

**Golder Associates Inc.**

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July 1, 2004

Our ref: 923-1000-002.R273

Palmer Coking Coal Company  
31407 Highway 169  
P.O. Box 10  
Black Diamond, Washington 98010

ATTENTION: Mr. Bill Kombol

**RE: LANDSBURG MINE SITE INTERIM GROUNDWATER MONITORING  
RESULTS– APRIL/MAY, 2004**

Dear Mr. Kombol:

Golder Associates Inc. (Golder) completed an interim groundwater monitoring event at the Landsburg Mine Site during October, 2003. Groundwater samples were collected from monitoring wells LMW-2, LMW-4, LMW-3, LMW-5, LMW-6, LMW-7, the new LMW-8, the new LMW-9 and the new LMW-10 (see Figure 1). The recently installed piezometer P-2 was also sampled for major cations/anions. Monitoring wells LMW-2 and LMW-4 are completed to monitor shallow and deeper zones within the Rogers seam north of the subsidence trench, and LMW-3, LMW-5 and LMW-10 are completed to monitor shallow and deeper zones within the Rogers coal seam south of the subsidence trench. These wells lay along the primary pathways for detection of a chemical release from the mine, were one to occur. Samples were also collected of the groundwater emanating from LMW-8, which is a shallow well monitoring the Rogers Portal #3 discharge and is a replacement for sampling the surface water discharge at the portal. LMW-8 provides a more representative water quality sample of the Rogers Portal #3 discharge than a sample of the surface water.

Groundwater sampling was conducted in accordance with the *Draft Interim Groundwater Monitoring Plan, Landsburg Mine Site* (Golder, 1997), 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 pH, specific conductance, temperature, dissolved oxygen, and turbidity,
- Collection of all purge water in appropriate containers for temporary on-site storage prior to disposal, and
- Collection of representative samples in appropriate containers; metals samples were field filtered using an inline 0.45 µm filter.



- Analyses of groundwater for volatile organic compounds (EPA Method 8260), priority pollutant metals, major cations and anions and petroleum hydrocarbons. In addition to these analytes, the newly installed LMW-9 groundwater sample was analyzed for semi-volatile organics (EPA Method 8270).

Sampling activities were documented on Sample Integrity Data Sheets (SIDS). Copies of the completed SIDS are provided in Appendix A to this letter.

Following sample collection, all bottles were sealed, labeled and placed in a cooler maintained at approximately 4° C. Groundwater samples from monitoring wells were transported under chain of custody procedures to STL Analytical Laboratory for analyses, located in Seattle, Washington, whereas the Portal Seep water sample was taken to On-Site Analytical Laboratory for analyses, located in Redmond, Washington. Analysis on all water samples included full GC/MS analysis (volatiles by EPA Method 8260, semivolatiles by EPA Method 8270, and pesticides/PCBs by EPA Method 8081), priority metals, fuel hydrocarbon scan, and selected general wet chemistry parameters.

The attached Table 1 presents analytical results for all analyses. Laboratory analytical reports are provided in Appendix B. Screening levels are based on maximum contaminant levels (MCLs) or State of Washington 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). Only two groundwater samples contained detectable organic compounds. Newly installed LMW-9 groundwater had detectable diethyl phthalate at 26.6 µg/L. Newly installed well LMW-10 had detectable benzene and toluene at 0.39 µg/L and 0.68 µg/L. Since toluene was also detected in the field blank, toluene detection in LMW-10 may not be a constituent of groundwater from this well. These detections are much below the MTCA levels as follows<sup>1</sup>:

- Diethyl Phthalate – MTCA cleanup level is 12,800 µg/L for groundwater and 28,400 µg/L for surface water.
- Benzene – MTCA cleanup level is 5 µg/L for groundwater and 22.7 µg/L for surface water.
- Toluene - MTCA cleanup level is 1000 µg/L for groundwater and 48,500 µg/L for surface water.

Future groundwater sampling will provide information whether these detected organic compounds are emanating from the Rogers Coal Seam mine or are residual artifacts from the drilling process.

Iron and manganese are the only compounds that were detected at concentrations in excess of the screening levels of 0.3 µg/L and 0.05 µg/L, respectively. For these compounds the only screening levels are secondary maximum contaminant levels (SMCLs) which are not health-based standards, but are protective of aesthetic qualities of water only. The concentrations of TDS, iron and manganese detected during the Spring 2004 sampling are similar to concentrations detected during the RI (Golder, 1996)<sup>2</sup> and the Interim Groundwater Sampling event in May, 2000 and October, 2003.

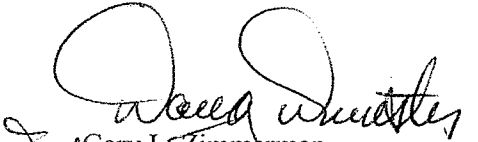
<sup>1</sup> Ecology, Washington State Department of, 2001. *Cleanup Levels and Risk Calculations under the Model Toxics Control Act Cleanup Regulations*. Publication No. 94-145. Olympia, Washington


<sup>2</sup> Golder Associates Inc., 1996. *Remedial Investigation and Feasibility Study for the Landsburg Mine Site*. Landsburg PLP Steering Committee.

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

Sincerely,

**GOLDER ASSOCIATES INC.**

  
For Gary L. Zimmerman  
Senior Environmental Scientist

  
Douglas J. Morell, Ph.D.; L.Hy.  
Principal

GLZ/DJM/tp

**TABLE**

MAY 2004 GROUNDWATER ANALYTICAL RESULTS  
LANDSBURG MINE SITE

ANALYTE		UNITS	LMW-2 5/13/2004	LMW-3 5/12/2004	LMW-4 5/13/2004	LMW-5 5/12/2004	LMW-6 5/13/2004	LMW-7 5/12/2004	LMW-8 5/10/2004	LMW-9 5/10/2004	LMW-10 5/18/2004	P-2 5/10/2004	Field Blank 5/12/2004
<b>Field Parameter</b>													
	pH	std	7.01	7.84	7.02	6.95	6.9	7.23	7.01	7.07	9.93	7.03	
	Conductivity	uS/cm	344	118	355	311	102	307	307	335	332	304	
	Temperature	°C	10.8	10.7	10.8	10.9	9.9	12	12.1	11.9	12.4	10.9	
	Turbidity	NTU	0.35	0.26	0.31	0.39	0.33	0.36	27	1.88	48	1	
<b>General Chemistry</b>													
	Total Dissolved Solids	mg/l								450			
	Chloride	mg/l		1.4		1.07			2.42	1.44		1.14	
	Sulfate	mg/l		12.4		8.32			4.15	14.7		9.57	
	Total Alkalinity	mg/L as CaCO3		156		488			389	437		436	
	Cyanide (total)	mg/l								0.01 U			
	Fluoride	mg/l								0.1 U			
	Nitrate/Nitrite-Nitrogen	mg/l as N								0.01 U			
<b>Metals</b>													
	Aluminum	mg/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
	Calcium	mg/l	130	39.9	130	98.1	30.1	56.3	84	93	5.98	78.6	0.25 U
	Iron	mg/l	0.186	0.15 U	0.811	0.179	2.16	0.813	5.19	1.75	0.15 U	1.38	0.15 U
	Magnesium	mg/l	78.2	17	78.1	56	15.7	26.6	44.5	53.1	2.56	48.1	0.5 U
	Potassium	mg/l	4.48	2.12	4.6	3.09	2 U	4.56	4.39	3.22	3.04	2 U	2 U
	Sodium	mg/l	25.2	10.9	33.5	20.6	8.55	56.4	18	20.9	97	19	0.25 U
	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
	Arsenic	mg/l	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00298	0.0039	0.001 U	0.00411		0.001 U
	Barium	mg/l	0.326	0.0729	0.362	0.268	0.104	0.463	0.0547	0.313	0.0168		0.01 U
	Beryllium	mg/l	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U
	Cadmium	mg/l	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U
	Chromium	mg/l	0.00144	0.001 U	0.00153	0.00132	0.001 U	0.001 U	0.001 U	0.00117	0.001 U		0.001 U
	Cobalt	mg/l	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00289	0.001 U	0.001 U		0.001 U
	Copper	mg/l	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U
	Lead	mg/l	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U
	Manganese	mg/l	0.219	0.0682	0.181	0.232	0.0313	0.111	1.52	0.171	0.01 U	0.201	0.01 U
	Nickel	mg/l	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00273	0.001 U	0.001 U		0.001 U
	Selenium	mg/l	0.0081	0.00102	0.0143	0.00855	0.001 U	0.001 U	0.001 U	0.00284	0.001 U		0.00142
	Silver	mg/l	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U
	Thallium	mg/l	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U
	Vanadium	mg/l	0.00413	0.001 U	0.00429	0.00358	0.001 U	0.0021	0.00248	0.00233	0.00244		0.001 U
	Zinc	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
	Mercury	mg/l	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U		0.0002 U

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MAY 2004 GROUNDWATER ANALYTICAL RESULTS  
LANDSBURG MINE SITE

ANALYTE	UNITS	LMW-2 5/13/2004	LMW-3 5/12/2004	LMW-4 5/13/2004	LMW-5 5/12/2004	LMW-6 5/13/2004	LMW-7 5/12/2004	LMW-8 5/10/2004	LMW-9 5/10/2004	LMW-10 5/18/2004	P-2 5/10/2004	Field Blank 5/12/2004
<b>Volatile Organic Compounds</b>												
1,1,1,2-Tetrachloroethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,1,1-Trichloroethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,1,2,2-Tetrachloroethane	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
1,1,2-Trichloroethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,1-Dichloroethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,1-Dichloroethene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,1-Dichloropropene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2,3-Trichlorobenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2,3-Trichloropropane	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
1,2,4-Trichlorobenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2,4-Trimethylbenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2-Dibromo-3-chloropropane	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
1,2-Dibromoethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2-Dichlorobenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2-Dichloroethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,2-Dichloropropane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,3,5-Trimethylbenzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
1,3-Dichlorobenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,3-Dichloropropane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
1,4-Dichlorobenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
2,2-Dichloropropane	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
2-Butanone	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U		2 U
2-Chlorotoluene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
2-Hexanone	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U		2 U
4-Chlorotoluene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
4-Methyl-2-pentanone	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U		2 U
Acetone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U		10 U
Benzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.39		0.2 U
Bromobenzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
Bromochloromethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Bromodichloromethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Bromoform	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Bromomethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U		2 U
Carbon disulfide	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
Carbon tetrachloride	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Chlorobenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Chloroethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U
Chloroform	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Chloromethane	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U

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MAY 2004 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	P-2	Field Blank
		5/13/2004	5/12/2004	5/13/2004	5/12/2004	5/13/2004	5/12/2004	5/10/2004	5/10/2004	5/18/2004	5/10/2004	5/12/2004
cis-1,2-Dichloroethene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
cis-1,3-Dichloropropene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Dibromochloromethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Dibromomethane	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Dichlorodifluoromethane	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
Ethylbenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Hexachlorobutadiene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
Isopropylbenzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
m,p-Xylene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5
Methyl tert-butyl ether	ug/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U
Methylene chloride	ug/l	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U		2 U
Naphthalene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
n-Butylbenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
n-Propylbenzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
o-Xylene	ug/l	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U
p-Isopropyltoluene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
sec-Butylbenzene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Styrene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
tert-Butylbenzene	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
Tetrachloroethene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Toluene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.68		0.25
trans-1,2-Dichloroethene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
trans-1,3-Dichloropropene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Trichloroethene	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
Trichlorofluoromethane	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U
Vinyl chloride	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U
<b>Hydrocarbon Identification</b>												
Diesel Range	mg/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U		0.63 U
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
Heavy Fuel Oil	mg/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U		0.63 U
Insulating Oil	mg/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U		0.63 U
Kerosene Range	mg/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U		0.63 U
Lube Oil Range	mg/l	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U		0.63 U

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MAY 2004 GROUNDWATER ANALYTICAL RESULTS  
LANDSBURG MINE SITE

ANALYTE	UNITS	LMW-2 5/13/2004	LMW-3 5/12/2004	LMW-4 5/13/2004	LMW-5 5/12/2004	LMW-6 5/13/2004	LMW-7 5/12/2004	LMW-8 5/10/2004	LMW-9 5/10/2004	LMW-10 5/18/2004	P-2 5/10/2004	Field Blank 5/12/2004
<b>Pesticides/PCBs</b>												
4,4'-DDD	ug/l								0.04 U			
4,4'-DDE	ug/l								0.08 U			
4,4'-DDT	ug/l								0.08 U			
Aldrin	ug/l								0.05 U			
alpha-BHC	ug/l								0.04 U			
alpha-Chlordane	ug/l								0.04 U			
beta-BHC	ug/l								0.04 U			
Chlordane (tech)	ug/l								0.5 U			
delta-BHC	ug/l								0.05 U			
Dieldrin	ug/l								0.08 U			
Endosulfan I	ug/l								0.02 U			
Endosulfan II	ug/l								0.08 U			
Endosulfan sulfate	ug/l								0.1 U			
Endrin	ug/l								0.08 U			
Endrin aldehyde	ug/l								0.16 U			
Endrin ketone	ug/l								0.08 U			
gamma-BHC (Lindane)	ug/l								0.04 U			
gamma-Chlordane	ug/l								0.04 U			
Heptachlor	ug/l								0.05 U			
Heptachlor epoxide	ug/l								0.04 U			
Methoxychlor	ug/l								0.5 U			
Toxaphene	ug/l								2 U			
Aroclor 1016	ug/l								0.1 U			
Aroclor 1221	ug/l								0.1 U			
Aroclor 1232	ug/l								0.1 U			
Aroclor 1242	ug/l								0.1 U			
Aroclor 1248	ug/l								0.1 U			
Aroclor 1254	ug/l								0.1 U			
Aroclor 1260	ug/l								0.1 U			
Aroclor 1262	ug/l								0.1 U			
Aroclor 1268	ug/l								0.1 U			
<b>SemiVolatile Organics</b>												
1,2,4-Trichlorobenzene	ug/l								10 U			
1,2-Dichlorobenzene	ug/l								10 U			
1,3-Dichlorobenzene	ug/l								10 U			
1,4-Dichlorobenzene	ug/l								10 U			
2,4,5-Trichlorophenol	ug/l								10 U			
2,4,6-Trichlorophenol	ug/l								10 U			
2,4-Dichlorophenol	ug/l								10 U			

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MAY 2004 GROUNDWATER ANALYTICAL RESULTS  
LANDSBURG MINE SITE

ANALYTE	UNITS	LMW-2 5/13/2004	LMW-3 5/12/2004	LMW-4 5/13/2004	LMW-5 5/12/2004	LMW-6 5/13/2004	LMW-7 5/12/2004	LMW-8 5/10/2004	LMW-9 5/10/2004	LMW-10 5/18/2004	P-2 5/10/2004	Field Blank 5/12/2004
2,4-Dimethylphenol	ug/l								10 U			
2,4-Dinitrophenol	ug/l								20 U			
2,4-Dinitrotoluene	ug/l								10 U			
2,6-Dinitrotoluene	ug/l								10 U			
2-Chloronaphthalene	ug/l								10 U			
2-Chlorophenol	ug/l								10 U			
2-Methylnaphthalene	ug/l								10 U			
2-Methylphenol	ug/l								10 U			
2-Nitroaniline	ug/l								10 U			
2-Nitrophenol	ug/l								10 U			
3 & 4-Methylphenol	ug/l								10 U			
3,3'-Dichlorobenzidine	ug/l								10 U			
3-Nitroaniline	ug/l								10 U			
4,6-Dinitro-2-methylphenol	ug/l								10 U			
4-Bromophenyl phenyl ether	ug/l								10 U			
4-Chloro-3-methylphenol	ug/l								10 U			
4-Chloroaniline	ug/l								10 U			
4-Chlorophenyl phenyl ether	ug/l								10 U			
4-Nitroaniline	ug/l								10 U			
4-Nitrophenol	ug/l								10 U			
Acenaphthene	ug/l								10 U			
Acenaphthylene	ug/l								10 U			
Aniline	ug/l								10 U			
Anthracene	ug/l								10 U			
Benzo (a) anthracene	ug/l								10 U			
Benzo (a) pyrene	ug/l								10 U			
Benzo (b) fluoranthene	ug/l								10 U			
Benzo (ghi) perylene	ug/l								10 U			
Benzo (k) fluoranthene	ug/l								10 U			
Benzoic Acid	ug/l								20 U			
Benzyl alcohol	ug/l								10 U			
Bis(2-chloroethoxy)methane	ug/l								10 U			
Bis(2-chloroethyl)ether	ug/l								10 U			
Bis(2-chloroisopropyl)ether	ug/l								10 U			
Bis(2-ethylhexyl)phthalate	ug/l								10 U			
Butyl benzyl phthalate	ug/l								10 U			
Carbazole	ug/l								10 U			
Chrysene	ug/l								10 U			
Dibenz (a,h) anthracene	ug/l								10 U			
Dibenzofuran	ug/l								10 U			

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MAY 2004 GROUNDWATER ANALYTICAL RESULTS  
LANDSBURG MINE SITE

ANALYTE	UNITS	LMW-2 5/13/2004	LMW-3 5/12/2004	LMW-4 5/13/2004	LMW-5 5/12/2004	LMW-6 5/13/2004	LMW-7 5/12/2004	LMW-8 5/10/2004	LMW-9 5/10/2004	LMW-10 5/18/2004	P-2 5/10/2004	Field Blank 5/12/2004
Diethyl phthalate	ug/l								26.6			
Dimethyl phthalate	ug/l								10 U			
Di-n-butyl phthalate	ug/l								10 U			
Di-n-octyl phthalate	ug/l								10 U			
Fluoranthene	ug/l								10 U			
Fluorene	ug/l								10 U			
Hexachlorobenzene	ug/l								10 U			
Hexachlorobutadiene	ug/l								10 U			
Hexachlorocyclopentadiene	ug/l								10 U			
Hexachloroethane	ug/l								10 U			
Indeno (1,2,3-cd) pyrene	ug/l								10 U			
Isophorone	ug/l								10 U			
Naphthalene	ug/l								10 U			
Nitrobenzene	ug/l								10 U			
N-Nitrosodi-n-propylamine	ug/l								10 U			
N-Nitrosodiphenylamine	ug/l								10 U			
Pentachlorophenol	ug/l								10 U			
Phenanthrene	ug/l								10 U			
Phenol	ug/l								10 U			
Pyrene	ug/l								10 U			

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**FIGURE**

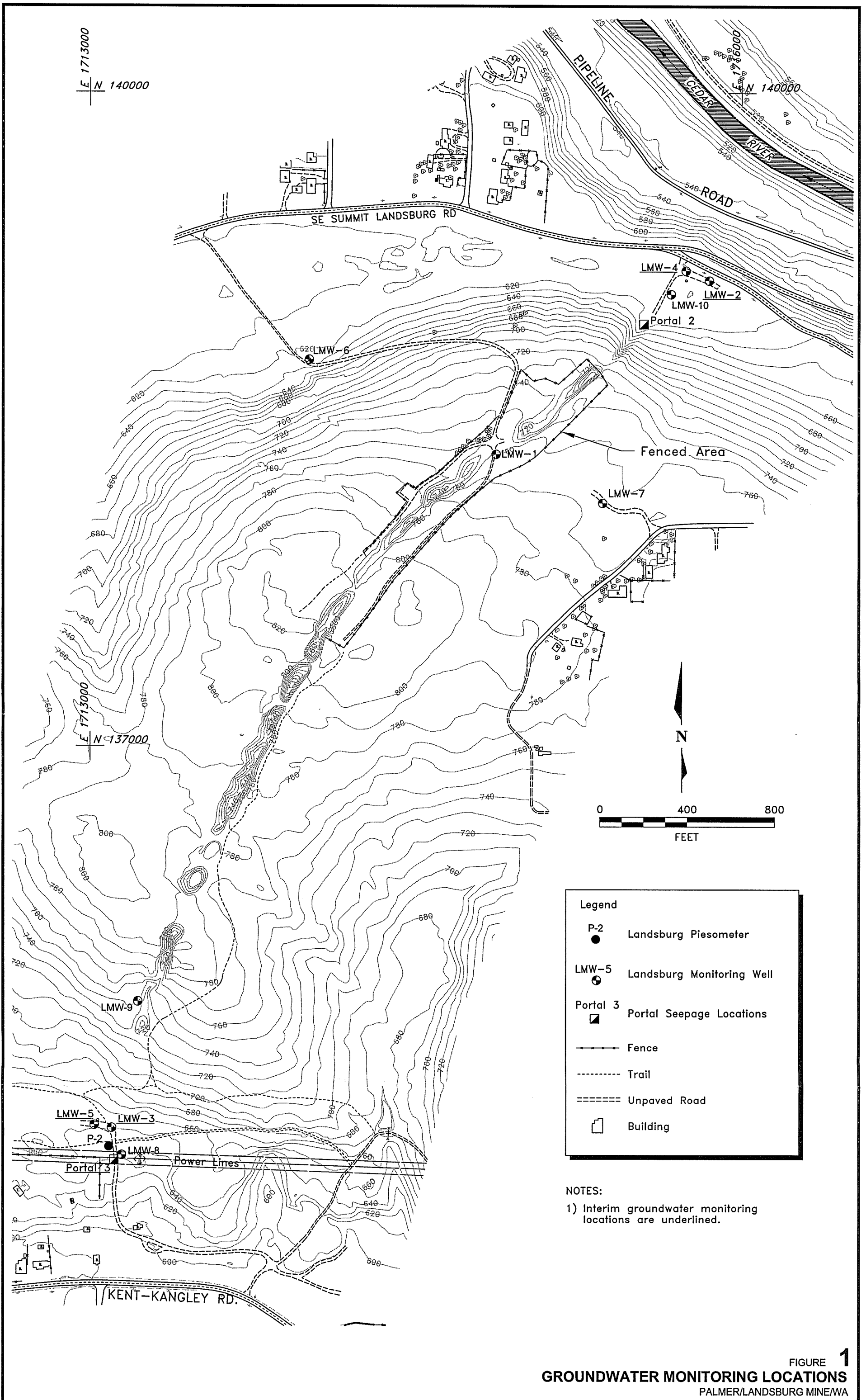


FIGURE 1  
**GROUNDWATER MONITORING LOCATIONS**  
 PALMER/LANDBURG MINE/WA

**APPENDIX A**  
**FIELD REPORT FORMS**

**SAMPLE INTEGRITY DATA SHEET**

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

Site Location Ravensdale, WA Sample ID LMW2-51304

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-13-04 Time 1120

Media Water Station LMW2

Sample Type: grab time composite space composite

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

SWL - 7.43  $(39 - 7.43) \times 0.66 \text{ g/ft} = 20$  Carrying  
 Sand Pack Interval 25-39=14  $(14 \text{ ft} \times 1.95) \times 0.25 = 6.8 \text{ g}$  sandpack  
 Packer Depth - NA  $27 \text{ g} \times 3 = 81 \text{ g}$   
 Sample Description Clear water H<sub>2</sub>S odor

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

SEE FIELD PARAMETERS SHEET

*Ex 4 mg  
As 1 mg / 1000*

Aliquot Amount	Analysis	Container	Preservation / Amount
<u>6</u> 3 - 40 mL	VOA	VOA Vial	HCl
1 - 500 mL	Metals/Cation	HDPE	HNO <sub>3</sub> (filter)
<u>3</u> 2 - 1 Liter	NWTPH-Dx	Glass Amber	HCl
3 - 40 mL	NWTPH-Gx	VOA Vial	HCl
<del>1 - 1 Liter</del>	Anions	HDPE	None

Sampler (signature) *[Signature]*

Date 5-13-04

Supervisor (signature) \_\_\_\_\_

Date \_\_\_\_\_

FIELD PARAMETERS SHEET

Well ID LMW-2  
 Date 5-13-04  
 Time Begin Purge 1035  
 Time Collect Sample 1120

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
7.46	1040						
7.46	1045	20+	6.97	348	10.8	-	0.62
	1050		6.99	347	10.8	-	0.43
7.46	1055	45	6.99	345	10.8	-	0.96
	1100		7.00	345	10.8	-	0.09
7.46	1105	60	7.00	346	10.8	-	0.29
7.46	1110		7.01	345	10.8	-	0.25
7.46	1115	95	7.01	344	10.8	-	0.35

Comments: Purge rate 2 gpm. @ 113 Hz

Sampler's Initials AKJ

**SAMPLE INTEGRITY DATA SHEET**

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273  
 Site Location Ravensdale, WA Sample ID LMW3-51204  
 Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-12-04 Time 1130

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 - 13.05  $(65-39) \times 0.66 \text{ gal/ft} = 17$

Sand Pack Interval 47-69 = 22'  $(22' \times 1.95) \times 0.25 = 11$

Packer Depth - 39' well bottom = 65'  $28 \text{ gal} \times 3 = 84 \text{ gal}$

Sample Description Clear Water

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	Metals/Cation	HDPE	HNO3 (filter)
2 - 1 Liter	NWTPH-Dx	Glass Amber	HCl
3 - 40 mL	NWTPH-Gx	VOA Vial	HCl
1 - 1 Liter	Anions	HDPE	None

Sampler (signature) [Signature] Date 5-12-04

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_



FIELD PARAMETERS SHEET

Well ID LMW-3  
 Date 5-12-04  
 Time Begin Purge 1030  
 Time Collect Sample 1130

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
12.61	1035					-	0.86
12.61	1040		7.81	113	10.7	-	0.61
	1045					-	
12.61	1050		7.85	114	10.7	-	0.55
	1055		7.86	114	10.7	-	
12.61	1100	50	7.87	115	10.7	-	0.47
	1105					-	
12.61	1110	65	7.87	116	10.7	-	0.60
12.61	1115		7.81	118	10.7	-	0.43
12.61	1120	78	7.80	118	10.7	-	0.41
12.61	1125	85	7.84	118	10.7	-	0.26

Comments: 12.61' after inflating of packer. Packer Pressure 110 psi  
 Purge rate ~ 17 gpm  
 125 Hz

Sampler's Initials MM

### SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

Site Location Ravensdale, WA Sample ID LMW4

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-13-04 Time 1234

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 - 9.53  $(210-187) \times 0.66 \text{ gal/ft} = 15.2$

Sand Pack Interval 189-211=22'  $(22 \times 1.95) \times 0.25 = 10.7$

Packer Depth - 187  $26 \text{ gal} \times 3 = 78 \text{ gal}$

Sample Description Clear Water

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	Metals/Cation	HDPE	HNO3 (filter)
2 - 1 Liter	NWTPH-Dx	Glass Amber	HCl
3 - 40 mL	NWTPH-Gx	VOA Vial	HCl
1- 1 Liter	Anions	HDPE	None

Sampler (signature) [Signature] Date 5-13-04

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_

FIELD PARAMETERS SHEET

Well ID LMW-4  
 Date 5-13-04  
 Time Begin Purge 1150  
 Time Collect Sample 1234

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
9.54	1200	20	7.08	362	10.8	-	0.53
	1205		7.06	358	10.8	-	0.39
9.54	1210	40	7.06	357	10.8	-	0.44
	1215		7.06	356	10.8	-	0.32
	1220	60	7.04	358	10.8	-	0.41
	1225		7.03	355	10.8	-	0.21
9.54	1230	80	7.02	355	10.8	-	0.31

Comments: Inflate packer to 110 psi. Water level 9.54.  
 Purge rate ~ 2 gpm. Converter set 145 Hz.

