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May 13, 2004

Government of Yukon
Energy, Mines and Resources K-10
Mineral Management Branch
Box 2703
Whitehorse, YT Y1A 2C6

Attn: Mr. Hugh Copland, Abandoned Mines Project Manager

Dear Mr. Copland:

Re: Galkeno 300 Receiving Environment Monitoring - February, March and April, 2004

This document outlines the results from Access Consulting Group's (ACG) continued monitoring of the Galkeno 300 (G300) adit discharge and its environmental effects upon the receiving environment, namely Christal Creek and the South McQuesten River, for the period of February to April 2004. Since the previous report of January 22nd, the sampling program has been expanded and a treatment system has been implemented at the G300 adit. This report will outline the various sampling events and their results from the February, March and April 2004 sampling programs.

Following the identification by ACG of measurable impacts in Christal Creek from the fugitive Galkeno 300 flow, Laberge Environmental Services (LES) was engaged to assist with the characterization of the flow distribution and receiving water quality by conducting monthly sampling events at the identified Galkeno 300 Fugitive Flow Investigation sites (Figure 1). Samples were analyzed for dissolved and total metals and general parameters at Norwest Labs in Vancouver. The results for these comprehensive monthly samples are shown in Table 1 and the original results from Norwest Labs are presented in Attachment #1. As part of this monthly sampling, bioassay samples have been collected at site ACG-WQ-10 (Culvert 4 on the Silver Trail Highway) and were analyzed by Integrated Resource Consultants (IRC) in Richmond. This culvert has been identified as the primary point of crossing the highway for the fugitive flow, and is the last feasible sampling point for the flow prior to its entrance into Christal Creek. The bioassay results can be seen in Table 2, and the original IRC results are shown in Attachment #2.

Under instruction from ACG, Ewing Transport, the site operators, included six of the more accessible monitoring sites in their weekly sampling regime, the samples from which are analyzed for total zinc content at the on-site laboratory in Elsa. These weekly results are displayed in Table 3.

On March 11, 2004, an on-site portable lime addition plant and settling pond treatment system was brought online at the G300 adit to precipitate dissolved metals from the adit flow. Details are presented in EBA Engineering Consultant's April 29, 2004 letter to ACG (see Attachment #4). Maintenance staff at the site have been conducting daily sampling of the decant flow from the G300 pond for on-site zinc analysis, and these results are shown in Table 4.

February Sampling

The February sampling by LES was conducted on February 19 and 20 by Ken Nordin, with the assistance of Larry Buyck of the Nacho Nyak Dunn (NND) and Jeremy Germaine and Grant Ewing of Ewing Transport (see Attachment #3). The results in Table 1 show that all receiving water sites except the background site KV-01 (S. McQuesten River u/s of Christal Creek) exceeded the CCME guidelines for total zinc. Total cadmium was exceeded at the adit, decant, and culvert 4 sites, as well as at Christal Creek sites A, C and D. Flow at Site C, which is below Culvert 5 but above the culvert flow confluence with Christal Creek, exceeded CCME guidelines for total lead, copper and silver. The Christal Creek station above Keno Highway (ACG-WQ-05) exceeded total lead CCME guidelines, and downstream sites A and B exceeded lead, copper and iron. Site D further downstream still exceeded lead CCME guidelines. Significant natural attenuation of most of these parameter concentrations occurred between site D and the Christal Creek at Hanson Road Site (KV-07) with only total zinc and lead exceeding CCME guidelines. Arsenic and copper guidelines were exceeded however at the mouth of Christal Creek. Only the zinc guideline was exceeded at the final site KV-02 (S. McQuesten near Pumphouse.)

The results of the bioassay sample from February 20 – sample 1125666 (Table 2) from culvert 4 showed the flow to be toxic to rainbow trout, with a 100% mortality rate after 96 hours in the undiluted sample and an LT_{50} of 4 hours.

Figures 2, 3 and 4 show the weekly total zinc concentration trends for the fugitive flow monitoring sites (Figure 2), Christal Creek receiving water sites (Figure 3), and the monthly concentrations for the downstream receiving water sites (Figure 4) using internal and external analyses. There is observed attenuation of zinc levels between the adit and culvert 4, and the levels in the flow below culvert 5 (Site C) were markedly lower.

March Sampling

Weekly sampling results in early March of 2004 showed total zinc levels consistent with the latter half of February. On March 11, a lime addition treatment system was brought online at the G300 adit. The redirection of the adit discharge into the settling pond is reflected in the drastic decrease in downstream zinc levels between March 5 and 12 (Figure 3). Daily sampling of the G300 pond decant was initiated on March 12 and the results are shown in Figure 5. The effluent zinc levels are trending downward. *Note: Further reductions in zinc levels at sites in the G300 sampling program are expected with the installation of a new lime delivery pump in early May. This will increase the rate of lime delivery to the raw adit water. Update - As of the writing of this report, pH in the G300 decant is known to be 8.9 units with a zinc*

concentration of 1.44 mg/L. Zinc levels stabilize at most other receiving water sites in the second half of March.

LES sampling was conducted by Ken Nordin and Paul Inglis (ACG) on March 23 and 24 (see LES's Field Report in Attachment #3). Duplicate samples were taken and analyzed at the on-site lab for total zinc QA/QC purposes. The original Norwest external analysis results are found in Attachment #1. Results revealed that all sites except the background in the South McQuesten exceeded zinc CCME guidelines. Flow rates in the Christal Creek and South McQuesten receiving waters were much reduced compared with February. This may in part account for copper and cadmium concentrations being above guidelines in most receiving water sites – including the South McQuesten background site – and for high arsenic levels in the two lowest sites on Christal Creek. Site B was considered a redundant station and sampling was discontinued at this site. The Site C sample exceeded CCME guidelines in only total zinc and cadmium.

The bioassay sample results from March 24 – sample 0403130 (Table 2) from culvert 4 revealed the flow's continued toxicity to rainbow trout, with a 100% mortality rate after 96 hours in the undiluted sample and an LT₅₀ of 2 hours.

April Sampling

April's internal weekly sampling results show marginal fluctuations in total zinc levels in receiving water sites (Figures 3 and 4). The fugitive flow results in Figure 2 display a sharp decrease in the total zinc level at culvert 4 in the third week, followed by increases at the adit, decant and culvert 4 in the final week of April. Figure 5 reveals the significant variation in daily total zinc levels at the treatment pond decant site in April, ranging from 16.9 to 85.1 mg/L. This variation is due to treatment process control, which is expected to improve with the addition of new equipment. As such, fugitive flow and receiving water zinc concentrations have also fluctuated.

Ken Nordin (LES) and Scott Keesey (ACG) conducted the April monthly sampling event on April 23 and 24 (see Attachment #3). Flow rates in the receiving waters were slightly increased over the March event. All sites with the exception of the background site (KV-01) exceeded total zinc CCME guidelines, and all sites except the background (KV-01) and the South McQuesten site near the Pumphouse (KV-02) exceeded total cadmium CCME guidelines. An additional site on the South McQuesten at the bridge just below the Haggart Creek confluence was included in this sampling round due to ease of access. This sample exceeded only total zinc and total lead CCME guidelines. Total zinc concentration was 0.055 mg/L.

The bioassay sample results from April 24 – sample W51483 (Table 2) from culvert 4 showed continued toxicity to rainbow trout, with a 100% mortality rate after 96 hours in the undiluted sample and an LT₅₀ of 8 hours.

Conclusion

The combination of daily, weekly and monthly sampling programs are providing further characterization of the fugitive flow from the G300 adit. Although further

investigation is needed to provide a complete hydrogeological account of the flow between the treatment pond decant and the Christal Creek receiving waters, the different geochemical signature and zinc concentration trends at Site C would suggest that little if any of the fugitive flow is crossing the Silver Trail Highway at culvert 5. The flow regime is dependant primarily on Department of Highways maintenance operations (i.e.: culvert deicing), with culvert 4 continuing to convey a significant portion of the fugitive flow under the highway.

As can be seen from the fugitive flow and receiving water quality sampling events, the G300 adit flow continues to effect both the Christal Creek and South McQuesten River receiving waters. With the installation of new pumping equipment at the G300 treatment plant, zinc concentrations are expected to drop below 1.0 mg/L. It is expected that with improved effluent treatment and spring melt the downstream receiving water quality will continue to improve. Weekly monitoring at the Christal Creek receiving water sites will continue with monthly monitoring in the Christal Creek and South McQuesten River downstream receiving waters. Our next planned event is for late May with results to be reported in June.

Should you have any questions, please contact the undersigned at 668-6463.

Sincerely,

ACCESS CONSULTING GROUP

A registered trade name for Access Mining Consultants Ltd.

A handwritten signature in black ink, appearing to be 'D. Cornett', with a long horizontal line extending to the right.

Dan Cornett, B. Sc., P. Biol., CCEP.
Principal

cc.

Heather Saggars, A/President, NNDDC
Frank Patch, Water Inspection Officer, YG, Department of Environment
Roman Krska, NND Lands
Vic Enns, Environment Canada

LIST OF TABLES

- Table 1. Comprehensive Analytical Results for Feb/Mar/Apr Receiving Environment Water Quality Monitoring of Galkeno 300 Discharge – Nor West Labs
- Table 2. 96-Hour Rainbow Trout Bioassay Results from Fugitive Flow Samples at Culvert #4 - IRC
- Table 3. Total Zinc Concentrations in Receiving Environment Sampling Sites for Galkeno 300 Adit Discharge
- Table 4. Daily Results for Total Zinc Concentrations in Galkeno 300 Treatment Pond Decant – On Site Lab

LIST OF FIGURES

- Figure 1. Galkeno 300 Receiving Waters Monitoring Stations: Keno Valley Project – Mean Total Zinc Concentrations, Feb-Apr 2004
- Figure 2. Comparison of Weekly Total Zn Levels for G300 Fugitive Flow Monitoring Sites (Internal Analysis at On-Site Laboratory)
- Figure 3. Comparison of Weekly Total Zn Levels for Christal Creek Receiving Water Monitoring Sites (Internal Analysis at On-Site Laboratory)
- Figure 4. Comparison of Monthly Total Zn Levels in G300 Fugitive Flow Downstream Receiving Waters (External Analysis at Norwest Labs)
- Figure 5. Daily Total Zn Results from Galkeno 300 Treatment Pond Decant (Internal Analysis at On-Site Laboratory)

LIST OF ATTACHMENTS

- Attachment 1. Norwest Labs external analysis results from February, March and April fugitive flow and receiving water sampling events
- Attachment 2. Integrated Resource Consultants bioassay results for February, March and April sampling at Culvert 4
- Attachment 3. Laberge Environmental Services field sampling reports for February, March and April monthly sampling events
- Attachment 4. EBA Engineering Consultants Ltd. letter to ACG: Treatment Pond Construction Inspection, Galkeno 300 Adit – near Keno City, Yukon

Table 1. Comprehensive Analytical Results for Feb/Mar/Apr Receiving Environment Water Quality Monitoring of Galkeno 300 Discharge

Location Description	Galkeno 300 Adit			Galkeno 300 Pond Decant		G300 Flow at Silver Trail Highway Culvert #4			G300 Flow from Highway Culvert #5, 1 m U/S of Entry to Christal Creek			Christal Creek U/S of Keno Road			Christal Creek U/S of Silver Trail Highway Culverts #4&5 Flows			Christal Creek 50 m U/S ACG-WQ-11	Christal Creek 50 m D/S ACG-WQ-11			Christal Creek at Hanson Lk. Rd.			Christal Creek at mouth		S. McQuesten U/S of Christal Creek			S. McQuesten River Near Pumphouse			South McQuesten Bridge at Haggart Creek	Detection Limit	Water: Freshwater Aquatic Life
Sampler	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN		
Station ID	LES-32			ACG-WQ-12		ACG-WQ-10			ACG-WQ-11 Site C			ACG-WQ-05			Site A			Site B	Site D			KV 7 (LES-07)			KV-7B (LES-07B)		KV-1 (LES-01)			KV-2 (LES-02)					
Lab	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest	Nonwest		
Lab Lot ID	209583-10	297577-10	303929-12	297577-11	303929-13	290583-9	297577-9	303929-11	290583-7	297577-6	303929-7	290583-4	297577-8	303929-9	290583-5	297577-5	303929-6	290583-6	290583-8	297577-7	303929-8	290583-3	297577-3	303929-5	297577-4	303929-4	290583-1	297577-1	303929-2	290583-2	297577-2	303929-3	303929-10		
Date	19-Feb-04	23-Mar-04	24-Apr-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04	19-Feb-04	23-Mar-04	24-Apr-04
Parameter ¹																																			
Dissolved Metals (Trace)																																			
Aluminum	0.02	0.26	<0.01	0.17	<0.01	0.02	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.005-0.1	
Antimony	<0.02	0.03	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02		
Arsenic	0.11	0.16	<0.04	0.06	<0.04	0.06	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.02	0.005	
Barium	0.0072	0.0066	0.0079	<0.0006	0.0091	0.0163	0.0176	0.0151	0.0432	0.0352	0.0303	0.0803	0.0517	0.064	0.0649	0.0462	0.0572	0.0661	0.0586	0.0517	0.0544	0.0571	0.0506	0.052	0.0517	0.039	0.0751	0.077	0.067	0.0927	0.088	0.0773	0.0976	0.0005	
Beryllium	0.0016	0.0297	<0.0006	0.0242	<0.0006	0.0012	0.0132	<0.0006	<0.0006	0.0033	<0.0006	<0.0006	0.0011	<0.0006	<0.0006	0.0011	<0.0006	<0.0006	0.0022	<0.0006	<0.0006	0.0011	<0.0006	0.0011	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0044	<0.0006	<0.0006	0.0005	
Bismuth	<0.02	0.07	<0.02	0.06	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	
Cadmium	0.209	0.226	0.194	0.162	0.15	0.107	0.117	0.105	0.0111	0.0363	0.0398	<0.0006	0.0011	0.0009	0.0029	0.0077	0.0043	0.0031	0.0026	0.0088	0.0087	0.0044	0.0039	0.0033	0.0081	<0.0006	0.0022	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0005	0.000017	
Calcium	256	172	97.4	245	138	255	223	136	465	294	156	213	145	77.7	219	151	85.8	212	191	152	83.4	132	123	66.9	125	45.8	59.2	27.7	75	66	30.3	31.9	0.01		
Chromium	0.008	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001	
Cobalt	0.1	0.108	0.106	0.073	0.079	0.015	0.01	0.019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001
Copper	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.002-0.004
Iron	20.8	21.8	10.8	1.58	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.021	0.018	<0.002	0.011	0.004	<0.002	<0.002	0.012	0.008	<0.002	0.009	<0.002	0.03	0.038	0.033	0.1	0.01	0.047	0.028	0.075	0.002	0.3	
Lead	0.253	<0.01	<0.01	<0.01	<0.01	0.165	<0.01	<0.01	0.022	<0.01	<0.01	0.033	<0.01	<0.01	0.044	0.012	<0.01	0.044	0.044	0.012	<0.01	0.033	0.011	<0.01	<0.01	<0.01	0.044	0.032	<0.01	0.044	<0.01	<0.01	<0.01	0.005	0.001-0.007
Lithium	0.035	<0.007	0.026	0.011	0.029	0.033	0.022	0.024	0.042	0.022	0.026	0.015	0.014	0.012	0.016	<0.007	0.014	0.018	0.014	<0.007	0.015	0.009	0.023	0.009	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.005	
Magnesium	52.9	37	23.3	35.3	21.2	50	42.8	24.6	74.6	50.7	29.1	35.4	25	14.4	36	25.4	16	34.6	31.5	26.6	15.2	25.4	24.3	14.3	24	11.3	19.7	19.6	10.5	22.7	20.8	10.3	11	0.01	
Manganese	188	163	152	135	134	108	94.1	92.9	5.64	16.1	18.1	1.46	1.17	0.969	9.17	6.12	4.07	8.18	7.19	7.57	7.86	2.86	3.08	2.99	1.84	1.17	0.0342	0.0297	0.0143	0.179	0.212	0.116	0.102	0.0005	
Molybdenum	<0.01	0.165	<0.01	0.1	<0.01	<0.01	0.1	<0.01	<0.01	0.035	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.073
Nickel	0.389	0.453	0.403	0.287	0.265	0.257	0.284	0.215	0.047	0.076	0.088	0.005	0.004	<0.002	0.022	0.02	0.008	0.02	0.019	0.025	0.016	0.007	0.012	0.006	0.005	0.004	0.005	<0.002	0.003	0.004	0.002	0.003	<0.002	0.001	0.025-0.15
Phosphorus	<0.06	0.24	0.15	0.09	<0.06	<0.06	0.23	0.16	<0.06	0.2	0.18	<0.06	0.06	<0.06	<0.06	0.17	0.15	<0.06	<0.06	0.16	0.12	<0.06	0.18	0.08	0.24	<0.06	<0.06	0.11	<0.06	<0.06	0.08	<0.06	0.05		
Potassium	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<					

Table 2. 96 - Hour Rainbow Trout Bioassay Results from Fugitive Flow Samples at Culvert #4

Date	LT ₅₀ in Hours*	% Trout Mortality after 96 hours	Toxic / Non-Toxic
20-Feb-04	4	100	Toxic
24-Mar-04	2	100	Toxic
24-Apr-04	8	100	Toxic

* LT50 is the median lethal time, or the time at which there is 50% fish mortality

Table 3. Total Zinc Concentrations in Receiving Environment Sampling Sites for Galkeno 300 Adit Discharge

Lab		Total Zinc Concentration (mg/L)																	CCME Guideline for the Protection of Aquatic Life (Total Zinc in mg/L)
		Internal	Internal	Norwest	Internal	Internal	Internal	Internal	Internal	Norwest	Internal QA/QC*	Internal	Internal	Internal	Internal	Internal	Norwest	Internal	
Sample Location	Station ID	6-Feb-04	12-Feb-04	19-Feb-04	20-Feb-04	27-Feb-04	5-Mar-04	12-Mar-04	19-Mar-04	23-Mar-04	23-Mar-04	27-Mar-04	1-Apr-04	9-Apr-04	16-Apr-04	21-Apr-04	24-Apr-04	28-Apr-04	
Galkeno 300 Adit	LES-32			144				116	103	133		130	125	116	111	110	109	125	0.030
Galkeno 300 Pond Decant	ACG-WQ-12							76.9	69.0	74.8		52.0	59.3	52.0	65.0	56.1	61.1	79.4	
Galkeno 300 Flow at Silver Trail Highway Culvert #4	ACG-WQ-10	89.7	96.6	99.3	79.4	99.3	89.5	73.2	60.0	81.4	76.5	74.3	78.5	70.0	67.0	65.4	23.1	56.4	
G300 Flow from Highway Culvert #5, 1 m u/s of Entry to Christal Creek	ACG-WQ-11 Site C		13.9	22.8	12.0	16.3	16.5		29.4	31.2	35.9	30.5	39.7	32.2	44.1	45.7	34.1	30.1	
Christal Creek U/S of Keno Road	ACG-WQ-05	0.112	0.104	0.164	0.095	0.091	0.073	0.148	0.155	0.177	0.132	0.175	0.127	0.153	0.157	0.148	0.171	0.165	
Christal Creek 600 m d/s of Keno Road	ACG-WQ-11 Site A	0.499	0.237	5.41	2.86	3.48	1.96	0.24	3.76	4.40	4.09	3.55	4.49	4.40	1.84	1.87	2.24	1.82	
Christal Creek 725 m d/s of Keno Road	ACG-WQ-11 Site B			5.03															
Christal Creek 825 m d/s of Keno Road	ACG-WQ-11 Site D	2.80	3.41	4.68	3.40	3.76	2.00	0.37	4.60	5.79	4.69	4.65	5.44	5.10	5.20	4.50	4.71	4.42	
Christal Creek at Hanson Lk. Rd.	KV-7 (LES-07)	1.43	1.47	2.14	1.25	1.30	1.25	0.52	1.24	2.56	2.15	1.89	2.20	2.15	2.00	2.03	2.16	1.95	
Christal Creek at Mouth	KV-7B (LES-07B)									1.91							1.86		
S. McQuesten River Near Pumphouse	KV-2 (LES-02)			0.142						0.206							0.116		
S. McQuesten River u/s of Christal Creek (Background)	KV-1 (LES-01)			0.013						0.027							0.016		

* Duplicate Samples Collected for QA/QC Purposes

**Table 4. Daily Results for Total Zinc Concentrations in
Galkeno 300 Treatment Pond Decant**

Date	Total Zn Concentration (mg/L)	Date	Total Zn Concentration (mg/L)
12-Mar-04	76.9	6-Apr-04	64.0
13-Mar-04	75.3	7-Apr-04	16.9
14-Mar-04	67.7	8-Apr-04	37.7
15-Mar-04	63.4	9-Apr-04	52.0
16-Mar-04	62.5	10-Apr-04	60.3
17-Mar-04	64.3	11-Apr-04	67.8
18-Mar-04	52.6	12-Apr-04	66.2
19-Mar-04	69.0	13-Apr-04	59.0
20-Mar-04	84.0	14-Apr-04	59.9
21-Mar-04	70.0	15-Apr-04	61.9
22-Mar-04	66.7	16-Apr-04	65.0
23-Mar-04	48.9	17-Apr-04	62.5
24-Mar-04	64.1	18-Apr-04	85.1
25-Mar-04	59.3	19-Apr-04	63.9
26-Mar-04	67.6	20-Apr-04	58.5
27-Mar-04	52.0	21-Apr-04	56.1
28-Mar-04	59.9	22-Apr-04	56.8
29-Mar-04	69.7	23-Apr-04	68.9
30-Mar-04	62.5	24-Apr-04	72.3
31-Mar-04	62.4	25-Apr-04	69.8
1-Apr-04	59.3	26-Apr-04	75.8
2-Apr-04	29.3	27-Apr-04	72.3
3-Apr-04	62.2	28-Apr-04	79.4
4-Apr-04	76.8	29-Apr-04	37.4
5-Apr-04	62.9	30-Apr-04	40.9
		1-May-04	25.9

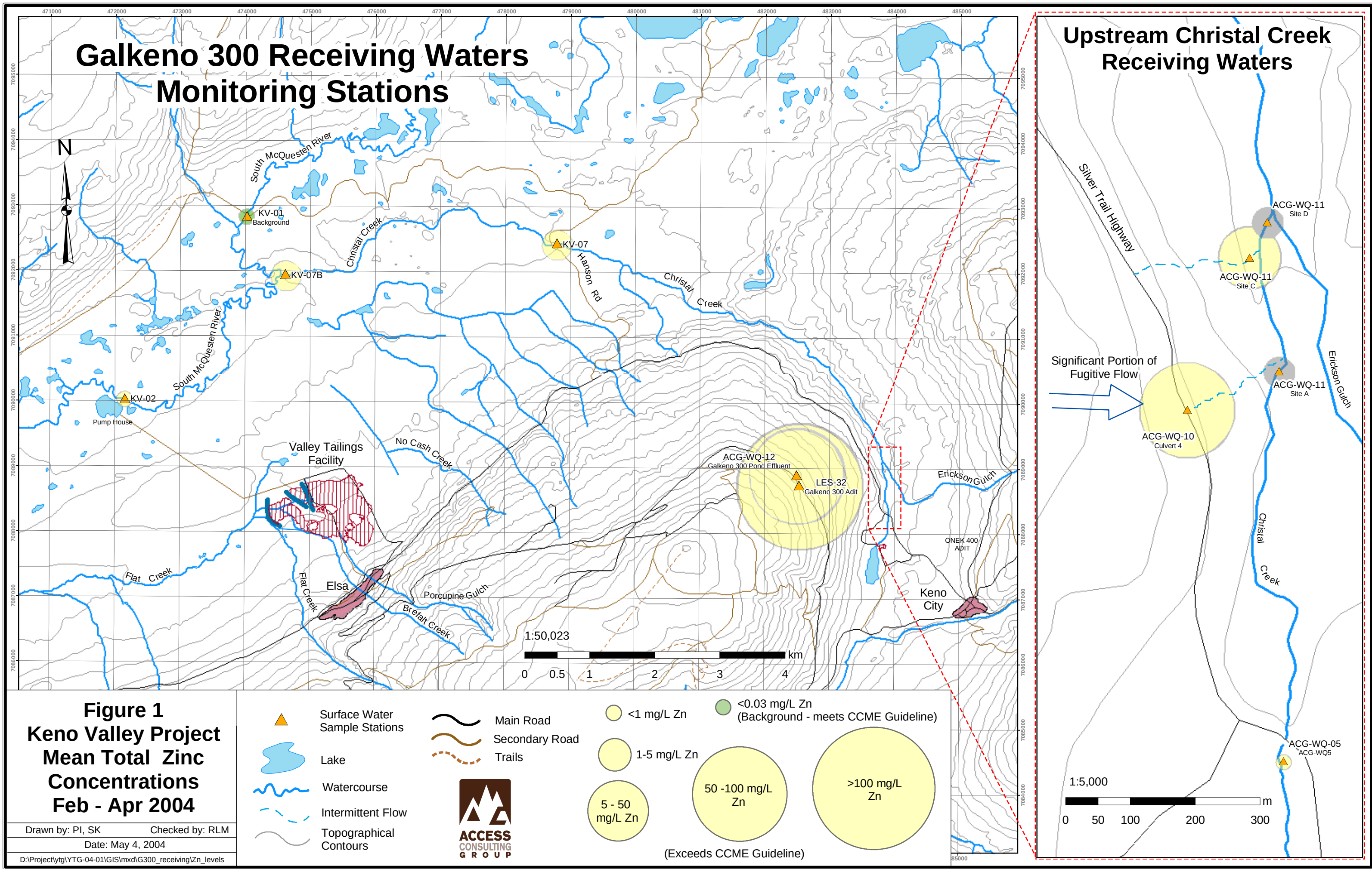


**Figure 2. Comparison of Weekly Total Zn Levels for G300 Fugitive Flow Monitoring Sites
(Internal Analysis at On-Site Laboratory)**

