Golder Associates Inc.

18300 NE Union Hill Road, Suite 200 Redmond, WA USA 98052-3333 Telephone (425) 883-0777 Fax (425) 882-5498 www.golder.com



June 17, 2005

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- MAY, 2005

Dear Mr. Kombol:

Golder Associates Inc. (Golder) completed an interim groundwater monitoring event at the Landsburg Mine Site during May, 2005. Groundwater samples were collected from monitoring wells LMW-2, LMW-3, LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9 and LMW-10 (see Figure 1). Monitoring wells LMW-2, LMW-4 and LMW-10 are completed to monitor shallow and deeper zones within the Rogers coal seam north of the Rogers Coal mine subsidence trench, and LMW-3 and LMW-5 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. Groundwater from LMW-9 represent shallow groundwater within the Rogers mine and provide an early indication of potential contamination migrating toward the south end in the upper horizon of the water table. Samples were also collected of the groundwater from LMW-8, which is a shallow well monitoring the Rogers Portal #3 groundwater 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. LMW-6 and LMW-7 monitoring wells obtain groundwater from the Frasier and Landsburg coal mines, respectively, to the west and east of the Rogers coal mine.

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 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 (with the additions of iron and manganese) and a petroleum hydrocarbon
identification scan.

The attached Table 1 presents analytical results for all analyses. Laboratory analytical reports are provided in Appendix A. The attached Table 2 presents water depth measurements collected from wells prior to sampling activities. Groundwater levels are similar to previous monitoring periods and indicate that groundwater is discharging out both ends of the Rogers Coal mine.

Following sample collection, all bottles were sealed, labeled and placed in a cooler maintained at approximately 4° C. All groundwater samples from monitoring wells were transported under chain-of-custody procedures to North Creek Analytical, Inc. for analyses, located in Bothell, Washington. Analysis on all water samples included volatiles by EPA Method 8260, priority metals suite of 13 analytes with the addition of manganese and iron, and a fuel hydrocarbon scan.

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). One groundwater sample contained a detectable volatile organic compound: LMW-10 had detectable benzene at 0.22 μ g/L. A duplicate sample was collected from LMW-10 also showing benzene concentrations at 0.22 μ g/L. These detections are much below the MTCA levels as follows¹:

• Benzene - MTCA cleanup level is 5μg/L for groundwater and 22.7 μg/L for surface water.

Groundwater monitoring results from samples collected during previous quarters also showed slight concentrations of both benzene and toluene within LMW-10 (April/May, 2004 data showed benzene and toluene at 0.39 μ g/L and 0.68 μ g/L, respectively; August, 2004 data showed benzene and toluene at 0.29 μ g/L and 0.44 μ g/L, respectively; and November, 2004 data showed benzene and toluene at 0.24 μ g/L and 0.31 μ g/L, respectively). The concentrations of the observed benzene remaining are only slightly above the reportable limits of the laboratory (0.20 μ g/L) and toluene has apparently reduced in concentration to below laboratory reporting limits. If concentration trends persist, it is anticipated that both benzene will also not be detectable the next quarter samples are collected.

Also, chloroform was present in the field blank at a trace concentration. This compound did not show up in any other groundwater or quality control samples allowing the conclusion that it may have been either accidentally introduced during lab processing or was present in the deionized water used for the sample.

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

Iron and manganese are the only metals that were detected at concentrations in excess of the screening levels of 0.3 μ g/L and 0.05 μ g/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. The concentrations of iron and manganese detected during the May, 2005 sampling are similar to concentrations detected during the RI (Golder, 1996)² and the Interim Groundwater Sampling events held previously.

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

Sincerely,

GOLDER ASSOCIATES INC.

Ryan Vannier, L.G. Project Hydrogeologist

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

Principal

RGV/DJM/se

Golder Associates Inc., 1996. Remedial Investigation and Feasibility Study for the Landsburg Mine Site. Landsburg PLP Steering Committee.

TABLES

MAY, 2005 GROUNDWATER ANALYTICAL RESULTS LANDSBURG MINE SITE

ANALYTE	UNITS	LMW-2 5/10/2005	LMW-3 5/11/2005	LMW-4 5/10/2005	LMW-5 5/11/2005	LMW-6 5/10/2005	LMW-7 5/10/2005	LMW-8 5/11/2005	LMW-9 5/11/2005	LMW-10 5/10/2005	DuplicateL MW-10 5/10/2005	Field Blank 5/10/2005
Field Parameter							***************************************					5. 10.2002
pH	stnd	6.79	7.45	6.78	6.75	6.57	6.89	6.54	6.80	8.41	8.41	NA
Conductivity	uS/cm	487	202	469	382	147.1	375	169.8	382	264	264	NA
Dissolved Oxygen	mg/L	0.08	0.02	0.04	0.08	0.08	0.13	2.98	0.04	0.19	0.19	
Temperature	°C	11.0	11.3	11.0	11.1	10.1	12.3	10.7	12.2	10.4	10.4	NA
Turbidity	NTU	1.18	0.63	0.17	0.35	0.61	0.29	287	1.87	0.50	0.50	
Metals	*****											
Antimony	mg/L	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	0.00207	0.00161	0.001 U	0.001 U	0.001 U	0.001 U				
Beryllium	mg/L	0.001 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				
Chromium	mg/L	0.00253	0.001 U	0.00220	0.001 U	0.001 U	0.00104	0.001 U	0.001 U	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				
Iron	mg/L	0.150 U	0.150 U	0.635	0.280	2.19	0.921	3.79	1.64	0.150 U	0.150 U	0.150 U
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U				
Manganese	mg/L	0.204	0.0750	0.186	0.225	0.0295	0.129	0.533	0.172	0.01 U	0.01 U	0.01 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000204	0.0002 U	0.0002 U				
Nickel	mg/L	0.001 U	0.00113	0.001 U	0.001 U	0.001 U	0.001 U	0.00221	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U				
Silver	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U				
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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				

MAY, 2005 GROUNDWATER ANALYTICAL RESULTS LANDSBURG MINE SITE

											DuplicateL	Field
ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	MW-10	Blank
		5/10/2005	5/11/2005	5/10/2005	5/11/2005	5/10/2005	5/10/2005	5/11/2005	5/11/2005	5/10/2005	5/10/2005	5/10/2005
Volatile Organic Compounds											0.10.2000	271072002
1,1,1,2-Tetrachloroethane	μg/L	0.2 U	0.2 U									
1,1,1-Trichloroethane	μg/L	0.2 U	. 0.2 U	0.2 U								
1,1,2,2-Tetrachloroethane	μg/L	0.5 U	0.5 U									
1,1,2-Trichloroethane	μg/L	0.2 U	0.2 U									
1,1-Dichloroethane	μg/L	0.2 U	0.2 U									
1,1-Dichloroethene	μg/L	0.2 U	0.2 U									
1,1-Dichloropropene	μg/L	0.2 U	0.2 U									
1,2,3-Trichlorobenzene	μg/L	0.2 U	0.2 U									
1,2,3-Trichloropropane	μg/L	0.5 U	0.5 U									
1,2,4-Trichlorobenzene	μg/L	0.2 U	0.2 U									
1,2,4-Trimethylbenzene	μg/L	0.2 U	0.2 U									
1,2-Dibromo-3-chloropropane	μg/L	0.5 U	0.5 U									
1,2-Dibromoethane	μg/L	0.2 U	0.2 U									
1,2-Dichlorobenzene	μg/L	0.2 U	0.2 U									
1,2-Dichloroethane	μg/L	0.2 U	0.2 U									
1,2-Dichloropropane	μg/L	0.2 U	0.2 U									
1,3,5-Trimethylbenzene	μg/L	0.5 U	0.5 U									
1,3-Dichlorobenzene	μg/L	0.2 U	0.2 U									
1,3-Dichloropropane	μg/L	0.2 U	0.2 U									
1,4-Dichlorobenzene	μg/L	0.2 U	0.2 U									
2,2-Dichloropropane	μg/L	0.5 U	0.5 U									
2-Butanone	μg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chlorotoluene	μg/L	0.5 U	0.5 U									
2-Hexanone	μg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chlorotoluene	μg/L	0.5 U	0.5 U									
4-Methyl-2-pentanone	μg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Acetone	μg/L	10 U	10 U									
Benzene	μg/L	0.2 U	0.220	0.220	0.2 U							
Bromobenzene	μg/L	0.5 U	0.5 U									
Bromochloromethane	μg/L	0.2 U	0.2 U									
Bromodichloromethane	μg/L	0.2 U	0.2 U									
Bromoform	μg/L	0.2 U	0.2 U									
Bromomethane	μg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	μg/L	0.5 U	0.5 U									
Carbon tetrachloride	μg/L	0.2 U	0.2 U									
Chlorobenzene	μg/L	0.2 U	0.2 U									

MAY, 2005 GROUNDWATER ANALYTICAL RESULTS LANDSBURG MINE SITE

			İ								DuplicateL	Field
ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	MW-10	Blank
		5/10/2005	5/11/2005	5/10/2005	5/11/2005	5/10/2005	5/10/2005	5/11/2005	5/11/2005	5/10/2005	5/10/2005	5/10/2005
Chloroethane	μg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	μg/L	0.2 U										
Chloromethane	μg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
cis-1,2-Dichloroethene	μg/L	0.2 U	0.2 U									
cis-1,3-Dichloropropene	μg/L	0.2 U	0.2 U									
Dibromochloromethane	μg/L	0.2 U	0.2 U									
Dibromomethane	μg/L	0.2 U	0.2 U									
Dichlorodifluoromethane	μg/L	0.5 U	0.5 U									
Ethylbenzene	μg/L	0.2 U	0.2 U									
Hexachlorobutadiene	μg/L	0.5 U	0.5 U									
Isopropylbenzene	μg/L	0.5 U	0.5 U									
m,p-Xylene	μg/L	0.5 U	0.5 U									
Methyl tert-butyl ether	μg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	μg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Butylbenzene	μg/L	0.2 U	0.2 U									
n-Propylbenzene	μg/L	0.5 U	0.5 U									
Naphthalene	μg/L	0.5 U	0.5 U									
o-Xylene	μg/L	0.25 U	0.25 U									
p-Isopropyltoluene	μg/L	0.2 U	0.2 U									
sec-Butylbenzene	μg/L	0.2 U	0.2 U	6.2 U	0.2 U	0.2 U						
Styrene	μg/L	0.5 U	0.5 U									
tert-Butylbenzene	μg/L	0.5 U	0.5 U									
Tetrachloroethene	μg/L	0.2 U	0.2 U									
Toluene	μg/L	0.2 U	0.2 U									
trans-1,2-Dichloroethene	μg/L	0.2 U	0.2 U									
trans-1,3-Dichloropropene	μg/L	0.2 U	0.2 U									
Trichloroethene	μg/L	0.2 U	0.2 U									
Trichlorofluoromethane	μg/L	0.5 U	0.5 U									
Vinyl chloride	μg/L	0.2 U	0.2 U									
Hydrocarbon Identification		<u> </u>										
Diesel Range	mg/L	0.63 U	0.63 U									
Gas Range	mg/L	0.25 U	0.25 U									
Heavy Fuel Oil	mg/L	0.63 U	0.63 U									
Insulating Oil	mg/L	0.63 U	0.63 U									
Kerosene Range	mg/L	0.63 U	0.63 U									
Lube Oil Range	mg/L	0.63 U	0.63 U									
										3.02 0	3.05 0	0.05 0

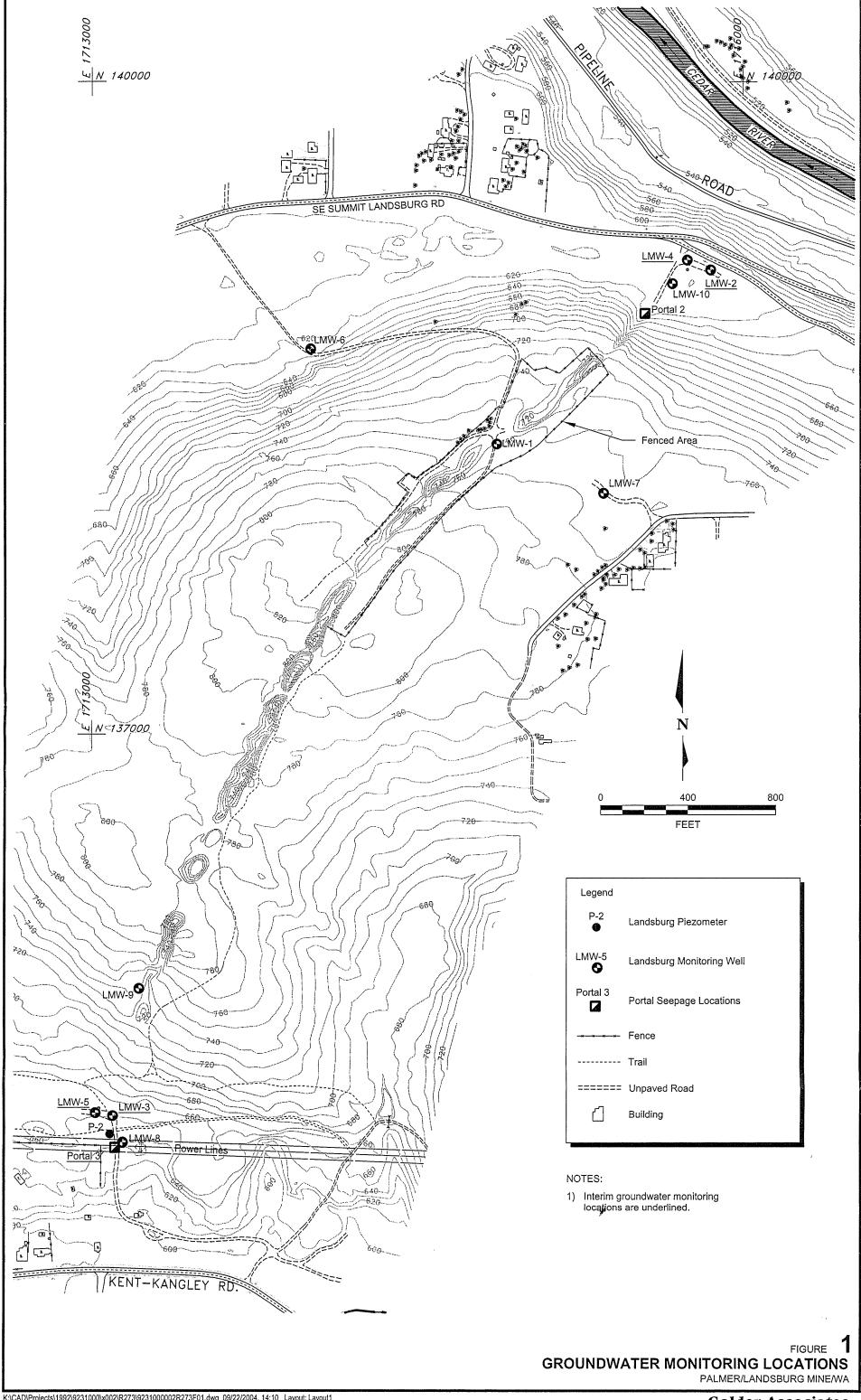
GROUNDWATER ELEVATION DATA COLLECTED 11/16/04 LANDSBURG MINE SITE

	UNITS	LMW-1	LMW-1a	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	P-2	Water Drainage	Frazier Sean Tunnel
Water Depths						1									
Time of data collection	ft bgs	1003	1006	0944	0902	0942	0906	0955	0927	0855	0912	0939	0900	NA	NA
Measured to Top of PVC		145.82	137.80	6.64	12.20	8.10*	13.75	25.53	212.94*	3.67	99.52	Artesian	6.81	NA	NA
Measured to Top of Monument	ft bgs	146.60	NC	7.30	NC	8.78*	NC	26.25	213.43*	NC	NC	Artesian	NC	NA	NA
Surveyed Elevation															<u>,</u>
Top of PVC	ft asl	NC	759.51	NC	656.75	NC	658.27	632.33	NC	646.97	743.99	618.87	651.37	NA	NA
Top of Monument	ft asl	765.89	NC	618.29	657.48	619.85	658.87	633.00	771.88	NC	NC	NC	NC	NA	NA
Ground Level	ft asl	762.90	756.59	615.35	654.40	617.09	655.63	629.95	768.79	645.25	741.13	615.75	648.54	551.38	542.15
Corrected Water Elevation															
Using PVC elevation	ft asl	NC	621.71	NC	644.55	NC	644.52	606.80	NC	643.30	644.47	Artesian	644.56	NA	NA
Using Monument elevation	ft asl	619.29	NC	610.99	NC	611.07*	NC	606.75	558.45*	NC	NC	Artesian	NC	NA	NA

Notes:

*= Data corrected to accomodate well inclination of 70° NA = Not applicable.
NC = Data not collected.

FIGURE



APPENDIX A

LABORATORY DATA



425.420.9200 fax 425.420.9210

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

27 May 2005

Douglas Morell
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 05/11/05 13:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Robert Greer For Amar Gill

Project Manager



425.420.9200 fax 425.420.9210

Spokane 11922 E. 1st Avenue, Spokane Valley, WA 99206-5302

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CASE NARRATIVE for B5E0309

Client:

Golder Associates Inc.

Project Manager:

Douglass Morell

Project Name:

Landsburg Mine

Project Number:

923-1000.002

1.0 DESCRIPTION OF CASE

Seven water samples were received for analysis of the following: Hydrocarbon Identification by Washington DOE Method NWTPH-HCID, Dissolved Metals by EPA 6000/7000 Series Methods, and Volatile Organic Compounds by EPA Method 8260B.

2.0 COMMENTS ON SAMPLE RECEIPT

Samples were received and logged in on May 11, 2005. Sample temperature at time of receipt was 4.3 ° C.

3.0 PREPARATIONS AND ANALYSIS

Hydrocarbon Identification by Washington DOE Method NWTPH-HCID

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

Dissolved Metals by EPA 6000/7000 Series Methods

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

Volatile Organic Compounds by EPA Method 8260B

All criteria for acceptable QC measurements were met, except for the following:

The spike recovery of Toluene for the BS in analytical batch 5E12071 was below the established control limits. The spike recoveries for the BSD, MS, and MSD for Naphthalene were all within the established control limits. All associated laboratory samples were non-detect for Naphthalene.

No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of this report.

Robert Greer for Amar Gill

Project Manager

North Creek Analytical



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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: 923-1000.002 Project Manager: Douglas Morell Reported:

05/27/05 10:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW6-051005	B5E0309-01	Water	05/10/05 11:40	05/11/05 13:15
LMW10-051005	B5E0309-02	Water	05/10/05 17:30	05/11/05 13:15
LMW11-051005	B5E0309-03	Water	05/10/05 13:00	05/11/05 13:15
FBLMW10-051005	B5E0309-04	Water	05/10/05 13:15	05/11/05 13:15
LMW2-051005	B5E0309-05	Water	05/10/05 14:30	05/11/05 13:15
LMW4-051005	B5E0309-06	Water	05/10/05 15:50	05/11/05 13:15
LMW7-051005	B5E0309-07	Water	05/10/05 16:55	05/11/05 13:15

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.



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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

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW6-051005 (B5E0309-01) Water	Sampled: 05	5/10/05 11:40	Received:	05/11/05 1	3:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	n	II	11	u	"	u	
Diesel Range Hydrocarbons	ND	0.630	11	n	n	**	и	**	
Insulating Oil Range Hydrocarbons	ND	0.630	11	11	11	11	ti .	n	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	u	11	н	n	u	"	
Lube Oil Range Hydrocarbons	ND	0.630	tt	н	u	II	**	n	
Surrogate: 2-FBP	80.4 %	50-150			"	"	"	n,	
Surrogate: Octacosane	90.6 %	50-150			"	n	"	"	
LMW10-051005 (B5E0309-02) Water	Sampled: 0	5/10/05 17:30	Received	: 05/11/05	13:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	н	Ħ	11	n	n	11	
Diesel Range Hydrocarbons	ND	0.630	Ħ	n	n	tt	11	н	
Insulating Oil Range Hydrocarbons	ND	0.630	н	11	n	11	n	11	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	11	n	**	11	n	II .	
Lube Oil Range Hydrocarbons	ND	0.630	n	ŧŧ	n	n	ti .	n	
Surrogate: 2-FBP	82.7 %	50-150			"	"	"	n .	
Surrogate: Octacosane	91.1 %	50-150			n	"	"	"	
LMW11-051005 (B5E0309-03) Water	Sampled: 05	5/10/05 13:00	Received	: 05/11/05 1	13:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	11	ıı	**	11	н	11	
Diesel Range Hydrocarbons	ND	0.630	it	"	н	и	11	ч	
Insulating Oil Range Hydrocarbons	ND	0.630	n	U	п	n	"	n	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	II	n	n	"	"	n	
Lube Oil Range Hydrocarbons	ND	0.630	11	п	n	If	u u	tr	
Surrogate: 2-FBP	69.0 %	50-150			n	"	"	п	
Surrogate: Octacosane	86.9 %	50-150			n	"	"	n	

North Creek Analytical - Bothell

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Robert Greer For Amar Gill, Project Manager



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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

Project Number: 923-1000.002

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
FBLMW10-051005 (B5E0309-04) Wa	ter Sampled	l: 05/10/05 13	3:15 Recei	ived: 05/11/	05 13:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	"	"	u	Ħ	11	11	
Diesel Range Hydrocarbons	ND	0.630	Ħ	77	Ħ	11	11	п	
Insulating Oil Range Hydrocarbons	ND	0.630	n	H.	17	н	11	Ħ	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	11	11	н	n	н	II	
Lube Oil Range Hydrocarbons	ND	0.630	n	11	n	II	11	н	
Surrogate: 2-FBP	69.6 %	50-150			н	"	"	11	
Surrogate: Octacosane	86.0 %	50-150			. "	"	n	"	
LMW2-051005 (B5E0309-05) Water	Sampled: 05/	/10/05 14:30	Received:	05/11/05 13	3:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	II	II	D.	**	11	**	
Diesel Range Hydrocarbons	ND	0.630	11	11	11	**	11	IT	
Insulating Oil Range Hydrocarbons	ND	0.630	II .	11	11	H	ti	и	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	11	H	п	11	11	n	
Lube Oil Range Hydrocarbons	ND	0.630	rt .	**	11	11	н	tt	
Surrogate: 2-FBP	78.4 %	50-150			"	"	"	"	
Surrogate: Octacosane	92.2 %	50-150			"	"	"	"	
LMW4-051005 (B5E0309-06) Water	Sampled: 05/	10/05 15:50	Received:	05/11/05 13	3:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	u	н	11	11	u	**	
Diesel Range Hydrocarbons	ND	0.630	и	11	11	u	n	"	
Insulating Oil Range Hydrocarbons	ND	0.630	"	11	u	n	11	11	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	0	н	**	**	**	u	
Lube Oil Range Hydrocarbons	ND	0.630	н	**	"	11	n	11	
Surrogate: 2-FBP	81.2 %	50-150			"	"	n	"	
Surrogate: Octacosane	93.6 %	50-150			"	"	"	n	

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 Project Manager: Douglas Morell Reported:

05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW7-051005 (B5E0309-07) Water	Sampled: 05	/10/05 16:55	Received:	05/11/05 1	3:15				Q-29
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	11	**	11	н	н	tt	
Diesel Range Hydrocarbons	ND	0.630	II.	If	н	11	n	Ħ	
Insulating Oil Range Hydrocarbons	ND	0.630	Ħ	11	11	n	II	n	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	II	n	n	tt	11	н	
Lube Oil Range Hydrocarbons	ND	0.630	11	11	11	*	u	u	
Surrogate: 2-FBP	79.8 %	50-150			"	n	"	n	
Surrogate: Octacosane	88.7 %	50-150			"	"	n	"	

