July 17, 2015 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 – MAY 2015

Dear Bill:

Golder Associates Inc. (Golder) completed an interim groundwater monitoring event at the Landsburg Mine Site during May 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 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, 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.
- Analyses of groundwater for volatile organic compounds (VOCs; United States Environmental Protection Agency [EPA] Method 8260C), priority pollutant metals (EPA Method 6010C/200.8/7470A Series), and a petroleum hydrocarbon identification scan (NWTPH-HCID).

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

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200
Redmond, WA 98052 USA
Tel: (425) 883-0777 Fax: (425) 882-5498 www.golder.com

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 water depth measurements and elevations that were collected from wells prior to sampling activities. Groundwater levels are 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 B groundwater cleanup levels, whichever value is less. In cases where an established MCL or Method 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. Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample. Laboratory analyses did not detect any VOCs 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. Methylene chloride was detected at 0.87 J micrograms per liter (µg/L) in the equipment blank sample EB-0515 above the method detection limit (MDL), but less than the reporting limit (RL). Data validation indicates that this detection is an equipment blank and does not affect the sample results since methylene chloride was not detected in any of the groundwater samples or in the method blanks.

The primary parameters detected in groundwater samples during this sampling event were metals that are naturally occurring. 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 during the May 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 7.1 µg/L (0.0071 mg/L), which is less than the Washington State primary drinking water MCL and greater than the MTCA groundwater cleanup level of 10 µg/L and 5 µg/L, respectively. 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

[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.

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

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 Douglas Morell at (425) 883-0777.

Sincerely,

GOLDER ASSOCIATES INC.

Jill S. Lamberts
Project Environmental Scientist

Douglas J. Morell, PhD, LHG
Principal

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JSL/DJM/cl

TABLES

Table 1: Groundwater Elevation Data Collection May 26, 2015 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	11:42 AM	11:35 AM	10:57 AM	12:19 PM	11:03 AM	12:25 PM	11:26 AM	10:37 AM	12:29 PM	12:10 PM	1:16 PM	12:03 PM	10:32 AM	NA	NA
Measured to Top of PVC	ft bgs	143.08	139.05	7.84	12.84	9.33	14.36	25.89	209.65	4.92	100.12	1.32	157.95	7.43	NA	NA
Measured to Top of Monument	ft bgs	143.86	139.25	8.52	13.59	10.02	15.01	26.62	210.20	5.92	100.41	NC	158.31	7.83	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	**622.08**	**620.46**	**609.89**	**643.91**	**609.93**	**643.91**	**606.44**	**561.86**	**642.05**	**643.87**	**617.55**	**643.92**	**643.94**	NA	NA
Using Monument elevation	ft asl	622.03	NA	609.77	643.89	609.83	643.86	606.38	561.68	NA	NA	NA	643.89	NA	NA	NA

Notes:

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

NA = Not applicable

NC = Data not collected

ft bgs = feet below ground surface

ft asl = feet above sea level

Table 2: May 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-8		LMW-9		LMW-10		LMW-11		LMW-11 Duplicate		Equipment Blank		Trip Blank	
		5/26/2015		5/28/2015		5/26/2015		5/28/2015		5/28/2015		5/29/2015		5/28/2015		5/28/2015		5/28/2015		5/29/2015		5/29/2015		5/28/2015		5/26/2015	
Field Parameter																											
pH	stnd	6.85		7.76		6.91		6.91		6.70		7.13		6.79		7.05		8.51		7.28		NA		NA		NA	
Conductivity	uS/cm	943		324		953		763		261.5		566		551		715		370		559		NA		NA		NA	
Dissolved Oxygen	mg/L	0.00		0.00		0.00		0.00		0.00		0.02		0.35		0.00		0.00		0.39		NA		NA		NA	
Temperature	^{o}C	10.7		10.9		10.7		11.0		9.9		12.5		15.3		11.6		11.1		11.3		NA		NA		NA	
E_h	Rel mV	-33.6		-36.2		-52.9		-96.6		-56.2		-24.8		-23.4		-25.0		-84.0		5.9		NA		NA		NA	
Turbidity	NTU	0.95		0.85		1.32		1.49		0.97		1.18		2.33		1.76		2.22		1.34		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	
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	
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	**0.0071**		**0.007**		0.003	U	NA	
Barium	mg/L	0.500	U	0.5	U	0.5	U	0.5	U	0.5	U	**0.503**		0.5	U	0.500	U	0.5	U	0.5	U	0.5	U	0.5	U	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	
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	
Calcium	mg/L	**115**		**37.1**		**109**		**93.2**		**27**		**55.2**		**62.1**		**85**		**7**		**59.1**		**58.6**		0.5	U	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	
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	
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	
Iron	mg/L	**0.250**		0.2	U	**1.07**		0.2	U	**2.44**		**1.2**		**17.1**		**1.64**		0.2	U	**1.73**		**1.75**		0.2	U	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	
Magnesium	mg/L	**71.3**		**15.5**		**66.7**		**52.9**		**13.5**		**25.6**		**33**		**47.8**		**3.07**		**28.9**		**29.1**		1	U	NA	
Manganese	mg/L	**0.216**		**0.061**		**0.16**		**0.235**		**0.032**		**0.15**		**0.512**		**0.177**		0.02	U	**0.139**		**0.140**		0.02	U	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	
Nickel	mg/L	0.02000	U	0.02000	U	0.02000	U	0.02000	U	0.02000	U	0.02000	U	0.02000	U	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	NA	
Potassium	mg/L	**3.67**		**1.69**		**3.73**		**2.74**		**0.69**		**3.01**		**2.07**		**2.60**		**1.29**		**2.18**		**2.23**		0.5	U	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	
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	
Sodium	mg/L	**20.9**		**9.97**		**27.7**		**15.6**		**6.63**		**37.9**		**10.1**		**15.3**		**82.3**		**33.9**		**34.3**		0.500	U	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	
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	
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	
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
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	2.5	U	2.5	U	2.5	U
Acrylonitrile	µg/L	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U	1	U	1	UJ	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
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
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
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
Bromoform	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

Table 2: May 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-8		LMW-9		LMW-10		LMW-11		LMW-11 Duplicate		Equipment Blank		Trip Blank	
		5/26/2015		5/28/2015		5/26/2015		5/28/2015		5/28/2015		5/29/2015		5/28/2015		5/28/2015		5/28/2015		5/29/2015		5/29/2015		5/28/2015		5/26/2015	
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
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
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
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
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	0.200	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
Carbon tetrachloride	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
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
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
2-Chloroethylvinylether	µg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	U	0.5	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
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
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	0.1	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
Chlorodibromomethane	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
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
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	0.1	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
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
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
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
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
1,1-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
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
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
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
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
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
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	0.1	U	0.1	U	0.1	U
2,2-Dichloropropane	µg/L	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	U	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	U	0.1	UJ	0.1	UJ
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	0.1	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
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
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
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	0.2	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
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	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
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	0.1	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	**0.87**	**J**	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	2.5	U	2.5	U	2.5	U

Table 2: May 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2		LMW-3		LMW-4		LMW-5		LMW-6		LMW-7		LMW-8		LMW-9		LMW-10		LMW-11		LMW-11 Duplicate		Equipment Blank		Trip Blank	
		5/26/2015		5/28/2015		5/26/2015		5/28/2015		5/28/2015		5/29/2015		5/28/2015		5/28/2015		5/28/2015		5/29/2015		5/29/2015		5/28/2015		5/26/2015	
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
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
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
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	0.2	U	0.2	U	0.2	U
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
1,3,5-Trichlorobenzene	µg/L	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
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	0.1	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
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	0.2	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
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
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
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
Total Benzofluoranthenes	µg/L	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		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
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	0.2	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
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
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
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	0.1	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
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
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
Hydrocarbon Identification																											
Diesel Range	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	NA	
Gas Range	mg/L	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	0.25	U	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	U	0.5	U	0.5	U	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

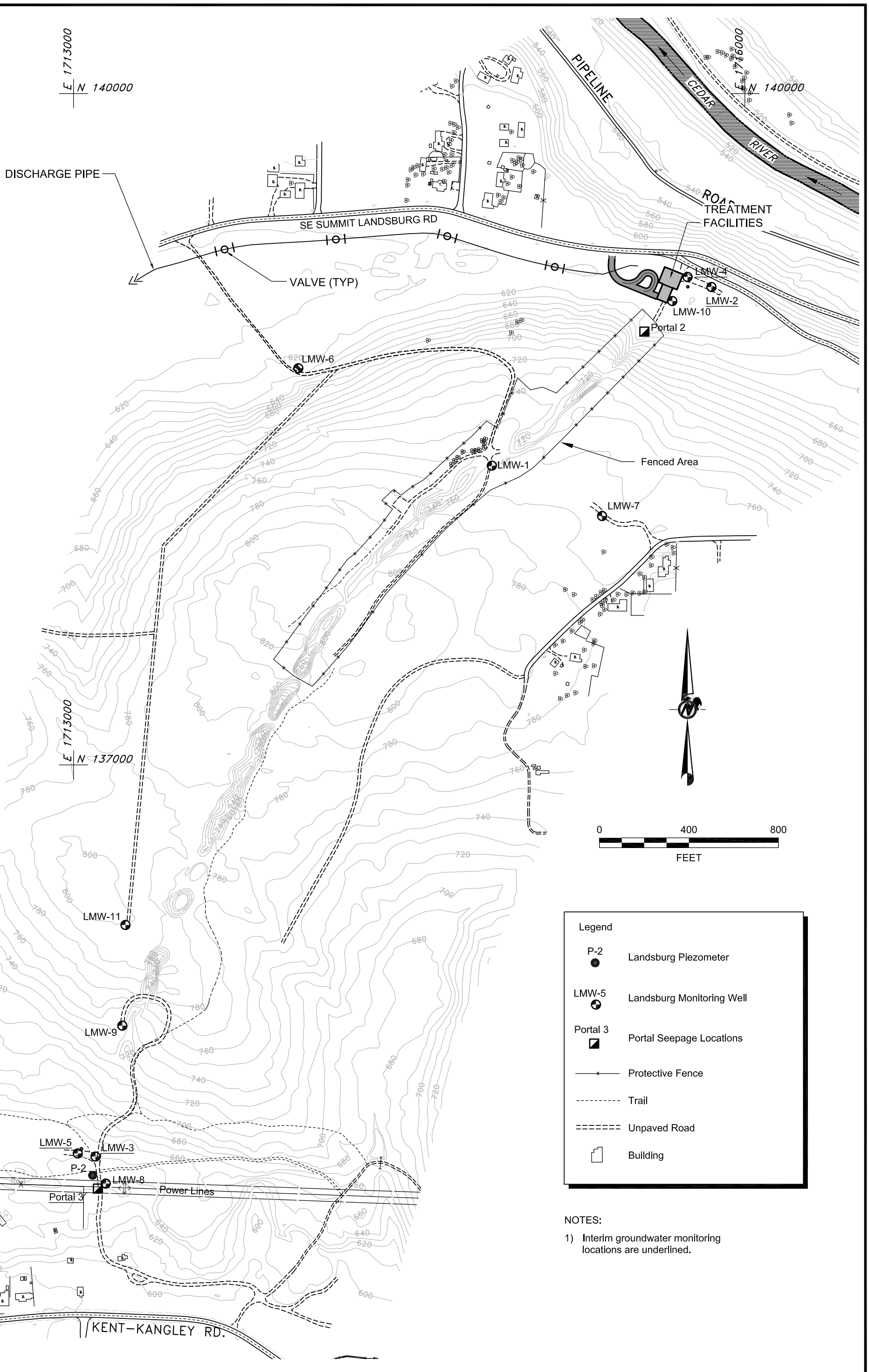
mg/L = milligrams per liter

Rel mV = relative millivolts

NTU = nephelometric turbidity unit

µg/L = micrograms per liter

FIGURES



NOTES:

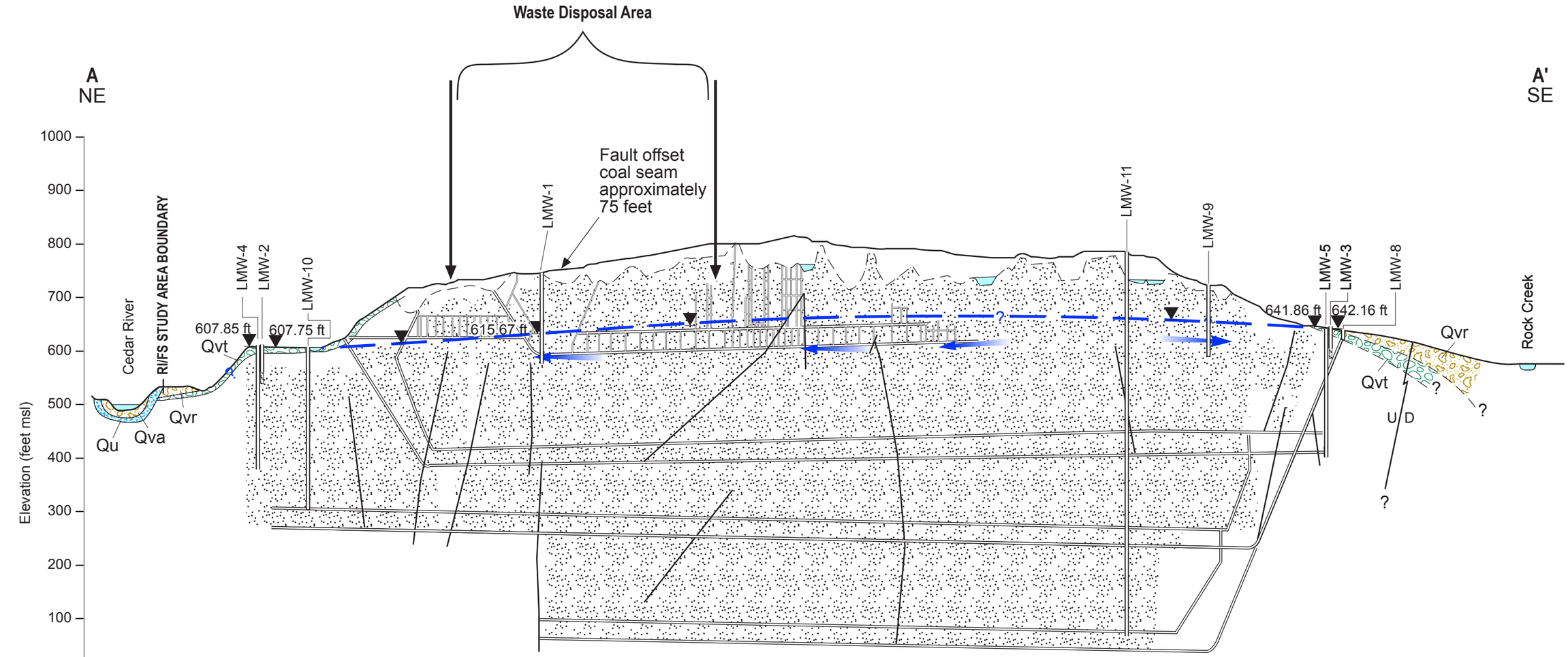
1) Interim groundwater monitoring locations are underlined.