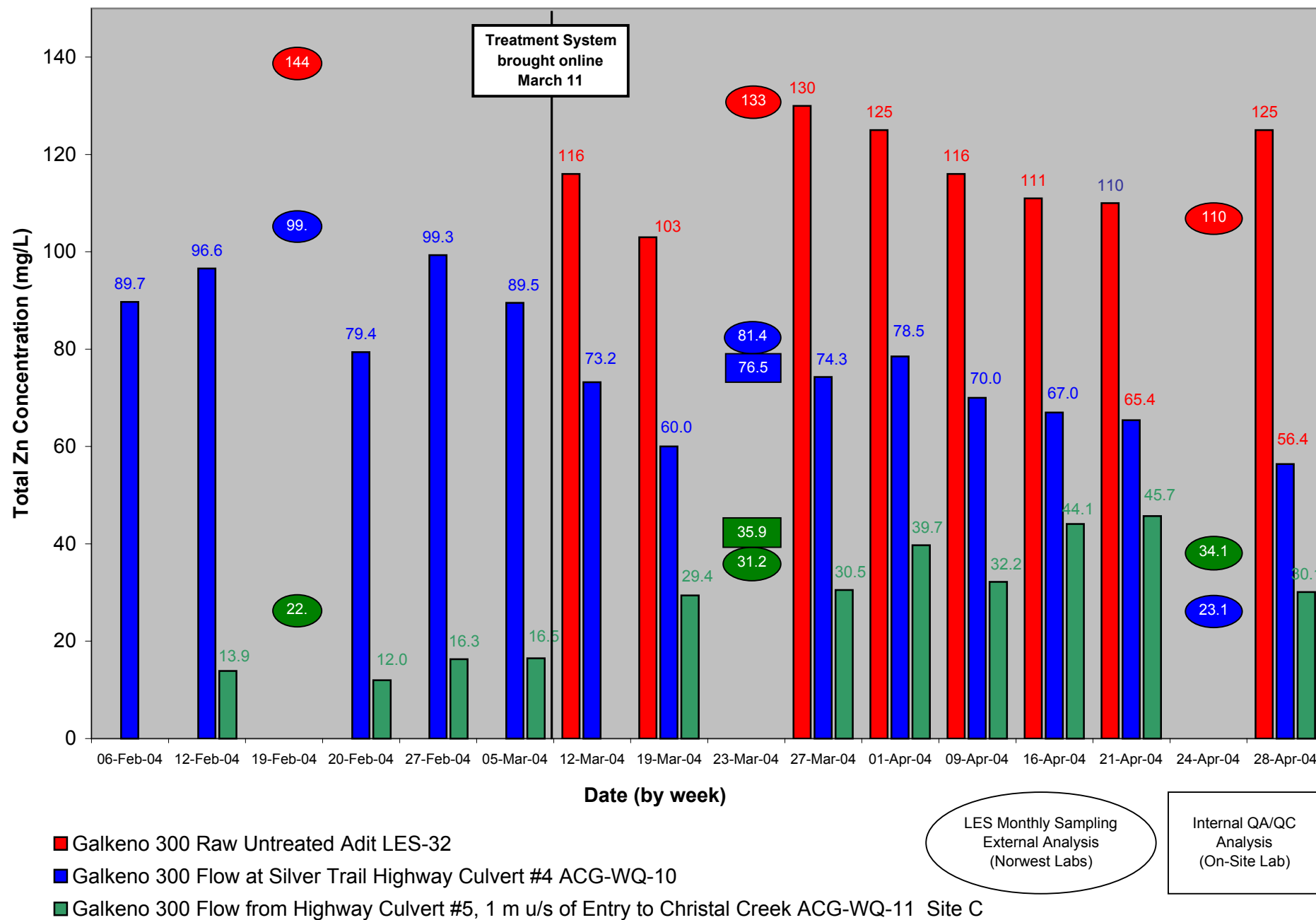


**Figure 4. Comparison of Monthly Total Zn Levels in G300 Fugitive Flow Downstream Receiving Waters
(External Analysis at Norwest Labs)**

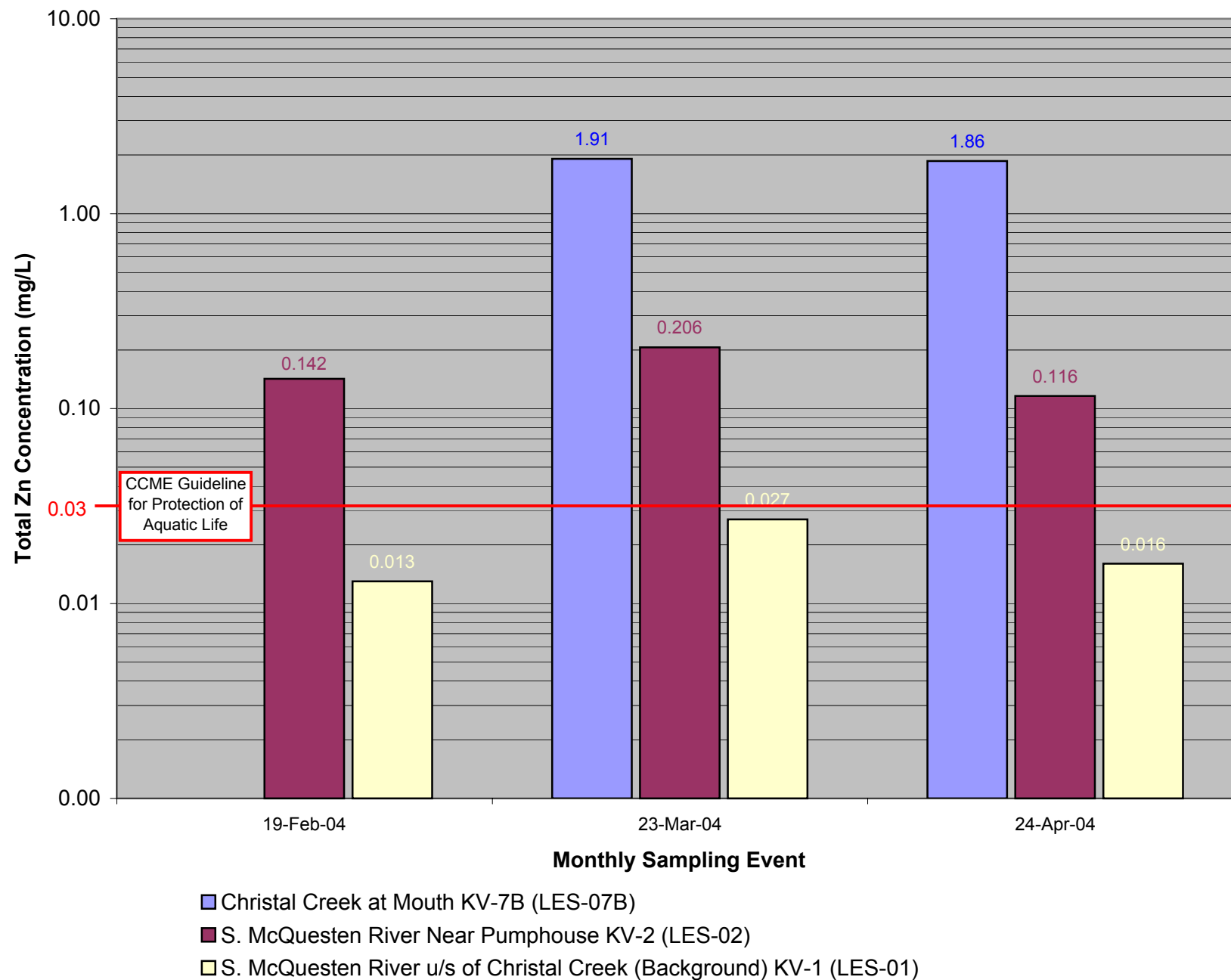


**Figure 3. Comparison of Weekly Total Zn Levels for Christal Creek Receiving Water Monitoring Sites
(Internal Analysis at On-Site Laboratory)**

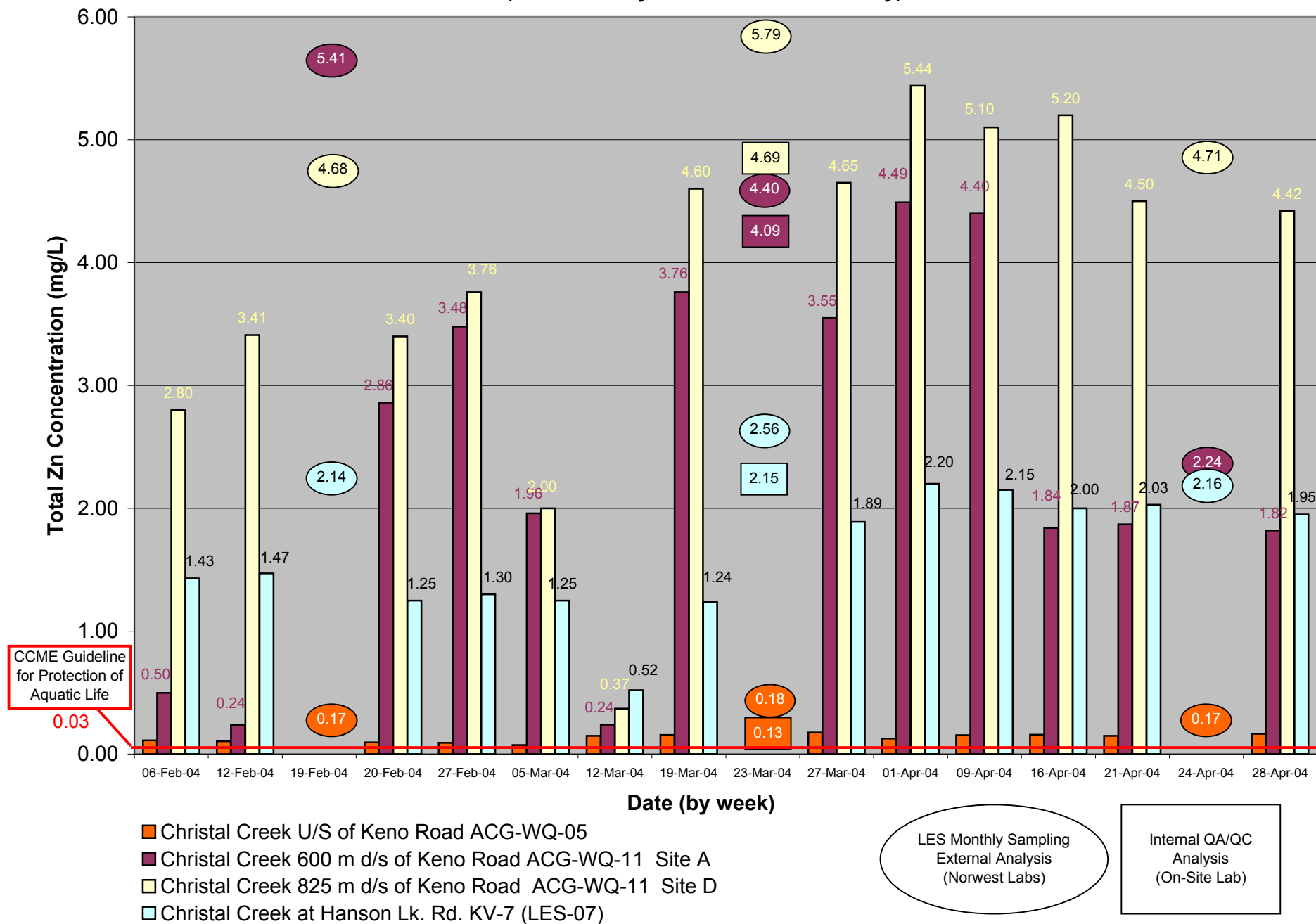
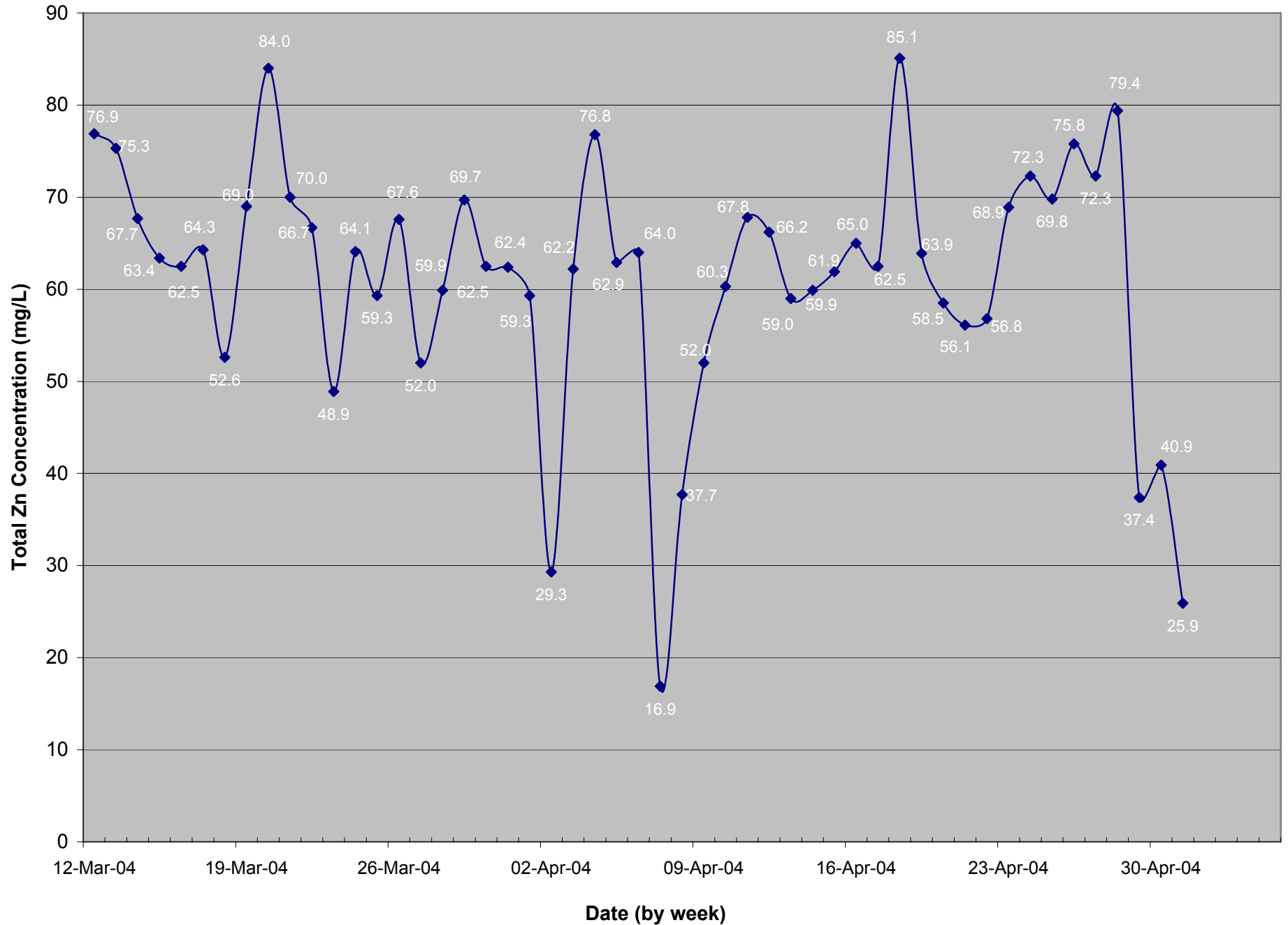


**Figure 5. Daily Total Zn Results from Galkeno 300 Treatment Pond Decant
(Internal Analysis at On-Site Laboratory)**



**Galkeno 300 Receiving Environment Monitoring –
February, March and April, 2004**

Attachment 1

**Norwest Labs External Analysis Results from February, March and April 2004
Fugitive Flow and Receiving Water Sampling Events**



NORWEST LABS

INFORMATION SHEET

CONTROL NUMBER

WATERS

W 51511

RESULTS & INVOICE TO:		COPY OF RESULTS TO:		WORK ORDER NO. 290583	
COMPANY: ACG		COMPANY:		DATE STAMP	
ADDRESS: 204 D Strickland St		ADDRESS:		RECEIVED FEB 23 2004	
CITY/TOWN: Whitehorse		CITY/TOWN:			
PROVINCE: YT		PROVINCE:			
POSTAL CODE: Y1A 2J8		POSTAL CODE:			
ATTENTION: T. Ritchie		ATTENTION:			
PHONE: 867-668-6463		PHONE:			
FAX:		FAX:			
CELL:		CELL:			

PURCHASE ORDER NO.:	PROJECT REF.: Keno Hill Mines	REF/QUOTE NO.:
---------------------	--------------------------------------	----------------

DATE SAMPLED 19 02 04	NUMBER OF SAMPLES	WATER	LIQ WASTE	OTHER (SPECIFY)
------------------------------	-------------------	-------	-----------	-----------------

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION INSTRUCTIONS AND ANALYSIS CODES)		RUSH (UPON FILLING IN THIS SECTION THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THE ANALYSIS)		CLIENT NO.	
- Bioassay samples in separate cooler - Samples have <u>not</u> been preserved - Samples need to be filtered for dissolved		NORWEST AUTHORIZATION		LP	
		NAME		DATE	
		RUSH DATE REQUIRED		COMPLETION DATE	
QA REPORT ☐		TIME			
SAMPLE CUSTODY		RELINQUISHED BY		RECEIVED BY Donna	
COMPANY		COMPANY		COMPANY NWLS	
DATE		DATE		DATE Feb 23/04	

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	KV-1	S. McQUESTEN U/S CRISTAL	Total 9 dissolved metals,	
2	KV-2	S. McQUESTEN @ RUMPHOUSE	AIK, SO ₄ , pH, cond, TSS,	
3	KV-7	CRISTAL @ HANSON L. RD.	hardness.	
4	ACG WQ5	CRISTAL U/S KEND HWY	" "	
5	(A)	CRISTAL @ SITE (A)	" "	
6	(B)	CRISTAL @ SITE (B)	" "	
7	SITE (C)	G300 FLOW @ SITE (C)	" "	
8	(D)	CRISTAL @ SITE (D)	" "	
9	#4	G300 CULVERT #4	" "	
10	G300	G300 ADIT FLOW	" "	
11	Field blank		Total 9 dissolved metals	
12	Duplicate		Total metals	
13				
14				
15				

AGRI-FOOD ENVIRONMENTAL

ENERGY RESOURCE

EDMONTON PH. (403) 438-5522 FAX (403) 434-8586
CALGARY PH. (403) 291-2022 FAX (403) 291-2021
LANGLEY PH. (604) 530-4344 FAX (604) 534-9996
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019

EDMONTON PH. (403) 454-1504 FAX (403) 451-4022
CALGARY PH. (403) 291-3024 FAX (403) 250-2819
GRANDE PRAIRIE PH. (403) 532-8709 FAX (403) 539-0611
FORT ST. JOHN PH. (250) 785-2731 FAX (250) 785-7092
ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101

NOTE: Please complete this form in its entirety to ensure correct testing and reporting requirements.

ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS.



Report Transmission Cover Page

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Copies	Contact	Company	Address	Fax	x	Post	x
1	Travis Ritchie	Access Mining Consultants Ltd.	204D Strickland Street Whitehorse, YT Y1A 2J8 Phone: (867) 668-6463 Fax: (867) 667-6680 Email: travis@accessconsulting.ca	Email	x	Pickup	
				Custom Email		Courier	
				Web	x	Hand	
				Email Notification	x		

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Agreement Notes

Lot Notes:

Reported Dissolved metals results for sample #8 are the average of the sample and its duplicate results. [KR Feb-25-04]

Sample Notes:

Reports associated with this Lot

Id/Format/Reported Date

519228 Envir2 3 Smp & DL

Id/Format/Reported Date

Id/Format/Reported Date

Comment:

See Methodology and Notes page of Analytical Report for all comments pertaining to this report.

If this report transmission is not satisfactory, please send report requirements to the address at the top of this page.

2/27/04

519228 27-Feb-2004

2/27/2004 12:12:54PM



Sample Custody

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Sample Disposal Date: Mar 28, 2004

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the upper right of this page.

_____ **Extend Sample Storage Until** _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for 1 to 5 samples per month	\$ 10.00
Storage for 6 to 20 samples per month	\$ 15.00
Storage for 21 to 50 samples per month	\$ 30.00
Storage for 51 to 200 samples per month	\$ 60.00
Storage for more than 200 samples per month	\$ 110.00

_____ **Return Sample, collect, to the address below via:**

_____ Greyhound
_____ Loomis
_____ Purolator
_____ Other (Specify) _____

Name: _____
Company: _____
Address: _____

Phone: _____
Fax: _____
Signature: _____

If no other arrangements have been made, samples will be disposed of on Mar 28, 2004.