North Creek Analytical - Bothell

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

Project: Landsburg Mine Project Number: 923-1000.002

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sampled: 05/	10/05 11:40	Received: (05/11/05 1	3:15				
ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
ND	0.00100	и	**	11	n	05/14/05	11	
ND	0.00100	11	11	11	**	n	R	
ND	0.00100	n	Ħ	Ħ	II	11	п	
ND	0.00100	11	n	**	н	11	n	
ND	0.00100	11	н	lt .	tt	н	н	
2.19	0.150	n	11	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
ND	0.000200	11	и	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
0.0295	0.0100	II	н	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
ND	0.00100	Ħ	Ħ	11	II	11	11	
ND	0.00100	u	tr.	II	11	ü	n	
ND	0.00300	n	**	n	11	05/18/05	n	
ND	0.00100	11	u	11	и	ŧ	u	
ND	0.00100	If	n	II	tt	05/14/05	11	
ND	0.0100	" .	11	11	tr.	11	tt	
Sampled: 05	/10/05 17:30	Received:	05/11/05 1	13:15				
ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
ND	0.00100	11	"	11	11	05/14/05	n	
ND	0.00100	. "	11	п	н	tt	Tr.	
ND	0.00100	Ħ	"	Ħ	tr	п	n	
ND	0.00100	11	11	"	u	tt	Ħ	
ND	0.00100	n	п	u .	и	11	. 11	
ND	0.150	n	н	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
0.000204	0.000200	11	11	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
ND	0.0100	lt.	u	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
ND	0.00100	Ħ	11	н	11	11	ti .	
ND	0.00100	11	n	**	11	If	ti .	
ND	0.00300	n .	II.	**	11	05/18/05	Ħ	
ND ND	0.00300 0.00100	11	и	11	"	05/18/05	11	
							n u	
	Sampled: 05/ ND ND ND ND ND ND 0.0295 ND	Result Limit Sampled: 05/10/05 11:40 ND 0.00100 ND 0.00100 ND 0.00100 ND 0.00100 ND 0.00100 ND 0.00100 ND 0.000200 0.0295 0.0100 ND 0.00100 ND 0.0100 ND 0.00100 ND 0.0100 <	Result Limit Units Sampled: 05/10/05 11:40 Received: 6 ND 0.00100 mg/l ND 0.00100 " ND 0.000200 " ND 0.00100 " ND	Result Limit Units Dilution Sampled: 05/10/05 11:40 Received: 05/11/05 1 ND 0.00100 mg/l 1 ND 0.00100 " " ND 0.000200 " " ND 0.00100 " "	Result Limit Units Dilution Batch Sampled: 05/10/05 11:40 Received: 05/11/05 13:15 SE12049 ND 0.00100 mg/l 1 5E12049 ND 0.00100 " " " ND 0.00100 " " 5E17041 ND 0.000200 " " 5E17041 ND 0.001200 " " 5E12049 ND 0.00100 " " " " ND 0.00100 " " " " ND 0.00100 " " " " ND 0.00100 " " "	Result Limit Units Dilution Batch Prepared Sampled: 05/10/05 11:40 Received: v5/11/05 13:15 Second Second <th< td=""><td>Result Limit Units Dilution Batch Prepared Analyzed Sampled: 05/10/05 11:40 Received: 05/11/05 13:15 SE12049 05/12/05 05/18/05 ND 0.00100 mg/l 1 \$E12049 05/12/05 05/18/05 ND 0.00100 " " " " 05/14/05 ND 0.00100 " " " " " " ND 0.00100 " <td< td=""><td>Result Limit Units Dilution Batch Prepared Analyzed Method ND 0.00100 mg/l 1 SE12049 05/12/05 05/18/05 EPA 6020 - Diss ND 0.00100 " " " 05/12/05 05/18/05 EPA 6020 - Diss ND 0.00100 " " " 05/12/05 05/14/05 " ND 0.00100 " " " " " " ND 0.00100 " " " " " " ND 0.00100 " " " " " " " ND 0.00100 "</td></td<></td></th<>	Result Limit Units Dilution Batch Prepared Analyzed Sampled: 05/10/05 11:40 Received: 05/11/05 13:15 SE12049 05/12/05 05/18/05 ND 0.00100 mg/l 1 \$E12049 05/12/05 05/18/05 ND 0.00100 " " " " 05/14/05 ND 0.00100 " " " " " " ND 0.00100 " <td< td=""><td>Result Limit Units Dilution Batch Prepared Analyzed Method ND 0.00100 mg/l 1 SE12049 05/12/05 05/18/05 EPA 6020 - Diss ND 0.00100 " " " 05/12/05 05/18/05 EPA 6020 - Diss ND 0.00100 " " " 05/12/05 05/14/05 " ND 0.00100 " " " " " " ND 0.00100 " " " " " " ND 0.00100 " " " " " " " ND 0.00100 "</td></td<>	Result Limit Units Dilution Batch Prepared Analyzed Method ND 0.00100 mg/l 1 SE12049 05/12/05 05/18/05 EPA 6020 - Diss ND 0.00100 " " " 05/12/05 05/18/05 EPA 6020 - Diss ND 0.00100 " " " 05/12/05 05/14/05 " ND 0.00100 " " " " " " ND 0.00100 " " " " " " ND 0.00100 " " " " " " " ND 0.00100 "

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Robert Greer For Amar Gill, Project Manager

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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 Project Manager: Douglas Morell Reported:

05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW11-051005 (B5E0309-03) Water	Sampled: 05	5/10/05 13:00	Received	05/11/05	13:15				
Silver	ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	n .	н	11	11	05/14/05	и	
Beryllium	ND	0.00100	11	11	n	11	**	n	
Cadmium ·	ND	0.00100	Ħ	11	11	e	н	н	
Chromium	ND	0.00100	Ħ	11	11	и	**	"	
Copper	ND	0.00100	U	H	11	n	tt	II	
Iron	ND	0.150	Ħ	11	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
Mercury	ND	0.000200	11	u	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
Manganese	ND	0.0100	11	н	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
Nickel	ND	0.00100	lt .	11	11	11	11	11	
Lead	ND	0.00100	11	"	"	11	ıı	n	
Antimony	ND	0.00300	tt	n	II.	н	05/18/05	n	
Selenium	ND	0.00100	н	**	n	**	11	n	
Thallium	ND	0.00100	"	tı	n	II	05/14/05	71	
Zinc	ND	0.0100	II.	tt	11	ti	11	U	
FBLMW10-051005 (B5E0309-04) Wate	er Sampled:	05/10/05 13:	15 Receiv	ed: 05/11/0)5 13:15				
Silver	ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	Ħ	n	11	11	05/14/05	н	
Beryllium	ND	0.00100	u	n	lt .	n	**	11	
Cadmium	ND	0.00100	н	н	*1	11	u u	11	
Chromium	ND	0.00100	11	11	u.	11	и	n	
Copper	ND	0.00100	, и	u	н	H	11	tt	
Iron	ND	0.150	n	H	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
Mercury	ND	0.000200	II.	"	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
Manganese	ND	0.0100	н	ıı	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
Nickel	ND	0.00100	11	n	**	11	u	11	
Lead	ND	0.00100	H .	11	IT	11	11	и	
Antimony	ND	0.00300	n	11	Ħ	н	05/18/05	n	
Selenium	ND	0.00100	tt	**	n	11	II	n	
Thallium	ND	0.00100	н	II .	п	tt	05/14/05	II	
Zinc	ND	0.0100					-		

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Golder Associates Inc.

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Project: Landsburg Mine Project Number: 923-1000.002

Reported:

05/27/05 10:30

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

Project Manager: Douglas Morell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW2-051005 (B5E0309-05) Water	Sampled: 05/	10/05 14:30	Received:	05/11/05 1	3:15				
Silver	ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	11	н	**	ti .	05/14/05	11	
Beryllium	ND	0.00100	II.	n	17	If	н	n	
Cadmium	ND	0.00100	11	n	"	11	11	n	
Chromium	0.00253	0.00100	II .	u	U	n	n	n	
Copper	ND	0.00100	11	n	11	11	11	n	
Iron	ND	0.150	u	It	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
Mercury	ND	0.000200	Ħ	11	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
Manganese	0.204	0.0100	н	u	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
Nickel	ND	0.00100	**	11	н	II	n	11	
Lead	ND	0.00100	H .	II.	11	"	u	u.	
Antimony	ND	0.00300	11	н	н	n	05/18/05	n	
Selenium	ND	0.00100	If	11	"	n	11	и	
Thallium	ND	0.00100	n	It	II	It	05/14/05	n	
Zinc	ND	0.0100	II	tt	n	п	11	n	
LMW4-051005 (B5E0309-06) Water	Sampled: 05/1	0/05 15:50	Received:	05/11/05 13	3:15				
Silver	ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	**	и	H	II .	05/14/05	н	
Beryllium	ND	0.00100	11	n	**	11	**	H	
Cadmium	ND	0.00100	11	n	tt.	11	11	u ·	
Chromium	0.00220	0.00100	II.	n	**	н	н	н	
Copper	ND	0.00100	11	u	tt	"	11	π	
Iron	0.635	0.150	11	н	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
Mercury	ND	0.000200	н	11	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
Manganese	0.186	0.0100	"	ti	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
Nickel	ND	0.00100	II	Ħ	н	II	m .	u .	
Lead	ND	0.00100	11	u .	tt	11	11	н	
Antimony	ND	0.00300	0	н	II .	11	05/18/05	tt .	
Selenium	ND	0.00100	n	11	11	11	н	н	
Thallium	ND	0.00100	11	ш	u	11	05/14/05	n	
Zinc	ND	0.0100	"	**	,,	lt.	"	II.	

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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 Project Manager: Douglas Morell **Reported:** 05/27/05 10:30

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

	Reporting							
Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sampled: 05/	10/05 16:55	Received	: 05/11/05 1	3:15				
ND	0.00100	mg/l	1	5E12049	05/12/05	05/18/05	EPA 6020 - Diss	
0.00207	0.00100	**	n	n	**	05/14/05	11	
ND	0.00100	Ir	n	**	II .	ıı	11	
ND	0.00100	11	11	H.	"	"	n	
0.00104	0.00100	н	н	**	Ħ	**	n	
ND	0.00100	11	n		n	**	11	
0.921	0.150	n	11	5E17041	05/17/05	05/26/05	EPA 6010B - Diss	
ND	0.000200	"	11	5E17031	05/17/05	05/17/05	EPA 7470A - Diss	
0.129	0.0100	и	п	5E12049	05/12/05	05/14/05	EPA 6020 - Diss	
ND	0.00100	**	n	11	**	**	tt	
ND	0.00100	n	II	n	"	11	u.	
ND	0.00300	n	n	11	If	05/18/05	n	
ND	0.00100	II	ıı	n	11	11	TI .	
ND	0.00100	Ħ	11	11	tt	05/14/05	n	
ND	0.0100	n	u	n	n	11	11	
	Sampled: 05/ ND 0.00207 ND ND 0.00104 ND 0.921 ND 0.129 ND ND ND ND ND ND ND ND	Result Limit Sampled: 05/10/05 16:55 ND 0.00100 0.00207 0.00100 ND 0.00100 ND 0.00100 0.00100 0.00100 0.00100 0.00100 0.00100 0.00100 0.00200 0.150 ND 0.000200 0.129 0.0100 ND 0.00100 ND 0.00100 ND 0.00100 ND 0.00300 ND 0.00100 ND	Result Limit Units Sampled: 05/10/05 16:55 Received: Decived: Decive of the property of the prop	Result Limit Units Dilution Sampled: 05/10/05 16:55 Received: 05/11/05 1 ND 0.00100 mg/l 1 0.00207 0.00100 " " ND 0.000200 " " ND 0.00100 " " ND 0.00100 " " ND 0.00100 " " ND 0.00100 " " ND 0.00300 " " ND 0.00100 " " ND 0.00100 " " ND 0.00100 " " ND 0.00100 " "	Result Limit Units Dilution Batch Sampled: 05/10/05 16:55 Received: 05/11/05 13:15 ND 0.00100 mg/l 1 5E12049 0.00207 0.00100 " " " ND 0.00100 " " 5E17041 ND 0.000200 " " 5E17031 0.129 0.0100 " " 5E12049 ND 0.00100 " " " ND 0.00300 " " " ND 0.00100 " " " ND 0.00100 "	Result Limit Units Dilution Batch Prepared Sampled: 05/10/05 16:55 Received: 05/11/05 13:15 ND 0.00100 mg/l 1 5E12049 05/12/05 0.00207 0.00100 """"""""""""""""""""""""""""""""""""	Result Limit Units Dilution Batch Prepared Analyzed Sampled: 05/10/05 16:55 Received: 05/11/05 13:15 SE12049 05/12/05 05/18/05 ND 0.00100 mg/l 1 5E12049 05/12/05 05/18/05 ND 0.00100 " " " " 05/14/05 ND 0.00100 " " " " " " ND 0.00100 " " " " " " ND 0.00100 " " " " " " ND 0.00100 " " 5E17041 05/17/05 05/26/05 ND 0.00200 " " 5E17041 05/17/05 05/17/05 0.129 0.0100 " " 5E12049 05/12/05 05/14/05 ND 0.00100 " " " " " " ND 0.00300 "	Result Limit Units Dilution Batch Prepared Analyzed Method Sampled: 05/10/05 16:55 Received: 05/11/05 13:15 ND 0.00100 mg/l 1 5E12049 05/12/05 05/18/05 EPA 6020 - Diss 0.00207 0.00100 " " " " 05/14/05 " ND 0.00100 " " " " " " " ND 0.00100 " " " " " " " " ND 0.00100 " </td

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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: 923-1000.002

Reported:

05/27/05 10:30

Volatile Organic Compounds by EPA Method 8260B

Project Manager: Douglas Morell

North Creek Analytical - Bothell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW6-051005 (B5E0309-01) Water	Sampled: 05/10	0/05 11:40	Received:	05/11/05 13	3:15				
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	n	u	**	н	**	n	
1,1,2,2-Tetrachloroethane	ND	0.500	Ħ	н	It	n	"	II .	
1,1,2-Trichloroethane	ND	0.200	. "	**	ti	If	n	"	
1,1-Dichloroethane	ND	0.200	n n	n	lt .	**	II .	11	
1,1-Dichloroethene	ND	0.200	n .	**	11	"	11	н	
1,1-Dichloropropene	ND	0.200	n	n	11	"	e e	o o	
1,2,3-Trichlorobenzene	ND	0.200	II.	Ħ	Ħ	n	"	n	
1,2,3-Trichloropropane	ND	0.500	**	n	u	**	n	n	
1,2,4-Trichlorobenzene	ND	0.200	tt.	11	11	n	H	n	
1,2,4-Trimethylbenzene	ND	0.200	11	u	u	H	11	**	
1,2-Dibromo-3-chloropropane	ND	0.500	n	11	IT	11	It	и	
1,2-Dibromoethane	ND	0.200	11	n	11	b	11	**	
1,2-Dichlorobenzene	ND	0.200	u	н	11	**	**	u	
1,2-Dichloroethane	ND	0.200	11	n	"	11	Ħ	tt	
1,2-Dichloropropane	ND	0.200	Ħ	n	It	n	tt	11	
1,3,5-Trimethylbenzene	ND	0.500	11	11	11	Ħ	H	n	
1,3-Dichlorobenzene	ND	0.200	n	н	n	n	"	11	
1,3-Dichloropropane	ND	0.200	n	n	п	"	n	n	
1,4-Dichlorobenzene	ND	0.200	n	U	tt	ıı	11	н	
2,2-Dichloropropane	ND	0.500	11	н	11	**	u ·	**	
2-Butanone	ND	2.00	n	11	11	**	Ħ	n	
2-Chlorotoluene	ND	0.500	U	n	11	ıı	n	н	
2-Hexanone	ND	2.00	н	**	11	11	tt.	TI .	
4-Chlorotoluene	ND	0.500	11	u	11	n	н	u	
4-Methyl-2-pentanone	ND	2.00	II.	n	11	**	**	H	
Acetone	ND	10.0	"	11	**	11	II	11	
Benzene	ND	0.200	U.	11	tr.	n	tt	n	
Bromobenzene	ND.	0.500	n	11	**	n	n .	n	
Bromochloromethane	ND	0.200	n	u	n	n	н	u	
Bromodichloromethane	ND	0.200	11	n	II.	11	"	u	
Bromoform	ND	0.200	11	"	11	TI	n	11	
Bromomethane	ND	2.00	11	"	n n	ıı	11	11	
Carbon disulfide	ND	0.500	n	"	"	11	11	Ħ	
Carbon tetrachloride	ND	0.200	n	n	"	tt	II .	11	

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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 Number: 923-1000.002
Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW6-051005 (B5E0309-01) Water	Sampled: 05	5/10/05 11:40	Received:	05/11/05 13	3:15				
Chlorobenzene	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	н	
Chloroethane	ND	1.00	"	n	11	11	IT	**	
Chloroform	ND	0.200	n	If	11	n n	11	II .	
Chloromethane	ND	1.00	**	11	11	**	II	11	
cis-1,2-Dichloroethene	ND	0.200	11	н	11	"	ti.	n	
cis-1,3-Dichloropropene	ND	0.200	n	II.	IT	n	· ·	tt	
Dibromochloromethane	ND	0.200	II.	11	n	н	**	n	
Dibromomethane	ND	0.200	fl	tt.	n	n	н	II.	
Dichlorodifluoromethane	ND	0.500	n	11	11	tt	n	в	
Ethylbenzene	ND	0.200	11	u	u	11	н	u	
Hexachlorobutadiene	ND	0.500	11	"	**	11	**	n	
Isopropylbenzene	ND	0.500	U	u	n	π	H	II .	
m,p-Xylene	ND	0.500	11	11	tt	II	**	n	
Methyl tert-butyl ether	ND	1.00	II.	u	"	tt	n	II.	
Methylene chloride	ND	2.00	H	**	**	n	11	11	
n-Butylbenzene	ND	0.200	ır	11	**	11	tt	u	
n-Hexane	ND	1.00	**	n	**	II .	11	н	
n-Propylbenzene	ND	0.500	u	tt .	IT	Ħ	II.	11	
Naphthalene	ND	0.500	11	11	ti	II.	Ħ	n	
o-Xylene	ND	0.250	**	u	n	11	IT	11	
p-Isopropyltoluene	ND	0.200	"	11	**	II.	11	tt.	
sec-Butylbenzene	ND	0.200	11	n	11	"	ti .	н	
Styrene	ND	0.500	11	Ħ	н	ti	н	u	
tert-Butylbenzene	ND	0.500	n	u	11	11	11	H	
Tetrachloroethene	ND	0.200	11	n	II	11	II	H	
Toluene	ND	0.200	tt.	11	11	н	11	II.	
trans-1,2-Dichloroethene	ND	0.200	"	11	u	11	n	н	
trans-1,3-Dichloropropene	ND	0.200	11	**	**	II .	н	11	
Trichloroethene	ND	0.200	н	11	tr.	**	u	н	
Trichlorofluoromethane	ND	0.500	u	11	н	II .	n	n	
Vinyl chloride	ND	0.200	11	H	n	11	11	R	
Surrogate: 1,2-DCA-d4	111 %	70-130			"	п	"	"	
Surrogate: Toluene-d8	102 %	70-130			n	"	"	"	
Surrogate: 4-BFB	99.8 %	70-130			"	"	"	n .	

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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 Number: 923-1000.002
Project Manager: Douglas Morell

Reported: 05/27/05 10:30

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

LMW10-051005 (B5E0309-02) Water Sampled: 05/10/05 17:30 Received: 05/11/05 13:15 1,1,1,2-Tetrachloroethane ND 0.200 ug/l 1 5E12071 05/12/05 05/12/05 EPA 8260B 1,1,1-Trichloroethane ND 0.200 "	
1,1,1,2-Tetrachloroethane ND 0.200 ug/l 1 5E12071 05/12/05 05/12/05 EPA 8260B 1,1,1-Trichloroethane ND 0.200 "	
1,1,1-Trichloroethane ND 0.200 "	
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 0.220 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: 923-1000.002 Project Manager: Douglas Morell

Reported: 05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
						Tropurcu	7 mary 2cc	Wichiod	Notes
LMW10-051005 (B5E0309-02) Water		05/10/05 17:30	Received	1: 05/11/05	13:15				
Chlorobenzene	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	н	
Chloroethane	ND	1.00	"	IT	11	n	It	O.	
Chloroform	ND	0.200	Ħ	II.	"	u	n	n	
Chloromethane	ND	1.00	IT	**	**	**	ıı	n	
cis-1,2-Dichloroethene	ND	0.200	tt	It	11	11	11	**	
cis-1,3-Dichloropropene	ND	0.200	11	ti	11	Ħ	n	n	
Dibromochloromethane	ND	0.200	II.	11	#1	n	lt .	II.	
Dibromomethane	ND	0.200	11	u	n	11	11	ti	
Dichlorodifluoromethane	ND	0.500	II	"	"	Ħ	n	u	
Ethylbenzene	ND	0.200	tı	ıt	n	II	**	tt	
Hexachlorobutadiene	ND	0.500	Ħ	n	u	11	н	н	
lsopropylbenzene	ND	0.500	IT	If	ft	н	11	n .	
m,p-Xylene	ND	0.500	"	"	II	11	11	и	
Methyl tert-butyl ether	ND	1.00	н	**	n	H.	u	n	
Methylene chloride	ND	2.00	11	11	11	11	11	n	
n-Butylbenzene	ND	0.200	11	**	tt	**	ti .	tt.	
n-Hexane	ND	1.00	11	u	n	u	**	11	
n-Propylbenzene	ND	0.500	ti	11	II.	**	IT	o o	
Naphthalene	ND	0.500	II .	H	11	u-	ti.	п	
o-Xylene	ND	0.250	11	11	n	ti	Ħ	n	
p-Isopropyltoluene	ND	0.200	IT	II	11	If	**	н	
sec-Butylbenzene	ND	0.200	n	n	н	11	II .	tt·	
Styrene	ND	0.500	11	II	11	n	11	н	
tert-Butylbenzene	ND	0.500	n	"	н	***	II	11	
Tetrachloroethene	ND	0.200	H	H .	π	IT	11	11	
Toluene	ND	0.200	**	11	11	n	lt .	II.	
trans-1,2-Dichloroethene	ND	0.200	11	If	11	Ħ	n	н	
trans-1,3-Dichloropropene	ND	0.200	II .	n	#	**	n	**	
Trichloroethene	ND	0.200	11	11	ır	**	11	н	
Trichlorofluoromethane	ND	0.500	u	n	11	**	tt.	tt	
Vinyl chloride	ND	0.200	"	n	u	11	11	Ħ	
Surrogate: 1,2-DCA-d4	111 %	70-130			"	"	"	n.	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-BFB	100 %	70-130			"	н	"	"	

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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 Number: 923-1000.002
Project Manager: Douglas Morell

Reported: 05/27/05 10:30

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW11-051005 (B5E0309-03) Water	Sampled: 05/	10/05 13:00	Received	l: 05/11/05	13:15				
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	"	u	11	н	#	11	
1,1,2,2-Tetrachloroethane	ND	0.500	n	**	**	n	II.	11	
1,1,2-Trichloroethane	ND	0.200	**	If	11	11	11	п	
1,1-Dichloroethane	ND	0.200	"	11	TI	11	п	n	
1,1-Dichloroethene	ND	0.200	"	н	n	н	11	It	
1,1-Dichloropropene	ND	0.200	II	"	11	11	**	11	
1,2,3-Trichlorobenzene	ND	0.200	Ħ	**	н	**	11	п	
1,2,3-Trichloropropane	ND	0.500	11	It	"	n	н	11	
1,2,4-Trichlorobenzene	ND	0.200	tt.	Ħ	11	tt	11	н	
1,2,4-Trimethylbenzene	ND	0.200	**	11	**	II	n	11	
1,2-Dibromo-3-chloropropane	ND	0.500	II .	11	11	ti	11	n	
1,2-Dibromoethane	ND	0.200	11	H	"	II	n	tt.	
1,2-Dichlorobenzene	ND	0.200	11	ti	n	tı	11	11	
1,2-Dichloroethane	ND	0.200	11	н	11	II	и	11	
1,2-Dichloropropane	ND	0.200	H	ш	11	u	11	н	
1,3,5-Trimethylbenzene	ND	0.500	n	n	11	**	11	Ħ	
1,3-Dichlorobenzene	ND	0.200	H.	tt	tı	**	tt	и	
1,3-Dichloropropane	ND	0.200	u	11	0	u u	II .	n	
1,4-Dichlorobenzene	ND	0.200	n	II.	**	11	n	п	
2,2-Dichloropropane	ND	0.500	11	**	U	n .	If	11	
2-Butanone	ND	2.00	*1	u	**	tt	11	II.	
2-Chlorotoluene	ND	0.500	· n	н	II .	***	11	11	
2-Hexanone	ND	2.00	11	**	**	**	Ħ	u	
4-Chlorotoluene	ND	0.500	ti .	"	TI .	11	u .	н	
4-Methyl-2-pentanone	ND	2.00	n	Ħ	11	н	Ħ	11	
Acetone	ND	10.0	п	11	11	11	11	n	
Benzene	0.220	0.200	**	11	n	II	n	†I	
Bromobenzene	ND	0.500	n	н	**	n	11	u	
Bromochloromethane	ND	0.200	**	tt	*	tt	ıı	TI	
Bromodichloromethane	ND	0.200	U	11	tt	n	n	tt	
Bromoform	ND	0.200	"	11	H	tt	lt .	n	
Bromomethane	ND	2.00	O.	11	tt	11	Ħ	11	
Carbon disulfide	ND	0.500	Ħ	u	tt.	tr.	u	n	
Carbon tetrachloride	ND	0.200	n .	н	11	11	11	11	

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Golder Associates Inc. 18300 NE Union Hill Rd, Suite 200 Redmond, WA/USA 98052-3333 Project Number: 923-1000.002
Project Manager: Douglas Morell