FIGURE **1**

GROUNDWATER MONITORING LOCATIONS

PALMER/LANDSBURG MINE/WA

Golder Associates



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

9231000002R273fig05.ai | Mod: 06/30/15 | AMP

Golder Associates

APPENDIX A
LABORATORY ANALYTICAL REPORTS

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 12, 2015

Doug Morell
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: AGV5 and AGV6

Dear Mr. Morell:

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 twelve water samples trip blanks in good condition on May 29, 2015. There were no discrepancies between the COC and the sample containers' labels.

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 with the exception of Trichlorofluoromethane which is out of control high. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The VOCs method blanks contained contamination. All associated samples were non-detect with the exception of one trip blank which was flagged with a "B" qualifier. All associated samples and QC that contain analyte have been flagged with a "B" qualifier.

The 6/6/15 VOCs LCS and LCSD are out of control high for Bromomethane and Iodomethane.

The 6/8/15 VOCs LCS is out of control for several analytes. The LCSD is in control and no further action was taken.

The VOCs matrix spike and matrix spike duplicate are out of control low for 2-Chloroethylether.

The total metals matrix spike is out of control low for chromium.

No other analytical complications were noted.

Per client request, the metals reporting limits were raised to meet client required limits.

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

Chain of Custody Record & Laboratory Analysis Request

Please analyze under existing MSA between Golder + ARI

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: AGV5	Turn-around Requested: Standard	Page: 1	of 2
ARI Client Company: Golder	Phone: 425-883-0777	Date: 5/26/2015	Ice Present? Yes
Client Contact: D.Morell, J.Lamberts		No. of Coolers: 5	Cooler Temps. 2.9-5.9
Client Project Name: Landsburg			
Client Project #: 923i000 002.R273	Samplers: Lamberts, Rydecki		

Sample ID	Date	Time	Matrix	No. Containers	VOCs client list	TPH-HCID	TAML Total Metals	Dissolved metals (Field Filtered w/0.45µm filter)					Notes/Comments
TripBlank-052615	5/26/15	—	W	3	X					HOLD			
LMW-2-0515		1435		11	X	X	X	~~HOLD~~					
LMW-4-0515		1615		11	X	X	X						
TripBlank-052815	5/28/15	—		3	HOLD								
LMW-9-0515		0950		11	X	X	X	HOLD					
EB-0515		11~~00~~		11	X	X	X						
LMW-3-0515		1127		11	X	X	X						
LMW-8-0515		1205		11	X	X	X						
LMW-5-0515		1330		11	X	X	X						
LMW-10-0515		1500		11	X	X	X						

Comments/Special Instructions	Relinquished by	Received by	Relinquished by	Received by
* Ecology EIM EDD	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
** CLIENT SPECIFIC RLS and ANALYTE LIST **	Printed Name: J. Lamberts	Printed Name: Kelly Bullen	Printed Name:	Printed Name:
Pls cc jlamberts@golder.com, dmorell@golder.com	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 5/29/15 1315	Date & Time: 5/29/15 1:05	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.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: D. Morell, J. Lamberts	
Client Project Name: Landsburg	
Client Project #: 923-1000-002.R273	Samplers: Lamberts, Rydecki

Page: 2 of 2	
Date: 5/28/2015	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: VOCs client list	TPH-HCID	TAML Total Metals	Diss. Metals (Field Filtered w/ 0.45um filter)					Notes/Comments
LMW-6-0515	5/28/15	1625	W	11	X	X	X	HOLD					
LMW-11-0515	5/24/15	0905	W	11	X	X	X	HOLD					
LMW-11-0515-D	"	0915	W	11	X	X	X	"					
LMW-7-0515	"	1200	W	27	X	X	X	"					MS/MSD Volume
Tripblank-052915	"	—	W	3	HOLD			"					

Comments/Special Instructions: *Ecology EIM EDD **CLIENT SPECIFIC RLs +ANALYTE LIST*** pls cc jlamberts +dmorell @golder.com	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: J. Lamberts	Printed Name: Kelly Bates	Printed Name	Printed Name
	Company: Golder	Company: ARI	Company	Company
	Date & Time: 5/29/15 1315	Date & Time: 5/29/15 1:15	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 AGV5 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) 4.0 3.8 4.0 2.9 5.9

Time: 1305

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90077952

Cooler Accepted by KB "CA" Date: 5/29/15 Time: 1305

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 5-20-15

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

Samples Logged by AV Date: 5/29/15 Time: 1435

***** 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:

TripBlank - 052615 - 2 of 3 vials have Pb bubbles.
LMW-8-0515 - 2 of 5 vials have LG bubbles.
LMW-4-0515 - 1 of 5 vials have LG bubbles.
TripBlank - 052815 - 2 of 3 vials have Pb bubbles.
LMW-9-0515 - 1 of 5 vials have LG bubbles.
LMW-3-0515 - 1 of 5 vials have Pb bubbles.
LMW-5-0515 - 1 of 5 vials have SM bubbles
LMW-6-0515 - 1 of 5 vials have Pb bubbles.
LMW-7-0515 - 1 of 5 vials have Sm bubbles
TripBlank - 052915 1 of 3 vials have LG bubbles

By: CA Date 5-29-15

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)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AGV5
Client: Golder Associates
Project Event: 8231000 002.R273
Project Name: Landsburg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	TRIP BLANK-052615	AGV5A	15-10234	Water	05/26/15	05/29/15 13:05
2.	LMW-2-0515	AGV5B	15-10235	Water	05/26/15 14:35	05/29/15 13:05
3.	LMW-4-0515	AGV5C	15-10236	Water	05/26/15 16:15	05/29/15 13:05
4.	LMW-9-0515	AGV5D	15-10237	Water	05/28/15 09:50	05/29/15 13:05
5.	EB-0515	AGV5E	15-10238	Water	05/28/15 11:00	05/29/15 13:05
6.	LMW-3-0515	AGV5F	15-10239	Water	05/28/15 11:27	05/29/15 13:05
7.	LMW-8-0515	AGV5G	15-10240	Water	05/28/15 12:05	05/29/15 13:05
8.	LMW-5-0515	AGV5H	15-10241	Water	05/28/15 13:30	05/29/15 13:05
9.	LMW-10-0515	AGV5I	15-10242	Water	05/28/15 15:00	05/29/15 13:05
10.	LMW-6-0515	AGV5J	15-10243	Water	05/28/15 16:25	05/29/15 13:05
11.	LMW-11-0515	AGV5K	15-10244	Water	05/29/15 09:05	05/29/15 13:05
12.	LMW-11-0515-D	AGV5L	15-10245	Water	05/29/15 09:15	05/29/15 13:05
13.	LMW-7-0515	AGV5M	15-10246	Water	05/29/15 12:00	05/29/15 13:05
14.	TRIP BLANK-052815	AGV5N	15-10247	Water	05/28/15	05/29/15 13:05
15.	TRIP BLANK-052915	AGV5O	15-10248	Water	05/29/15	05/29/15 13:05

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AGV6
Client: Golder Associates
Project Event: 8231000 002.R273
Project Name: Landsburg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	LMW-2-0515	AGV6A	15-10249	Water	05/26/15 14:35	05/29/15 13:05
2.	LMW-4-0515	AGV6B	15-10250	Water	05/26/15 16:15	05/29/15 13:05
3.	LMW-9-0515	AGV6C	15-10251	Water	05/28/15 09:50	05/29/15 13:05
4.	EB-0515	AGV6D	15-10252	Water	05/28/15 11:00	05/29/15 13:05
5.	LMW-3-0515	AGV6E	15-10253	Water	05/28/15 11:27	05/29/15 13:05
6.	LMW-8-0515	AGV6F	15-10254	Water	05/28/15 12:05	05/29/15 13:05
7.	LMW-5-0515	AGV6G	15-10255	Water	05/28/15 13:30	05/29/15 13:05
8.	LMW-10-0515	AGV6H	15-10256	Water	05/28/15 15:00	05/29/15 13:05
9.	LMW-6-0515	AGV6I	15-10257	Water	05/28/15 16:25	05/29/15 13:05
10.	LMW-11-0515	AGV6J	15-10258	Water	05/29/15 09:05	05/29/15 13:05
11.	LMW-11-0515-D	AGV6K	15-10259	Water	05/29/15 09:15	05/29/15 13:05
12.	LMW-7-0515	AGV6L	15-10260	Water	05/29/15 12:00	05/29/15 13:05

PRESERVATION VERIFICATION 05/29/15
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ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AGV5**

Inquiry Number: NONE
Analysis Requested: 05/29/15
Contact: Morell, Douglas
Client: Golder Associates
Logged by: AV
Sample Set Used: Yes-481
Validatable Package: 1V4
Deliverables:

PC: Kelly
VTSR: 05/29/15

Project #: 8231000 002.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
15-10235 **AGV5B**	LMW-2-0515						TOT P															
15-10236 **AGV5C**	LMW-4-0515						TOT P															
15-10237 **AGV5D**	LMW-9-0515						TOT P															
15-10238 **AGV5E**	EB-0515						TOT P															
15-10239 **AGV5F**	LMW-3-0515						TOT P															
15-10240 **AGV5G**	LMW-8-0515						TOT P															
15-10241 **AGV5H**	LMW-5-0515						TOT P															
15-10242 **AGV5I**	LMW-10-0515						TOT P															
15-10243 **AGV5J**	LMW-6-0515						TOT P															
15-10244 **AGV5K**	LMW-11-0515						TOT P															
15-10245 **AGV5L**	LMW-11-05.5-D						TOT P															
15-10246 **AGV5M**	LMW-7-0515						TOT P															

P=Pass

Checked By AV/CA Date 5/29/15

PRESERVATION VERIFICATION 05/29/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AGV6**

Inquiry Number: NONE
Analysis Requested: 05/29/15
Contact: Morell, Douglas
Client: Golder Associates
Logged by: AV
Sample Set Used: Yes-481
Validatable Package: lV4
Deliverables:

PC: Kelly
VTSR: 05/29/15

Project #: 8231000 002.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
15-10249 **AGV6A**	LMW-2-0515						TOT P															
15-10250 **AGV6B**	LMW-4-0515						TOT P															
15-10251 **AGV6C**	LMW-9-0515						TOT P															
15-10252 **AGV6D**	EB-0515						TOT P															
15-10253 **AGV6E**	LMW-3-0515						TOT P															
15-10254 **AGV6F**	LMW-8-0515						TOT P															
15-10255 **AGV6G**	LMW-5-0515						TOT P															
15-10256 **AGV6H**	LMW-10-0515						TOT P															
15-10257 **AGV6I**	LMW-6-0515						TOT P															
15-10258 **AGV6J**	LMW-11-0515						TOT P															
15-10259 **AGV6K**	LMW-11-0515-D						TOT P															
15-10260 **AGV6L**	LMW-7-0515						TOT P															

P=Pass

Checked By AV/CA Date 5/29/15

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK-052615**
 SAMPLE

Lab Sample ID: AGV5A
LIMS ID: 15-10234
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 16:22

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 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 Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK-052615**

SAMPLE

Lab Sample ID: AGV5A
LIMS ID: 15-10234
Matrix: Water
Date Analyzed: 06/06/15 16:22

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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**	**0.28 JB**
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	98.4%
d8-Toluene	99.3%
Bromofluorobenzene	97.1%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-2-0515**
 SAMPLE

Lab Sample ID: AGV5B
LIMS ID: 15-10235
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 16:46

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-2-0515**

SAMPLE

Lab Sample ID: AGV5B
LIMS ID: 15-10235
Matrix: Water
Date Analyzed: 06/06/15 16:46

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	100%
d8-Toluene	100%
Bromofluorobenzene	97.3%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-4-0515**
 SAMPLE

Lab Sample ID: AGV5C
LIMS ID: 15-10236
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 17:11

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	< 0.20 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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-4-0515**
 SAMPLE

Lab Sample ID: AGV5C
LIMS ID: 15-10236
Matrix: Water
Date Analyzed: 06/06/15 17:11

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	98.9%
d8-Toluene	100%
Bromofluorobenzene	97.3%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-9-0515**
 SAMPLE

Lab Sample ID: AGV5D
LIMS ID: 15-10237
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 17:36

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	0.10	< 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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-9-0515**

SAMPLE

Lab Sample ID: AGV5D
LIMS ID: 15-10237
Matrix: Water
Date Analyzed: 06/06/15 17:36

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	100%
d8-Toluene	100%
Bromofluorobenzene	97.3%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: EB-0515**
 SAMPLE