Analytical Report

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
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Bill to: Access Mining Consultants Ltd.
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204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
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Page: 1 of 14

		NWL Number	290583-1	290583-2	290583-3	
		Sample Date				
		Sample Description	KV -1 / S. McQuesten u/s Christal / 19/02/04	KV -2 / S. McQuesten @ Pumphouse / 19/02/04	KV - 7 / Christal @ Hanson L. Rd. / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Dissolved	mg/L	0.0751	0.0927	0.0571	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Calcium	Dissolved	mg/L	61.9	75.0	132	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	0.038	0.010	<0.002	0.002
Lead	Dissolved	mg/L	0.044	0.044	0.033	0.01
Lithium	Dissolved	mg/L	<0.007	<0.007	0.009	0.006
Magnesium	Dissolved	mg/L	19.7	22.7	25.4	0.01
Manganese	Dissolved	mg/L	0.0342	0.179	2.86	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	0.005	0.004	0.007	0.002
Phosphorus	Dissolved	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Dissolved	mg/L	3.0	3.5	3.7	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	3.27	3.33	1.69	0.05
Strontium	Dissolved	mg/L	0.242	0.246	0.245	0.005
Sulphur	Dissolved	mg/L	25.3	33.0	88.0	1
Sulphate (SO4)	Dissolved	mg/L	75.9	99.0	264	0.6
Thorium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	<0.004	<0.004	<0.004	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	0.013	0.139	2.10	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005



Analytical Report

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Page: 2 of 14

		NWL Number	290583-1	290583-2	290583-3	
		Sample Date				
		Sample Description	KV -1 / S. McQuesten u/s Christal / 19/02/04	KV -2 / S. McQuesten @ Pumphouse / 19/02/04	KV - 7 / Christal @ Hanson L. Rd. / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace) - Continued						
Hardness	as CaCO3	mg/L	236	281	434	1
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Total	mg/L	0.0760	0.0960	0.0587	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Calcium	Total	mg/L	63.9	79.8	164	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Total	mg/L	<0.001	0.001	0.001	0.001
Iron	Total	mg/L	0.159	0.107	0.034	0.002
Lead	Total	mg/L	0.044	0.044	0.033	0.01
Lithium	Total	mg/L	<0.007	<0.007	0.009	0.006
Magnesium	Total	mg/L	20.6	24.2	26.7	0.01
Manganese	Total	mg/L	0.0351	0.186	2.91	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.006	0.004	0.010	0.002
Phosphorus	Total	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	3.0	3.6	3.9	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	3.30	3.44	1.71	0.05
Strontium	Total	mg/L	0.244	0.256	0.251	0.005
Sulphur	Total	mg/L	26.7	36.7	88.9	1
Thorium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	<0.004	<0.004	<0.004	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	0.013	0.142	2.14	0.001



Analytical Report

Norwest Labs
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204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 290583
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Page: 3 of 14

		NWL Number	290583-1	290583-2	290583-3	
		Sample Date				
		Sample Description	KV -1 / S. McQuesten u/s Christal / 19/02/04	KV -2 / S. McQuesten @ Pumphouse / 19/02/04	KV - 7 / Christal @ Hanson L. Rd. / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<2	<2	4	1
Routine Water						
pH	Water	pH	7.3	7.5	7.7	0.1
Electrical Conductivity	Water	uS/cm	418	485	730	1
Hydroxide	Water	mg/L	<5	<5	<5	5
Carbonate	Water	mg/L	<6	<6	<6	5
Bicarbonate	Water	mg/L	180	204	180	5
T-Alkalinity	as CaCO3	mg/L	147	168	147	5



Analytical Report

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Name: Keno Hill Mines
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Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Page: 4 of 14

		NWL Number	290583-4	290583-5	290583-6	
		Sample Date				
		Sample Description	ACG WQ 5 / Christal u/s Keno Hwy / 19/02/04	Site A / Christal @ Site A / 19/02/04	Site B / Christal @ Site B / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Dissolved	mg/L	0.0803	0.0649	0.0661	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	<0.0006	0.0029	0.0031	0.0005
Calcium	Dissolved	mg/L	213	219	212	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Lead	Dissolved	mg/L	0.033	0.044	0.044	0.01
Lithium	Dissolved	mg/L	0.015	0.016	0.018	0.006
Magnesium	Dissolved	mg/L	35.4	36.0	34.6	0.01
Manganese	Dissolved	mg/L	1.46	9.17	8.18	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	0.005	0.022	0.020	0.002
Phosphorus	Dissolved	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Dissolved	mg/L	4.8	4.6	4.7	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	1.89	1.92	1.98	0.05
Strontium	Dissolved	mg/L	0.258	0.286	0.296	0.005
Sulphur	Dissolved	mg/L	143	154	143	1
Sulphate (SO4)	Dissolved	mg/L	429	462	429	0.6
Thorium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	<0.004	<0.004	<0.004	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	0.154	5.17	4.98	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005



Analytical Report

Norwest Labs
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NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
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Report Number: 519228

Page: 5 of 14

		NWL Number	290583-4	290583-5	290583-6	
		Sample Date				
		Sample Description	ACG WQ 5 / Christal u/s Keno Hwy / 19/02/04	Site A / Christal @ Site A / 19/02/04	Site B / Christal @ Site B / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace) - Continued						
Hardness	as CaCO ₃	mg/L	679	695	673	1
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	0.06	0.07	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Total	mg/L	0.0840	0.0712	0.0714	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	<0.0006	0.0029	0.0031	0.0005
Calcium	Total	mg/L	230	233	222	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Total	mg/L	0.002	0.111	0.006	0.001
Iron	Total	mg/L	0.187	0.303	0.366	0.002
Lead	Total	mg/L	0.033	0.044	0.044	0.01
Lithium	Total	mg/L	0.016	0.017	0.018	0.006
Magnesium	Total	mg/L	36.9	37.3	35.6	0.01
Manganese	Total	mg/L	1.53	9.27	8.27	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.006	0.022	0.022	0.002
Phosphorus	Total	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	5.1	5.0	4.8	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.94	2.02	2.00	0.05
Strontium	Total	mg/L	0.272	0.303	0.306	0.005
Sulphur	Total	mg/L	144	156	144	1
Thorium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	<0.004	0.006	0.007	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	0.164	5.41	5.03	0.001



Analytical Report

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Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Page: 6 of 14

		NWL Number	290583-4	290583-5	290583-6	
		Sample Date				
		Sample Description	ACG WQ 5 / Christal u/s Keno Hwy / 19/02/04	Site A / Christal @ Site A / 19/02/04	Site B / Christal @ Site B / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<2	26	31	1
Routine Water						
pH	Water	pH	7.2	7.2	7.4	0.1
Electrical Conductivity	Water	uS/cm	774	845	845	1
Hydroxide	Water	mg/L	<5	<5	<5	5
Carbonate	Water	mg/L	<6	<6	<6	5
Bicarbonate	Water	mg/L	175	169	170	5
T-Alkalinity	as CaCO3	mg/L	143	138	139	5



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Name: Keno Hill Mines
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NWL Lot ID: 290583
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Report Number: 519228

Page: 7 of 14

		NWL Number	290583-7	290583-8	290583-9	
		Sample Date				
		Sample Description	Site C / G300 Flow @ Site C / 19/02/04	Site D / Christal @ D / 19/02/04	Site # 4 / G300 Culvert # 4 / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	0.02	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	0.06	0.04
Barium	Dissolved	mg/L	0.0432	0.0586	0.0163	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	0.0012	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	0.0110	0.0026	0.107	0.0005
Calcium	Dissolved	mg/L	465	191	255	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	0.004	0.001
Cobalt	Dissolved	mg/L	<0.001	<0.001	0.015	0.001
Copper	Dissolved	mg/L	0.004	<0.001	0.002	0.001
Iron	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Lead	Dissolved	mg/L	0.022	0.044	0.165	0.01
Lithium	Dissolved	mg/L	0.042	0.014	0.033	0.006
Magnesium	Dissolved	mg/L	74.6	31.5	50.0	0.01
Manganese	Dissolved	mg/L	5.64	7.19	108	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	0.047	0.019	0.257	0.002
Phosphorus	Dissolved	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	0.1	0.1
Silicon	Dissolved	mg/L	6.5	4.2	4.7	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	2.44	1.78	1.70	0.05
Strontium	Dissolved	mg/L	0.705	0.280	0.323	0.005
Sulphur	Dissolved	mg/L	429	143	352	1
Sulphate (SO4)	Dissolved	mg/L	1290	429	1060	0.6
Thorium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	0.008	<0.004	0.007	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	22.4	4.63	89.8	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	0.008	0.005



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204D Strickland Street
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Attn: Travis Ritchie
Sampled By:
Company:

Project
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Name: Keno Hill Mines
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NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Page: 8 of 14

		NWL Number	290583-7	290583-8	290583-9	
		Sample Date				
		Sample Description	Site C / G300 Flow @ Site C / 19/02/04	Site D / Christal @ D / 19/02/04	Site # 4 / G300 Culvert # 4 / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace) - Continued						
Hardness	as CaCO ₃	mg/L	1470	608	843	1
Metals Total (Trace)						
Aluminum	Total	mg/L	0.04	0.01	0.14	0.01
Antimony	Total	mg/L	0.03	<0.02	<0.02	0.02
Arsenic	Total	mg/L	<0.04	<0.04	0.08	0.04
Barium	Total	mg/L	0.0437	0.0592	0.0204	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	0.0019	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.0111	0.0027	0.108	0.0005
Calcium	Total	mg/L	510	202	299	0.01
Chromium	Total	mg/L	<0.001	0.001	0.007	0.001
Cobalt	Total	mg/L	<0.001	<0.001	0.017	0.001
Copper	Total	mg/L	0.007	0.003	0.004	0.001
Iron	Total	mg/L	0.024	0.106	0.316	0.002
Lead	Total	mg/L	0.022	0.044	0.167	0.01
Lithium	Total	mg/L	0.042	0.014	0.033	0.006
Magnesium	Total	mg/L	80.3	32.6	58.1	0.01
Manganese	Total	mg/L	5.93	7.29	121	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.050	0.019	0.260	0.002
Phosphorus	Total	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	0.1	0.1
Silicon	Total	mg/L	6.7	4.3	4.7	0.05
Silver	Total	mg/L	0.003	<0.002	<0.002	0.002
Sodium	Total	mg/L	2.47	1.80	1.72	0.05
Strontium	Total	mg/L	0.714	0.283	0.327	0.005
Sulphur	Total	mg/L	467	144	411	1
Thorium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	0.009	<0.004	0.011	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	22.8	4.68	98.4	0.001



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204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Travis Ritchie
Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
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Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
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Report Number: 519228

Page: 9 of 14

		NWL Number	290583-7	290583-8	290583-9	
		Sample Date				
		Sample Description	Site C / G300 Flow @ Site C / 19/02/04	Site D / Christal @ D / 19/02/04	Site # 4 / G300 Culvert # 4 / 19/02/04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Zirconium	Total	mg/L	<0.006	<0.006	0.012	0.005
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<2	25	36	1
Routine Water						
pH	Water	pH	6.8	7.3	6.2	0.1
Electrical Conductivity	Water	uS/cm	1720	875	1520	1
Hydroxide	Water	mg/L	<5	<5	<5	5
Carbonate	Water	mg/L	<6	<6	<6	5
Bicarbonate	Water	mg/L	57	170	12	5
T-Alkalinity	as CaCO3	mg/L	46	139	10	5

		NWL Number	290583-10			
		Sample Date				
		Sample Description	G300 / G300 Adit Flow / 19/02/04			
		Matrix	Water - General			
Analyte		Units	Results	Results	Results	Detection Limit
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	34			1
Routine Water						
pH	Water	pH	6.4			0.1
Electrical Conductivity	Water	uS/cm	1530			1
Hydroxide	Water	mg/L	<5			5
Carbonate	Water	mg/L	<6			5
Bicarbonate	Water	mg/L	79			5
T-Alkalinity	as CaCO3	mg/L	65			5



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Sampled By:
Company:

Project
ID:
Name: Keno Hill Mines
Location:
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Acct. Code:

NWL Lot ID: 290583
Control Number: W 51511
Date Received: Feb 23, 2004
Date Reported: Feb 27, 2004
Report Number: 519228

Page: 10 of 14

		NWL Number		290583-10	290583-11
		Sample Date			
		Sample Description		G300 / G300 Adit Flow / 19/02/04	Field Blank / Field Blank / 19/02/04
		Matrix	Water - General	Water - General	
Analyte		Units	Results	Results	Detection Limit
Metals Dissolved (Trace)					
Aluminum	Dissolved	mg/L	0.02	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	0.11	<0.04	0.04
Barium	Dissolved	mg/L	0.0072	<0.0006	0.0005
Beryllium	Dissolved	mg/L	0.0016	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	0.209	<0.0006	0.0005
Calcium	Dissolved	mg/L	256	<0.01	0.01
Chromium	Dissolved	mg/L	0.008	<0.001	0.001
Cobalt	Dissolved	mg/L	0.100	<0.001	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	20.8	<0.002	0.002
Lead	Dissolved	mg/L	0.253	<0.01	0.01
Lithium	Dissolved	mg/L	0.035	<0.007	0.006
Magnesium	Dissolved	mg/L	52.9	<0.01	0.01
Manganese	Dissolved	mg/L	188	<0.0006	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	0.389	<0.002	0.002
Phosphorus	Dissolved	mg/L	<0.06	<0.06	0.05
Potassium	Dissolved	mg/L	<1	<1	1
Selenium	Dissolved	mg/L	0.22	<0.1	0.1
Silicon	Dissolved	mg/L	4.5	<0.1	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	1.68	<0.06	0.05
Strontium	Dissolved	mg/L	0.265	<0.005	0.005
Sulphur	Dissolved	mg/L	429	<1	1
Sulphate (SO4)	Dissolved	mg/L	1290	-	0.6
Thorium	Dissolved	mg/L	<0.005	<0.005	0.005
Tin	Dissolved	mg/L	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	0.008	<0.004	0.004
Uranium	Dissolved	mg/L	0.07	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	92.6	0.002	0.001
Zirconium	Dissolved	mg/L	0.008	<0.005	0.005



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Date Reported: Feb 27, 2004
Report Number: 519228

Page: 11 of 14

NWL Number		290583-10	290583-11		
Sample Date					
Sample Description		G300 / G300 Adit Flow / 19/02/04	Field Blank / Field Blank / 19/02/04		
Matrix		Water - General	Water - General		
Analyte	Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace) - Continued					
Hardness	as CaCO ₃	mg/L	858	-	1



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Report Number: 519228

Page: 12 of 14

		NWL Number		290583-10	290583-11	290583-12
		Sample Date				
		Sample Description		G300 / G300 Adit Flow / 19/02/04	Field Blank / Field Blank / 19/02/04	Duplicate / Duplicate / 19/02/04
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace)						
Aluminum	Total	mg/L	0.07	<0.01	0.03	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	0.24	<0.04	<0.04	0.04
Barium	Total	mg/L	0.0072	<0.0006	0.0607	0.0005
Beryllium	Total	mg/L	0.0028	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.211	<0.0006	0.0023	0.0005
Calcium	Total	mg/L	259	<0.01	212	0.01
Chromium	Total	mg/L	0.012	<0.001	<0.001	0.001
Cobalt	Total	mg/L	0.101	<0.001	<0.001	0.001
Copper	Total	mg/L	0.003	<0.001	0.002	0.001
Iron	Total	mg/L	28.7	<0.002	0.229	0.002
Lead	Total	mg/L	0.256	<0.01	0.044	0.01
Lithium	Total	mg/L	0.036	<0.007	0.012	0.006
Magnesium	Total	mg/L	53.4	<0.01	34.6	0.01
Manganese	Total	mg/L	194	<0.0006	8.20	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.393	<0.002	0.020	0.002
Phosphorus	Total	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	0.22	<0.1	<0.1	0.1
Silicon	Total	mg/L	4.5	<0.1	4.2	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.70	<0.06	1.77	0.05
Strontium	Total	mg/L	0.268	<0.006	0.266	0.005
Sulphur	Total	mg/L	433	<1	156	1
Thorium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	0.008	<0.004	0.006	0.004
Uranium	Total	mg/L	0.12	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	144	0.002	4.53	0.001
Zirconium	Total	mg/L	0.032	<0.006	<0.006	0.005



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Date Reported: Feb 27, 2004
Report Number: 519228

Page: 13 of 14

Approved by:

Bill Warning, B.Sc.
Lab Operations Manager



Methodology and Notes

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Page: 14 of 14

Method of Analysis:

MethodName	Reference	Method	Date Analysis Started	Location
Alkalinity	APHA	* Titration Method, 2320 B	24-Feb-04	Norwest Labs Surrey
Conductivity	APHA	* Conductivity - Laboratory Method, 2510 B	24-Feb-04	Norwest Labs Surrey
Metals SemiTrace (Dissolved) in water	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	25-Feb-04	Norwest Labs Surrey
Metals SemiTrace (Total) in water	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	25-Feb-04	Norwest Labs Surrey
pH in water	APHA	* Electrometric Method, 4500-H+ B	25-Feb-04	Norwest Labs Surrey
pH in water	APHA	* Electrometric Method, 4500-H+ B	26-Feb-04	Norwest Labs Surrey
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	27-Feb-04	Norwest Labs Surrey

* Norwest method(s) is based on reference method

References:

APHA Standard Methods for the Examination of Water and Wastewater
US EPA US Environmental Protection Agency Test Methods

Comments:

Reported Dissolved metals results for sample #8 are the average of the sample and its duplicate results. [KR Feb-25-04]

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

The test report shall not be reproduced except in full, without the written approval of the laboratory



NORWEST LABS

INFORMATION SHEET WATERS

CONTROL NUMBER

W 51490

RESULTS & INVOICE TO: COMPANY: <u>ACG</u> ADDRESS: <u>204 D STRICKLAND ST.</u> <u>WHITEHORSE, Y.T.</u> CITY/TOWN: PROVINCE: <u>YIA 2J8</u> POSTAL CODE: ATTENTION: <u>DAN CORNETT</u> PHONE: <u>867 668 6463</u> FAX: CELL: <u>dan@accessconsulting.ca</u>		COPY OF RESULTS TO: COMPANY: <u>LES</u> ADDRESS: CITY/TOWN: PROVINCE: POSTAL CODE: ATTENTION: <u>KEN NORDIN</u> PHONE: <u>867 668 6838</u> FAX: CELL: <u>Laberge@internorth.com</u>		WORK ORDER NO. <u>303929</u> DATE STAMP	
---	--	---	--	---	--

PURCHASE ORDER NO.:	PROJECT REF.:	REF./QUOTE NO.:
----------------------------	----------------------	------------------------

DATE SAMPLED <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>	NUMBER OF SAMPLES <u> </u>	WATER <u> </u>	LIQ WASTE <u> </u>	OTHER (SPECIFY) <u> </u>
---	------------------------------------	------------------------	----------------------------	----------------------------------

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION INSTRUCTIONS AND ANALYSIS CODES) • 100 ML BOTTLES PRESERVED WITH HNO ₃ (TIMETAL) • 250 mL BOTTLES NOT PRESERVED - FILTER FOR DISSOLVED METALS.		RUSH (UPON FILLING IN THIS SECTION THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THE ANALYSIS) NORWEST AUTHORIZATION NAME <u> </u> DATE <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> RUSH DATE REQUIRED <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> TIME <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> COMPLETION DATE <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>		CLIENT NO. <u> </u> LP <u> </u> COMPLETION DATE <u> </u> <u> </u> <u> </u> <u> </u> <u> </u> <u> </u>
QA REPORT ☒				

SAMPLE CUSTODY	SAMPLED BY <u>K. NORDIN</u>	RECEIVED BY <u>K. NORDIN</u>	RECEIVED BY
	COMPANY <u>LES</u>	COMPANY <u>LES</u>	COMPANY
	DATE <u>23/24 APRIL 2004</u>	DATE <u>25 APRIL 2004</u>	DATE

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	KV 41	LIGHTNING CK. @ KEND	TOTAL AND DISSOLVED	
2	KV 1	S. McQUESTEN U/S CRISTAL	METALS, ALK, SO ₄ ,	
3	KV 2	S. McQUESTEN @ P.H. POND	pH, COND., TSS, HARDNESS	
4	KV 7B	CHRISTAL CK. @ MOUTH		
5	KV 7	CHRISTAL CK. @ H.L. ROAD		
6	SITE (A)	CHRISTAL CK. @ SITE (A)		
7	SITE (C)	FUGITIVE FLOW SITE (C)		
8	SITE (D)	CHRISTAL CK @ SITE (D)		
9	ACG WQ5	CHRISTAL CK @ ACG WQ5		
10		S. McQUESTEN @ H.C. BRIDGE		
11	#4	FUGITIVE FLOW @ CULVERT #4		
12		GK300 ADIT MINE WATER		
13		GK300 POND EFFLUENT		
14		TRAVEL BLANK	- TOTAL METALS ONLY	
15		DUPLICATE (BLIND)	- TOTAL METALS ONLY	

AGRI-FOOD ENVIRONMENTAL

EDMONTON PH. (403) 438-5522 FAX (403) 434-8586
CALGARY PH. (403) 291-2022 FAX (403) 291-2021
LANGLEY PH. (604) 530-4344 FAX (604) 534-9996
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019

ENERGY RESOURCE

EDMONTON PH. (403) 454-1504 FAX (403) 451-4022
CALGARY PH. (403) 291-3024 FAX (403) 250-2819
GRANDE PRAIRIE PH. (403) 532-8709 FAX (403) 539-0611
FORT ST. JOHN PH. (250) 785-2731 FAX (250) 785-7092
ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101

NOTE: Please complete this form in its entirety to ensure correct testing and reporting requirements.

ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS.



Report Transmission Cover Page

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Copies	Contact	Company	Address	Fax	x	Post	x
1	Dan Cornett	Access Mining Consultants Ltd.	204D Strickland Street Whitehorse, YT Y1A 2J8 Phone: (867) 668-6463 Fax: (867) 667-6680 Email: dan@accessconsulting.ca	Email	x	Pickup	
				Custom Email		Courier	
				Web		Hand	
				Email Notification			

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Due to instrument difficulties at NWL-Surrey, reported ICP results were obtained by NWL-Edmonton low-level ICP and ICP-MS analysis. [KR Apr-30-04]
NWL-Edmonton ICP analysis does not include element Thorium; therefore reported results do not list "Th". [KR Apr-30-04]

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date

543795 Envir2QC 3 Smp & DL

Id/Format/Reported Date

Id/Format/Reported Date

Comment:

See Methodology and Notes page of Analytical Report for all comments pertaining to this report.

If this report transmission is not satisfactory, please send report requirements to the address at the top of this page.

4/30/04

543795 30-Apr-2004

5/3/2004 12:54:50PM



Sample Custody

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

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Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Sample Disposal Date: Jun 02, 2004

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the upper right of this page.

_____ **Extend Sample Storage Until** _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for 1 to 5 samples per month	\$ 10.00
Storage for 6 to 20 samples per month	\$ 15.00
Storage for 21 to 50 samples per month	\$ 30.00
Storage for 51 to 200 samples per month	\$ 60.00
Storage for more than 200 samples per month	\$ 110.00

_____ **Return Sample, collect, to the address below via:**

_____ Greyhound
_____ Loomis
_____ Purolator
_____ Other (Specify) _____

Name: _____
Company: _____
Address: _____

Phone: _____
Fax: _____
Signature: _____

If no other arrangements have been made, samples will be disposed of on Jun 02, 2004.