Sampler's Initials YKZ

**SAMPLE INTEGRITY DATA SHEET**

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

Site Location Ravensdale, WA Sample ID LMW5-51204 *+ Dupl.*

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube *LMW55-51204*

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-12-04 Time 0935

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 - 14.60' BT2  $(242-222) \times 0.66 = 13 \text{ g/l} \times 3 = 39 \text{ g/l}$

Sand Pack Interval - None

Packer Depth - 222, well bottom - 242

Sample Description Clear water, H<sub>2</sub>S odor

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

SEE FIELD PARAMETERS SHEET

*Extra Dupl.  
6  
8  
4  
6  
2*

Aliquot Amount	Analysis	Container	Preservation / Amount
<del>X</del> - 40 mL	<u>VOA</u>	VOA Vial	HCl
<del>X</del> - 500 mL	<u>Metals/Cation</u>	HDPE	HNO3 (filter)
<del>X</del> - 1 Liter	<u>NWTPH-Dx</u>	Glass Amber	HCl
<del>X</del> - 40 mL	<u>NWTPH-Gx</u>	VOA Vial	HCl
<del>X</del> 1 Liter	<u>Anions</u>	HDPE	None

Sampler (signature) [Signature]

Date 5-12-04

Supervisor (signature) \_\_\_\_\_

Date \_\_\_\_\_

FIELD PARAMETERS SHEET

Well ID LMW-5  
 Date 5-12-04  
 Time Begin Purge 0900  
 Time Collect Sample 0935

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
14.59	0905		6.94	313	10.7	-	0.57
14.59	0910	15	6.92	312	10.8	-	0.45
	0915		6.92	311	10.8	-	0.37
14.59	0920	30	6.93	310	10.9	-	0.16
	0925		6.95	312	10.9	-	0.48
14.59	0930	45	6.95	311	10.9	-	0.39

Comments: Set packer pressure at 150 psi  
 Purge rate 1.5 gpm - 108 Hz

Sampler's Initials MM

## SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273  
 Site Location Ravensdale, WA Sample ID LMW6-51304  
 Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-13-04 Time 0911

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 - 42.34  $(106-81) \times 0.66 = 17$

Sand Pack Interval - 83-106-23  $(23 \times 1.95) \times 0.25 = 11$

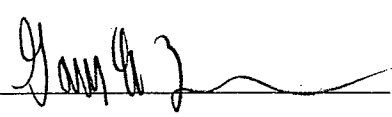
Packer Depth - 81', bottom of well - 106  $28 \times 3 = 84 \text{ gal}$

Sample Description Clean water

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 - 40 mL	<u>VOA</u>	VOA Vial	HCl
1 - 500 mL	<u>Metals/Cation</u>	HDPE	HNO3 (filter)
2 - 1 Liter	<u>NWTPH-Dx</u>	Glass Amber	HCl
3 - 40 mL	<u>NWTPH-Gx</u>	VOA Vial	HCl
1- 1 Liter	Anions	HDPE	None

Sampler (signature)  Date 5-13-04

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_

# FIELD PARAMETERS SHEET

Well ID MW-6  
 Date 5-13-04  
 Time Begin Purge 0826  
 Time Collect Sample 0911

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
42.04	0825		7.12	105	9.6	-	18
42.04	0830	18	6.99	102	9.7	-	5.2
	0840	36	6.88	101	9.8	-	1.5
42.04	0850	54	6.88	101	9.9	-	0.95
42.04	0900	72	6.89	102	9.9	-	0.64
42.04	0910	90	6.90	102	9.9	-	0.33

Comments: Set packer at 100 psi 42.04 after in plate  
 0820 Purge rate ~ 1.8 gpm 185 Hz on converter

Sampler's Initials JMZ

4  
 2.8  
 5  
 0.0

**SAMPLE INTEGRITY DATA SHEET**

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

Site Location Ravensdale, WA Sample ID LMW7-51204

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-12-04 Time 1325

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 - 228.13  $(254 - 228) \times 0.66 = 17 \text{ gal} \times 3 = 51$

Sand Pack Interval - NA

Packer Depth - NA, well depth - 254 ft

Sample Description Clear Water

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 - 40 mL	<u>VOA</u>	VOA Vial	HCl
1 - 500 mL	<u>Metals/Cation</u>	HDPE	HNO3 (filter)
2 - 1 Liter	<u>NWTPH-Dx</u>	Glass Amber	HCl
3 - 40 mL	<u>NWTPH-Gx</u>	VOA Vial	HCl
1- 1 Liter	Anions	HDPE	None

9

Sampler (signature) [Signature]

Date 5-12-04

Supervisor (signature) \_\_\_\_\_

Date \_\_\_\_\_



FIELD PARAMETERS SHEET

Well ID LMW-7  
 Date 5-12-04  
 Time Begin Purge 1242  
 Time Collect Sample 1325

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
-	1250		7.49	284	12.2	-	0.54
	1255		7.49	286	12.3	-	4.06
	1300		7.28	304	12.2	-	3.14
	1305	30	7.25	304	12.0	-	0.60
	1310		7.23	305	12.0	-	0.43
	1315	45	7.24	306	11.9	-	0.36
	1320	52	7.23	307	12.0	-	
	1325					-	

Comments: 1242 Begin purge at ~ 1.5 gpm - 341.5 Hz on convention

Sampler's Initials YHJ

# SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273  
 Site Location Ravensdale, WA Sample ID LMW8-51004  
 Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or QED Bladder

Date 5-10-04 Time 1515

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 - 4.77  $(13 - 4.77) \times 0.17 = 1.4$   
 Sand Pack Interval 6-13'  $[(13 - 6) \times 2.55] \times 0.25 = 4.5$   
 Packer Depth 13.0' 6 gal / well vol.

Sample Description \_\_\_\_\_

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 - 40 mL	VOA	VOA Vial	HCl
1 - 500 mL	Metals/Cation	HDPE	HNO3 (filter)
2 - 1 Liter	NWTPH-Dx	Glass Amber	HCl
3 - 40 mL	NWTPH-Gx	VOA Vial	HCl
1- 1 Liter	Anions	HDPE	None

Sampler (signature) [Signature]

Date 5-10-04

Supervisor (signature) \_\_\_\_\_

Date \_\_\_\_\_

FIELD PARAMETERS SHEET

Well ID LMW-8  
 Date 5-10-04  
 Time Begin Purge 1404  
 Time Collect Sample 1515

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
	14:17		6.89	288	11.3	-	728
	15:15		7.01	307	12.1		27

Comments: Pump set ~ 3ft above bottom of well  
 1404 - Begin Purge 1 gpm  
 1408 - Reduce purge 0.5 gpm  
 1410 - 12.35' bT 2"  
 1414 - Water near top of the pump 12.6' purge rate 1/3 gpm  
 1420 - Water level 12.7 ft. Shut down allow for recharge. total purged ~ 9 gal  
 1430 - Water level 10.85  
 1500 - water level 5.70  
 1507 - 5.65  
 1510 - Turn pump on collect samples

Sampler's Initials JKZ

### SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

Site Location Ravensdale, WA Sample ID LMW9-51004

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler ~~Dedicated Pump Grundfos or QED-Bladder~~

Date 5-10-04 Time 1045

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 - 100.39' bT2"  $(159-100) \times 0.17 = 10.81$

Sand Pack Interval - 146-159'  $(159-146) \times 2.55 = 8$

Packer Depth - NA Well bottom 159' 18 gal / well vol.

Sample Description Clear water

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	Metals/Cation	HDPE	HNO3 (filter)
2 - 1 Liter	NWTPH-Dx	Glass Amber	HCl
3 - 40 mL	NWTPH-Gx	VOA Vial	HCl
1 - 1 Liter	Anions	HDPE	None
2 - 1 Liter	SVOA	Glass Amber	None
2 - 1 Liter	Pesticides	Glass Amber	None
1 - 500 mL	CN-	HDPE	NaOH
<u>2</u> <del>X</del> <sup>250</sup> <del>500</del> mL	PCBs	Glass Amber	None
1 - 500 mL	Nitrate-Nitrite	HDPE	H2SO4

18

Sampler (signature) [Signature] Date 5-10-04

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_

FIELD PARAMETERS SHEET

Well ID LMW-9  
 Date 5-10-04  
 Time Begin Purge 0948  
 Time Collect Sample 1045

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
100.45	1005		7.01	364	11.9	-	5.73
100.45	1010		7.06	349	11.8	-	6.26
100.45	1015		7.06	340	11.8	-	3.13
100.45	1020		7.07	336	11.9	-	2.08
	1025		7.07	336	11.9		2.07
100.45	1030		7.07	335	11.9		1.89
100.45	1035	47	7.07	335	11.9		1.88

Comments: Begin purge with pump ~ 10ft above bottom. Purge rate 1gpm  
 1006 - Lower pump to 5ft off bottom

Sampler's Initials AKZ

**SAMPLE INTEGRITY DATA SHEET**

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

Site Location Ravensdale, WA Sample ID LMW10651804

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or OED Bladder Low Flow Purge

Date 5-18-04 Time 1050

Media Water Station LMW-10

Sample Type: grab time composite space composite

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

SWL - 0.29 ft b74'

Sand Pack Interval 287-267

~~Well~~ Packer Depth 287' Pump at 80' Pump Intake at 277 ft

Sample Description Cloudy water

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 - 40 mL	<u>VOA</u>	VOA Vial	HCl
1 - 500 mL	<u>Metals/Cation</u>	HDPE	HNO3 (filter)
2 - 1 Liter	<u>NWTPH-Dx</u>	Glass Amber	HCl
3 - 40 mL	<u>NWTPH-Gx</u>	VOA Vial	HCl
1 - 1 Liter	Anions	HDPE	None

Sampler (signature) [Signature] Date 5-18-04

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_

FIELD PARAMETERS SHEET

Well ID LMW-10  
 Date 5-18-04  
 Time Begin Purge 0937  
 Time Collect Sample 1050

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
1.5	0946					-	
1.8	0948					-	
2.08	0951		9.95	336	12.1	-	58
2.40	0955		10.02	344	12.1	-	
2.84	1000		*	342	12.1	-	
3.25	1009	← 200 ml/min	9.40	338	12.3	-	52
3.62	1015	← 200 ml/min	9.80	335	12.2	-	51
3.86	1020		9.90	333	12.1	-	
4.13	1025		9.93	332	12.0	-	50
4.35	1030		9.93	329	12.0	-	
4.68	1035		9.92	328	12.1	-	48
4.71	1040		9.93	331	12.3	-	48
4.72	1045		9.93	332	12.4	-	48
						-	
						-	

Comments: Set N<sub>2</sub> 100psi, set throttle to 0.5 x 80 + 15 = 65psi  
 SWL ~ 0.29 ft b74" before start purge  
 ↑ Pump depth ↑ Extra  
 Set ID 55 Ret 15 Discharge 15  
 0937 AM ID 65 R 5 D 25  
 Try ID 60 R 10 D 20 - good  
 ID 62 R 8 D 22 - better - 250 ml/cycle = 500 ml/min  
 0949 Change to 1 cpm ID 25 R 35 D 25 300 ml/min  
 \* Recalibrate pH meter to 4-7-10 pH | 1035 - ID 20 R 40 D 20 - Purge 150 ml/min

Sampler's Initials MLG

### SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273  
 Site Location Ravensdale, WA Sample ID LMW P-2  
 Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or OED Bladder

Date 5-10-04 Time 1322

Media Water Station LMW P-2

Sample Type: grab time composite space composite

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

SWL - 7.69' btt  $(44 - 7.69) 0.17 \text{ g/l} / 1 \text{ ft} = 6.2 \text{ g/l}$

Sand-Pack Interval 39-44' - Open Hole

Packer Depth NA Well Depth 44'

Sample Description Clear Water

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	Metals (Cation)	HDPE	HNO3 (filter)
2 - 1 Liter	NWTPH-Dx	Glass Amber	HCl
3 - 40 mL	NWTPH-Gx	VOA Vial	HCl
1 - 1 Liter	Anions	HDPE	None

Sampler (signature) [Signature]

Date 5-10-04

Supervisor (signature) \_\_\_\_\_

Date \_\_\_\_\_



FIELD PARAMETERS SHEET

Well ID P-2  
 Date 5-10-04  
 Time Begin Purge 1255  
 Time Collect Sample 1322

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU
7.72	1300		7.40	310	10.8	-	1.18
7.72	1305		7.11	304	10.9	-	1.99
7.72	1310		7.05	304	10.9	-	1.07
7.72	1315		7.04	304	10.9	-	1.55
7.72	1320	50	7.03	304	10.9	-	1.00

Comments: Set pump ~ 5ft off bottom, begin purge at ~2gpm  
 1300 lower pump to 2.5ft off bottom

Sampler's Initials JM

Field Blank

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site Project No. 923-1000-002.R273

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

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos or OED Bladder Direct All of jar

Date 5-12-04 Time 1055

Media Water Station LMW-3 Table

Sample Type: grab time composite space composite

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

SWL - Water from NCA Lab.

Sand Pack Interval

Packer Depth

Sample Description

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
<u>3 - 40 mL</u>	VOA	VOA Vial	HCl
<u>1 - 500 mL</u>	Metals/Cation	HDPE	HNO3 (filter)
<u>2 - 1 Liter</u>	NWTPH-Dx	Glass Amber	HCl
<del>3 - 40 mL</del>	NWTPH-Gx	VOA Vial	HCl
<del>1 - 1 Liter</del>	Anions	HDPE	None

Sampler (signature) [Signature] Date 5-12-04

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_

# FIELD PARAMETERS SHEET

Well ID \_\_\_\_\_

Date \_\_\_\_\_

Time Begin Purge \_\_\_\_\_

Time Collect Sample \_\_\_\_\_

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	

Comments:

Sampler's Initials \_\_\_\_\_

**APPENDIX B**  
**LABORATORY DATA**



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27 May 2004

Gary Zimmerman  
Golder Associates Inc.  
18300 NE Union Hill Rd, Suite 200  
Redmond, WA/USA 98052-3333  
RE: Landsburg Mine

Enclosed are the results of analyses for samples received by the laboratory on 05/13/04 14:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kortland Orr  
PM



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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P-2	B4E0378-01	Water	05/10/04 13:22	05/13/04 14:10
LMW8-51004	B4E0378-02	Water	05/10/04 15:15	05/13/04 14:10
LMW55-51204	B4E0378-03	Water	05/12/04 09:00	05/13/04 14:10
LMW5-51204	B4E0378-04	Water	05/12/04 09:35	05/13/04 14:10
FBLMW-3	B4E0378-05	Water	05/12/04 10:55	05/13/04 14:10
LMW3-51204	B4E0378-06	Water	05/12/04 11:30	05/13/04 14:10
LMW7-51204	B4E0378-07	Water	05/12/04 13:25	05/13/04 14:10
LMW6-51304	B4E0378-08	Water	05/13/04 09:11	05/13/04 14:10
LMW2-51304	B4E0378-09	Water	05/13/04 11:20	05/13/04 14:10
LMW4-51304	B4E0378-10	Water	05/13/04 12:34	05/13/04 14:10
LMW9-51004	B4E0378-11	Water	05/10/04 10:45	05/13/04 14:10
Trip Blank	B4E0378-12	Water	05/13/04 12:00	05/13/04 14:10



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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW8-51004 (B4E0378-02) Water    Sampled: 05/10/04 15:15    Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	86.8 %	50-150			"	"	"	"	
Surrogate: Octacosane	78.8 %	50-150			"	"	"	"	
<b>LMW55-51204 (B4E0378-03) Water    Sampled: 05/12/04 09:00    Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	77.8 %	50-150			"	"	"	"	
Surrogate: Octacosane	73.5 %	50-150			"	"	"	"	
<b>LMW5-51204 (B4E0378-04) Water    Sampled: 05/12/04 09:35    Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	87.7 %	50-150			"	"	"	"	
Surrogate: Octacosane	80.8 %	50-150			"	"	"	"	

North Creek Analytical - Bothell

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Kortland Orr, PM

North Creek Analytical, Inc.  
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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>FBLMW-3 (B4E0378-05) Water</b> <b>Sampled: 05/12/04 10:55</b> <b>Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	86.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	79.5 %	50-150			"	"	"	"	

<b>LMW3-51204 (B4E0378-06) Water</b> <b>Sampled: 05/12/04 11:30</b> <b>Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	83.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	81.5 %	50-150			"	"	"	"	

<b>LMW7-51204 (B4E0378-07) Water</b> <b>Sampled: 05/12/04 13:25</b> <b>Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	83.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	78.1 %	50-150			"	"	"	"	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW6-51304 (B4E0378-08) Water Sampled: 05/13/04 09:11 Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	94.7 %	50-150			"	"	"	"	
Surrogate: Octacosane	88.1 %	50-150			"	"	"	"	
<b>LMW2-51304 (B4E0378-09) Water Sampled: 05/13/04 11:20 Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/16/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	68.9 %	50-150			"	"	"	"	
Surrogate: Octacosane	74.8 %	50-150			"	"	"	"	
<b>LMW4-51304 (B4E0378-10) Water Sampled: 05/13/04 12:34 Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/17/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	92.4 %	50-150			"	"	"	"	
Surrogate: Octacosane	84.8 %	50-150			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water    Sampled: 05/10/04 10:45    Received: 05/13/04 14:10</b>									
Gx Range Hydrocarbons	ND	0.250	mg/l	1	4E14039	05/14/04	05/17/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630	"	"	"	"	"	"	
Surrogate: 2-FBP	87.1 %	50-150			"	"	"	"	
Surrogate: Octacosane	76.8 %	50-150			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Total Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>P-2 (B4E0378-01) Water    Sampled: 05/10/04 13:22    Received: 05/13/04 14:10</b>										
Calcium	78.6	0.250		mg/l	1	4E17017	05/17/04	05/17/04	EPA 6010B	
Iron	1.38	0.150		"	"	"	"	"	"	
Potassium	ND	2.00		"	"	"	"	"	"	
Magnesium	48.1	0.500		"	"	"	"	"	"	
Manganese	0.201	0.0100		"	"	"	"	"	"	
Sodium	19.0	0.250		"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW8-51004 (B4E0378-02) Water    Sampled: 05/10/04 15:15    Received: 05/13/04 14:10</b>									
Silver	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	0.00390	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	0.0547	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	05/19/04	"	
Calcium	84.0	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	0.00289	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
Iron	5.19	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	4.39	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	44.5	0.500	"	"	"	"	"	"	
Manganese	1.52	0.100	"	10	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	18.0	0.250	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	0.00273	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	05/19/04	"	
Antimony	ND	0.00300	"	"	"	"	05/18/04	"	
Selenium	ND	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	05/19/04	"	
Vanadium	0.00248	0.00100	"	"	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

<b>LMW55-51204 (B4E0378-03) Water    Sampled: 05/12/04 09:00    Received: 05/13/04 14:10</b>									
Silver	ND	0.00500	mg/l	5	4E17026	05/17/04	05/19/04	EPA 6020	D-14
Aluminum	ND	0.200	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	0.271	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Calcium	101	0.250	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	0.00126	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**LMW55-51204 (B4E0378-03) Water Sampled: 05/12/04 09:00 Received: 05/13/04 14:10**

Iron	0.186	0.150	mg/l	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	4.17	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	56.0	0.500	"	"	"	"	"	"	
Manganese	0.232	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	20.4	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Antimony	ND	0.00300	"	1	"	"	05/18/04	"	
Selenium	0.0102	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Vanadium	0.00352	0.00100	"	1	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

**LMW5-51204 (B4E0378-04) Water Sampled: 05/12/04 09:35 Received: 05/13/04 14:10**

Silver	ND	0.00500	mg/l	5	4E17026	05/17/04	05/19/04	EPA 6020	D-14
Aluminum	ND	0.200	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	0.268	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Calcium	98.1	0.250	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	0.00132	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
Iron	0.179	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	3.09	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	56.0	0.500	"	"	"	"	"	"	
Manganese	0.232	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	20.6	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Antimony	ND	0.00300	"	1	"	"	05/18/04	"	
Selenium	0.00855	0.00100	"	"	"	"	"	"	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW5-51204 (B4E0378-04) Water    Sampled: 05/12/04 09:35    Received: 05/13/04 14:10</b>									
Thallium	ND	0.00500	mg/l	5	4E17026	05/17/04	05/19/04	"	D-14
Vanadium	<b>0.00358</b>	0.00100	"	1	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	
<b>FBLMW-3 (B4E0378-05) Water    Sampled: 05/12/04 10:55    Received: 05/13/04 14:10</b>									
Silver	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	ND	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	05/19/04	"	
Calcium	ND	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
Iron	ND	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	ND	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	ND	0.500	"	"	"	"	"	"	
Manganese	ND	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	ND	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	05/19/04	"	
Antimony	ND	0.00300	"	"	"	"	05/18/04	"	
Selenium	<b>0.00142</b>	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	05/19/04	"	
Vanadium	ND	0.00100	"	"	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW3-51204 (B4E0378-06) Water    Sampled: 05/12/04 11:30    Received: 05/13/04 14:10</b>									
Silver	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	0.0729	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	05/19/04	"	
Calcium	39.9	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
Iron	ND	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	2.12	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	17.0	0.500	"	"	"	"	"	"	
Manganese	0.0682	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	10.9	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	05/19/04	"	
Antimony	ND	0.00300	"	"	"	"	05/18/04	"	
Selenium	0.00102	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	05/19/04	"	
Vanadium	ND	0.00100	"	"	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