Reported: 05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
LMW11-051005 (B5E0309-03) Water	Sampled: (05/10/05 13:00	Received	1: 05/11/05	13:15				
Chlorobenzene	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	n	
Chloroethane	ND	1.00	U	n	11	II	II .	n	
Chloroform	ND	0.200	**	11	**	11	11	n	
Chloromethane	ND	1.00	11	"	**	u	n	n	
cis-1,2-Dichloroethene	ND	0.200	**	u u	II	11	н	Ħ	
cis-1,3-Dichloropropene	ND	0.200	tt.	"	tt	u	**	11	
Dibromochloromethane	ND	0.200	11	· ·	tt	H	n	н	
Dibromomethane	ND	0.200	u	**	11	11	11	tt	
Dichlorodifluoromethane	ND	0.500	**	u	**	н	II	II	
Ethylbenzene	ND	0.200	H	**	n	11	11	n	
Hexachlorobutadiene	ND	0.500	Ħ	11	n	lt .	u	n.	
Isopropylbenzene	ND	0.500	11	***	n	tt	11	n	
m,p-Xylene	ND	0.500	**	tt	11	u	11	11	
Methyl tert-butyl ether	ND	1.00	**	H	11	11	H	11	
Methylene chloride	ND	2.00	n	11	**	n	n	n	
n-Butylbenzene	ND	0.200	**	II.	11	11	it .	11	
n-Hexane	ND	1.00	11	n	11	n	ii .	11	
n-Propylbenzene	ND	0.500	**	II .	n .	н	ti	11	
Naphthalene	ND	0.500	II	11	11	11	II	n	
o-Xylene	ND	0.250	11	n	u	11	11	11	
p-Isopropyltoluene	ND	0.200	11	н	n	и	If	11	
sec-Butylbenzene	ND	0.200	n	"	ti	n	н	н	
Styrene	ND	0.500	"	17	II	U	n	n	
tert-Butylbenzene	ND	0.500	11	н	**	11	II	11	
Tetrachloroethene	ND	0.200	"	n	n	**	и	n	
Toluene	ND	0.200	U	11	11	п	11	11	
trans-1,2-Dichloroethene	ND	0.200	11	11	11	"	lt .	u.	
trans-1,3-Dichloropropene	ND	0.200	11	u	II .	11	*	н	
Trichloroethene	ND	0.200	и	**	н	н	Tr.	n	
Trichlorofluoromethane	ND	0.500	n	II .	"	**		tr	
Vinyl chloride	ND	0.200	II .	**	n	tt	ń	n	
Surrogate: 1,2-DCA-d4	114 %	70-130			"	"	n n	n .	
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: 923-1000.002

Reported:

05/27/05 10:30

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

Project Manager: Douglas Morell

PRILAMVII-0-51005 (BSE0309-04) Water ND 0.200 1.0 5E1207 0.5/12/05	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1- Trichloroethane	FBLMW10-051005 (B5E0309-04) Water	Sampled	: 05/10/05 13:	15 Recei	ived: 05/11/	05 13:15				
1,1,2,2-Tetrachloroethane ND 0,500 " <td< td=""><td>1,1,1,2-Tetrachloroethane</td><td>ND</td><td>0.200</td><td>ug/l</td><td>1</td><td>5E12071</td><td>05/12/05</td><td>05/12/05</td><td>EPA 8260B</td><td></td></td<>	1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	EPA 8260B	
1,1,2-Trichloroethane	1,1,1-Trichloroethane	ND	0.200	**	n	n	11	**	17	
1,1-Dichloroethane	1,1,2,2-Tetrachloroethane	ND	0.500	11	If	u u	н	н	u u	
1,1-Dichloroethene	1,1,2-Trichloroethane	ND	0.200	11	11	tı	tt	11	**	
1,1-Dichloropropene	1,1-Dichloroethane	ND	0.200	n	ıı	II	н	ti	tr.	
1,2,3-Trichlorobenzene ND 0,200 "<	1,1-Dichloroethene	ND	0.200	11	11	11	**	n	n	
1,2,3-Trichloropropane ND 0,500 "<	1,1-Dichloropropene	ND	0.200	н	u	11	n	n	u	
1,2,4-Trichlorobenzene ND 0,200 "<	1,2,3-Trichlorobenzene	ND	0.200	u	ti	†I	"	tt	11	
1,2,4-Trimethylbenzene ND 0,200 "<	1,2,3-Trichloropropane	ND	0.500	**	н	11	и	н	u .	
1,2-Dibromo-3-chloropropane ND 0,500 " <	1,2,4-Trichlorobenzene	ND	0.200	u	11	n	"	11	п	
1,2-Dibromoethane ND 0,200 "	1,2,4-Trimethylbenzene	ND	0.200	n	n	**	"	n	II.	
1,2-Dichlorobenzene ND 0,200 """"""""""""""""""""""""""""""""""""	1,2-Dibromo-3-chloropropane	ND	0.500	tt	11	n	n	tt	n	
1,2-Dichloroethane	I,2-Dibromoethane	ND	0.200	11	II	11	n	II	11	
1,2-Dichloropropane ND 0,200 """"""""""""""""""""""""""""""""""""	1,2-Dichlorobenzene	ND	0.200	n	11	**	11	Ħ	н	
1,3,5-Trimethylbenzene ND 0,500 """"""""""""""""""""""""""""""""""""	1,2-Dichloroethane	ND	0.200	n	11	"	II	II.	n	
1,3-Dichlorobenzene ND 0,200 """"""""""""""""""""""""""""""""""""	1,2-Dichloropropane	ND	0.200	11	11	n	**	ti	II.	
1,3-Dichloropropane	1,3,5-Trimethylbenzene	ND	0.500	n	11	**	n	**	Ħ	
1,4-Dichlorobenzene ND 0,200 """"""""""""""""""""""""""""""""""""	1,3-Dichlorobenzene	ND	0.200	11	n	"	11	н	u .	
2,2-Dichloropropane ND 0.500 """"""""""""""""""""""""""""""""""""	1,3-Dichloropropane	ND	0.200	H	11	**	ti .	n	н	
2-Butanone ND 2.00 " " " " " " " " " " " " " " " " 2-Chlorotoluene ND 0.500 " " " " " " " " " " " " " " " " " "	1,4-Dichlorobenzene	ND	0.200	11	II	н	n	н	11	
2-Chlorotoluene ND 0.500 " " " " " " " " " " " " " " " " " "	2,2-Dichloropropane	ND	0.500	n	π	TE	11	n	u	
2-Hexanone ND 2.00 " " " " " " " " " " " " " " " " " "	2-Butanone	ND	2.00	11	II.	u	II	n	н	
4-Chlorotoluene ND 0.500 """" """ """ """ """ ND 10.0 """ ND 10.0 """ """ """ """ """ """ ""	2-Chlorotoluene	ND	0.500	11	**	n	Ħ	11	u	
4-Methyl-2-pentanone ND 2.00 10 10 10 10 10 10 10 10 10	2-Hexanone	ND	2.00	n	"	n	tt .	11	11	
Acetone ND 10.0 " " " " " " " " " " " " " " " " " "	4-Chlorotoluene	ND	0.500	u .		11	"	n	11	
ND 0.200 "	l-Methyl-2-pentanone	ND	2.00	ii .	n	11	**	11	n.	
Bromobenzene ND 0.500 "	Acetone	ND	10.0	11	n	II .	II	11	11	
Bromochloromethane	Benzene	ND	0.200	н	**	11	**	Ħ	n	
Bromodichloromethane	Bromobenzene	ND	0.500	11	tt	11	п	n	п	
Bromoform ND 0.200	Bromochloromethane	ND	0.200	п	"	н	11	н	n	
Bromomethane ND 2.00 " " " " " " " " " " " " " " " " " "	Bromodichloromethane	ND	0.200	**	**	11	tt	n	n	
Carbon disulfide ND 0.500 " " " " " "	Bromoform	ND	0.200	u u	н		**	tt	11	
	Bromomethane	ND	2.00	11	**	11	m ,	11	**	
Carbon tetrachloride ND 0,200 " " " " " "	Carbon disulfide	ND	0.500	a	u	"	tr .	11	tt.	
	Carbon tetrachloride	ND	0.200	Ħ	11	If	11	н	н	

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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: 923-1000.002 Project Manager: Douglas Morell **Reported:** 05/27/05 10:30

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

PBLMW10-051005 (BSE0309-04) Water Sampled: 05/10/05 13:15 Received: 05/11/05 Re	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chlorobenzene ND	FBLMW10-051005 (B5E0309-04) Water	Sample	d: 05/10/05 13:	15 Recei	ved: 05/11/0	05 13:15				
Chlorotchare Chlorotorm Chlorotorm O.430 0.200 0							05/12/05	05/12/05	11	
Chloromethane	Chloroethane	ND	1.00						n	
cis-1,2-Dichloroethene	Chloroform	0.430	0.200	ır	tr	e e	н	tt	u	
cis-1,3-Dichloropropene ND 0,200 "	Chloromethane	ND	1.00	"	11	n	n	"	11	
Dibromochlaromethane ND	cis-1,2-Dichloroethene	ND	0.200	II	U	tt	11	11	n .	
Dichlormomethane ND 0.200 " " " " " " " " "	cis-1,3-Dichloropropene	ND	0.200	11	**	11	11	**	#1	
Dichlorodifluoromethane ND	Dibromochloromethane	ND	0.200	п	u	11	II.	n	u ·	
Ethylbenzene ND 0.200 " " " " " " " " " " " " " " " " " "	Dibromomethane	ND	0.200	**	**	н	11	11	11	
Hexachlorobutadiene ND 0.500 " " " " " " " " "	Dichlorodifluoromethane	ND	0.500	tr .	tr	11	11	H	u	
Supropylbenzene ND 0.500 " " " " " " " " "	Ethylbenzene	ND	0.200	11	н	II	н	11	н	
m.p-Xylene ND 0.500 "	Hexachlorobutadiene	ND	0.500	tt.	ti.	n	**	H	u	
Methyl tert-butyl ether ND 1,00 """"""""""""""""""""""""""""""""""""	Isopropylbenzene	ND	0.500	11	11	н	N	11	н	
Methylene chloride n-Butylbenzene ND 0,200 " " " " " " " " " " " " " " " " " "	m,p-Xylene	ND	0.500	11	11	**	11	n	11	
n-Butylbenzene ND 0,200 " " " " " " " " " " " " " " " " " "	Methyl tert-butyl ether	ND	1.00	н	н	**	11	11	It.	
n-Hexane ND 1.00 " " " " " " " " " " " " " " " " " "	Methylene chloride	ND	2.00	n	n	"	11	11	11	
Naphthalene ND 0.500 "	n-Butylbenzene	ND	0.200	И	и	lt.	u	H	u	
Naphthalene ND 0.500 " " " " " " " " " " " " " " " " " "	n-Hexane	ND	1.00	tt	n	11	**	Ħ	n	
0-Xylene	n-Propylbenzene	ND	0.500	н	II	**	11	II	**	
p-isopropyltoluene ND 0.200 " " " " " " " " " " " " " " " " " "	Naphthalene	ND	0.500	11	11	н	H	11	tr	
ND	o-Xylene	ND	0.250	II	lt.	Tt .	**	u	n	
Styrene ND 0.500 """"""""""""""""""""""""""""""""""""	p-Isopropyltoluene	ND	0.200	n	n	II	H	n	11	
tert-Butylbenzene ND 0.500 " " " " " " " " " " " " " " " " " "	sec-Butylbenzene	ND	0.200	u	19	11	11	n	IT	
Tetrachloroethene ND 0.200 " " " " " " " " " " " " " " " " " "	Styrene	ND	0.500	н	11	u	11	11	n	
Toluene ND 0.200 " " " " " " " " " " " " " " " " " "	tert-Butylbenzene	ND	0.500	**	tı	#1	ıı	tı	u	
trans-1,2-Dichloroethene ND 0.200 " " " " " " " " " " " " " " " " " "	Tetrachloroethene	ND	0.200	II	tt .	11	tt	**	n	
trans-1,3-Dichloropropene ND 0.200 " <th< td=""><td>Toluene</td><td>ND</td><td>0.200</td><td>11</td><td>**</td><td>н</td><td>**</td><td>II</td><td>"</td><td></td></th<>	Toluene	ND	0.200	11	**	н	**	II	"	
Trichloroethene ND 0.200 "	rans-1,2-Dichloroethene	ND	0.200	lf .	U U	11	11	11	n	
Trichlorofluoromethane ND 0.500 "<	rans-1,3-Dichloropropene	ND	0.200	**	11	11	n	u	*1	
Vinyl chloride ND 0.200 "	Trichloroethene	ND	0.200	II.	u	"	н	**	ıı .	
Surrogate: 1,2-DCA-d4 110 % 70-130 " " " " " " " " " " " " " " " " " " "	Trichlorofluoromethane	ND		11	11	11	ft	11	11	
Surrogate: Toluene-d8 99.0 % 70-130 " " " " "	Vinyl chloride	ND	0.200	n	11	If	11	n	n	
·	Surrogate: 1,2-DCA-d4	110 %	70-130			"	"	"	n	
Surrogate: 4-BFB 100 % 70-130 " " " " "	Surrogate: Toluene-d8	99.0 %	70-130			"	n	"	n	
	Surrogate: 4-BFB	100 %	70-130			"	"	"	"	

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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: 923-1000.002 Project Manager: Douglas Morell

Reported: 05/27/05 10:30

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

		Reporting		-					
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
LMW2-051005 (B5E0309-05) Water	Sampled: 05/1	0/05 14:30	Received:	05/11/05 13	3:15				
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	11	O.	11	11	n	"	
1,1,2,2-Tetrachloroethane	ND	0.500	11	11	n	n	n	U	
1,1,2-Trichloroethane	ND	0.200	11	· ·	n	n	11	11	
1,1-Dichloroethane	ND	0.200	n	**	**	#	н	n .	
1,1-Dichloroethene	ND	0.200	11	II	Ħ	II .	ŧr	11	
1,1-Dichloropropene	ND	0.200	u	n	"	**	н	II	
1,2,3-Trichlorobenzene	ND	0.200	Ħ	n	11	II	n	п	
1,2,3-Trichloropropane	ND	0.500	H	11	**	11	н	н	
1,2,4-Trichlorobenzene	ND	0.200	11	н	11	n	11	11	
1,2,4-Trimethylbenzene	ND	0.200	n	#	n	**	н	11	
1,2-Dibromo-3-chloropropane	ND	0.500	11	11	Ħ	It	11	11	
1,2-Dibromoethane	ND	0.200	n	11	**	n	H	11	
1,2-Dichlorobenzene	ND	0.200	Ħ	н	11	II.	tt	п	
1,2-Dichloroethane	ND	0.200	n	"	n	11	11	11	
1,2-Dichloropropane	ND	0.200	n	п	n	tt	tt	н	
1,3,5-Trimethylbenzene	ND	0.500	n	"	**	11	u	u	
1,3-Dichlorobenzene	ND	0.200	11	11	"	17	**	n	
1,3-Dichloropropane	ND	0.200	н	**	"	11	11	"	
1,4-Dichlorobenzene	ND	0.200	n	u	n	tt	11	n.	
2,2-Dichloropropane	ND	0.500	п	**	n	н	n	11	
2-Butanone	ND	2.00	11	u	II	**	ıı	n	
2-Chlorotoluene	ND	0.500	α	n	n	ıı	п	n	
2-Hexanone	ND	2.00	#	11	ır	"	11	11	
4-Chlorotoluene	ND	0.500	II.	11	н	II.	11	II.	
4-Methyl-2-pentanone	ND	2.00	"	n	n	н	11	11	
Acetone	ND	10.0	11	n	11	*1	n	u.	
Benzene	ND	0.200	u	**	11	H	**	н	
Bromobenzene	ND	0.500	11	II	н	ft	11	n	
Bromochloromethane	ND	0.200	n	. 11	11	**	11	п	
Bromodichloromethane	ND	0.200	n	ıı	ır	n	11	11	
Bromoform	ND	0.200	11	**	11	п	n	tt	
Bromomethane	ND	2.00	tt	u	II.	11	"	н	
Carbon disulfide	ND	0.500	II	"	н	11	ll .	**	
Carbon tetrachloride	ND	0.200	11	11	tt.	11	11	11	
		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: 923-1000.002

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW2-051005 (B5E0309-05) Water	Sampled: 05	5/10/05 14:30	Received:	: 05/11/05 13	3:15				
Chlorobenzene	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	n .	
Chloroethane	ND	1.00	U	n	R	**	Ħ	н	
Chloroform	ND	0.200	n	Ħ	**	Ħ	11	u	
Chloromethane	ND	1.00	11	"	11	**	11	н	
cis-1,2-Dichloroethene	ND	0.200	11	и	n	н	n	11	
cis-1,3-Dichloropropene	ND	0.200	n	"	11	11	n	11	
Dibromochloromethane	ND	0.200	ıı	н	11	н	11	n	
Dibromomethane	ND	0.200	н	11	"	11	11	11	
Dichlorodifluoromethane	ND	0.500	u	н	"	**	u ·	tt.	
Ethylbenzene	ND	0.200	**	u	u	u	11	п	
Hexachlorobutadiene	ND	0.500	"	11	11	**	ti .	11	
Isopropylbenzene	ND	0.500	**	u	н	11	11	н	
m,p-Xylene	ND	0.500	**	**	11	#	tt	n	
Methyl tert-butyl ether	ND	1.00	n	D.	II	11	n	н	
Methylene chloride	ND	2.00	II.	Ħ	Ħ	11	11	11	
n-Butylbenzene	ND	0.200	11	n	II	11	H	н	
n-Hexane	ND	. 1.00	u	n	ti	и	11	17	
n-Propylbenzene	ND	0.500	**	u	n	tt	n	II	
Naphthalene	ND	0.500	It	Ħ	"	II .	n	11	
o-Xylene	ND	0.250	Ħ	U	II.	11	II	п	
p-Isopropyltoluene	ND	0.200	u	n	11	u	н	11	
sec-Butylbenzene	ND	0.200	n	U	u	11	n	ti.	
Styrene	ND	0.500	II.	n	11	u	11	n	
tert-Butylbenzene	ND	0.500	Ħ	11	11	11	11	11	
Tetrachloroethene	ND	0.200	11	n	и	11	II .	II.	
Toluene	ND	0.200	n	п	n	Ħ	tt	п	
rans-1,2-Dichloroethene	ND	0.200	n	H	II	п	U	n	
rans-1,3-Dichloropropene	ND	0.200	11	11	71	IT	n	н	
Trichloroethene	ND	0.200	n	n	U	11	n.	11	
Trichlorofluoromethane	ND	0.500	**	11	11	τι	n	п	
Vinyl chloride	ND	0.200	**	li	н	u	u	Ħ	
Surrogate: 1,2-DCA-d4	117 %	70-130			n	"	n	н	
Surrogate: Toluene-d8	93.2 %	70-130			"	"	"	"	
Surrogate: 4-BFB	103 %	70-130			n	"	"	"	

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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

Project Number: 923-1000.002 Reported:
Project Manager: Douglas Morell 05/27/05 10:30

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW4-051005 (B5E0309-06) Water	Sampled: 05/	10/05 15:50	Received:	05/11/05 13	3:15				
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	n .	11	"	**	n	11	
1,1,2,2-Tetrachloroethane	ND	0.500	11	H	11	11	11	n	
1,1,2-Trichloroethane	ND	0.200	0	"	lt	**	11	n	
1,1-Dichloroethane	ND	0.200	н	н	11	"	u u	n	
1,1-Dichloroethene	ND	0.200	tr	u	н	11	и	ti	
1,1-Dichloropropene	ND	0.200	н	н	11	n	11	H .	
1,2,3-Trichlorobenzene	ND	0.200	II.	11	н	11	tt .	n	
1,2,3-Trichloropropane	ND	0.500	н	н	11	н	n	II.	
1,2,4-Trichlorobenzene	ND	0.200	tt	"	**	11	n	n	
1,2,4-Trimethylbenzene	ND	0.200	н	п	"	II .	Ħ	O.	
1,2-Dibromo-3-chloropropane	ND	0.500	ti	11	H	11	u	11	
1,2-Dibromoethane	ND	0.200	н	u	11	11	11	11	
1,2-Dichlorobenzene	ND	0.200	11	Ħ	U	Ħ	11	n	
1,2-Dichloroethane	ND	0.200	H .	tr	Ħ	n	H .	11	
1,2-Dichloropropane	ND	0.200	n	**	n	11	11	II.	
1,3,5-Trimethylbenzene	ND	0.500	11	II.	11	n	п	Ħ	
1,3-Dichlorobenzene	ND	0.200	н	II	п	II	*11	n	
1,3-Dichloropropane	ND	0.200	II .	11	11	11	n	If	
1,4-Dichlorobenzene	ND	0.200	n	n	11	11	н	п	
2,2-Dichloropropane	ND	0.500	11	n	If	Ħ	11	11	
2-Butanone	ND	2.00	п	It	п	11	II	II .	
2-Chlorotoluene	ND	0.500	11	u	n	U .	**	11	
2-Hexanone	ND	2.00	u	n	11	**	11	Ħ	
4-Chlorotoluene	ND	0.500	н	H	n	ŧı	tt	11	
4-Methyl-2-pentanone	ND	2.00	11	n	n	H	u	11	
Acetone	ND	10.0	n	11	ti	n	U	If	
Benzene	ND	0.200	11	н	IF.	11	**	n	
Bromobenzene	ND	0.500	n	tr	n	н	11	u	
Bromochloromethane	ND	0.200	n	и	D	tr	it	H	
Bromodichloromethane	ND	0.200	11	11	tt	u	11	**	
Bromoform	ND	0.200	11	tt	n	11	n	u .	
Bromomethane	ND	2.00	11	н	11	u	н	**	
Carbon disulfide	ND	0.500	II	**	"	11	11	n	
Carbon tetrachloride	ND	0.200	11	u	п	**	H .	11	

North Creek Analytical - Bothell

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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 Number: 923-1000.002
Project Manager: Douglas Morell

Reported: 05/27/05 10:30

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

Analyta	D 1/2	Reporting	Y 7	D.11					
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW4-051005 (B5E0309-06) Water	Sampled: 05	5/10/05 15:50	Received:	05/11/05 13	3:15				
Chlorobenzene	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	11	
Chloroethane	ND	1.00	11	n	N	и	tt	н	
Chloroform	ND	0.200	II	11	**	**	н	u	
Chloromethane	ND	1.00	Ħ	н	н	H	tt	11	
cis-1,2-Dichloroethene	ND	0.200	11	11	tr.	n	II .	u	
cis-1,3-Dichloropropene	ND	0.200	#1	н	н	n	n	tt	
Dibromochloromethane	ND	0.200	11	11	ti	11	II	tr	
Dibromomethane	ND	0.200	11	"	11	н	n	n	
Dichlorodifluoromethane	ND	0.500	II.	**	11	11	tr .	u	
Ethylbenzene	ND	0.200	11	H	**	H	n	11	
Hexachlorobutadiene	ND	0.500	II.	n	**	11	II	tt	
Isopropylbenzene	ND	0.500	"	н	н	tt.	11	н	
m,p-Xylene	ND	0.500	u	**	11	11	Ħ	TT .	
Methyl tert-butyl ether	ND	1.00	**	H.	н	u	11	и	
Methylene chloride	ND	2.00	u	n	11	"	er e	11	
n-Butylbenzene	ND	0.200	n	II .	и	II .	Ħ	и	
n-Hexane	ND	1.00	11	п	**	**	n	11	
n-Propylbenzene	ND	0.500	*1	n n	н	n	II	11	
Naphthalene	ND	0.500	u	п	11	11	ti	n	
o-Xylene	ND	0.250	11	"	п	11	11	n	
p-Isopropyltoluene	ND	0.200	**	Ħ	ti	II.	н	11	
sec-Butylbenzene	ND	0.200	n	n	11	n	11	11	
Styrene	ND	0.500	n .	If	n	II.	II	n	
tert-Butylbenzene	ND	0.500	n	11	11	11	"	II	
Tetrachloroethene	ND	0.200	Ħ	п	u .	11	II.	**	
Toluene	ND	0.200	11	n	11	н	11	n	
trans-1,2-Dichloroethene	ND	0.200	**	tt .	n	"	11	н	
trans-1,3-Dichloropropene	ND	0.200	II	н	n	11	H	"	
Trichloroethene	ND	0.200	11	ti	11	"	**	n	
Trichlorofluoromethane	ND	0.500	II.	11	11	11	er .	n	
Vinyl chloride	ND	0.200	11	11	n	н	11	n .	
Surrogate: 1,2-DCA-d4	118 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.0 %	70-130			"	"	"	n	
Surrogate: 4-BFB	100 %	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: 923-1000.002

Reported: 05/27/05 10:30

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

Project Manager: Douglas Morell

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW7-051005 (B5E0309-07) Water	Sampled: 05/	10/05 16:55	Received:	05/11/05 13	3:15				
1,1,1,2-Tetrachloroethane	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	EPA 8260B	
1,1,1-Trichloroethane	ND	0.200	0	11	o o	11	11	11	
1,1,2,2-Tetrachloroethane	ND	0.500	п	n	n	**	n	n	
1,1,2-Trichloroethane	ND	0.200	н	11	11	**	11	Ħ	
1,1-Dichloroethane	ND	0.200	11	"	**	n .	n	n	
1,1-Dichloroethene	ND	0.200	н	"	II .	"	n	Ħ	
1,1-Dichloropropene	ND	0.200	**	**	n	н	H	11	
1,2,3-Trichlorobenzene	ND	0.200	n	tr.	u	tt	11	Ħ	
1,2,3-Trichloropropane	ND	0.500	ti	**	n	n	II	11	
1,2,4-Trichlorobenzene	ND	0.200	Ħ	н	11	n	11	#1	
1,2,4-Trimethylbenzene	ND	0.200	n	11	n	It	II	ti	
1,2-Dibromo-3-chloropropane	ND	0.500	и	**	n n	11	π	н	
1,2-Dibromoethane	ND	0.200	11	11	н	u	u	11	
1,2-Dichlorobenzene	ND	0.200	11	11	11	11	11	11	
1,2-Dichloroethane	ND	0.200	11	11	n	n	n.	**	
1,2-Dichloropropane	ND	0.200	II .	11	**	н	11	If .	
1,3,5-Trimethylbenzene	ND	0.500	"	II	H	"	u	11	
1,3-Dichlorobenzene	ND	0.200	ti .	11	11	n	H	11	
1,3-Dichloropropane	ND	0.200	Ħ	n	tt	11	11	н	
1,4-Dichlorobenzene	ND	0.200	n .	"	11	II .	II .	11	
2,2-Dichloropropane	ND	0.500	11	u	e e	н	11	tt.	
2-Butanone	ND	2.00	tt.	11	н	**	u .	н	
2-Chlorotoluene	ND	0.500	n	Ħ	11	н	н	n	
2-Hexanone	ND	2.00	11	n	It	n	**	и	
4-Chlorotoluene	ND	0.500	н	11	11	O.	ır	п	
4-Methyl-2-pentanone	ND	2.00	n	11	n	**	Ħ	u	
Acetone	ND	10.0	n	n	и	ŧŧ	tr	н	
Benzene	ND	0.200	11	II	11	н	tt	11	
Bromobenzene	ND	0.500	11	*1	и	n	u u	и	
Bromochloromethane	ND	0.200	n	u	**	17	Ħ	11	
Bromodichloromethane	ND	0.200	n	н	lt.	11	**	U	
Bromoform	ND	0.200	11	11	11	TI	If	n	
Bromomethane	ND	2.00	n	11	n	11	Ħ	tt	
Carbon disulfide	ND	0.500	11	**	er	11	u	II.	
Carbon tetrachloride	ND	0.200	n	n	**	u .	11	н	