Analytical Report

Norwest Labs
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Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
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Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 1 of 19

		NWL Number		303929-1	303929-2	303929-3
		Sample Description		KV41 - Lightning Ck @ KENO / 24-Apr-04	KV1 - S. McQuesten u/s Christal / 24-Apr-04	KV2 - S. McQuestion @ P.H. Pond / 24-Apr-04
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Dissolved	mg/L	0.0544	0.0670	0.0773	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Calcium	Dissolved	mg/L	16.9	27.7	30.3	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	0.021	0.100	0.028	0.002
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Dissolved	mg/L	<0.007	<0.007	<0.007	0.006
Magnesium	Dissolved	mg/L	3.64	10.5	10.3	0.01
Manganese	Dissolved	mg/L	0.0022	0.0143	0.116	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	<0.002	0.003	0.003	0.002
Phosphorus	Dissolved	mg/L	<0.06	<0.06	<0.06	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Dissolved	mg/L	3.4	2.9	3.0	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	0.53	1.47	1.39	0.05
Strontium	Dissolved	mg/L	0.098	0.252	0.240	0.005
Sulphur	Dissolved	mg/L	18.2	26.9	30.3	1
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	<0.004	<0.004	<0.004	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	0.026	0.026	0.115	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Metals Total (Trace)						
Aluminum	Total	mg/L	0.03	<0.01	<0.01	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02



Analytical Report

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 2 of 19

		NWL Number 303929-1		303929-2		303929-3	
		Sample Description KV41 - Lightning Ck @ KENO / 24-Apr-04		KV1 - S. McQuesten u/s Christal / 24-Apr-04		KV2 - S. McQuestion @ P.H. Pond / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General		
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Total (Trace) - Continued							
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Total	mg/L	0.0584	0.0676	0.0795	0.0005	
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Calcium	Total	mg/L	18.5	31.4	35.6	0.01	
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Total	mg/L	0.068	0.158	0.147	0.002	
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Total	mg/L	<0.007	<0.007	<0.007	0.006	
Magnesium	Total	mg/L	4.61	12.5	11.8	0.01	
Manganese	Total	mg/L	0.0022	0.0144	0.118	0.0005	
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Total	mg/L	<0.002	0.003	0.003	0.002	
Phosphorus	Total	mg/L	<0.06	<0.06	<0.06	0.05	
Potassium	Total	mg/L	<1	<1	<1	1	
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Total	mg/L	3.5	3.0	3.1	0.05	
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Total	mg/L	0.54	1.48	1.89	0.05	
Strontium	Total	mg/L	0.104	0.260	0.252	0.005	
Sulphur	Total	mg/L	19.2	27.8	31.6	1	
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Total	mg/L	<0.004	<0.004	<0.004	0.004	
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06	
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Total	mg/L	0.026	0.016	0.116	0.001	
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005	
Physical and Aggregate Properties							
Temp. of observed pH and EC		°C	20.4	20.2	20.1		
Solids	Total Suspended	mg/L	<3	<3	<3	1	
Routine Water							
pH			7.80	7.81	7.85		



Analytical Report

Norwest Labs
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204D Strickland Street
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Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
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Page: 3 of 19

		NWL Number	303929-1	303929-2	303929-3	
		Sample Description	KV41 - Lightning Ck @ KENO / 24-Apr-04	KV1 - S. McQuesten u/s Christal / 24-Apr-04	KV2 - S. McQuestion @ P.H. Pond / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Electrical Conductivity		µS/cm at 25C	228	408	426	1
Calcium	Dissolved	mg/L	35.2	53.6	62.8	0.2
Magnesium	Dissolved	mg/L	5.9	17.8	19.8	0.2
Sulphate (SO4)	Dissolved	mg/L	51.7	80.6	87.2	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	73	185	188	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	60	152	154	5
Hardness	Dissolved as CaCO3	mg/L	112	207	238	



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NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 4 of 19

		NWL Number	303929-4	303929-5	303929-6	
		Sample Description	KV7B - Christal Ck @ Mouth / 24-Apr-04	KV7 - Christal Ck @ H.L Road / 24-Apr-04	Site - A - Christal Ck @ Site A / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Dissolved	mg/L	0.0390	0.0520	0.0572	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	0.0081	0.0039	0.0043	0.0005
Calcium	Dissolved	mg/L	45.8	66.9	85.8	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	0.030	0.009	0.004	0.002
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Dissolved	mg/L	<0.007	0.009	0.014	0.006
Magnesium	Dissolved	mg/L	11.3	14.3	16.0	0.01
Manganese	Dissolved	mg/L	1.17	2.99	4.07	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	0.004	0.006	0.008	0.002
Phosphorus	Dissolved	mg/L	<0.06	0.08	0.15	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Dissolved	mg/L	2.8	3.9	4.1	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	0.66	1.02	1.09	0.05
Strontium	Dissolved	mg/L	0.182	0.270	0.305	0.005
Sulphur	Dissolved	mg/L	67.6	97.0	127	1
Tin	Dissolved	mg/L	0.019	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	<0.004	0.004	0.007	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	1.84	2.13	2.21	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04



Analytical Report

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Page: 5 of 19

		NWL Number	303929-4	303929-5	303929-6	
		Sample Description	KV7B - Christal Ck @ Mouth / 24-Apr-04	KV7 - Christal Ck @ H.L Road / 24-Apr-04	Site - A - Christal Ck @ Site A / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Barium	Total	mg/L	0.0404	0.0529	0.0602	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.0077	0.0045	0.0045	0.0005
Calcium	Total	mg/L	55.8	85.7	102	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Total	mg/L	0.121	0.170	0.262	0.002
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Total	mg/L	<0.007	0.009	0.015	0.006
Magnesium	Total	mg/L	13.2	18.7	18.8	0.01
Manganese	Total	mg/L	1.18	3.02	4.33	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.005	0.007	0.008	0.002
Phosphorus	Total	mg/L	<0.06	0.08	0.15	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	2.8	4.0	4.4	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	0.90	1.23	1.20	0.05
Strontium	Total	mg/L	0.193	0.273	0.310	0.005
Sulphur	Total	mg/L	68.3	99.2	134	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	<0.004	0.006	0.009	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	1.86	2.16	2.24	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	20.1	20.3	20.5	
Solids	Total Suspended	mg/L	<3	<3	4	1
Routine Water						
pH			7.63	7.88	7.57	
Electrical Conductivity		µS/cm at 25C	597	737	886	1
Calcium	Dissolved	mg/L	92.0	126	169	0.2



Analytical Report

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Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 6 of 19

		NWL Number	303929-4	303929-5	303929-6	
		Sample Description	KV7B - Christal Ck @ Mouth / 24-Apr-04	KV7 - Christal Ck @ H.L Road / 24-Apr-04	Site - A - Christal Ck @ Site A / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Magnesium	Dissolved	mg/L	18.9	25.0	27.4	0.2
Sulphate (SO4)	Dissolved	mg/L	233	290	382	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	133	178	177	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	109	146	145	5
Hardness	Dissolved as CaCO3	mg/L	307	419	534	



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Page: 7 of 19

		NWL Number 303929-7		303929-8		303929-9	
		Sample Description Site - C - Fugitive Flow Site C / 24-Apr-04		Site - D - Christal Ck @ Site D / 24-Apr-04		ACGWQ5 - Christal Ck @ ACG WQ5 / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General		
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Dissolved (Trace)							
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Dissolved	mg/L	0.0303	0.0544	0.0640	0.0005	
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Dissolved	mg/L	0.0398	0.0087	0.0009	0.0005	
Calcium	Dissolved	mg/L	156	83.4	77.7	0.01	
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Dissolved	mg/L	<0.001	0.001	<0.001	0.001	
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Dissolved	mg/L	<0.002	0.008	0.018	0.002	
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Dissolved	mg/L	0.026	0.015	0.012	0.006	
Magnesium	Dissolved	mg/L	29.1	15.2	14.4	0.01	
Manganese	Dissolved	mg/L	18.1	7.86	0.969	0.0005	
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Dissolved	mg/L	0.088	0.016	<0.002	0.002	
Phosphorus	Dissolved	mg/L	0.18	0.12	<0.06	0.05	
Potassium	Dissolved	mg/L	<1	<1	<1	1	
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Dissolved	mg/L	5.6	4.2	4.1	0.05	
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Dissolved	mg/L	1.27	1.05	0.86	0.05	
Strontium	Dissolved	mg/L	0.585	0.306	0.252	0.005	
Sulphur	Dissolved	mg/L	314	137	107	1	
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Dissolved	mg/L	0.017	0.008	0.006	0.004	
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06	
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Dissolved	mg/L	33.8	4.66	0.169	0.001	
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005	
Metals Total (Trace)							
Aluminum	Total	mg/L	<0.01	0.02	<0.01	0.01	
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02	



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Date Reported: May 03, 2004
Report Number: 543795

Page: 8 of 19

		NWL Number 303929-7		303929-8		303929-9	
		Sample Description Site - C - Fugitive Flow Site C / 24-Apr-04		Site - D - Christal Ck @ Site D / 24-Apr-04		ACGWQ5 - Christal Ck @ ACG WQ5 / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General		
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Total (Trace) - Continued							
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Total	mg/L	0.0306	0.0549	0.0647	0.0005	
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Total	mg/L	0.0402	0.0088	0.0011	0.0005	
Calcium	Total	mg/L	194	98.2	78.5	0.01	
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Total	mg/L	<0.001	0.001	<0.001	0.001	
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Total	mg/L	0.040	0.322	0.239	0.002	
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Total	mg/L	0.026	0.015	0.012	0.006	
Magnesium	Total	mg/L	34.6	17.5	14.5	0.01	
Manganese	Total	mg/L	18.7	8.08	1.01	0.0005	
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Total	mg/L	0.089	0.017	<0.002	0.002	
Phosphorus	Total	mg/L	0.18	0.12	<0.06	0.05	
Potassium	Total	mg/L	1.2	<1	<1	1	
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Total	mg/L	5.9	4.3	4.3	0.05	
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Total	mg/L	1.48	1.06	0.87	0.05	
Strontium	Total	mg/L	0.591	0.309	0.255	0.005	
Sulphur	Total	mg/L	327	145	116	1	
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Total	mg/L	0.017	0.009	0.006	0.004	
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06	
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Total	mg/L	34.1	4.71	0.171	0.001	
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005	
Physical and Aggregate Properties							
Temp. of observed pH and EC		°C	20.6	20.4	20.3		
Solids	Total Suspended	mg/L	<3	7	<3	1	
Routine Water							
pH			7.01	7.55	7.54		



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Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

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Report Number: 543795

Page: 9 of 19

		NWL Number	303929-7	303929-8	303929-9	
		Sample Description	Site - C - Fugitive Flow Site C / 24-Apr-04	Site - D - Christal Ck @ Site D / 24-Apr-04	ACGWQ5 - Christal Ck @ ACG WQ5 / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Electrical Conductivity		µS/cm at 25C	1640	943	846	1
Calcium	Dissolved	mg/L	320	181	161	0.2
Magnesium	Dissolved	mg/L	51.7	29.4	26.6	0.2
Sulphate (SO4)	Dissolved	mg/L	1000	428	349	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	50	173	175	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	41	142	144	5
Hardness	Dissolved as CaCO3	mg/L	1010	572	511	



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Date Reported: May 03, 2004
Report Number: 543795

Page: 10 of 19

		NWL Number	303929-10	303929-11	303929-12	
		Sample Description	S. McQuesten @ H.C. Bridge / 24-Apr-04	#4 - Fugitive Flow @ Culvert #4 / 24-Apr-04	GK300 - Adit mine water / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Dissolved	mg/L	0.0976	0.0151	0.0079	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	<0.0006	0.105	0.194	0.0005
Calcium	Dissolved	mg/L	31.9	136	97.4	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Dissolved	mg/L	<0.001	0.019	0.106	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	0.075	<0.002	10.8	0.002
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Dissolved	mg/L	<0.007	0.024	0.026	0.006
Magnesium	Dissolved	mg/L	11.0	24.6	23.3	0.01
Manganese	Dissolved	mg/L	0.102	92.9	152	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	<0.002	0.215	0.403	0.002
Phosphorus	Dissolved	mg/L	<0.06	0.16	0.15	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Dissolved	mg/L	3.6	3.8	4.7	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	1.58	0.98	1.03	0.05
Strontium	Dissolved	mg/L	0.242	0.368	0.259	0.005
Sulphur	Dissolved	mg/L	26.6	297	304	1
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	<0.004	0.016	0.015	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	0.042	55.7	108	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	0.04	0.03	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	<0.04	<0.04	0.19	0.04



Analytical Report

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Date Reported: May 03, 2004
Report Number: 543795

Page: 11 of 19

		NWL Number	303929-10	303929-11	303929-12	
		Sample Description	S. McQuesten @ H.C. Bridge / 24-Apr-04	#4 - Fugitive Flow @ Culvert #4 / 24-Apr-04	GK300 - Adit mine water / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Barium	Total	mg/L	0.104	0.0180	0.0081	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	<0.0006	0.110	0.198	0.0005
Calcium	Total	mg/L	33.3	146	115	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	0.020	0.108	0.001
Copper	Total	mg/L	<0.001	0.002	<0.001	0.001
Iron	Total	mg/L	0.540	0.126	21.7	0.002
Lead	Total	mg/L	<0.01	<0.01	0.017	0.01
Lithium	Total	mg/L	<0.007	0.025	0.028	0.006
Magnesium	Total	mg/L	11.5	26.8	27.5	0.01
Manganese	Total	mg/L	0.103	101	160	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	<0.002	0.221	0.407	0.002
Phosphorus	Total	mg/L	<0.06	0.16	0.15	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	3.7	3.9	4.8	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.99	0.99	1.04	0.05
Strontium	Total	mg/L	0.256	0.376	0.262	0.005
Sulphur	Total	mg/L	27.8	314	318	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	<0.004	0.019	0.015	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	0.055	23.1	109	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	20.2	20.2	20.3	
Solids	Total Suspended	mg/L	<3	23	17	1
Routine Water						
pH			7.78	6.89	6.31	
Electrical Conductivity		µS/cm at 25C	435	1520	1520	1
Calcium	Dissolved	mg/L	64.6	249	192	0.2



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Date Reported: May 03, 2004
Report Number: 543795

Page: 12 of 19

		NWL Number	303929-10	303929-11	303929-12	
		Sample Description	S. McQuesten @ H.C. Bridge / 24-Apr-04	#4 - Fugitive Flow @ Culvert #4 / 24-Apr-04	GK300 - Adit mine water / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Magnesium	Dissolved	mg/L	19.4	39.9	40.0	0.2
Sulphate (SO ₄)	Dissolved	mg/L	80.1	1000	979	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	207	46	77	5
P-Alkalinity	as CaCO ₃	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO ₃	mg/L	170	38	64	5
Hardness	Dissolved as CaCO ₃	mg/L	241	786	645	



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Date Reported: May 03, 2004
Report Number: 543795

Page: 13 of 19

NWL Number 303929-13
Sample Description Gk300 - Pond Effluent /
24-Apr-04
Matrix Water - General

Analyte	Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)					
Aluminum	Dissolved	mg/L	<0.01		0.01
Antimony	Dissolved	mg/L	<0.02		0.02
Arsenic	Dissolved	mg/L	<0.04		0.04
Barium	Dissolved	mg/L	0.0091		0.0005
Beryllium	Dissolved	mg/L	<0.0006		0.0005
Bismuth	Dissolved	mg/L	<0.02		0.02
Cadmium	Dissolved	mg/L	0.150		0.0005
Calcium	Dissolved	mg/L	138		0.01
Chromium	Dissolved	mg/L	<0.001		0.001
Cobalt	Dissolved	mg/L	0.079		0.001
Copper	Dissolved	mg/L	<0.001		0.001
Iron	Dissolved	mg/L	<0.002		0.002
Lead	Dissolved	mg/L	<0.01		0.01
Lithium	Dissolved	mg/L	0.029		0.006
Magnesium	Dissolved	mg/L	21.2		0.01
Manganese	Dissolved	mg/L	134		0.0005
Molybdenum	Dissolved	mg/L	<0.01		0.01
Nickel	Dissolved	mg/L	0.265		0.002
Phosphorus	Dissolved	mg/L	<0.06		0.05
Potassium	Dissolved	mg/L	<1		1
Selenium	Dissolved	mg/L	<0.1		0.1
Silicon	Dissolved	mg/L	3.3		0.05
Silver	Dissolved	mg/L	<0.002		0.002
Sodium	Dissolved	mg/L	1.10		0.05
Strontium	Dissolved	mg/L	0.378		0.005
Sulphur	Dissolved	mg/L	302		1
Tin	Dissolved	mg/L	<0.01		0.01
Titanium	Dissolved	mg/L	0.016		0.004
Uranium	Dissolved	mg/L	<0.06		0.06
Vanadium	Dissolved	mg/L	<0.001		0.001
Zinc	Dissolved	mg/L	60.5		0.001
Zirconium	Dissolved	mg/L	<0.005		0.005
Physical and Aggregate Properties					
Temp. of observed pH and EC		°C	20.5		
Solids	Total Suspended	mg/L	14		1
Routine Water					



Analytical Report

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 14 of 19

NWL Number 303929-13
Sample Description Gk300 - Pond Effluent /
24-Apr-04
Matrix Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
pH			7.10			
Electrical Conductivity		µS/cm at 25C	1650			1
Calcium	Dissolved	mg/L	269			0.2
Magnesium	Dissolved	mg/L	36.8			0.2
Sulphate (SO4)	Dissolved	mg/L	997			0.2
Hydroxide		mg/L	<5			5
Carbonate		mg/L	<6			6
Bicarbonate		mg/L	153			5
P-Alkalinity	as CaCO3	mg/L	<5			5
T-Alkalinity	as CaCO3	mg/L	125			5
Hardness	Dissolved as CaCO3	mg/L	824			



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Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 15 of 19

		NWL Number 303929-13		303929-14	303929-15	
		Sample Description Gk300 - Pond Effluent /		Travel Blank /	Duplicate (Blind) /	
		24-Apr-04		24-Apr-04	24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	0.05	<0.04	<0.04	0.04
Barium	Total	mg/L	0.0092	<0.0006	0.0654	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.151	<0.0006	0.0012	0.0005
Calcium	Total	mg/L	163	0.19	84.0	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	0.079	<0.001	<0.001	0.001
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Total	mg/L	5.54	0.042	0.258	0.002
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Total	mg/L	0.029	<0.007	0.013	0.006
Magnesium	Total	mg/L	26.2	0.16	15.4	0.01
Manganese	Total	mg/L	140	0.113	1.02	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.268	<0.002	<0.002	0.002
Phosphorus	Total	mg/L	0.12	<0.06	<0.06	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	3.3	<0.1	4.3	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.27	0.18	1.04	0.05
Strontium	Total	mg/L	0.382	<0.006	0.264	0.005
Sulphur	Total	mg/L	312	<1	115	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	0.016	<0.004	0.006	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	61.1	0.039	0.179	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005



Analytical Report

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Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
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Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 16 of 19

Approved by:

Marie England



Quality Control

Norwest Labs
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Surrey, BC. V3S 8P8
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Control Number: W 51490
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Page: 17 of 19

Metals Dissolved

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Sulphur	mq/L	<0.05	0.08	-2.22	2.39	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Apr 29, 2004					
Acquired By:						
Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Sulphur	mq/L	143	142	9.99	0.02	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Apr 29, 2004					
Acquired By:	To Thong					
Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Sulphur	mq/L	47.8	49.8	44.6	55.0	✓
Material Used:	Metals High					
Date Acquired:	Apr 29, 2004					
Acquired By:						
Sulphur	mq/L	0.95	1.02	0.81	1.23	✓
Material Used:	Metals Low					
Date Acquired:	Apr 29, 2004					
Acquired By:						

Physical and Aggregate Properties

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Solids	mq/L	1870	1930	10	15	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Apr 29, 2004					
Acquired By:	Bvul Sim					
Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Solids	mg/L	193	200	180	220	✓
Material Used:	Water High					
Date Acquired:	Apr 29, 2004					
Acquired By:	Bvul Sim					
Solids	mq/L	21	20	18	22	✓
Material Used:	Water Low					
Date Acquired:	Apr 29, 2004					
Acquired By:	Bvul Sim					



Quality Control

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Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
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Name:
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NWL Lot ID: 303929
Control Number: W 51490
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Page: 18 of 19

Routine Water

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		8.16	8.15	9.99	0.10	✓
Electrical Conductivity	dS/m at 25C	1.82	1.82	9.990	0.002	✓
Calcium	mq/L	181	180	10.0	0.6	✓
Magnesium	mq/L	29.4	29.3	10.0	0.2	✓
Hydroxide	mq/L	<5	<5	10		✓
Carbonate	mq/L	<6	<6	10		✓
Bicarbonate	mq/L	925	940	10		✓
P-Alkalinity	mq/L	<5	<5	10	5	✓
T-Alkalinity	mq/L	758	771	10	5	✓

Material Used: Edmonton Duplicate
Date Acquired: Apr 28, 2004
Acquired By: Amanda Mitchell

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mq/L	256	251	237	265	✓
Magnesium	mq/L	100	102	95	109	✓

Material Used: Metals High
Date Acquired: Apr 29, 2004
Acquired By:

Calcium	mq/L	4.8	4.8	4.3	5.3	✓
Magnesium	mq/L	1.8	1.9	1.6	2.1	✓

Material Used: Metals Low
Date Acquired: Apr 29, 2004
Acquired By:

pH		9.27	9.23	9.11	9.35	✓
Electrical Conductivity	dS/m at 25C	2.72	2.73	2.61	2.85	✓
P-Alkalinity	mg/L	533	525	478	572	✓
T-Alkalinity	mg/L	997	1005	972	1038	✓

Material Used: Water High
Date Acquired: Apr 28, 2004
Acquired By: Amanda Mitchell

pH		6.89	6.90	6.83	6.97	✓
Electrical Conductivity	dS/m at 25C	0.079	0.076	0.070	0.081	✓
P-Alkalinity	mq/L	63	61	43	78	✓
T-Alkalinity	mq/L	130	128	119	137	✓

Material Used: Water Low
Date Acquired: Apr 28, 2004
Acquired By: Amanda Mitchell



Methodology and Notes

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NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
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Report Number: 543795

Page: 19 of 19

Method of Analysis:

MethodName	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Conductivity - Laboratory Method, 2510 B	28-Apr-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	* Electrometric Method, 4500-H+ B	28-Apr-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	* Titration Method, 2320 B	28-Apr-04	Norwest Labs Edmonton
Metals SemiTrace (Dissolved) in water	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	30-Apr-04	Norwest Labs Surrey
Metals SemiTrace (Total) in water	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	30-Apr-04	Norwest Labs Surrey
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	29-Apr-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	29-Apr-04	Norwest Labs Edmonton

* Norwest method(s) is based on reference method

References:

APHA Standard Methods for the Examination of Water and Wastewater
US EPA US Environmental Protection Agency Test Methods

Comments:

Due to instrument difficulties at NWL-Surrey, reported ICP results were obtained by NWL-Edmonton low-level ICP and ICP-MS analysis. [KR Apr-30-04]
NWL-Edmonton ICP analysis does not include element Thorium; therefore reported results do not list "Th". [KR Apr-30-04]

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

The test report shall not be reproduced except in full, without the written approval of the laboratory



NORWEST LABS

INFORMATION SHEET WATERS

CONTROL NUMBER

W 51490

RESULTS & INVOICE TO:		COPY OF RESULTS TO:		WORK ORDER NO. 303929	
COMPANY: ACG		COMPANY: LES		DATE STAMP	
ADDRESS: 204 D STRICKLAND ST.		ADDRESS:			
CITY/TOWN: WHITEHORSE, Y.T.		CITY/TOWN:			
PROVINCE: YIA 2J8		PROVINCE:			
POSTAL CODE:		POSTAL CODE:			
ATTENTION: DAN CORNETT		ATTENTION: KEN NORDIN			
PHONE: 867 668 6463		PHONE: 867 668 6838			
FAX:		FAX:			
CELL: dan@accessconsulting.ca		CELL: Laberge@internorth.com			

PURCHASE ORDER NO.:	PROJECT REF.:	REF./QUOTE NO.:
----------------------------	----------------------	------------------------

DATE SAMPLED	NUMBER OF SAMPLES	WATER	LIQ WASTE	OTHER (SPECIFY)
---------------------	--------------------------	--------------	------------------	------------------------

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION INSTRUCTIONS AND ANALYSIS CODES) • 100 mL BOTTLES PRESERVED WITH HNO ₃ (TIMETAL) • 250 mL BOTTLES NOT PRESERVED - FILTER FOR DISSOLVED METALS.		RUSH (UPON FILLING IN THIS SECTION THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THE ANALYSIS) NORWEST AUTHORIZATION NAME _____ DATE _____ RUSH DATE REQUIRED _____ TIME _____ COMPLETION DATE _____		CLIENT NO.
--	--	--	--	-------------------

SAMPLE CUSTODY	SAMPLED BY K. NORDIN	RECEIVED BY	RELINQUISHED BY K. NORDIN	RECEIVED BY
	COMPANY LES	COMPANY	COMPANY LES	COMPANY
	DATE 23/24 APRIL 2004	DATE	DATE 25 APRIL 2004	DATE

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	KV 41	LIGHTNING CK. @ KEND	TOTAL AND DISSOLVED	
2	KV 1	S. McQUESTEN U/S CRISTAL	METALS, ALK, SO ₄ ,	
3	KV 2	S. McQUESTEN @ P.H. POND	pH, COND., TSS, HARDNESS	
4	KV 7B	CHRISTAL CK. @ MOUTH		
5	KV 7	CHRISTAL CK. @ H.L. ROAD		
6	SITE (A)	CHRISTAL CK. @ SITE (A)		
7	SITE (C)	FUGITIVE FLOW SITE (C)		
8	SITE (D)	CHRISTAL CK @ SITE (D)		
9	ACG WQ5	CHRISTAL CK @ ACG WQ5		
10		S. McQUESTEN @ H.C. BRIDGE		
11	#4	FUGITIVE FLOW @ CULVERT #4		
12		GK300 ADIT MINE WATER		
13		GK300 POND EFFLUENT		
14		TRAVEL BLANK	- TOTAL METALS ONLY	
15		DUPLICATE (BLIND)	- TOTAL METALS ONLY	



Report Transmission Cover Page

Norwest Labs
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Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
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LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Copies	Contact	Company	Address	Fax	x	Post	x
1	Dan Cornett	Access Mining Consultants Ltd.	204D Strickland Street Whitehorse, YT Y1A 2J8 Phone: (867) 668-6463 Fax: (867) 667-6680 Email: dan@accessconsulting.ca	Email	x	Pickup	
				Custom Email		Courier	
				Web		Hand	
				Email Notification			

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Due to instrument difficulties at NWL-Surrey, reported ICP results were obtained by NWL-Edmonton low-level ICP and ICP-MS analysis. [KR Apr-30-04]
NWL-Edmonton ICP analysis does not include element Thorium; therefore reported results do not list "Th". [KR Apr-30-04]

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date

543795 Envir2QC 3 Smp & DL

Id/Format/Reported Date

Id/Format/Reported Date

Comment:

See Methodology and Notes page of Analytical Report for all comments pertaining to this report.

If this report transmission is not satisfactory, please send report requirements to the address at the top of this page.

4/30/04

543795 30-Apr-2004

5/3/2004 12:54:50PM



Sample Custody

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
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NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Sample Disposal Date: Jun 02, 2004

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the upper right of this page.