<b>LMW7-51204 (B4E0378-07) Water    Sampled: 05/12/04 13:25    Received: 05/13/04 14:10</b>									
Silver	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	0.00298	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	0.463	0.0200	"	2	"	"	05/19/04	"	
Beryllium	ND	0.00100	"	1	"	"	05/19/04	"	
Calcium	56.3	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	

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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**LMW7-51204 (B4E0378-07) Water    Sampled: 05/12/04 13:25    Received: 05/13/04 14:10**

Iron	0.813	0.150	mg/l	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	4.56	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	26.6	0.500	"	"	"	"	"	"	
Manganese	0.111	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	56.4	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	05/19/04	"	
Antimony	ND	0.00300	"	"	"	"	05/18/04	"	
Selenium	ND	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	05/19/04	"	
Vanadium	0.00210	0.00100	"	"	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

**LMW6-51304 (B4E0378-08) Water    Sampled: 05/13/04 09:11    Received: 05/13/04 14:10**

Silver	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Barium	0.104	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	05/19/04	"	
Calcium	30.1	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
Iron	2.16	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	ND	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	15.7	0.500	"	"	"	"	"	"	
Manganese	0.0313	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	8.55	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	05/19/04	"	
Antimony	ND	0.00300	"	"	"	"	05/18/04	"	
Selenium	ND	0.00100	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW6-51304 (B4E0378-08) Water</b> <b>Sampled: 05/13/04 09:11</b> <b>Received: 05/13/04 14:10</b>									
Thallium	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	"	
Vanadium	ND	0.00100	"	"	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	
<b>LMW2-51304 (B4E0378-09) Water</b> <b>Sampled: 05/13/04 11:20</b> <b>Received: 05/13/04 14:10</b>									
Silver	ND	0.00500	mg/l	5	4E17026	05/17/04	05/19/04	EPA 6020	D-14
Aluminum	ND	0.200	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
<b>Barium</b>	<b>0.326</b>	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
<b>Calcium</b>	<b>130</b>	0.250	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
<b>Chromium</b>	<b>0.00144</b>	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
<b>Iron</b>	<b>0.186</b>	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
<b>Potassium</b>	<b>4.48</b>	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
<b>Magnesium</b>	<b>78.2</b>	0.500	"	"	"	"	"	"	
<b>Manganese</b>	<b>0.219</b>	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
<b>Sodium</b>	<b>25.2</b>	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Antimony	ND	0.00300	"	1	"	"	05/18/04	"	
<b>Selenium</b>	<b>0.00810</b>	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
<b>Vanadium</b>	<b>0.00413</b>	0.00100	"	1	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**LMW4-51304 (B4E0378-10) Water    Sampled: 05/13/04 12:34    Received: 05/13/04 14:10**

Silver	ND	0.00500	mg/l	5	4E17026	05/17/04	05/19/04	EPA 6020	D-14
Aluminum	ND	0.200	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
<b>Barium</b>	<b>0.362</b>	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
<b>Calcium</b>	<b>130</b>	0.250	"	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
<b>Chromium</b>	<b>0.00153</b>	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
<b>Iron</b>	<b>0.811</b>	0.150	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
<b>Potassium</b>	<b>4.60</b>	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
<b>Magnesium</b>	<b>78.1</b>	0.500	"	"	"	"	"	"	
<b>Manganese</b>	<b>0.181</b>	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
<b>Sodium</b>	<b>33.5</b>	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00500	"	5	"	"	05/19/04	"	D-14
Antimony	ND	0.00300	"	1	"	"	05/18/04	"	
<b>Selenium</b>	<b>0.0143</b>	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00500	"	5	"	"	05/19/04	"	D-14
<b>Vanadium</b>	<b>0.00429</b>	0.00100	"	1	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

**LMW9-51004 (B4E0378-11) Water    Sampled: 05/10/04 10:45    Received: 05/13/04 14:10**

Silver	ND	0.00100	mg/l	1	4E17026	05/17/04	05/19/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Arsenic	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
<b>Barium</b>	<b>0.313</b>	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	05/19/04	"	
<b>Calcium</b>	<b>93.0</b>	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
<b>Chromium</b>	<b>0.00117</b>	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Dissolved Metals by EPA 6000/7000 Series Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water Sampled: 05/10/04 10:45 Received: 05/13/04 14:10</b>									
Iron	1.75	0.150	mg/l	1	4E18024	05/18/04	05/24/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4E17022	05/17/04	05/19/04	EPA 7470A	
Potassium	3.22	2.00	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Magnesium	53.1	0.500	"	"	"	"	"	"	
Manganese	0.171	0.0100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Sodium	20.9	0.250	"	"	4E18024	05/18/04	05/24/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E17026	05/17/04	05/18/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	05/19/04	"	
Antimony	ND	0.00300	"	"	"	"	05/18/04	"	
Selenium	0.00284	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	05/19/04	"	
Vanadium	0.00233	0.00100	"	"	"	"	05/18/04	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

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**Organochlorine Pesticides by EPA Method 8081A  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water    Sampled: 05/10/04 10:45    Received: 05/13/04 14:10</b>									
Aldrin	ND	0.0500	ug/l	1	4E17008	05/17/04	05/20/04	EPA 8081A	
alpha-BHC	ND	0.0400	"	"	"	"	"	"	
beta-BHC	ND	0.0400	"	"	"	"	"	"	
delta-BHC	ND	0.0500	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	0.0400	"	"	"	"	"	"	
Chlordane (tech)	ND	0.500	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0400	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0400	"	"	"	"	"	"	
4,4'-DDD	ND	0.0400	"	"	"	"	"	"	
4,4'-DDE	ND	0.0800	"	"	"	"	"	"	
4,4'-DDT	ND	0.0800	"	"	"	"	"	"	
Dieldrin	ND	0.0800	"	"	"	"	"	"	
Endosulfan I	ND	0.0200	"	"	"	"	"	"	
Endosulfan II	ND	0.0800	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.100	"	"	"	"	"	"	
Endrin	ND	0.0800	"	"	"	"	"	"	
Endrin aldehyde	ND	0.160	"	"	"	"	"	"	
Endrin ketone	ND	0.0800	"	"	"	"	"	"	
Heptachlor	ND	0.0500	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0400	"	"	"	"	"	"	
Methoxychlor	ND	0.500	"	"	"	"	"	"	
Toxaphene	ND	2.00	"	"	"	"	"	"	
Surrogate: TCX	106 %	24-143			"	"	"	"	
Surrogate: Decachlorobiphenyl	96.8 %	10-145			"	"	"	"	

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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

**LMW8-51004 (B4E0378-02) Water**    **Sampled: 05/10/04 15:15**    **Received: 05/13/04 14:10**

1,1,1,2-Tetrachloroethane	ND	0.200		ug/l	1	4E18050	05/18/04	05/18/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200		"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500		"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200		"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200		"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200		"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200		"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500		"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200		"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500		"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200		"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200		"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500		"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200		"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200		"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500		"	"	"	"	"	"	
2-Butanone	ND	2.00		"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500		"	"	"	"	"	"	
2-Hexanone	ND	2.00		"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500		"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00		"	"	"	"	"	"	
Acetone	ND	10.0		"	"	"	"	"	"	
Benzene	ND	0.200		"	"	"	"	"	"	
Bromobenzene	ND	0.500		"	"	"	"	"	"	
Bromochloromethane	ND	0.200		"	"	"	"	"	"	
Bromodichloromethane	ND	0.200		"	"	"	"	"	"	
Bromoform	ND	0.200		"	"	"	"	"	"	
Bromomethane	ND	2.00		"	"	"	"	"	"	
Carbon disulfide	ND	0.500		"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200		"	"	"	"	"	"	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>LMW8-51004 (B4E0378-02) Water    Sampled: 05/10/04 15:15    Received: 05/13/04 14:10</b>										
Chlorobenzene	ND	0.200		ug/l	1	4E18050	05/18/04	05/18/04	"	
Chloroethane	ND	1.00		"	"	"	"	"	"	
Chloroform	ND	0.200		"	"	"	"	"	"	
Chloromethane	ND	1.00		"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200		"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200		"	"	"	"	"	"	
Dibromochloromethane	ND	0.200		"	"	"	"	"	"	
Dibromomethane	ND	0.200		"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.200		"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500		"	"	"	"	"	"	
Isopropylbenzene	ND	0.500		"	"	"	"	"	"	
m,p-Xylene	ND	0.500		"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00		"	"	"	"	"	"	
Methylene chloride	ND	2.00		"	"	"	"	"	"	
n-Butylbenzene	ND	0.200		"	"	"	"	"	"	
n-Propylbenzene	ND	0.500		"	"	"	"	"	"	
Naphthalene	ND	0.500		"	"	"	"	"	"	
o-Xylene	ND	0.250		"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200		"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200		"	"	"	"	"	"	
Styrene	ND	0.500		"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500		"	"	"	"	"	"	
Tetrachloroethene	ND	0.200		"	"	"	"	"	"	
Toluene	ND	0.200		"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200		"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200		"	"	"	"	"	"	
Trichloroethene	ND	0.200		"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500		"	"	"	"	"	"	
Vinyl chloride	ND	0.200		"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %	70-130				"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130				"	"	"	"	
Surrogate: 4-BFB	99.8 %	70-130				"	"	"	"	

North Creek Analytical - Bothell

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**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**



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 907.563.9200 fax 907.563.9210

Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW55-51204 (B4E0378-03) Water Sampled: 05/12/04 09:00 Received: 05/13/04 14:10</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E18050	05/18/04	05/18/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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 907.563.9200 fax 907.563.9210

Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW55-51204 (B4E0378-03) Water Sampled: 05/12/04 09:00 Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E18050	05/18/04	05/18/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	"	
Surrogate: 4-BFB	99.0 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**LMW5-51204 (B4E0378-04) Water**    **Sampled: 05/12/04 09:35**    **Received: 05/13/04 14:10**

1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E18050	05/18/04	05/18/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc.  
18300 NE Union Hill Rd, Suite 200  
Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
Project Number: [none]  
Project Manager: Gary Zimmerman

Reported:  
05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW5-51204 (B4E0378-04) Water Sampled: 05/12/04 09:35 Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E18050	05/18/04	05/18/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-BFB	98.2 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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 907.563.9200 fax 907.563.9210

Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>FBLMW-3 (B4E0378-05) Water Sampled: 05/12/04 10:55 Received: 05/13/04 14:10</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E18050	05/18/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>FBLMW-3 (B4E0378-05) Water Sampled: 05/12/04 10:55 Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E18050	05/18/04	05/19/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>0.500</b>	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.250</b>	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-BFB	99.5 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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North Creek Analytical, Inc.  
 Environmental Laboratory Network



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 907.563.9200 fax 907.563.9210

Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW3-51204 (B4E0378-06) Water Sampled: 05/12/04 11:30 Received: 05/13/04 14:10</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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**Environmental Laboratory Network**



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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW3-51204 (B4E0378-06) Water Sampled: 05/12/04 11:30 Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	99.5 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	"	
Surrogate: 4-BFB	98.0 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**LMW7-51204 (B4E0378-07) Water**    **Sampled: 05/12/04 13:25**    **Received: 05/13/04 14:10**

1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW7-51204 (B4E0378-07) Water Sampled: 05/12/04 13:25 Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-BFB	102 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW6-51304 (B4E0378-08) Water Sampled: 05/13/04 09:11 Received: 05/13/04 14:10</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW6-51304 (B4E0378-08) Water    Sampled: 05/13/04 09:11    Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-BFB	100 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW2-51304 (B4E0378-09) Water Sampled: 05/13/04 11:20 Received: 05/13/04 14:10</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW2-51304 (B4E0378-09) Water    Sampled: 05/13/04 11:20    Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-BFB	103 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW4-51304 (B4E0378-10) Water    Sampled: 05/13/04 12:34    Received: 05/13/04 14:10</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW4-51304 (B4E0378-10) Water    Sampled: 05/13/04 12:34    Received: 05/13/04 14:10</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
Toluene	ND	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.8 %	70-130			"	"	"	"	
Surrogate: 4-BFB	99.5 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**LMW9-51004 (B4E0378-11) Water**    **Sampled: 05/10/04 10:45**    **Received: 05/13/04 14:10**

1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
Benzene	ND	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

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 907.563.9200 fax 907.563.9210

Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>LMW9-51004 (B4E0378-11) Water    Sampled: 05/10/04 10:45    Received: 05/13/04 14:10</b>										
Chlorobenzene	ND	0.200		ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00		"	"	"	"	"	"	
Chloroform	ND	0.200		"	"	"	"	"	"	
Chloromethane	ND	1.00		"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200		"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200		"	"	"	"	"	"	
Dibromochloromethane	ND	0.200		"	"	"	"	"	"	
Dibromomethane	ND	0.200		"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.200		"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500		"	"	"	"	"	"	
Isopropylbenzene	ND	0.500		"	"	"	"	"	"	
m,p-Xylene	ND	0.500		"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00		"	"	"	"	"	"	
Methylene chloride	ND	2.00		"	"	"	"	"	"	
n-Butylbenzene	ND	0.200		"	"	"	"	"	"	
n-Propylbenzene	ND	0.500		"	"	"	"	"	"	
Naphthalene	ND	0.500		"	"	"	"	"	"	
o-Xylene	ND	0.250		"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200		"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200		"	"	"	"	"	"	
Styrene	ND	0.500		"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500		"	"	"	"	"	"	
Tetrachloroethene	ND	0.200		"	"	"	"	"	"	
Toluene	ND	0.200		"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200		"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200		"	"	"	"	"	"	
Trichloroethene	ND	0.200		"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500		"	"	"	"	"	"	
Vinyl chloride	ND	0.200		"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %	70-130				"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130				"	"	"	"	
Surrogate: 4-BFB	101 %	70-130				"	"	"	"	

North Creek Analytical - Bothell

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 907.563.9200 fax 907.563.9210

Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Trip Blank (B4E0378-12) Water Sampled: 05/13/04 12:00 Received: 05/13/04 14:10</b>										
1,1,1,2-Tetrachloroethane	ND	0.200		ug/l	1	4E19026	05/19/04	05/19/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200		"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500		"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200		"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200		"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200		"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200		"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500		"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200		"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500		"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200		"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200		"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500		"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200		"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200		"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200		"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500		"	"	"	"	"	"	
2-Butanone	ND	2.00		"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500		"	"	"	"	"	"	
2-Hexanone	ND	2.00		"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500		"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00		"	"	"	"	"	"	
Acetone	ND	10.0		"	"	"	"	"	"	
Benzene	ND	0.200		"	"	"	"	"	"	
Bromobenzene	ND	0.500		"	"	"	"	"	"	
Bromochloromethane	ND	0.200		"	"	"	"	"	"	
Bromodichloromethane	ND	0.200		"	"	"	"	"	"	
Bromoform	ND	0.200		"	"	"	"	"	"	
Bromomethane	ND	2.00		"	"	"	"	"	"	
Carbon disulfide	ND	0.500		"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200		"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Trip Blank (B4E0378-12) Water Sampled: 05/13/04 12:00 Received: 05/13/04 14:10</b>										
Chlorobenzene	ND	0.200		ug/l	1	4E19026	05/19/04	05/19/04	"	
Chloroethane	ND	1.00		"	"	"	"	"	"	
Chloroform	ND	0.200		"	"	"	"	"	"	
Chloromethane	ND	1.00		"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200		"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200		"	"	"	"	"	"	
Dibromochloromethane	ND	0.200		"	"	"	"	"	"	
Dibromomethane	ND	0.200		"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500		"	"	"	"	"	"	
Ethylbenzene	ND	0.200		"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500		"	"	"	"	"	"	
Isopropylbenzene	ND	0.500		"	"	"	"	"	"	
m,p-Xylene	ND	0.500		"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00		"	"	"	"	"	"	
Methylene chloride	ND	2.00		"	"	"	"	"	"	
n-Butylbenzene	ND	0.200		"	"	"	"	"	"	
n-Propylbenzene	ND	0.500		"	"	"	"	"	"	
Naphthalene	ND	0.500		"	"	"	"	"	"	
o-Xylene	ND	0.250		"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200		"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200		"	"	"	"	"	"	
Styrene	ND	0.500		"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500		"	"	"	"	"	"	
Tetrachloroethene	ND	0.200		"	"	"	"	"	"	
Toluene	ND	0.200		"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200		"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200		"	"	"	"	"	"	
Trichloroethene	ND	0.200		"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500		"	"	"	"	"	"	
Vinyl chloride	ND	0.200		"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %	70-130				"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130				"	"	"	"	
Surrogate: 4-BFB	102 %	70-130				"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Semivolatile Organic Compounds by EPA Method 8270C**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water    Sampled: 05/10/04 10:45    Received: 05/13/04 14:10</b>									
1,2,4-Trichlorobenzene	ND	10.0	ug/l	1	4E14036	05/14/04	05/17/04	EPA 8270C	
1,2-Dichlorobenzene	ND	10.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	10.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	10.0	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	10.0	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	10.0	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	10.0	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	20.0	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	10.0	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	10.0	"	"	"	"	"	"	
2-Chloronaphthalene	ND	10.0	"	"	"	"	"	"	
2-Chlorophenol	ND	10.0	"	"	"	"	"	"	
2-Methylnaphthalene	ND	10.0	"	"	"	"	"	"	
2-Methylphenol	ND	10.0	"	"	"	"	"	"	
2-Nitroaniline	ND	10.0	"	"	"	"	"	"	
2-Nitrophenol	ND	10.0	"	"	"	"	"	"	
3 & 4-Methylphenol	ND	10.0	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	10.0	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	10.0	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	10.0	"	"	"	"	"	"	
4-Chloroaniline	ND	10.0	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	10.0	"	"	"	"	"	"	
4-Nitroaniline	ND	10.0	"	"	"	"	"	"	
4-Nitrophenol	ND	10.0	"	"	"	"	"	"	
Acenaphthene	ND	10.0	"	"	"	"	"	"	
Acenaphthylene	ND	10.0	"	"	"	"	"	"	
Aniline	ND	10.0	"	"	"	"	"	"	
Anthracene	ND	10.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	10.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	10.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	10.0	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	10.0	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Semivolatile Organic Compounds by EPA Method 8270C**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water Sampled: 05/10/04 10:45 Received: 05/13/04 14:10</b>									
Benzo (k) fluoranthene	ND	10.0	ug/l	1	4E14036	05/14/04	05/17/04	"	
Benzoic Acid	ND	20.0	"	"	"	"	"	"	
Benzyl alcohol	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	10.0	"	"	"	"	"	"	
Carbazole	ND	10.0	"	"	"	"	"	"	
Chrysene	ND	10.0	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	10.0	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	10.0	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Dibenzofuran	ND	10.0	"	"	"	"	"	"	
<b>Diethyl phthalate</b>	<b>26.6</b>	10.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	10.0	"	"	"	"	"	"	
Fluorene	ND	10.0	"	"	"	"	"	"	
Hexachlorobenzene	ND	10.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
Hexachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Isophorone	ND	10.0	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	10.0	"	"	"	"	"	"	
Nitrobenzene	ND	10.0	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
Phenanthrene	ND	10.0	"	"	"	"	"	"	
Phenol	ND	10.0	"	"	"	"	"	"	
Pyrene	ND	10.0	"	"	"	"	"	"	
Surrogate: 2-FP	53.2 %	18-124			"	"	"	"	
Surrogate: Phenol-d6	69.3 %	25-122			"	"	"	"	
Surrogate: 2,4,6-TBP	87.7 %	19-132			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Semivolatile Organic Compounds by EPA Method 8270C  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water    Sampled: 05/10/04 10:45    Received: 05/13/04 14:10</b>									
Surrogate: Nitrobenzene-d5	80.5 %	44-124			4E14036	05/14/04	05/17/04	"	
Surrogate: p-Terphenyl-d14	87.5 %	10-132			"	"	"	"	
Surrogate: 2-FBP	80.1 %	41-129			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Conventional Chemistry Parameters by APHA/EPA Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>P-2 (B4E0378-01) Water Sampled: 05/10/04 13:22 Received: 05/13/04 14:10</b>									
Total Alkalinity	436	5.00 mg/L as CaCO3		1	4E20044	05/20/04	05/20/04	EPA 310.1	
<b>LMW8-51004 (B4E0378-02) Water Sampled: 05/10/04 15:15 Received: 05/13/04 14:10</b>									
Total Alkalinity	389	5.00 mg/L as CaCO3		1	4E20044	05/20/04	05/20/04	EPA 310.1	
<b>LMW55-51204 (B4E0378-03) Water Sampled: 05/12/04 09:00 Received: 05/13/04 14:10</b>									
Total Alkalinity	477	5.00 mg/L as CaCO3		1	4E20044	05/20/04	05/20/04	EPA 310.1	
<b>LMW5-51204 (B4E0378-04) Water Sampled: 05/12/04 09:35 Received: 05/13/04 14:10</b>									
Total Alkalinity	488	5.00 mg/L as CaCO3		1	4E20044	05/20/04	05/20/04	EPA 310.1	
<b>LMW3-51204 (B4E0378-06) Water Sampled: 05/12/04 11:30 Received: 05/13/04 14:10</b>									
Total Alkalinity	156	5.00 mg/L as CaCO3		1	4E20044	05/20/04	05/20/04	EPA 310.1	
<b>LMW9-51004 (B4E0378-11) Water Sampled: 05/10/04 10:45 Received: 05/13/04 14:10</b>									
Total Alkalinity	437	5.00 mg/L as CaCO3		1	4E20044	05/20/04	05/20/04	EPA 310.1	
Cyanide (total)	ND	0.0100 mg/l		"	4E20036	"	05/20/04	EPA 335.2 Mod	
Fluoride	ND	0.100 "		"	4E24044	05/24/04	05/24/04	EPA 340.2	
Nitrate/Nitrite-Nitrogen	ND	0.0100 mg/l as N		"	4E21033	05/21/04	05/21/04	EPA 353.2	
Total Dissolved Solids	450	10 mg/l		"	4E17034	05/17/04	05/19/04	EPA 160.1	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Anions by EPA Method 300.0**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>P-2 (B4E0378-01) Water Sampled: 05/10/04 13:22 Received: 05/13/04 14:10</b>									
Chloride	1.14	0.400	mg/l	1	4E21003	05/20/04	05/20/04	EPA 300.0	
Sulfate	9.57	0.400	"	"	"	"	"	"	
<b>LMW8-51004 (B4E0378-02) Water Sampled: 05/10/04 15:15 Received: 05/13/04 14:10</b>									
Chloride	2.42	0.400	mg/l	1	4E21003	05/20/04	05/20/04	EPA 300.0	
Sulfate	4.15	0.400	"	"	"	"	"	"	
<b>LMW55-51204 (B4E0378-03) Water Sampled: 05/12/04 09:00 Received: 05/13/04 14:10</b>									
Chloride	1.10	0.400	mg/l	1	4E21003	05/20/04	05/20/04	EPA 300.0	
Sulfate	8.34	0.400	"	"	"	"	"	"	
<b>LMW5-51204 (B4E0378-04) Water Sampled: 05/12/04 09:35 Received: 05/13/04 14:10</b>									
Chloride	1.07	0.400	mg/l	1	4E21003	05/20/04	05/20/04	EPA 300.0	
Sulfate	8.32	0.400	"	"	"	"	"	"	
<b>LMW3-51204 (B4E0378-06) Water Sampled: 05/12/04 11:30 Received: 05/13/04 14:10</b>									
Chloride	1.40	0.400	mg/l	1	4E21003	05/20/04	05/20/04	EPA 300.0	
Sulfate	12.4	0.800	"	2	"	"	"	"	
<b>LMW9-51004 (B4E0378-11) Water Sampled: 05/10/04 10:45 Received: 05/13/04 14:10</b>									
Chloride	1.44	0.400	mg/l	1	4E21003	05/20/04	05/20/04	EPA 300.0	
Sulfate	14.7	0.800	"	2	"	"	"	"	