Lab Sample ID: AGV5E
LIMS ID: 15-10238
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 18:00

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**	**0.87 J**
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: EB-0515**
 SAMPLE

Lab Sample ID: AGV5E
LIMS ID: 15-10238
Matrix: Water
Date Analyzed: 06/06/15 18:00

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	102%
d8-Toluene	99.7%
Bromofluorobenzene	97.5%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-3-0515**
 SAMPLE

Lab Sample ID: AGV5F
LIMS ID: 15-10239
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 18:25

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	< 0.20 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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-3-0515**
 SAMPLE

Lab Sample ID: AGV5F
LIMS ID: 15-10239
Matrix: Water
Date Analyzed: 06/06/15 18:25

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	102%
d8-Toluene	100%
Bromofluorobenzene	98.0%
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

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-8-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5G
LIMS ID: 15-10240
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 18:50

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-8-0515**

SAMPLE

Lab Sample ID: AGV5G
LIMS ID: 15-10240
Matrix: Water
Date Analyzed: 06/06/15 18:50

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	101%
d8-Toluene	100%
Bromofluorobenzene	100%
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

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-5-0515**
 SAMPLE

Lab Sample ID: AGV5H
LIMS ID: 15-10241
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 19:14

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-5-0515**
 SAMPLE

Lab Sample ID: AGV5H
LIMS ID: 15-10241
Matrix: Water
Date Analyzed: 06/06/15 19:14

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	102%
d8-Toluene	101%
Bromofluorobenzene	100%
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

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-10-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5I
LIMS ID: 15-10242
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 19:39

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-10-0515**
 SAMPLE

Lab Sample ID: AGV5I
LIMS ID: 15-10242
Matrix: Water
Date Analyzed: 06/06/15 19:39

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	103%
d8-Toluene	101%
Bromofluorobenzene	97.9%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-6-0515**
 SAMPLE

Lab Sample ID: AGV5J
LIMS ID: 15-10243
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 20:03

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-6-0515**
 SAMPLE

Lab Sample ID: AGV5J
LIMS ID: 15-10243
Matrix: Water
Date Analyzed: 06/06/15 20:03

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	101%
d8-Toluene	99.9%
Bromofluorobenzene	99.0%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515**
 SAMPLE

Lab Sample ID: AGV5K
LIMS ID: 15-10244
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 20:28

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515**
 SAMPLE

Lab Sample ID: AGV5K
LIMS ID: 15-10244
Matrix: Water
Date Analyzed: 06/06/15 20:28

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	103%
d8-Toluene	102%
Bromofluorobenzene	97.3%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515-D**
 SAMPLE

Lab Sample ID: AGV5L
LIMS ID: 15-10245
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 16:00

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515-D**
 SAMPLE

Lab Sample ID: AGV5L
LIMS ID: 15-10245
Matrix: Water
Date Analyzed: 06/08/15 16:00

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	101%
d8-Toluene	98.0%
Bromofluorobenzene	98.7%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**
 SAMPLE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 16:25

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	< 0.20 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 Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**
 SAMPLE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Date Analyzed: 06/08/15 16:25

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	98.3%
Bromofluorobenzene	97.7%
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 Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-060615A**
METHOD BLANK

Lab Sample ID: MB-060615A
LIMS ID: 15-10234
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 15:57

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**	**0.14**
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**	**0.21**
541-73-1	**1,3-Dichlorobenzene**	**0.04**	**0.20**	**0.12 J**
106-46-7	**1,4-Dichlorobenzene**	**0.04**	**0.20**	**0.17 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**	**0.56**
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-060615A**
 METHOD BLANK

Lab Sample ID: MB-060615A QC Report No: AGV5-Golder Associates
LIMS ID: 15-10234 Project: Landsburg
Matrix: Water 8231000 002.R273
Date Analyzed: 06/06/15 15:57

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**	**0.30**
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**	**0.11 J**
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**	**0.13 J**
120-82-1	**1,2,4-Trichlorobenzene**	**0.11**	**0.50**	**0.42 J**
91-20-3	**Naphthalene**	**0.12**	**0.50**	**0.97**
87-61-6	**1,2,3-Trichlorobenzene**	**0.11**	**0.20**	**0.57**

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.6%
d8-Toluene	99.9%
Bromofluorobenzene	99.5*
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-060815A**
 METHOD BLANK

Lab Sample ID: MB-060815A
LIMS ID: 15-10245
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 13:16

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 Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-060815A**
METHOD BLANK

Lab Sample ID: MB-060815A
LIMS ID: 15-10245
Matrix: Water
Date Analyzed: 06/08/15 13:16

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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**	**0.22**
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**	**0.26**

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	96.9%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-060615A	Method Blank	10	99.6%	99.9%	99.5%	102%	0
LCS-060615A	Lab Control	10	95.5%	100%	103%	98.9%	0
LCSD-060615A	Lab Control Dup	10	97.8%	101%	104%	97.8%	0
AGV5A	TRIP BLANK-052615	10	98.4%	99.3%	97.1%	100%	0
AGV5B	LMW-2-0515	10	100%	100%	97.3%	102%	0
AGV5C	LMW-4-0515	10	98.9%	100%	97.3%	102%	0
AGV5D	LMW-9-0515	10	100%	100%	97.3%	101%	0
AGV5E	EB-0515	10	102%	99.7%	97.5%	101%	0
AGV5F	LMW-3-0515	10	102%	100%	98.0%	103%	0
AGV5G	LMW-8-0515	10	101%	100%	100%	103%	0
AGV5H	LMW-5-0515	10	102%	101%	100%	103%	0
AGV5I	LMW-10-0515	10	103%	101%	97.9%	102%	0
AGV5J	LMW-6-0515	10	101%	99.9%	99.0%	101%	0
AGV5K	LMW-11-0515	10	103%	102%	97.3%	102%	0
MB-060815A	Method Blank	10	101%	96.9%	98.2%	101%	0
LCS-060815A	Lab Control	10	99.3%	99.9%	102%	99.1%	0
LCSD-060815A	Lab Control Dup	10	99.0%	100%	104%	99.4%	0
AGV5L	LMW-11-0515-D	10	101%	98.0%	98.7%	101%	0
AGV5M	LMW-7-0515	10	104%	98.3%	97.7%	102%	0
AGV5MMS	LMW-7-0515	10	99.2%	98.4%	102%	100%	0
AGV5MMSD	LMW-7-0515	10	99.2%	99.2%	101%	98.6%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(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: 15-10234 to 15-10246

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**
 MATRIX SPIKE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 21:45

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**

MATRIX SPIKE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Date Analyzed: 06/08/15 21:45

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.2%
d8-Toluene	98.4%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**

MATRIX SPIKE DUPLICATE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 22:10

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

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

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**

MATRIX SPIKE DUPLICATE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Date Analyzed: 06/08/15 22:10

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

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

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.2%
d8-Toluene	99.2%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	98.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-060615A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-060615A
LIMS ID: 15-10234
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT7/PAB
LCSD: NT7/PAB
Date Analyzed LCS: 06/06/15 15:08
LCSD: 06/06/15 15:32

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	10.4	10.0	104%	10.3	10.0	103%	1.0%
Bromomethane	14.4	10.0	144%	14.6	10.0	146%	1.4
Vinyl Chloride	10.6	10.0	106%	10.7	10.0	107%	0.9
Chloroethane	11.2	10.0	112%	11.2	10.0	112%	0.0%
Methylene Chloride	10.6	10.0	106%	10.6	10.0	106%	0.0%
Acetone	49.3	50.0	98.6%	49.8	50.0	99.6%	1.0%
Carbon Disulfide	11.3	10.0	113%	11.1	10.0	111%	1.8%
1,1-Dichloroethene	10.5	10.0	105%	10.6	10.0	106%	0.9%
1,1-Dichloroethane	10.5	10.0	105%	10.3	10.0	103%	1.9%
trans-1,2-Dichloroethene	10.5	10.0	105%	10.3	10.0	103%	1.9%
cis-1,2-Dichloroethene	10.4	10.0	104%	10.4	10.0	104%	0.0%
Chloroform	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,2-Dichloroethane	10.2	10.0	102%	10.0	10.0	100%	2.0%
2-Butanone	49.3	50.0	98.6%	49.8	50.0	99.6%	1.0%
1,1,1-Trichloroethane	10.4	10.0	104%	10.4	10.0	104%	0.0%
Carbon Tetrachloride	10.8	10.0	108%	10.8	10.0	108%	0.0%
Vinyl Acetate	10.5	10.0	105%	10.3	10.0	103%	1.9%
Bromodichloromethane	10.9	10.0	109%	10.7	10.0	107%	1.9%
1,2-Dichloropropane	10.4	10.0	104%	10.3	10.0	103%	1.0%
cis-1,3-Dichloropropene	10.9	10.0	109%	10.9	10.0	109%	0.0%
Trichloroethene	10.4	10.0	104%	10.3	10.0	103%	1.0%
Dibromochloromethane	10.7	10.0	107%	10.5	10.0	105%	1.9%
1,1,2-Trichloroethane	10.1	10.0	101%	9.99	10.0	99.9%	1.1%
Benzene	10.8	10.0	108%	10.7	10.0	107%	0.9%
trans-1,3-Dichloropropene	10.6	10.0	106%	10.4	10.0	104%	1.9%
2-Chloroethylvinylether	10.7	10.0	107%	10.8	10.0	108%	0.9%
Bromoform	10.8	10.0	108%	10.4	10.0	104%	3.8
4-Methyl-2-Pentanone (MIBK)	50.2	50.0	100%	50.1	50.0	100%	0.2%
2-Hexanone	51.9	50.0	104%	51.6	50.0	103%	0.6%
Tetrachloroethene	10.1	10.0	101%	10.0	10.0	100%	1.0%
1,1,2,2-Tetrachloroethane	11.1 B	10.0	111%	11.0 B	10.0	110%	0.9%
Toluene	10.7	10.0	107%	10.5	10.0	105%	1.9%
Chlorobenzene	10.3	10.0	103%	10.2	10.0	102%	1.0%
Ethylbenzene	10.7	10.0	107%	10.7	10.0	107%	0.0%
Styrene	11.3	10.0	113%	11.7	10.0	117%	3.5%
Trichlorofluoromethane	12.7 Q	10.0	127%	12.9 Q	10.0	129%	1.6%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.2	10.0	102%	10.2	10.0	102%	0.0%
m,p-Xylene	22.1	20.0	110%	22.2	20.0	111%	0.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-060615A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-060615A
LIMS ID: 15-10234
Matrix: Water

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	11.2	10.0	112%	11.2	10.0	112%	0.0
1,2-Dichlorobenzene	12.0 B	10.0	120%	11.8 B	10.0	118%	1.7
1,3-Dichlorobenzene	10.0 B	10.0	100%	9.82 B	10.0	98.2%	1.8
1,4-Dichlorobenzene	9.70 B	10.0	97.0%	9.51 B	10.0	95.1%	2.0
Acrolein	59.1	50.0	118%	56.8	50.0	114%	4.0%
Iodomethane	12.7	10.0	127%	13.0	10.0	130%	2.3
Acrylonitrile	9.44	10.0	94.4%	9.41	10.0	94.1%	0.3%
1,1-Dichloropropene	10.6	10.0	106%	10.6	10.0	106%	0.0
Dibromomethane	10.2	10.0	102%	10.3	10.0	103%	1.0
1,1,1,2-Tetrachloroethane	10.6	10.0	106%	10.4	10.0	104%	1.9
1,2-Dibromo-3-chloropropane	10.4 B	10.0	104%	10.5 B	10.0	105%	1.0
1,2,3-Trichloropropane	10.2	10.0	102%	9.95	10.0	99.5%	2.5%
trans-1,4-Dichloro-2-butene	9.98	10.0	99.8%	9.54	10.0	95.4%	4.5%
1,3,5-Trimethylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9
1,2,4-Trimethylbenzene	11.1	10.0	111%	10.9	10.0	109%	1.8%
Hexachlorobutadiene	9.44 B	10.0	94.4%	9.67 B	10.0	96.7%	2.4%
1,2-Dibromoethane	10.4	10.0	104%	10.4	10.0	104%	0.0%
Bromochloromethane	10.6	10.0	106%	10.4	10.0	104%	1.9%
2,2-Dichloropropane	9.99 Q	10.0	99.9%	9.84 Q	10.0	98.4%	1.5%
1,3-Dichloropropane	10.2	10.0	102%	10.2	10.0	102%	0.0
Isopropylbenzene	11.1	10.0	111%	10.7	10.0	107%	3.7%
n-Propylbenzene	9.99	10.0	99.9%	9.78	10.0	97.8%	2.1%
Bromobenzene	9.91 B	10.0	99.1%	9.62 B	10.0	96.2%	3.0
2-Chlorotoluene	10.4	10.0	104%	10.1	10.0	101%	2.9%
4-Chlorotoluene	10.6	10.0	106%	10.2	10.0	102%	3.8
tert-Butylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9%
sec-Butylbenzene	11.0	10.0	110%	10.7	10.0	107%	2.8%
4-Isopropyltoluene	11.0	10.0	110%	10.7	10.0	107%	2.8%
n-Butylbenzene	11.0 B	10.0	110%	10.7 B	10.0	107%	2.8
1,2,4-Trichlorobenzene	9.90 B	10.0	99.0%	9.81 B	10.0	98.1%	0.9
Naphthalene	11.1 B	10.0	111%	11.3 B	10.0	113%	1.8
1,2,3-Trichlorobenzene	9.59 B	10.0	95.9%	9.63 B	10.0	96.3%	0.4

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.5%	97.8%
d8-Toluene	100%	101%
Bromofluorobenzene	103%	104%
d4-1,2-Dichlorobenzene	98.9%	97.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-060815A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-060815A
LIMS ID: 15-10245
Matrix: Water
Data Release Authorized:
Reported: 06/12/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT7/PAB
LCSD: NT7/PAB
Date Analyzed LCS: 06/08/15 12:27
LCSD: 06/08/15 12:51