_____ **Extend Sample Storage Until** _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for 1 to 5 samples per month	\$ 10.00
Storage for 6 to 20 samples per month	\$ 15.00
Storage for 21 to 50 samples per month	\$ 30.00
Storage for 51 to 200 samples per month	\$ 60.00
Storage for more than 200 samples per month	\$ 110.00

_____ **Return Sample, collect, to the address below via:**

_____ Greyhound
_____ Loomis
_____ Purolator
_____ Other (Specify) _____

Name: _____
Company: _____
Address: _____

Phone: _____
Fax: _____
Signature: _____

If no other arrangements have been made, samples will be disposed of on Jun 02, 2004.



Analytical Report

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Page: 1 of 19

		NWL Number 303929-1		303929-2		303929-3	
		Sample Description KV41 - Lightning Ck @ KENO / 24-Apr-04		KV1 - S. McQuesten u/s Christal / 24-Apr-04		KV2 - S. McQuestion @ P.H. Pond / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General		
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Dissolved (Trace)							
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Dissolved	mg/L	0.0544	0.0670	0.0773	0.0005	
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Calcium	Dissolved	mg/L	16.9	27.7	30.3	0.01	
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Dissolved	mg/L	0.021	0.100	0.028	0.002	
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Dissolved	mg/L	<0.007	<0.007	<0.007	0.006	
Magnesium	Dissolved	mg/L	3.64	10.5	10.3	0.01	
Manganese	Dissolved	mg/L	0.0022	0.0143	0.116	0.0005	
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Dissolved	mg/L	<0.002	0.003	0.003	0.002	
Phosphorus	Dissolved	mg/L	<0.06	<0.06	<0.06	0.05	
Potassium	Dissolved	mg/L	<1	<1	<1	1	
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Dissolved	mg/L	3.4	2.9	3.0	0.05	
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Dissolved	mg/L	0.53	1.47	1.39	0.05	
Strontium	Dissolved	mg/L	0.098	0.252	0.240	0.005	
Sulphur	Dissolved	mg/L	18.2	26.9	30.3	1	
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Dissolved	mg/L	<0.004	<0.004	<0.004	0.004	
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06	
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Dissolved	mg/L	0.026	0.026	0.115	0.001	
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005	
Metals Total (Trace)							
Aluminum	Total	mg/L	0.03	<0.01	<0.01	0.01	
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02	



Analytical Report

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Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 2 of 19

		NWL Number 303929-1		303929-2		303929-3	
		Sample Description KV41 - Lightning Ck @ KENO / 24-Apr-04		KV1 - S. McQuesten u/s Christal / 24-Apr-04		KV2 - S. McQuestion @ P.H. Pond / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General		
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Total (Trace) - Continued							
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Total	mg/L	0.0584	0.0676	0.0795	0.0005	
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Calcium	Total	mg/L	18.5	31.4	35.6	0.01	
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Total	mg/L	0.068	0.158	0.147	0.002	
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Total	mg/L	<0.007	<0.007	<0.007	0.006	
Magnesium	Total	mg/L	4.61	12.5	11.8	0.01	
Manganese	Total	mg/L	0.0022	0.0144	0.118	0.0005	
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Total	mg/L	<0.002	0.003	0.003	0.002	
Phosphorus	Total	mg/L	<0.06	<0.06	<0.06	0.05	
Potassium	Total	mg/L	<1	<1	<1	1	
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Total	mg/L	3.5	3.0	3.1	0.05	
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Total	mg/L	0.54	1.48	1.89	0.05	
Strontium	Total	mg/L	0.104	0.260	0.252	0.005	
Sulphur	Total	mg/L	19.2	27.8	31.6	1	
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Total	mg/L	<0.004	<0.004	<0.004	0.004	
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06	
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Total	mg/L	0.026	0.016	0.116	0.001	
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005	
Physical and Aggregate Properties							
Temp. of observed pH and EC		°C	20.4	20.2	20.1		
Solids	Total Suspended	mg/L	<3	<3	<3	1	
Routine Water							
pH			7.80	7.81	7.85		



Analytical Report

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Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
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Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
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Report Number: 543795

Page: 3 of 19

		NWL Number	303929-1	303929-2	303929-3	
		Sample Description	KV41 - Lightning Ck @ KENO / 24-Apr-04	KV1 - S. McQuesten u/s Christal / 24-Apr-04	KV2 - S. McQuestion @ P.H. Pond / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Electrical Conductivity		µS/cm at 25C	228	408	426	1
Calcium	Dissolved	mg/L	35.2	53.6	62.8	0.2
Magnesium	Dissolved	mg/L	5.9	17.8	19.8	0.2
Sulphate (SO4)	Dissolved	mg/L	51.7	80.6	87.2	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	73	185	188	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	60	152	154	5
Hardness	Dissolved as CaCO3	mg/L	112	207	238	



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Report Number: 543795

Page: 4 of 19

		NWL Number	303929-4	303929-5	303929-6	
		Sample Description	KV7B - Christal Ck @ Mouth / 24-Apr-04	KV7 - Christal Ck @ H.L Road / 24-Apr-04	Site - A - Christal Ck @ Site A / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)						
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Dissolved	mg/L	0.0390	0.0520	0.0572	0.0005
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Dissolved	mg/L	0.0081	0.0039	0.0043	0.0005
Calcium	Dissolved	mg/L	45.8	66.9	85.8	0.01
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Dissolved	mg/L	0.030	0.009	0.004	0.002
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Dissolved	mg/L	<0.007	0.009	0.014	0.006
Magnesium	Dissolved	mg/L	11.3	14.3	16.0	0.01
Manganese	Dissolved	mg/L	1.17	2.99	4.07	0.0005
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Dissolved	mg/L	0.004	0.006	0.008	0.002
Phosphorus	Dissolved	mg/L	<0.06	0.08	0.15	0.05
Potassium	Dissolved	mg/L	<1	<1	<1	1
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Dissolved	mg/L	2.8	3.9	4.1	0.05
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Dissolved	mg/L	0.66	1.02	1.09	0.05
Strontium	Dissolved	mg/L	0.182	0.270	0.305	0.005
Sulphur	Dissolved	mg/L	67.6	97.0	127	1
Tin	Dissolved	mg/L	0.019	<0.01	<0.01	0.01
Titanium	Dissolved	mg/L	<0.004	0.004	0.007	0.004
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Dissolved	mg/L	1.84	2.13	2.21	0.001
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04



Analytical Report

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Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
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NWL Lot ID: 303929
Control Number: W 51490
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Date Reported: May 03, 2004
Report Number: 543795

Page: 5 of 19

		NWL Number	303929-4	303929-5	303929-6	
		Sample Description	KV7B - Christal Ck @ Mouth / 24-Apr-04	KV7 - Christal Ck @ H.L Road / 24-Apr-04	Site - A - Christal Ck @ Site A / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Barium	Total	mg/L	0.0404	0.0529	0.0602	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.0077	0.0045	0.0045	0.0005
Calcium	Total	mg/L	55.8	85.7	102	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	<0.001	<0.001	0.001
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Total	mg/L	0.121	0.170	0.262	0.002
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Total	mg/L	<0.007	0.009	0.015	0.006
Magnesium	Total	mg/L	13.2	18.7	18.8	0.01
Manganese	Total	mg/L	1.18	3.02	4.33	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.005	0.007	0.008	0.002
Phosphorus	Total	mg/L	<0.06	0.08	0.15	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	2.8	4.0	4.4	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	0.90	1.23	1.20	0.05
Strontium	Total	mg/L	0.193	0.273	0.310	0.005
Sulphur	Total	mg/L	68.3	99.2	134	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	<0.004	0.006	0.009	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	1.86	2.16	2.24	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	20.1	20.3	20.5	
Solids	Total Suspended	mg/L	<3	<3	4	1
Routine Water						
pH			7.63	7.88	7.57	
Electrical Conductivity		µS/cm at 25C	597	737	886	1
Calcium	Dissolved	mg/L	92.0	126	169	0.2



Analytical Report

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Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
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NWL Lot ID: 303929
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Page: 6 of 19

		NWL Number	303929-4	303929-5	303929-6	
		Sample Description	KV7B - Christal Ck @ Mouth / 24-Apr-04	KV7 - Christal Ck @ H.L Road / 24-Apr-04	Site - A - Christal Ck @ Site A / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Magnesium	Dissolved	mg/L	18.9	25.0	27.4	0.2
Sulphate (SO4)	Dissolved	mg/L	233	290	382	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	133	178	177	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	109	146	145	5
Hardness	Dissolved as CaCO3	mg/L	307	419	534	



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Page: 7 of 19

		NWL Number 303929-7		303929-8		303929-9	
		Sample Description Site - C - Fugitive Flow Site C / 24-Apr-04		Site - D - Christal Ck @ Site D / 24-Apr-04		ACGWQ5 - Christal Ck @ ACG WQ5 / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General		
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Dissolved (Trace)							
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Dissolved	mg/L	0.0303	0.0544	0.0640	0.0005	
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Dissolved	mg/L	0.0398	0.0087	0.0009	0.0005	
Calcium	Dissolved	mg/L	156	83.4	77.7	0.01	
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Dissolved	mg/L	<0.001	0.001	<0.001	0.001	
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Dissolved	mg/L	<0.002	0.008	0.018	0.002	
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Dissolved	mg/L	0.026	0.015	0.012	0.006	
Magnesium	Dissolved	mg/L	29.1	15.2	14.4	0.01	
Manganese	Dissolved	mg/L	18.1	7.86	0.969	0.0005	
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Dissolved	mg/L	0.088	0.016	<0.002	0.002	
Phosphorus	Dissolved	mg/L	0.18	0.12	<0.06	0.05	
Potassium	Dissolved	mg/L	<1	<1	<1	1	
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Dissolved	mg/L	5.6	4.2	4.1	0.05	
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Dissolved	mg/L	1.27	1.05	0.86	0.05	
Strontium	Dissolved	mg/L	0.585	0.306	0.252	0.005	
Sulphur	Dissolved	mg/L	314	137	107	1	
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Dissolved	mg/L	0.017	0.008	0.006	0.004	
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06	
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Dissolved	mg/L	33.8	4.66	0.169	0.001	
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005	
Metals Total (Trace)							
Aluminum	Total	mg/L	<0.01	0.02	<0.01	0.01	
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02	



Analytical Report

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Page: 8 of 19

		NWL Number	303929-7	303929-8	303929-9	
		Sample Description	Site - C - Fugitive Flow Site C / 24-Apr-04	Site - D - Christal Ck @ Site D / 24-Apr-04	ACGWQ5 - Christal Ck @ ACG WQ5 / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Arsenic	Total	mg/L	<0.04	<0.04	<0.04	0.04
Barium	Total	mg/L	0.0306	0.0549	0.0647	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.0402	0.0088	0.0011	0.0005
Calcium	Total	mg/L	194	98.2	78.5	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	0.001	<0.001	0.001
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Total	mg/L	0.040	0.322	0.239	0.002
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Total	mg/L	0.026	0.015	0.012	0.006
Magnesium	Total	mg/L	34.6	17.5	14.5	0.01
Manganese	Total	mg/L	18.7	8.08	1.01	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.089	0.017	<0.002	0.002
Phosphorus	Total	mg/L	0.18	0.12	<0.06	0.05
Potassium	Total	mg/L	1.2	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	5.9	4.3	4.3	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.48	1.06	0.87	0.05
Strontium	Total	mg/L	0.591	0.309	0.255	0.005
Sulphur	Total	mg/L	327	145	116	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	0.017	0.009	0.006	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	34.1	4.71	0.171	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	20.6	20.4	20.3	
Solids	Total Suspended	mg/L	<3	7	<3	1
Routine Water						
pH			7.01	7.55	7.54	



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Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 9 of 19

		NWL Number	303929-7	303929-8	303929-9	
		Sample Description	Site - C - Fugitive Flow Site C / 24-Apr-04	Site - D - Christal Ck @ Site D / 24-Apr-04	ACGWQ5 - Christal Ck @ ACG WQ5 / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Electrical Conductivity		µS/cm at 25C	1640	943	846	1
Calcium	Dissolved	mg/L	320	181	161	0.2
Magnesium	Dissolved	mg/L	51.7	29.4	26.6	0.2
Sulphate (SO4)	Dissolved	mg/L	1000	428	349	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	50	173	175	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	41	142	144	5
Hardness	Dissolved as CaCO3	mg/L	1010	572	511	



Analytical Report

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Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

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Date Reported: May 03, 2004
Report Number: 543795

Page: 10 of 19

		NWL Number 303929-10		303929-11		303929-12	
		Sample Description S. McQuesten @ H.C. Bridge / 24-Apr-04		#4 - Fugitive Flow @ Culvert #4 / 24-Apr-04		GK300 - Adit mine water / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit	
Metals Dissolved (Trace)							
Aluminum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Antimony	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Arsenic	Dissolved	mg/L	<0.04	<0.04	<0.04	0.04	
Barium	Dissolved	mg/L	0.0976	0.0151	0.0079	0.0005	
Beryllium	Dissolved	mg/L	<0.0006	<0.0006	<0.0006	0.0005	
Bismuth	Dissolved	mg/L	<0.02	<0.02	<0.02	0.02	
Cadmium	Dissolved	mg/L	<0.0006	0.105	0.194	0.0005	
Calcium	Dissolved	mg/L	31.9	136	97.4	0.01	
Chromium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Cobalt	Dissolved	mg/L	<0.001	0.019	0.106	0.001	
Copper	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Iron	Dissolved	mg/L	0.075	<0.002	10.8	0.002	
Lead	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Lithium	Dissolved	mg/L	<0.007	0.024	0.026	0.006	
Magnesium	Dissolved	mg/L	11.0	24.6	23.3	0.01	
Manganese	Dissolved	mg/L	0.102	92.9	152	0.0005	
Molybdenum	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Nickel	Dissolved	mg/L	<0.002	0.215	0.403	0.002	
Phosphorus	Dissolved	mg/L	<0.06	0.16	0.15	0.05	
Potassium	Dissolved	mg/L	<1	<1	<1	1	
Selenium	Dissolved	mg/L	<0.1	<0.1	<0.1	0.1	
Silicon	Dissolved	mg/L	3.6	3.8	4.7	0.05	
Silver	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002	
Sodium	Dissolved	mg/L	1.58	0.98	1.03	0.05	
Strontium	Dissolved	mg/L	0.242	0.368	0.259	0.005	
Sulphur	Dissolved	mg/L	26.6	297	304	1	
Tin	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01	
Titanium	Dissolved	mg/L	<0.004	0.016	0.015	0.004	
Uranium	Dissolved	mg/L	<0.06	<0.06	<0.06	0.06	
Vanadium	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001	
Zinc	Dissolved	mg/L	0.042	55.7	108	0.001	
Zirconium	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005	
Metals Total (Trace)							
Aluminum	Total	mg/L	<0.01	0.04	0.03	0.01	
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02	
Arsenic	Total	mg/L	<0.04	<0.04	0.19	0.04	



Analytical Report

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204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
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Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 11 of 19

		NWL Number	303929-10	303929-11	303929-12	
		Sample Description	S. McQuesten @ H.C. Bridge / 24-Apr-04	#4 - Fugitive Flow @ Culvert #4 / 24-Apr-04	GK300 - Adit mine water / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace) - Continued						
Barium	Total	mg/L	0.104	0.0180	0.0081	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	<0.0006	0.110	0.198	0.0005
Calcium	Total	mg/L	33.3	146	115	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	<0.001	0.020	0.108	0.001
Copper	Total	mg/L	<0.001	0.002	<0.001	0.001
Iron	Total	mg/L	0.540	0.126	21.7	0.002
Lead	Total	mg/L	<0.01	<0.01	0.017	0.01
Lithium	Total	mg/L	<0.007	0.025	0.028	0.006
Magnesium	Total	mg/L	11.5	26.8	27.5	0.01
Manganese	Total	mg/L	0.103	101	160	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	<0.002	0.221	0.407	0.002
Phosphorus	Total	mg/L	<0.06	0.16	0.15	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	3.7	3.9	4.8	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.99	0.99	1.04	0.05
Strontium	Total	mg/L	0.256	0.376	0.262	0.005
Sulphur	Total	mg/L	27.8	314	318	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	<0.004	0.019	0.015	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	0.055	23.1	109	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005
Physical and Aggregate Properties						
Temp. of observed pH and EC		°C	20.2	20.2	20.3	
Solids	Total Suspended	mg/L	<3	23	17	1
Routine Water						
pH			7.78	6.89	6.31	
Electrical Conductivity		µS/cm at 25C	435	1520	1520	1
Calcium	Dissolved	mg/L	64.6	249	192	0.2



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Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
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Report Number: 543795

Page: 12 of 19

		NWL Number	303929-10	303929-11	303929-12	
		Sample Description	S. McQuesten @ H.C. Bridge / 24-Apr-04	#4 - Fugitive Flow @ Culvert #4 / 24-Apr-04	GK300 - Adit mine water / 24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Magnesium	Dissolved	mg/L	19.4	39.9	40.0	0.2
Sulphate (SO ₄)	Dissolved	mg/L	80.1	1000	979	0.2
Hydroxide		mg/L	<5	<5	<5	5
Carbonate		mg/L	<6	<6	<6	6
Bicarbonate		mg/L	207	46	77	5
P-Alkalinity	as CaCO ₃	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO ₃	mg/L	170	38	64	5
Hardness	Dissolved as CaCO ₃	mg/L	241	786	645	



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NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 13 of 19

NWL Number 303929-13
Sample Description Gk300 - Pond Effluent /
24-Apr-04
Matrix Water - General

Analyte	Units	Results	Results	Results	Detection Limit
Metals Dissolved (Trace)					
Aluminum	Dissolved	mg/L	<0.01		0.01
Antimony	Dissolved	mg/L	<0.02		0.02
Arsenic	Dissolved	mg/L	<0.04		0.04
Barium	Dissolved	mg/L	0.0091		0.0005
Beryllium	Dissolved	mg/L	<0.0006		0.0005
Bismuth	Dissolved	mg/L	<0.02		0.02
Cadmium	Dissolved	mg/L	0.150		0.0005
Calcium	Dissolved	mg/L	138		0.01
Chromium	Dissolved	mg/L	<0.001		0.001
Cobalt	Dissolved	mg/L	0.079		0.001
Copper	Dissolved	mg/L	<0.001		0.001
Iron	Dissolved	mg/L	<0.002		0.002
Lead	Dissolved	mg/L	<0.01		0.01
Lithium	Dissolved	mg/L	0.029		0.006
Magnesium	Dissolved	mg/L	21.2		0.01
Manganese	Dissolved	mg/L	134		0.0005
Molybdenum	Dissolved	mg/L	<0.01		0.01
Nickel	Dissolved	mg/L	0.265		0.002
Phosphorus	Dissolved	mg/L	<0.06		0.05
Potassium	Dissolved	mg/L	<1		1
Selenium	Dissolved	mg/L	<0.1		0.1
Silicon	Dissolved	mg/L	3.3		0.05
Silver	Dissolved	mg/L	<0.002		0.002
Sodium	Dissolved	mg/L	1.10		0.05
Strontium	Dissolved	mg/L	0.378		0.005
Sulphur	Dissolved	mg/L	302		1
Tin	Dissolved	mg/L	<0.01		0.01
Titanium	Dissolved	mg/L	0.016		0.004
Uranium	Dissolved	mg/L	<0.06		0.06
Vanadium	Dissolved	mg/L	<0.001		0.001
Zinc	Dissolved	mg/L	60.5		0.001
Zirconium	Dissolved	mg/L	<0.005		0.005
Physical and Aggregate Properties					
Temp. of observed pH and EC		°C	20.5		
Solids	Total Suspended	mg/L	14		1
Routine Water					



Analytical Report

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Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
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NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 14 of 19

NWL Number 303929-13
Sample Description Gk300 - Pond Effluent /
24-Apr-04
Matrix Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
pH			7.10			
Electrical Conductivity		µS/cm at 25C	1650			1
Calcium	Dissolved	mg/L	269			0.2
Magnesium	Dissolved	mg/L	36.8			0.2
Sulphate (SO4)	Dissolved	mg/L	997			0.2
Hydroxide		mg/L	<5			5
Carbonate		mg/L	<6			6
Bicarbonate		mg/L	153			5
P-Alkalinity	as CaCO3	mg/L	<5			5
T-Alkalinity	as CaCO3	mg/L	125			5
Hardness	Dissolved as CaCO3	mg/L	824			



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Date Reported: May 03, 2004
Report Number: 543795

Page: 15 of 19

		NWL Number 303929-13		303929-14	303929-15	
		Sample Description Gk300 - Pond Effluent /		Travel Blank /	Duplicate (Blind) /	
		24-Apr-04		24-Apr-04	24-Apr-04	
		Matrix	Water - General	Water - General	Water - General	
Analyte		Units	Results	Results	Results	Detection Limit
Metals Total (Trace)						
Aluminum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Antimony	Total	mg/L	<0.02	<0.02	<0.02	0.02
Arsenic	Total	mg/L	0.05	<0.04	<0.04	0.04
Barium	Total	mg/L	0.0092	<0.0006	0.0654	0.0005
Beryllium	Total	mg/L	<0.0006	<0.0006	<0.0006	0.0005
Bismuth	Total	mg/L	<0.02	<0.02	<0.02	0.02
Cadmium	Total	mg/L	0.151	<0.0006	0.0012	0.0005
Calcium	Total	mg/L	163	0.19	84.0	0.01
Chromium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Cobalt	Total	mg/L	0.079	<0.001	<0.001	0.001
Copper	Total	mg/L	<0.001	<0.001	<0.001	0.001
Iron	Total	mg/L	5.54	0.042	0.258	0.002
Lead	Total	mg/L	<0.01	<0.01	<0.01	0.01
Lithium	Total	mg/L	0.029	<0.007	0.013	0.006
Magnesium	Total	mg/L	26.2	0.16	15.4	0.01
Manganese	Total	mg/L	140	0.113	1.02	0.0005
Molybdenum	Total	mg/L	<0.01	<0.01	<0.01	0.01
Nickel	Total	mg/L	0.268	<0.002	<0.002	0.002
Phosphorus	Total	mg/L	0.12	<0.06	<0.06	0.05
Potassium	Total	mg/L	<1	<1	<1	1
Selenium	Total	mg/L	<0.1	<0.1	<0.1	0.1
Silicon	Total	mg/L	3.3	<0.1	4.3	0.05
Silver	Total	mg/L	<0.002	<0.002	<0.002	0.002
Sodium	Total	mg/L	1.27	0.18	1.04	0.05
Strontium	Total	mg/L	0.382	<0.006	0.264	0.005
Sulphur	Total	mg/L	312	<1	115	1
Tin	Total	mg/L	<0.01	<0.01	<0.01	0.01
Titanium	Total	mg/L	0.016	<0.004	0.006	0.004
Uranium	Total	mg/L	<0.07	<0.07	<0.07	0.06
Vanadium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Zinc	Total	mg/L	61.1	0.039	0.179	0.001
Zirconium	Total	mg/L	<0.006	<0.006	<0.006	0.005



Analytical Report

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NWL Lot ID: 303929
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Page: 16 of 19

Approved by:

Marie England



Quality Control

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Page: 17 of 19

Metals Dissolved

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Sulphur	mq/L	<0.05	0.08	-2.22	2.39	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Apr 29, 2004					
Acquired By:						
Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Sulphur	mq/L	143	142	9.99	0.02	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Apr 29, 2004					
Acquired By:	To Thong					
Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Sulphur	mq/L	47.8	49.8	44.6	55.0	✓
Material Used:	Metals High					
Date Acquired:	Apr 29, 2004					
Acquired By:						
Sulphur	mq/L	0.95	1.02	0.81	1.23	✓
Material Used:	Metals Low					
Date Acquired:	Apr 29, 2004					
Acquired By:						

Physical and Aggregate Properties

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Solids	mq/L	1870	1930	10	15	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Apr 29, 2004					
Acquired By:	Bvul Sim					
Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Solids	mg/L	193	200	180	220	✓
Material Used:	Water High					
Date Acquired:	Apr 29, 2004					
Acquired By:	Bvul Sim					
Solids	mq/L	21	20	18	22	✓
Material Used:	Water Low					
Date Acquired:	Apr 29, 2004					
Acquired By:	Bvul Sim					



Quality Control

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Date Reported: May 03, 2004
Report Number: 543795