North Creek Analytical - Bothell

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**Polychlorinated Biphenyls by EPA 8082 Modified with Micro-Extraction  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>LMW9-51004 (B4E0378-11) Water Sampled: 05/10/04 10:45 Received: 05/13/04 14:10</b>									
Aroclor 1016	ND	0.100	ug/l	1	4E17013	05/17/04	05/18/04	EPA 8082 Mod.	
Aroclor 1221	ND	0.100	"	"	"	"	"	"	
Aroclor 1232	ND	0.100	"	"	"	"	"	"	
Aroclor 1242	ND	0.100	"	"	"	"	"	"	
Aroclor 1248	ND	0.100	"	"	"	"	"	"	
Aroclor 1254	ND	0.100	"	"	"	"	"	"	
Aroclor 1260	ND	0.100	"	"	"	"	"	"	
Aroclor 1262	ND	0.100	"	"	"	"	"	"	
Aroclor 1268	ND	0.100	"	"	"	"	"	"	
Surrogate: TCX	112 %	29-130			"	"	"	"	
Surrogate: Decachlorobiphenyl	115 %	22-112			"	"	"	"	S-03

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E14039: Prepared 05/14/04 Using EPA 3520C**

**Blank (4E14039-BLK1)**

Gx Range Hydrocarbons	ND	0.250	mg/l							
Kerosene Range Hydrocarbons	ND	0.630	"							
Diesel Range Hydrocarbons	ND	0.630	"							
Insulating Oil Range Hydrocarbons	ND	0.630	"							
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"							
Lube Oil Range Hydrocarbons	ND	0.630	"							
Surrogate: 2-FBP	DET		"	0.320		81.6	50-150			
Surrogate: Octacosane	DET		"	0.160		77.5	50-150			

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 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Total Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17017: Prepared 05/17/04 Using EPA 3010A**

**Blank (4E17017-BLK1)**

Calcium	ND	0.250	mg/l							
Iron	ND	0.150	"							
Potassium	ND	2.00	"							
Magnesium	ND	0.500	"							
Manganese	ND	0.0100	"							
Sodium	ND	0.250	"							

**LCS (4E17017-BS1)**

Calcium	4.56	0.250	mg/l	5.00		91.2	80-120			
Iron	4.76	0.150	"	5.00		95.2	80-120			
Potassium	9.03	2.00	"	10.0		90.3	80-120			
Magnesium	4.95	0.500	"	5.00		99.0	80-120			
Manganese	4.84	0.0100	"	5.00		96.8	80-120			
Sodium	4.99	0.250	"	5.00		99.8	80-120			

**LCS Dup (4E17017-BSD1)**

Calcium	4.51	0.250	mg/l	5.00		90.2	80-120	1.10	20	
Iron	4.73	0.150	"	5.00		94.6	80-120	0.632	20	
Potassium	8.78	2.00	"	10.0		87.8	80-120	2.81	20	
Magnesium	4.92	0.500	"	5.00		98.4	80-120	0.608	20	
Manganese	4.80	0.0100	"	5.00		96.0	80-120	0.830	20	
Sodium	4.97	0.250	"	5.00		99.4	80-120	0.402	20	

**Matrix Spike (4E17017-MS1)**

Source: B4E0298-01

Calcium	8.47	0.250	mg/l	5.00	3.70	95.4	75-125			
Iron	6.08	0.150	"	5.00	1.32	95.2	75-125			
Potassium	9.49	2.00	"	10.0	ND	94.9	80-120			
Magnesium	5.43	0.500	"	5.00	0.358	101	80-120			
Manganese	4.93	0.0100	"	5.00	0.0440	97.7	75-125			
Sodium	6.51	0.250	"	5.00	1.38	103	75-125			

North Creek Analytical - Bothell

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**Total Metals by EPA 6000/7000 Series Methods - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 4E17017: Prepared 05/17/04 Using EPA 3010A**

**Matrix Spike Dup (4E17017-MSD1)**

**Source: B4E0298-01**

Calcium	8.44	0.250	mg/l	5.00	3.70	94.8	75-125	0.355	20	
Iron	6.05	0.150	"	5.00	1.32	94.6	75-125	0.495	20	
Potassium	9.45	2.00	"	10.0	ND	94.5	80-120	0.422	20	
Magnesium	5.39	0.500	"	5.00	0.358	101	80-120	0.739	20	
Manganese	4.90	0.0100	"	5.00	0.0440	97.1	75-125	0.610	20	
Sodium	6.41	0.250	"	5.00	1.38	101	75-125	1.55	20	

North Creek Analytical - Bothell

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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17022: Prepared 05/17/04 Using EPA 7470A**

**Blank (4E17022-BLK1)**

Mercury ND 0.000200 mg/l

**LCS (4E17022-BS1)**

Mercury 0.00495 0.000200 mg/l 0.00500 99.0 80-120

**LCS Dup (4E17022-BSD1)**

Mercury 0.00493 0.000200 mg/l 0.00500 98.6 80-120 0.405 20

**Matrix Spike (4E17022-MS1)**

**Source: B4E0378-02**

Mercury 0.00519 0.000200 mg/l 0.00500 ND 104 70-130

**Matrix Spike Dup (4E17022-MSD1)**

**Source: B4E0378-02**

Mercury 0.00538 0.000200 mg/l 0.00500 ND 108 70-130 3.60 20

**Batch 4E17026: Prepared 05/17/04 Using EPA 3005A**

**Blank (4E17026-BLK1)**

Silver	ND	0.00100	mg/l							
Arsenic	ND	0.00100	"							
Barium	ND	0.0100	"							
Beryllium	ND	0.00100	"							
Cadmium	ND	0.00100	"							
Cobalt	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00100	"							
Manganese	ND	0.0100	"							
Nickel	ND	0.00100	"							
Lead	ND	0.00100	"							
Antimony	ND	0.00300	"							
Selenium	ND	0.00100	"							
Thallium	ND	0.00100	"							
Vanadium	ND	0.00100	"							
Zinc	ND	0.0100	"							

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17026: Prepared 05/17/04 Using EPA 3005A**

**LCS (4E17026-BS1)**

Silver	0.196	0.00100	mg/l	0.200		98.0	80-120			
Arsenic	0.198	0.00100	"	0.200		99.0	80-120			
Barium	0.201	0.0100	"	0.200		100	80-120			
Beryllium	0.220	0.00100	"	0.200		110	80-120			
Cadmium	0.202	0.00100	"	0.200		101	80-120			
Cobalt	0.202	0.00100	"	0.200		101	80-120			
Chromium	0.200	0.00100	"	0.200		100	80-120			
Copper	0.205	0.00100	"	0.200		102	80-120			
Manganese	0.204	0.0100	"	0.200		102	80-120			
Nickel	0.195	0.00100	"	0.200		97.5	80-120			
Lead	0.198	0.00100	"	0.200		99.0	80-120			
Antimony	0.0490	0.00300	"	0.0500		98.0	80-120			
Selenium	0.195	0.00100	"	0.200		97.5	80-120			
Thallium	0.197	0.00100	"	0.200		98.5	80-120			
Vanadium	0.206	0.00100	"	0.200		103	80-120			
Zinc	0.204	0.0100	"	0.200		102	80-120			

**LCS Dup (4E17026-BSD1)**

Silver	0.196	0.00100	mg/l	0.200		98.0	80-120	0.00	20	
Arsenic	0.197	0.00100	"	0.200		98.5	80-120	0.506	20	
Barium	0.204	0.0100	"	0.200		102	80-120	1.48	20	
Beryllium	0.218	0.00100	"	0.200		109	80-120	0.913	20	
Cadmium	0.202	0.00100	"	0.200		101	80-120	0.00	20	
Cobalt	0.201	0.00100	"	0.200		100	80-120	0.496	20	
Chromium	0.200	0.00100	"	0.200		100	80-120	0.00	20	
Copper	0.206	0.00100	"	0.200		103	80-120	0.487	20	
Manganese	0.204	0.0100	"	0.200		102	80-120	0.00	20	
Nickel	0.194	0.00100	"	0.200		97.0	80-120	0.514	20	
Lead	0.198	0.00100	"	0.200		99.0	80-120	0.00	20	
Antimony	0.0491	0.00300	"	0.0500		98.2	80-120	0.204	20	
Selenium	0.198	0.00100	"	0.200		99.0	80-120	1.53	20	
Thallium	0.198	0.00100	"	0.200		99.0	80-120	0.506	20	
Vanadium	0.206	0.00100	"	0.200		103	80-120	0.00	20	
Zinc	0.206	0.0100	"	0.200		103	80-120	0.976	20	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17026: Prepared 05/17/04 Using EPA 3005A**

**Matrix Spike (4E17026-MS1)**

**Source: B4E0378-02**

Silver	0.0906	0.00100	mg/l	0.100	ND	90.6	21-136			
Arsenic	0.141	0.00100	"	0.100	0.00390	137	75-125			Q-02
Barium	0.171	0.0100	"	0.100	0.0547	116	75-125			
Beryllium	0.109	0.00100	"	0.100	ND	109	75-125			
Cadmium	0.116	0.00100	"	0.100	ND	116	75-125			
Cobalt	0.108	0.00100	"	0.100	0.00289	105	75-125			
Chromium	0.112	0.00100	"	0.100	0.000866	111	75-125			
Copper	0.111	0.00100	"	0.100	0.000819	110	70-124			
Manganese	1.54	0.100	"	0.100	1.52	20.0	54-158			Q-15
Nickel	0.103	0.00100	"	0.100	0.00273	100	76-125			
Lead	0.0982	0.00100	"	0.100	ND	98.2	75-125			
Antimony	0.0569	0.00300	"	0.0500	0.00106	112	78-125			
Selenium	0.152	0.00100	"	0.100	0.000680	151	76-128			Q-02
Thallium	0.100	0.00100	"	0.100	ND	100	75-125			
Vanadium	0.120	0.00100	"	0.100	0.00248	118	75-129			
Zinc	0.120	0.0100	"	0.100	0.00500	115	75-131			

**Matrix Spike Dup (4E17026-MSD1)**

**Source: B4E0378-02**

Silver	0.0915	0.00100	mg/l	0.100	ND	91.5	21-136	0.988	50	
Arsenic	0.150	0.00100	"	0.100	0.00390	146	75-125	6.19	20	Q-02
Barium	0.178	0.0100	"	0.100	0.0547	123	75-125	4.01	20	
Beryllium	0.112	0.00100	"	0.100	ND	112	75-125	2.71	20	
Cadmium	0.122	0.00100	"	0.100	ND	122	75-125	5.04	20	
Cobalt	0.113	0.00100	"	0.100	0.00289	110	75-125	4.52	20	
Chromium	0.118	0.00100	"	0.100	0.000866	117	75-125	5.22	20	
Copper	0.117	0.00100	"	0.100	0.000819	116	70-124	5.26	20	
Manganese	1.52	0.100	"	0.100	1.52	0.00	54-158	1.31	20	Q-15
Nickel	0.108	0.00100	"	0.100	0.00273	105	76-125	4.74	20	
Lead	0.0999	0.00100	"	0.100	ND	99.9	75-125	1.72	20	
Antimony	0.0602	0.00300	"	0.0500	0.00106	118	78-125	5.64	20	
Selenium	0.164	0.00100	"	0.100	0.000680	163	76-128	7.59	20	Q-02
Thallium	0.102	0.00100	"	0.100	ND	102	75-125	1.98	20	
Vanadium	0.126	0.00100	"	0.100	0.00248	124	75-129	4.88	20	
Zinc	0.127	0.0100	"	0.100	0.00500	122	75-131	5.67	20	

North Creek Analytical - Bothell

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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18024: Prepared 05/18/04 Using EPA 3005A**

**Blank (4E18024-BLK1)**

Aluminum	ND	0.200	mg/l							
Calcium	ND	0.250	"							
Iron	ND	0.150	"							
Potassium	ND	2.00	"							
Magnesium	ND	0.500	"							
Sodium	ND	0.250	"							

**LCS (4E18024-BS1)**

Aluminum	4.71	0.200	mg/l	5.00		94.2	80-120			
Calcium	4.80	0.250	"	5.00		96.0	80-120			
Iron	4.72	0.150	"	5.00		94.4	80-120			
Potassium	9.05	2.00	"	10.0		90.5	80-120			
Magnesium	4.93	0.500	"	5.00		98.6	80-120			
Sodium	4.81	0.250	"	5.00		96.2	80-120			

**LCS Dup (4E18024-BSD1)**

Aluminum	4.71	0.200	mg/l	5.00		94.2	80-120	0.00	20	
Calcium	4.82	0.250	"	5.00		96.4	80-120	0.416	20	
Iron	4.73	0.150	"	5.00		94.6	80-120	0.212	20	
Potassium	9.28	2.00	"	10.0		92.8	80-120	2.51	20	
Magnesium	4.93	0.500	"	5.00		98.6	80-120	0.00	20	
Sodium	4.81	0.250	"	5.00		96.2	80-120	0.00	20	

**Matrix Spike (4E18024-MS1)**

**Source: B4E0378-02**

Aluminum	5.23	0.200	mg/l	5.00	ND	105	80-120			
Calcium	88.3	0.250	"	5.00	84.0	86.0	80-120			
Iron	10.3	0.150	"	5.00	5.19	102	80-120			
Potassium	15.0	2.00	"	10.0	4.39	106	80-120			
Magnesium	49.6	0.500	"	5.00	44.5	102	80-120			
Sodium	23.3	0.250	"	5.00	18.0	106	80-120			

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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18024: Prepared 05/18/04 Using EPA 3005A**

**Matrix Spike Dup (4E18024-MSD1)**

**Source: B4E0378-02**

Aluminum	5.13	0.200	mg/l	5.00	ND	103	80-120	1.93	20	
Calcium	87.8	0.250	"	5.00	84.0	76.0	80-120	0.568	20	Q-03
Iron	10.2	0.150	"	5.00	5.19	100	80-120	0.976	20	
Potassium	15.8	2.00	"	10.0	4.39	114	80-120	5.19	20	
Magnesium	48.4	0.500	"	5.00	44.5	78.0	80-120	2.45	20	Q-03
Sodium	22.5	0.250	"	5.00	18.0	90.0	80-120	3.49	20	

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**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17008: Prepared 05/17/04 Using EPA 3520C**

**Blank (4E17008-BLK1)**

Aldrin	ND	0.0500	ug/l							
alpha-BHC	ND	0.0400	"							
beta-BHC	ND	0.0400	"							
delta-BHC	ND	0.0500	"							
gamma-BHC (Lindane)	ND	0.0400	"							
Chlordane (tech)	ND	0.500	"							
alpha-Chlordane	ND	0.0400	"							
gamma-Chlordane	ND	0.0400	"							
4,4'-DDD	ND	0.0400	"							
4,4'-DDE	ND	0.0800	"							
4,4'-DDT	ND	0.0800	"							
Dieldrin	ND	0.0800	"							
Endosulfan I	ND	0.0200	"							
Endosulfan II	ND	0.0800	"							
Endosulfan sulfate	ND	0.100	"							
Endrin	ND	0.0800	"							
Endrin aldehyde	ND	0.160	"							
Endrin ketone	ND	0.0800	"							
Heptachlor	ND	0.0500	"							
Heptachlor epoxide	ND	0.0400	"							
Methoxychlor	ND	0.500	"							
Toxaphene	ND	2.00	"							

Surrogate: TCX	0.205		"	0.200		102	24-143
Surrogate: Decachlorobiphenyl	0.180		"	0.200		90.0	10-145

**LCS (4E17008-BS1)**

Aldrin	0.255	0.0800	ug/l	0.250		102	55-127
alpha-BHC	0.274	0.0400	"	0.250		110	60-124
beta-BHC	0.268	0.0400	"	0.250		107	57-139
delta-BHC	0.282	0.100	"	0.250		113	20-113
gamma-BHC (Lindane)	0.269	0.0400	"	0.250		108	61-127
alpha-Chlordane	0.245	0.0400	"	0.250		98.0	40-160
gamma-Chlordane	0.240	0.0400	"	0.250		96.0	40-160
4,4'-DDD	0.607	0.0400	"	0.500		121	59-130

North Creek Analytical - Bothell

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**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17008: Prepared 05/17/04 Using EPA 3520C**

**LCS (4E17008-BS1)**

4,4'-DDE	0.568	0.0800	ug/l	0.500		114	61-128			
4,4'-DDT	0.518	0.0800	"	0.500		104	71-139			
Dieldrin	0.536	0.0800	"	0.500		107	59-124			
Endosulfan I	0.251	0.0200	"	0.250		100	44-140			
Endosulfan II	0.524	0.0800	"	0.500		105	43-145			
Endosulfan sulfate	0.532	0.100	"	0.500		106	63-116			
Endrin	0.498	0.0800	"	0.500		99.6	66-127			
Endrin aldehyde	0.534	0.160	"	0.500		107	51-122			
Endrin ketone	0.598	0.0800	"	0.500		120	40-160			
Heptachlor	0.249	0.0800	"	0.250		99.6	60-133			
Heptachlor epoxide	0.247	0.0400	"	0.250		98.8	63-126			
Methoxychlor	2.32	0.500	"	2.50		92.8	73-144			
Surrogate: TCX	0.194		"	0.200		97.0	24-143			
Surrogate: Decachlorobiphenyl	0.219		"	0.200		110	10-145			

**LCS Dup (4E17008-BSD1)**

Aldrin	0.253	0.0800	ug/l	0.250		101	55-127	0.787	30	
alpha-BHC	0.275	0.0400	"	0.250		110	60-124	0.364	30	
beta-BHC	0.260	0.0400	"	0.250		104	57-139	3.03	30	
delta-BHC	0.276	0.100	"	0.250		110	20-113	2.15	30	
gamma-BHC (Lindane)	0.269	0.0400	"	0.250		108	61-127	0.00	30	
alpha-Chlordane	0.244	0.0400	"	0.250		97.6	40-160	0.409	30	
gamma-Chlordane	0.241	0.0400	"	0.250		96.4	40-160	0.416	30	
4,4'-DDD	0.588	0.0400	"	0.500		118	59-130	3.18	30	
4,4'-DDE	0.565	0.0800	"	0.500		113	61-128	0.530	30	
4,4'-DDT	0.513	0.0800	"	0.500		103	71-139	0.970	35	
Dieldrin	0.533	0.0800	"	0.500		107	59-124	0.561	35	
Endosulfan I	0.247	0.0200	"	0.250		98.8	44-140	1.61	30	
Endosulfan II	0.524	0.0800	"	0.500		105	43-145	0.00	30	
Endosulfan sulfate	0.532	0.100	"	0.500		106	63-116	0.00	30	
Endrin	0.522	0.0800	"	0.500		104	66-127	4.71	35	
Endrin aldehyde	0.519	0.160	"	0.500		104	51-122	2.85	30	
Endrin ketone	0.587	0.0800	"	0.500		117	40-160	1.86	30	
Heptachlor	0.246	0.0800	"	0.250		98.4	60-133	1.21	30	

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**Organochlorine Pesticides by EPA Method 8081A - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4E17008: Prepared 05/17/04 Using EPA 3520C</b>										
<b>LCS Dup (4E17008-BSD1)</b>										
Heptachlor epoxide	0.250	0.0400	ug/l	0.250		100	63-126	1.21	30	
Methoxychlor	2.31	0.500	"	2.50		92.4	73-144	0.432	30	
Surrogate: TCX	0.193		"	0.200		96.5	24-143			
Surrogate: Decachlorobiphenyl	0.195		"	0.200		97.5	10-145			

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**Blank (4E18050-BLK1)**

1,1,1,2-Tetrachloroethane	ND	0.200	ug/l							
1,1,1-Trichloroethane	ND	0.200	"							
1,1,2,2-Tetrachloroethane	ND	0.500	"							
1,1,2-Trichloroethane	ND	0.200	"							
1,1-Dichloroethane	ND	0.200	"							
1,1-Dichloroethene	ND	0.200	"							
1,1-Dichloropropene	ND	0.200	"							
1,2,3-Trichlorobenzene	ND	0.200	"							
1,2,3-Trichloropropane	ND	0.500	"							
1,2,4-Trichlorobenzene	ND	0.200	"							
1,2,4-Trimethylbenzene	ND	0.200	"							
1,2-Dibromo-3-chloropropane	ND	0.500	"							
1,2-Dibromoethane	ND	0.200	"							
1,2-Dichlorobenzene	ND	0.200	"							
1,2-Dichloroethane	ND	0.200	"							
1,2-Dichloropropane	ND	0.200	"							
1,3,5-Trimethylbenzene	ND	0.500	"							
1,3-Dichlorobenzene	ND	0.200	"							
1,3-Dichloropropane	ND	0.200	"							
1,4-Dichlorobenzene	ND	0.200	"							
2,2-Dichloropropane	ND	0.500	"							
2-Butanone	ND	2.00	"							
2-Chlorotoluene	ND	0.500	"							
2-Hexanone	ND	2.00	"							
4-Chlorotoluene	ND	0.500	"							
4-Methyl-2-pentanone	ND	2.00	"							
Acetone	ND	10.0	"							
Benzene	ND	0.200	"							
Bromobenzene	ND	0.500	"							
Bromochloromethane	ND	0.200	"							
Bromodichloromethane	ND	0.200	"							
Bromoform	ND	0.200	"							
Bromomethane	ND	2.00	"							
Carbon disulfide	ND	0.500	"							

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**Blank (4E18050-BLK1)**

Carbon tetrachloride	ND	0.200	ug/l							
Chlorobenzene	ND	0.200	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	0.200	"							
Chloromethane	ND	1.00	"							
cis-1,2-Dichloroethene	ND	0.200	"							
cis-1,3-Dichloropropene	ND	0.200	"							
Dibromochloromethane	ND	0.200	"							
Dibromomethane	ND	0.200	"							
Dichlorodifluoromethane	ND	0.500	"							
Ethylbenzene	ND	0.200	"							
Hexachlorobutadiene	ND	0.500	"							
Isopropylbenzene	ND	0.500	"							
m,p-Xylene	ND	0.500	"							
Methyl tert-butyl ether	ND	1.00	"							
Methylene chloride	ND	5.00	"							
n-Butylbenzene	ND	0.200	"							
n-Propylbenzene	ND	0.500	"							
Naphthalene	ND	0.500	"							
o-Xylene	ND	0.250	"							
p-Isopropyltoluene	ND	0.200	"							
sec-Butylbenzene	ND	0.200	"							
Styrene	ND	0.500	"							
tert-Butylbenzene	ND	0.500	"							
Tetrachloroethene	ND	0.200	"							
Toluene	ND	0.200	"							
trans-1,2-Dichloroethene	ND	0.200	"							
trans-1,3-Dichloropropene	ND	0.200	"							
Trichloroethene	ND	0.200	"							
Trichlorofluoromethane	ND	0.500	"							
Vinyl chloride	ND	0.200	"							
Surrogate: 1,2-DCA-d4	3.97		"	4.00		99.2	70-130			
Surrogate: Toluene-d8	3.94		"	4.00		98.5	70-130			
Surrogate: 4-BFB	3.90		"	4.00		97.5	70-130			

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**LCS (4E18050-BS1)**

1,1,1,2-Tetrachloroethane	1.95	0.200	ug/l	2.00		97.5	80-120			
1,1,1-Trichloroethane	2.02	0.200	"	2.00		101	80-120			
1,1,2,2-Tetrachloroethane	1.90	0.500	"	2.00		95.0	80-120			
1,1,2-Trichloroethane	1.96	0.200	"	2.00		98.0	80-120			
1,1-Dichloroethane	1.96	0.200	"	2.00		98.0	80-120			
1,1-Dichloroethene	2.02	0.200	"	2.00		101	80-120			
1,1-Dichloropropene	2.03	0.200	"	2.00		102	80-120			
1,2,3-Trichlorobenzene	1.93	0.200	"	2.00		96.5	80-120			
1,2,3-Trichloropropane	1.94	0.500	"	2.00		97.0	80-120			
1,2,4-Trichlorobenzene	1.93	0.200	"	2.00		96.5	80-120			
1,2,4-Trimethylbenzene	2.07	0.200	"	2.00		104	80-120			
1,2-Dibromo-3-chloropropane	1.92	0.500	"	2.00		96.0	80-120			
1,2-Dibromoethane	1.98	0.200	"	2.00		99.0	80-120			
1,2-Dichlorobenzene	1.94	0.200	"	2.00		97.0	80-120			
1,2-Dichloroethane	1.99	0.200	"	2.00		99.5	80-120			
1,2-Dichloropropane	2.00	0.200	"	2.00		100	80-120			
1,3,5-Trimethylbenzene	2.06	0.500	"	2.00		103	80-120			
1,3-Dichlorobenzene	2.00	0.200	"	2.00		100	80-120			
1,3-Dichloropropane	1.95	0.200	"	2.00		97.5	80-120			
1,4-Dichlorobenzene	1.93	0.200	"	2.00		96.5	80-120			
2,2-Dichloropropane	1.84	0.500	"	2.00		92.0	80-120			
2-Butanone	18.5	2.00	"	20.0		92.5	80-120			
2-Chlorotoluene	2.04	0.500	"	2.00		102	80-120			
2-Hexanone	17.8	2.00	"	20.0		89.0	80-120			
4-Chlorotoluene	2.00	0.500	"	2.00		100	80-120			
4-Methyl-2-pentanone	18.8	2.00	"	20.0		94.0	80-120			
Acetone	18.0	10.0	"	20.0		90.0	80-120			
Benzene	1.99	0.200	"	2.00		99.5	80-120			
Bromobenzene	1.99	0.500	"	2.00		99.5	80-120			
Bromochloromethane	2.06	0.200	"	2.00		103	80-120			
Bromodichloromethane	2.00	0.200	"	2.00		100	80-120			
Bromoform	1.99	0.200	"	2.00		99.5	80-120			
Bromomethane	2.11	2.00	"	2.00		106	80-120			