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	8.13	10.0	81.3%	8.61	10.0	86.1%	5.7%
Bromomethane	8.69	10.0	86.9%	10.4	10.0	104%	17.9%
Vinyl Chloride	8.45	10.0	84.5%	9.08	10.0	90.8%	7.2%
Chloroethane	8.86	10.0	88.6%	10.2	10.0	102%	14.1%
Methylene Chloride	8.90	10.0	89.0%	9.51	10.0	95.1%	6.6%
Acetone	39.4	50.0	78.8%	43.0	50.0	86.0%	8.7%
Carbon Disulfide	9.36	10.0	93.6%	9.69	10.0	96.9%	3.5%
1,1-Dichloroethene	8.67	10.0	86.7%	9.17	10.0	91.7%	5.6%
1,1-Dichloroethane	8.43	10.0	84.3%	9.06	10.0	90.6%	7.2%
trans-1,2-Dichloroethene	8.40	10.0	84.0%	8.96	10.0	89.6%	6.5%
cis-1,2-Dichloroethene	8.40	10.0	84.0%	9.01	10.0	90.1%	7.0%
Chloroform	8.54	10.0	85.4%	9.08	10.0	90.8%	6.1%
1,2-Dichloroethane	8.48	10.0	84.8%	9.10	10.0	91.0%	7.1%
2-Butanone	38.6	50.0	77.2%	41.2	50.0	82.4%	6.5%
1,1,1-Trichloroethane	8.66	10.0	86.6%	9.24	10.0	92.4%	6.5%
Carbon Tetrachloride	8.98	10.0	89.8%	9.82	10.0	98.2%	8.9%
Vinyl Acetate	8.00	10.0	80.0%	8.74	10.0	87.4%	8.8%
Bromodichloromethane	8.96	10.0	89.6%	9.52	10.0	95.2%	6.1%
1,2-Dichloropropane	8.35	10.0	83.5%	8.95	10.0	89.5%	6.9%
cis-1,3-Dichloropropene	8.84	10.0	88.4%	9.69	10.0	96.9%	9.2%
Trichloroethene	8.53	10.0	85.3%	9.11	10.0	91.1%	6.6%
Dibromochloromethane	8.76	10.0	87.6%	9.55	10.0	95.5%	8.6%
1,1,2-Trichloroethane	8.13	10.0	81.3%	8.89	10.0	88.9%	8.9%
Benzene	8.76	10.0	87.6%	9.39	10.0	93.9%	6.9%
trans-1,3-Dichloropropene	8.71	10.0	87.1%	9.44	10.0	94.4%	8.0%
2-Chloroethylvinylether	8.71	10.0	87.1%	9.50	10.0	95.0%	8.7%
Bromoform	8.85	10.0	88.5%	9.34	10.0	93.4%	5.4%
4-Methyl-2-Pentanone (MIBK)	39.4	50.0	78.8%	43.3	50.0	86.6%	9.4%
2-Hexanone	41.0	50.0	82.0%	44.6	50.0	89.2%	8.4%
Tetrachloroethene	8.65	10.0	86.5%	9.23	10.0	92.3%	6.5%
1,1,2,2-Tetrachloroethane	8.94	10.0	89.4%	9.42	10.0	94.2%	5.2%
Toluene	8.65	10.0	86.5%	9.33	10.0	93.3%	7.6%
Chlorobenzene	8.45	10.0	84.5%	9.03	10.0	90.3%	6.6%
Ethylbenzene	8.82	10.0	88.2%	9.51	10.0	95.1%	7.5%
Styrene	9.59	10.0	95.9%	10.3	10.0	103%	7.1%
Trichlorofluoromethane	10.9	10.0	109%	11.5	10.0	115%	5.4%
1,1,2-Trichloro-1,2,2-trifluoroetha	8.62	10.0	86.2%	9.38	10.0	93.8%	8.4%
m,p-Xylene	18.2	20.0	91.0%	19.6	20.0	98.0%	7.4%

AGV5 8008W

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-060815A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-060815A QC Report No: AGV5-Golder Associates
LIMS ID: 15-10245 Project: Landsburg
Matrix: Water 8231000 002.R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.05	10.0	90.5%	9.92	10.0	99.2%	9.2%
1,2-Dichlorobenzene	9.68	10.0	96.8%	10.4	10.0	104%	7.2%
1,3-Dichlorobenzene	8.26	10.0	82.6%	8.70	10.0	87.0%	5.2%
1,4-Dichlorobenzene	7.91	10.0	79.1%	8.47	10.0	84.7%	6.8%
Acrolein	42.5	50.0	85.0%	47.2	50.0	94.4%	10.5%
Iodomethane	9.10	10.0	91.0%	10.1	10.0	101%	10.4%
Acrylonitrile	7.10 Q	10.0	71.0%	8.12 Q	10.0	81.2%	13.4%
1,1-Dichloropropene	8.68	10.0	86.8%	9.40	10.0	94.0%	8.0%
Dibromomethane	8.33	10.0	83.3%	9.01	10.0	90.1%	7.8%
1,1,1,2-Tetrachloroethane	8.74	10.0	87.4%	9.23	10.0	92.3%	5.5%
1,2-Dibromo-3-chloropropane	8.14	10.0	81.4%	9.10	10.0	91.0%	11.1%
1,2,3-Trichloropropane	8.29	10.0	82.9%	8.49	10.0	84.9%	2.4%
trans-1,4-Dichloro-2-butene	8.34	10.0	83.4%	8.87	10.0	88.7%	6.2%
1,3,5-Trimethylbenzene	8.69	10.0	86.9%	9.43	10.0	94.3%	8.2%
1,2,4-Trimethylbenzene	8.82	10.0	88.2%	9.65	10.0	96.5%	9.0%
Hexachlorobutadiene	8.65 B	10.0	86.5%	9.18 B	10.0	91.8%	5.9%
1,2-Dibromoethane	8.38	10.0	83.8%	9.04	10.0	90.4%	7.6%
Bromochloromethane	8.52	10.0	85.2%	9.19	10.0	91.9%	7.6%
2,2-Dichloropropane	8.82	10.0	88.2%	9.33	10.0	93.3%	5.6%
1,3-Dichloropropane	8.37	10.0	83.7%	9.08	10.0	90.8%	8.1%
Isopropylbenzene	9.01	10.0	90.1%	9.53	10.0	95.3%	5.6%
n-Propylbenzene	8.22	10.0	82.2%	8.68	10.0	86.8%	5.4%
Bromobenzene	8.02	10.0	80.2%	8.57	10.0	85.7%	6.6%
2-Chlorotoluene	8.56	10.0	85.6%	9.02	10.0	90.2%	5.2%
4-Chlorotoluene	8.58	10.0	85.8%	9.12	10.0	91.2%	6.1%
tert-Butylbenzene	8.85	10.0	88.5%	9.39	10.0	93.9%	5.9%
sec-Butylbenzene	9.08	10.0	90.8%	9.61	10.0	96.1%	5.7%
4-Isopropyltoluene	9.05	10.0	90.5%	9.73	10.0	97.3%	7.2%
n-Butylbenzene	9.11	10.0	91.1%	9.70	10.0	97.0%	6.3%
1,2,4-Trichlorobenzene	8.21	10.0	82.1%	8.91	10.0	89.1%	8.2%
Naphthalene	9.24	10.0	92.4%	9.69	10.0	96.9%	4.8%
1,2,3-Trichlorobenzene	7.79 B	10.0	77.9%	8.60 B	10.0	86.0%	9.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	99.3%	99.0%
d8-Toluene	99.9%	100%
Bromofluorobenzene	102%	104%
d4-1,2-Dichlorobenzene	99.1%	99.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**

MATRIX SPIKE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/12/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst MS: NT7/PAB
MSD: NT7/PAB
Date Analyzed MS: 06/08/15 21:45
MSD: 06/08/15 22:10

Sample Amount MS: 10.0 mL
MSD: 10.0 mL
Purge Volume MS: 10.0 mL
MSD: 10.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Chloromethane	< 0.50 U	8.44	10.0	84.4%	8.54	10.0	85.4%	1.2%
Bromomethane	< 1.0 U	8.95	10.0	89.5%	8.89	10.0	88.9%	0.7%
Vinyl Chloride	< 0.10 U	8.81	10.0	88.1%	8.96	10.0	89.6%	1.7%
Chloroethane	< 0.20 U	9.47	10.0	94.7%	9.74	10.0	97.4%	2.8%
Methylene Chloride	< 1.0 U	8.41	10.0	84.1%	8.78	10.0	87.8%	4.3%
Acetone	< 5.0 U	44.3	50.0	88.6%	43.6	50.0	87.2%	1.6%
Carbon Disulfide	< 0.20 U	9.30	10.0	93.0%	9.38	10.0	93.8%	0.9%
1,1-Dichloroethene	< 0.20 U	8.89	10.0	88.9%	9.56	10.0	95.6%	7.3%
1,1-Dichloroethane	< 0.20 U	8.80	10.0	88.0%	8.86	10.0	88.6%	0.7%
trans-1,2-Dichloroethene	< 0.20 U	8.41	10.0	84.1%	8.59	10.0	85.9%	2.1%
cis-1,2-Dichloroethene	< 0.20 U	8.81	10.0	88.1%	8.76	10.0	87.6%	0.6%
Chloroform	< 0.20 U	8.89	10.0	88.9%	8.93	10.0	89.3%	0.4%
1,2-Dichloroethane	< 0.20 U	9.26	10.0	92.6%	9.05	10.0	90.5%	2.3%
2-Butanone	< 5.0 U	42.8	50.0	85.6%	41.3	50.0	82.6%	3.6%
1,1,1-Trichloroethane	< 0.20 U	9.08	10.0	90.8%	9.02	10.0	90.2%	0.7%
Carbon Tetrachloride	< 0.20 U	9.50	10.0	95.0%	9.26	10.0	92.6%	2.6%
Vinyl Acetate	< 0.20 U	8.09	10.0	80.9%	7.93	10.0	79.3%	2.0%
Bromodichloromethane	< 0.20 U	9.25	10.0	92.5%	9.07	10.0	90.7%	2.0%
1,2-Dichloropropane	< 0.20 U	8.78	10.0	87.8%	8.50	10.0	85.0%	3.2%
cis-1,3-Dichloropropene	< 0.20 U	8.99	10.0	89.9%	8.88	10.0	88.8%	1.2%
Trichloroethene	< 0.20 U	8.88	10.0	88.8%	8.76	10.0	87.6%	1.4%
Dibromochloromethane	< 0.20 U	9.16	10.0	91.6%	8.71	10.0	87.1%	5.0%
1,1,2-Trichloroethane	< 0.20 U	8.56	10.0	85.6%	8.40	10.0	84.0%	1.9%
Benzene	< 0.20 U	9.18	10.0	91.8%	9.18	10.0	91.8%	0.0%
trans-1,3-Dichloropropene	< 0.20 U	9.03	10.0	90.3%	8.79	10.0	87.9%	2.7%
2-Chloroethylvinylether	< 0.50 U	< 0.50 U	10.0	NA	< 0.50 U	10.0	NA	NA
Bromoform	< 0.20 U	9.05	10.0	90.5%	8.71	10.0	87.1%	3.8%
4-Methyl-2-Pentanone (MIBK)	< 2.5 U	43.8	50.0	87.6%	41.8	50.0	83.6%	4.7%
2-Hexanone	< 5.0 U	46.2	50.0	92.4%	43.0	50.0	86.0%	7.2%
Tetrachloroethene	< 0.20 U	9.03	10.0	90.3%	8.79	10.0	87.9%	2.7%
1,1,2,2-Tetrachloroethane	< 0.10 U	9.75	10.0	97.5%	9.41	10.0	94.1%	3.5%
Toluene	< 0.20 U	9.16	10.0	91.6%	9.04	10.0	90.4%	1.3%
Chlorobenzene	< 0.20 U	8.95	10.0	89.5%	8.77	10.0	87.7%	2.0%
Ethylbenzene	< 0.20 U	9.02	10.0	90.2%	8.94	10.0	89.4%	0.9%
Styrene	< 0.20 U	9.78	10.0	97.8%	9.43	10.0	94.3%	3.6%
Trichlorofluoromethane	< 0.20 U	11.1	10.0	111%	11.1	10.0	111%	0.0%
1,1,2-Trichloro-1,2,2-trifl	< 0.20 U	8.58	10.0	85.8%	8.78	10.0	87.8%	2.3%
m,p-Xylene	< 0.40 U	19.1	20.0	95.5%	18.7	20.0	93.5%	2.1%
o-Xylene	< 0.20 U	9.55	10.0	95.5%	9.30	10.0	93.0%	2.7%
1,2-Dichlorobenzene	< 0.20 U	10.4	10.0	104%	10.1	10.0	101%	2.9%
1,3-Dichlorobenzene	< 0.20 U	8.71	10.0	87.1%	8.55	10.0	85.5%	1.9%
1,4-Dichlorobenzene	< 0.20 U	8.52	10.0	85.2%	8.26	10.0	82.6%	3.1%
Acrolein	< 2.5 U	44.9	50.0	89.8%	45.8	50.0	91.6%	2.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**