Page: 18 of 19

Routine Water

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		8.16	8.15	9.99	0.10	✓
Electrical Conductivity	dS/m at 25C	1.82	1.82	9.990	0.002	✓
Calcium	mq/L	181	180	10.0	0.6	✓
Magnesium	mq/L	29.4	29.3	10.0	0.2	✓
Hydroxide	mq/L	<5	<5	10		✓
Carbonate	mq/L	<6	<6	10		✓
Bicarbonate	mq/L	925	940	10		✓
P-Alkalinity	mq/L	<5	<5	10	5	✓
T-Alkalinity	mq/L	758	771	10	5	✓

Material Used: Edmonton Duplicate
Date Acquired: Apr 28, 2004
Acquired By: Amanda Mitchell

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mq/L	256	251	237	265	✓
Magnesium	mq/L	100	102	95	109	✓

Material Used: Metals High
Date Acquired: Apr 29, 2004
Acquired By:

Calcium	mq/L	4.8	4.8	4.3	5.3	✓
Magnesium	mq/L	1.8	1.9	1.6	2.1	✓

Material Used: Metals Low
Date Acquired: Apr 29, 2004
Acquired By:

pH		9.27	9.23	9.11	9.35	✓
Electrical Conductivity	dS/m at 25C	2.72	2.73	2.61	2.85	✓
P-Alkalinity	mg/L	533	525	478	572	✓
T-Alkalinity	mg/L	997	1005	972	1038	✓

Material Used: Water High
Date Acquired: Apr 28, 2004
Acquired By: Amanda Mitchell

pH		6.89	6.90	6.83	6.97	✓
Electrical Conductivity	dS/m at 25C	0.079	0.076	0.070	0.081	✓
P-Alkalinity	mq/L	63	61	43	78	✓
T-Alkalinity	mq/L	130	128	119	137	✓

Material Used: Water Low
Date Acquired: Apr 28, 2004
Acquired By: Amanda Mitchell



Methodology and Notes

Norwest Labs
#104, 19575-55 A Ave.
Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Bill to: Access Mining Consultants Ltd.
Report to: Access Mining Consultants Ltd.
204D Strickland Street
Whitehorse, YT, Canada
Y1A 2J8
Attn: Dan Cornett
Sampled By: K. Nordin
Company: LES

Project
ID:
Name:
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 303929
Control Number: W 51490
Date Received: Apr 26, 2004
Date Reported: May 03, 2004
Report Number: 543795

Page: 19 of 19

Method of Analysis:

MethodName	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Conductivity - Laboratory Method, 2510 B	28-Apr-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	* Electrometric Method, 4500-H+ B	28-Apr-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	* Titration Method, 2320 B	28-Apr-04	Norwest Labs Edmonton
Metals SemiTrace (Dissolved) in water	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	30-Apr-04	Norwest Labs Surrey
Metals SemiTrace (Total) in water	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	30-Apr-04	Norwest Labs Surrey
Metals Trace (Dissolved) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	29-Apr-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	29-Apr-04	Norwest Labs Edmonton

* Norwest method(s) is based on reference method

References:

APHA Standard Methods for the Examination of Water and Wastewater
US EPA US Environmental Protection Agency Test Methods

Comments:

Due to instrument difficulties at NWL-Surrey, reported ICP results were obtained by NWL-Edmonton low-level ICP and ICP-MS analysis. [KR Apr-30-04]
NWL-Edmonton ICP analysis does not include element Thorium; therefore reported results do not list "Th". [KR Apr-30-04]

Please direct any inquiries regarding this report to our Client Services group.
Results relate only to samples as submitted

The test report shall not be reproduced except in full, without the written approval of the laboratory

**Galkeno 300 Receiving Environment Monitoring –
February, March and April, 2004**

Attachment 2

**Integrated Resource Consultants Bioassay Results for February, March and
April Sampling at Culvert 4**

FEB-27-2004 10:35

IRC INTEGRATED RESOURCE

002/002

P.01/01

IRC

Integrated Resource Consultants Inc.

160-14480 River Road
Richmond, B.C.
V6V 1L4 Canada
Tel: (604) 278-7714
Fax: (604) 278-7741
email: irc@mindlink.bc.ca**Fax Cover Sheet**

DATE: 27 February 2004
TO: Frances Ellison
Norwest Labs
FROM: Marian Zazzi
IRC Integrated Resource Consultants Inc.
RE: BIOASSAY RESULT

Culvert 4.

Number of pages including cover sheet: 1

SAMPLE NAME:	1125666; Lot # 290703
SAMPLE DATE:	20 February 2004
DATE RECEIVED:	24 February 2004; 1440 hrs
ANALYSIS:	Rainbow trout 96 hour toxicity - LT50
96 HOUR RESULT:	The 96 hour (static) LT ₅₀ was 4 hours, with a 95% confidence interval between 1 and 18 hours 100% trout mortality in undiluted sample

Please call should you have any questions
Full report to follow in the mail.

This fax is confidential. Use of this facsimile by anyone other than the intended recipient is prohibited. If you have received this facsimile in error, please call 278-7714 and discard facsimile. Thank you.

TOTAL P.01



Suite 160, 14480 River Road
Richmond, BC, Canada V6V 1L4
Tel. 604-278-7714 • Fax 604-278-7741
www.ircintegratedresource.com
FILE: NORWEST/0403130.RTT

DATE: 6 April 2004

TO: Tracy Bueller
Norwest Labs
104-19575 55A Ave
Surrey, B.C. V3S 8P8

REPORT ON: RAINBOW TROUT BIOASSAY RESULTS

SAMPLE DESCRIPTION:

IRC Sample ID No.:	0403130
Sample Name:	297649-1; PO# 297649
Date collected:	24 March 2004
Date, time received:	29 March 2004; 1350 hrs.
Collection Method:	Grab
Amount, Container:	2 X 10 litre plastic containers
Physical description:	Clear pale yellow liquid
Date, time tested:	29 March 2004; 1750 hrs.

RAINBOW TROUT 96 HR RESULTS:

The 96 hour LT_{50} was 2 hours, with a 95% confidence interval between 0.2 and 12 hours.
100% trout mortality in undiluted sample

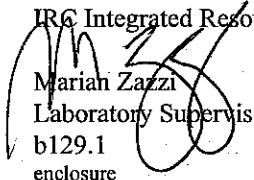
The LT_{50} is defined as the median lethal time or the time at which there is 50% fish mortality. Results are calculated using the method described by Stephan (Methods for calculating an LC_{50} in: Aquatic Toxicology and Hazard Evaluation, American Society for Testing and Materials, 1977).

The method used for this test was as per the IRC laboratory "Standard Operating Procedure for Rainbow Trout Holding and Testing" RTver5. This procedure follows the "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" EPS 1/RM/13, Second Edition – December 2000. Test volume was 15 litres with ten fish in each test vessel. Aeration was by forced air, through glass pipettes at a rate of approximately 6.5 ± 1 ml/L/min. The sample was not pH adjusted or filtered prior to testing.

The initial dissolved oxygen level was 10.8 mg/L at 16.0°C, the conductivity was 1450 μ S/cm and the initial pH was 6.3. After pre-aerating the sample for 120 minutes, the dissolved oxygen level was 10.0 mg/L. As the dissolved oxygen level was greater than 70% saturation and less than 100% saturation the test was initiated at this time. The test set up technician was AH.

Please call should you have any questions.

IRC Integrated Resource Consultants Inc.


Marian Zazzi
Laboratory Supervisor
b129.1
enclosure

RAW DATA:

TEST CONCENTRATION		HOURS						
		0	0.2	12	24	48	72	96
100%	Percent Survival	100%	100%	0%	0%			
	Dissolved Oxygen (mg/L)	10.0			9.7			
	Temperature (°C)	15.0			14.5			
	pH	6.46.6			6.4			
	Conductivity (µS/cm)	1450			1450			
	Symptoms	1	1,2	-	-			
	Loading Density (g/L)	0.44	0.44	-	-			
CONTROL	Percent Survival	100%	100%	100%	100%	100%	100%	100%
	Dissolved Oxygen (mg/L)	9.8			10.2	9.7	9.5	8.9
	Temperature (°C)	15.0			14.5	14.0	14.0	14.0
	pH	7.4			7.3	7.3	7.2	7.2
	Conductivity (µS/cm)	60						65
	Symptoms	1	1	1	1	1	1	1
	Loading Density (g/L)	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Technician		AH	AH	MZ	AH	AH	AH	AH

KEY TO SYMPTOMS:

- 1 = no apparent effect
- 2 = fish showing signs of stress
- 3 = loss of equilibrium

TEST FISH STOCK INFORMATION

Date received:	23 February 2004	
Source:	Sun Valley Trout Farm	
Species:	<i>Oncorhynchus mykiss</i> (Rainbow Trout)	
Fork Length:	Mean:	4.12cm $\pm$ 0.31cm
	Range:	3.80cm – 4.40cm
Wet weight:	Mean:	0.66 $\pm$ 0.11 g
	Range:	0.52 – 0.80g
Condition Factor (100xWt/length ³ cm):	0.94	

Acclimation History	
Acclimation temperature:	14.0 to 14.5 ° CELSIUS
Treatments:	None
Water:	Dechlorinated tap water
Feeding:	Moore Clark Fry Feed
Mortality:	< 2%

RAINBOW TROUT REFERENCE TOXICANT DATA

Stock Arrival Date (y/m/d)	Test Date (y/m/d)	Toxicant	Log LC ₅₀ (mg/L)
03.10.16	03.11.18	Phenol	1.06
03.11.10	03.11.26	“	1.08
03.11.17	03.12.03	“	1.04
03.11.17	03.12.16	“	0.97
03.11.26	03.12.17	“	1.08
03.11.26	04.01.07	“	1.01
03.12.23	04.01.12	“	0.99
04.01.13	04.01.29	“	1.01
04.01.19	04.02.05	“	1.01
04.01.19	04.02.19	“	0.99
04.02.03	04.02.25	“	1.01
04.02.03	04.03.15	“	1.03
04.02.23	04.03.18	“	1.04
04.02.23	04.04.02	“	0.99
LAB GEOMETRIC MEAN (LOG) $\pm$ 2 standard deviations:			1.03 mg/L $\pm$ 0.08
Warning Limits (Log Values):		0.95 mg/L to 1.11 mg/L	

CONTROL/DILUTION WATER QUALITY:

Hardness: 22 mg/L

Total Residual Chlorine: 0 mg/L



Integrated Resource Consultants Inc.

Richmond, B.C.
V6V 1L4 Canada
Tel: (604) 278-7714
Fax: (604) 278-7741
email:
info@ircintegratedresource.com

Fax Cover Sheet

DATE: 3 May 2004
TO: Frances Ellison
Norwest Labs
FROM: Marian Zazzi
IRC Integrated Resource Consultants Inc.
RE: BIOASSAY RESULT

Number of pages including cover sheet: 1

SAMPLE NAME:	Culvert #4 Below G300: Fugitive Flow Control Number: W51483
SAMPLE DATE:	24 April 2004
DATE RECEIVED:	26 April 2004; 1340 hrs
ANALYSIS:	Rainbow trout 96 hour toxicity - LT50
96 HOUR RESULT:	The 96 hour (static) LT ₅₀ was 8 hours, with a 95% confidence interval between 3 and 24 hours. 100% trout mortality in 100% concentration

cc. Dan Cornett, ACG
cc. Ken Nordin, Laberge Environmental

Please call should you have any questions
Full report to follow in the mail.

This fax is confidential. Use of this facsimile by anyone other than the intended recipient is prohibited. If you have received this facsimile in error, please call 278-7714 and discard facsimile. Thank you.

**Galkeno 300 Receiving Environment Monitoring –
February, March and April, 2004**

Attachment 3

**Laberge Environmental Services Field Sampling Reports for February, March
and April Monthly Sampling Events**

Memorandum

To: Dan Cornett, Access Consulting Group

February 26, 2004

From: Ken Nordin, Laberge Environmental Services

**Re: Galkeno 300 Fugitive Flow Investigation Winter Sampling Event of
February 18 to 20, 2004**

The following is a brief summary of the receiving water and fugitive flow sampling event at Elsa-Keno, which was carried out between February 18 and 20, 2004. All of the water samples were collected on February 19 and 20. The site at the mouth of Christal Creek was not sampled due to access difficulties.

Sample containers were obtained from Access Consulting. General parameters were collected in clean new one liter plastic bottles. Total metals samples were collected in 100 ml acid washed bottles. Samples to be filtered for dissolved metals were collected in 250 ml acid washed bottles, left unpreserved, and marked "to be filtered for dissolved metals". Insulated plastic gloves were used for sample collection. All containers were rinsed at least 3 times in the sample waters.

In Situ measurements of conductivity were made with an Orion instruments model 115 meter. Please note that this meter is consistent among readings but is not accurate (reads lower than conductivity calibration standard solution). It was used as a field screening tool and for discharge measurements. For real conductivity, see lab report.

Please call if you have any questions about this report.

Ken Nordin, ASCT CCEP

1 BACKGROUND

Laberge Environmental Services (LES) was engaged by Access Consulting Group (ACG) on February 10, 2004 to assist in the investigation of fugitive flow from the Galkeno 300 adit. This sampling event was part of a larger project to characterize the flow distribution, quality, and migration of metals laden water draining from the Galkeno 300 adit. Concurrently, plans were being implemented to treat the adit discharge at its source so as to prevent migration of metals to Christal Creek, or to the South McQuesten River.

ACG summarized the sampling events related to the G300 investigation in a January 22, 2004 memo to Bill Dunn, Yukon Government Project manger, Operation and Maintenance of Environmental Control Facilities keno Hill Mining Properties. During sampling events in December and January, ACG established a number of sites for weekly monitoring. LES was asked to help with a monthly sampling event which would include the weekly sample sites as well as receiving water sites further downstream in the system.

The sites selected for the sampling event were as follows:

Galkeno 300 Receiving Water Sample Sites	
Site #	Site Description
LES #32	Galkeno 300 adit flow
ACG-WQ-10	Galkeno 300 fugitive flow at Culvert #5
Culvert #4	Galkeno 300 fugitive flow at Culvert #4
Culvert #3	Galkeno 300 fugitive flow at Culvert #3
Culvert #2	Galkeno 300 fugitive flow at Culvert #2
ACG-WQ-5	Christal Creek u/s of Keno Hwy and the diversion ditch
Site A	Christal Creek u/s of the flow path of Culvert #4
Site C (ACG-WQ-11)	Flow from Culvert #5 just u/s with confluence with Christal Creek
Site D	Christal Creek d/s Culvert #5 flow but u/s Erickson Cr
LES 1B	South McQuesten d/s Christal
LES 7B	Christal Creek @ mouth
LES 7	Christal Creek u/s Hanson Lake Road Crossing
LES #1	South McQuesten River u/s Christal Creek
LES #2	South McQuesten River at Pump House

2 RESULTS

Ken Nordin (LES) prepared for the sampling event and traveled to Elsa on Wednesday, February 18, 2004. R. McIntyre and the caretaker, G. Ewing and sampler J. Germaine were on site as well. The logistics of sampling were discussed. On February 19, Ken met Larry Buyck of the Nacho Nyak Dun (NND) and began the sampling event. The day was spent sampling the South McQuesten River at the pump house, South McQuesten River upstream of Christal Creek, and Christal Creek at the Hanson Lake road. Some time was spent trying to access Christal creek at the mouth. First, an attempt was made to snowmobile down the South McQuesten River from LES #2. This route proved impassable due to deep snow (150 cm) and open water stretched of the river, about 1 km downstream of LES #2. Snowmobiles were stuck and it took some time to retreat from this attempt. The crew then tried to access the mouth of Christal Creek via a summer walking trail, but could not find the correct trail head. Christal Creek was sampled at the Hanson Lake Road.

On Friday, February 20, 2004, Larry Buyck and Ken Nordin were helped by Jeremy Germaine and Grant Ewing. All of the Christal Creek sites were accessed by snowmobile. Each culvert was checked carefully, and a robust flow was detected at Culvert #4, with all of the remaining culverts having no flow. A bioassay sample was collected at Culvert #4.

A second attempt to reach the mouth of Christal Creek was made. The walking trail was found, but proved to be impassable by snowmobiles; even the Summit driven by Mr. Ewing. (The trail was heavily overgrown and too narrow for the machines, which got stuck reputedly. Larry Bucyk lefty the site at 4 PM, and Ken Nordin then accompanied Grant Ewing to the G300 adit and collected a sample from the V notch weir. Ken returned to Laberge on February 20th, and prepared and shipped the samples to Norwest Labs on February 21st. The air waybill (Air North) number was 2870018753. The chain of custody control numbers were W 51511 and W51512.

Snow was deep. There was an average of 140 cm in the McQuesten Valley and about 130 cm in the Christal Creek valley near Keno City. Winter water sampling protocol was followed throughout. Discharge measurements were made using the salt dilution method and by volumetric where possible. One field duplicate sample was collected. One field blank was made using deionized water. The Chain of Custody forms and copy of field notes are attached.

In Situ results and photos follow.

In Situ Data February 19/20, 2004

	G300 LES #32	Culvert #4	ACG WQ 5	Site A	Site B	LES 7 KV - 7	Site C	Site D	LES #1 KV-1	LES #2 KV-2
*Specific Conductance (µS/cm)	1536	1521	771	862	846	714	1481	864	389	421
Water Temp. (°C)	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Air Temp. (°C)	-15	-14	-14	-14	-14	-20	-14	-14	-18	-19
Discharge	NM	+ - 8 L/SEC	NM	NM	NM	0.18 M3/sec	+ - 0.3 L/SEC	NM	2.29 M3/sec	2.24 M3/sec



South McQuesten at Pump house Pond



Same site looking D/S



South McQuesten upstream of Christal Creek





Sample site s McQuesten u/s Christal



South McQuesten 1 km d/s KV 1



Field crew. Grant Ewing, Larry Bucyk



Jeremy Germaine at Christal Creek upstream of Hanson Lake road



Jeremy and Larry at Christal Site A



Christal Site A



Christal at Site C





Site C



Christal at Site D



Christal at Site D



Site D flag



ACG WQ5 Christal U/S Hwy



Culvert #3 (dry)



Culvert #2 (dry)



Culvert #4



Culvert #4



Culvert #5, Glacier. No Q through Hwy.



G300 thawing pond footprint



G300 Gen bldg



G300 weir



Memorandum

To: Dan Cornett, Access Consulting Group
From: Ken Nordin, Laberge Environmental Services

April 7, 2004

**Re: Galkeno 300 Fugitive Flow Investigation Winter Sampling Event of March
22 to 24, 2004**

The following is a brief summary of the receiving water and fugitive flow sampling event at Elsa- Keno, which was carried out between March 22 and 24, 2004. This sampling event was meant to follow the February event by about one month. All of the water samples were collected on March 23 and 24. This time, the mouth of Christal Creek was sampled by accessing on foot.

Sample containers were obtained from Access Consulting. General parameters were collected in clean new one liter plastic bottles. Total metals samples were collected in 100 ml acid washed bottles. Samples to be filtered for dissolved metals were collected in 250 ml acid washed bottles, left unpreserved, and later filtered and preserved in the Elsa lab house. Insulated plastic gloves were used for sample collection. All containers were rinsed at least 3 times in the sample waters. Seven unpreserved 250 mL samples were collected as duplicates and left in the Elsa lab house for Sonja Hepner.

In Situ measurements of conductivity were made with an Orion instruments model 115 meter. Please note that this meter is consistent among readings but is not accurate (reads lower than conductivity calibration standard solution). It was used as a field screening tool and for discharge measurements. For real conductivity, see lab report. Field pH was measured in the field with an Accumet field pH meter, calibrated on the morning of use. This meter was checked against the pH pens used by the Elsa field staff, and readings were found to be within 1% (G300 pond effluent read 7.70 on mine and 8.0 on the pen the Jeremy used). Dissolved oxygen was measured at the South McQuesten with a YSI DO probe calibrated prior to use. Since the water at this site was highly oxygenated, no further measurements of DO were considered necessary. Due to gear limitations, we did not try to access the lower McQuesten valley.

Note that the discharge in the McQuesten has dropped considerably since February, indicating extreme low flow conditions. I suggest that an April sampling event be expanded to include some of the receiving water stations in the Flat Creek and Lightning Creek drainages.

Please call if you have any questions about this report.

Ken Nordin, AScT CCEP

1 BACKGROUND

Laberge Environmental Services (LES) was engaged by Access Consulting Group (ACG) on February 10, 2004 to assist in a monthly expanded investigation of fugitive flow from the Galkeno 300 adit. These sampling events are part of a larger project to characterize the flow distribution, quality, and migration of metals laden water draining from the Galkeno 300 adit. A sampling event was carried out on February 19 – 22nd. In early March a treatment system was commissioned to treat the adit discharge at its source so as to prevent migration of metals to Christal Creek, or to the South McQuesten River. This memo summarizes the field data collected during the second sampling event of March 22 to 24, 2004.

ACG summarized the sampling events related to the G300 investigation in a January 22, 2004 memo to Bill Dunn, Yukon Government Project manger, Operation and Maintenance of Environmental Control Facilities keno Hill Mining Properties. During sampling events in December and January, ACG established a number of sites for weekly monitoring. LES was asked to help with a monthly sampling event which would include the weekly sample sites as well as receiving water sites further downstream in the system. In the March event, it was planned to sample some of the receiving waters farther downstream, such as the Flat Creek drainage, but circumstances did not allow this additional sampling, except for the mouth of Christal Creek.

The sites sampled during the March 2004 sampling event were as follows:

Galkeno 300 Receiving Water Sample Sites	
Site #	Site Description
LES #32	Galkeno 300 adit flow
	Galkeno 300 treatment pond effluent
Culvert #4	Galkeno 300 fugitive flow at Culvert #4
ACG-WQ-5	Christal Creek u/s of Keno Hwy and the diversion ditch (also blind duplicate labeled "Duplicate")
Site A	Christal Creek u/s of the flow path of Culvert #4
Site C (ACG-WQ-11)	Fugitive Flow from just u/s with confluence with Christal Creek
Site D	Christal Creek d/s Culvert #5 flow but u/s Erickson Cr
KV7B (LES #7B)	Christal Creek @ mouth
KV 7 (LES #7)	Christal Creek u/s Hanson Lake Road Crossing
KV1 (LES #1)	South McQuesten River u/s Christal Creek
KV2 (LES #2)	South McQuesten River at Pump House

2 RESULTS

Ken Nordin (LES) and Paul Inglis (ACG) prepared for the sampling event and traveled to the Silver Trail Inn on March 22nd. On March 23rd, Ken and Paul met Dick Ewing, Grant Ewing and sampler Jeremy Germaine at the Elsa site ("transport"). The logistics of sampling were discussed. Grant accompanied us to the South McQuesten sites, breaking trail with his snowmobile. The first part of the day was spent sampling the South McQuesten River at the pump house, South McQuesten River upstream of Christal Creek, Christal Creek at the mouth, and Christal Creek at Hanson Lake road. At 4:30 PM, we returned to Elsa and loaded skidoo and gear on the highway. The gates were locked, so we were not able to pick up the bioassay containers or talk to staff. We then went over to the upper Christal Creek sites, sampled Site A, Site C, Site D, and ACGWQ5 before shutting down for the day.

On Wednesday March 24, 2004, we returned to "transport", picked up a radio, went to the lab house to get bioassay containers, and proceeded to look for flow across the highway at Culvert #4. We met Dick and Grant on the road, who advised that there was no snowmobile on site that day, so we decided not to try and access the lower McQuesten sites or lower Flat Creek due to limitations of our gear (one Tundra skidoo). We found the fugitive flow from Galkeno 300 was still crossing the highway only at culvert #4. We sampled at this location, and then proceeded to Galkeno 300 adit and sampled both the adit flow and the treated effluent. We then filtered and preserved samples at the lab house, and returned to Whitehorse.

Ken prepared and shipped the samples to Norwest Labs on March 25th. The air waybill (Air North) number was 28700129080. The chain of custody control numbers were W 51444 (bioassay) and W51488 (water).

Snow was still deep. The March snow survey bulletin reported that the Mayo district was experiencing up to 180% of normal snow pack. Snow depths varied between 90 and 150 cm around the sample sites.

Winter water sampling protocol was followed throughout. Discharge measurements were made using the salt dilution method. One blind field duplicate sample was collected (ACGWQ5). No field blanks were due to shortage of reliable deionized water. The Chain of Custody forms and copy of field notes are attached. In Situ results follow. Paul Inglis took photos with ACG camera.