North Creek Analytical - Bothell

Robert Greer For Amar Gill, Project Manager

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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

Project Number: 923-1000.002

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW7-051005 (B5E0309-07) Water	Sampled: 05	5/10/05 16:55	Received:	05/11/05 13	3:15				
Chlorobenzene	ND	0.200	ug/l	1	5E12071	05/12/05	05/12/05	n	
Chloroethane	ND	1.00	H	н	н	u	Ħ	11	
Chloroform	ND	0.200	u	11	11	**	n	n .	
Chloromethane	ND	1.00	н	н	n	"	n	11	
cis-1,2-Dichloroethene	ND	0.200	II.	ti	II .	n	11	п	
cis-1,3-Dichloropropene	ND	0.200	н	н	n	n	II	п	
Dibromochloromethane	ND	0.200	n	u	u	11	11	n	
Dibromomethane	ND	0.200	н	н	**	u	II .	11	
Dichlorodifluoromethane	ND	0.500	n	U	u	tt	11	n	
Ethylbenzene	ND	0.200	tt	"	H	W	u	n	
Hexachlorobutadiene	ND	0.500	D.	U	17	n	11	If	
sopropylbenzene	ND	0.500	11	Ħ	н	u	tt	н	
m,p-Xylene	ND	0.500	u	u	11	n	н	II.	
Methyl tert-butyl ether	ND	1.00	**	н	11	***	11	11	
Methylene chloride	ND	2.00	u u	"	**	и	H	11	
a-Butylbenzene	ND	0.200	Ħ	H	H .	n	n	п	
-Hexane	ND	1.00	11	11	**	ıı	II	tt	
-Propylbenzene	ND	0.500	Ħ	n	**	n	11	II	
Naphthalene	ND	0.500	u	11	11	11	11	11	
-Xylene	ND	0.250	**	et.	u	11	п	n	
-Isopropyltoluene	ND	0:200	**	n	11	**	n	и п	
ec-Butylbenzene	ND	0.200	n	n	11	Ħ	и	n	
tyrene	ND	0.500	"	п	ii .	n	11	II .	
ert-Butylbenzene	ND	0.500	n	ti	ti .	n	II.	н	
etrachioroethene	ND	0.200	11	II	II .	11	и	11	
oluene	ND	0.200	U	n	11	II .	11	п	
rans-1,2-Dichloroethene	ND	0.200	**	ır	n .	11	п	11	
ans-1,3-Dichloropropene	ND	0.200	n	n	Ħ	11	11	R	
richloroethene	ND	0.200	n	II.	11	н	O .	n	
richlorofluoromethane	ND	0.500	u	11	If	11	н	tt.	
inyl chloride	ND	0.200	11	11	n	п	11	ır	
urrogate: 1,2-DCA-d4	112 %	70-130			"	11	"	"	
urrogate: Toluene-d8	97.5 %	70-130			"	"	"	n	
urrogate: 4-BFB	98.5 %	70-130			"	"	"	n	

North Creek Analytical - Bothell

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Robert Greer For Amar Gill, Project Manager

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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: 923-1000.002

Reported: Project Manager: Douglas Morell 05/27/05 10:30

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

		Reporting			Spike	Source		%REC		RPD		
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	
Batch 5E17005:	Prepared 05/17/05	Using E	PA 3520C									
Blank (5E17005-BL	K1)											
Gx Range Hydrocarbon	ıs	ND	0.250	mg/l								
Kerosene Range Hydro	carbons	ND	0.630	71								
Diesel Range Hydrocar	bons	ND	0.630	n								
Insulating Oil Range Hy	ydrocarbons	ND	0.630	**								
Heavy Fuel Oil Range I	Hydrocarbons	ND	0.630	11								
Lube Oil Range Hydrod	earbons	ND	0.630	n								
Surrogate: 2-FBP		DET		"	0.250		80.0	50-150				
Surrogate: Octacosane		DET		"	0.250		93.6	50-150				
LCS (5E17005-BS1))											
Diesel Range Hydrocart	oons	DET	0.630	mg/l	2.00		66.5	50-150				
Surrogate: 2-FBP		DET		"	0.250		67.6	50-150				
LCS Dup (5E17005-	·BSD1)											
Diesel Range Hydrocart	oons	DET	0.630	mg/l	2.00		73.5	50-150	10.0	40		
Surrogate: 2-FBP		DET		"	0.250		80.0	50-150				
Duplicate (5E17005-	-DUP1)					Source: B	5E0309-0)1				
Gx Range Hydrocarbons	S	0.0932	0.250	mg/l		0.106			12.9	50		
Kerosene Range Hydroc	earbons	0.0741	0.630	11		0.0809			8.77	50		
Diesel Range Hydrocarb	oons	0.0490	0.630	u u		0.0504			2.82	50		
Insulating Oil Range Hy	drocarbons	0.0818	0.630	"		0.0855			4.42	50		
Heavy Fuel Oil Range H	lydrocarbons	0.126	0.630	u u		0.129			2.35	50		
Lube Oil Range Hydroca	arbons	0.0517	0.630	"		0.0527			1.92	50		
Surrogate: 2-FBP		DET		"	0.245		75.5	50-150				
Surrogate: Octacosane		DET		"	0.245		91.8	50-150				
Matrix Spike (5E17005-MS1)					Source: B5E0309-05							
Diesel Range Hydrocarb	ons	DET	0.630	mg/l	1.98	0.0585	70.8	25-149				
Surrogate: 2-FBP		DET		"	0.248		78.2	50-150				

North Creek Analytical - Bothell

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%REC

50-150

907.563.9200 fax 907.563.9210

Golder Associates Inc.

Analyte

Surrogate: 2-FBP

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

Project: Landsburg Mine

Level

0.248

Result

%REC

70.6

Project Number: 923-1000.002

Project Manager: Douglas Morell

Reported:

RPD

RPD

05/27/05 10:30

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

Reporting

Limit

Result

DET

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E17005:	Prepared 05/17/05	Using EPA	A 3520C								•
Matrix Spike Dup (5E17005-MSD1)					Source: B	5E0309-0	05			
Diesel Range Hydrocarl	bons	DET	0.630	mg/l	1.98	0.0585	64.2	25-149	9.32	40	

Units

North Creek Analytical - Bothell

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%REC

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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

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

RPD

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

Reporting

Blank (SE12049-BLK1) Silver	Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Blank (5E12049-BLK1) Silver	Batch 5E12049:	Prepared 05/12/05										- 10000
Silver ND 0.00100 mg/l										······································		
Arsenic ND 0,00100 " Beryllium ND 0,00100 " Cadmitum ND 0,00100 " CCopper ND 0,00100 " Manganese ND 0,00100 " Mickel ND 0,00100 " Lead ND 0,00100 " Selenium ND 0,00100 " Seleni	Silver		ND	0.00100	mg/l				•			
Cadmium ND 0.00100 " Chromium ND 0.00100 " Copper ND 0.00100 " Nickel ND 0.00100 " Lead ND 0.00100 " Antimony ND 0.00300 " Selenium ND 0.00100 " Thallium ND 0.0100 " Zinc ND 0.0100 " ECS (5E12049-BS1) Silver 0.212 0.00100 " 0.200 106 80-120 Arsenic 0.206 0.00100 " 0.200 103 80-120 Beryllium 0.202 0.00100 " 0.200 104 80-120 Cadmium 0.209 0.00100 " 0.200 103 80-120 Chromium 0.206 0.00100 " 0.200 104 80-120 Copper 0.244 0.00100 " 0.200 104	Arsenic		ND	0.00100								
Chromium	Beryllium		ND	0.00100	n							
Copper	Cadmium		ND	0.00100	11							
Manganese ND 0.0100 " Nickel ND 0.00100 " Lead ND 0.00100 " Antimony ND 0.00300 " Selenium ND 0.00100 " Thallium ND 0.00100 " Zine ND 0.0100 " Zine ND 0.0100 " LCS (5E12049-BS1) " *** Silver 0.212 0.00100 " 0.200 106 80-120 Arsenic 0.206 0.00100 " 0.200 103 80-120 Beryllium 0.202 0.00100 " 0.200 101 80-120 Cadmium 0.209 0.00100 " 0.200 104 80-120 Chromium 0.206 0.00100 " 0.200 103 80-120 Copper 0.204 0.00100 " 0.200 104 80-120 <t< td=""><td>Chromium</td><td></td><td>ND</td><td>0.00100</td><td>"</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Chromium		ND	0.00100	"							
Nickel ND 0.00100 " Lead ND 0.00100 " Antimony ND 0.00300 " Selenium ND 0.00100 " Thallium ND 0.00100 " Thallium ND 0.00100 " Zine ND 0.0100 " LCS (5E12049-BS1) Silver 0.212 0.00100 mg/l 0.200 106 80-120 Arsenic 0.206 0.00100 " 0.200 101 80-120 Beryllium 0.202 0.00100 " 0.200 104 80-120 Cadmium 0.209 0.00100 " 0.200 103 80-120 Chromium 0.206 0.00100 " 0.200 104 80-120 Changanese 0.208 0.0100 " 0.200 104 80-120 Chickel 0.205 0.00100 " 0.200 104 80-120 Chead 0.212 0.00100 " 0.200 106 80-120 Chatimony 0.0531 0.00300 " 0.0500 106 80-120 Challium 0.209 0.00100 " 0.200 104 80-120 Challium 0.209 0.00100 " 0.200 106 80-120 Challium 0.209 0.00100 " 0.200 106 80-120 Challium 0.209 0.00100 " 0.200 104 80-120 Challium 0.209 0.00100 " 0.200 106 80-120	Copper		ND	0.00100	R							
Lead ND 0.00100 " Antimony ND 0.00300 " Selenium ND 0.00100 " Thallium ND 0.00100 " Zine ND 0.00100 " LCS (5E12049-BS1) Silver 0.212 0.00100 mg/l 0.200 106 80-120 Arsenic 0.206 0.00100 " 0.200 103 80-120 Beryllium 0.202 0.00100 " 0.200 101 80-120 Cadmium 0.209 0.00100 " 0.200 104 80-120 Chromium 0.206 0.00100 " 0.200 103 80-120 Manganese 0.204 0.00100 " 0.200 104 80-120 Markel 0.205 0.0100 " 0.200 104 80-120 Manganese 0.208 0.0100 " 0.200 106 80-120	Manganese		ND	0.0100	n							
Antimony ND 0,00300 " Selenium ND 0,00100 " Thallium ND 0,00100 " Zinc ND 0,0100 " LCS (5E12049-BS1) Silver 0,212 0,00100 " 0,200 106 80-120 Arsenic 0,206 0,00100 " 0,200 101 80-120 Beryllium 0,202 0,00100 " 0,200 101 80-120 Cadmium 0,209 0,00100 " 0,200 104 80-120 Chromium 0,206 0,00100 " 0,200 103 80-120 Chromium 0,206 0,00100 " 0,200 104 80-120 Copper 0,204 0,00100 " 0,200 103 80-120 Manganese 0,208 0,0100 " 0,200 104 80-120 Mickel 0,205 0,00100 " 0,200 104 80-120 Nickel 0,205 0,00100 " 0,200 104 80-120 Antimony 0,0531 0,00300 " 0,200 106 80-120 Fallium 0,209 0,00100 " 0,200 106 80-120 Fallium 0,209 0,00100 " 0,200 104 80-120 Fallium 0,200 0,00100 " 0,200 106 80-120 Fallium 0,200 0,00100 " 0,200 104 80-120 Fallium 0,200 0,00100 " 0,200 106 80-120	Nickel		ND	0.00100	11							
Selenium	Lead		ND	0.00100	n							
Thallium	Antimony		ND	0.00300	tt							
Comparison	Selenium		ND	0.00100	li .							
Comparison	Thallium		ND	0.00100	n							
Silver 0.212 0.00100 mg/l 0.200 106 80-120 Arsenic 0.206 0.00100 " 0.200 103 80-120 Beryllium 0.202 0.00100 " 0.200 101 80-120 Cadmium 0.209 0.00100 " 0.200 104 80-120 Chromium 0.206 0.00100 " 0.200 103 80-120 Copper 0.204 0.00100 " 0.200 102 80-120 Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 106 80-120 Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Zinc		ND	0.0100	n							
Arsenic 0.206 0.00100 " 0.200 103 80-120 Beryllium 0.202 0.00100 " 0.200 101 80-120 Cadmium 0.209 0.00100 " 0.200 104 80-120 Chromium 0.206 0.00100 " 0.200 103 80-120 Copper 0.204 0.00100 " 0.200 102 80-120 Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 102 80-120 Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Fiballium 0.212 0.00100 " 0.200 106 80-120	LCS (5E12049-BS1)										
Arsenic 0.206 0.00100 " 0.200 103 80-120 Beryllium 0.202 0.00100 " 0.200 101 80-120 Cadmium 0.209 0.00100 " 0.200 104 80-120 Chromium 0.206 0.00100 " 0.200 103 80-120 Copper 0.204 0.00100 " 0.200 102 80-120 Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 104 80-120 Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Silver		0.212	0.00100	mg/l	0.200		106	80-120			
Cadmium 0.209 0.00100 " 0.200 104 80-120 Chromium 0.206 0.00100 " 0.200 103 80-120 Copper 0.204 0.00100 " 0.200 102 80-120 Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 106 80-120 Lead 0.212 0.00100 " 0.0500 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Arsenic		0.206	0.00100	n	0.200		103	80-120			
Chromium 0.206 0.00100 " 0.200 103 80-120 Copper 0.204 0.00100 " 0.200 102 80-120 Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 106 80-120 Lead 0.212 0.00100 " 0.0500 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Beryllium		0.202	0.00100	11	0.200	,	101	80-120			
Copper 0.204 0.00100 " 0.200 102 80-120 Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 102 80-120 Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Cadmium		0.209	0.00100	H	0.200		104	80-120			
Manganese 0.208 0.0100 " 0.200 104 80-120 Nickel 0.205 0.00100 " 0.200 102 80-120 Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Chromium		0.206	0.00100	"	0.200		103	80-120			
Nickel 0.205 0.00100 " 0.200 102 80-120 Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Copper		0.204	0.00100	H.	0.200		102	80-120			
Lead 0.212 0.00100 " 0.200 106 80-120 Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Manganese		0.208	0.0100	Ħ	0.200		104	80-120			
Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Nickel		0.205	0.00100	ti .	0.200		102	80-120			
Antimony 0.0531 0.00300 " 0.0500 106 80-120 Selenium 0.209 0.00100 " 0.200 104 80-120 Thallium 0.212 0.00100 " 0.200 106 80-120	Lead		0.212	0.00100	n	0.200		106	80-120			
Selenium 0.209 0.00100 " 0.200 104 80-120 Fhallium 0.212 0.00100 " 0.200 106 80-120	Antimony		0.0531	0.00300	**	0.0500						
Thallium 0.212 0.00100 " 0.200 106 80-120	Selenium		0.209	0.00100	11	0.200						
	Thallium		0.212	0.00100	11							
	Zinc		0.217	0.0100	11	0.200		108	80-120			

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.



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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 Project Manager: Douglas Morell Reported:

05/27/05 10:30

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

Batch 5E12049: Prepared 05/12/05 Using EPA 3005A Using EPA 3005A				Reporting		Spike	Source		%REC		RPD	
CS Dup (5E12049-BSD1) Silver 0.212 0.00100 mg/l 0.200 106 80-120 0.00 20 20 20 20 20 20	Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Silver 0.212 0.00100 mg/l 0.200 106 80-120 0.00 20 Arsenic 0.208 0.00100 " 0.200 104 80-120 0.966 20 Beryllium 0.202 0.00100 " 0.200 101 80-120 0.00 20 Cadmium 0.208 0.00100 " 0.200 104 80-120 0.480 20 Chromium 0.210 0.00100 " 0.200 104 80-120 1.92 20 Copper 0.207 0.00100 " 0.200 106 80-120 1.90 20 Manganese 0.212 0.0100 " 0.200 104 80-120 1.90 20 Nickel 0.207 0.0100 " 0.200 107 80-120 0.971 20 Lead 0.216 0.0210 " 0.200 107 80-120 0.563 20 Selenium 0.210	Batch 5E12049:	Prepared 05/12/05	Using E	PA 3005A								
Arsenic 0.008 0.00100 " 0.200 101 80-120 0.966 20 Beryllium 0.202 0.00100 " 0.200 101 80-120 0.966 20 Cadmium 0.208 0.00100 " 0.200 101 80-120 0.966 20 Cadmium 0.210 0.00100 " 0.200 105 80-120 1.92 20 Chromium 0.210 0.00100 " 0.200 105 80-120 1.92 20 Copper 0.207 0.00100 " 0.200 106 80-120 1.92 20 Copper 0.207 0.00100 " 0.200 106 80-120 1.90 20 Manganese 0.212 0.0100 " 0.200 106 80-120 1.90 20 Nickel 0.207 0.00100 " 0.200 106 80-120 1.90 20 Nickel 0.207 0.00100 " 0.200 106 80-120 1.90 20 Nickel 0.207 0.00100 " 0.200 106 80-120 1.90 20 Nickel 0.207 0.00100 " 0.200 108 80-120 1.87 20 Cadmium 0.210 0.00100 " 0.200 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 107 80-120 0.563 20 Selenium 0.214 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 109 80-120 0.460 20 Matrix Spike (SE12049-MS1) Selenium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Chromium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Chromium 0.0917 0.00100 " 0.100 ND 96.7 80-125 Chromium 0.0917 0.00100 " 0.100 ND 96.7 80-125 Chromium 0.0917 0.00100 " 0.000 ND 96.7 80-125 Chromium 0.0917 0.00100 " 0.000 ND 96.7 80-125 Chromium 0.0919 0.00100 " 0.0095 0.00080 91.1 76-125 Chromium 0.0919 0.00100 " 0.0095 0.00080 92.8 78-125 Chromium 0.00924 0.00100 " 0.0095 0.00080 92.8 78-125 Chromium 0.0094 0.00100 " 0.0000 0.00080 92.8 78-125 Chromium 0.0039 0.00100 " 0.0000 0.00080 92.8 78-125	LCS Dup (5E12049	-BSD1)										
Beryllium	Silver		0.212	0.00100	mg/l	0.200		106	80-120	0.00	20	
Cadmium 0.208 0.00100 " 0.200 104 80-120 0.480 20 Chromium 0.210 0.00100 " 0.200 105 80-120 1.92 20 Copper 0.207 0.00100 " 0.200 106 80-120 1.46 20 Manganese 0.212 0.0100 " 0.200 104 80-120 1.90 20 Nickel 0.207 0.00100 " 0.200 104 80-120 0.971 20 Lead 0.216 0.00100 " 0.200 108 80-120 0.971 20 Antimony 0.0534 0.00300 " 0.0500 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.460 20 Matrix Spike (Arsenic		0.208	0.00100	"	0.200		104	80-120	0.966	20	
Chromium	Beryllium		0.202	0.00100	11	0.200		101	80-120	0.00	20	
Copper 0.207 0.00100 " 0.200 104 80-120 1.46 20	Cadmium		0.208	0.00100	11	0.200		104	80-120	0.480	20	
Manganese 0.212 0.0100 " 0.200 106 80-120 1.90 20 Nickel 0.207 0.00100 " 0.200 104 80-120 1.87 20 Lead 0.216 0.00100 " 0.200 108 80-120 1.87 20 Antimony 0.0534 0.00300 " 0.0500 107 80-120 0.563 20 Selenium 0.214 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.218 0.0100 " 0.200 107 80-120 0.460 20 Matrix Spike (5E12049-MS1) Source: B5E0205-07 Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7	Chromium		0.210	0.00100	п	0.200		105	80-120	1.92	20	
Nickel 0.207 0.00100 " 0.200 104 80-120 0.971 20 Lead 0.216 0.00100 " 0.200 108 80-120 1.87 20 Antimony 0.0534 0.00300 " 0.0500 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 105 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.939 20 Zinc 0.218 0.0100 " 0.200 109 80-120 0.460 20 Matrix Spike (5E12049-MS1) Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.000800 92.8 78-125 Lead 0.0924 0.00100 " 0.0995 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Copper		0.207	0.00100	11	0.200		104	80-120	1.46	20	
Lead 0.216 0.00100 " 0.200 108 80-120 1.87 20 Antimony 0.0534 0.00300 " 0.0500 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 105 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.477 20 Thallium 0.218 0.0100 " 0.200 109 80-120 0.460 20 Matrix Spike (5E12049-MS1) Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 ND 94.5 80-125 Copper 0.0899 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.100 0.000580 91.1 76-125 Nickel 0.129 0.00100 " 0.0995 0.000800 92.8 78-125 Lead 0.0924 0.00100 " 0.0995 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125	Manganese		0.212	0.0100	Ħ	0.200		106	80-120	1.90	20	
Antimony 0.0534 0.00300 " 0.0500 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 105 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.939 20 Zinc 0.218 0.0100 " 0.200 109 80-120 0.460 20 Matrix Spike (5E12049-MS1) Source: BSE0205-07 Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 96.7 80-125 Chromium 0.0917 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Nickel		0.207	0.00100	11	0.200		104	80-120	0.971	20	
Antimony 0.0534 0.00300 " 0.0500 107 80-120 0.563 20 Selenium 0.210 0.00100 " 0.200 105 80-120 0.477 20 Thallium 0.214 0.00100 " 0.200 107 80-120 0.939 20 Zinc 0.218 0.0100 " 0.200 109 80-120 0.460 20 Silver 0.218 0.0100 " 0.200 109 80-120 0.460 20 Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Chromium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.0037 0.00100 " 0.100 ND 93.7 78-125 Chromium 0.0937 0.00100 " 0.100 ND 93.7 78-125 Chromium 0.0937 0.00100 " 0.100 ND 93.7 78-125 Chromium 0.0037 0.00100 " 0.100 ND 93.7	Lead		0.216	0.00100	II .	0.200		108	80-120	1.87		
Thallium 0.214 0.00100 " 0.200 107 80-120 0.939 20 Zinc 0.218 0.0100 " 0.200 109 80-120 0.460 20 Matrix Spike (5E12049-MS1) Source: B5E0205-07 Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7 80-125 Beryllium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0919 0.00100 " 0.101 0.0000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.0408 88.6 73-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125	Antimony		0.0534	0.00300	11	0.0500		107	80-120	0.563		
Zinc 0.218 0.0100 " 0.200 109 80-120 0.460 20 Matrix Spike (5E12049-MS1) Source: B5E0205-07	Selenium		0.210	0.00100	11	0.200		105	80-120	0.477	20	
Matrix Spike (5E12049-MS1) Source: B5E0205-07 Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 ND 96.7 80-125 Beryllium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100	Thallium		0.214	0.00100	ti	0.200		107	80-120	0.939	20	
Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 0.0221 102 70-138 Beryllium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.0000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125	Zinc		0.218	0.0100	Ħ	0.200		109	80-120	0.460	20	
Silver 0.0600 0.00100 mg/l 0.100 ND 60.0 43-124 Arsenic 0.124 0.00100 " 0.100 0.0221 102 70-138 Beryllium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.0000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125	Matrix Spike (5E12	049-MS1)					Source: B:	5E0205-0) 7			
Arsenic 0.124 0.00100 " 0.100 0.0221 102 70-138 Beryllium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0500 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.00164 101 61-156 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125	Silver		0.0600	0.00100	mg/l	0.100						
Beryllium 0.0967 0.00100 " 0.100 ND 96.7 80-125 Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0500 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.00164 101 61-156 Selenium 0.103 0.00100 " 0.100 ND 93.7 78-125	Arsenic		0.124	0.00100		0.100	0.0221	102	70-138			
Cadmium 0.0945 0.00100 " 0.100 ND 94.5 80-125 Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Beryllium		0.0967	0.00100	ti .	0.100	ND	96.7				
Chromium 0.0917 0.00100 " 0.100 0.000580 91.1 76-125 Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Cadmium		0.0945	0.00100	11	0.100	ND					
Copper 0.0899 0.00100 " 0.101 0.0000700 88.9 71-125 Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.0000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Chromium		0.0917	0.00100	"	0.100	0.000580	91.1				
Nickel 0.129 0.00100 " 0.0995 0.0408 88.6 73-125 Lead 0.0924 0.00100 " 0.0995 0.0000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Copper		0.0899	0.00100	**	0.101	0.0000700	88.9				
Lead 0.0924 0.00100 " 0.0995 0.0000800 92.8 78-125 Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Nickel		0.129	0.00100	0		0.0408					
Antimony 0.0319 0.00300 " 0.0500 0.000270 63.3 63-126 Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	ead		0.0924	0.00100	11		0.0000800					
Selenium 0.103 0.00100 " 0.100 0.00164 101 61-156 Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Antimony		0.0319	0.00300	u	0.0500	0.000270					
Thallium 0.0937 0.00100 " 0.100 ND 93.7 78-125	Selenium		0.103	0.00100	Ħ	0.100						
	hallium		0.0937	0.00100	n							
	Line		0.102	0.0100	**							