MATRIX SPIKE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Iodomethane	< 0.50 U	9.15	10.0	91.5%	9.83	10.0	98.3%	7.2%
Acrylonitrile	< 1.0 U	8.16 Q	10.0	81.6%	7.87 Q	10.0	78.7%	3.6%
1,1-Dichloropropene	< 0.10 U	9.02	10.0	90.2%	9.10	10.0	91.0%	0.9%
Dibromomethane	< 0.20 U	8.62	10.0	86.2%	8.48	10.0	84.8%	1.6%
1,1,1,2-Tetrachloroethane	< 0.20 U	9.14	10.0	91.4%	8.86	10.0	88.6%	3.1%
1,2-Dibromo-3-chloropropane	< 0.50 U	8.83	10.0	88.3%	8.37	10.0	83.7%	5.3%
1,2,3-Trichloropropane	< 0.20 U	8.59	10.0	85.9%	8.33	10.0	83.3%	3.1%
trans-1,4-Dichloro-2-butene	< 1.0 U	8.85	10.0	88.5%	8.51	10.0	85.1%	3.9%
1,3,5-Trimethylbenzene	< 0.20 U	9.23	10.0	92.3%	8.97	10.0	89.7%	2.9%
1,2,4-Trimethylbenzene	< 0.20 U	9.39	10.0	93.9%	9.05	10.0	90.5%	3.7%
Hexachlorobutadiene	< 0.20 U	8.77 B	10.0	87.7%	8.57 B	10.0	85.7%	2.3%
1,2-Dibromoethane	< 0.10 U	8.84	10.0	88.4%	8.56	10.0	85.6%	3.2%
Bromochloromethane	< 0.20 U	9.08	10.0	90.8%	8.74	10.0	87.4%	3.8%
2,2-Dichloropropane	< 0.10 U	7.81	10.0	78.1%	7.73	10.0	77.3%	1.0%
1,3-Dichloropropane	< 0.10 U	8.78	10.0	87.8%	8.60	10.0	86.0%	2.1%
Isopropylbenzene	< 0.20 U	9.40	10.0	94.0%	9.30	10.0	93.0%	1.1%
n-Propylbenzene	< 0.20 U	8.82	10.0	88.2%	8.55	10.0	85.5%	3.1%
Bromobenzene	< 0.20 U	8.51	10.0	85.1%	8.42	10.0	84.2%	1.1%
2-Chlorotoluene	< 0.10 U	9.04	10.0	90.4%	8.81	10.0	88.1%	2.6%
4-Chlorotoluene	< 0.20 U	9.13	10.0	91.3%	8.88	10.0	88.8%	2.8%
tert-Butylbenzene	< 0.20 U	9.49	10.0	94.9%	9.34	10.0	93.4%	1.6%
sec-Butylbenzene	< 0.20 U	9.52	10.0	95.2%	9.27	10.0	92.7%	2.7%
4-Isopropyltoluene	< 0.10 U	9.65	10.0	96.5%	9.45	10.0	94.5%	2.1%
n-Butylbenzene	< 0.20 U	9.55	10.0	95.5%	9.35	10.0	93.5%	2.1%
1,2,4-Trichlorobenzene	< 0.50 U	8.60	10.0	86.0%	8.41	10.0	84.1%	2.2%
Naphthalene	< 0.50 U	9.93	10.0	99.3%	9.74	10.0	97.4%	1.9%
1,2,3-Trichlorobenzene	< 0.20 U	8.38 B	10.0	83.8%	8.21 B	10.0	82.1%	2.0%

Reported in µg/L (ppb)

NA-No recovery due to high concentration of analyte in original sample, calculated negative recovery, or undetected spike.
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: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Matrix: Water

Data Release Authorized:
Reported: 06/04/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-060215	Method Blank	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10235					Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	87.2%
AGV5B	LMW-2-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10235	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	87.6%
AGV5C	LMW-4-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10236	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	79.4%
AGV5D	LMW-9-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10237	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	93.6%
AGV5E	EB-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10238	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	88.7%
AGV5F	LMW-3-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10239	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	91.7%
AGV5G	LMW-8-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10240	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	97.4%
AGV5H	LMW-5-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10241	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	92.4%
AGV5I	LMW-10-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10242	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	95.2%

AGV5 0015

ANALYTICAL RESOURCES INCORPORATED

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

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Matrix: Water

Data Release Authorized:
Reported: 06/04/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
AGV5J	LMW-6-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10243	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	93.8%
AGV5K	LMW-11-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10244	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	98.0%
AGV5L	LMW-11-0515-D	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10245	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	87.2%
AGV5M	LMW-7-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10246	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	85.4%

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.

AGVS 8005

ANALYTICAL RESOURCES INCORPORATED

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Client ID	O-TER	TOT OUT
MB-060215	87.2%	0
LMW-2-0515	87.6%	0
LMW-4-0515	79.4%	0
LMW-9-0515	93.6%	0
EB-0515	88.7%	0
LMW-3-0515	91.7%	0
LMW-8-0515	97.4%	0
LMW-5-0515	92.4%	0
LMW-10-0515	95.2%	0
LMW-6-0515	93.8%	0
LMW-11-0515	98.0%	0
LMW-11-0515-D	87.2%	0
LMW-7-0515	85.4%	0

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

Prep Method: SW3510C
Log Number Range: 15-10235 to 15-10246

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LMW-2-0515
SAMPLE

Lab Sample ID: AGV5B
LIMS ID: 15-10235
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**115,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**250**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**71,300**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**216**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**3,670**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**20,900**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-4-0515
SAMPLE

Lab Sample ID: AGV5C
LIMS ID: 15-10236
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**109,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,070**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**66,700**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**160**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**3,730**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**27,700**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-9-0515
SAMPLE

Lab Sample ID: AGV5D
LIMS ID: 15-10237
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**85,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,640**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**47,800**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**177**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,600**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**15,300**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: EB-0515
SAMPLE

Lab Sample ID: AGV5E
LIMS ID: 15-10238
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-70-2	Calcium	11.3	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	7439-95-4	Magnesium	9.6	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7439-96-5	Manganese	0.28	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-09-7	Potassium	66	500	500	U
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-23-5	Sodium	11.4	500	500	U
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-3-0515
SAMPLE

Lab Sample ID: AGV5F
LIMS ID: 15-10239
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**37,100**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**15,500**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**61**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**1,690**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**9,970**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-8-0515
SAMPLE

Lab Sample ID: AGV5G
LIMS ID: 15-10240
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**62,100**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**17,100**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**33,000**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**512**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,070**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**10,100**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: LMW-5-0515
SAMPLE

Lab Sample ID: AGV5H
LIMS ID: 15-10241
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**93,200**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**52,900**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**235**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,740**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**15,600**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: LMW-10-0515
SAMPLE

Lab Sample ID: AGV5I
LIMS ID: 15-10242
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**7,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**3,070**	
3010A	06/03/15	6010C	06/05/15	7439-96-5	Manganese	0.28	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**1,290**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**82,300**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: LMW-6-0515
SAMPLE

Lab Sample ID: AGV5J
LIMS ID: 15-10243
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**27,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**2,440**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**13,500**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**32**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**690**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**6,630**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-11-0515
SAMPLE

Lab Sample ID: AGV5K
LIMS ID: 15-10244
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	**7440-38-2**	**Arsenic**	0.048	3.0	**7.1**	
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**59,100**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,730**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**28,900**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**139**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,180**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**33,900**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-11-0515-D
SAMPLE

Lab Sample ID: AGV5L
LIMS ID: 15-10245
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	**7440-38-2**	**Arsenic**	0.048	3.0	**7.0**	
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**58,600**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,750**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**29,100**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**140**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,230**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**34,300**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-7-0515
SAMPLE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	**7440-39-3**	**Barium**	1.33	500	**503**	
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**55,200**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,200**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**25,600**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**150**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**3,010**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**37,900**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: LMW-7-0515
DUPLICATE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

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	500	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	55,200	54,500	1.3%	+/- 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	1,200	1,170	2.5%	+/- 20%	
Lead	200.8	10 U	10 U	0.0%	+/- 10	L
Magnesium	6010C	25,600	25,300	1.2%	+/- 20%	
Manganese	6010C	150	150	0.0%	+/- 20%	
Nickel	6010C	20 U	20 U	0.0%	+/- 20	L
Potassium	6010C	3,010	2,990	0.7%	+/- 20%	
Selenium	200.8	5 U	5 U	0.0%	+/- 5	L
Silver	6010C	3 U	3 U	0.0%	+/- 3	L
Sodium	6010C	37,900	37,700	0.5%	+/- 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

Sample ID: LMW-7-0515
MATRIX SPIKE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010C	1,000 U	2,080	2,000	104%	
Antimony	200.8	3 U	25	25	100%	
Arsenic	200.8	3 U	24	25	96.0%	
Barium	6010C	500	2,540	2,000	102%	
Beryllium	6010C	2 U	505	500	101%	
Cadmium	6010C	2 U	508	500	102%	
Calcium	6010C	55,200	64,000	10,000	88.0%	H
Chromium	6010C	1,000 U	1,000 U	500	NR	N
Cobalt	6010C	10 U	500	500	100%	
Copper	6010C	3 U	520	500	104%	
Iron	6010C	1,200	3,270	2,000	104%	
Lead	200.8	10 U	20	20	100%	
Magnesium	6010C	25,600	35,300	10,000	97.0%	
Manganese	6010C	150	640	500	98.0%	
Nickel	6010C	20 U	500	500	100%	
Potassium	6010C	3,010	13,400	10,000	104%	
Selenium	200.8	5 U	71	80	88.8%	
Silver	6010C	3 U	532	500	106%	
Sodium	6010C	37,900	48,100	10,000	102%	
Thallium	200.8	2 U	23	25	92.0%	
Vanadium	6010C	3 U	514	500	103%	
Zinc	6010C	20 U	480	500	96.0%	

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

Sample ID: METHOD BLANK

Lab Sample ID: AGV5MB
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-70-2	Calcium	11.3	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	7439-95-4	Magnesium	9.6	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7439-96-5	Manganese	0.28	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-09-7	Potassium	66	500	500	U
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-23-5	Sodium	11.4	500	500	U
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: LAB CONTROL

Lab Sample ID: AGV5LCS
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010C	2050	2000	102%	
Antimony	200.8	25.4	25.0	102%	
Arsenic	200.8	23.4	25.0	93.6%	
Barium	6010C	2110	2000	106%	
Beryllium	6010C	493	500	98.6%	
Cadmium	6010C	511	500	102%	
Calcium	6010C	10100	10000	101%	
Chromium	6010C	523	500	105%	
Cobalt	6010C	512	500	102%	
Copper	6010C	499	500	99.8%	
Iron	6010C	2100	2000	105%	
Lead	200.8	26.1	25.0	104%	
Magnesium	6010C	10500	10000	105%	
Manganese	6010C	492	500	98.4%	
Nickel	6010C	510	500	102%	
Potassium	6010C	10100	10000	101%	
Selenium	200.8	74.4	80.0	93.0%	
Silver	6010C	508	500	102%	
Sodium	6010C	10000	10000	100%	
Thallium	200.8	25.8	25.0	103%	
Vanadium	6010C	524	500	105%	
Zinc	6010C	490	500	98.0%	

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: 06/09/15
Date Received: 05/29/15

QC Report No: AGV6-Golder Associates
Project: Landsburg
8231000 002.R273

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-2-0515 AGV6A 15-10249	05/26/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-4-0515 AGV6B 15-10250	05/26/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-9-0515 AGV6C 15-10251	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
EB-0515 AGV6D 15-10252	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-3-0515 AGV6E 15-10253	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-8-0515 AGV6F 15-10254	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-5-0515 AGV6G 15-10255	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-10-0515 AGV6H 15-10256	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-6-0515 AGV6I 15-10257	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-11-0515 AGV6J 15-10258	05/29/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-11-0515-D AGV6K 15-10259	05/29/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-7-0515 AGV6L 15-10260	05/29/15	Water	06/03/15 06/09/15	20.0	20.0 U
MB-060315 Method Blank	NA	Water	06/03/15 06/09/15	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-7-0515
DUPLICATE

Lab Sample ID: AGV6L
LIMS ID: 15-10260
Matrix: Water
Data Release Authorized:
Reported: 06/09/15

QC Report No: AGV6-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

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-7-0515
MATRIX SPIKE

Lab Sample ID: AGV6L
LIMS ID: 15-10260
Matrix: Water
Data Release Authorized:
Reported: 06/09/15

QC Report No: AGV6-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

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
Sample ID: LAB CONTROL

Lab Sample ID: AGV6LCS
LIMS ID: 15-10260
Matrix: Water
Data Release Authorized:
Reported: 06/09/15

QC Report No: AGV6-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Mercury	7470A	201	200	100%	

Reported in ng/L

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

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-~~0615~~ 0515

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 5/26/2015 **Time** 1435

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 – 7.84 ft below TOC (inner PVC at elev. X) (bottom at 38.1 ft bgs, 4-in casing) @10:57 on 5/26/15

Screen Interval – 27.9-38.1 ft bgs Monument: 2.94 ags Inner PVC: 2.38 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, 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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/24/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-2
Date 5/21/2015
Time Begin Purge 1330
Time Collect Sample 1435

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
	1400		6.87	946	10.6	0.02	1.62	-18.5
	1405		6.88	946	10.6	0.00	1.09	-27.7
	1410		6.87	950	10.9	0.00	1.01	-21.9
	1415		6.89	948	10.9	0.00	0.75	-28.2
	1420		6.90	948	10.9	0.00	0.85	-34.1
	1425		6.89	946	10.9	0.00	0.80	-27.9
	1430		6.85	943	10.7	0.00	0.95	-33.6

Comments:
Grundfos @ 90Hz
$\frac{5\ gal}{3.5\ min} = 1.429\ gpm \Rightarrow \frac{30\ gal/well\ vol}{1.42\ gpm} = 21\ min/well\ vol \times 3 = 63\ min\ purge$

PID=0.0ppm

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-3-0615 0515

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 5/28/2015 **Time** 1127

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 – 12.84 ft below TOC (inner PVC at elev. X) (bottom at 64.8 ft bgs, 4-in casing) @ 12:19 on 5/26/15

Screen Interval – 49.8-64.8 ft bgs Monument: 3.08 ags Inner PVC: 2.35 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 – 500 mL, 2 – 40 mL ✓	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/28/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-3
Date 5/28/2015
Time Begin Purge 1022
Time Collect Sample 1127