North Creek Analytical - Bothell

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**LCS (4E18050-BS1)**

Carbon disulfide	1.97	0.500	ug/l	2.00		98.5	80-120			
Carbon tetrachloride	2.13	0.200	"	2.00		106	80-120			
Chlorobenzene	1.96	0.200	"	2.00		98.0	80-120			
Chloroethane	1.98	1.00	"	2.00		99.0	80-120			
Chloroform	1.86	0.200	"	2.00		93.0	80-120			
Chloromethane	1.90	1.00	"	2.00		95.0	80-120			
cis-1,2-Dichloroethene	2.02	0.200	"	2.00		101	80-120			
cis-1,3-Dichloropropene	2.01	0.200	"	2.00		100	80-120			
Dibromochloromethane	1.99	0.200	"	2.00		99.5	80-120			
Dibromomethane	2.05	0.200	"	2.00		102	80-120			
Dichlorodifluoromethane	1.96	0.500	"	2.00		98.0	80-120			
Ethylbenzene	1.98	0.200	"	2.00		99.0	80-120			
Hexachlorobutadiene	2.01	0.500	"	2.00		100	80-120			
Isopropylbenzene	2.01	0.500	"	2.00		100	80-120			
m,p-Xylene	4.02	0.500	"	4.00		100	80-120			
Methyl tert-butyl ether	1.93	1.00	"	2.00		96.5	80-120			
Methylene chloride	2.01	5.00	"	2.00		100	80-120			
n-Butylbenzene	2.07	0.200	"	2.00		104	80-120			
n-Propylbenzene	2.03	0.500	"	2.00		102	80-120			
Naphthalene	2.20	0.500	"	2.00		110	80-120			
o-Xylene	1.99	0.250	"	2.00		99.5	80-120			
p-Isopropyltoluene	2.07	0.200	"	2.00		104	80-120			
sec-Butylbenzene	2.08	0.200	"	2.00		104	80-120			
Styrene	2.01	0.500	"	2.00		100	80-120			
tert-Butylbenzene	2.07	0.500	"	2.00		104	80-120			
Tetrachloroethene	2.00	0.200	"	2.00		100	80-120			
Toluene	1.97	0.200	"	2.00		98.5	80-120			
trans-1,2-Dichloroethene	1.97	0.200	"	2.00		98.5	80-120			
trans-1,3-Dichloropropene	2.02	0.200	"	2.00		101	80-120			
Trichloroethene	1.95	0.200	"	2.00		97.5	80-120			
Trichlorofluoromethane	1.97	0.500	"	2.00		98.5	80-120			
Vinyl chloride	1.96	0.200	"	2.00		98.0	80-120			
Surrogate: 1,2-DCA-d4	4.05		"	4.00		101	70-130			

North Creek Analytical - Bothell

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**LCS (4E18050-BS1)**

Surrogate: Toluene-d8	3.93		ug/l	4.00		98.2	70-130			
Surrogate: 4-BFB	4.04		"	4.00		101	70-130			

**LCS Dup (4E18050-BSD1)**

1,1,1,2-Tetrachloroethane	2.01	0.200	ug/l	2.00		100	80-120	3.03	30	
1,1,1-Trichloroethane	2.07	0.200	"	2.00		104	80-120	2.44	30	
1,1,2,2-Tetrachloroethane	1.79	0.500	"	2.00		89.5	80-120	5.96	30	
1,1,2-Trichloroethane	2.01	0.200	"	2.00		100	80-120	2.52	30	
1,1-Dichloroethane	2.01	0.200	"	2.00		100	80-120	2.52	30	
1,1-Dichloroethene	2.07	0.200	"	2.00		104	80-120	2.44	30	
1,1-Dichloropropene	2.04	0.200	"	2.00		102	80-120	0.491	30	
1,2,3-Trichlorobenzene	1.92	0.200	"	2.00		96.0	80-120	0.519	30	
1,2,3-Trichloropropane	1.87	0.500	"	2.00		93.5	80-120	3.67	30	
1,2,4-Trichlorobenzene	1.96	0.200	"	2.00		98.0	80-120	1.54	30	
1,2,4-Trimethylbenzene	2.12	0.200	"	2.00		106	80-120	2.39	30	
1,2-Dibromo-3-chloropropane	1.92	0.500	"	2.00		96.0	80-120	0.00	30	
1,2-Dibromoethane	2.04	0.200	"	2.00		102	80-120	2.99	30	
1,2-Dichlorobenzene	1.96	0.200	"	2.00		98.0	80-120	1.03	30	
1,2-Dichloroethane	2.01	0.200	"	2.00		100	80-120	1.00	30	
1,2-Dichloropropane	2.01	0.200	"	2.00		100	80-120	0.499	30	
1,3,5-Trimethylbenzene	2.11	0.500	"	2.00		106	80-120	2.40	30	
1,3-Dichlorobenzene	2.00	0.200	"	2.00		100	80-120	0.00	30	
1,3-Dichloropropane	1.98	0.200	"	2.00		99.0	80-120	1.53	30	
1,4-Dichlorobenzene	1.97	0.200	"	2.00		98.5	80-120	2.05	30	
2,2-Dichloropropane	1.85	0.500	"	2.00		92.5	80-120	0.542	30	
2-Butanone	18.1	2.00	"	20.0		90.5	80-120	2.19	30	
2-Chlorotoluene	2.04	0.500	"	2.00		102	80-120	0.00	30	
2-Hexanone	18.5	2.00	"	20.0		92.5	80-120	3.86	30	
4-Chlorotoluene	2.12	0.500	"	2.00		106	80-120	5.83	30	
4-Methyl-2-pentanone	18.6	2.00	"	20.0		93.0	80-120	1.07	30	
Acetone	17.8	10.0	"	20.0		89.0	80-120	1.12	30	
Benzene	2.03	0.200	"	2.00		102	80-120	1.99	30	
Bromobenzene	2.00	0.500	"	2.00		100	80-120	0.501	30	
Bromochloromethane	2.00	0.200	"	2.00		100	80-120	2.96	30	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**LCS Dup (4E18050-BSD1)**

Bromodichloromethane	2.05	0.200	ug/l	2.00		102	80-120	2.47	30	
Bromoform	2.04	0.200	"	2.00		102	80-120	2.48	30	
Bromomethane	2.32	2.00	"	2.00		116	80-120	9.48	30	
Carbon disulfide	2.03	0.500	"	2.00		102	80-120	3.00	30	
Carbon tetrachloride	2.19	0.200	"	2.00		110	80-120	2.78	30	
Chlorobenzene	2.07	0.200	"	2.00		104	80-120	5.46	30	
Chloroethane	2.11	1.00	"	2.00		106	80-120	6.36	30	
Chloroform	1.87	0.200	"	2.00		93.5	80-120	0.536	30	
Chloromethane	2.08	1.00	"	2.00		104	80-120	9.05	30	
cis-1,2-Dichloroethene	2.03	0.200	"	2.00		102	80-120	0.494	30	
cis-1,3-Dichloropropene	1.98	0.200	"	2.00		99.0	80-120	1.50	30	
Dibromochloromethane	2.01	0.200	"	2.00		100	80-120	1.00	30	
Dibromomethane	2.00	0.200	"	2.00		100	80-120	2.47	30	
Dichlorodifluoromethane	2.00	0.500	"	2.00		100	80-120	2.02	30	
Ethylbenzene	2.12	0.200	"	2.00		106	80-120	6.83	30	
Hexachlorobutadiene	2.01	0.500	"	2.00		100	80-120	0.00	30	
Isopropylbenzene	2.12	0.500	"	2.00		106	80-120	5.33	30	
m,p-Xylene	4.20	0.500	"	4.00		105	80-120	4.38	30	
Methyl tert-butyl ether	1.91	1.00	"	2.00		95.5	80-120	1.04	30	
Methylene chloride	2.02	5.00	"	2.00		101	80-120	0.496	30	
n-Butylbenzene	2.12	0.200	"	2.00		106	80-120	2.39	30	
n-Propylbenzene	2.09	0.500	"	2.00		104	80-120	2.91	30	
Naphthalene	2.11	0.500	"	2.00		106	80-120	4.18	30	
o-Xylene	2.10	0.250	"	2.00		105	80-120	5.38	30	
p-Isopropyltoluene	2.11	0.200	"	2.00		106	80-120	1.91	30	
sec-Butylbenzene	2.11	0.200	"	2.00		106	80-120	1.43	30	
Styrene	2.17	0.500	"	2.00		108	80-120	7.66	30	
tert-Butylbenzene	2.08	0.500	"	2.00		104	80-120	0.482	30	
Tetrachloroethene	2.10	0.200	"	2.00		105	80-120	4.88	30	
Toluene	2.10	0.200	"	2.00		105	80-120	6.39	30	
trans-1,2-Dichloroethene	2.01	0.200	"	2.00		100	80-120	2.01	30	
trans-1,3-Dichloropropene	2.05	0.200	"	2.00		102	80-120	1.47	30	
Trichloroethene	2.05	0.200	"	2.00		102	80-120	5.00	30	
Trichlorofluoromethane	2.02	0.500	"	2.00		101	80-120	2.51	30	

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E18050: Prepared 05/18/04 Using EPA 5030B**

**LCS Dup (4E18050-BSD1)**

Vinyl chloride	2.10	0.200	ug/l	2.00		105	80-120	6.90	30	
Surrogate: 1,2-DCA-d4	3.92		"	4.00		98.0	70-130			
Surrogate: Toluene-d8	4.11		"	4.00		103	70-130			
Surrogate: 4-BFB	4.01		"	4.00		100	70-130			

**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Blank (4E19026-BLK1)**

1,1,1,2-Tetrachloroethane	ND	0.200	ug/l							
1,1,1-Trichloroethane	ND	0.200	"							
1,1,2,2-Tetrachloroethane	ND	0.500	"							
1,1,2-Trichloroethane	ND	0.200	"							
1,1-Dichloroethane	ND	0.200	"							
1,1-Dichloroethene	ND	0.200	"							
1,1-Dichloropropene	ND	0.200	"							
1,2,3-Trichlorobenzene	ND	0.200	"							
1,2,3-Trichloropropane	ND	0.500	"							
1,2,4-Trichlorobenzene	ND	0.200	"							
1,2,4-Trimethylbenzene	ND	0.200	"							
1,2-Dibromo-3-chloropropane	ND	0.500	"							
1,2-Dibromoethane	ND	0.200	"							
1,2-Dichlorobenzene	ND	0.200	"							
1,2-Dichloroethane	ND	0.200	"							
1,2-Dichloropropane	ND	0.200	"							
1,3,5-Trimethylbenzene	ND	0.500	"							
1,3-Dichlorobenzene	ND	0.200	"							
1,3-Dichloropropane	ND	0.200	"							
1,4-Dichlorobenzene	ND	0.200	"							
2,2-Dichloropropane	ND	0.500	"							
2-Butanone	ND	2.00	"							
2-Chlorotoluene	ND	0.500	"							
2-Hexanone	ND	2.00	"							
4-Chlorotoluene	ND	0.500	"							
4-Methyl-2-pentanone	ND	2.00	"							
Acetone	ND	10.0	"							

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Blank (4E19026-BLK1)**

Benzene	ND	0.200	ug/l							
Bromobenzene	ND	0.500	"							
Bromochloromethane	ND	0.200	"							
Bromodichloromethane	ND	0.200	"							
Bromoform	ND	0.200	"							
Bromomethane	ND	2.00	"							
Carbon disulfide	ND	0.500	"							
Carbon tetrachloride	ND	0.200	"							
Chlorobenzene	ND	0.200	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	0.200	"							
Chloromethane	ND	1.00	"							
cis-1,2-Dichloroethene	ND	0.200	"							
cis-1,3-Dichloropropene	ND	0.200	"							
Dibromochloromethane	ND	0.200	"							
Dibromomethane	ND	0.200	"							
Dichlorodifluoromethane	ND	0.500	"							
Ethylbenzene	ND	0.200	"							
Hexachlorobutadiene	ND	0.500	"							
Isopropylbenzene	ND	0.500	"							
m,p-Xylene	ND	0.500	"							
Methyl tert-butyl ether	ND	1.00	"							
Methylene chloride	ND	2.00	"							
n-Butylbenzene	ND	0.200	"							
n-Propylbenzene	ND	0.500	"							
Naphthalene	ND	0.500	"							
o-Xylene	ND	0.250	"							
p-Isopropyltoluene	ND	0.200	"							
sec-Butylbenzene	ND	0.200	"							
Styrene	ND	0.500	"							
tert-Butylbenzene	ND	0.500	"							
Tetrachloroethene	ND	0.200	"							
Toluene	ND	0.200	"							
trans-1,2-Dichloroethene	ND	0.200	"							

North Creek Analytical - Bothell

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North Creek Analytical, Inc.  
Environmental Laboratory Network



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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Blank (4E19026-BLK1)**

trans-1,3-Dichloropropene	ND	0.200	ug/l							
Trichloroethene	ND	0.200	"							
Trichlorofluoromethane	ND	0.500	"							
Vinyl chloride	ND	0.200	"							
Surrogate: 1,2-DCA-d4	4.12		"	4.00		103	70-130			
Surrogate: Toluene-d8	3.97		"	4.00		99.2	70-130			
Surrogate: 4-BFB	4.11		"	4.00		103	70-130			

**LCS (4E19026-BS1)**

1,1,1,2-Tetrachloroethane	2.15	0.200	ug/l	2.00		108	80-120			
1,1,1-Trichloroethane	2.23	0.200	"	2.00		112	80-120			
1,1,2,2-Tetrachloroethane	1.91	0.500	"	2.00		95.5	80-120			
1,1,2-Trichloroethane	2.11	0.200	"	2.00		106	80-120			
1,1-Dichloroethane	2.13	0.200	"	2.00		106	80-120			
1,1-Dichloroethane	2.21	0.200	"	2.00		110	80-120			
1,1-Dichloropropene	2.22	0.200	"	2.00		111	80-120			
1,2,3-Trichlorobenzene	2.11	0.200	"	2.00		106	80-120			
1,2,3-Trichloropropane	2.09	0.500	"	2.00		104	80-120			
1,2,4-Trichlorobenzene	2.09	0.200	"	2.00		104	80-120			
1,2,4-Trimethylbenzene	2.22	0.200	"	2.00		111	80-120			
1,2-Dibromo-3-chloropropane	2.17	0.500	"	2.00		108	80-120			
1,2-Dibromoethane	2.08	0.200	"	2.00		104	80-120			
1,2-Dichlorobenzene	2.10	0.200	"	2.00		105	80-120			
1,2-Dichloroethane	2.15	0.200	"	2.00		108	80-120			
1,2-Dichloropropane	2.05	0.200	"	2.00		102	80-120			
1,3,5-Trimethylbenzene	2.22	0.500	"	2.00		111	80-120			
1,3-Dichlorobenzene	2.12	0.200	"	2.00		106	80-120			
1,3-Dichloropropane	2.09	0.200	"	2.00		104	80-120			
1,4-Dichlorobenzene	2.11	0.200	"	2.00		106	80-120			
2,2-Dichloropropane	2.28	0.500	"	2.00		114	80-120			
2-Butanone	19.2	2.00	"	20.0		96.0	80-120			
2-Chlorotoluene	2.01	0.500	"	2.00		100	80-120			
2-Hexanone	19.6	2.00	"	20.0		98.0	80-120			
4-Chlorotoluene	2.31	0.500	"	2.00		116	80-120			

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**LCS (4E19026-BS1)**

4-Methyl-2-pentanone	19.4	2.00	ug/l	20.0		97.0	80-120			
Acetone	19.5	10.0	"	20.0		97.5	80-120			
Benzene	2.14	0.200	"	2.00		107	80-120			
Bromobenzene	2.07	0.500	"	2.00		104	80-120			
Bromochloromethane	2.14	0.200	"	2.00		107	80-120			
Bromodichloromethane	2.11	0.200	"	2.00		106	80-120			
Bromoform	2.16	0.200	"	2.00		108	80-120			
Bromomethane	1.70	2.00	"	2.00		85.0	80-120			
Carbon disulfide	2.29	0.500	"	2.00		114	80-120			
Carbon tetrachloride	2.31	0.200	"	2.00		116	80-120			
Chlorobenzene	2.15	0.200	"	2.00		108	80-120			
Chloroethane	2.09	1.00	"	2.00		104	80-120			
Chloroform	1.98	0.200	"	2.00		99.0	80-120			
Chloromethane	2.01	1.00	"	2.00		100	80-120			
cis-1,2-Dichloroethene	2.17	0.200	"	2.00		108	80-120			
cis-1,3-Dichloropropene	2.12	0.200	"	2.00		106	80-120			
Dibromochloromethane	2.15	0.200	"	2.00		108	80-120			
Dibromomethane	2.08	0.200	"	2.00		104	80-120			
Dichlorodifluoromethane	2.09	0.500	"	2.00		104	80-120			
Ethylbenzene	2.21	0.200	"	2.00		110	80-120			
Hexachlorobutadiene	2.20	0.500	"	2.00		110	80-120			
Isopropylbenzene	2.17	0.500	"	2.00		108	80-120			
m,p-Xylene	4.41	0.500	"	4.00		110	80-120			
Methyl tert-butyl ether	2.06	1.00	"	2.00		103	80-120			
Methylene chloride	1.74	2.00	"	2.00		87.0	80-120			
n-Butylbenzene	2.20	0.200	"	2.00		110	80-120			
n-Propylbenzene	2.20	0.500	"	2.00		110	80-120			
Naphthalene	2.18	0.500	"	2.00		109	80-120			
o-Xylene	2.19	0.250	"	2.00		110	80-120			
p-Isopropyltoluene	2.20	0.200	"	2.00		110	80-120			
sec-Butylbenzene	2.21	0.200	"	2.00		110	80-120			
Styrene	2.24	0.500	"	2.00		112	80-120			
tert-Butylbenzene	2.21	0.500	"	2.00		110	80-120			
Tetrachloroethene	2.26	0.200	"	2.00		113	80-120			

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**LCS (4E19026-BS1)**

Toluene	2.16	0.200	ug/l	2.00		108	80-120			
trans-1,2-Dichloroethene	2.14	0.200	"	2.00		107	80-120			
trans-1,3-Dichloropropene	2.20	0.200	"	2.00		110	80-120			
Trichloroethene	2.15	0.200	"	2.00		108	80-120			
Trichlorofluoromethane	2.17	0.500	"	2.00		108	80-120			
Vinyl chloride	2.18	0.200	"	2.00		109	80-120			
Surrogate: 1,2-DCA-d4	4.06		"	4.00		102	70-130			
Surrogate: Toluene-d8	4.11		"	4.00		103	70-130			
Surrogate: 4-BFB	4.08		"	4.00		102	70-130			

**LCS Dup (4E19026-BS1)**

1,1,1,2-Tetrachloroethane	2.18	0.200	ug/l	2.00		109	80-120	1.39	30	
1,1,1-Trichloroethane	2.21	0.200	"	2.00		110	80-120	0.901	30	
1,1,2,2-Tetrachloroethane	1.87	0.500	"	2.00		93.5	80-120	2.12	30	
1,1,2-Trichloroethane	2.14	0.200	"	2.00		107	80-120	1.41	30	
1,1-Dichloroethane	2.15	0.200	"	2.00		108	80-120	0.935	30	
1,1-Dichloroethene	2.19	0.200	"	2.00		110	80-120	0.909	30	
1,1-Dichloropropene	2.17	0.200	"	2.00		108	80-120	2.28	30	
1,2,3-Trichlorobenzene	2.07	0.200	"	2.00		104	80-120	1.91	30	
1,2,3-Trichloropropane	1.98	0.500	"	2.00		99.0	80-120	5.41	30	
1,2,4-Trichlorobenzene	2.07	0.200	"	2.00		104	80-120	0.962	30	
1,2,4-Trimethylbenzene	2.15	0.200	"	2.00		108	80-120	3.20	30	
1,2-Dibromo-3-chloropropane	2.13	0.500	"	2.00		106	80-120	1.86	30	
1,2-Dibromoethane	2.17	0.200	"	2.00		108	80-120	4.24	30	
1,2-Dichlorobenzene	2.04	0.200	"	2.00		102	80-120	2.90	30	
1,2-Dichloroethane	2.00	0.200	"	2.00		100	80-120	7.23	30	
1,2-Dichloropropane	2.09	0.200	"	2.00		104	80-120	1.93	30	
1,3,5-Trimethylbenzene	2.16	0.500	"	2.00		108	80-120	2.74	30	
1,3-Dichlorobenzene	2.10	0.200	"	2.00		105	80-120	0.948	30	
1,3-Dichloropropane	2.13	0.200	"	2.00		106	80-120	1.90	30	
1,4-Dichlorobenzene	2.06	0.200	"	2.00		103	80-120	2.40	30	
2,2-Dichloropropane	2.25	0.500	"	2.00		112	80-120	1.32	30	
2-Butanone	19.4	2.00	"	20.0		97.0	80-120	1.04	30	
2-Chlorotoluene	1.99	0.500	"	2.00		99.5	80-120	1.00	30	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**LCS Dup (4E19026-BSD1)**

2-Hexanone	19.1	2.00	ug/l	20.0		95.5	80-120	2.58	30	
4-Chlorotoluene	2.30	0.500	"	2.00		115	80-120	0.434	30	
4-Methyl-2-pentanone	19.5	2.00	"	20.0		97.5	80-120	0.514	30	
Acetone	18.7	10.0	"	20.0		93.5	80-120	4.19	30	
Benzene	2.13	0.200	"	2.00		106	80-120	0.468	30	
Bromobenzene	2.04	0.500	"	2.00		102	80-120	1.46	30	
Bromochloromethane	2.11	0.200	"	2.00		106	80-120	1.41	30	
Bromodichloromethane	2.12	0.200	"	2.00		106	80-120	0.473	30	
Bromoform	2.16	0.200	"	2.00		108	80-120	0.00	30	
Bromomethane	1.80	2.00	"	2.00		90.0	80-120	5.71	30	
Carbon disulfide	2.24	0.500	"	2.00		112	80-120	2.21	30	
Carbon tetrachloride	2.27	0.200	"	2.00		114	80-120	1.75	30	
Chlorobenzene	2.13	0.200	"	2.00		106	80-120	0.935	30	
Chloroethane	2.05	1.00	"	2.00		102	80-120	1.93	30	
Chloroform	1.98	0.200	"	2.00		99.0	80-120	0.00	30	
Chloromethane	1.96	1.00	"	2.00		98.0	80-120	2.52	30	
cis-1,2-Dichloroethene	2.15	0.200	"	2.00		108	80-120	0.926	30	
cis-1,3-Dichloropropene	2.12	0.200	"	2.00		106	80-120	0.00	30	
Dibromochloromethane	2.21	0.200	"	2.00		110	80-120	2.75	30	
Dibromomethane	2.13	0.200	"	2.00		106	80-120	2.38	30	
Dichlorodifluoromethane	2.10	0.500	"	2.00		105	80-120	0.477	30	
Ethylbenzene	2.20	0.200	"	2.00		110	80-120	0.454	30	
Hexachlorobutadiene	2.15	0.500	"	2.00		108	80-120	2.30	30	
Isopropylbenzene	2.20	0.500	"	2.00		110	80-120	1.37	30	
m,p-Xylene	4.30	0.500	"	4.00		108	80-120	2.53	30	
Methyl tert-butyl ether	2.06	1.00	"	2.00		103	80-120	0.00	30	
Methylene chloride	1.74	2.00	"	2.00		87.0	80-120	0.00	30	
n-Butylbenzene	2.22	0.200	"	2.00		111	80-120	0.905	30	
n-Propylbenzene	2.12	0.500	"	2.00		106	80-120	3.70	30	
Naphthalene	2.23	0.500	"	2.00		112	80-120	2.27	30	
o-Xylene	2.17	0.250	"	2.00		108	80-120	0.917	30	
p-Isopropyltoluene	2.15	0.200	"	2.00		108	80-120	2.30	30	
sec-Butylbenzene	2.12	0.200	"	2.00		106	80-120	4.16	30	
Styrene	2.29	0.500	"	2.00		114	80-120	2.21	30	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**LCS Dup (4E19026-BSD1)**

tert-Butylbenzene	2.12	0.500	ug/l	2.00		106	80-120	4.16	30	
Tetrachloroethene	2.26	0.200	"	2.00		113	80-120	0.00	30	
Toluene	2.18	0.200	"	2.00		109	80-120	0.922	30	
trans-1,2-Dichloroethene	2.13	0.200	"	2.00		106	80-120	0.468	30	
trans-1,3-Dichloropropene	2.23	0.200	"	2.00		112	80-120	1.35	30	
Trichloroethene	2.14	0.200	"	2.00		107	80-120	0.466	30	
Trichlorofluoromethane	2.15	0.500	"	2.00		108	80-120	0.926	30	
Vinyl chloride	2.10	0.200	"	2.00		105	80-120	3.74	30	