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: 923-1000.002 Project Manager: Douglas Morell

Reported:

05/27/05 10:30

RPD

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

Reporting

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E12049: Pre	pared 05/12/05	Using l	EPA 3005A								
Matrix Spike (5E12049-N	AS2)					Source: B	5E0309-	05			
Silver		0.0723	0.00100	mg/l	0.100	ND	72.3	43-124			
Arsenic		0.105	0.00100	н	0.100	0.000450	105	70-138			
Beryllium		0.0952	0.00100	11	0.100	ND	95.2	80-125			
Cadmium		0.0932	0.00100	11	0.100	ND	93.2	80-125			
Chromium		0.0939	0.00100	11	0.100	0.00253	91.4	76-125			
Copper		0.0556	0.00100	11	0.101	0.000230	54.8	71-125			Q-02
Manganese		0.295	0.0100	11	0.100	0.204	91.0	54-158			
Nickel		0.0886	0.00100	n	0.0995	0.000740	88.3	73-125			
Lead		0.0892	0.00100	11	0.0995	ND	89.6	78-125			
Antimony		0.0398	0.00300	11	0.0500	ND	79.6	63-126			
Selenium		0.0703	0.00100	tt.	0.100	0.000650	69.6	61-156			
Thallium		0.0930	0.00100	#1	0.100	ND	93.0	78-125			
Zinc		0.0999	0.0100	**	0.0995	0.00253	97.9	70-127			
Matrix Spike (5E12049-M	1 S3)					Source: B	5E0205-0	7RE1			
Manganese		0.494	0.0500	mg/l	0.100	0.399	95.0	54-158			
Matrix Spike Dup (5E120	49-MSD1)					Source: B	5E0205-0	7			
Silver		0.0675	0.00100	mg/l	0.100	ND	67.5	43-124	11.8	50	
Arsenic		0.121	0.00100	"	0.100	0.0221	98.9	70-138	2.45	20	
Beryllium		0.0943	0.00100	п	0.100	ND	94.3	80-125	2.51	20	
Cadmium		0.0919	0.00100	., н	0.100	ND	91.9	80-125	2.79	20	
Chromium		0.0891	0.00100	11	0.100	0.000580	88.5	76-125	2.88	20	
Copper		0.0868	0.00100	11	0.101	0.0000700	85.9	71-125	3.51	20	
Nickel		0.126	0.00100	tt	0.0995	0.0408	85.6	73-125	2.35	20	
Lead		0.0896	0.00100	**	0.0995	0.0000800	90.0	78-125	3.08	20	
Antimony		0.0349	0.00300	If	0.0500	0.000270	69.3	63-126	8.98	20	
Selenium		0.106	0.00100	11	0.100	0.00164	104	61-156	2.87	20	
Thallium		0.0900	0.00100	II .	0.100	ND	90.0	78-125	4.03	20	
Zinc		0.0983	0.0100	**	0.0995	0.00179	97.0	70-127	3.69	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: 923-1000.002

Reported: 05/27/05 10:30

RPD

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control

Reporting

North Creek Analytical - Bothell

Project Manager: Douglas Morell

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E12049:	Prepared 05/12/05	Using 1	EPA 3005A								
Matrix Spike Dup	(5E12049-MSD2)					Source: B	5E0309-	05			
Silver		0.0696	0.00100	mg/l	0.100	ND	69.6	43-124	3.81	50	
Arsenic		0.101	0.00100	11	0.100	0.000450	101	70-138	3.88	20	
Beryllium		0.0935	0.00100	"	0.100	ND	93.5	80-125	1.80	20	
Cadmium		0.0929	0.00100	II .	0.100	ND	92.9	80-125	0.322	20	
Chromium		0.0926	0.00100	11	0.100	0.00253	90.1	76-125	1.39	20	
Copper		0.0542	0.00100	n	0.101	0.000230	53.4	71-125	2.55	20	Q-02
Manganese		0.293	0.0100	tt	0.100	0.204	89.0	54-158	0.680	20	
Nickel		0.0871	0.00100	tt	0.0995	0.000740	86.8	73-125	1.71	20	
Lead		0.0883	0.00100	Ħ	0.0995	ND	88.7	78-125	1.01	20	
Antimony		0.0396	0.00300	If	0.0500	ND	79.2	63-126	0.504	20	
Selenium		0.0672	0.00100	*1	0.100	0.000650	66.6	61-156	4.51	20	
Thallium		0.0923	0.00100	11	0.100	ND	92.3	78-125	0.756	20	
Zinc		0.0996	0.0100	п	0.0995	0.00253	97.6	70-127	0.301	20	
Matrix Spike Dup (5E12049-MSD3)					Source: B	5E0205-(7RE1			
Manganese		0.476	0.0500	mg/l	0.100	0.399	77.0	54-158	3.71	20	
Batch 5E17031:	Prepared 05/17/05	Using I	EPA 7470A								
Blank (5E17031-BL	K1)										
Mercury		ND	0.000200	mg/l							
LCS (5E17031-BS1))										
Mercury		0.00503	0.000200	mg/l	0.00500		101	80-120			
LCS Dup (5E17031-	-BSD1)										
Mercury		0.00503	0.000200	mg/l	0.00500		101	80-120	0.00	20	

North Creek Analytical - Bothell

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North Creek Analytical, Inc. Environmental Laboratory Network Robert Greer For Amar Gill, Project Manager



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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

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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
Batch 5E17031:	Prepared 05/17/05		EPA 7470A	Ointo	Level	resur	701000	Limits	N D	Chint	Notes
Duplicate (5E1703)			3114 / 1/014			Source: B	5T0300 (ns			
Mercury	1-0011)	ND	0.000200	mg/l		0.0000501	3E0309-0	<i>J</i> 3		20	
•			0.000200							20	
Matrix Spike (5E17	7031-MS1)					Source: B	5E0309-0)5			
Mercury		0.00509	0.000200	mg/l	0.00500	0.0000501	101	70-130			
Matrix Spike (5E17	7031-MS2)					Source: B	5E0462-0)1			
Mercury		0.00344	0.000200	mg/l	0.00500	ND	68.8	70-130			Q-0
Matrix Spike Dup (5E17031-MSD1)					Source: B	5E0309-0)5			
Mercury		0.00538	0.000200	mg/l	0.00500	0.0000501	107	70-130	5.54	20	
Batch 5E17041:	Prepared 05/17/05	Heing E	PA 3010A								
Blank (5E17041-BL		CSING L	ARSOIOA		· · · · · · · · · · · · · · · · · · ·		······································				
Iron	IKI)	ND	0,150	mg/l							
		112	0.150	1112/1							
	_										
LCS (5E17041-BS1)										
Iron)	4.64	0.150	mg/l	5.00		92.8	80-120			
	, , , , , , , , , , , , , , , , , , , ,	4.64	0.150	mg/l	5.00		92.8	80-120		•	
Iron LCS Dup (5E17041	, , , , , , , , , , , , , , , , , , , ,	4.64	0.150	mg/l	5.00		92.8	80-120 80-120	1.28	20	
Iron LCS Dup (5E17041 Iron	-BSD1)					Source: B	94.0	80-120	1.28	20	
Iron LCS Dup (5E17041 Iron Matrix Spike (5E17	-BSD1)					Source: B 3	94.0	80-120	1.28	20	
Iron LCS Dup (5E17041 Iron Matrix Spike (5E17 Iron	-BSD1) 041-MS1)	4.70	0.150	mg/l	5.00	0.103	94.0 5E0309-0 93.3	80-120 25 80-120	1.28	20	
lron LCS Dup (5E17041	-BSD1) 041-MS1)	4.70	0.150	mg/l	5.00		94.0 5E0309-0 93.3	80-120 25 80-120	0.00	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: 923-1000.002

Spike

Project Manager: Douglas Morell

Reported:

RPD

05/27/05 10:30

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

Reporting

Batch 5E12071: Prepared 05/12/ Blank (5E12071-BLK1) 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2,-Trichloroethane 1,1,2,-Trichloroethane	/05 Using EF ND ND ND	0.200					
1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane	ND			 			
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane	ND					 	
1,1,2,2-Tetrachloroethane			ug/l		 	 	
	ND	0.200	Ħ				
1.1.2-Trichloroethane		0.500	п				
1,1,2 111011101000110110	ND	0.200	11				
1,1-Dichloroethane	ND	0.200	11				
1,1-Dichloroethene	ND	0.200	н				
1,1-Dichloropropene	ND	0.200	11				
1,2,3-Trichlorobenzene	ND	0.200	It				
,2,3-Trichloropropane	ND	0.500	Ħ				
,2,4-Trichlorobenzene	ND	0.200	II				
,2,4-Trimethylbenzene	ND	0.200	Ħ				
,2-Dibromo-3-chloropropane	ND	0.500	**				
,2-Dibromoethane	ND	0.200	11				
,2-Dichlorobenzene	ND	0.200	11				
,2-Dichloroethane	ND	0.200	II				
,2-Dichloropropane	ND	0.200	11				
,3,5-Trimethylbenzene	ND	0.500	II .				
,3-Dichlorobenzene	ND	0.200	**				
,3-Dichloropropane	ND	0.200	n				
,4-Dichlorobenzene	ND	0.200	. "				
,2-Dichloropropane	ND	0.500	11				
-Butanone	ND	2.00	II.				
-Chiorotoluene	ND	0.500	11				
-Hexanone	ND	2.00	11				
-Chlorotoluene	ND	0.500	II .				
-Methyl-2-pentanone	ND	2.00	**				
cetone	ND	10.0	II.				
Benzene	ND	0.200	Ħ				
romobenzene	ND	0.500	n				
romochloromethane	ND	0.200	II				
romodichloromethane	ND	0.200	11				
romoform	ND	0.200	11				
romomethane	ND	2.00	tt				

North Creek Analytical - Bothell

Carbon disulfide

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> North Creek Analytical, Inc. Environmental Laboratory Network

ND

0.500



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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

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E12071: Prepared 05/12/0	5 Using El	PA 5030B								
Blank (5E12071-BLK1)										
Carbon tetrachloride	ND	0.200	ug/l							
Chlorobenzene	ND	0.200	tt							
Chloroethane	ND	1.00	***							
Chloroform	ND	0.200	н							
Chloromethane	ND	1.00	11							
cis-1,2-Dichloroethene	ND	0.200	н			• •				
cis-1,3-Dichloropropene	ND	0.200	11							
Dibromochloromethane	ND	0.200	и							
Dibromomethane	ND	0.200	tt							
Dichlorodifluoromethane	ND	0.500	и							
Ethylbenzene	ND	0.200	11							
Hexachlorobutadiene	ND	0.500	п							
Isopropylbenzene	ND	0.500	11							
m,p-Xylene	ND	0.500	tf.							
Methyl tert-butyl ether	ND	1.00	n							
Methylene chloride	ND	5.00	11							
n-Butylbenzene	ND	0.200	n							
n-Hexane	ND	1.00	11							
n-Propylbenzene	ND	0.500	n							
Naphthalene	ND	0.500	11							
o-Xylene	ND	0.250	**							
p-Isopropyltoluene	ND	0.200	n							
sec-Butylbenzene	ND	0.200	"							
Styrene	ND	0.500	n			•				
tert-Butylbenzene	ND	0.500	n							
Tetrachloroethene	ND	0.200	***							
Toluene	ND	0.200	н							
trans-1,2-Dichloroethene	ND	0.200	tt							
trans-1,3-Dichloropropene	ND	0.200	II .							
Trichloroethene	ND	0.200	11							
Trichlorofluoromethane	ND	0.500	U							
Vinyl chloride	ND	0.200	u							
Surrogate: 1,2-DCA-d4	4.43		"	4.00		111	70-130			

North Creek Analytical - Bothell

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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 Project Manager: Douglas Morell Reported:

05/27/05 10:30

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

Batch 5E12071: Prepared 05/12/05 Using EPA 5 Blank (5E12071-BLK1) Surrogate: Toluene-d8 Surrogate: 4-BFB LCS (5E12071-BS1) 1,1,1,2-Tetrachloroethane 3.93 0 1,1,1-Trichloroethane 3.60 0 1,1,2,2-Tetrachloroethane 3.68 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethane 3.98 0 1,1-Dichloroptopene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichlorobenzene 3.61 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloropropane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0		ug/l " " " " " "	4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00	Result	97.0 103 98.2 102 90.0 89.2 92.0	70-130 70-130 80-120 80-120 80-120 80-120 80-120	RPD	Limit	Notes
Blank (5E12071-BLK1) Surrogate: Toluene-d8 3.88 Surrogate: 4-BFB 4.11 LCS (5E12071-BS1) 3.93 1,1,1-Trichloroethane 4.10 1,1,2-Tetrachloroethane 3.60 1,1,2-Trichloroethane 3.57 1,1-Dichloroethane 3.68 1,1-Dichloroethane 3.98 1,1-Dichloropropene 3.97 1,2,3-Trichlorobenzene 3.40 1,2,3-Trichloropropane 3.61 1,2,4-Trimethylbenzene 3.84 1,2-Dibromo-3-chloropropane 3.57 1,2-Dibromoethane 3.75 1,2-Dichlorobenzene 3.71 1,2-Dichloropropane 3.88 1,2-Dichloropropane 3.79 1,2-Dichloropropane 3.79 1,3,5-Trimethylbenzene 3.87	.200 .200 .500 .200 .200 .200 .200 .200	ug/l " " " "	4.00 4.00 4.00 4.00 4.00 4.00 4.00		98.2 102 90.0 89.2	70-130 80-120 80-120 80-120 80-120			
Surrogate: Toluene-d8 3.88 Surrogate: 4-BFB 4.11 LCS (5E12071-BS1) 3.93 0 1,1,1-Trichloroethane 3.93 0 1,1,1-Trichloroethane 3.60 0 1,1,2-Tetrachloroethane 3.60 0 1,1,2-Trichloroethane 3.68 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethane 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trinethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloropropane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .500 .200 .200 .200 .200 .200 .200	ug/l " " " "	4.00 4.00 4.00 4.00 4.00 4.00 4.00		98.2 102 90.0 89.2	70-130 80-120 80-120 80-120 80-120			
Surrogate: 4-BFB 4.11 LCS (5E12071-BS1) 3.93 0 1,1,1,2-Tetrachloroethane 4.10 0 1,1,1-Trichloroethane 3.60 0 1,1,2-Tetrachloroethane 3.57 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethane 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloropropane 3.79 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .500 .200 .200 .200 .200 .200 .200	ug/l " " " "	4.00 4.00 4.00 4.00 4.00 4.00 4.00		98.2 102 90.0 89.2	70-130 80-120 80-120 80-120 80-120			
LCS (5E12071-BS1) 1,1,1,2-Tetrachloroethane 3.93 0 1,1,1-Trichloroethane 4.10 0 1,1,2,2-Tetrachloroethane 3.60 0 1,1,2-Trichloroethane 3.57 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloropropane 3.79 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .500 .200 .200 .200 .200 .200 .200	ug/l " " " " "	4.00 4.00 4.00 4.00 4.00 4.00		98.2 102 90.0 89.2	80-120 80-120 80-120 80-120			
1,1,1,2-Tetrachloroethane 3.93 0 1,1,1-Trichloroethane 4.10 0 1,1,2,2-Tetrachloroethane 3.60 0 1,1,2-Trichloroethane 3.57 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloropropane 3.79 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .500 .200 .200 .200 .200 .200 .200	11 11 11 11 11 11 11 11 11 11 11 11 11	4.00 4.00 4.00 4.00 4.00		102 90.0 89.2	80-120 80-120 80-120			
1,1,1-Trichloroethane 4.10 0 1,1,2,2-Tetrachloroethane 3.60 0 1,1,2-Trichloroethane 3.57 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloropropane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .500 .200 .200 .200 .200 .200 .200	11 11 11 11 11 11 11 11 11 11 11 11 11	4.00 4.00 4.00 4.00 4.00		102 90.0 89.2	80-120 80-120 80-120			
1,1,2,2-Tetrachloroethane 3.60 0 1,1,2-Trichloroethane 3.57 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trinethorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.500 .200 .200 .200 .200 .200 .200	11 11 11	4.00 4.00 4.00 4.00		90.0 89.2	80-120 80-120			
1,1,2-Trichloroethane 3.57 0 1,1-Dichloroethane 3.68 0 1,1-Dichloroethene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .200 .200 .200 .200 .200	tf 11 11	4.00 4.00 4.00		89.2	80-120			
1,1-Dichloroethane 3.68 0 1,1-Dichloropropene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .200 .200 .200 .500	n n	4.00 4.00						
1,1-Dichloroethene 3.98 0 1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .200 .200 .500	tt tt	4.00		92.0	80-120			
1,1-Dichloropropene 3.97 0 1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .200 .500	п				00-120			
1,2,3-Trichlorobenzene 3.40 0 1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200 .500		4 00		99.5	80-120			
1,2,3-Trichloropropane 3.61 0 1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.500	11	1.00		99.2	80-120			
1,2,4-Trichlorobenzene 3.53 0 1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0			4.00		85.0	80-120			
1,2,4-Trimethylbenzene 3.84 0 1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	200	n	4.00		90.2	80-120			
1,2-Dibromo-3-chloropropane 3.57 0 1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0		11	4.00		88.2	80-120			
1,2-Dibromoethane 3.75 0 1,2-Dichlorobenzene 3.71 0 1,2-Dichloroethane 3.88 0 1,2-Dichloropropane 3.79 0 1,3,5-Trimethylbenzene 3.87 0	.200	11	4.00		96.0	80-120			
1,2-Dichlorobenzene 3.71 0. 1,2-Dichloroethane 3.88 0. 1,2-Dichloropropane 3.79 0. 1,3,5-Trimethylbenzene 3.87 0.	.500	н	4.00		89.2	80-120			
1,2-Dichloroethane 3.88 0. 1,2-Dichloropropane 3.79 0. 1,3,5-Trimethylbenzene 3.87 0.	.200	11	4.00		93.8	80-120			
1,2-Dichloropropane 3.79 0. 1,3,5-Trimethylbenzene 3.87 0.	.200	11	4.00		92.8	80-120			
1,3,5-Trimethylbenzene 3.87 0.	.200	tt	4.00		97.0	80-120			
	.200	tt	4.00		94.8	80-120			
1.3-Dichlorobenzene 3.65 0	.500	11	4.00		96.8	80-120			
	200	11	4.00		91.2	80-120			
1,3-Dichloropropane 3.42 0.	200	n	4.00		85.5	80-120			
1,4-Dichlorobenzene 3.61 0.	200	n	4.00		90.2	80-120			
2,2-Dichloropropane 4.21 0.	500	11	4.00		105	80-120			
2-Butanone 35.5	2.00	11	40.0		88.8	80-120			
	500	11	4.00		92.2	80-120			
2-Hexanone 37.0	2.00	**	40.0		92.5	80-120			
4-Chlorotoluene 3.65 0.	500	Ħ	4.00		91.2	80-120			
4-Methyl-2-pentanone 39.0	2.00	11	40.0		97.5	80-120			
	0.0	11	40.0		86.5	80-120			
	200	11	4.00		94.8	80-120			
	500	II .	4.00		92.5	80-120			
Bromochloromethane 3.61 0.		"	4.00		90.2	80-120			

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.



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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: 923-1000.002

Reported: 05/27/05 10:30

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

Project Manager: Douglas Morell

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5E12071:	Prepared 05/12/05	Using E	EPA 5030B								
LCS (5E12071-BS1)											
Bromodichloromethane		4.08	0.200	ug/l	4.00		102	80-120			
Bromoform		3.78	0.200	Ħ	4.00		94.5	80-120			
Bromomethane		3.64	2.00	n	4.00		91.0	80-120			
Carbon disulfide		3.84	0.500	11	4.00		96.0	80-120			
Carbon tetrachloride		4.25	0.200	n	4.00		106	80-120			
Chlorobenzene		3.66	0.200	11	4.00		91.5	80-120			
Chloroethane		4.07	1.00	"	4.00		102	80-120			
Chloroform		3.81	0.200	u	4.00		95.2	80-120			
Chloromethane		3.92	1.00	Ħ	4.00		98.0	80-120			
cis-1,2-Dichloroethene		3.71	0.200	n	4.00		92.8	80-120			
cis-1,3-Dichloropropene		3.92	0.200	11	4.00		98.0	80-120			
Dibromochloromethane		3.90	0.200	11	4.00		97.5	80-120			
Dibromomethane		3.66	0.200	#1	4.00		91.5	80-120			
Dichlorodifluoromethane		4.15	0.500	11	4.00		104	80-120			
Ethylbenzene		3.81	0.200	11	4.00		95.2	80-120			
Hexachlorobutadiene		3.92	0.500	11	4.00		98.0	80-120			
Isopropylbenzene		3.88	0.500	11	4.00		97.0	80-120			
m,p-Xylene		7.58	0.500	n	8.00		94.8	80-120			
Methyl tert-butyl ether		3.68	1.00	It	4.00		92.0	80-120			
Methylene chloride		3.78	2.00	Ħ	4.00		94.5	80-120			
n-Butylbenzene		3.77	0.200	II.	4.00		94.2	80-120			
n-Propylbenzene		3.84	0.500	11	4.00		96.0	80-120			
Naphthalene		2.97	0.500	11	4.00		74.2	80-120			
o-Xylene		3.82	0.250	Ħ	4.00		95.5	80-120			
p-Isopropyltoluene		3.92	0.200	II .	4.00		98.0	80-120			
sec-Butyibenzene		3.91	0.200	11	4.00		97.8	80-120			
Styrene		3.82	0.500	Ħ	4.00		95.5	80-120			
tert-Butylbenzene		3.86	0.500	n	4.00		96.5	80-120			
Tetrachloroethene		3.80	0.200	11	4.00		95.0	80-120			
Toluene		3.68	0.200	11	4.00		92.0	80-120			
rans-1,2-Dichloroethene		3.92	0.200	11	4.00		98.0	80-120			
rans-1,3-Dichloropropene		3.84	0.200	11	4.00		96.0	80-120			
Trichloroethene		3.89	0.200	11	4.00		97.2	80-120			
Trichlorofluoromethane		4.55	0.500	11	4.00		114	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: 923-1000.002

Reported:

05/27/05 10:30

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

Project Manager: Douglas Morell

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E12071: Prepared 05/12/05	Using El	PA 5030B								
LCS (5E12071-BS1)										-
Vinyl chloride	4.08	0.200	ug/l	4.00		102	80-120			
Surrogate: 1,2-DCA-d4	4.29		"	4.00		107	70-130		· · · · · · · · · · · · · · · · · · ·	
Surrogate: Toluene-d8	3.95		"	4.00		98.8	70-130			
Surrogate: 4-BFB	4.02		"	4.00		100	70-130			
LCS Dup (5E12071-BSD1)										
1,1,1,2-Tetrachloroethane	4.11	0.200	ug/l	4.00		103	80-120	4.48	30	
1,1,1-Trichloroethane	4.23	0.200	11	4.00		106	80-120	3.12	30	
1,1,2,2-Tetrachloroethane	3.74	0.500	11	4.00		93.5	80-120	3.81	30	
1,1,2-Trichloroethane	3.77	0.200	11	4.00		94.2	80-120	5.45	30	
1,1-Dichloroethane	3.92	0.200	"	4.00		98.0	80-120	6.32	30	
1,1-Dichloroethene	4.16	0.200	11	4.00		104	80-120	4.42	30	
1,1-Dichloropropene	4.19	0.200	11	4.00		105	80-120	5.39	30	
1,2,3-Trichlorobenzene	3.71	0.200	II	4.00		92.8	80-120	8.72	30	
1,2,3-Trichloropropane	3.81	0.500	11	4.00		95.2	80-120	5.39	30	
1,2,4-Trichlorobenzene	3.87	0.200	II .	4.00		96.8	80-120	9.19	30	
1,2,4-Trimethylbenzene	4.12	0.200	Ħ	4.00		103	80-120	7.04	30	
1,2-Dibromo-3-chloropropane	3.81	0.500	U*	4.00		95.2	80-120	6.50	30	
1,2-Dibromoethane	3.86	0.200	*1	4.00		96.5	80-120	2.89	30	
1,2-Dichlorobenzene	3.88	0.200	u	4.00		97.0	80-120	4.48	30	
1,2-Dichloroethane	4.19	0.200	Ħ	4.00		105	80-120	7.68	30	
1,2-Dichloropropane	3.85	0.200	II .	4.00		96.2	80-120	1.57	30	
1,3,5-Trimethylbenzene	4.13	0.500	"	4.00		103	80-120	6.50	30	
1,3-Dichlorobenzene	3.83	0.200	**	4.00		95.8	80-120	4.81	30	
1,3-Dichloropropane	3.86	0.200	If	4.00		96.5	80-120	12.1	30	
1,4-Dichlorobenzene	3.78	0.200	11	4.00		94.5	80-120	4.60	30	
2,2-Dichloropropane	4.34	0.500	u	4.00		108	80-120	3.04	30	
2-Butanone	33.7	2.00	"	40.0		84.2	80-120	5.20	30	
2-Chlorotoluene	3.78	0.500	0	4.00		94.5	80-120	2.41	30	
2-Hexanone	36.5	2.00	Ħ	40.0		91.2	80-120	1.36	30	
4-Chlorotoluene	4.19	0.500	"	4.00		105	80-120	13.8	30	
4-Methyl-2-pentanone	36.6	2.00	11	40.0		91.5	80-120	6.35	30	
Acetone	32.9	10.0	11	40.0		82.2	80-120	5.04	30	
Benzene	3.83	0.200	ti.	4.00		95.8	80-120	1.05	30	