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
	1035		7.91	311	10.9	0.00	1.3	-30.0
	1045		7.88	312	10.9	0.00	1.26	-32.2
	1055		7.85	317	10.9	0.00	1.07	-32.2
	1105		7.79	321	10.9	0.00	1.08	-35.2
	1115		7.76	324	10.9	0.00	1.56	-34.1
	1125		7.76	324	10.9	0.00	0.85	-36.2

Comments:
PID = 0.0 ppm
Packer: 110 psi
Grundfos:

$\frac{5\text{ gal}}{4\text{ min}} = 1.25\text{ gpm}$

$\frac{27\text{ gal/wellvol}}{1.25\text{ gpm}} = 22\text{ min/wellvol.} \times 3 = 65\text{ min purge}$

Sampler's Initials JCL/AWR

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-4-0615 05/15

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 5/26/2015 **Time** 16:15

Media Water **Station** LMW-4

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

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

SWL – 9.93 – not corrected for inclination ft below TOC (inner PVC at elev. X) (bottom at 209.7 ft bgs, 4-in casing) @ 11:03 on 5/26/15

Screen Interval – 195-209.7 ft bgs Monument: 2.76 ags Inner PVC: 2.17 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 clear, 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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/26/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-4
Date 5/26/2015
Time Begin Purge 1450
Time Collect Sample 1615

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
	1505		6.91	944	10.6	0.01	1.38	-39.3
	1515		6.92	900	10.7	0.00	1.26	-46.1
	1525		6.94	959	10.7	0.00	1.88	-45.0
	1535		6.93	942	10.7	0.00	1.26	-55.9
	1545		6.92	948	10.7	0.00	1.32	-54.9
	1555		6.92	907	10.7	0.00	2.11	-52.2
	1605		6.91	883	10.7	0.00	1.07	-53.2
	1615		6.91	953	10.7	0.00	1.32	-52.9

Comments:
Packer: 140 psi
Grundfos: 85 Hz

$\frac{5\text{ gal}}{5\text{ min}} = 1\text{ gpm}$

$\frac{27\text{ gal/well vol}}{1\text{ gpm}} = 27\text{ min} \times 3 = 81\text{ min purge}$

PID = 0.0 ppm

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-5-~~0615~~ 0515

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 5/28/15 **Time** 1330

Media Water **Station** LMW-5

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

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

SWL – 14.36 ft below TOC (inner PVC at elev. X) (bottom at 241.8 ft bgs, 4-in casing) @ 12:25 on 12/26/15

Screen Interval – 231.8-241.8 ft bgs Monument: 3.24 ags Inner PVC: 2.64 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, 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 ✓ (Field Filtered)	Dissolved Metals	HDPE	HNO3 (filter)
4 – 500 mL, 2 – 40 mL ✓	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/28/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-5
Date 5/28/2015
Time Begin Purge 1242
Time Collect Sample 1330

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
	1255		6.90	767	11.0	0.02	1.68	-101.7
	1305		6.88	766	11.0	0.00	1.57	-101.2
	1315		6.91	766	11.0	0.00	1.35	-99.7
	1320		6.90	765	11.0	0.00	1.22	-98.2
	1325		6.89	763	11.0	0.00	2.00	-97.4
	1330		6.91	763	11.0	0.00	1.49	-96.6

Comments:

Packer 130psi

PID = 0.0ppm

Grundfos: ~~90~~ 125 Hz

$\frac{5\ gal}{4\ min} = 1.25\ gpm \rightarrow \frac{19\ gal/well\ Vol}{1.25\ gpm} = 15.2\ min/well\ vol$

X3 = 46 min purge

Sampler's Initials JCI/AMR

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-6-0615

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 5/28/2015 **Time** 1625

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 – 25.89 ft below TOC (inner PVC at elev. X) (bottom at 105.9 ft bgs, 4-in casing) 0/1:26 on 5/26/15

Screen Interval – 90.9-105.9 ft bgs Monument: 3.05 ags Inner PVC: 2.38 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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/28/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-6
Date 5/28/2015
Time Begin Purge 1530
Time Collect Sample 1625

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
	1545		6.67	259.7	9.7	0.00	3.90	-53.6
	1555		6.69	260.9	9.8	0.00	2.16	-56.3
	1605		6.72	261.2	9.9	0.00	1.36	-56.8
	1615		6.71	261.7	9.9	0.00	2.30	-56.6
	1625		6.70	261.5	9.9	0.00	0.97	-56.2

Comments:
Bladder: 110psi
PID=0.0ppm
Grundfos: 180 Hz

$\frac{5\ gal}{\sim 3\ min} = 1.67\ gpm = \frac{30\ gal/well\ vol}{1.67\ gpm} = 18\ min/well\ vol\ below\ packer \times 3$

$= 54\ min\ purge$

Sampler's Initials JSI/AMR

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-7-0615, ~~LMW-7-0615-D~~ New

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 5/29/2015 **Time** 1200

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 – 223.11 ft below TOC (inner PVC at elev. X) (bottom at 253.7 ft bgs, 4-in casing)
↳ Non-corrected H2O level; not corrected for slant,
Screen Interval – 239.6-253.7 ft bgs Monument: 3.09 ags Inner PVC: 2.72 ags

Sand Pack Interval – NA

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

Sample Description Clear, no odor.

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
9 ~~6~~ – 40 mL	VOA	VOA Vial	HCl
2 ~~1~~ 2 – 500 mL	Total Metals	HDPE	HNO3 (non)
2 ~~1~~ 2 – 500 mL	Dissolved Metals	HDPE	HNO3 (filter)
8 – 500 mL, ~~4~~ 6 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

↳ Increased for MS/MSD

Sampler (signature) [signature] **Date** 5/29/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-7
Date 5/29/2015
Time Begin Purge 1035
Time Collect Sample 1200 / ~~1235~~

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh (pH) Rel mV
	1050		7.28	418	12.4	0.20	1.91	-12.9
	1105		7.17	506	12.5	0.09	2.38	-19.8
	1120		7.14	549	12.5	0.05	1.62	-21.5
	1135		7.14	553	12.5	0.05	1.42	-22.5
	1150		7.11	580	12.5	0.03	1.83	-23.3
	1200		7.13	566	12.5	0.02	1.18	-24.8

Comments: PID = 0.0 ppm;
Grundfos @ ~~340 Hz~~ 345 Hz

$\frac{5 \text{ gallons}}{5 \text{ min}} = 1.0 \text{ gpm} \rightarrow \frac{28.3 \text{ gal/well volume}}{1.0 \text{ gal/gpm}} = 28.3 \text{ min/well volume} \times 3 \approx 85 \text{ min purge}$

* Pump reinstalled today; missing some screws for seal @ TOC;

- MS/MSD also sampled @ this location.

Sampler's Initials ~~AMM~~ JSL

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-8-0615 + EB-0515

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 5/28/2015 **Time** 1205 / EB-0515 @ 1100

Media Water **Station** LMW-8

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

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

SWL – 4.92 ft below TOC (PVC at black notch) (bottom at 13 ft bgs, 2-in casing) @ 12:29 on 5/28/15

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 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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) _____ **Date** 5/28/2015

Supervisor (signature) _____ **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-B-0515 + EB-0515
Date 5/20/2015
Time Begin Purge 1115
Time Collect Sample 1205 / 1100 for EB-0515 (pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
7.34	1128		7.03	321	15.8	2.99	116	63.3
7.48	1133		6.84	434	15.8	2.12	39.6	28.0
7.57	1138		6.78	522	15.9	0.92	13.3	5.6
7.63	1143		6.78	537	15.8	0.81	7.33	-3.4
7.68	1148		6.80	539	15.7	0.66	7.04	-8.4
7.68	1153		6.79	542	15.5	0.51	6.28	-15.5
7.68	1158		6.82	549	15.6	0.42	2.89	-21.2
7.68	1203		6.79	551	15.3	0.35	2.33	-23.4

Comments:
PID = 0.0 ppm
Flow rate = ~200 mL/min
VOCs + HCID vials collected using bailer

1100 - Collected EB-Field Blank before purge. Through tubing (and filter for dissolved metals) using lab provided DI water; EB-0515

Sampler's Initials JSL/AWR

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-9-~~0615~~ 0515

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 5/28/2015 **Time**

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 – 100.12 ft below TOC (PVC at black notch) (bottom at 159 ft bgs, 2-in casing) @ 12:10 on 5/28/15

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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) _____ **Date** 5/28/2015

Supervisor (signature) _____ **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-9
Date 5/28/2015
Time Begin Purge 0905
Time Collect Sample 0950

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
	0920		6.98	696	11.7	0.08	3.69	27.4
	0925		6.98	714	11.7	0.03	2.29	8.8
	0930		6.99	716	11.6	0.00	2.56	-6.0
	0935		7.04	716	11.6	0.00	1.63	-13.9
	0940		7.05	715	11.6	0.00	1.44	-20.0
	0945		7.05	715	11.6	0.00	1.76	-25.0

Comments:

PID: 0.0ppm
Grundfos: 25Hz

$\frac{5\text{gal}}{3\text{min}} = 1.67\text{gpm} \rightarrow \frac{21.6\text{gal/well volume}}{1.67\text{gpm}} = 12.96\text{ min/well volume}$

∴ 40 min purge

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-10-0615 @515

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 5/28/2015 **Time** 1500

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 – 1.33' ft below TOC (PVC) (bottom at 289 ft bgs, 4-in casing) on 5/26/15 @ 1316

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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/28/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-10-0515
Date 5/20/2015
Time Begin Purge 1432
Time Collect Sample 1500

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C (pH)	DO mg/L	Turbidity NTU	Eh Rel mV
3.97'	1435		8.55	370	11.0	0.00	7.78	-89.8
5.44'	1440		8.49	372	11.0	0.00	4.25	-98.4
6.52'	1445		8.48	372	11.0	0.00	3.22	-96.6
8.06'	1450		8.52	371	11.1	0.00	2.36	-91.0
8.28'	1455		8.51	370	11.1	0.00	2.22	-84.0

Comments:

Tank: 110 psi
Controller: 60 psi
Cycle TD 50/20/20, 2CPM
PID = 0.0 ppm
Purge Rate: ~900 mL/min

Sampler's Initials BMM/JSL

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-11-0515 + LMW-11-0515-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 Pump Grundfos and QED Bladder

Date 5/29/2015 **Time** 0905 / 0915 (Field Duplicate)

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 – 158.31 ft below TOC (PVC) (bottom at 707 ft bgs, 4-in casing)

Screen Interval – 696-707 ft bgs PVC stickup: 2.37 ags Outer metal Casing: 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, no odor to 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 – 500 mL, 2 – 40 mL	TPH-HCID	Glass Amber, VOA Vial	HCl

Sampler (signature) [signature] **Date** 5/29/2015

Supervisor (signature) [signature] **Date** 6/2/2015

FIELD PARAMETERS SHEET

Well ID LMW-11
Date 5/29/2015
Time Begin Purge 0759 (Grundfos) / 0830 (Bladder)
Time Collect Sample 0905 / 0915 (Field Duplicate)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C (pH)	DO mg/L	Turbidity NTU	Eh Rel mV
	0840		7.36	479	12.1	3.54	3.46	80.2
	0845		7.22	536	11.5	3.34	~~1.89~~ 1.78	~~48.~~ 42.7 KMR
	0850		7.24	542	11.3	0.95	1.76	28.1
	0855		7.24	550	11.3	0.65	1.45	17.7
	0900		7.28	558	11.3	0.47	2.19	10.0
	0905		7.28	559	11.3	0.39	1.34	5.9

Comments:
0759 - Start Pump (Grundfos) @ ~170' bloc. 300.0 Hz Purge Rate: $\frac{5\ gal}{4\ min} = 1.25$ gpm
0830 - Start bladder pump after hr PID = 0.0 ppm

Tank: 1100 psi
Controller: 1100 psi
ID: 1CPM (#30, 30s/30s)
Rate: ~390 mLs/min

Sampler's Initials AMR/JSL

APPENDIX C
LANDSBURG MINE SITE MAY 2015 DATA VALIDATION AND QUALITY ASSURANCE / QUALITY CONTROL REVIEW MEMORANDUM

TECHNICAL MEMORANDUM

Date: June 15, 2015 **Project No.:** 923-1000-002.R273

To: Bill Kombol **Company:** Palmer Coking Coal Company

From: Jill Lamberts, Project Environmental Scientist

Email: Jill_Lamberts@golder.com

RE: LANDSBURG MINE SITE MAY 2015 DATA VALIDATION & QUALITY ASSURANCE / QUALITY CONTROL REVIEW

A total of 15 water samples (including three Trip Blanks and one Equipment Blank) were collected by Golder Associates Inc. (Golder) on May 26 to 29, 2015 as part of the Landsburg sampling project. Samples were analyzed by Analytical Resources Inc. of Tukwila, Washington for the following:

- Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260C;
- 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.

Samples were analyzed in accordance with procedures described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA SW-846, 3rd edition; methods 6010C, 7470A, 8260C, and 200.8), and for Northwest Total Petroleum Hydrocarbon Methods. Quality assurance / quality control (QA/QC) reviews of laboratory data were performed in the laboratory in accordance with the laboratory 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 (EPA 2014a) and National Functional Guidelines for Organic Review (EPA 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 Tier II, and included the following:

- Data Package Completeness
- Verification of required deliverables
- Evaluation of holding times
- Laboratory narrative evaluation
- Evaluation and qualification of quality control elements for: Surrogates, Matrix Spike, Laboratory Control samples, Laboratory Duplicates, Method Blanks, and Field Blank and Field Duplicate evaluation as applicable

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200
Redmond, WA 98052 USA
Tel: (425) 883-0777 Fax: (425) 882-5498 www.golder.com

- 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 and not directly involved in the project. Data qualifiers that were applied by the laboratory have been removed from the data summary report sheets, when applicable, and superseded by data validation qualifiers. Overall, the data review showed that data are acceptable for use except where indicated by data qualifiers. For details about the data validation, refer to the attached data validation checklists and the validated analytical report pages in Attachment 1. A summary of the data validation qualifiers applied are found within the data validation checklists and are defined in the table below.