Surrogate: 1,2-DCA-d4	4.09		"	4.00		102	70-130			
Surrogate: Toluene-d8	4.12		"	4.00		103	70-130			
Surrogate: 4-BFB	3.89		"	4.00		97.2	70-130			

**Matrix Spike (4E19026-MS1)**

**Source: B4E0378-09**

1,1,1,2-Tetrachloroethane	1.97	0.200	ug/l	2.00	ND	98.5	70-130			
1,1,1-Trichloroethane	2.07	0.200	"	2.00	ND	104	70-130			
1,1,2,2-Tetrachloroethane	1.87	0.500	"	2.00	ND	93.5	70-130			
1,1,2-Trichloroethane	2.00	0.200	"	2.00	ND	100	70-130			
1,1-Dichloroethane	2.11	0.200	"	2.00	ND	106	70-130			
1,1-Dichloroethene	2.19	0.200	"	2.00	ND	110	59-158			
1,1-Dichloropropene	2.16	0.200	"	2.00	ND	108	70-130			
1,2,3-Trichlorobenzene	1.85	0.200	"	2.00	ND	92.5	70-130			
1,2,3-Trichloropropane	1.89	0.500	"	2.00	ND	94.5	70-130			
1,2,4-Trichlorobenzene	1.87	0.200	"	2.00	ND	93.5	70-130			
1,2,4-Trimethylbenzene	2.01	0.200	"	2.00	ND	100	70-130			
1,2-Dibromo-3-chloropropane	1.84	0.500	"	2.00	ND	92.0	70-130			
1,2-Dibromoethane	2.04	0.200	"	2.00	ND	102	70-130			
1,2-Dichlorobenzene	1.89	0.200	"	2.00	ND	94.5	70-130			
1,2-Dichloroethane	2.05	0.200	"	2.00	ND	102	70-130			
1,2-Dichloropropane	2.04	0.200	"	2.00	ND	102	70-130			
1,3,5-Trimethylbenzene	2.05	0.500	"	2.00	ND	102	70-130			
1,3-Dichlorobenzene	1.98	0.200	"	2.00	ND	99.0	70-130			
1,3-Dichloropropane	1.97	0.200	"	2.00	ND	98.5	70-130			
1,4-Dichlorobenzene	1.93	0.200	"	2.00	ND	96.5	70-130			
2,2-Dichloropropane	2.05	0.500	"	2.00	ND	102	70-130			

North Creek Analytical - Bothell

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Matrix Spike (4E19026-MS1)**

**Source: B4E0378-09**

2-Butanone	18.4	2.00	ug/l	20.0	ND	92.0	70-130			
2-Chlorotoluene	1.95	0.500	"	2.00	ND	97.5	70-130			
2-Hexanone	17.3	2.00	"	20.0	ND	86.5	70-130			
4-Chlorotoluene	2.04	0.500	"	2.00	ND	102	70-130			
4-Methyl-2-pentanone	17.7	2.00	"	20.0	ND	88.5	70-130			
Acetone	19.1	10.0	"	20.0	ND	95.5	70-130			
Benzene	2.06	0.200	"	2.00	ND	103	63-148			
Bromobenzene	1.92	0.500	"	2.00	ND	96.0	70-130			
Bromochloromethane	2.04	0.200	"	2.00	ND	102	70-130			
Bromodichloromethane	1.63	0.200	"	2.00	ND	81.5	70-130			
Bromoform	1.75	0.200	"	2.00	ND	87.5	70-130			
Bromomethane	1.52	2.00	"	2.00	ND	76.0	70-130			
Carbon disulfide	2.70	0.500	"	2.00	ND	135	70-130			Q-01
Carbon tetrachloride	0.840	0.200	"	2.00	ND	42.0	70-130			Q-01
Chlorobenzene	2.03	0.200	"	2.00	ND	102	80-128			
Chloroethane	2.11	1.00	"	2.00	ND	106	70-130			
Chloroform	1.94	0.200	"	2.00	ND	97.0	70-130			
Chloromethane	1.97	1.00	"	2.00	ND	98.5	70-130			
cis-1,2-Dichloroethene	2.06	0.200	"	2.00	ND	103	70-130			
cis-1,3-Dichloropropene	1.82	0.200	"	2.00	ND	91.0	70-130			
Dibromochloromethane	1.65	0.200	"	2.00	ND	82.5	70-130			
Dibromomethane	2.02	0.200	"	2.00	ND	101	70-130			
Dichlorodifluoromethane	2.06	0.500	"	2.00	ND	103	70-130			
Ethylbenzene	2.10	0.200	"	2.00	ND	105	70-130			
Hexachlorobutadiene	2.10	0.500	"	2.00	ND	105	70-130			
Isopropylbenzene	2.07	0.500	"	2.00	ND	104	70-130			
m,p-Xylene	4.02	0.500	"	4.00	ND	100	70-130			
Methyl tert-butyl ether	2.00	1.00	"	2.00	ND	100	70-130			
Methylene chloride	1.79	2.00	"	2.00	ND	89.5	70-130			
n-Butylbenzene	2.07	0.200	"	2.00	ND	104	70-130			
n-Propylbenzene	2.04	0.500	"	2.00	ND	102	70-130			
Naphthalene	1.72	0.500	"	2.00	ND	86.0	70-130			
o-Xylene	2.02	0.250	"	2.00	ND	101	70-130			
p-Isopropyltoluene	2.08	0.200	"	2.00	ND	104	70-130			

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Matrix Spike (4E19026-MS1)**

**Source: B4E0378-09**

sec-Butylbenzene	2.11	0.200	ug/l	2.00	ND	106	70-130			
Styrene	1.98	0.500	"	2.00	ND	99.0	70-130			
tert-Butylbenzene	2.11	0.500	"	2.00	ND	106	70-130			
Tetrachloroethene	2.13	0.200	"	2.00	ND	106	70-130			
Toluene	2.13	0.200	"	2.00	ND	106	72-127			
trans-1,2-Dichloroethene	2.16	0.200	"	2.00	ND	108	70-130			
trans-1,3-Dichloropropene	1.81	0.200	"	2.00	ND	90.5	70-130			
Trichloroethene	2.09	0.200	"	2.00	ND	104	80-126			
Trichlorofluoromethane	1.94	0.500	"	2.00	ND	97.0	70-130			
Vinyl chloride	2.14	0.200	"	2.00	ND	107	70-130			
Surrogate: 1,2-DCA-d4	4.09		"	4.00		102	70-130			
Surrogate: Toluene-d8	4.08		"	4.00		102	70-130			
Surrogate: 4-BFB	3.92		"	4.00		98.0	70-130			

**Matrix Spike Dup (4E19026-MSD1)**

**Source: B4E0378-09**

1,1,1,2-Tetrachloroethane	1.90	0.200	ug/l	2.00	ND	95.0	70-130	3.62	30	
1,1,1-Trichloroethane	2.01	0.200	"	2.00	ND	100	70-130	2.94	30	
1,1,2,2-Tetrachloroethane	1.75	0.500	"	2.00	ND	87.5	70-130	6.63	30	
1,1,2-Trichloroethane	1.96	0.200	"	2.00	ND	98.0	70-130	2.02	30	
1,1-Dichloroethane	1.99	0.200	"	2.00	ND	99.5	70-130	5.85	30	
1,1-Dichloroethene	2.07	0.200	"	2.00	ND	104	59-158	5.63	30	
1,1-Dichloropropene	2.04	0.200	"	2.00	ND	102	70-130	5.71	30	
1,2,3-Trichlorobenzene	1.84	0.200	"	2.00	ND	92.0	70-130	0.542	30	
1,2,3-Trichloropropane	1.71	0.500	"	2.00	ND	85.5	70-130	10.0	30	
1,2,4-Trichlorobenzene	1.84	0.200	"	2.00	ND	92.0	70-130	1.62	30	
1,2,4-Trimethylbenzene	2.00	0.200	"	2.00	ND	100	70-130	0.499	30	
1,2-Dibromo-3-chloropropane	1.84	0.500	"	2.00	ND	92.0	70-130	0.00	30	
1,2-Dibromoethane	1.92	0.200	"	2.00	ND	96.0	70-130	6.06	30	
1,2-Dichlorobenzene	1.87	0.200	"	2.00	ND	93.5	70-130	1.06	30	
1,2-Dichloroethane	1.87	0.200	"	2.00	ND	93.5	70-130	9.18	30	
1,2-Dichloropropane	1.95	0.200	"	2.00	ND	97.5	70-130	4.51	30	
1,3,5-Trimethylbenzene	1.96	0.500	"	2.00	ND	98.0	70-130	4.49	30	
1,3-Dichlorobenzene	1.91	0.200	"	2.00	ND	95.5	70-130	3.60	30	
1,3-Dichloropropane	1.93	0.200	"	2.00	ND	96.5	70-130	2.05	30	

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Matrix Spike Dup (4E19026-MSD1)**

**Source: B4E0378-09**

1,4-Dichlorobenzene	1.93	0.200	ug/l	2.00	ND	96.5	70-130	0.00	30	
2,2-Dichloropropane	1.91	0.500	"	2.00	ND	95.5	70-130	7.07	30	
2-Butanone	18.1	2.00	"	20.0	ND	90.5	70-130	1.64	30	
2-Chlorotoluene	1.82	0.500	"	2.00	ND	91.0	70-130	6.90	30	
2-Hexanone	17.3	2.00	"	20.0	ND	86.5	70-130	0.00	30	
4-Chlorotoluene	2.04	0.500	"	2.00	ND	102	70-130	0.00	30	
4-Methyl-2-pentanone	17.9	2.00	"	20.0	ND	89.5	70-130	1.12	30	
Acetone	18.3	10.0	"	20.0	ND	91.5	70-130	4.28	30	
Benzene	1.97	0.200	"	2.00	ND	98.5	63-148	4.47	20	
Bromobenzene	1.85	0.500	"	2.00	ND	92.5	70-130	3.71	30	
Bromochloromethane	1.93	0.200	"	2.00	ND	96.5	70-130	5.54	30	
Bromodichloromethane	1.56	0.200	"	2.00	ND	78.0	70-130	4.39	30	
Bromoform	1.66	0.200	"	2.00	ND	83.0	70-130	5.28	30	
Bromomethane	1.61	2.00	"	2.00	ND	80.5	70-130	5.75	30	
Carbon disulfide	2.52	0.500	"	2.00	ND	126	70-130	6.90	30	
Carbon tetrachloride	0.850	0.200	"	2.00	ND	42.5	70-130	1.18	30	Q-01
Chlorobenzene	1.97	0.200	"	2.00	ND	98.5	80-128	3.00	20	
Chloroethane	1.98	1.00	"	2.00	ND	99.0	70-130	6.36	30	
Chloroform	1.86	0.200	"	2.00	ND	93.0	70-130	4.21	30	
Chloromethane	1.86	1.00	"	2.00	ND	93.0	70-130	5.74	30	
cis-1,2-Dichloroethene	1.94	0.200	"	2.00	ND	97.0	70-130	6.00	30	
cis-1,3-Dichloropropene	1.77	0.200	"	2.00	ND	88.5	70-130	2.79	30	
Dibromochloromethane	1.59	0.200	"	2.00	ND	79.5	70-130	3.70	30	
Dibromomethane	1.92	0.200	"	2.00	ND	96.0	70-130	5.08	30	
Dichlorodifluoromethane	1.95	0.500	"	2.00	ND	97.5	70-130	5.49	30	
Ethylbenzene	1.99	0.200	"	2.00	ND	99.5	70-130	5.38	30	
Hexachlorobutadiene	1.95	0.500	"	2.00	ND	97.5	70-130	7.41	30	
Isopropylbenzene	2.00	0.500	"	2.00	ND	100	70-130	3.44	30	
m,p-Xylene	4.08	0.500	"	4.00	ND	102	70-130	1.48	30	
Methyl tert-butyl ether	1.95	1.00	"	2.00	ND	97.5	70-130	2.53	30	
Methylene chloride	1.70	2.00	"	2.00	ND	85.0	70-130	5.16	30	
n-Butylbenzene	2.06	0.200	"	2.00	ND	103	70-130	0.484	30	
n-Propylbenzene	1.99	0.500	"	2.00	ND	99.5	70-130	2.48	30	
Naphthalene	1.84	0.500	"	2.00	ND	92.0	70-130	6.74	30	

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit	Notes
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**Batch 4E19026: Prepared 05/19/04 Using EPA 5030B**

**Matrix Spike Dup (4E19026-MSD1)**

**Source: B4E0378-09**

o-Xylene	1.98	0.250	ug/l	2.00	ND	99.0	70-130	2.00	30	
p-Isopropyltoluene	1.98	0.200	"	2.00	ND	99.0	70-130	4.93	30	
sec-Butylbenzene	1.95	0.200	"	2.00	ND	97.5	70-130	7.88	30	
Styrene	2.02	0.500	"	2.00	ND	101	70-130	2.00	30	
tert-Butylbenzene	1.94	0.500	"	2.00	ND	97.0	70-130	8.40	30	
Tetrachloroethene	2.02	0.200	"	2.00	ND	101	70-130	5.30	30	
Toluene	2.03	0.200	"	2.00	ND	102	72-127	4.81	20	
trans-1,2-Dichloroethene	2.05	0.200	"	2.00	ND	102	70-130	5.23	30	
trans-1,3-Dichloropropene	1.72	0.200	"	2.00	ND	86.0	70-130	5.10	30	
Trichloroethene	2.00	0.200	"	2.00	ND	100	80-126	4.40	20	
Trichlorofluoromethane	1.82	0.500	"	2.00	ND	91.0	70-130	6.38	30	
Vinyl chloride	2.05	0.200	"	2.00	ND	102	70-130	4.30	30	
Surrogate: 1,2-DCA-d4	4.02		"	4.00		100	70-130			
Surrogate: Toluene-d8	4.05		"	4.00		101	70-130			
Surrogate: 4-BFB	3.88		"	4.00		97.0	70-130			

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**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E14036: Prepared 05/14/04 Using EPA 3520C**

**Blank (4E14036-BLK1)**

1,2,4-Trichlorobenzene	ND	10.0	ug/l							
1,2-Dichlorobenzene	ND	10.0	"							
1,3-Dichlorobenzene	ND	10.0	"							
1,4-Dichlorobenzene	ND	10.0	"							
2,4,5-Trichlorophenol	ND	10.0	"							
2,4,6-Trichlorophenol	ND	10.0	"							
2,4-Dichlorophenol	ND	10.0	"							
2,4-Dimethylphenol	ND	10.0	"							
2,4-Dinitrophenol	ND	20.0	"							
2,4-Dinitrotoluene	ND	10.0	"							
2,6-Dinitrotoluene	ND	10.0	"							
2-Chloronaphthalene	ND	10.0	"							
2-Chlorophenol	ND	10.0	"							
2-Methylnaphthalene	ND	10.0	"							
2-Methylphenol	ND	10.0	"							
2-Nitroaniline	ND	10.0	"							
2-Nitrophenol	ND	10.0	"							
3 & 4-Methylphenol	ND	10.0	"							
3,3'-Dichlorobenzidine	ND	10.0	"							
3-Nitroaniline	ND	10.0	"							
4,6-Dinitro-2-methylphenol	ND	10.0	"							
4-Bromophenyl phenyl ether	ND	10.0	"							
4-Chloro-3-methylphenol	ND	10.0	"							
4-Chloroaniline	ND	10.0	"							
4-Chlorophenyl phenyl ether	ND	10.0	"							
4-Nitroaniline	ND	10.0	"							
4-Nitrophenol	ND	10.0	"							
Acenaphthene	ND	10.0	"							
Acenaphthylene	ND	10.0	"							
Aniline	ND	10.0	"							
Anthracene	ND	10.0	"							
Benzo (a) anthracene	ND	10.0	"							
Benzo (a) pyrene	ND	10.0	"							
Benzo (b) fluoranthene	ND	10.0	"							

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**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E14036: Prepared 05/14/04 Using EPA 3520C**

**Blank (4E14036-BLK1)**

Benzo (ghi) perylene	ND	10.0	ug/l							
Benzo (k) fluoranthene	ND	10.0	"							
Benzoic Acid	ND	20.0	"							
Benzyl alcohol	ND	10.0	"							
Bis(2-chloroethoxy)methane	ND	10.0	"							
Bis(2-chloroethyl)ether	ND	10.0	"							
Bis(2-chloroisopropyl)ether	ND	10.0	"							
Bis(2-ethylhexyl)phthalate	ND	10.0	"							
Butyl benzyl phthalate	ND	10.0	"							
Carbazole	ND	10.0	"							
Chrysene	ND	10.0	"							
Di-n-butyl phthalate	ND	10.0	"							
Di-n-octyl phthalate	ND	10.0	"							
Dibenz (a,h) anthracene	ND	10.0	"							
Dibenzofuran	ND	10.0	"							
Diethyl phthalate	ND	10.0	"							
Dimethyl phthalate	ND	10.0	"							
Fluoranthene	ND	10.0	"							
Fluorene	ND	10.0	"							
Hexachlorobenzene	ND	10.0	"							
Hexachlorobutadiene	ND	10.0	"							
Hexachlorocyclopentadiene	ND	10.0	"							
Hexachloroethane	ND	10.0	"							
Indeno (1,2,3-cd) pyrene	ND	10.0	"							
Isophorone	ND	10.0	"							
N-Nitrosodi-n-propylamine	ND	10.0	"							
N-Nitrosodiphenylamine	ND	10.0	"							
Naphthalene	ND	10.0	"							
Nitrobenzene	ND	10.0	"							
Pentachlorophenol	ND	10.0	"							
Phenanthrene	ND	10.0	"							
Phenol	ND	10.0	"							
Pyrene	ND	10.0	"							

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: [none]  
 Project Manager: Gary Zimmerman

Reported:  
 05/27/04 17:00

**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E14036: Prepared 05/14/04 Using EPA 3520C**

**Blank (4E14036-BLK1)**

Surrogate: 2-FP	29.5		ug/l	50.0		59.0	18-124			
Surrogate: Phenol-d6	33.7		"	50.0		67.4	25-122			
Surrogate: 2,4,6-TBP	39.3		"	50.0		78.6	19-132			
Surrogate: Nitrobenzene-d5	37.9		"	50.0		75.8	44-124			
Surrogate: p-Terphenyl-d14	43.5		"	50.0		87.0	10-132			
Surrogate: 2-FBP	39.5		"	50.0		79.0	41-129			

**LCS (4E14036-BS1)**

1,2,4-Trichlorobenzene	74.4	10.0	ug/l	100		74.4	52-120			
1,4-Dichlorobenzene	79.5	10.0	"	100		79.5	43-122			
2,4-Dinitrotoluene	103	10.0	"	100		103	67-129			
2-Chlorophenol	65.2	10.0	"	100		65.2	23-134			
4-Chloro-3-methylphenol	77.0	10.0	"	100		77.0	48-132			
4-Nitrophenol	81.1	10.0	"	100		81.1	12-153			
Acenaphthene	89.1	10.0	"	100		89.1	66-119			
N-Nitrosodi-n-propylamine	84.2	10.0	"	100		84.2	41-141			
Pentachlorophenol	104	10.0	"	100		104	34-130			
Phenol	65.6	10.0	"	100		65.6	20-124			
Pyrene	91.7	10.0	"	100		91.7	59-134			

Surrogate: 2-FP	23.5		"	50.0		47.0	18-124			
Surrogate: Phenol-d6	31.9		"	50.0		63.8	25-122			
Surrogate: 2,4,6-TBP	42.1		"	50.0		84.2	19-132			
Surrogate: Nitrobenzene-d5	36.2		"	50.0		72.4	44-124			
Surrogate: p-Terphenyl-d14	41.4		"	50.0		82.8	10-132			
Surrogate: 2-FBP	43.0		"	50.0		86.0	41-129			

**LCS Dup (4E14036-BSD1)**

1,2,4-Trichlorobenzene	78.9	10.0	ug/l	100		78.9	52-120	5.87	25	
1,4-Dichlorobenzene	89.9	10.0	"	100		89.9	43-122	12.3	26	
2,4-Dinitrotoluene	105	10.0	"	100		105	67-129	1.92	29	
2-Chlorophenol	67.4	10.0	"	100		67.4	23-134	3.32	61	
4-Chloro-3-methylphenol	78.1	10.0	"	100		78.1	48-132	1.42	49	
4-Nitrophenol	82.7	10.0	"	100		82.7	12-153	1.95	37	
Acenaphthene	93.7	10.0	"	100		93.7	66-119	5.03	49	
N-Nitrosodi-n-propylamine	92.5	10.0	"	100		92.5	41-141	9.39	36	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: [none] Project Manager: Gary Zimmerman	Reported: 05/27/04 17:00
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**Semivolatile Organic Compounds by EPA Method 8270C - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit	Notes
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**Batch 4E14036: Prepared 05/14/04 Using EPA 3520C**

**LCS Dup (4E14036-BSD1)**

Pentachlorophenol	109	10.0	ug/l	100	109	34-130	4.69	32		
Phenol	70.3	10.0	"	100	70.3	20-124	6.92	53		
Pyrene	95.8	10.0	"	100	95.8	59-134	4.37	50		
Surrogate: 2-FP	24.4		"	50.0	48.8	18-124				
Surrogate: Phenol-d6	33.4		"	50.0	66.8	25-122				
Surrogate: 2,4,6-TBP	43.6		"	50.0	87.2	19-132				
Surrogate: Nitrobenzene-d5	38.5		"	50.0	77.0	44-124				
Surrogate: p-Terphenyl-d14	43.4		"	50.0	86.8	10-132				
Surrogate: 2-FBP	45.1		"	50.0	90.2	41-129				

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**Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 4E17034: Prepared 05/17/04 Using General Preparation**

**Blank (4E17034-BLK1)**

Total Dissolved Solids ND 10 mg/l

**Duplicate (4E17034-DUP1)**

Source: B4D0168-41

Total Dissolved Solids 280 10 mg/l 280 0.00 20

**Batch 4E20036: Prepared 05/20/04 Using General Preparation**

**Blank (4E20036-BLK1)**

Cyanide (total) ND 0.0100 mg/l

**LCS (4E20036-BS1)**

Cyanide (total) 0.0810 0.0100 mg/l 0.100 81.0 75-125

**LCS Dup (4E20036-BSD1)**

Cyanide (total) 0.0870 0.0100 mg/l 0.100 87.0 75-125 7.14 25

**Matrix Spike (4E20036-MS1)**

Source: B4E0378-11

Cyanide (total) 0.0860 0.0100 mg/l 0.100 ND 86.0 40-150

**Batch 4E20044: Prepared 05/20/04 Using General Preparation**

**Blank (4E20044-BLK1)**

Total Alkalinity ND 5.00 mg/L as CaCO3

**LCS (4E20044-BS1)**

Total Alkalinity 54.6 5.00 mg/L as CaCO3 50.0 109 90-110

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**Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E20044: Prepared 05/20/04 Using General Preparation**