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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 Number: 923-1000.002
Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E12071: Prepared 05/12/05	Using El	PA 5030B								
LCS Dup (5E12071-BSD1)										
Bromobenzene	3.94	0.500	ug/l	4.00		98.5	80-120	6.28	30	
Bromochloromethane	3.87	0.200	If	4.00		96.8	80-120	6.95	30	
Bromodichloromethane	4.09	0.200	11	4.00		102	80-120	0.245	30	
Bromoform	4.00	0.200	11	4.00		100	80-120	5.66	30	
Bromomethane	3.93	2.00	11	4.00		98.2	80-120	7.66	30	
Carbon disulfide	4.00	0.500	Ħ	4.00		100	80-120	4.08	30	
Carbon tetrachloride	4.33	0.200	n	4.00		108	80-120	1.86	30	
Chlorobenzene	3.92	0.200	11	4.00		98.0	80-120	6.86	30	
Chloroethane	4.33	1.00	u	4.00		108	80-120	6.19	30	
Chloroform	3.97	0.200	11	4.00		99.2	80-120	4.11	30	
Chloromethane	3.84	1.00	11	4.00		96.0	80-120	2.06	30	
cis-1,2-Dichloroethene	3.98	0.200	Ħ	4.00		99.5	80-120	7.02	30	
cis-1,3-Dichloropropene	4.06	0.200	n	4.00		102	80-120	3.51	30	
Dibromochloromethane	4.10	0.200	**	4.00		102	80-120	5.00	30	
Dibromomethane	3.77	0.200	11	4.00		94.2	80-120	2.96	30	
Dichlorodifluoromethane	4.32	0.500	11	4.00		108	80-120	4.01	30	
Ethylbenzene	4.07	0.200	**	4.00		102	80-120	6.60	30	
Hexachlorobutadiene	4.20	0.500	Ħ	4.00		105	80-120	6.90	30	
sopropylbenzene	4.15	0.500	u .	4.00		104	80-120	6.72	30	
n,p-Xylene	8.27	0.500	11	8.00		103	80-120	8.71	30	
Methyl tert-butyl ether	3.87	1.00	11	4.00		96.8	80-120	5.03	30	
Methylene chloride	3.99	2.00	11	4.00		99.8	80-120	5.41	30	
n-Butylbenzene	4.15	0.200	**	4.00		104	80-120	9.60	30	
n-Propylbenzene	4.09	0.500	II .	4.00		102	80-120	6.31	30	
Naphthalene	3.57	0.500	ti	4.00		89.2	80-120	18.3	30	
o-Xylene	4.10	0.250	II	4.00		102	80-120	7.07	30	
o-Isopropyltoluene	4.24	0.200	11	4.00		106	80-120	7.84	30	
ec-Butylbenzene	4.18	0.200	II .	4.00		104	80-120	6.67	30	
Styrene	4.08	0.500	**	4.00		102	80-120	6.58	30	
ert-Butylbenzene	4.25	0.500	U	4.00		106	80-120	9.62	30	
etrachloroethene	4.22	0.200	11	4.00		106	80-120	10.5	30	
oluene	3.93	0.200	11	4.00		98.2	80-120	6.57	30	
rans-1,2-Dichloroethene	4.05	0.200	H .	4.00		101	80-120	3.26	30	
rans-1,3-Dichloropropene	4.16	0.200	**	4.00		104	80-120	8.00	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: 923-1000.002

Project Manager: Douglas Morell

Reported: 05/27/05 10:30

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	λ1
			Omts	PEAGI	Kesun	/0KEC	Limits	KPD	Limit	Notes
Batch 5E12071: Prepared 05/12/05	Using I	EPA 5030B								
LCS Dup (5E12071-BSD1)										
Trichloroethene	4.00	0.200	ug/l	4.00		100	80-120	2.79	30	
Trichlorofluoromethane	4.58	0.500	11	4.00		114	80-120	0.657	30	
Vinyl chloride	4.27	0.200	n	4.00		107	80-120	4.55	30	
Surrogate: 1,2-DCA-d4	4.22		"	4.00		106	70-130			
Surrogate: Toluene-d8	3.99		n	4.00		99.8	70-130			
Surrogate: 4-BFB	4.04		"	4.00		101	70-130			
Matrix Spike (5E12071-MS1)					Source: B	5E0309-0)5			
1,1,1,2-Tetrachloroethane	4.91	0.200	ug/l	4.00	ND	123	70-130			
1,1,1-Trichloroethane	4.76	0.200	"	4.00	ND	119	70-130			
1,1,2,2-Tetrachloroethane	4.72	0.500	u	4.00	ND	118	70-130			
1,1,2-Trichloroethane	4.86	0.200	11	4.00	ND	122	70-130			
1,1-Dichloroethane	4.55	0.200	"	4.00	ND	114	70-130			
1,1-Dichloroethene	4.80	0.200	11	4.00	ND	120	59-158			
1,1-Dichloropropene	4.92	0.200	ır	4.00	ND	123	70-130			
1,2,3-Trichlorobenzene	4.42	0.200	Ħ	4.00	ND	110	70-130			
1,2,3-Trichloropropane	4.59	0.500	11	4.00	ND	115	70-130			
1,2,4-Trichlorobenzene	4.41	0.200	н	4.00	ND	110	70-130			
1,2,4-Trimethylbenzene	4.52	0.200	11	4.00	ND	113	70-130			
1,2-Dibromo-3-chloropropane	4.72	0.500	и.,	4.00	ND	118	70-130			
1,2-Dibromoethane	4.89	0.200	tt	4.00	ND	122	70-130			
1,2-Dichlorobenzene	4.60	0.200	II .	4.00	ND	115	70-130			
1,2-Dichloroethane	4.90	0.200	n	4.00	ND	122	70-130			
1,2-Dichloropropane	4.80	0.200	11	4.00	ND	120	70-130			
1,3,5-Trimethylbenzene	4.61	0.500	н	4.00	ND	115	70-130			
,3-Dichlorobenzene	4.31	0.200	11	4.00	ND	108	70-130			
,3-Dichloropropane	4.85	0.200	н	4.00	ND	121	70-130			
,4-Dichlorobenzene	4.40	0.200	п	4.00	ND	110	70-130			
2,2-Dichloropropane	4.23	0.500	п	4.00	ND	106	70-130			
2-Butanone	42.2	2.00	п	40.0	ND	106	70-130			
2-Chlorotoluene	3.81	0.500	11	4.00	ND	95.2	70-130			
-Hexanone	44.6	2.00	и	40.0	ND	112	70-130			
-Chlorotoluene	5.32	0.500	11	4.00	ND	133	70-130			Q-0
-Methyl-2-pentanone	45.3	2.00	II .	40.0	ND	113	70-130			

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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

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 5E12071: Prepared 05/12/05	Using El				· · · · · · · · · · · · · · · · · · ·			
Matrix Spike (5E12071-MS1)					Source: I	35E0309	-05	
Acetone	40.3	10.0	ug/l	40.0	ND	101	70-130	
Benzene	4.76	0.200	11	4.00	ND	119	63-148	
Bromobenzene	4.53	0.500	**	4.00	ND	113	70-130	
Bromochloromethane	4.71	0.200	Ħ	4.00	ND	118	70-130	
Bromodichloromethane	4.89	0.200	#1	4.00	ND	122	70-130	
Bromoform	5.03	0.200	**	4.00	ND	126	70-130	
Bromomethane	1.82	2.00	**	4.00	ND	45.5	70-130	Q-02
Carbon disulfide	6.57	0.500	11	4.00	ND	164	70-130	Q-02
Carbon tetrachloride	4.82	0.200	**	4.00	ND	120	70-130	
Chlorobenzene	4.64	0.200	11	4.00	ND	116	80-128	
Chloroethane	5.27	1.00	**	4.00	ND	132	70-130	Q-02
Chloroform	4.65	0.200	tt	4.00	ND	116	70-130	
Chloromethane	4.51	1.00	11	4.00	ND	113	70-130	
cis-1,2-Dichloroethene	4.82	0.200	11	4.00	ND	120	70-130	
cis-1,3-Dichloropropene	5.07	0.200	#	4.00	ND	127	70-130	
Dibromochloromethane	5.05	0.200	11	4.00	ND	126	70-130	
Dibromomethane	4.63	0.200	н	4.00	ND	116	70-130	
Dichlorodifluoromethane	4.60	0.500	**	4.00	ND	115	70-130	
Ethylbenzene	4.74	0.200	ti .	4.00	ND	118	70-130	
Hexachlorobutadiene	4.22	0.500	Ħ	4.00	ND	106	70-130	
Isopropylbenzene	5.06	0.500	II	4.00	ND	126	70-130	
n,p-Xylene	9.70	0.500	**	8.00	ND	121	70-130	
Methyl tert-butyl ether	4.81	1.00	U	4.00	ND	120	70-130	
Methylene chloride	4.73	2.00	11	4.00	ND	118	70-130	
n-Butylbenzene	4.54	0.200	п	4.00	ND	114	70-130	
n-Propylbenzene	4.57	0.500	n	4.00	ND	114	70-130	
Naphthalene	4.68	0.500	n	4.00	ND	117	70-130	
p-Xylene	5.01	0.250	11	4.00	ND	125	70-130	
p-Isopropyltoluene	4.70	0.200	Ħ	4.00	ND	118	70-130	
ec-Butylbenzene	4.66	0.200	II .	4.00	ND	116	70-130	
Styrene	4.97	0.500	11	4.00	ND	124	70-130	
ert-Butylbenzene	4.56	0.500	n	4.00	ND	114	70-130	
Tetrachloroethene	4.78	0.200	**	4.00	ND	120	70-130	
Foluene	4.74	0.200	**	4.00	ND	118	72-127	

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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

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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
Batch 5E12071: Prepared 05/12/05	Using E	PA 5030B								
Matrix Spike (5E12071-MS1)					Source: B	5E0309-	05			
trans-1,2-Dichloroethene	4.79	0.200	ug/l	4.00	ND	120	70-130			
trans-1,3-Dichloropropene	4.93	0.200	ti	4.00	ND	123	70-130			
Trichloroethene	4.72	0.200	n	4.00	ND	118	80-126			
Trichlorofluoromethane	6.53	0.500	11	4.00	ND	163	70-130			Q-02
Vinyl chloride	4.81	0.200	H .	4.00	ND	120	70-130			
Surrogate: 1,2-DCA-d4	4.18		"	4.00		104	70-130			N
Surrogate: Toluene-d8	4.18		n	4.00		104	70-130			
Surrogate: 4-BFB	3.77		"	4.00		94.2	70-130			
Matrix Spike Dup (5E12071-MSD1)				;	Source: B	5E0309-0)5			A-01
1,1,1,2-Tetrachloroethane	3.97	0.200	ug/l	4.00	ND	99.2	70-130	21.2	30	
1,1,1-Trichloroethane	4.24	0.200	11	4.00	ND	106	70-130	11.6	30	
1,1,2,2-Tetrachloroethane	4.13	0.500	II	4.00	ND	103	70-130	13.3	30	
1,1,2-Trichloroethane	3.93	0.200	11	4.00	ND	98.2	70-130	21.2	30	
,l-Dichloroethane	4.06	0.200	n	4.00	ND	102	70-130	11.4	30	
,1-Dichloroethene	4.24	0.200	n	4.00	ND	106	59-158	12.4	30	
,1-Dichloropropene	4.29	0.200	It	4.00	ND	107	70-130	13.7	30	
,2,3-Trichlorobenzene	3.81	0.200	n	4.00	ND	95.2	70-130	14.8	30	
,2,3-Trichloropropane	4.03	0.500	II	4.00	ND	101	70-130	13.0	30	
,2,4-Trichlorobenzene	3.91	0.200	11	4.00	ND	97.8	70-130	12.0	30	
,2,4-Trimethylbenzene	4.01	0.200	11	4.00	ND	100	70-130	12.0	30	
,2-Dibromo-3-chloropropane	4.04	0.500	11	4.00	ND	101	70-130	15.5	30	
,2-Dibromoethane	3.95	0.200	**	4.00	ND	98.8	70-130	21.3	30	
,2-Dichlorobenzene	3.97	0.200	11	4.00	ND	99.2	70-130	14.7	30	
,2-Dichloroethane	4.14	0.200	n	4.00	ND	104	70-130	16.8	30	
,2-Dichloropropane	4.10	0.200	п	4.00	ND	102	70-130	15.7	30	
,3,5-Trimethylbenzene	4.08	0.500	11	4.00	ND	102	70-130	12.2	30	
,3-Dichlorobenzene	3.91	0.200	R	4.00	ND	97.8	70-130	9.73	30	
,3-Dichloropropane	3.96	0.200	11	4.00	ND	99.0	70-130	20.2	30	
,4-Dichlorobenzene	3.81	0.200	n	4.00	ND	95.2	70-130	14.4	30	
,2-Dichloropropane	3.68	0.500	11	4.00	ND	92.0	70-130	13.9	30	
-Butanone	43.9	2.00	rı .	40.0	ND	110	70-130	3.95	30	
-Chlorotoluene	3.99	0.500	11	4.00	ND	99.8	70-130	4.62	30	
-Hexanone	40.4	2.00	11	40.0	ND	101	70-130	9.88	30	

North Creek Analytical - Bothell

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Golder Associates Inc.

Ratch 5F12071.

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

Project: Landsburg Mine
Project Number: 923-1000.002

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 5E12071: Prepared 05/12/05	Using El	PA 5030B								
Matrix Spike Dup (5E12071-MSD1)					Source:	B5E0309	-05			A-01
4-Chlorotoluene	3.82	0.500	ug/l	4.00	ND	95.5	70-130	32.8	30	Q-07
4-Methyl-2-pentanone	42.6	2.00	· 0	40.0	ND	106	70-130	6.14	30	
Acetone	40.0	10.0	11	40.0	ND	100	70-130	0.747	30	
Benzene	4.15	0.200	"	4.00	ND	104	63-148	13.7	20	
Bromobenzene	4.04	0.500	"	4.00	ND	101	70-130	11.4	30	
Bromochloromethane	4.22	0.200	**	4.00	ND	106	70-130	11.0	30	
Bromodichloromethane	4.18	0.200	u	4.00	ND	104	70-130	15.7	30	
Bromoform	3.86	0.200	**	4.00	ND	96.5	70-130	26.3	30	
Bromomethane	2.24	2.00	II.	4.00	ND	56.0	70-130	20.7	30	Q-02
Carbon disulfide	5.02	0.500	**	4.00	ND	126	70-130	26.7	30	
Carbon tetrachloride	4.12 .	0.200	II	4.00	ND	103	70-130	15.7	30	
Chlorobenzene	3.87	0.200	ti	4.00	ND	96.8	80-128	18.1	20	
Chloroethane	4.32	1.00	n	4.00	ND	108	70-130	19.8	30	
Chloroform	4.05	0.200	11	4.00	ND	101	70-130	13.8	30	
Chloromethane	3.99	1.00	IT	4.00	ND	99.8	70-130	12.2	30	
cis-1,2-Dichloroethene	4.26	0.200	n	4.00	ND	106	70-130	12.3	30	
cis-1,3-Dichloropropene	4.23	0.200	n	4.00	ND	106	70-130	18.1	30	
Dibromochloromethane	4.13	0.200	11	4.00	ND	103	70-130	20.0	30	
Dibromomethane	4.00	0.200	II.	4.00	ND	100	70-130	14.6	30	
Dichlorodifluoromethane	3.93	0.500	11	4.00	ND	98.2	70-130	15.7	30	
Ethylbenzene	3.97	0.200	11	4.00	ND	99.2	70-130	17.7	30	
Hexachlorobutadiene	3.83	0.500	n	4.00	ND	95.8	70-130	9.69	30	
Isopropylbenzene	4.04	0.500	n	4.00	ND	101	70-130	22.4	30	
m,p-Xylene	7.88	0.500	н	8.00	ND	98.5	70-130	20.7	30	
Methyl tert-butyl ether	4.18	1.00	er e	4.00	ND	104	70-130	14.0	30	
Methylene chloride	4.25	2.00	Ħ	4.00	ND	106	70-130	10.7	30	
n-Butylbenzene	3.96	0.200	11	4.00	ND	99.0	70-130	13.6	30	
n-Propylbenzene	4.03	0.500	11	4.00	ND	101	70-130	12.6	30	
Naphthalene	3.89	0.500	11	4.00	ND	97.2	70-130	18.4	30	
o-Xylene	3.99	0.250	11	4.00	ND	99.8	70-130	22.7	30	
p-Isopropyltoluene	4.09	0.200	11	4.00	ND	102	70-130	13.9	30	
sec-Butylbenzene	4.10	0.200	"	4.00	ND	102	70-130	12.8	30	
Styrene	4.09	0.500	Ħ	4.00	ND	102	70-130	19.4	30	
tert-Butylbenzene	4.04	0.500	11	4.00	ND	101	70-130	12.1	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

Source

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

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

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E12071: Prepared 05/12/	05 Using EF	PA 5030B								
Matrix Spike Dup (5E12071-MSD1)					Source: E	35E0309-0	05			A-01
Tetrachloroethene	3.98	0.200	ug/l	4.00	ND	99.5	70-130	18.3	30	
Toluene	3.86	0.200	11	4.00	ND	96.5	72-127	20.5	20	Q-07
trans-1,2-Dichloroethene	4.21	0.200	Ħ	4.00	ND	105	70-130	12.9	30	
trans-1,3-Dichloropropene	3.98	0.200	11	4.00	ND	99.5	70-130	21.3	30	
Trichloroethene	4.09	0.200	Ħ	4.00	ND	102	80-126	14.3	20	
Trichlorofluoromethane	4.82	0.500	Ħ	4.00	ND	120	70-130	30.1	30	Q-07
Vinyl chloride	4.26	0.200	"	4.00	ND	106	70-130	12.1	30	
Surrogate: 1,2-DCA-d4	4.09		"	4.00		102	70-130			
Surrogate: Toluene-d8	3.88		"	4.00		97.0	70-130			
Surrogate: 4-BFB	3.92		"	4.00		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: 923-1000.002

Project Manager: Douglas Morell

Reported:

05/27/05 10:30

Notes and Definitions

A-01 MSD was run outside of 12hr QC window.

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-07 The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does

not represent an out-of-control condition for the batch.

Q-29 This sample was prepared outside of the method established holding time.

X See case narrative.

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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CHAIN OF CUSTODY REPORT

		HAIN OI	FCU	JST	ODY	RE	PO!	RT							W	ork Order #	PI	SE 031	79
NCA CLIENT: Color Ass	ociates, inc					INVO	ICE TO):							T			OUND REQUEST	
REPORT TO: Ryan Vanni ADDRESS: 18300 NE Va	el Box H	orrall															in B	usiness Days *	
ADDRESS: 18300 NE V?	an and Each	005 m <i>है.</i>															Organic & Ir	norganic Analyses	
PHONE: (427) 883-0787 PROJECT NAME: Loads burg	4 48000	والمرازع والمستران والمرازع				P.O. N	LIMBE	R.							—([10 7	5	4 3 2	1 <1
PROJECT NAME: 1.5	17x.(72)/32	36-1778	T			1.0		PRES	EDVA	TIVE					——] ³	' ہے۔۔۔۔۔۔۔'	\	lydrocarbon Analyses	!
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PROJECT NUMBER: 973-10	700.00L		FICE	Misc	HC		L			<u> </u>	Ĺ								
SAMPLED BY: Byen Varni	\ _			Τ	Ι		RE	QUEST	ED A	VALYS	SES	Ι Τ			-	با	OTHER :	Specify:	
CLIENT SAMPLE	SAMP	LING	بر. ا	1											-				·
IDENTIFICATION	DATE/		VOC;	Herolis	FICIE										,	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
			1 7		<u> </u>					ļ							001111	COMMENTS	
1 LMW/6-051005	05/10/05	1140	X	X	X											W	6		61
2 LHW10-051005	03/10/05	1730	X	X	X											W	(02
3 LAWII-051005	05/10/07	1300	×	×	X											W	6		03
4 FBLAW 10-071007	05/10/05	1315	1	×	X											W	6		04
5 LMWZ-071005	05/10/05	1430.	×	义	X			·								W	(O	EXTO FOR MESSO	05
6 LMW4-051005	05/10/05	1550	×	×	×										·	W	6		00
7 LAW7 -051005	05/10/05	1655	X	×	7											W	6		to7
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31 May 2005

Douglas Morell
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 05/12/05 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kortland Orr For Amar Gill

Project Manager



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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: Douglas Morell

Reported:

05/31/05 18:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW3-051105	B5E0368-01	Water	05/11/05 10:15	05/12/05 18:00
LMW5-051105	B5E0368-02	Water	05/11/05 11:05	05/12/05 18:00
LMW8-051105	B5E0368-03	Water	05/11/05 11:30	05/12/05 18:00
LMW9-051105	B5E0368-04	Water	05/11/05 13:35	05/12/05 18:00

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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: Douglas Morell Reported:

05/31/05 18:44

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW3-051105 (B5E0368-01) Water	Sampled: 05	/11/05 10:15	Received:	05/12/05 1	8:00				
Gx Range Hydrocarbons	ND	0.250	mg/l	I	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	11	***	н	H	11	ti .	
Diesel Range Hydrocarbons	ND	0.630	u	и	11	11	II	u	
Insulating Oil Range Hydrocarbons	. ND	0.630	**	11	n	n	n	11	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	11	n	**	n	tt	11	
Lube Oil Range Hydrocarbons	ND	0.630	Ħ	11	#	u	Ħ	Ħ	
Surrogate: 2-FBP	77.1 %	50-150			"	"	n	п	
Surrogate: Octacosane	92.2 %	50-150			"	n	"	"	
LMW5-051105 (B5E0368-02) Water	Sampled: 05	/11/05 11:05	Received:	05/12/05 18	8:00				
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	U	н	**	"	11	11	
Diesel Range Hydrocarbons	ND	0.630	n	n	II.	**	н	n	
Insulating Oil Range Hydrocarbons	ND	0.630	11	It	n	н	"	n	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	н	11	11	71	II.	II.	
Lube Oil Range Hydrocarbons	ND	0.630	Ħ	u	n	11	11	11	
Surrogate: 2-FBP	78.6 %	50-150			"	"	"	n .	
Surrogate: Octacosane	91.1 %	50-150			"	"	"	"	
LMW8-051105 (B5E0368-03) Water	Sampled: 05/	11/05 11:30	Received:	05/12/05 18	3:00				
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	и.,	n	11	H	11	n	
Diesel Range Hydrocarbons	ND	0.630	n	n	u	11	u	U	
Insulating Oil Range Hydrocarbons	ND	0.630	11	**	11	11	H	n	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	н		**	n	n	11	
Lube Oil Range Hydrocarbons	ND	0.630	11	11	п	Ħ	11	n .	
Surrogate: 2-FBP	79.6 %	50-150			"	**	"	11	
Surrogate: Octacosane	92.4 %	50-150			"	"	п	n	

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

Reported: 05/31/05 18:44

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

Project Manager: Douglas Morell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW9-051105 (B5E0368-04) Water	Compled: 05	/11/05 12.25	D	05/10/05 1	0.00				
Divivis-031103 (D3E0306-04) water	Sampled: 05	/11/05 13:35	Received:	05/12/05 1	8:00				
Gx Range Hydrocarbons	ND	0.250	mg/l	1	5E17005	05/18/05	05/20/05	NWTPH-HCID	
Kerosene Range Hydrocarbons	ND	0.630	н	н	н	11	н	11	
Diesel Range Hydrocarbons	ND	0.630	u	11	11	n	11	н	
Insulating Oil Range Hydrocarbons	ND	0.630	n	Ħ	II	n	н	Ħ	
Heavy Fuel Oil Range Hydrocarbons	ND	0.630	u	u	TF	**	**	11	
Lube Oil Range Hydrocarbons	ND	0.630	н	н	н		н	11	
Surrogate: 2-FBP	76.0 %	50-150			"	"	"	n .	
Surrogate: Octacosane	88.8 %	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: 923-1000.002 R273

Reported:

05/31/05 18:44

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

Project Manager: Douglas Morell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW3-051105 (B5E0368-01) Water	Sampled: 05/	11/05 10:15	Received:	05/12/05 1	8:00				
Silver	ND	0.00100	mg/l	1	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	11	"	u	11	**	**	
Beryllium	ND	0.00100	п	ir.	11	n	05/26/05	н	
Cadmium	ND	0.00100	tt	11	0	11	05/25/05	n	
Chromium	ND	0.00100	tt .	н	11	H	H	Ħ	
Copper	ND	0.00100	tr	**	11	11	"	u	
Iron	ND	0.150	11	11	5E24045	05/24/05	05/27/05	EPA 6010B - Diss	
Mercury	ND	0.000200	**	11	5E18041	05/18/05	05/18/05	EPA 7470A - Diss	
Manganese	0.0750	0.0100	н	II	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Nickel	0.00113	0.00100	11	11	11	**	**	ti .	
Lead	ND	0.00100	n	n	n	u	п	11	
Antimony	ND	0.00300	n	11	11	11	05/26/05	tt	
Selenium	ND	0.00100	11	n	н	ıı	05/25/05	и	
Thallium	ND	0.00100	n	11	11	11	Ħ	**	
Zinc	ND	0.0100	ji	II	п	11	11	11	
LMW5-051105 (B5E0368-02) Water	Sampled: 05/	11/05 11:05	Received:	05/12/05 18	8:00				
Silver	ND	0.00100	mg/l	1	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	11	**	11	**	н	11	
Beryllium	ND	0.00100	n	н	ii	11	05/26/05	н	
Cadmium	ND	0.00100	n	11	. 11	11	05/25/05	11	
Chromium	ND	0.00100	II	11	H	11	**	u	
Copper	ND	0.00100	n .	It	**	н	10	n	
Iron	0.280	0.150	n	п	5E24045	05/24/05	05/27/05	EPA 6010B - Diss	
Mercury	ND	0.000200	п	н	5E18041	05/18/05	05/18/05	EPA 7470A - Diss	
Manganese	0.225	0.0100	11	"	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Nickel	ND	0.00100	н	n	n	11	tr	u .	
Lead	ND	0.00100	n	11	11	n	н	н	
Antimony	ND	0.00300	"	II .	**	11	05/26/05	tr	
Selenium	ND	0.00100	11	n	Ħ	II .	05/25/05	н	
Thallium	ND	0.00100	n	u	11	n	н	ti.	
Zinc	ND	0.0100	н	n	H	II.	tt	II .	