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.

Attachments

Attachment 1 Data Evaluation Checklists and Validated Analytical Report Pages

References

United States Environmental Protection Agency (EPA). 2014a. USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Data Review. OSWER 9355.0-131.EPA-540-R-013-001, August.

EPA. 2014b. USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review. OSWER 9355.0-132.EPA-540-R-014-002, August.

ATTACHMENT 1
DATA EVALUATION CHECKLISTS
AND
VALIDATED ANALYTICAL REPORT PAGES

QA LEVEL II – ORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Manager: Douglas Morell
Project Name: Landsburg Mine Site
Project Number: 923-1000-002.R273
Reviewer: Jill Lamberts
Validation Date: 6/15/2015
Laboratory: Analytical Resources, Inc., (ARI) Tukwila, WA
SDG#: AGV5 and AGV6
Analytical Method (type and no.): VOCs by 8260C and Northwest Total Petroleum Hydrocarbon Scan by NWTPH-HCID
Matrix: ☐ Air ☐ Soil/Sed. ☑ Water ☐ Waste ☐ Other (specify):
Sample Names: Trip Blank-052615, LMW-2-0515, LMW-4-0515, LMW-9-0515, EB-0515, LMW-3-0525, LMW-8-0515, LMW-5-0515 LMW-10-0515, LMW-6-0515, LMW-11-0515, LMW-11-0515-D, LMW-7-0515 (plus Trip Blank-052815 and Trip Blank-052915 which were not analyzed)

NOTE: Please provide calculations in comment areas or on the back (if on the back, please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☑	☐	☐	
b) Sampling team indicated?	☑	☐	☐	
c) Sampling location noted?	☑	☐	☐	
d) Sampling depth indicated (soils)?	☐	☐	☑	
e) Sample type indicated (grab/composite)?	☑	☐	☐	
f) Field QC noted?	☑	☐	☐	
g) Field parameters collected (note types)?	☑	☐	☐	pH, Conductivity, Eh, DO, Temperature, Turbidity
h) Field calibration within control limits?	☑	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☑	☐	All are acceptable.
j) Does the laboratory narrative note deficiencies?	☑	☐	☐	

Note deficiencies: 1. VOCs CCALs out of control low for several analytes. 2. VOCs CCALs out of control high for trichloroflurormethane. 3. VOCs method blanks contained contamination. 4. 6/6/15 VOCs LCS/LCSD out of control high for bromomethane & iodomethane. 5. VOCs LCS out of control for several analytes. 6. VOCs MS/MSD out of control low for 2-CEVE. See page 2-3 for DV discussion.

Chain of Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	☑	☐	☐	
b) Was the COC signed by both field and laboratory personnel?	☑	☐	☐	
c) Were the samples received in good condition?	☑	☐	☐	See comment #7.

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were the hold times met for sample pretreatment?	☑	☐	☐	Cooler Temps: 4.0, 3.8, 4.0, 2.9, 5.9 C
b) Were the hold times met for sample analysis?	☑	☐	☐	
c) Were the correct preservatives used?	☑	☐	☐	HCl
d) Was the correct method used?	☑	☐	☐	
e) Were the appropriate reporting limits achieved?	☑	☐	☐	
f) Were any sample dilutions noted?	☐	☑	☐	
g) Were any matrix problems noted?	☐	☑	☐	

QA LEVEL II – ORGANIC DATA EVALUATION CHECKLIST

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were analytes detected in the method blank(s)?	☑	☐	☐	See comment #3.
b) Were analytes detected in the field blank(s)?	☐	☐	☑	
c) Were analytes detected in the equipment blank(s)?	☑	☐	☐	See comment #8.
d) Were analytes detected in the trip blank(s)?	☑	☐	☐	See comment #3.

Laboratory Control Sample (LCS)	**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 comment #4 & #5.

Duplicates	**YES**	**NO**	**NA**	**COMMENTS**
a) Were field duplicates collected (note original and duplicate sample names)?	☑	☐	☐	LMW-11-0515 and LMW-11-0515-D
b) Were field dup. precision criteria met (note RPD)?	☑	☐	☐	All analytes are ND.
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☑	☐	Not required.
d) Were lab dup. precision criteria met (note RPD)?	☐	☐	☑	

Blind Standards	**YES**	**NO**	**NA**	**COMMENTS**
a) Was a blind standard used (indicate name compounds included and concentrations)?	☐	☑	☐	Not required.
b) Was the %D within control limits?	☐	☐	☑	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	**YES**	**NO**	**NA**	**COMMENTS**
a) Was MS accuracy criteria met?	☐	☑	☐	See comment #6.
Recovery criteria could not be calculated since sample Contained high concentration of analyte?	☐	☐	☑	
b) Was MSD accuracy criteria met?	☐	☑	☐	
Recovery criteria could not be calculated since sample contained high concentration of analyte?	☐	☐	☑	
c) Were MS/MSD precision criteria met?	☑	☐	☐	

Surrogate Spikes	**YES**	**NO**	**NA**	**COMMENTS**
a) Were surrogate recoveries within control limits?	☑	☐	☐	
b) Were surrogate recoveries not calculated due to dilutions?	☐	☐	☑	

Comments/Notes: 1. VOCs CCALs out of control low for 2,2-Dichloropropane for 6/6/15 analyses and Acrylonitrile for 6/8/15 analyses. Qualify as estimated J/UJ on associated samples.

2. VOCs CCALs out of control high for trichloroflurormethane for 6/6/15 analysis. Qualify detected results as estimated with a high bias J+ - no qualification applied since all samples are ND for trichlorofluoromethane.

3. VOCs method blanks contained contamination for multiple analytes. No qualification was necessary because samples were all

Comments/Notes: ND except for Naphthalene in the Trip Blank-052615 sample at 0.28 JB ug/L. The result was qualified as ND at LOQ (0.50 U ug/L).

4. 6/6/15 VOCs LCS/LCSD out of control high for bromomethane & iodomethane. No action taken since all associated results are ND for these analytes.

5. VOCs LCS out of control for several analytes. No action taken since the LCSD was in control.

6. VOCs MS/MSD out of control low for 2-CEVE. Qualify sample LMW-7-0515 as estimated (UJ) for 2-CEVE.

7. Several VOCs sample vials had small, and pea-sized bubbles in 1 or 2 of 5 vials for sample sets. 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. Affected samples: Trip Blank-052615, Trip Blank-052815 LMW-3-0515, LMW-10-0515, and LMW-7-0515.

Samples LMW-2-0515, LMW-4-0515, LMW-9-0515, LMW-5-0515, and Trip Blank-052915 had large bubbles in 1 or 2 of 5 vials for samples to be analyzed for VOCs. Large bubbles (4 to < 6 mm in size) may have a minor effect on VOC results, but protocol dictates that the lab will select vials without bubbles for analysis. The samples had no detections of VOCs, which is consistent with historical results, which is consistent with historical results. No further action was taken other than to note.

8. Equipment Blank sample EB-0515 contained methylene chloride at 0.87 J ug/L. No action was taken since methylene chloride was not found in any other samples.

QA LEVEL II – ORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
Trip Blank-052615	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
Trip Blank-052615	Naphthalene	<0.28 JB ug/L	< 0.50 U ug/L	Method Blank contamination.
LMW-2-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-4-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-9-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
EB-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-3-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-8-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-5-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-10-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-6-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-11-0515	2,2-Dichloropropane	< 0.10 U ug/L	UJ	CCAL out of control low.
LMW-11-0515-D	Acrylonitrile	< 1.0 U	UJ	CCAL out of control low.
LMW-7-0515	Acrylonitrile	< 1.0 U	UJ	CCAL out of control low.
LMW-7-0515	2-Chloroethylvinylethere	< 0.50 U	UJ	MS/MSD out of control low.

Signature: Jill Lamberts

Digitally signed by Jill Lamberts
DN: cn=Jill Lamberts, o=Golder Associates, ou, email=jlamberts@golder.com, c=US
Date: 2015.06.15 13:07:01 -07'00'

Date: 6/15/2015

QA LEVEL II – INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Manager: Douglas Morell
Project Name: Landsburg Mine Site
Project Number: 923-1000-002.R273
Reviewer: Jill Lamberts
Validation Date: 6/15/2015
Laboratory: Analytical Resources, Inc., (ARI) Tukwila, WA
SDG#: AGV5 and AGV6
Analytical Method (type and no.): Total Metals by EPA 6010C and 200.8 Total Mercury by EPA SW7470A.
Matrix: ☐ Air ☐ Soil/Sed. ☑ Water ☐ Waste ☐ Other(specify):
Sample Names: LMW-2-0515, LMW-4-0515, LMW-9-0515, EB-0515, LMW-3-0525, LMW-8-0515, LMW-5-0515, LMW-10-0515, LMW-6-0515, LMW-11-0515, LMW-11-0515-D, LMW-7-0515
* Samples also submitted for dissolved metals, but were not analyzed per project plan.

NOTE: Please provide calculations in comment areas or on the back (if on the back, please indicate in comment (areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☑	☐	☐	
b) Sampling team indicated?	☑	☐	☐	
c) Sampling location noted?	☑	☐	☐	
d) Sampling depth indicated (soils)?	☐	☐	☑	
e) Sample type indicated (grab/composite)?	☑	☐	☐	
f) Field QC noted?	☑	☐	☐	
g) Field parameters collected (note types)?	☑	☐	☐	pH, Conductivity, Eh, DO, Temperature, Turbidity
h) Field Calibration within control limits?	☑	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☑	☐	All are acceptable.
j) Does the laboratory narrative note deficiencies?	☑	☐	☐	

Note deficiencies: 1. Total metals spike out of control low for chromium. See page 2 for details. 2. Per client request, the metals reporting limits were raised to meet client required levels. No action other than to note. RLs meet client required levels.

Chain of Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	☑	☐	☐	
b) Was the COC signed by both field and laboratory personnel?	☑	☐	☐	
c) Were the samples received in good condition?	☑	☐	☐	

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were the hold times met for sample pretreatment?	☑	☐	☐	Cooler Temps: 4.0, 3.8, 4.0, 2.9, 5.9 C
b) Were the hold times met for sample analysis?	☑	☐	☐	
c) Were the correct preservatives used?	☑	☐	☐	HNO3 - checked upon receipt and was ok.
d) Was the correct method used?	☑	☐	☐	
e) Were the appropriate reporting limits achieved?	☑	☐	☐	See comment #2 above.
f) Were any sample dilutions noted?	☐	☑	☐	
g) Were any matrix problems noted?	☐	☑	☐	

QA LEVEL II – INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☑	☐	
b) Were analytes detected in the field blank(s)?	☐	☐	☑	
c) Were analytes detected in the equipment blank(s)?	☐	☑	☐	
d) Were analytes detected in the trip blank(s)?	☐	☐	☑	

Laboratory Control Sample (LCS)	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?	☑	☐	☐	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☑	☐	☐	LMW-11-0515 and LMW-11-0515-D
b) Were field dup. precision criteria met (note RPD)?	☑	☐	☐	All RPDs are < 20% or results < 5X LOQ
c) Were lab duplicates analyzed (note original and duplicate samples)?	☑	☐	☐	LMW-7-0515
d) Were lab dup. precision criteria met (note RPD)?	☑	☐	☐	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name compounds included and concentrations)?	☐	☐	☑	
b) Was the %D within control limits?	☐	☐	☑	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☐	☑	☐	See comment #1.
Recovery criteria could not be calculated since sample Contained high concentration of analyte?	☑	☐	☐	For Calcium.
b) Was MSD accuracy criteria met?	☐	☐	☑	No MSD analyzed. Not required.
Recovery criteria could not be calculated since sample contained high concentration of analyte?	☐	☐	☑	
c) Were MS/MSD precision criteria met?	☐	☐	☑	Precision exhibited with DUP RPDs.

Comments/Notes: 1. Total metals spike out of control low for chromium. No action taken as the RLs were greater than the spike amount added.

Comments/Notes:

QA LEVEL II – INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: Jill Lamberts

Digitally signed by Jill Lamberts
DN: cn=Jill Lamberts, o=Golder Associates, ou, email=jlamberts@golder.com, c=US
Date: 2015.06.15 12:53:52 -07'00'

Date: 6/15/2015

Chain of Custody Record & Laboratory Analysis Request

Please analyze under existing MSA between Golder + ARI

ARI Assigned Number: AGV5	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: D.Morell, J. Lamberts	
Client Project Name: Landsburg	
Client Project #: 923i000 002.R273	Samplers: Lamberts, Rydecki

Page: 1 of 2

Date: 5/26/2015 Ice Present? YES

No. of Coolers: 5 Cooler Temps. 2.9-5.9

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

Sample ID	Date	Time	Matrix	No Containers	VOCs client list	TPH-HCID	TAML Total Metals	Dissolved Metals (Field Filtered w/ 0.45µm filter)				Notes/Comments
TripBlank-052615	5/26/15	—	W	3	X				HOLD			
LMW-2-0515		1435		11	X	X	X	~~HOLD~~				
LMW-4-0515		1615		11	X	X	X	**				
TripBlank-052815	5/28/15	—		3	HOLD							
LMW-9-0515		0950		11	X	X	X	HOLD				
EB-0515		1140*		11	X	X	X					
LMW-3-0515		1127		11	X	X	X					
LMW-8-0515		1205		11	X	X	X					
LMW-5-0515		1330		11	X	X	X					
LMW-10-0515		1500		11	X	X	X					

Comments/Special Instructions
- Ecology EIM EDD
- ** CLIENT SPECIFIC RLS and ANALYTE LIST **
- Pls cc jlamberts@golder.com dmorell@golder.com

	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
Printed Name	J. Lamberts	Kelly Bullin		
Company	Golder	ARI		
Date & Time	5/29/15 1315	5/29/15 1:05		

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

QA/QC J. Lamberts 6/15/2015

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 2 of 2	
ARI Client Company: Golder	Phone: 425-883-0777	Date: 5/28/2015	Ice Present?
Client Contact: D. Morell, J. Lamberts		No of Coolers:	Cooler Temps:
Client Project Name: Landsburg			
Client Project #: 923-1000-002-R273	Samplers: Lamberts, Rydecki		

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

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: VOCs client list	TPH-HCID	TAML Total Metals	Diss. Metals (Field Filtered w/ 0.45µm filter)					Notes/Comments
LMW-6-0515	5/28/15	1625	W	11	X	X	X	HOLD					
LMW-11-0515	5/29/15	0905	W	11	X	X	X	HOLD					
LMW-11-0515-D	"	0915	W	11	X	X	X	"					
LMW-7-0515	"	1200	W	27	X	X	X	"					MS/MSD Volume
TripBlank-052915	"	—	W	3	HOLD			"					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
*Ecology EIM EDD **CLIENT SPECIFIC RLs + ANALYTE LIST** pls cc jlamberts + dmorell @golder.com	Printed Name: J. Lamberts	Printed Name: [illegible]	Printed Name	Printed Name
	Company: Golder	Company: ARI	Company	Company
	Date & Time: 5/29/15 1315	Date & Time: 5/29/15 1315	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.