**LCS Dup (4E20044-BSD1)**

Total Alkalinity	51.3	5.00 mg/L as CaCO3		50.0		103	90-110	6.23	20	
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**Duplicate (4E20044-DUP1)**

Source: B4D0328-11

Total Alkalinity	50.5	5.00 mg/L as CaCO3			50.9			0.789	20	
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**Duplicate (4E20044-DUP2)**

Source: B4D0328-12

Total Alkalinity	28.4	5.00 mg/L as CaCO3			28.5			0.351	20	
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**Duplicate (4E20044-DUP3)**

Source: B4E0378-01

Total Alkalinity	436	5.00 mg/L as CaCO3			436			0.00	20	
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**Batch 4E21033: Prepared 05/21/04 Using General Preparation**

**Blank (4E21033-BLK1)**

Nitrate/Nitrite-Nitrogen	ND	0.0100	mg/l as N							
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**LCS (4E21033-BS1)**

Nitrate/Nitrite-Nitrogen	0.990	0.0100	mg/l as N	1.00		99.0	90-110			
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**LCS Dup (4E21033-BSD1)**

Nitrate/Nitrite-Nitrogen	0.977	0.0100	mg/l as N	1.00		97.7	90-110	1.32	20	
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**Matrix Spike (4E21033-MS1)**

Source: B4E0378-11

Nitrate/Nitrite-Nitrogen	0.176	0.0100	mg/l as N	0.250	ND	70.4	36-150			
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**Matrix Spike Dup (4E21033-MSD1)**

Source: B4E0378-11

Nitrate/Nitrite-Nitrogen	0.182	0.0100	mg/l as N	0.250	ND	72.8	36-150	3.35	20	
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**Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4E24044: Prepared 05/24/04 Using General Preparation</b>										
<b>Blank (4E24044-BLK1)</b>										
Fluoride	ND	0.100	mg/l							
<b>LCS (4E24044-BS1)</b>										
Fluoride	2.00	0.100	mg/l	2.00		100	90-110			
<b>LCS Dup (4E24044-BSD1)</b>										
Fluoride	2.02	0.100	mg/l	2.00		101	90-110	0.995	20	
<b>Duplicate (4E24044-DUP1) Source: B4E0378-11</b>										
Fluoride	0.0890	0.100	mg/l		0.0980			9.63	25	
<b>Matrix Spike (4E24044-MS1) Source: B4E0378-11</b>										
Fluoride	2.00	0.100	mg/l	2.00	0.0980	95.1	75-125			

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**Anions by EPA Method 300.0 - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E21003: Prepared 05/20/04 Using General Preparation**

**Blank (4E21003-BLK1)**

Chloride	ND	0.400	mg/l							
Sulfate	ND	0.400	"							

**LCS (4E21003-BS1)**

Chloride	2.04	0.400	mg/l	2.00		102	90-110			
Sulfate	5.93	0.400	"	6.00		98.8	90-110			

**LCS Dup (4E21003-BSD1)**

Chloride	1.97	0.400	mg/l	2.00		98.5	90-110	3.49	20	
Sulfate	5.94	0.400	"	6.00		99.0	90-110	0.168	20	

**Duplicate (4E21003-DUP1)**

**Source: B4E0378-03**

Chloride	1.08	0.400	mg/l		1.10			1.83	25	
Sulfate	8.55	0.400	"		8.34			2.49	25	

**Matrix Spike (4E21003-MS1)**

**Source: B4E0378-03**

Chloride	2.29	0.400	mg/l	2.00	1.10	59.5	52-134			
Sulfate	14.9	0.800	"	6.00	8.34	109	58-135			

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**Polychlorinated Biphenyls by EPA 8082 Modified with Micro-Extraction - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E17013: Prepared 05/17/04 Using Solvent Extraction**

**Blank (4E17013-BLK1)**

Aroclor 1016	ND	0.100	ug/l							
Aroclor 1221	ND	0.100	"							
Aroclor 1232	ND	0.100	"							
Aroclor 1242	ND	0.100	"							
Aroclor 1248	ND	0.100	"							
Aroclor 1254	ND	0.100	"							
Aroclor 1260	ND	0.100	"							
Aroclor 1262	ND	0.100	"							
Aroclor 1268	ND	0.100	"							

Surrogate: TCX	0.608		"	0.500		122	29-130			
Surrogate: Decachlorobiphenyl	0.530		"	0.500		106	22-112			

**LCS (4E17013-BS1)**

Aroclor 1016	4.70	0.100	ug/l	5.00		94.0	58-124			
Aroclor 1260	5.10	0.100	"	5.00		102	64-136			
Surrogate: TCX	0.627		"	0.500		125	29-130			
Surrogate: Decachlorobiphenyl	0.524		"	0.500		105	22-112			

**LCS Dup (4E17013-BSD1)**

Aroclor 1016	3.89	0.100	ug/l	5.00		77.8	58-124	18.9	30	
Aroclor 1260	4.47	0.100	"	5.00		89.4	64-136	13.2	30	
Surrogate: TCX	0.510		"	0.500		102	29-130			
Surrogate: Decachlorobiphenyl	0.508		"	0.500		102	22-112			

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**Notes and Definitions**

- D-14 Diluted due to matrix effect.
- Q-01 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- Q-02 The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.
- Q-03 The percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
- Q-15 Analyses are not controlled on matrix spike RPD and/or percent recoveries when the sample concentration is significantly higher than the spike level.
- S-03 The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



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 541-383-9310 FAX 382-7588  
 907-334-9200 FAX 334-9210

### CHAIN OF CUSTODY REPORT

Work Order #: *B4E0378*

CLIENT: <i>Golden Associates Inc</i>				INVOICE TO:				<b>TURNAROUND REQUEST</b> in Business Days * Organic & Inorganic Analyses <input type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <small>STD.</small> Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <small>STD.</small> <input type="checkbox"/> OTHER Specify: _____ <small>* Turnaround Requests less than standard may incur Rush Charges.</small>																							
REPORT TO: <i>Gary Zimmerman</i> ADDRESS: <i>18300 NE Union Hill Rd, #200</i> <i>Redmond, WA 98052</i>				P.O. NUMBER:																											
PHONE: <i>425 883-0777</i> FAX:				PROJECT NAME: <i>Landsburg</i>				PRESERVATIVE																							
PROJECT NUMBER: <i>923-1000-002.R273</i>				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>HCl</td><td>HNO<sub>3</sub></td><td>HCl</td><td>HCl</td><td>-</td><td>HNO<sub>3</sub>/HCl</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>				HCl	HNO <sub>3</sub>	HCl	HCl	-	HNO <sub>3</sub> /HCl																		
HCl	HNO <sub>3</sub>	HCl	HCl	-	HNO <sub>3</sub> /HCl																										
SAMPLED BY:				REQUESTED ANALYSES																											
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		VOC	metals	MUTPH-D	MUTPH-G	ANION		CATIONS	TPH/IO							MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID										
1 <i>P-2</i>		<i>5-10-04 1322</i>						X		X								<i>W</i>	<i>2</i>		<i>01</i>										
2 <i>LMW8-51004</i>		<i>5-10-04 1515</i>		✓	✓	*	*	✓			✓								<i>10</i>		<i>02</i>										
3 <i>LMW55-51204</i>		<i>5-12-04 0900</i>		✓	✓	*	*	✓			✓								<i>10</i>		<i>03</i>										
4 <i>LMW5-51204</i>		<i>0935</i>		✓	✓	*	*	✓			✓								<i>10</i>		<i>04</i>										
5 <i>FB LMW-3</i>		<i>1055</i>		✓	✓						✓								<i>6</i>		<i>05</i>										
6 <i>LMW3-51204</i>		<i>1130</i>		✓	✓	*	*	✓			✓								<i>10</i>		<i>06</i>										
7 <i>LMW7-51204</i>		<i>1325</i>		✓	✓	*	*				✓								<i>9</i>		<i>07</i>										
8 <i>LMW6-51304</i>		<i>5-13-04/0911</i>		✓	✓	*	*				✓								<i>9</i>		<i>08</i>										
9 <i>LMW2-51304</i>		<i>1120</i>		✓	✓	*	*				✓								<i>13</i>	<i>Extra Vol. for MS/MSD</i>	<i>09</i>										
10 <i>LMW4-51304</i>		<i>1234</i>		✓	✓	*	*				✓								<i>9</i>		<i>10</i>										
RELEASED BY: <i>Gary Zimmerman</i>				DATE: <i>5-13-04</i>				RECEIVED BY: <i>Cathy Gamble</i>				DATE: <i>5/13/04</i>																			
PRINT NAME: <i>Gary Zimmerman</i> FIRM: <i>Golden</i>				TIME: <i>1410</i>				PRINT NAME: <i>Cathy Gamble</i> FIRM: <i>NCA</i>				TIME: <i>14:10</i>																			
RELEASED BY:				DATE:				RECEIVED BY:				DATE:																			
PRINT NAME:				TIME:				PRINT NAME:				TIME:																			
ADDITIONAL REMARKS: <i>① Anions - Alk, Cl, SO4</i>				* only if pos. HCl/O				TEMP:				PAGE <i>1</i> OF <i>2</i>																			
<i>② Cations - Ca, Fe, Mg, Mn, K, Na</i>																															



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### CHAIN OF CUSTODY REPORT

Work Order #:

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REPORT TO: ADDRESS:		P.O. NUMBER:																					
PHONE: _____ FAX: _____		PROJECT NAME: <u>Landsburg</u>		PRESERVATIVE <input type="checkbox"/> HCl / <input type="checkbox"/> HNO <sub>3</sub> / <input type="checkbox"/> HCl / <input type="checkbox"/> HCl / <input type="checkbox"/> - / <input type="checkbox"/> - / <input type="checkbox"/> NaOH / <input type="checkbox"/> - / <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> / <input type="checkbox"/> - / <input type="checkbox"/> HCl																			
PROJECT NUMBER: <u>923-1000-002.R273</u>		REQUESTED ANALYSES																					
SAMPLED BY:		VOC		SVOCs		METALS		ANIONS		PH		MATRIX (W, S, O)		# OF CONT.		LOCATION / COMMENTS		NCA WO ID					
		METHALS		PARTICULATES		CN		PCBS		N+V													
1 <u>LMW 9-51004</u>		5-10-04 / 1045		✓		✓		*		*		✓		✓		✓		✓		W 18		11	
2 <u>Trip Blank</u>		Lab		✓						*										W 3		12	
3																						<u>13/CG 5/11</u>	
4																							
5																							
6																							
7																							
8																							
9																							
10																							
RELEASED BY: <u>[Signature]</u>		DATE: <u>5-13-04</u>		RECEIVED BY: <u>Cathy Gamble</u>		DATE: <u>5/13/04</u>																	
PRINT NAME: <u>Gary Zimmerman</u>		FIRM: <u>Golden</u>		TIME: <u>1410</u>		PRINT NAME: <u>Cathy Gamble</u>		FIRM: <u>NCA</u>		TIME: <u>14:10</u>													
RELEASED BY:		DATE:		RECEIVED BY:		DATE:																	
PRINT NAME:		FIRM:		TIME:		PRINT NAME:		FIRM:		TIME:													
ADDITIONAL REMARKS: <u>③ AIK, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>-</sup>, TDS</u>				<u>* only if pos. HClO</u>																			

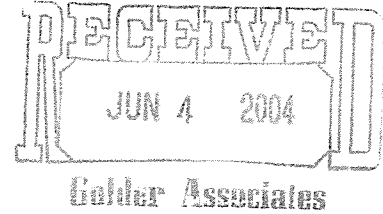




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541.383.9310 fax 541.382.7588  
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907.563.9200 fax 907.563.9210

02 June 2004

Gary Zimmerman  
Golder Associates Inc.  
18300 NE Union Hill Rd, Suite 200  
Redmond, WA/USA 98052-3333  
RE: Landsburg Mine



Enclosed are the results of analyses for samples received by the laboratory on 05/19/04 14:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Robert Greer For Kortland Orr  
PM



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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	<b>Reported:</b> 06/02/04 15:40
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW10-51804	B4E0510-01	Water	05/18/04 10:50	05/19/04 14:25

North Creek Analytical - Bothell

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Robert Greer For Kortland Orr, PM



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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>MW10-51804 (B4E0510-01) Water</b> <b>Sampled: 05/18/04 10:50</b> <b>Received: 05/19/04 14:25</b>										
Gx Range Hydrocarbons	ND	0.250		mg/l	1	4E22002	05/22/04	05/24/04	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630		"	"	"	"	"	"	
Diesel Range Hydrocarbons	ND	0.630		"	"	"	"	"	"	
Insulating Oil Range Hydrocarbons	ND	0.630		"	"	"	"	"	"	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630		"	"	"	"	"	"	
Lube Oil Range Hydrocarbons	ND	0.630		"	"	"	"	"	"	
<i>Surrogate: 2-FBP</i>	81.5 %	50-150				"	"	"	"	
<i>Surrogate: Octacosane</i>	90.1 %	50-150				"	"	"	"	

North Creek Analytical - Bothell

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Robert Greer For Kortland Orr, PM

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**



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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: 923-1000-002.R273  
 Project Manager: Gary Zimmerman

Reported:  
 06/02/04 15:40

**Dissolved Metals by EPA 6000/7000 Series Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW10-51804 (B4E0510-01) Water Sampled: 05/18/04 10:50 Received: 05/19/04 14:25</b>									
Silver	ND	0.00100	mg/l	1	4E27006	05/27/04	05/27/04	EPA 6020	
Aluminum	ND	0.200	"	"	4E28023	05/28/04	05/28/04	EPA 6010B	
Arsenic	0.00411	0.00100	"	"	4E27006	05/27/04	05/27/04	EPA 6020	
Barium	0.0168	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	"	"	
Calcium	5.98	0.250	"	"	4E28023	05/28/04	05/28/04	EPA 6010B	
Cadmium	ND	0.00100	"	"	4E27006	05/27/04	05/27/04	EPA 6020	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00100	"	"	"	"	"	"	
Iron	ND	0.150	"	"	4E28023	05/28/04	05/28/04	EPA 6010B	
Mercury	ND	0.000200	"	"	4F01014	06/01/04	06/01/04	EPA 7470A	
Potassium	3.04	2.00	"	"	4E28023	05/28/04	05/28/04	EPA 6010B	
Magnesium	2.56	0.500	"	"	"	"	"	"	
Manganese	ND	0.0100	"	"	4E27006	05/27/04	05/27/04	EPA 6020	
Sodium	97.0	0.250	"	"	4E28023	05/28/04	05/28/04	EPA 6010B	
Nickel	ND	0.00100	"	"	4E27006	05/27/04	05/27/04	EPA 6020	
Lead	ND	0.00100	"	"	"	"	"	"	
Antimony	ND	0.00300	"	"	"	"	"	"	
Selenium	ND	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	"	"	
Vanadium	0.00244	0.00100	"	"	"	"	"	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: 923-1000-002.R273  
 Project Manager: Gary Zimmerman

Reported:  
 06/02/04 15:40

**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW10-51804 (B4E0510-01) Water Sampled: 05/18/04 10:50 Received: 05/19/04 14:25</b>									
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	4E25053	05/25/04	05/25/04	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.200	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.500	"	"	"	"	"	"	
1,2-Dibromoethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.200	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.200	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.200	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.500	"	"	"	"	"	"	
2-Butanone	ND	2.00	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
2-Hexanone	ND	2.00	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.500	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	2.00	"	"	"	"	"	"	
Acetone	ND	10.0	"	"	"	"	"	"	
<b>Benzene</b>	<b>0.390</b>	0.200	"	"	"	"	"	"	
Bromobenzene	ND	0.500	"	"	"	"	"	"	
Bromochloromethane	ND	0.200	"	"	"	"	"	"	
Bromodichloromethane	ND	0.200	"	"	"	"	"	"	
Bromoform	ND	0.200	"	"	"	"	"	"	
Bromomethane	ND	2.00	"	"	"	"	"	"	
Carbon disulfide	ND	0.500	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.200	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Robert Greer For Kortland Orr, PM

North Creek Analytical, Inc.  
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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW10-51804 (B4E0510-01) Water    Sampled: 05/18/04 10:50    Received: 05/19/04 14:25</b>									
Chlorobenzene	ND	0.200	ug/l	1	4E25053	05/25/04	05/25/04	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	0.200	"	"	"	"	"	"	
Chloromethane	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Dibromochloromethane	ND	0.200	"	"	"	"	"	"	
Dibromomethane	ND	0.200	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.200	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.500	"	"	"	"	"	"	
Isopropylbenzene	ND	0.500	"	"	"	"	"	"	
m,p-Xylene	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	2.00	"	"	"	"	"	"	
n-Butylbenzene	ND	0.200	"	"	"	"	"	"	
n-Propylbenzene	ND	0.500	"	"	"	"	"	"	
Naphthalene	ND	0.500	"	"	"	"	"	"	
o-Xylene	ND	0.250	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.200	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.200	"	"	"	"	"	"	
Styrene	ND	0.500	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.500	"	"	"	"	"	"	
Tetrachloroethene	ND	0.200	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.680</b>	0.200	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.200	"	"	"	"	"	"	
Trichloroethene	ND	0.200	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.500	"	"	"	"	"	"	
Vinyl chloride	ND	0.200	"	"	"	"	"	"	
Surrogate: 1,2-DCA-d4	98.5 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.0 %	70-130			"	"	"	"	
Surrogate: 4-BFB	102 %	70-130			"	"	"	"	

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: 923-1000-002.R273  
 Project Manager: Gary Zimmerman

Reported:  
 06/02/04 15:40

**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E22002: Prepared 05/22/04 Using EPA 3520C**

**Blank (4E22002-BLK1)**

Gx Range Hydrocarbons	ND	0.250	mg/l							
Kerosene Range Hydrocarbons	ND	0.630	"							
Diesel Range Hydrocarbons	ND	0.630	"							
Insulating Oil Range Hydrocarbons	ND	0.630	"							
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	"							
Lube Oil Range Hydrocarbons	ND	0.630	"							
Surrogate: 2-FBP	DET		"	0.320		73.1	50-150			
Surrogate: Octacosane	DET		"	0.160		81.9	50-150			

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E27006: Prepared 05/27/04 Using EPA 3005A**

**Blank (4E27006-BLK1)**

Silver	ND	0.00100	mg/l							
Arsenic	ND	0.00100	"							
Barium	ND	0.0100	"							
Beryllium	ND	0.00100	"							
Cadmium	ND	0.00100	"							
Cobalt	ND	0.00100	"							
Chromium	ND	0.00100	"							
Copper	ND	0.00100	"							
Manganese	ND	0.0100	"							
Nickel	ND	0.00100	"							
Lead	ND	0.00100	"							
Antimony	ND	0.00300	"							
Selenium	ND	0.00100	"							
Thallium	ND	0.00100	"							
Vanadium	ND	0.00100	"							
Zinc	ND	0.0100	"							

**LCS (4E27006-BS1)**

Silver	0.199	0.00100	mg/l	0.200		99.5	80-120			
Arsenic	0.198	0.00100	"	0.200		99.0	80-120			
Barium	0.200	0.0100	"	0.200		100	80-120			
Beryllium	0.195	0.00100	"	0.200		97.5	80-120			
Cadmium	0.198	0.00100	"	0.200		99.0	80-120			
Cobalt	0.201	0.00100	"	0.200		100	80-120			
Chromium	0.200	0.00100	"	0.200		100	80-120			
Copper	0.201	0.00100	"	0.200		100	80-120			
Manganese	0.200	0.0100	"	0.200		100	80-120			
Nickel	0.200	0.00100	"	0.200		100	80-120			
Lead	0.201	0.00100	"	0.200		100	80-120			
Antimony	0.0502	0.00300	"	0.0500		100	80-120			
Selenium	0.197	0.00100	"	0.200		98.5	80-120			
Thallium	0.201	0.00100	"	0.200		100	80-120			
Vanadium	0.198	0.00100	"	0.200		99.0	80-120			
Zinc	0.201	0.0100	"	0.200		100	80-120			

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 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: 923-1000-002.R273  
 Project Manager: Gary Zimmerman

Reported:  
 06/02/04 15:40

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E27006: Prepared 05/27/04 Using EPA 3005A**

**LCS Dup (4E27006-BSD1)**

Silver	0.200	0.00100	mg/l	0.200		100	80-120	0.501	20	
Arsenic	0.200	0.00100	"	0.200		100	80-120	1.01	20	
Barium	0.202	0.0100	"	0.200		101	80-120	0.995	20	
Beryllium	0.197	0.00100	"	0.200		98.5	80-120	1.02	20	
Cadmium	0.198	0.00100	"	0.200		99.0	80-120	0.00	20	
Cobalt	0.200	0.00100	"	0.200		100	80-120	0.499	20	
Chromium	0.200	0.00100	"	0.200		100	80-120	0.00	20	
Copper	0.201	0.00100	"	0.200		100	80-120	0.00	20	
Manganese	0.200	0.0100	"	0.200		100	80-120	0.00	20	
Nickel	0.201	0.00100	"	0.200		100	80-120	0.499	20	
Lead	0.201	0.00100	"	0.200		100	80-120	0.00	20	
Antimony	0.0511	0.00300	"	0.0500		102	80-120	1.78	20	
Selenium	0.198	0.00100	"	0.200		99.0	80-120	0.506	20	
Thallium	0.200	0.00100	"	0.200		100	80-120	0.499	20	
Vanadium	0.198	0.00100	"	0.200		99.0	80-120	0.00	20	
Zinc	0.200	0.0100	"	0.200		100	80-120	0.499	20	

**Matrix Spike (4E27006-MS1)**

**Source: B4E0510-01**

Silver	0.0876	0.00100	mg/l	0.100	ND	87.6	21-136			
Arsenic	0.0965	0.00100	"	0.100	0.00411	92.4	75-125			
Barium	0.109	0.0100	"	0.100	0.0168	92.2	75-125			
Beryllium	0.0905	0.00100	"	0.100	ND	90.5	75-125			
Cadmium	0.0906	0.00100	"	0.100	ND	90.6	75-125			
Cobalt	0.0867	0.00100	"	0.100	0.000480	86.2	75-125			
Chromium	0.0906	0.00100	"	0.100	0.000780	89.8	75-125			
Copper	0.0892	0.00100	"	0.100	0.000380	88.8	70-124			
Manganese	0.0909	0.0100	"	0.100	0.00243	88.5	54-158			
Nickel	0.0877	0.00100	"	0.100	0.000390	87.3	76-125			
Lead	0.0906	0.00100	"	0.100	ND	90.6	75-125			
Antimony	0.0431	0.00300	"	0.0500	0.00245	81.3	78-125			
Selenium	0.0949	0.00100	"	0.100	0.000660	94.2	76-128			
Thallium	0.0909	0.00100	"	0.100	ND	90.9	75-125			
Vanadium	0.0912	0.00100	"	0.100	0.00244	88.8	75-129			
Zinc	0.0956	0.0100	"	0.100	0.00222	93.4	75-131			

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E27006: Prepared 05/27/04 Using EPA 3005A**

**Matrix Spike Dup (4E27006-MSD1)**

**Source: B4E0510-01**

Silver	0.0891	0.00100	mg/l	0.100	ND	89.1	21-136	1.70	50	
Arsenic	0.0974	0.00100	"	0.100	0.00411	93.3	75-125	0.928	20	
Barium	0.111	0.0100	"	0.100	0.0168	94.2	75-125	1.82	20	
Beryllium	0.0906	0.00100	"	0.100	ND	90.6	75-125	0.110	20	
Cadmium	0.0931	0.00100	"	0.100	ND	93.1	75-125	2.72	20	
Cobalt	0.0878	0.00100	"	0.100	0.000480	87.3	75-125	1.26	20	
Chromium	0.0910	0.00100	"	0.100	0.000780	90.2	75-125	0.441	20	
Copper	0.0898	0.00100	"	0.100	0.000380	89.4	70-124	0.670	20	
Manganese	0.0918	0.0100	"	0.100	0.00243	89.4	54-158	0.985	20	
Nickel	0.0884	0.00100	"	0.100	0.000390	88.0	76-125	0.795	20	
Lead	0.0912	0.00100	"	0.100	ND	91.2	75-125	0.660	20	
Antimony	0.0452	0.00300	"	0.0500	0.00245	85.5	78-125	4.76	20	
Selenium	0.0958	0.00100	"	0.100	0.000660	95.1	76-128	0.944	20	
Thallium	0.0911	0.00100	"	0.100	ND	91.1	75-125	0.220	20	
Vanadium	0.0925	0.00100	"	0.100	0.00244	90.1	75-129	1.42	20	
Zinc	0.0954	0.0100	"	0.100	0.00222	93.2	75-131	0.209	20	