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

Reported:

Project Manager: Douglas Morell

05/31/05 18:44

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW8-051105 (B5E0368-03) Water	Sampled: 05/	11/05 11:30	Received:	05/12/05 1	8:00				
Silver	ND	0.00100	mg/l	1	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Arsenic	0.00161	0.00100	Ð	н	n	tt	H	n	
Beryllium	ND	0.00100	н	0	n	It	05/26/05	» · · · · · · · · · · · · · · · · · · ·	
Cadmium	ND	0.00100	n	"	**	**	05/25/05	н	
Chromium	ND	0.00100	н	11	"	It	#	11	
Copper	ND	0.00100	ŧŧ	**	и	"	Ħ	11	
Iron	3.79	0.150	"	u	5E24045	05/24/05	05/27/05	EPA 6010B - Diss	
Mercury	ND	0.000200	n	н	5E18041	05/18/05	05/18/05	EPA 7470A - Diss	
Nickel	0.00221	0.00100	11	11	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Lead	ND	0.00100	ti	11	"	"	n	Ħ	
Antimony	ND	0.00300	11	11	n	ıı	05/26/05	U	
Selenium	ND	0.00100	ti	**	**	Ħ	05/25/05	11	
Thallium	ND	0.00100	11	II .	71	II .	11	u	
Zinc	ND	0.0100	**	n	n	11	ft	Ħ	
LMW8-051105 (B5E0368-03RE1) Wa	iter Sampled	: 05/11/05 11	:30 Recei	ved: 05/12/	05 18:00				
Manganese	0.533	0.0200	mg/l	2	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
LMW9-051105 (B5E0368-04) Water	Sampled: 05/	11/05 13:35	Received:	05/12/05 18	3:00				
Silver	ND	0.00100	mg/l	1	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Arsenic	ND	0.00100	tt	н	11	II .	n	u	
Beryllium	ND	0.00100	IT	11	11	**	05/26/05	n	
Cadmium	ND	0.00100	11	11	n	n	05/25/05	11	
Chromium	ND	0.00100	n	Ħ	n	11	tt	u	
Copper	ND	0.00100	11	**	н	H.	n	n	
Iron	1.64	0.150	11	н	5E24045	05/24/05	05/27/05	EPA 6010B - Diss	
Mercury	ND	0.000200	н	Ħ	5E18041	05/18/05	05/18/05	EPA 7470A - Diss	
Manganese	0.172	0.0100	11	п	5E17056	05/17/05	05/25/05	EPA 6020 - Diss	
Nickel	ND	0.00100	n	**	n	11	11	H .	
Lead	ND	0.00100	11	H	Ħ	н	n	n	
Antimony	ND	0.00300	н	n	ti	#	05/26/05	H	
Selenium	ND	0.00100	**	n	Ħ	н	05/25/05	н	
Thallium	ND	0.00100	п	**	ti	**	n	Ħ	
Zinc	ND	0.0100	11	tt	n	u	u	ti	

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: Douglas Morell

Reported: 05/31/05 18:44

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW3-051105 (B5E0368-01) Water	Sampled: 05/1	1/05 10:15	Received:	05/12/05 18	8:00				
Acetone	ND	10.0	ug/l	1	5E18079	05/17/05	05/18/05	EPA 8260B	
Benzene	ND	0.200	II	11	н	п	Ħ	"	
Bromobenzene	ND	0.500	11	n	tr	**	**	"	
Bromochloromethane	ND	0.200	ıı	**	н	11	H	u u	
Bromodichloromethane	ND	0.200	Ħ	H	11	tt	***	n	
Bromoform	ND	0.200	u	n	tı	u	н	n	
Bromomethane	ND	2.00	"	n n		11	11	н	
2-Butanone	ND	2.00	ш	11	н	*11	11	Ħ	
n-Butylbenzene	ND	0.200	n	п	**	tt	n	n	
sec-Butylbenzene	ND	0.200	11	**	н	Ħ	II	π	
tert-Butylbenzene	ND	0.500	n	u	**	Ħ	11	It	
Carbon disulfide	ND	0.500	Ħ	11	II.	11	n	н	
Carbon tetrachloride	ND	0.200	н	n .	**	It	п	ti .	
Chlorobenzene	ND	0.200	**	11	11	11	11	11	
Chloroethane	ND	1.00	Ħ	11	11	11	II .	11	
Chloroform	ND	0.200	11	II .	n	Ħ	н	н	
Chloromethane	ND	1.00	II	17	n	11	11	tt	
2-Chlorotoluene	ND	0.500	**	u	11	II	н	11	
4-Chlorotoluene	ND	0.500	II	n	n	n	11	н	
Dibromochloromethane	ND	0.200	Ħ	п	n	H	u	11	
1,2-Dibromo-3-chloropropane	ND	0.500	. "	n	tr	11	н	II.	
1,2-Dibromoethane	ND	0.200	n	**	n	11	11	н	
Dibromomethane	ND	0.200	11	n	11	"	н	n	
1,2-Dichlorobenzene	ND	0.200	IT	**	11	n	**	II.	
1,3-Dichlorobenzene	ND	0.200	n	ti.	н	n	91	н	
1,4-Dichlorobenzene	ND ·	0.200	n	u	11	tt	н	11	
Dichlorodifluoromethane	ND	0.500	n	*1	n	tt	tt	н	
1,1-Dichloroethane	ND	0.200	R	n	**	н	II .	11	
1,2-Dichloroethane	ND	0.200	н	"	н	ft	**	tı	
1,1-Dichloroethene	ND	0.200	11	n	11	u	11	п	
cis-1,2-Dichloroethene	ND	0.200	tr	**	11	"	n	**	
trans-1,2-Dichloroethene	ND	0.200	**	u	•	ti	tt	п	
1,2-Dichloropropane	ND	0.200	u	11	n	n	II	H	
• •									

North Creek Analytical - Bothell

1,3-Dichloropropane

2,2-Dichloropropane

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ND

ND

0.200

0.500



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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: 923-1000.002 R273 Project Manager: Douglas Morell

Reported:

05/31/05 18:44

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW3-051105 (B5E0368-01) Water	Sampled: 05	5/11/05 10:15	Received:	05/12/05 18	8:00				
1,1-Dichloropropene	ND	0.200	ug/l	1	5E18079	05/17/05	05/18/05	н	
cis-1,3-Dichloropropene	ND	0.200	n	n	tt.	11	11	11	
trans-1,3-Dichloropropene	ND	0.200	n ·	Ħ	n	II.	H	ti .	
Ethylbenzene	ND	0.200	Ħ	II.	If	н	Ħ	11	
Hexachlorobutadiene	ND	0.500	п	11	II	п	II	n	
Methyl tert-butyl ether	ND	1.00	Ħ	11	**	11	11	11	
n-Hexane	ND	1.00	11	и	n	Ħ	u	n	
2-Hexanone	ND	2.00	Ħ	11	**	11	tt	tt	
lsopropylbenzene	ND	0.500	rt	н	"	**	11	n	
p-Isopropyltoluene	ND	0.200	11	tr	n	11	H	11	
4-Methyl-2-pentanone	ND	2.00	11	Ü	IŢ	11	#1	11	
Methylene chloride	ND	2.00	II .	tt	**	n n	n	n	
Naphthalene	ND	0.500	**	u	n n	**	Ħ	n	
n-Propylbenzene	ND	0.500	ıı	**	#1	п	11	n	
Styrene	ND	0.500	n	u	ŧŧ	и	n	n	
1,2,3-Trichlorobenzene	ND	0.200	H.	H	**	**	ti	n	
1,2,4-Trichlorobenzene	ND	0.200	**	**	**	н	n	n	
1,1,1,2-Tetrachloroethane	ND	0.200	II.	n	н	11	tt	tı	
1,1,2,2-Tetrachloroethane	ND	0.500	**	tt	**	Ħ	11	н	
Tetrachloroethene	ND	0.200	11	u	u	н	H	Ħ	
Toluene	ND	0.200		n	n	11	11	n .	
1,1,1-Trichloroethane	ND	0.200	*1	**	n	Ħ	n	н	
1,1,2-Trichloroethane	ND	0.200	n n	n	и	n	n	n	
Trichloroethene	ND	0.200	**	11	n	tt	n	11	
Trichlorofluoromethane	ND	0.500	**	n	II .	н	II	n	
1,2,3-Trichloropropane	ND	0.500	Ħ	н	n	11	n	11	
1,2,4-Trimethylbenzene	ND	0.200	Ħ	11	11	ti .	n	11	
1,3,5-Trimethylbenzene	ND	0.500	11	н	н	11	11	н	
Vinyl chloride	ND	0.200	11	tr	**	11	tr	n	
o-Xylene	ND	0.250	n	II	II.	11	11	tt	
m,p-Xylene	ND	0.500	11	11	11	11	tt	н	
Surrogate: 1,2-DCA-d4	92.0 %	70-130			n	"	"	n .	
Surrogate: Toluene-d8	100 %	70-130			n	"	"	"	
Surrogate: 4-BFB	102 %	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: 923-1000.002 R273 Project Manager: Douglas Morell

Reported: 05/31/05 18:44

Volatile Organic Compounds by EPA Method 8260B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW5-051105 (B5E0368-02) Water	Sampled: 05/	11/05 11:05	Received:	05/12/05 18	3:00		,		
Acetone	ND	10.0	ug/l	1	5E18079	05/17/05	05/18/05	EPA 8260B	
Benzene	ND	0.200	0	Ħ	11	11	н	в	
Bromobenzene	ND	0.500	71	11	II	н	n	II	
Bromochloromethane	ND	0.200	11	"	11	11	н	п	
Bromodichloromethane	ND	0.200	**	***	н	. #	11	tt	
Bromoform	ND	0.200	n	n	n	11	n	H	
Bromomethane	ND	2.00	11	tt	н	n	**	11	
2-Butanone	ND	2.00	II.	и	"	11	H	n	
n-Butylbenzene	ND	0.200	*1	11	n	n	11	11	
sec-Butylbenzene	ND	0.200	11	и	11	n	II	н	
tert-Butylbenzene	ND	0.500	tt	tt	II .	tr.	11	11	
Carbon disulfide	ND	0.500	II	II .	n	11	n	n	
Carbon tetrachloride	ND	0.200	Ħ	11	tr	11	п	11	
Chlorobenzene	ND	0.200	II.	11	n	n	II	11	
Chloroethane	ND	1.00	n	**	**	11	n	n	
Chloroform	ND	0.200	u	11	n	11	n	ft	
Chloromethane	ND	1.00	**	Ħ	tt	n	n	и	
2-Chlorotoluene	ND	0.500	n .	11	н	n	11	11	
4-Chlorotoluene	ND	0.500	11	n	11	n	II .	п	
Dibromochloromethane	ND	0.200	11	11	11	11	n	11	
1,2-Dibromo-3-chloropropane	ND	0.500	н	#1	и	"	D	11	
1,2-Dibromoethane	ND	0.200	**	n	n	11	n	н	
Dibromomethane	ND	0.200	**	n	н	н	11	Ti.	
1,2-Dichlorobenzene	ND	0.200	**	11	11	n	n	II.	
1,3-Dichlorobenzene	ND	0.200	n	11	. 11	ti	tt	n	
1,4-Dichlorobenzene	ND	0.200	11	n	н	11	11	11	
Dichlorodifluoromethane	ND	0.500	n	11	11	11	n	н	
1,1-Dichloroethane	ND	0.200	n	H	11	н	**	n	
1,2-Dichloroethane	ND	0.200	11	11	11	**	It	п	
1,1-Dichloroethene	ND	0.200	n	II.	tt .	u ·	11	н	
cis-1,2-Dichloroethene	ND	0.200	11	н	11	11	**	11	
rans-1,2-Dichloroethene	ND	0.200	n	11	tt	TI.	н	u	
1,2-Dichloropropane	ND	0.200	11	ıı	н	tt	tt	11	
1,3-Dichloropropane	ND	0.200	u .	n	Ħ.	11	ti .	u ·	
2,2-Dichloropropane	ND	0.500	11	ft	II.	II.	11	n	

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: 923-1000.002 R273 Project Manager: Douglas Morell Reported:

05/31/05 18:44

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW5-051105 (B5E0368-02) Water	Sampled: 05	5/11/05 11:05	Received:	05/12/05 18	8:00				
1,1-Dichloropropene	ND	0.200	ug/l	1	5E18079	05/17/05	05/18/05	u.	
cis-1,3-Dichloropropene	ND	0.200	n	tt	n	11	н	**	
trans-1,3-Dichloropropene	ND	0.200	н	н	**	II	Ħ	II	
Ethylbenzene	ND	0.200	tr	tt	11	**	н	11	
Hexachlorobutadiene	ND	0.500	н	н	11	n	11	и	
Methyl tert-butyl ether	ND	1.00	Ħ	11	H	11	II.	n	
n-Hexane	ND	1.00	11	Ħ	"	"	11	n	
2-Hexanone	ND	2.00	11	"	n	н	II.	n	
Isopropylbenzene	ND	0.500	n	п	"	11	n	π	
p-Isopropyltoluene	ND	0.200	11	11	II.	u	II.	n	
4-Methyl-2-pentanone	ND	2.00	II .	n	11	**	11	n	
Methylene chloride	ND	2.00	π	"	**	11	11	n .	
Naphthalene	ND	0.500	It	**	**	R	п	**	
n-Propylbenzene	ND	0.500	11	н	tt	11	**	II.	
Styrene	ND	0.500	u	n	It	и	11	11	
1,2,3-Trichlorobenzene	ND	0.200	ti	II	n	tı	Ħ	u	
1,2,4-Trichlorobenzene	ND	0.200	tt	n	0	u	u ·	н	
1,1,1,2-Tetrachloroethane	ND	0.200	**	(1	n	"	**	tt	
1,1,2,2-Tetrachloroethane	ND	0.500	u	"	tt	n	tt	n	
Tetrachloroethene	ND	0.200	н	tt	u	n	n	n	
Toluene	ND	0.200	tt	H	n	n	n	tt	
1,1,1-Trichloroethane	ND	0.200	H	**	II	11	II .	n	
1,1,2-Trichloroethane	ND	0.200	n	u	11	u	n	n	
Trichloroethene	ND	0.200	U	11	u	11	**	11	
Trichlorofluoromethane	ND	0.500	11	11	11	H	ti.	n	
1,2,3-Trichloropropane	ND	0.500	ti	H	**	n	Ħ	n	
1,2,4-Trimethylbenzene	ND	0.200	н	tt	•	11	II .	11	
1,3,5-Trimethylbenzene	ND	0.500	tt	н	11	н	n	n	
Vinyl chloride	ND	0.200	11	**	n .	11	11	11	
o-Xylene	ND	0.250	n	ti	11	н	II .	n	
m,p-Xylene	ND	0.500	tt	п	n .	11	11	11	
Surrogate: 1,2-DCA-d4	94.5 %	70-130			"	"	"	n	
Surrogate: Toluene-d8	99.0 %	70-130			n	"	"	#	
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: Douglas Morell

Reported:

05/31/05 18:44

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW8-051105 (B5E0368-03) Water	Sampled: 05/	11/05 11:30	Received:	05/12/05 18	8:00				
Acetone	ND	10.0	ug/l	1	5E18079	05/17/05	05/18/05	EPA 8260B	
Benzene	ND	0.200	11	**	н	n	"	tt.	
Bromobenzene	ND	0.500	II .	n	11	"	п	**	
Bromochloromethane	ND	0.200	n	**	II .	n	n	н	
Bromodichloromethane	ND	0.200	n	и	Ħ	n	II .	11	
Bromoform	ND	0.200	tt	n	ĬĬ	*1	"	н	
Bromomethane	ND	2.00	n	н	n	11	11	u u	
2-Butanone	ND	2.00	H	11	п	11	**	п	
n-Butylbenzene	ND	0.200	11	u	11	n	n	tt	
sec-Butylbenzene	ND	0.200	n	11	**	11	11	н	
tert-Butylbenzene	ND	0.500	11	U	н	11	n	"	
Carbon disulfide	ND	0.500	н	н	ti	• 11	n	n	
Carbon tetrachloride	ND	0.200	11	**	11	ti	Ħ	n	
Chlorobenzene	ND	0.200	If	n	11	#	"	n	
Chloroethane	ND	1.00	**	**	n	"	H	и	
Chloroform	ND	0.200	tt.	n	**		11	n	
Chloromethane	ND	1.00	11	tt	**	n	н	11	
2-Chlorotoluene	ND	0.500	11	n	11	п	11	r.	
4-Chlorotoluene	ND	0.500	н	11	11	11	11	11	
Dibromochloromethane	ND	0.200	tt	11	н	11	н	ır	
,2-Dibromo-3-chloropropane	ND	0.500	II .	11	"	н	tr	11	
,2-Dibromoethane	ND	0.200	н	"	11	11	II .	11	
Dibromomethane	ND	0.200	tt	п	н	u u	ti	п	
,2-Dichlorobenzene	ND	0.200	н	n	11	н	Ħ	н	
,3-Dichlorobenzene	ND	0.200	11	II.	II .	11	н	π	
.4-Dichlorobenzene	ND	0.200	u	11	n	tt	tt	п	
Dichlorodifluoromethane	ND	0.500	**	tt	n	11	11	Ħ	
,l-Dichloroethane	ND	0.200	11	n	**	tt	н	11	
,2-Dichloroethane	ND	0.200	n	**	11	"	11	n	
,1-Dichloroethene	ND	0.200	n	u	п	tt	II	Ħ	
is-1,2-Dichloroethene	ND	0.200	II	11	**	п	ti	n	
rans-1,2-Dichloroethene	ND	0.200	tt	u ·	II .	tı	11	n	
,2-Dichloropropane	ND	0.200	11	n	н	u	n	ti .	
,3-Dichloropropane	ND	0.200	н	ti	11	и	11	II.	
,2-Dichloropropane									

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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: Douglas Morell

Reported:

05/31/05 18:44

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
LMW8-051105 (B5E0368-03) Water	Sampled: 05	5/11/05 11:30	Received:	05/12/05 18	8:00				
1,1-Dichloropropene	ND	0.200	ug/l	1	5E18079	05/17/05	05/18/05	ti	
cis-1,3-Dichloropropene	ND	0.200	n	ff	11	11	11	II.	
trans-1,3-Dichloropropene	ND	0.200	11	II	**	n	"	11	
Ethylbenzene	ND	0.200	H	n	II .	II	"	tt	
Hexachlorobutadiene	ND	0.500	n	ıı	Ħ	"	**	"	
Methyl tert-butyl ether	ND	1.00	Ü	**	li .	н	11	u	
n-Hexane	ND	1.00	Ħ	*1	11	n	н	Ħ	
2-Hexanone	ND	2.00	u	"	11	n	Ħ	u	
Isopropylbenzene	ND	0.500	ţt	**	n	tt	н	u	
p-Isopropyltoluene	ND	0.200	и	п	11	u	11	11	
4-Methyl-2-pentanone	ND	2.00	**	11	Ħ	Ħ	и	n	
Methylene chloride	ND	2.00	n	n	"	***	Ħ	Ħ	
Naphthalene	ND	0.500	**	**	11	**	11	II.	
n-Propylbenzene	ND	0.500		n	Ħ	11	н	n	
Styrene	ND	0.500	11	11	H	n	n	11	
1,2,3-Trichlorobenzene	ND	0.200	tr	n .	11	TI	H	n	
1,2,4-Trichlorobenzene	ND	0.200	11	и	n	II.	11	11	
1,1,1,2-Tetrachloroethane	ND	0.200	11	ţı	Ħ	Ħ	11	н	
1,1,2,2-Tetrachloroethane	ND	0.500	11	u	tt	**	н	n	
Tetrachloroethene	ND	0.200	n	Ħ	н	u	n	II.	
Toluene	ND	0.200	п	и	n	n	u	11	
1,1,1-Trichloroethane	ND	0.200	11	11	н	n,	11	11	
1,1,2-Trichloroethane	ND	0.200	II.	tt	n	**	u u	u	
Trichloroethene	ND	0.200	11	н	R	**	и	ti	
Trichlorofluoromethane	ND	0.500	II.	TI .	н	н	11	11	
1,2,3-Trichloropropane	ND	0.500	11	u	11	"	n	н	
1,2,4-Trimethylbenzene	ND	0.200	11	n	It	It	ıı	"	
1,3,5-Trimethylbenzene	ND	0.500	11	п	"	11	11	II.	
Vinyl chloride	ND	0.200	n	11	u	n	II	"	
-Xylene	ND	0.250	II .	tt	**	"	tt.	u .	
n,p-Xylene	ND	0.500	11	n	"	tt	II .	Ħ	
Surrogate: 1,2-DCA-d4	94.5 %	70-130			"	"	"	п	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	n .	
Surrogate: 4-BFB	103 %	70-130			"	n	"	"	

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: Douglas Morell

Reported:

05/31/05 18:44

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW9-051105 (B5E0368-04) Water	Sampled: 05/1	1/05 13:35	Received:	05/12/05 18	8:00				
Acetone	ND	10.0	ug/l	1	5E18079	05/17/05	05/18/05	EPA 8260B	
Benzene	ND	0.200	Ħ	"	Ħ	н	11	н	
Bromobenzene	ND	0.500	n	и	н	11	H .	tt	
Bromochloromethane	ND	0.200	II.	n n	11	u	**	и	
Bromodichloromethane	ND	0.200	n	11	H	11	11	11	
Bromoform	ND	0.200	11	n	11	11	н	H	
Bromomethane	ND	2.00	**	tt	**	ti	n	"	
2-Butanone	ND	2.00	11	u	n	Ħ	II	0	
n-Butylbenzene	ND	0.200	п	**	n	н	n	n	
sec-Butylbenzene	ND	0.200	ti	n	n	И	tt	tt	
tert-Butylbenzene	ND	0.500	n .	Ħ	11	**	н	II .	
Carbon disulfide	ND	0.500	11	11	11	н	**	Ħ	
Carbon tetrachloride	ND	0.200	u	11	n	"	ti	II .	
Chlorobenzene	ND	0.200	n	11	**	II.	н	II	
Chloroethane	ND	1.00	11	tt	11	u	11	TI.	
Chloroform	ND	0.200	11	n	**	11	II .	u	
Chloromethane	ND	1.00	†1	**	11	11	11	tt	
2-Chlorotoluene	ND	0.500	u	n	н	n	11	11	
4-Chlorotoluene	ND	0.500	Ħ	n	**	11	11	и	
Dibromochloromethane	ND	0.200	n	tt	n	11	н	н	
1,2-Dibromo-3-chloropropane	ND	0.500	II.	. "	п	n	11	п	
1,2-Dibromoethane	ND	0.200	Ħ	"	n	tt	11	n	
Dibromomethane	ND	0.200	11	n	11	11	н	п	
1,2-Dichlorobenzene	ND	0.200	IT	n .	н	n	n	11	
1,3-Dichlorobenzene	ND	0.200	11	11	11	n	n .	11	
1,4-Dichlorobenzene	ND	0.200	n	11	n	n	н	п	
Dichlorodifluoromethane	ND	0.500	н	n	n	u	11	н	
1,1-Dichloroethane	ND	0.200	11	**	n	11	Ti .	11	
1,2-Dichloroethane	ND	0.200	11	n	11	II.	n	n .	
1,1-Dichloroethene	ND	0.200	11	n	и	n	tt	н	
cis-1,2-Dichloroethene	ND	0.200	Ħ	**	**	п	11	rı	
rans-1,2-Dichloroethene	ND	0.200	n .	tt	n	11	u	P	
1,2-Dichloropropane	ND	0.200	**	II	If	и	**	н	
1,3-Dichloropropane	ND	0.200	"	11	u	tı	11	n	
2,2-Dichloropropane	ND	0.500	n	tt	u	ŧŧ	п	11	
• •		·							