In Situ Data March 23/24, 2004

	G300 LES #32	G300 Pond Effluent	Culvert #4	ACG WQ 5	Site A	LES 7 KV - 7	Site C	Site D	LES #1 KV-1	LES #2 KV-2
*Specific Conductance (μS/cm)	1537	1542	1521	786	842	726	1652	882	406	433
Water Temp. ($^{\circ}$C)	3.1	2.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Air Temp. ($^{\circ}$C)	+1	-5	-10	-8	-8	-5	-8	-8	-10	-19
pH	7.07	7.70	NM	7.94	7.48	8.28	7.21	7.60	7.62	7.62
Dissolved Oxygen	NM	NM	NM	NM	NM	NM	NM	NM	NM	11.3 MG/L
Discharge	NM	NM	+ - 8 L/SEC	NM	NM	0.15 M3/sec	+ - 0.3 L/SEC	NM	0.28 M3/sec	0.29 M3/sec

"Write in the Rain"
ALL-WEATHER WRITING PAPER

Name _____

Address _____

Phone _____

Project _____

PAGE	REFERENCE	DATE
	G 300 FUGITIVE FLOW INVESTIGATION	
	MARCH 2004	
	- March 22. Paul Inglis came out to Laberge, left his truck, travel to Silver Trail Inn. got there about 8:45 PM - March 23. went to Elsa, gates locked, so unload skidos out Hwy, go up to transport, met Dick, Grant + Jimmy ~ 8:30 AM. Grant broke trail for us with Summit.	

MARCH 23, 2004

09:24
South McQuesten @
Ph. pond. ~ Paul, Grant
(met @ transport 08:30)

- sample 1L, 2x 100 mL,
Field filter DSS met.
with 60 mL syringe

pH 7.62
COND 433 μ S/cm (old meter)
DO 11.3 mg/L
T°C 0.1°C
ice 80 cm 40 cm
depth 80 cm
snow ~ 70 cm on river. more
like 90 cm elsewhere. places
up to 140 cm in bush.

- skidos back to truck, load
up for trip down to
Christal (10:45)

March 23

- skidoo down to KVI, McQ
w/ Christal. Tough drilling.
open 2 holes, v. little flow
evident. sample w/ hole:
1L, 1250 mL for filter,
100 mL.
pH 7.62
COND 406 μ S/cm
T°C 0.1°C
ice 43
H₂O 25 (5 cm under ice)
- there is open water DLS,
about 900 m. Grant went
down with skidoo to see if
he could get to Christal = no
way. open water + thin ice.
So Paul + me skidoo as far
as we can, opt to ski
down river to mouth of
Christal. (now ~ 12:00)

march 23, 2004

Ski in to LES (KV) 7B,
mouth of Christal Creek.

12:00 - 2 PM.

chop one hole - dry,
chop 2ND hole adj. to
station flag tape;

sample 1L, 2x250 mL, 1100 mL

pH — frozen meter

COND 706 (old meter)

T°C 0.1°C

ice .55

H₂O 0.61

snow 90 cm

- swivel pix with access camera -
Paul in pix, flag tape. (my
camera is dead - batteries?)

- Do 2ND Saltdil^{ty}, worked
ok, then skiddo out

to KV-7 Christal

@ HL Rd. see current
meter note for salt dil
measurement.

Warm, +2, sunny.

KV7 (3:28 PM)

Christal Creek @ Hansen L. Rd

sample 1L, 2x250 mL, 1100 mL

pH 8.28

COND 726 μ S/cm

T°C 0.1°C

ice 25 cm

snow 80 cm

H₂O 10 cm

- Do Salt dil at same place
as in FEB. See current meter note

- Re-install Chart Pac,
with 9V aux. Only, because
12V aux connection is
broken. Logger is
set at 4 hr rate,
has correct date/time.
Took out the 12V battery.

- Skiddo back to truck, load
gear, try gate = locked, move
on to Christal sites (have
no biodiversity containers.)

March 23, 2004

- move to Christal Fugitive Flow sites, unload @ 6:00.

- Site A: 5:20 pm
1L, 2x250 mL, 100mL

pH 7.48
COND 842 $\mu\text{S}/\text{cm}$?
T $^{\circ}\text{C}$ 0.1
ice 60 cm
snow 90 cm
H $_2\text{O}$ 20 cm

- fast flowing chute, styrofoam cover, flagged "site (A)"

- Did not sample site (B) - oversight.

Fugitive Flow @ site (C)
5:45 PM

- Found ϕ same place as in FEB. ϕ is about the same $\approx .25 - .3 \text{ L}/\text{sec}$ (big glacier forming.)

- sampled 1L, 2x250mL, 100mL

pH 7.21
COND 1652 $\mu\text{S}/\text{cm}$
T $^{\circ}\text{C}$ 0.1 $^{\circ}\text{C}$
ice glacier
snow 90cm (in area)
H $_2\text{O}$ chopped out 5cm hole

- took pix & access camera - see glove, instruments in pic.

8	March 23, 2004	9
Christal Creek at Site D, just below Erickson Gulch. 6:10 PM 1L, 3 x 100 mL		ACG W05 Deep hole, sample & pole 1L 2 x 250 mL 1 100 mL
pH 7.60 COND 882 $\mu S/cm$ T$^{\circ}C$ 0.1 ice .8 (wafers) snow .9m H$_2$O .20m		pH 7.94 COND 786 $\mu S/cm$ T$^{\circ}C$ 0.1 ice .80, layers, wafers Sno .8-.9 typical H$_2$O .75m
• deep hole, thin layer of ice, kept open by snow and cover.		• load skidoo, quite 7:15 PM

March 24 2004

- go to houses, get 2x10L,
stop @ Transport, plu
radio, meet
- Sample Culvert #4,
approx sm Φ as last
time.

pH frozen meter
COND 1517
T°C 0.2

2X 10L bioassay
2x 1L, 2x 100mL

G300 POND EFFLUENT
- sampled at 3" Φ hole
in pipe, inside insulated
box:
1L, 1250mL, 2x 100mL

* pH 7.10 7.70
COND 1542
T°C 2.7

G300 ADIT FLOW @ WEIR

pH 7.07
COND 1537
T°C 3.1

2X 1L 1 100mL

* thin layer of ice on top,

* compare to Grevy's meter later
on = very much the same.
mine 7.8 his = 8.0

Sample prep log 3.24.04

KV1 ✓ S McQuoten v/s crystal ck.
 KV2 S McQ @ PH POND
 KV7 crystal ck @ HCL Rd
 site C ✓
 site A ✓
 KV7B crystal ck @ mouth
 site D ✓
 G300 Adit ✓
 GK300 Pond Effluent ✓
 ACQ WQ5 crystal v/s Hwy
 GK300 Culvert #4 ✓
~~KAT~~

(prep, filter + preserve samples
 at lab. used ALS HX2 vials,
 60 mL syringes, and Accoss
 .45 µm filters. No D.I.
 for filter blanks.)

* left these for Sonia to
 analyse, to check QC.

FF	PRIS	* Sonia's	DUPE	
✓	✓			1
✓	✓			2
✓	✓	✓		3
✓	✓	✓		4
✓	✓	✓		5
✓	✓			6
✓	✓	✓		7
✓	✓	✓		8
✓	✓			9
✓	✓	✓	✓	10
✓	✓	✓		11

- pack and shipped samples
 from office on Thursday
 March 25, 2004, ship
 via Air North.



**NORWEST
LABS**

**INFORMATION SHEET
WATERS**

CONTROL NUMBER

W 51488

RESULTS & INVOICE TO:		COPY OF RESULTS TO:		WORK ORDER NO.
COMPANY:	ACG	COMPANY:	LES	DATE STAMP
ADDRESS:	204D Strickland St. Whitehorse	ADDRESS:		
CITY/TOWN:	Y.T.	CITY/TOWN:		
PROVINCE:		PROVINCE:		
POSTAL CODE:	Y1A 2J8	POSTAL CODE:		
ATTENTION:	DAN CORNETT	ATTENTION:	KEN NORDIN	
PHONE:	867 668 6463	PHONE:		
FAX:		FAX:		
CELL:	dan@accessconsulting.ca	CELL:	Laberge@internorth.com	

PURCHASE ORDER NO.:	PROJECT REF.:	REF./QUOTE NO.:
	G300 FUGITIVE FLOW INVESTIGATION	

DATE SAMPLED	23/03/04	NUMBER OF SAMPLES	WATER	LIQ WASTE	OTHER (SPECIFY)
--------------	----------	-------------------	-------	-----------	-----------------

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION INSTRUCTIONS AND ANALYSIS CODES) • metals samples field filtered and preserved. • Bioassay under separate cover	RUSH (UPON FILLING IN THIS SECTION THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THE ANALYSIS) NORWEST AUTHORIZATION		CLIENT NO.
	NAME	DATE	LP
	RUSH DATE REQUIRED	DATE	
QA REPORT ☒	TIME	COMPLETION DATE	

SAMPLE CUSTODY	SAMPLED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
	K. NORDIN	K. NORDIN	K. NORDIN	
	COMPANY	COMPANY	COMPANY	COMPANY
	LES		LES	
	DATE	DATE	DATE	DATE
	23/24 03/04		25/03/04	

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	KV 1 South McQuesten u/s Christal		TOTAL & DISSOLVED METALS,	
2	KV 2 South McQuesten @ Ramp House Pond		ALK, SO ₄ , pH, COND,	
3	KV 7 Christal Creek @ Hanson L Road		TSS, HARDNESS	
4	KV 7B Christal Creek @ mouth			
5	Site (A) Christal Creek site A			
6	Site (C) Fugitive Flow @ C			
7	Site (D) Christal Creek site D			
8	ACG WQS Christal Creek u/s Hwy			
9	Culvert #4 G300 Fugitive Flow Culvert #4			
10	G300 Adit Galkena 300 Adit flow			
11	GK300 EFF. POND EFFLUENT GK300			
12	DUPLICATE			
13				
14				
15				

AGRI-FOOD ENVIRONMENTAL
EDMONTON PH. (403) 438-5522 FAX (403) 434-8586
CALGARY PH. (403) 291-2022 FAX (403) 291-2021
LANGLEY PH. (604) 530-4344 FAX (604) 534-9996
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019

ENERGY RESOURCE
EDMONTON PH. (403) 454-1504 FAX (403) 451-4022
CALGARY PH. (403) 291-3024 FAX (403) 250-2819
GRANDE PRAIRIE PH. (403) 532-8709 FAX (403) 539-0611
FORT ST. JOHN PH. (250) 785-2731 FAX (250) 785-7092
ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101

NOTE: Please complete this form in its entirety to ensure correct testing and reporting requirements.

ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS.



**NORWEST
LABS**

**INFORMATION SHEET
WATERS**

CONTROL NUMBER

W 51444

RESULTS & INVOICE TO:		COPY OF RESULTS TO:		WORK ORDER NO.	
COMPANY: ACG		COMPANY: LES		DATE STAMP	
ADDRESS: 204D Strickland St.		ADDRESS:			
CITY/TOWN: Whitehorse		CITY/TOWN:			
PROVINCE: Y.T.		PROVINCE:			
POSTAL CODE: Y1A 2J8		POSTAL CODE:			
ATTENTION: DAN CORNETT		ATTENTION: KENNORDIN			
PHONE: 867 668 6463		PHONE:			
FAX:		FAX:			
CELL: dan@adacessconsulting.ca		CELL: Laberge@internorth.com			

PURCHASE ORDER NO.:	PROJECT REF.: GALKENO 300 FUGITIVE FLOW INVESTIGATION	REF./QUOTE NO.:
----------------------------	---	------------------------

DATE SAMPLED 24/03/04	NUMBER OF SAMPLES	WATER 01	LIQ WASTE	OTHER (SPECIFY)
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SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION INSTRUCTIONS AND ANALYSIS CODES)	RUSH (UPON FILLING IN THIS SECTION THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THE ANALYSIS)		CLIENT NO.
	NORWEST AUTHORIZATION		LP
	NAME	DATE	COMPLETION DATE
	RUSH DATE REQUIRED	TIME	
QA REPORT ☒		HR.	MIN.

SAMPLE CUSTODY	SAMPLED BY K. NORDIN	RECEIVED BY	RELINQUISHED BY K. NORDIN	RECEIVED BY
	COMPANY LES	COMPANY	COMPANY LES	COMPANY
	DATE 24/03/04	DATE	DATE 24/03/04	DATE

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	#4		RAINBOW TROUT 96hr	
2	BELGOW G300.		TOXICITY LC50	
3	FUGITIVE FLOW INVESTIGATION			
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

AGRI-FOOD ENVIRONMENTAL	ENERGY RESOURCE	NOTE: Please complete this form in its entirety to ensure correct testing and reporting requirements. ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS.
EDMONTON PH. (403) 438-5522 FAX (403) 434-8586	EDMONTON PH. (403) 454-1504 FAX (403) 451-4022	
CALGARY PH. (403) 291-2022 FAX (403) 291-2021	CALGARY PH. (403) 291-3024 FAX (403) 250-2819	
LANGLEY PH. (604) 530-4344 FAX (604) 534-9996	GRANDE PRAIRIE PH. (403) 532-8709 FAX (403) 539-0611	
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527	FORT ST. JOHN PH. (250) 785-2731 FAX (250) 785-7092	
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019	ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101	

287|YXY|00129080

G300 Fugitive Flow samples March 2004

287 00129080

SHIPPER'S NAME AND ADDRESS Laberge Environmental Services Whitehorse YT CANADA		SHIPPER'S ACCOUNT NUMBER 36040497		NOT NEGOTIABLE AIR WAYBILL (AIR CONSIGNMENT NOTE)		AIR NORTH LTD. 150 Condor Rd. Whitehorse, YT Y1A 6E6 GST No. R100094499	
CONSIGNEE'S NAME AND ADDRESS NORWEST LABS-VANCOUVER 104-19575-55 Ave Surrey, BC CANADA		CONSIGNEE'S ACCOUNT NUMBER 89312196		It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage. SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.			
ISSUING CARRIER'S AGENT NAME AND CITY AIR NORTH LTD. Whitehorse				TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER AS PER TARIFF RULE UNLESS SHIPPER GIVES OTHER INSTRUCTIONS HEREON			
AGENTS IATA CODE 287		ACCOUNT NO.		ACCOUNTING INFORMATION INVOICE: Nor West Labs			
AIRPORT OF DEPARTURE (ADDR OF FIRST CARRIER) AND REQUESTED ROUTING Whitehorse							
ROUTING AND DESTINATION TO BY FIRST CARRIER YVR 4N TO BY TO BY				CURRENCY CDN	CHGS CODE	WT/VOL PPD COLL	OTHER PPD COLL
AIRPORT OF DESTINATION Vancouver		FOR CARRIER USE ONLY FLIGHT/DATE		AMOUNT OF INSURANCE		INSURANCE- If shipper requests insurance in accordance with conditions on reverse hereof, indicate amount to be insured in figures in box marked amount of insurance	
HANDLING INFORMATION these commodities licensed by US for ultimate destination				Diversion contrary to US law is provided			
NO. OF PIECES RCP	GROSS WEIGHT	RATE CLASS COMMODITY ITEM NO.	CHARGEABLE WEIGHT	RATE CHARGE	TOTAL	NATURE AND QUANTITY OF GOODS (INCL. DIMENSION OR VOLUME)	
2	100	P	100.00	1.00 NSC 7%	100.00 7.00	Water Samples NOT RESTRICTED	
2	100.0				107.00		
PREPAID A. 107.00		WEIGHT CHARGE COLLECT		P-UP ZONE	PICKUP CHARGES	ORIGIN ADVANCE CHARGES	
VALUATION CHARGE		DEL. ZONE		B.	DELIVERY CHARGES	K.	
D.		C. 12.07		L.		DEST. ADVANCE CHARGES	
I. 8.33		TAX		SHIPPER'S R.F.C.		OTHER CHARGES AND DESCRIPTION	
TOTAL OTHER CHARGES DUE AGENT		Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains restricted articles, such part is properly described by name and is in proper condition for carriage by air according to applicable national government regulations, and for international shipments, the current international Air Transport Association's Restricted Articles Regulations					
B.F.		SIGNATURE OF SHIPPER OR HIS AGENT					
TOTAL OTHER CHARGES DUE CARRIER							
C. 12.07							
G. COD →							
TOTAL PREPAID		TOTAL COLLECT		EXECUTED ON			
127.40				25-03-2004 01:27 Whitehorse			
CURRENCY CONVERSION RATES		TOTAL COLLECT IN DESTINATION CURRENCY		{Date} {Time} at {Place} SIGNATURE OF ISSUING CARRIER OR ITS AGENT			
FOR CARRIERS USE ONLY AT DESTINATION		CHARGES AT DESTINATION		TOTAL COLLECT CHARGES			

287 00129080

Memorandum

To: Dan Cornett, Access Consulting Group
From: Ken Nordin, Laberge Environmental Services

April 27, 2004

Re: Galkeno 300 Fugitive Flow Investigation Winter Sampling Event of April 22 to 24, 2004

The following is a brief summary of the receiving water and fugitive flow sampling event at Elsa– Keno, which was carried out between April 22 and 24, 2004. This sampling event followed the March event by one month. All of the water samples were collected on March 23 and 24. Two additional sample sites were visited this time – Lightning Creek at Keno City and the South McQuesten at the Haggart Creek bridge, to add more receiving water data to the set.

Sample containers were provided by LES except for the bioassay containers which were obtained from the lab house at Elsa. General parameters were collected in clean new one liter plastic bottles. Total metals samples were collected in 100 ml acid washed bottles. Samples to be filtered for dissolved metals were collected in 250 ml acid washed bottles, left unpreserved, and a note was made on the C.O.C. form for Norwest Labs to filter for dissolved metals. Insulated plastic gloves were used for sample collection. All containers were rinsed at least 3 times in the sample waters.

In Situ measurements of conductivity were made with an Orion instruments model 126 meter. Field pH was measured in the field with an Accumet field pH meter, calibrated on the morning of use. The pH meter froze up on the 24th, so pH readings from samples taken that day were later run at the LES office on April 25th.

Note that discharge reported in the last two data reports for the McQuesten River at KV1 and KV2 was in error. The in situ forms for both previous reports are attached to this report with the recalculated data.

Please call if you have any questions about this report.

Ken Nordin, ASCT CCEP

1 BACKGROUND

Laberge Environmental Services (LES) was engaged by Access Consulting Group (ACG) on February 10, 2004 to assist in a monthly expanded investigation of fugitive flow from the Galkeno 300 adit. These sampling events are part of a larger project to characterize the flow distribution, quality, and migration of metals laden water draining from the Galkeno 300 adit. A sampling event was carried out on February 19 – 22nd. In early March a treatment system was commissioned to treat the adit discharge at its source so as to prevent migration of metals to Christal Creek, or to the South McQuesten River. This memo summarizes the field data collected during the third sampling event of April 22 to 24, 2004.

ACG summarized the sampling events related to the G300 investigation in a January 22, 2004 memo to Bill Dunn, Yukon Government Project manager, Operation and Maintenance of Environmental Control Facilities keno Hill Mining Properties. During sampling events in December and January, ACG established a number of sites for weekly monitoring. LES was asked to help with a monthly sampling event which would include the weekly sample sites as well as receiving water sites further downstream in the system. In this sampling event, two stations were added – the McQuesten River at the Haggart Creek Bridge, and Lightning Creek at Keno City.

The sites sampled during the April 2004 sampling event were as follows:

Galkeno 300 Receiving Water Sample Sites	
Site #	Site Description
LES #32	Galkeno 300 adit flow
	Galkeno 300 treatment pond effluent
Culvert #4	Galkeno 300 fugitive flow at Culvert #4
ACG-WQ-5	Christal Creek u/s of Keno Hwy and the diversion ditch (also blind duplicate labeled "Duplicate")
Site A	Christal Creek u/s of the flow path of Culvert #4
Site C (ACG-WQ-11)	Fugitive Flow from just u/s with confluence with Christal Creek
Site D	Christal Creek d/s Culvert #5 flow but u/s Erickson Cr
KV7B (LES #7B)	Christal Creek @ mouth
KV 7 (LES #7)	Christal Creek u/s Hanson Lake Road Crossing
KV1 (LES #1)	South McQuesten River u/s Christal Creek
KV2 (LES #2)	South McQuesten River at Pump House
KV 41 (LES #41)	Lightning Creek at Keno City
	South McQuesten at Haggart Creek Bridge

2 RESULTS

Ken Nordin (LES) and Scott Kersey (ACG) prepared for the sampling event and traveled to the Keno City Cabins on April 22nd. On April 23rd, Ken and Scott went to Elsa and started sampling at KV2 - South McQuesten River at the pump house pond. No one from the site staff was available to assist, so the program was done by Scott and Ken with a Tundra Skidoo and trailboggan. South McQuesten River upstream of Christal Creek, Christal Creek at the mouth, and Christal Creek at Hanson Lake road were sampled next. Returning from Christal Creek, the truck got stuck, so the trailer had to be left on the Hanson lake road. (There was about 15 cm of wet snow during the night, and precipitation continued on and off all day.) After supper, Ken and Scott went to pick up bioassay containers at Elsa, and retrieved the trailer using a set of chains borrowed at Keno.

On Saturday April 24th the sites along the Elsa - Keno road were sampled. Lightning Creek at Keno City was sampled in an open lead a few hundred meters upstream of the regular site. Then samples were collected from the Christal Creek sites. The fugitive flow from Galkeno 300 was still crossing the highway only at culvert #4, where a bioassay sample was collected. Finally, the South McQuesten River was sampled at the Haggart Creek Bridge, accessed by truck. (Flat Creek and South McQuesten river samples in that vicinity were still not accessible with the equipment at hand.)

Ken prepared and shipped the samples to Norwest Labs on April 25th. The air waybill (Air North) number for the bioassay sample shipped direct to IRC labs was 28700138073. The air waybill (Air North) number for the water samples was 287 00138062. The chain of custody control numbers were W 51483 (bioassay) and W51490 (water).

Snow pack was ripening, and about 30 cm less in depth. Snow depths varied between 80 and 100 cm around the sample sites.

Winter water sampling protocol was followed throughout. Discharge measurements were made using the salt dilution method. One blind field duplicate sample was collected (ACGWQ5). One travel blank was made using deionized water from the LES office. In Situ results follow. (NOTE that calculation errors were made in discharge measurements in the last two reports. These have been corrected and the corrected data is attached to this report.) Field notes and selected photos are attached.

In Situ Data April 23/24, 2004

	G300 LES #32	G300 Pond Effluent	Culvert #4	ACG WQ 5	Site A	LES 7 KV - 7	Site C	Site D	LES #1 KV-1	LES #2 KV-2	S. McQ. @ H.C. Bridge
*Specific Conductance (μS/cm)	1521	1564	1340	791	863	719	1538	903	383	410	408
Water Temp. ($^{\circ}$C)	3.1	3.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2
pH	*6.69	*7.04	*6.8	7.51	*7.39	*7.61	*6.91	*7.46	7.71	7.74	7.71
Discharge	NM	+ - 8 L/sec	+ - 8 L/SEC	NM	NM	0.15 M3/sec	+ - 0.3 L/SEC	NM	0.84 M3/sec	0.60 M3/sec	1.25 M3/sec

* pH meter froze up, so these values were taken on April 25 in Whitehorse from small aliquots.

In Situ Data February 19/20, 2004

	G300 LES #32	Culvert #4	ACG WQ 5	Site A	Site B	LES 7 KV - 7	Site C	Site D	LES #1 KV-1	LES #2 KV-2
*Specific Conductance (μS/cm)	1536	1521	771	862	846	714	1481	864	389	421
Water Temp. ($^{\circ}$C)	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Air Temp. ($^{\circ}$C)	-15	-14	-14	-14	-14	-20	-14	-14	-18	-19
Discharge	NM	+ - 8 L/SEC	NM	NM	NM	0.18 M3/sec	+ - 0.3 L/SEC	NM	1.45 M3/sec	1.49 M3/sec

NOTE: Discharge was recalculated in April.

In Situ Data March 23/24, 2004

	G300 LES #32	G300 Pond Effluent	Culvert #4	ACG WQ 5	Site A	LES 7 KV - 7	Site C	Site D	LES #1 KV-1	LES #2 KV-2
*Specific Conductance (μS/cm)	1537	1542	1521	786	842	726	1652	882	406	433
Water Temp. ($^{\circ}$C)	3.1	2.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Air Temp. ($^{\circ}$C)	+1	-5	-10	-8	-8	-5	-8	-8	-10	-19
pH	7.07	7.70	NM	7.94	7.48	8.28	7.21	7.60	7.62	7.62
Dissolved Oxygen	NM	NM	NM	NM	NM	NM	NM	NM	NM	11.3 MG/L
Discharge	NM	NM	+ - 8 L/SEC	NM	NM	0.15 M3/sec	+ - 0.3 L/SEC	NM	0.44 M3/sec	0.43 M3/sec

Note: Discharge was recalculated in April.