**Batch 4E28023: Prepared 05/28/04 Using EPA 3005A**

**Blank (4E28023-BLK1)**

Aluminum	ND	0.200	mg/l							
Calcium	ND	0.250	"							
Iron	ND	0.150	"							
Potassium	ND	2.00	"							
Magnesium	ND	0.500	"							
Sodium	ND	0.250	"							

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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E28023: Prepared 05/28/04 Using EPA 3005A**

**LCS (4E28023-BS1)**

Aluminum	5.01	0.200	mg/l	5.00		100	80-120			
Calcium	5.04	0.250	"	5.00		101	80-120			
Iron	5.19	0.150	"	5.00		104	80-120			
Potassium	10.2	2.00	"	10.0		102	80-120			
Magnesium	5.07	0.500	"	5.00		101	80-120			
Sodium	5.03	0.250	"	5.00		101	80-120			

**LCS Dup (4E28023-BSD1)**

Aluminum	5.03	0.200	mg/l	5.00		101	80-120	0.398	20	
Calcium	5.00	0.250	"	5.00		100	80-120	0.797	20	
Iron	5.17	0.150	"	5.00		103	80-120	0.386	20	
Potassium	9.84	2.00	"	10.0		98.4	80-120	3.59	20	
Magnesium	5.09	0.500	"	5.00		102	80-120	0.394	20	
Sodium	5.07	0.250	"	5.00		101	80-120	0.792	20	

**Matrix Spike (4E28023-MS1)**

**Source: B4E0510-01**

Aluminum	5.63	0.200	mg/l	5.00	0.148	110	80-120			
Calcium	11.4	0.250	"	5.00	5.98	108	80-120			
Iron	5.68	0.150	"	5.00	ND	114	80-120			
Potassium	15.1	2.00	"	10.0	3.04	121	80-120			
Magnesium	8.03	0.500	"	5.00	2.56	109	80-120			Q-01
Sodium	96.5	0.250	"	5.00	97.0	-10.0	80-120			Q-03

**Matrix Spike Dup (4E28023-MSD1)**

**Source: B4E0510-01**

Aluminum	5.78	0.200	mg/l	5.00	0.148	113	80-120	2.63	20	
Calcium	11.4	0.250	"	5.00	5.98	108	80-120	0.00	20	
Iron	5.79	0.150	"	5.00	ND	116	80-120	1.92	20	
Potassium	14.0	2.00	"	10.0	3.04	110	80-120	7.56	20	
Magnesium	8.19	0.500	"	5.00	2.56	113	80-120	1.97	20	
Sodium	100	0.250	"	5.00	97.0	60.0	80-120	3.56	20	Q-03

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**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control  
 North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4F01014: Prepared 06/01/04 Using EPA 7470A</b>										
<b>Blank (4F01014-BLK1)</b>										
Mercury	ND	0.000200	mg/l							
<b>LCS (4F01014-BS1)</b>										
Mercury	0.00490	0.000200	mg/l	0.00500		98.0	80-120			
<b>LCS Dup (4F01014-BSD1)</b>										
Mercury	0.00507	0.000200	mg/l	0.00500		101	80-120	3.41	20	
<b>Matrix Spike (4F01014-MS1) Source: B4E0510-01</b>										
Mercury	0.00505	0.000200	mg/l	0.00500	ND	101	70-130			
<b>Matrix Spike (4F01014-MS2) Source: B4E0761-01</b>										
Mercury	0.00470	0.000200	mg/l	0.00500	ND	94.0	70-130			
<b>Matrix Spike Dup (4F01014-MSD1) Source: B4E0510-01</b>										
Mercury	0.00492	0.000200	mg/l	0.00500	ND	98.4	70-130	2.61	20	
<b>Matrix Spike Dup (4F01014-MSD2) Source: B4E0761-01</b>										
Mercury	0.00478	0.000200	mg/l	0.00500	ND	95.6	70-130	1.69	20	

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
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**Batch 4E25053: Prepared 05/25/04 Using EPA 5030B**

**Blank (4E25053-BLK1)**

1,1,1,2-Tetrachloroethane	ND	0.200	ug/l							
1,1,1-Trichloroethane	ND	0.200	"							
1,1,2,2-Tetrachloroethane	ND	0.500	"							
1,1,2-Trichloroethane	ND	0.200	"							
1,1-Dichloroethane	ND	0.200	"							
1,1-Dichloroethene	ND	0.200	"							
1,1-Dichloropropene	ND	0.200	"							
1,2,3-Trichlorobenzene	ND	0.200	"							
1,2,3-Trichloropropane	ND	0.500	"							
1,2,4-Trichlorobenzene	ND	0.200	"							
1,2,4-Trimethylbenzene	ND	0.200	"							
1,2-Dibromo-3-chloropropane	ND	0.500	"							
1,2-Dibromoethane	ND	0.200	"							
1,2-Dichlorobenzene	ND	0.200	"							
1,2-Dichloroethane	ND	0.200	"							
1,2-Dichloropropane	ND	0.200	"							
1,3,5-Trimethylbenzene	ND	0.500	"							
1,3-Dichlorobenzene	ND	0.200	"							
1,3-Dichloropropane	ND	0.200	"							
1,4-Dichlorobenzene	ND	0.200	"							
2,2-Dichloropropane	ND	0.500	"							
2-Butanone	ND	2.00	"							
2-Chlorotoluene	ND	0.500	"							
2-Hexanone	ND	2.00	"							
4-Chlorotoluene	ND	0.500	"							
4-Methyl-2-pentanone	ND	2.00	"							
Acetone	ND	10.0	"							
Benzene	ND	0.200	"							
Bromobenzene	ND	0.500	"							
Bromochloromethane	ND	0.200	"							
Bromodichloromethane	ND	0.200	"							
Bromoform	ND	0.200	"							
Bromomethane	ND	2.00	"							
Carbon disulfide	ND	0.500	"							

North Creek Analytical - Bothell

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Golder Associates Inc.  
 18300 NE Union Hill Rd, Suite 200  
 Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
 Project Number: 923-1000-002.R273  
 Project Manager: Gary Zimmerman

Reported:  
 06/02/04 15:40

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E25053: Prepared 05/25/04 Using EPA 5030B**

**Blank (4E25053-BLK1)**

Carbon tetrachloride	ND	0.200	ug/l							
Chlorobenzene	ND	0.200	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	0.200	"							
Chloromethane	ND	1.00	"							
cis-1,2-Dichloroethene	ND	0.200	"							
cis-1,3-Dichloropropene	ND	0.200	"							
Dibromochloromethane	ND	0.200	"							
Dibromomethane	ND	0.200	"							
Dichlorodifluoromethane	ND	0.500	"							
Ethylbenzene	ND	0.200	"							
Hexachlorobutadiene	ND	0.500	"							
Isopropylbenzene	ND	0.500	"							
m,p-Xylene	ND	0.500	"							
Methyl tert-butyl ether	ND	1.00	"							
Methylene chloride	ND	2.00	"							
n-Butylbenzene	ND	0.200	"							
n-Propylbenzene	ND	0.500	"							
Naphthalene	ND	0.500	"							
o-Xylene	ND	0.250	"							
p-Isopropyltoluene	ND	0.200	"							
sec-Butylbenzene	ND	0.200	"							
Styrene	ND	0.500	"							
tert-Butylbenzene	ND	0.500	"							
Tetrachloroethene	ND	0.200	"							
Toluene	ND	0.200	"							
trans-1,2-Dichloroethene	ND	0.200	"							
trans-1,3-Dichloropropene	ND	0.200	"							
Trichloroethene	ND	0.200	"							
Trichlorofluoromethane	ND	0.500	"							
Vinyl chloride	ND	0.200	"							
Surrogate: 1,2-DCA-d4	4.04		"	4.00		101	70-130			
Surrogate: Toluene-d8	3.91		"	4.00		97.8	70-130			
Surrogate: 4-BFB	4.11		"	4.00		103	70-130			

North Creek Analytical - Bothell

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Project: Landsburg Mine  
 Project Number: 923-1000-002.R273  
 Project Manager: Gary Zimmerman

Reported:  
 06/02/04 15:40

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E25053: Prepared 05/25/04 Using EPA 5030B**

**LCS (4E25053-BS1)**

1,1,1,2-Tetrachloroethane	1.78	0.200	ug/l	2.00		89.0	80-120			
1,1,1-Trichloroethane	1.71	0.200	"	2.00		85.5	80-120			
1,1,2,2-Tetrachloroethane	1.83	0.500	"	2.00		91.5	80-120			
1,1,2-Trichloroethane	1.70	0.200	"	2.00		85.0	80-120			
1,1-Dichloroethane	1.74	0.200	"	2.00		87.0	80-120			
1,1-Dichloroethene	1.73	0.200	"	2.00		86.5	80-120			
1,1-Dichloropropene	1.74	0.200	"	2.00		87.0	80-120			
1,2,3-Trichlorobenzene	1.79	0.200	"	2.00		89.5	80-120			
1,2,3-Trichloropropane	1.66	0.500	"	2.00		83.0	80-120			
1,2,4-Trichlorobenzene	1.76	0.200	"	2.00		88.0	80-120			
1,2,4-Trimethylbenzene	1.80	0.200	"	2.00		90.0	80-120			
1,2-Dibromo-3-chloropropane	1.61	0.500	"	2.00		80.5	80-120			
1,2-Dibromoethane	1.77	0.200	"	2.00		88.5	80-120			
1,2-Dichlorobenzene	1.76	0.200	"	2.00		88.0	80-120			
1,2-Dichloroethane	1.71	0.200	"	2.00		85.5	80-120			
1,2-Dichloropropane	1.71	0.200	"	2.00		85.5	80-120			
1,3,5-Trimethylbenzene	1.77	0.500	"	2.00		88.5	80-120			
1,3-Dichlorobenzene	1.71	0.200	"	2.00		85.5	80-120			
1,3-Dichloropropane	1.76	0.200	"	2.00		88.0	80-120			
1,4-Dichlorobenzene	1.75	0.200	"	2.00		87.5	80-120			
2,2-Dichloropropane	1.64	0.500	"	2.00		82.0	80-120			
2-Butanone	17.6	2.00	"	20.0		88.0	80-120			
2-Chlorotoluene	1.85	0.500	"	2.00		92.5	80-120			
2-Hexanone	17.5	2.00	"	20.0		87.5	80-120			
4-Chlorotoluene	1.77	0.500	"	2.00		88.5	80-120			
4-Methyl-2-pentanone	17.9	2.00	"	20.0		89.5	80-120			
Acetone	17.3	10.0	"	20.0		86.5	80-120			
Benzene	1.74	0.200	"	2.00		87.0	80-120			
Bromobenzene	1.77	0.500	"	2.00		88.5	80-120			
Bromochloromethane	1.72	0.200	"	2.00		86.0	80-120			
Bromodichloromethane	1.79	0.200	"	2.00		89.5	80-120			
Bromoform	1.82	0.200	"	2.00		91.0	80-120			
Bromomethane	1.91	2.00	"	2.00		95.5	80-120			

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E25053: Prepared 05/25/04 Using EPA 5030B**

**LCS (4E25053-BS1)**

Carbon disulfide	1.75	0.500	ug/l	2.00		87.5	80-120			
Carbon tetrachloride	1.79	0.200	"	2.00		89.5	80-120			
Chlorobenzene	1.74	0.200	"	2.00		87.0	80-120			
Chloroethane	1.66	1.00	"	2.00		83.0	80-120			
Chloroform	1.66	0.200	"	2.00		83.0	80-120			
Chloromethane	1.65	1.00	"	2.00		82.5	80-120			
cis-1,2-Dichloroethene	1.78	0.200	"	2.00		89.0	80-120			
cis-1,3-Dichloropropene	1.82	0.200	"	2.00		91.0	80-120			
Dibromochloromethane	1.82	0.200	"	2.00		91.0	80-120			
Dibromomethane	1.77	0.200	"	2.00		88.5	80-120			
Dichlorodifluoromethane	1.65	0.500	"	2.00		82.5	80-120			
Ethylbenzene	1.77	0.200	"	2.00		88.5	80-120			
Hexachlorobutadiene	1.91	0.500	"	2.00		95.5	80-120			
Isopropylbenzene	1.77	0.500	"	2.00		88.5	80-120			
m,p-Xylene	3.53	0.500	"	4.00		88.2	80-120			
Methyl tert-butyl ether	1.76	1.00	"	2.00		88.0	80-120			
Methylene chloride	1.73	2.00	"	2.00		86.5	80-120			
n-Butylbenzene	1.77	0.200	"	2.00		88.5	80-120			
n-Propylbenzene	1.72	0.500	"	2.00		86.0	80-120			
Naphthalene	1.99	0.500	"	2.00		99.5	80-120			
o-Xylene	1.74	0.250	"	2.00		87.0	80-120			
p-Isopropyltoluene	1.83	0.200	"	2.00		91.5	80-120			
sec-Butylbenzene	1.82	0.200	"	2.00		91.0	80-120			
Styrene	1.79	0.500	"	2.00		89.5	80-120			
tert-Butylbenzene	1.80	0.500	"	2.00		90.0	80-120			
Tetrachloroethene	1.70	0.200	"	2.00		85.0	80-120			
Toluene	1.71	0.200	"	2.00		85.5	80-120			
trans-1,2-Dichloroethene	1.73	0.200	"	2.00		86.5	80-120			
trans-1,3-Dichloropropene	1.77	0.200	"	2.00		88.5	80-120			
Trichloroethene	1.73	0.200	"	2.00		86.5	80-120			
Trichlorofluoromethane	1.67	0.500	"	2.00		83.5	80-120			
Vinyl chloride	1.67	0.200	"	2.00		83.5	80-120			
Surrogate: 1,2-DCA-d4	3.88		"	4.00		97.0	70-130			

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E25053: Prepared 05/25/04 Using EPA 5030B**

**LCS (4E25053-BS1)**

Surrogate: Toluene-d8	4.00		ug/l	4.00		100	70-130			
Surrogate: 4-BFB	4.05		"	4.00		101	70-130			

**LCS Dup (4E25053-BSD1)**

1,1,1,2-Tetrachloroethane	2.02	0.200	ug/l	2.00		101	80-120	12.6	30	
1,1,1-Trichloroethane	1.90	0.200	"	2.00		95.0	80-120	10.5	30	
1,1,2,2-Tetrachloroethane	1.86	0.500	"	2.00		93.0	80-120	1.63	30	
1,1,2-Trichloroethane	1.94	0.200	"	2.00		97.0	80-120	13.2	30	
1,1-Dichloroethane	1.87	0.200	"	2.00		93.5	80-120	7.20	30	
1,1-Dichloroethene	1.93	0.200	"	2.00		96.5	80-120	10.9	30	
1,1-Dichloropropene	1.89	0.200	"	2.00		94.5	80-120	8.26	30	
1,2,3-Trichlorobenzene	2.01	0.200	"	2.00		100	80-120	11.6	30	
1,2,3-Trichloropropane	1.82	0.500	"	2.00		91.0	80-120	9.20	30	
1,2,4-Trichlorobenzene	1.99	0.200	"	2.00		99.5	80-120	12.3	30	
1,2,4-Trimethylbenzene	2.00	0.200	"	2.00		100	80-120	10.5	30	
1,2-Dibromo-3-chloropropane	1.76	0.500	"	2.00		88.0	80-120	8.90	30	
1,2-Dibromoethane	2.00	0.200	"	2.00		100	80-120	12.2	30	
1,2-Dichlorobenzene	1.92	0.200	"	2.00		96.0	80-120	8.70	30	
1,2-Dichloroethane	1.88	0.200	"	2.00		94.0	80-120	9.47	30	
1,2-Dichloropropane	1.87	0.200	"	2.00		93.5	80-120	8.94	30	
1,3,5-Trimethylbenzene	1.98	0.500	"	2.00		99.0	80-120	11.2	30	
1,3-Dichlorobenzene	1.92	0.200	"	2.00		96.0	80-120	11.6	30	
1,3-Dichloropropane	1.98	0.200	"	2.00		99.0	80-120	11.8	30	
1,4-Dichlorobenzene	1.90	0.200	"	2.00		95.0	80-120	8.22	30	
2,2-Dichloropropane	1.76	0.500	"	2.00		88.0	80-120	7.06	30	
2-Butanone	19.4	2.00	"	20.0		97.0	80-120	9.73	30	
2-Chlorotoluene	1.94	0.500	"	2.00		97.0	80-120	4.75	30	
2-Hexanone	19.1	2.00	"	20.0		95.5	80-120	8.74	30	
4-Chlorotoluene	1.90	0.500	"	2.00		95.0	80-120	7.08	30	
4-Methyl-2-pentanone	19.5	2.00	"	20.0		97.5	80-120	8.56	30	
Acetone	18.6	10.0	"	20.0		93.0	80-120	7.24	30	
Benzene	1.92	0.200	"	2.00		96.0	80-120	9.84	30	
Bromobenzene	1.86	0.500	"	2.00		93.0	80-120	4.96	30	
Bromochloromethane	1.91	0.200	"	2.00		95.5	80-120	10.5	30	

North Creek Analytical - Bothell

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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 4E25053: Prepared 05/25/04 Using EPA 5030B**

**LCS Dup (4E25053-BSD1)**

Bromodichloromethane	1.94	0.200	ug/l	2.00		97.0	80-120	8.04	30	
Bromoform	2.03	0.200	"	2.00		102	80-120	10.9	30	
Bromomethane	2.09	2.00	"	2.00		104	80-120	9.00	30	
Carbon disulfide	1.93	0.500	"	2.00		96.5	80-120	9.78	30	
Carbon tetrachloride	2.05	0.200	"	2.00		102	80-120	13.5	30	
Chlorobenzene	1.96	0.200	"	2.00		98.0	80-120	11.9	30	
Chloroethane	1.85	1.00	"	2.00		92.5	80-120	10.8	30	
Chloroform	1.80	0.200	"	2.00		90.0	80-120	8.09	30	
Chloromethane	1.84	1.00	"	2.00		92.0	80-120	10.9	30	
cis-1,2-Dichloroethene	1.97	0.200	"	2.00		98.5	80-120	10.1	30	
cis-1,3-Dichloropropene	1.98	0.200	"	2.00		99.0	80-120	8.42	30	
Dibromochloromethane	2.01	0.200	"	2.00		100	80-120	9.92	30	
Dibromomethane	1.94	0.200	"	2.00		97.0	80-120	9.16	30	
Dichlorodifluoromethane	1.82	0.500	"	2.00		91.0	80-120	9.80	30	
Ethylbenzene	1.99	0.200	"	2.00		99.5	80-120	11.7	30	
Hexachlorobutadiene	2.10	0.500	"	2.00		105	80-120	9.48	30	
Isopropylbenzene	2.01	0.500	"	2.00		100	80-120	12.7	30	
m,p-Xylene	3.99	0.500	"	4.00		99.8	80-120	12.2	30	
Methyl tert-butyl ether	1.95	1.00	"	2.00		97.5	80-120	10.2	30	
Methylene chloride	1.80	2.00	"	2.00		90.0	80-120	3.97	30	
n-Butylbenzene	2.04	0.200	"	2.00		102	80-120	14.2	30	
n-Propylbenzene	1.90	0.500	"	2.00		95.0	80-120	9.94	30	
Naphthalene	2.18	0.500	"	2.00		109	80-120	9.11	30	
o-Xylene	2.01	0.250	"	2.00		100	80-120	14.4	30	
p-Isopropyltoluene	1.98	0.200	"	2.00		99.0	80-120	7.87	30	
sec-Butylbenzene	1.98	0.200	"	2.00		99.0	80-120	8.42	30	
Styrene	2.07	0.500	"	2.00		104	80-120	14.5	30	
tert-Butylbenzene	1.97	0.500	"	2.00		98.5	80-120	9.02	30	
Tetrachloroethene	1.97	0.200	"	2.00		98.5	80-120	14.7	30	
Toluene	1.98	0.200	"	2.00		99.0	80-120	14.6	30	
trans-1,2-Dichloroethene	1.92	0.200	"	2.00		96.0	80-120	10.4	30	
trans-1,3-Dichloropropene	2.01	0.200	"	2.00		100	80-120	12.7	30	
Trichloroethene	1.90	0.200	"	2.00		95.0	80-120	9.37	30	
Trichlorofluoromethane	1.86	0.500	"	2.00		93.0	80-120	10.8	30	

North Creek Analytical - Bothell

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333	Project: Landsburg Mine Project Number: 923-1000-002.R273 Project Manager: Gary Zimmerman	Reported: 06/02/04 15:40
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**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4E25053: Prepared 05/25/04 Using EPA 5030B</b>										
<b>LCS Dup (4E25053-BSD1)</b>										
Vinyl chloride	1.84	0.200	ug/l	2.00		92.0	80-120	9.69	30	
Surrogate: 1,2-DCA-d4	3.92		"	4.00		98.0	70-130			
Surrogate: Toluene-d8	4.11		"	4.00		103	70-130			
Surrogate: 4-BFB	3.88		"	4.00		97.0	70-130			

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Robert Greer For Kortland Orr, PM

North Creek Analytical, Inc.  
Environmental Laboratory Network



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Spokane 11922 E. 1st Avenue, Spokane Valley, WA 99206-5302  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119  
907.563.9200 fax 907.563.9210

Golder Associates Inc.  
18300 NE Union Hill Rd, Suite 200  
Redmond, WA/USA 98052-3333

Project: Landsburg Mine  
Project Number: 923-1000-002.R273  
Project Manager: Gary Zimmerman

**Reported:**  
06/02/04 15:40

### Notes and Definitions

- Q-01 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- Q-03 The percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Bothell

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 503-906-9200 FAX 906-9210  
 541-383-9310 FAX 382-7588  
 907-334-9200 FAX 334-9210

### CHAIN OF CUSTODY REPORT

Work Order #: **B4E0510**

CLIENT: <b>Golden Associates</b>			INVOICE TO:				<b>TURNAROUND REQUEST</b> in Business Days * Organic & Inorganic Analyses <input type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <small>STD.</small> Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <small>STD.</small> <input type="checkbox"/> <b>OTHER</b> Specify: _____ <small>* Turnaround Requests less than standard may incur Rush Charges.</small>							
REPORT TO: <b>Gary Zimmerman</b> ADDRESS: <b>18300 NE Union Hill Rd # 200</b> <b>Redmond, WA 98052</b>			P.O. NUMBER:											
PHONE: _____ FAX: _____			PRESERVATIVE											
PROJECT NAME: <b>Landsburg</b>			HCl/Amg/ACI											
PROJECT NUMBER: <b>923-1000-002-R273</b>			HCl/HCl											
SAMPLED BY: <b>Gary Zimmerman</b>			REQUESTED ANALYSES											
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME	SNO	SNO	SNO	SNO	SNO	SNO	SNO	SNO	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 MW10-51804		5-18-04/1050	✓	✓	✓	✗	✗				W	9		-01
2														
3														
4														
5														
6														
7														
8														
9														
10														
RELEASED BY: <b>[Signature]</b>			DATE: <b>5-19-04</b>			RECEIVED BY: <b>[Signature]</b>			DATE: <b>5-19-04</b>					
PRINT NAME: <b>Gary L. Zimmerman</b> FIRM: <b>Golden</b>			TIME: <b>1000</b>			PRINT NAME: <b>TRACY TONTY</b> FIRM: <b>NCA</b>			TIME: <b>1425</b>					
RELEASED BY:			DATE:			RECEIVED BY:			DATE:					
PRINT NAME:			TIME:			PRINT NAME:			TIME:					
ADDITIONAL REMARKS: <b>* only if positive HClO</b>												TEMP: <b>3.4</b>	PAGE <b>1</b> OF <b>1</b>	

w/es