QA/QC J. Lamberts 6/15/2015

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK-052615**
 SAMPLE

Lab Sample ID: AGV5A
LIMS ID: 15-10234
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 16:22

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 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

AGV5 060815

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK-052615**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5A
LIMS ID: 15-10234
Matrix: Water
Date Analyzed: 06/06/15 16:22

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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 UJ
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**	~~**0.28 JB**~~ < 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	98.4%
d8-Toluene	99.3%
Bromofluorobenzene	97.1%
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.

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-2-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5B
LIMS ID: 15-10235
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 16:46

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

FORM I

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-2-0515**
 SAMPLE

Lab Sample ID: AGV5B
LIMS ID: 15-10235
Matrix: Water
Date Analyzed: 06/06/15 16:46

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	UJ
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	100%
d8-Toluene	100%
Bromofluorobenzene	97.3%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-4-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5C
LIMS ID: 15-10236
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 17:11

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	< 0.20 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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-4-0515**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5C
LIMS ID: 15-10236
Matrix: Water
Date Analyzed: 06/06/15 17:11

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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 UJ
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	98.9%
d8-Toluene	100%
Bromofluorobenzene	97.3%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-9-0515**
 SAMPLE

Lab Sample ID: AGV5D
LIMS ID: 15-10237
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 17:36

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	0.10	< 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

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-9-0515**
 SAMPLE

Lab Sample ID: AGV5D
LIMS ID: 15-10237
Matrix: Water
Date Analyzed: 06/06/15 17:36

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	UJ
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	100%
d8-Toluene	100%
Bromofluorobenzene	97.3%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: EB-0515**
 SAMPLE

Lab Sample ID: AGV5E
LIMS ID: 15-10238
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 18:00

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**	**0.87 J**
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

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: EB-0515**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5E
LIMS ID: 15-10238
Matrix: Water
Date Analyzed: 06/06/15 18:00

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	UJ
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	102%
d8-Toluene	99.7%
Bromofluorobenzene	97.5%
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.

FORM I

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-3-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5F
LIMS ID: 15-10239
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 18:25

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	< 0.20 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

FORM I

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-3-0515**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5F
LIMS ID: 15-10239
Matrix: Water
Date Analyzed: 06/06/15 18:25

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	UJ
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	102%
d8-Toluene	100%
Bromofluorobenzene	98.0%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-8-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5G
LIMS ID: 15-10240
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 18:50

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

FORM I

AGV5 00021

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-8-0515**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5G
LIMS ID: 15-10240
Matrix: Water
Date Analyzed: 06/06/15 18:50

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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 UJ
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	100%
Bromofluorobenzene	100%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-5-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5H
LIMS ID: 15-10241
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 19:14

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

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QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-5-0515**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5H
LIMS ID: 15-10241
Matrix: Water
Date Analyzed: 06/06/15 19:14

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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 UJ
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	102%
d8-Toluene	101%
Bromofluorobenzene	100%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-10-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5I
LIMS ID: 15-10242
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 19:39

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

FORM I

AGV5 : 00025

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-10-0515**
 SAMPLE

Lab Sample ID: AGV5I
LIMS ID: 15-10242
Matrix: Water
Date Analyzed: 06/06/15 19:39

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	UJ
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	103%
d8-Toluene	101%
Bromofluorobenzene	97.9%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-6-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5J
LIMS ID: 15-10243
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 20:03

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

FORM I

AGV5 - 8827

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-6-0515**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AGV5J
LIMS ID: 15-10243
Matrix: Water
Date Analyzed: 06/06/15 20:03

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	UJ
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	99.9%
Bromofluorobenzene	99.0%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5K
LIMS ID: 15-10244
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/06/15 20:28

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

FORM I

AGV5 : 00029

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LMW-11-0515
SAMPLE

Lab Sample ID: AGV5K
LIMS ID: 15-10244
Matrix: Water
Date Analyzed: 06/06/15 20:28

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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 UJ
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	103%
d8-Toluene	102%
Bromofluorobenzene	97.3%
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.

FORM I

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515-D**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5L
LIMS ID: 15-10245
Matrix: Water
Data Release Authorized:
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 16:00

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	UJ
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	

AGV5-00021

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-11-0515-D**
 SAMPLE

Lab Sample ID: AGV5L
LIMS ID: 15-10245
Matrix: Water
Date Analyzed: 06/08/15 16:00

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	101%
d8-Toluene	98.0%
Bromofluorobenzene	98.7%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized: MW
Reported: 06/11/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 06/08/15 16:25

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	< 0.20 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 UJ
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 UJ
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

AGV5-08828

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LMW-7-0515**
 SAMPLE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Date Analyzed: 06/08/15 16:25

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.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	98.3%
Bromofluorobenzene	97.7%
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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

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

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Matrix: Water

Data Release Authorized:
Reported: 06/04/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-060215	Method Blank	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10235					Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	87.2%
AGV5B	LMW-2-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10235	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	87.6%
AGV5C	LMW-4-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10236	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	79.4%
AGV5D	LMW-9-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10237	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	93.6%
AGV5E	EB-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10238	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	88.7%
AGV5F	LMW-3-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10239	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	91.7%
AGV5G	LMW-8-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10240	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	97.4%
AGV5H	LMW-5-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10241	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	92.4%
AGV5I	LMW-10-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10242	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	95.2%

AGV5 8231

ANALYTICAL RESOURCES INCORPORATED

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

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273

Matrix: Water

Data Release Authorized:
Reported: 06/04/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
AGV5J	LMW-6-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10243	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	93.8%
AGV5K	LMW-11-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10244	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	98.0%
AGV5L	LMW-11-0515-D	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10245	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	87.2%
AGV5M	LMW-7-0515	06/02/15	06/03/15	1.0	Gas	< 0.25 U
15-10246	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	85.4%

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.

AGV5 8231

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-2-0515
SAMPLE

Lab Sample ID: AGV5B
LIMS ID: 15-10235
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**115,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**250**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**71,300**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**216**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**3,670**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**20,900**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

FORM-I

AGV5-0005

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-4-0515
SAMPLE

Lab Sample ID: AGV5C
LIMS ID: 15-10236
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/26/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**109,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,070**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**66,700**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**160**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**3,730**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**27,700**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-9-0515
SAMPLE

Lab Sample ID: AGV5D
LIMS ID: 15-10237
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**85,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,640**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**47,800**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**177**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,600**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**15,300**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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: EB-0515
SAMPLE

Lab Sample ID: AGV5E
LIMS ID: 15-10238
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-70-2	Calcium	11.3	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	7439-95-4	Magnesium	9.6	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7439-96-5	Manganese	0.28	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-09-7	Potassium	66	500	500	U
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-23-5	Sodium	11.4	500	500	U
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

AGV5 : 08851

QA/QC J. Lamberts 6/15/2015

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INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-3-0515
SAMPLE

Lab Sample ID: AGV5F
LIMS ID: 15-10239
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**37,100**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**15,500**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**61**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**1,690**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**9,970**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

AGV5 - 00055

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-8-0515
SAMPLE

Lab Sample ID: AGV5G
LIMS ID: 15-10240
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**62,100**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**17,100**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**33,000**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**512**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,070**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**10,100**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-5-0515
SAMPLE

Lab Sample ID: AGV5H
LIMS ID: 15-10241
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**93,200**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**52,900**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**235**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,740**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**15,600**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

AGV5 : 00057

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-10-0515
SAMPLE

Lab Sample ID: AGV5I
LIMS ID: 15-10242
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**7,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	7439-89-6	Iron	7.5	200	200	U
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**3,070**	
3010A	06/03/15	6010C	06/05/15	7439-96-5	Manganese	0.28	20	20	U
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**1,290**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**82,300**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

QA/QC J. Lamberts 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-6-0515
SAMPLE

Lab Sample ID: AGV5J
LIMS ID: 15-10243
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/28/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**27,000**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**2,440**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**13,500**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**32**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**690**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**6,630**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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 6/15/2015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LMW-11-0515
SAMPLE

Lab Sample ID: AGV5K
LIMS ID: 15-10244
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	**7440-38-2**	**Arsenic**	0.048	3.0	**7.1**	
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**59,100**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,730**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**28,900**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**139**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,180**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**33,900**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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-11-0515-D
SAMPLE

Lab Sample ID: AGV5L
LIMS ID: 15-10245
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	**7440-38-2**	**Arsenic**	0.048	3.0	**7.0**	
3010A	06/03/15	6010C	06/05/15	7440-39-3	Barium	1.33	500	500	U
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**58,600**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,750**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**29,100**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**140**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**2,230**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**34,300**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	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
Page 1 of 1

Sample ID: LMW-7-0515
SAMPLE

Lab Sample ID: AGV5M
LIMS ID: 15-10246
Matrix: Water
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGV5-Golder Associates
Project: Landsburg
8231000 002.R273
Date Sampled: 05/29/15
Date Received: 05/29/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	06/03/15	6010C	06/05/15	7429-90-5	Aluminum	7.6	1,000	1,000	U
200.8	06/03/15	200.8	06/05/15	7440-36-0	Antimony	0.010	3.0	3.0	U
200.8	06/03/15	200.8	06/05/15	7440-38-2	Arsenic	0.048	3.0	3.0	U
3010A	06/03/15	6010C	06/05/15	**7440-39-3**	**Barium**	1.33	500	**503**	
3010A	06/03/15	6010C	06/05/15	7440-41-7	Beryllium	0.16	2	2	U
3010A	06/03/15	6010C	06/05/15	7440-43-9	Cadmium	0.18	2	2	U
3010A	06/03/15	6010C	06/05/15	**7440-70-2**	**Calcium**	11.3	500	**55,200**	
3010A	06/03/15	6010C	06/05/15	7440-47-3	Chromium	1.24	1,000	1,000	U
3010A	06/03/15	6010C	06/05/15	7440-48-4	Cobalt	0.27	10	10	U
3010A	06/03/15	6010C	06/05/15	7440-50-8	Copper	0.9	3	3	U
3010A	06/03/15	6010C	06/05/15	**7439-89-6**	**Iron**	7.5	200	**1,200**	
200.8	06/03/15	200.8	06/05/15	7439-92-1	Lead	0.046	10.0	10.0	U
3010A	06/03/15	6010C	06/05/15	**7439-95-4**	**Magnesium**	9.6	1,000	**25,600**	
3010A	06/03/15	6010C	06/05/15	**7439-96-5**	**Manganese**	0.28	20	**150**	
3010A	06/03/15	6010C	06/05/15	7440-02-0	Nickel	4	20	20	U
3010A	06/03/15	6010C	06/05/15	**7440-09-7**	**Potassium**	66	500	**3,010**	
200.8	06/03/15	200.8	06/05/15	7782-49-2	Selenium	0.127	5.0	5.0	U
3010A	06/03/15	6010C	06/05/15	7440-22-4	Silver	0.4	3	3	U
3010A	06/03/15	6010C	06/05/15	**7440-23-5**	**Sodium**	11.4	500	**37,900**	
200.8	06/03/15	200.8	06/05/15	7440-28-0	Thallium	0.004	2.0	2.0	U
3010A	06/03/15	6010C	06/05/15	7440-62-2	Vanadium	0.27	3	3	U
3010A	06/03/15	6010C	06/05/15	7440-66-6	Zinc	1.4	20	20	U

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

AGV5 00062

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 06/09/15
Date Received: 05/29/15
Page 1 of 1

QC Report No: AGV6-Golder Associates
Project: Landsburg
8231000 002.R273

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-2-0515 AGV6A 15-10249	05/26/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-4-0515 AGV6B 15-10250	05/26/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-9-0515 AGV6C 15-10251	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
EB-0515 AGV6D 15-10252	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-3-0515 AGV6E 15-10253	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-8-0515 AGV6F 15-10254	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-5-0515 AGV6G 15-10255	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-10-0515 AGV6H 15-10256	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-6-0515 AGV6I 15-10257	05/28/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-11-0515 AGV6J 15-10258	05/29/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-11-0515-D AGV6K 15-10259	05/29/15	Water	06/03/15 06/09/15	20.0	20.0 U
LMW-7-0515 AGV6L 15-10260	05/29/15	Water	06/03/15 06/09/15	20.0	20.0 U
MB-060315 Method Blank	NA	Water	06/03/15 06/09/15	20.0	20.0 U

Reported in ng/L

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

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