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: Douglas Morell

Reported: 05/31/05 18:44

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

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
LMW9-051105 (B5E0368-04) Water	Sampled: 05	5/11/05 13:35	Received:	05/12/05 18	8:00				
1,1-Dichloropropene	ND	0.200	ug/l	1	5E18079	05/17/05	05/18/05	п	
cis-1,3-Dichloropropene	ND	0.200	Ħ	n	n	11	11	н	
trans-1,3-Dichloropropene	ND	0.200	n	**	ft.	H	n	**	
Ethylbenzene	ND	0.200	n	n	н	tt	tt.	н	
Hexachlorobutadiene	ND	0.500	ft	**	Ħ	H	ıı	11	
Methyl tert-butyl ether	ND	1.00	u	n	n	11	Ħ	n	
n-Hexane	ND	1.00	n	n	n	ti	п	п	
2-Hexanone	ND	2.00	II.	n.	11	n	11	11	
Isopropylbenzene	ND	0.500	"	11	н	**	ņ	п	
p-Isopropyltoluene	ND	0.200	II.	11	u	H	н	n	
4-Methyl-2-pentanone	ND	2.00	n	ш	н	n	ft	II.	
Methylene chloride	ND	2.00	11	**	11	n	H	н	
Naphthalene	ND	0.500	II .	11	If	н	n	n	
n-Propylbenzene	ND	0.500	**	*1	11	11	tt.	n	
Styrene	ND	0.500	tr.	n	n n	u .	n	11	
1,2,3-Trichlorobenzene	ND	0.200	**	n	н	**	tt	11	
1,2,4-Trichlorobenzene	ND	0.200	n	11	**	11	ti.	n	
1,1,1,2-Tetrachloroethane	ND	0.200	н	n	11	"	11	11	
1,1,2,2-Tetrachloroethane	ND	0.500	n	**	**	n	TI .	II.	
Tetrachloroethene	ND	0.200	n	n	"	11	н	и	
Toluene	ND	0.200	11	ii	н	н	11	11	
1,1,1-Trichloroethane	ND	0.200	11	**	tı	11	tt	u	
1,1,2-Trichloroethane	ND	0.200	n	u	II.	11	H	n	
Trichloroethene	ND	0.200	*1	н	н	н	11	11	
Trichlorofluoromethane	ND	0.500	II .	n	n	tt .	ıt	n	
1,2,3-Trichloropropane	ND	0.500	**	n	11	W.	u	n	
1,2,4-Trimethylbenzene	ND	0.200	ti .	Ħ	11	11	n	11	
1,3,5-Trimethylbenzene	ND	0.500	n	**	11	†I	II	II.	
Vinyl chloride	ND	0.200	11	n	н	11	n	11	
o-Xylene	ND	0.250	II	11	11	11	11	и	
m,p-Xylene	ND	0.500	11	0	u	11	II	tt	
Surrogate: 1,2-DCA-d4	96.0 %	70-130			п	"	"	"	
Surrogate: Toluene-d8	99.5 %	70-130			"	"	"	rr .	
Surrogate: 4-BFB	101 %	70-130			"	"	"	"	

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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: Douglas Morell

Reported:

05/31/05 18:44

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	RPD	RPD	27.4.
				Offics	Level	Result	70REC	Limits	RPD	Limit	Notes
Batch 5E17005: Pr	epared 05/17/05	Using I	EPA 3520C								
Blank (5E17005-BLK1)											
Gx Range Hydrocarbons		ND	0.250	mg/l							
Kerosene Range Hydrocarbo	ons	ND	0.630	n							
Diesel Range Hydrocarbons		ND	0.630	ti							
Insulating Oil Range Hydrod	carbons	ND	0.630	11							
Heavy Fuel Oil Range Hydro	ocarbons	ND	0.630	Ħ							
Lube Oil Range Hydrocarbo	ns	ND	0.630	11							
Surrogate: 2-FBP		DET		"	0.250		80.0	50-150			
Surrogate: Octacosane		DET		"	0.250		93.6	50-150			
LCS (5E17005-BS1)											
Diesel Range Hydrocarbons		DET	0.630	mg/l	2.00		66.5	50-150			
Surrogate: 2-FBP		DET		п	0.250		67.6	50-150			
LCS Dup (5E17005-BSI	D1)										
Diesel Range Hydrocarbons		DET	0.630	mg/l	2.00		73.5	50-150	10.0	40	
Surrogate: 2-FBP		DET		"	0.250		80.0	50-150			
Duplicate (5E17005-DU)	P1)					Source: B	5E0309-0)1			
Gx Range Hydrocarbons		0.0932	0.250	mg/l		0.106			12.9	50	
Kerosene Range Hydrocarbo	ns '	0.0741	0.630	н		0.0809			8.77	50	
Diesel Range Hydrocarbons		0.0490	0.630	tr		0.0504			2.82	50	
Insulating Oil Range Hydroc	arbons	0.0818	0.630	tt		0.0855			4.42	50	
Heavy Fuel Oil Range Hydro	carbons	0.126	0.630	н		0.129			2.35	50	
Lube Oil Range Hydrocarbor	ns	0.0517	0.630	TI .		0.0527			1.92	50	
Surrogate: 2-FBP		DET		"	0.245		75.5	50-150			
Surrogate: Octacosane		DET		"	0.245		91.8	50-150			
Matrix Spike (5E17005-	MS1)					Source: B	5E0309-0	5			
Diesel Range Hydrocarbons		DET	0.630	mg/l	1.98	0.0585	70.8	25-149			
Surrogate: 2-FBP		DET		"	0.248		78.2	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: Douglas Morell

Spike

Source

Reported:

05/31/05 18:44

RPD

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

Reporting

Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E17005:	Prepared 05/17/05	Using EI	PA 3520C								
Matrix Spike Dup	(5E17005-MSD1)					Source: E	B5E0309-0	05			
Diesel Range Hydroca	rbons	DET	0.630	mg/l	1.98	0.0585	64.2	25-149	9.32	40	
Surrogate: 2-FBP		DET		"	0.248		70.6	50-150			

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Golder Associates Inc.

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

Project: Landsburg Mine

Spike

Source

Project Number: 923-1000.002 R273 Project Manager: Douglas Morell Reported:

RPD

05/31/05 18:44

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

Reporting

1			reporting		Spire	Source		/OICEC		KPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E17056:	Prepared 05/17/05	Using E	PA 3005A								
Blank (5E17056-Bl	LK1)										
Silver		ND	0.00100	mg/l							
Arsenic		ND	0.00100	**							
Beryllium		ND	0.00100	н							
Cadmium		ND	0.00100	TI .							
Chromium		ND	0.00100	н							
Copper		ND	0.00100	11							
Manganese		ND	0.0100	и							
Nickel		ND	0.00100	11							
Lead		ND	0.00100	н							
Antimony		ND	0.00300	11							
Selenium		ND	0.00100	11							
Thallium		ND	0.00100	n							
Zinc		ND	0.0100	n							
LCS (5E17056-BS1)										
Silver		0.221	0.00100	mg/l	0.200		110	80-120			
Arsenic		0.223	0.00100	tt	0.200		112	80-120			
Beryllium		0.211	0.00100	II	0.200		106	80-120			
Cadmium		0.221	0.00100	tt	0.200		110	80-120			
Chromium		0.224	0.00100	II .	0.200		112	80-120			
Copper		0.222	0.00100	n	0.200		111	80-120			
Manganese		0.223	0.0100	ti	0.200		112	80-120			
Nickel		0.222	0.00100	н	0.200		111	80-120			
Lead		0.222	0.00100	11	0.200		111	80-120			
Antimony		0.0570	0.00300	11	0.0500		114	80-120			
Selenium		0.222	0.00100	"	0.200		111	80-120			
Thallium		0.221	0.00100	n	0.200		110	80-120			
Zinc		0.222	0.0100	11	0.200		111	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: 923-1000.002 R273 Project Manager: Douglas Morell

Reported: 05/31/05 18:44

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

Analyte		Dogult	Reporting	T I (4	Spike	Source	0/7770	%REC	222	RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E17056:	Prepared 05/17/05	Using I	EPA 3005A								
LCS Dup (5E17056	5-BSD1)										
Silver		0.221	0.00100	mg/l	0.200		110	80-120	0.00	20	
Arsenic		0.222	0.00100	ti	0.200		111	80-120	0.449	20	
Beryllium		0.207	0.00100	**	0.200		104	80-120	1.91	20	
Cadmium		0.222	0.00100	II.	0.200		111	80-120	0.451	20	
Chromium		0.222	0.00100	"	0.200		111	80-120	0.897	20	
Copper		0.221	0.00100	II .	0.200		110	80-120	0.451	20	
Manganese		0.221	0.0100	n	0.200		110	80-120	0.901	20	
Nickel		0.221	0.00100	tr	0.200		110	80-120	0.451	20	
Lead		0.222	0.00100	n	0.200		111	80-120	0.00	20	
Antimony		0.0568	0.00300	Ħ	0.0500		114	80-120	0.351	20	
Selenium		0.222	0.00100	**	0.200		111	80-120	0.00	20	
Thallium		0.221	0.00100	11	0.200		110	80-120	0.00	20	
Zinc		0.221	0.0100	"	0.200		110	80-120	0.451	20	
Matrix Spike (5E17	056-MS1)					Source: B	5E0368-0	1			
Silver		0.0917	0.00100	mg/l	0.100	ND	91.7	43-124			
Arsenic		0.108	0.00100	n	0.100	0.000710	107	70-138			
Beryllium		0.0918	0.00100	II	0.100	ND	91.8	80-125			
Cadmium		0.0983	0.00100	n	0.100	ND	98.3	80-125			
Chromium		0.0982	0.00100	II	0.100	ND	98.2	76-125			
Copper		0.0956	0.00100	n	0.101	0.000740	93.9	71-125			
Manganese		0.171	0.0100	II.	0.100	0.0750	96.0	54-158			
Nickel		0.0954	0.00100	н	0.0995	0.00113	94.7	73-125			
Lead		0.0962	0.00100	B	0.0995	ND	96.7	78-125			
Antimony		0.0326	0.00300	н	0.0500	0.00175	61.7	63-126			Q-0
Selenium		0.104	0.00100	tt	0.100	ND	104	61-156			
[hallium		0.0975	0.00100	н	0.100	ND	97.5	78-125			
Zinc		0.105	0.0100	71	0.0995	0.00298	103	70-127			

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: Douglas Morell Reported:

05/31/05 18:44

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
Batch 5E17056:	Prepared 05/17/05	Using I	EPA 3005A								
Matrix Spike Dup	(5E17056-MSD1)					Source: B	5E0368-0)1			
Silver		0.0927	0.00100	mg/l	0.100	ND	92.7	43-124	1.08	50	
Arsenic		0.108	0.00100	11	0.100	0.000710	107	70-138	0.00	20	
Beryllium		0.0934	0.00100	\$1	0.100	ND	93.4	80-125	1.73	20	
Cadmium		0.100	0.00100	Ħ	0.100	ND	100	80-125	1.71	20	
Chromium		0.0986	0.00100	II	0.100	ND	98.6	76-125	0.407	20	
Copper		0.0960	0.00100	tt	0.101	0.000740	94.3	71-125	0.418	20	
Manganese		0.170	0.0100	п	0.100	0.0750	95.0	54-158	0.587	20	
Nickel		0.0951	0.00100	n	0.0995	0.00113	94.4	73-125	0.315	20	
Lead		0.0953	0.00100	It	0.0995	ND .	95.8	78-125	0.940	20	
Antimony		0.0353	0.00300	**	0.0500	0.00175	67.1	63-126	7.95	20	
Selenium		0.106	0.00100	II.	0.100	ND	106	61-156	1.90	20	
Thallium		0.0968	0.00100	n	0.100	ND	96.8	78-125	0.721	20	
Zinc		0.106	0.0100	11	0.0995	0.00298	104	70-127	0.948	20	
Batch 5E18041:	Prepared 05/18/05	Using E	PA 7470A								
Blank (5E18041-BL	LK1)										
Mercury		ND	0.000200	mg/l							
LCS (5E18041-BS1)										
Mercury		0.00475	0.000200	mg/l	0.00500		95.0	80-120			
LCS Dup (5E18041	-BSD1)										
Mercury		0.00500	0.000200	mg/l	0.00500		100	80-120	5.13	20	
Duplicate (5E18041	-DUP1)					Source: B5	E0368-0	1			
Mercury	0.0	0000751	0.000200	mg/l		0.000152			67.7	20	Q-06

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Project: Landsburg Mine

Project Number: 923-1000.002 R273

Project Manager: Douglas Morell

Reported:

05/31/05 18:44

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

			Reporting		Spike	Source		%REC		RPD					
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes				
Batch 5E18041:	Prepared 05/18/05	Using I	EPA 7470A												
Matrix Spike (5E1	8041-MS1)					Source: B	5E0368-0	01							
Mercury		0.00497	0.000200	mg/l	0.00500	0.000152	96.4	70-130							
Matrix Spike Dup	(5E18041-MSD1)	Source: B5E0368-01													
Mercury		0.00508	0.000200	mg/l	0.00500	0.000152	98.6	70-130	2.19	20					
Batch 5E24045:	Prepared 05/24/05	Using E	EPA 3005A												
Blank (5E24045-Bl	LK1)					-									
Iron		ND	0.150	mg/l											
LCS (5E24045-BS1	(1)														
Iron		4.77	0.150	mg/l	5.00		95.4	80-120							
LCS Dup (5E24045	S-BSD1)														
Iron		4.70	0.150	mg/l	5.00		94.0	80-120	1.48	20					
Matrix Spike (5E24	1045-MS1)					Source: B	5E0368-0)1							
Iron		4.91	0.150	mg/l	5.00	ND	98.2	80-120							
Matrix Spike Dup (5E24045-MSD1)					Source: B:	5E0368-0)1							
Iron		4.87	0.150	mg/l	5.00	ND	97.4	80-120	0.818	20					

North Creek Analytical - Bothell

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Kortland Orr For Amar Gill, Project Manager



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%REC

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

Reported:

05/31/05 18:44

RPD

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

Reporting

Project Manager: Douglas Morell

Blank (5E18079-BLK1)	Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
No.	Batch 5E18079: Pr	repared 05/17/05	Using EI	PA 5030B								
Benzane ND 0.200 ** Bromochloromethane ND 0.500 ** Bromochlichoromethane ND 0.200 * Bromochlichoromethane ND 0.200 * Bromomethane ND 2.00 * Bromomethane ND 2.00 * Butylbenzene ND 0.200 * Butylbenzene ND 0.200 * Carbon disulfide ND 0.500 * Carbon tetrachloride ND 0.500 * Calloroethane ND 0.200 * Chlorothane ND 0.200 * Chlorothane ND 0.500 *	Blank (5E18079-BLK1))										
Promobenzene ND 0.500 *	Acetone		ND	10.0	ug/l							
Bromochloromethane ND 0.200 " Bromochloromethane ND 0.200 " Bromoform ND 0.500 " Carbon disulfide ND 0.500 " Carbon disulfide ND 0.500 " Carbon disulfide ND 0.200 " Chlorosthane ND 0.200 " Chlorosthane ND 0.200 " Chlorosthane ND 0.500 " Oliromochloromethane ND 0.500 " Oliromochloromethane ND 0.200 " Oliromoch	Benzene		ND	0.200	·							
Bromodichloromethane	Bromobenzene		ND	0.500	11							
Second Form ND 0.200	Bromochloromethane		ND	0.200	r r							
ND 2.00 *	Bromodichloromethane		ND	0.200	ti .							
Paturanone ND 2.00	Bromoform		ND	0.200	B							
Patry Patr	Bromomethane		ND	2.00	11							
ND 0.200	2-Butanone		ND	2.00	u							
Carbon disulfide	n-Butylbenzene		ND	0.200	11							
Carbon disulfide ND 0.500 " Carbon tetrachloride ND 0.200 " Chlorobenzene ND 0.200 " Chlorofethane ND 1.00 " Chloroform ND 0.200 " Chlorofothane ND 0.500 " Chlorotoluene ND 0.500 " Chlorotoluene ND 0.500 " Chlorotoluene ND 0.500 " Chloromoethane ND 0.500 " Chloromoethane ND 0.200 " Carbinomoethane ND 0.200 " Carbinomoethane ND 0.200 " Carbinorobenzene ND 0.200 "	sec-Butylbenzene		ND	0.200	**							
Carbon tetrachloride	tert-Butylbenzene		ND	0.500	u							
Chlorobenzene ND	Carbon disulfide		ND	0.500	tt							
Chloroethane ND 1.00 " Chloroform ND 0.200 " Chloromethane ND 1.00 " Chloromethane ND 0.500 " Chloromethane ND 0.200 " Ch	Carbon tetrachloride		ND	0.200	u							
Chloroform ND 0.200 " Chloromethane ND 1.00 " Chloromethane ND 0.500 " Chlorotoluene ND 0.500 " Chlorotoluene ND 0.500 " Chlorotoluene ND 0.500 " Chlorotoluene ND 0.200 " Chloromethane ND 0.200 " Chlorobenzene ND 0.200 " Chlorobenzene ND 0.200 " Chlorobenzene ND 0.200 " Chlorotoliuene ND 0.500 " Chlorotoliuene ND 0.500 " Chlorotoliuene ND 0.200 " Chlorotoliuene ND 0.	Chlorobenzene		ND	0.200	ft							
Chloromethane	Chloroethane		ND	1.00	n							
-Chlorotoluene ND 0.500 " -Chlorotoluene ND 0.500 " -Chlorotoluene ND 0.500 " -Chlorotoluene ND 0.500 " -Chlorotoluene ND 0.200 " -Chloromochloromethane ND 0.200 " -Chloromochloromethane ND 0.200 " -Chloromochloromethane ND 0.200 " -Chloromochlane ND 0.200 " -Chloromochlane ND 0.200 " -Chlorobenzene ND 0.200 " -Chlorobenzene ND 0.200 " -Chlorobenzene ND 0.200 " -Chlorobenzene ND 0.200 " -Chlorodifluoromethane ND 0.200 " -Chlorodifluoromethane ND 0.200 " -Chlorodifluoromethane ND 0.200 " -Chlorotolinoromethane N	Chloroform		ND	0.200	ft							
ND	Chloromethane		ND	1.00	и							
Dibromochloromethane	2-Chlorotoluene		ND	0.500	11							
2-Dibromo-3-chloropropane	1-Chlorotoluene		ND	0.500	n							
2-Dibromoethane	Dibromochloromethane		ND	0.200	11							
Dibromomethane ND 0.200 " ,2-Dichlorobenzene ND 0.200 " ,3-Dichlorobenzene ND 0.200 " ,4-Dichlorobenzene ND 0.200 " Dichlorodifluoromethane ND 0.500 " ,1-Dichloroethane ND 0.200 " ,2-Dichloroethane ND 0.200 " ,1-Dichloroethene ND 0.200 " ,1-Dichloroethene ND 0.200 "	,2-Dibromo-3-chloropropar	ne	ND	0.500	11							
2-Dichlorobenzene	,2-Dibromoethane		ND	0.200	tt							
3-Dichlorobenzene	Dibromomethane		ND	0.200	н							
4-Dichlorobenzene ND 0.200 " Dichlorodifluoromethane ND 0.500 " ,1-Dichloroethane ND 0.200 " ,2-Dichloroethane ND 0.200 " ,1-Dichloroethene ND 0.200 " is-1,2-Dichloroethene ND 0.200 "	,2-Dichlorobenzene		ND	0.200	11							
ND 0.500	,3-Dichlorobenzene		ND	0.200	н							
1-Dichloroethane	,4-Dichlorobenzene		ND	0.200	11							
,2-Dichloroethane ND 0.200 " ,1-Dichloroethene ND 0.200 " is-1,2-Dichloroethene ND 0.200 "	Dichlorodifluoromethane		ND	0.500	n							
1-Dichloroethene ND 0.200 " is-1,2-Dichloroethene ND 0.200 "	,1-Dichloroethane		ND	0.200	n							
is-1,2-Dichloroethene ND 0.200 "	,2-Dichloroethane		ND	0.200	11							
	,1-Dichloroethene		ND	0.200	11							
	is-1,2-Dichloroethene		ND	0.200	**							
	rans-1,2-Dichloroethene		ND	0.200	tt .							

North Creek Analytical - Bothell

1,2-Dichloropropane

1,3-Dichloropropane

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ND

ND

0.200

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: 923-1000.002 R273

Reported:

05/31/05 18:44

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

Project Manager: Douglas Morell

Analyte	Result	Reporting	I Inita	Spike	Source	0/000	%REC	DDD	RPD	
, mary c	Kesun	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E18079: Prepared 05/17/05	Using E	PA 5030B								
Blank (5E18079-BLK1)										
2,2-Dichloropropane	ND	0.500	ug/l							
1,1-Dichloropropene	ND	0.200	n							
cis-1,3-Dichloropropene	ND	0.200								
trans-1,3-Dichloropropene	ND	0.200	11							
Ethylbenzene	ND	0.200	U							
Hexachlorobutadiene	ND	0.500	Ħ							
Methyl tert-butyl ether	ND	1.00	H							
n-Hexane	ND	1.00	**							
2-Hexanone	ND	2.00	IT							
Isopropylbenzene	ND	0.500	11							
p-Isopropyltoluene	ND	0.200	u							
4-Methyl-2-pentanone	ND	2.00	**							
Methylene chloride	ND	2.00	u							
Naphthalene	ND	0.500	11							
n-Propylbenzene	ND	0.500	II.							
Styrene	ND	0.500	"							
1,2,3-Trichlorobenzene	ND	0.200	u u							
,2,4-Trichlorobenzene	ND	0.200	tt							
1,1,1,2-Tetrachloroethane	ND	0.200	U							
,1,2,2-Tetrachloroethane	ND	0.500	**							
Tetrachloroethene	ND	0.200	n n							
Coluene	ND	0.200	**							
,1,1-Trichloroethane	ND	0.200	II							
,1,2-Trichloroethane	ND	0.200	Ħ							
richloroethene	ND	0.200	n							
richlorofluoromethane	ND	0.500	11							
,2,3-Trichloropropane	ND	0.500	n							
,2,4-Trimethylbenzene	ND	0.200	n							
,3,5-Trimethylbenzene	ND	0.500	u							
inyl chloride	ND	0.200	†1							
-Xylene	ND	0.250	u							
n,p-Xylene	ND	0.500	tı							
urrogate: 1,2-DCA-d4	17.9		"	20.0		89.5	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: 923-1000.002 R273

Reported:

05/31/05 18:44

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

Project Manager: Douglas Morell

			Reporting		Spike	Source		%REC		RPD	
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5E18079:	Prepared 05/17/05	Using E	PA 5030B								
Blank (5E18079-BL	K1)										
Surrogate: Toluene-d8		20.4		ug/l	20.0		102	70-130			
Surrogate: 4-BFB		20.1		"	20.0		100	70-130			
LCS (5E18079-BS1))										
Benzene		41.1	0.200	ug/l	40.0		103	80-120			
Chlorobenzene		41.4	0.200	**	40.0		104	77-120			
1,1-Dichloroethene		37.7	0.200	tr.	40.0		94.2	80-120			
Methyl tert-butyl ether		39.6	1.00	*1	40.0		99.0	80-120			
Toluene		41.2	0.200	tt	40.0		103	80-120			
Trichloroethene		38.4	0.200	11	40.0		96.0	80-120			
Surrogate: 1,2-DCA-d4		16.8		"	20.0		84.0	70-130			
Surrogate: Toluene-d8		20.3		"	20.0		102	70-130			
Surrogate: 4-BFB		20.5		11	20.0		102	70-130			
LCS Dup (5E18079-	BSD1)										
Benzene		39.2	0.200	ug/l	40.0		98.0	80-120	4.73	20	
Chlorobenzene		40.2	0.200	11	40.0		100	77-120	2.94	20	
1,1-Dichloroethene		37.2	0.200	Ħ	40.0		93.0	80-120	1.34	20	
Methyl tert-butyl ether		39.2	1.00	u	40.0		98.0	80-120	1.02	20	
Toluene		40.2	0.200	*1	40.0		100	80-120	2.46	20	
Trichloroethene		37.2	0.200	TI .	40.0		93.0	80-120	3.17	20	
Surrogate: 1,2-DCA-d4		16.7		11	20.0		83.5	70-130			
Surrogate: Toluene-d8		20.4		"	20.0		102	70-130			
Surrogate: 4-BFB		20.6		"	20.0		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: 923-1000.002 R273 Project Manager: Douglas Morell

Reported:

05/31/05 18:44

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-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.

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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