G300 April 23, 2004

April 22: Drive to Keno, stay overnight at Keno City Cabins April 23 (with Scott Keesy + Travis R.)

- April 23: snowed 6" overnight. roads bad. start at KV2 (LES2) after dropping off stuff @ Lab for Senja, got stuck, ...

KV2 S. McQuesten River @ Pump House Pond

11:20

- pH 7.74 (April 25)
- COND 410 $\mu\text{S/cm}$
- T°C 0.1°C

sample ~ 100m D/S of flagged site, open lead. 1L, 250, 100mL

Salt dike, . Max: 5641 + 3175
see current meter note.

April 23/04

- had lunch + transport, pack up skidoo, drive to LES-1 turnoff, skidoo to LES-1

- South McQuesten ~~is~~ U/S crystal (LES-1, KV-1).

2:00 pm

pH 7.71 (April 25)
COND 383 $\mu\text{S/cm}$
T°C 0.1°C

- sample in open lead ~ 800m DIS of regular sample site 1L, 250mL, 100mL

- snow has gone down ~ 1'

- Salt dike @ sample site MS 4901 + 516.8 two trials.

check Q: 8.8, 8.9, 9 sec
6m. W ~ 2.5m
d ~ .3
Q ~ 5 cms

April 23/04

- Ski in to LES FB,
drop hole @ flagging 3:20
lots of ice, some wet overflow
along & facing banks.
Sample 1L, 250mL, 100mL
pH
COND 717 $\mu\text{S/cm}$
T $^{\circ}\text{C}$ 0.4 $^{\circ}\text{C}$!

- snow/sleet / cloudy

- Back to truck load skidoo,
go to KV-7 Christal @
Hanson Lake Road 5:20

Sample at existing hole
DIS bridge plywood cover
1L, 250mL, 100mL
pH 7.61 (April 25)
COND 719 $\mu\text{S/cm}$
T $^{\circ}\text{C}$ 0.1

- Did 2 trials of Salinity
see current meter notes
- got stuck on H.C. Paul, left
trailer, picked up later (930pm)

(This page is April 24)

Galileo 300 Adit

- Q measurement with
white bucket (V=15)
(check this)

T₁ 1.75
T₂ 1.94 } 1.92 Q $\approx$ 7.8
T₃ 2.06 } secs. L/sec

- Sample 1L, 250mL,
100mL

pH 6.69 (April 25)
COND 1521 $\mu\text{S/cm}$
T $^{\circ}\text{C}$ 3.1 $^{\circ}\text{C}$

- 2 pix & Scott holding
meter.

April 24, 2004:

- check out of Keno Cabins, return tire chains to Dick.
- collect sample at lightning creek in open water section approx. 7 km U/S Keno just D/S of settling pond outlet.

9:30 AM

pH NM (meter frozen up)
COND. 212 μ S/cm
T°C 0.4°

- check out stones: saw stoneflies, mayfly, caddisflies.
- Do salt dir, complete at 10:00.
- Took photos U/S, D/S

- Left note @ Keno Cabins for Insa to Bill Access, met Grant + Jake @ Christal - they are having trouble with floc in pond, are water sampling.

• CHRISTAL SITE (A)

11:00

pH 7.39 (April 25)
COND 863 μ S/cm
T°C 0.2°C

- Scott in photo, had to open hole - iced up.
- Sample 1L, 250 mL, 100 mL

- walk past site B, stop at Site (C). Note Q is now towards North side of gully, about same rate of flow as March.

11:15 AM

pH 6.91 (April 25)

COND. 1538 $\mu\text{S/cm}$

T°C 0.1 °C

- Sample 1L, 250 mL, 100 mL

- photo - scott sampling

- walk down to site D,

11:30 AM

pH 7.46 (April 25)

COND. 903 $\mu\text{S/cm}$

T°C 0.2 °C

Sample 1L, 250 mL, 100 mL,
photos incl. scott's foot in
hole

- Sample ACG WQ 5
note holes from EP
X section

pH 7.51 (April 25)

COND ~~795~~ 40 $\mu\text{S/cm}$

T°C 0.2 °C

- Sample 1L, 250 mL, 100 mL,
plus 100 mL Duplicate,
(blind, labelled "DUPLICATE")

- Sample Culvert #4

12:20 PM, note flow
up of the culvert on uphill
ditch has COND 1067 μS ,

pH 6.8 (April 25)

COND 1340 $\mu\text{S/cm}$

T°C 0.2 °C

- Sample 2 x 10 L Bioassay
1L, 250 mL, 100 mL

- G300 POND EFFLUENT

1:50 PM

pH 7.0 (measured April 25,
COND 1564 pH meter was
T° 3.4°C down at time)

- took photos of pond -
note flow + short
circuiting.

- sample 1L, 250 mL, 100 mL

- pick up trailer, then drop off
at S McQuesten Road,
Drive down to Haggart
CK Bridge, sample
3:20 PM

- people catching grayling

pH 7.71
COND 408 μ S/cm
T°C 0.2

- Saltdike, from bridge,
measured ~ 80 m d/s

- pick up trailer, drive to
Laberge, arrived 9:45 PM.

April 25:

- drive to office, prep +
ship samples. preserved
100 mL totals, left
250 mL samples for
analysis to JICA for
dissolved metals.
Shipped bioassay
direct to ~~Lab~~ IRC.



NORWEST LABS

INFORMATION SHEET WATERS

CONTROL NUMBER

W 51490

RESULTS & INVOICE TO:

COMPANY: *ACG*
ADDRESS: *204 D STRICKLAND ST.*
WHITEHORSE, Y.T.
CITY/TOWN:
PROVINCE: *Y/A 258*
POSTAL CODE:
ATTENTION: *DAN CORNETT*
PHONE: *867 668 6463*
FAX:
CELL: *dan@accessconsulting.ca*

COPY OF RESULTS TO:

COMPANY: *LES*
ADDRESS:
CITY/TOWN:
PROVINCE:
POSTAL CODE:
ATTENTION: *KEN NORDIN*
PHONE: *867 668 6838*
FAX:
CELL: *Laberge@internorth.com*

WORK ORDER NO.

DATE STAMP

PURCHASE ORDER NO.:

PROJECT REF.:

REF/QUOTE NO.:

DATE SAMPLED NUMBER OF SAMPLES WATER LIQ WASTE OTHER (SPECIFY)

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION
INSTRUCTIONS AND ANALYSIS CODES)

- 100 mL BOTTLES PRESERVED WITH HNO_3 (T.METAL)
- 250 mL BOTTLES NOT PRESERVED + FILTER FOR DISSOLVED METALS.

RUSH

(UPON FILLING IN THIS SECTION THE
CLIENT ACCEPTS THAT SURCHARGES
WILL BE ATTACHED TO THE ANALYSIS)

NORWEST AUTHORIZATION

NAME DATE
RUSH DATE
REQUIRED
TIME

CLIENT NO.

LP

COMPLETION DATE

QA REPORT ☒

SAMPLE CUSTODY
SAMPLED BY: *K. NORDIN* RECEIVED BY: *K. NORDIN*
COMPANY: *LES* COMPANY: *LES*
DATE: *23/24 APRIL 2004* DATE: *25 APRIL 2004*

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	KV 41 LIGHTNING CR. @ KENO	-	TOTAL AND DISSOLVED	
2	KV 1 S. McQUESTEN U/S CHRISTAL	-	METALS, ALK, SO_4 ,	
3	KV 2 S. McQUESTEN @ R.H. POND	-	pH, COND., TSS, HARDNESS	
4	KV 7B CHRISTAL CK @ MOUTH	-		
5	KV 7 CHRISTAL CK @ H.L. ROAD	-		
6	SITE (A) CHRISTAL CK @ SITE (A)	-		
7	SITE (C) FUGITIVE FLOW SITE (C)	-		
8	SITE (D) CHRISTAL CK @ SITE (D)	-		
9	ACGWQ5 CHRISTAL CK @ ACGWQ5	-		
10	S. McQUESTEN @ H.C. BRIDGE	-		
11	#4 FUGITIVE FLOW @ COVERT #4	-		
12	GK300 ADIT MINE WATER	-		
13	GK300 POND EFFLUENT	-		
14	TRAVEL BLANK	-	- TOTAL METALS ONLY	
15	DUPLICATE (BLIND)	-	- TOTAL METALS ONLY	

AGRI-FOOD ENVIRONMENTAL

EDMONTON PH. (403) 438-5522 FAX (403) 434-8586
CALGARY PH. (403) 291-2022 FAX (403) 291-2021
LANGLEY PH. (604) 530-4344 FAX (604) 534-9996
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019

ENERGY RESOURCE

EDMONTON PH. (403) 454-1504 FAX (403) 451-4022
CALGARY PH. (403) 291-3024 FAX (403) 250-2619
GRANDE PRAIRIE PH. (403) 532-8709 FAX (403) 539-0611
FORT ST. JOHN PH. (250) 785-2731 FAX (250) 785-7092
ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101

NOTE: Please complete this form in its entirety to ensure
correct testing and reporting requirements.

ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS.



**NORWEST
LABS**

**INFORMATION SHEET
WATERS**

CONTROL NUMBER

W 51483

RESULTS & INVOICE TO:

COMPANY: **ACG**
ADDRESS: **204 D STRICKLAND ST.**
WHITEHORSE Y.T.
CITY/TOWN:
PROVINCE: **Y1A 2J8**
POSTAL CODE:
ATTENTION: **- DAN CORNETT**
PHONE: **- 867 668 6463**
FAX:
CELL: **dan@accessconsulting.ca**

COPY OF RESULTS TO:

COMPANY: **LES**
ADDRESS:
CITY/TOWN:
PROVINCE:
POSTAL CODE:
ATTENTION: **- KEN NORDIN**
PHONE:
FAX:
CELL: **Laberge@internorth.com**

WORK ORDER NO.

DATE STAMP

PURCHASE ORDER NO.:

PROJECT REF.:

REF/QUOTE NO.:

GALKEND 300 FUGITIVE FLOW INVESTIGATION

DATE SAMPLED ☐ D ☐ M ☐ Y NUMBER OF SAMPLES WATER ☐ LIQ WASTE ☐ OTHER (SPECIFY) _____

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION INSTRUCTIONS AND ANALYSIS CODES)

**IRC: PLEASE HANDLE,
REPORT, & INVOICE SAME AS
PREVIOUS SAMPLES.**

RUSH

(UPON FILLING IN THIS SECTION THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THE ANALYSIS)

NORWEST AUTHORIZATION

NAME _____ DATE _____
RUSH DATE REQUIRED ☐ D ☐ M ☐ Y
TIME ☐ HR. ☐ MIN.

CLIENT NO.

LP

COMPLETION DATE ☐ D ☐ M ☐ Y

QA REPORT ☒

SAMPLE CUSTODY

SAMPLED BY: **K. NORDIN**
COMPANY: **LES**
DATE: **24 APRIL 2004**

RECEIVED BY

COMPANY

DATE

RELINQUISHED BY

COMPANY

DATE

RECEIVED BY

COMPANY

DATE

SITE I.D.	SAMPLE DESCRIPTION	OTHER	ANALYSIS PACKAGE CODES (USE CODES LISTED ON THE REVERSE OF THIS SHEET)	LAB CODING
1	#4			
2	CULVERT #4			
3	BELOW G300:			
4	FUGITIVE FLOW			
5	12:20 PM			
6	APRIL 24, 2004			
7				
8				
9				
10				
11				
12				
13				
14				
15				

AGRI-FOOD ENVIRONMENTAL

EDMONTON PH. (403) 438-5522 FAX (403) 434-8586
CALGARY PH. (403) 291-2022 FAX (403) 291-2021
LANGLEY PH. (604) 530-4344 FAX (604) 534-9096
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019

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FORT ST. JOHN PH. (250) 785-2731 FAX (250) 785-7092
ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101

NOTE: Please complete this form in its entirety to ensure correct testing and reporting requirements.

ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS

287|YXY|00138062

April G300 water samples

287 00138062

SHIPPER'S NAME AND ADDRESS Laberge Environmental Services Whitehorse YT CANADA		SHIPPER'S ACCOUNT NUMBER 53694992		NOT NEGOTIABLE AIR WAYBILL (AIR CONSIGNMENT NOTE)		AIR NORTH LTD. 150 Condor Rd. Whitehorse, YT Y1A 6E6 GST No. R100094499			
CONSIGNEES NAME AND ADDRESS NORWEST LABS-VANCOUVER 104-19575-55 Ave Surrey, BC CANADA		CONSIGNEES ACCOUNT NUMBER 89312196		It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage. SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.					
ISSUING CARRIERS AGENT NAME AND CITY AIR NORTH LTD. Whitehorse				TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER AS PER TARIFF RULE UNLESS SHIPPER GIVES OTHER INSTRUCTIONS HEREON					
AGENTS IATA CODE 287		ACCOUNT NO.		ACCOUNTING INFORMATION					
AIRPORT OF DEPARTURE (ADDR OF FIRST CARRIER) AND REQUESTED ROUTING Whitehorse				INVOICE: Norwest Labs					
ROUTING AND DESTINATION TO BY FIRST CARRIER TO BY TO BY YVR 4N				CURRENCY CDN	CHGS CODE	WT/VOL PPD COLL	OTHER PPD COLL	DECLARED VALUE FOR CARRIAGE NVD	DECLARED VALUE FOR CUSTOMS NCV
AIRPORT OF DESTINATION Vancouver		FOR CARRIER USE ONLY FLIGHT/DATE		AMOUNT OF INSURANCE		INSURANCE - If shipper requests insurance in accordance with conditions on reverse hereof, indicate amount to be insured in figures in box marked amount of insurance			TC
HANDLING INFORMATION these commodities licensed by US for ultimate destination Please Deliver Keep Cool									
NO. OF PIECES RCP	GROSS WEIGHT	RATE CLASS COMMODITY ITEM NO.	CHARGEABLE WEIGHT	RATE CHARGE	TOTAL		NATURE AND QUANTITY OF GOODS (INCL. DIMENSION OR VOLUME)		
2	57	P	57.00	1.00	57.00		Water Samples		
				NSC 7%	3.99		NOT RESTRICTED		
2	57.0				60.99				
A. 60.99		WEIGHT CHARGE		PICKUP CHARGES		ORIGIN ADVANCE CHARGES		DESCRIPTION OF ORIGIN ADVANCE	
B. 12.07		VALUATION CHARGE		DELIVERY CHARGES		DEST. ADVANCE CHARGES		DESCRIPTION OF DEST. ADVANCE	
C. 5.11		TAX		SHIPPER'S R.F.C.		OTHER CHARGES AND DESCRIPTION			
D. 12.07		TOTAL OTHER CHARGES DUE AGENT		Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains restricted articles, such part is properly described by name and is in proper condition for carriage by air according to applicable national government regulations, and for international shipments, the current international Air Transport Association's Restricted Articles Regulations					
E. 78.17		TOTAL OTHER CHARGES DUE CARRIER		SIGNATURE OF SHIPPER OR HIS AGENT					
F. 78.17		TOTAL PREPAID		EXECUTED ON					
G. 78.17		TOTAL COLLECT		25-04-2004 02:39 Whitehorse					
H. 78.17		TOTAL COLLECT IN DESTINATION CURRENCY		(Date) (Time) at (Place) SIGNATURE OF ISSUING CARRIER OR ITS AGENT					
I. 78.17		TOTAL COLLECT CHARGES		287 00138062					



**NORWEST
LABS**

**INFORMATION SHEET
WATERS**

CONTROL NUMBER

W 51483

RESULTS & INVOICE TO:

COMPANY: **ACG**
ADDRESS: **204 D STRICKLAND ST.**
CITY/TOWN: **WHITEHORSE Y.T.**
PROVINCE: **Y1A 2J8**
POSTAL CODE:
ATTENTION: **- DAN CORNETT**
PHONE: **- 867 668 6463**
FAX:
CELL: **dan@accessconsulting.ca**

COPY OF RESULTS TO:

COMPANY: **LES**
ADDRESS:
CITY/TOWN:
PROVINCE:
POSTAL CODE:
ATTENTION: **- KEN NORDIN**
PHONE:
FAX:
CELL: **Laberge@internorth.com**

WORK ORDER NO.

DATE STAMP

PURCHASE ORDER NO.:

PROJECT REF.:

REF/QUOTE NO.:

GALKENO 300 FUGITIVE FLOW INVESTIGATION

DATE SAMPLED

D M Y

NUMBER OF SAMPLES

WATER

LIQ WASTE

OTHER (SPECIFY)

SPECIAL INSTRUCTIONS (SEE OVER FOR IMPORTANT SAMPLE INFORMATION
INSTRUCTIONS AND ANALYSIS CODES)

**IRC: PLEASE HANDLE,
REPORT, & INVOICE SAME AS
PREVIOUS SAMPLES.**

RUSH

(UPON FILLING IN THIS SECTION THE
CLIENT ACCEPTS THAT SURCHARGES
WILL BE ATTACHED TO THE ANALYSIS)

NORWEST AUTHORIZATION

CLIENT NO.

LP

NAME
RUSH DATE
REQUIRED
DATE
D M Y
HR. MIN.

COMPLETION DATE

D M Y

QA REPORT ☒

SAMPLE
CUSTODY

SAMPLED
BY **K. NORDIN**
COMPANY
LES
DATE
24 APRIL 2004

RECEIVED
BY

COMPANY

DATE

RELINQUISHED
BY

COMPANY

DATE

RECEIVED
BY

COMPANY

DATE

SITE I.D.

SAMPLE DESCRIPTION

OTHER

ANALYSIS PACKAGE CODES

(USE CODES LISTED ON THE
REVERSE OF THIS SHEET)

LAB CODING

1	#4	CULVERT #4	-	RAINBOW TROUT 96hr	
2		BELOW G300:	-	TOXICITY LC50	
3		FUGITIVE FLOW	-		
4		12:20 PM	-		
5		APRIL 24, 2004	-		
6			-		
7			-		
8			-		
9			-		
10			-		
11			-		
12			-		
13			-		
14			-		
15			-		

AGRI-FOOD ENVIRONMENTAL

EDMONTON PH. (403) 438-5522 FAX (403) 434-8586
CALGARY PH. (403) 291-2022 FAX (403) 291-2021
LANGLEY PH. (604) 530-4344 FAX (604) 534-9996
LETHBRIDGE PH. (403) 329-9266 FAX (403) 327-8527
WINNIPEG PH. (204) 982-8630 FAX (204) 275-6019

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EDMONTON PH. (403) 454-1504 FAX (403) 451-4022
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ESTEVAN PH. (306) 634-7218 FAX (306) 634-4101

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ACCREDITED BY THE STANDARDS COUNCIL OF CANADA FOR SPECIFIC TESTS



Sample site LES #2 or KV2, South McQuesten at pump house pond April 23 2004.



Sample site LES #1 or KV1 South McQuesten Upstream of Christal Creek
(approximately 500 m downstream of regular station)



Sample site LES #7B or KV 7B Christal Creek at mouth, just upstream of South McQuesten River.



Sample site LES #7 or KV 7 Christal Creek at Hanson Lake Road (actually sampled just downstream of bridge).



Sample site LES #41 or KV 41 Lightning Creek at Keno City (actually sampled about 500 m upstream of regular station in open lead).



Christal Creek at site A.



Fugitive flow from Galkeno 300 at Site C.



Christal Creek at Site D. Note sampler assuming awkward position.



Christal Creek at ACGWQ 5.



Sample site Galkeno 300 inside Adit.



Sample station Galkeno 300 pond effluent.



Galkeno 300 treatment pond. Note short circuiting and floating loose floc.



South McQuesten River at Haggart Creek Bridge.

**Galkeno 300 Receiving Environment Monitoring –
February, March and April, 2004**

Attachment 4

**EBA Engineering Consultants Ltd. Letter to ACG: Treatment Pond
Construction Inspection, Galkeno 300 Adit – near Keno City, Yukon**

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

April 29, 2004

EBA File: 1200076

Access Consulting Group
204D Strickland Street
Whitehorse, YT. Y1A 2J8

Attention: Mr. Rob McIntyre, R.E.T.
President

Subject: Treatment Pond Construction Inspection
Galkeno 300 Adit – near Keno City, Yukon

As requested, this letter provides a summary of the inspection services provided by EBA Engineering Consultants Ltd. (EBA) during the construction of the water treatment pond for Galkeno 300 Adit discharge water.

The purpose of the inspections was to record observations made, ensure that the design of the treatment pond was adhered to, and that any changes in design were recorded.

Included with this summary are the Field Inspection Reports, “as-built” drawings, and selected photos, taken by both EBA and the contractor, showing the treatment pond in various stages of construction.

SITE INSPECTIONS

Mr. James Buyck completed two-site inspections, once during the excavation of the treatment pond, and another shortly after the placement of the geotextile and Enviro-liner.

Excavation

The inspection of the treatment pond excavation was completed on February 26 & 27, 2004. The treatment pond was excavated with two Cat 235 tracked excavators, one equipped with a ripper shank and the other with a frost bucket. The treatment pond area had already been hoarded and heated to remove some of the seasonal frost to assist in the excavation. The excavation was inspected during and after completion and found to be very clean, free of sharp rocks or objects that may damage the liner once installed. The overall dimensions were consistent with the proposed design and the pond was constructed square and symmetrical. During the excavation it was noticed the seasonal frost had penetrated to a depth of approximately 1.8 m, and the base of the excavation was found to be relatively unfrozen.

Liner Placement

The second inspection trip was completed on March 9, 2004, during the placement of the Enviro-liner. Both the inlet and discharge pipes were already installed, along with the placement of the geotextile and Enviro-liner when Mr. Buyck arrived on site. The overall construction of the treatment pond and installation of the inlet and discharge pipes were constructed to design with

1200076_Inspection_Final

the exception of the method of securing the liner around the edge of the treatment pond. The proposed key trench to be used to secure the geotextile and Enviro-liner around the edge of the treatment pond was abandoned as excavating the still frozen ground was not possible without first heating and hoarding, which turned out to be a slow and lengthy process when first used to thaw the ground for the treatment pond.

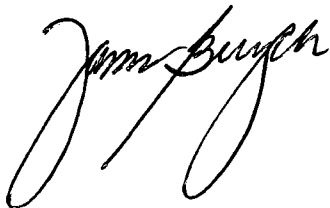
Instead, the liner and geotextile were pinned down with 2x4 studs nailed into the ground with 200 mm spikes. The overlap was then folded over itself and covered with a 300 mm high by 1000 mm wide "berm" constructed of material excavated from the treatment pond.

SUMMARY AND CONCLUSIONS

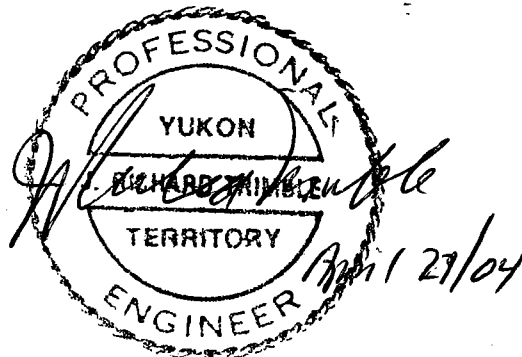
In summary, the construction of the Galkeno 300 Water Treatment Pond was completed in general accordance with EBA's original design intent. Photos taken by EBA during the two site inspections, along with photos taken by the contractor during various stages of construction are included on the CD attached to this letter.

We trust that you will find this report satisfactory for your purposes. If you have any questions, or require additional information, please contact the undersigned.

Yours truly,
EBA Engineering Consultants Ltd.

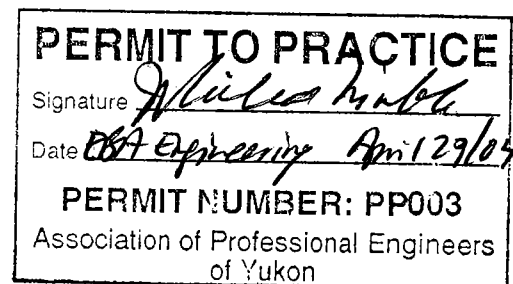


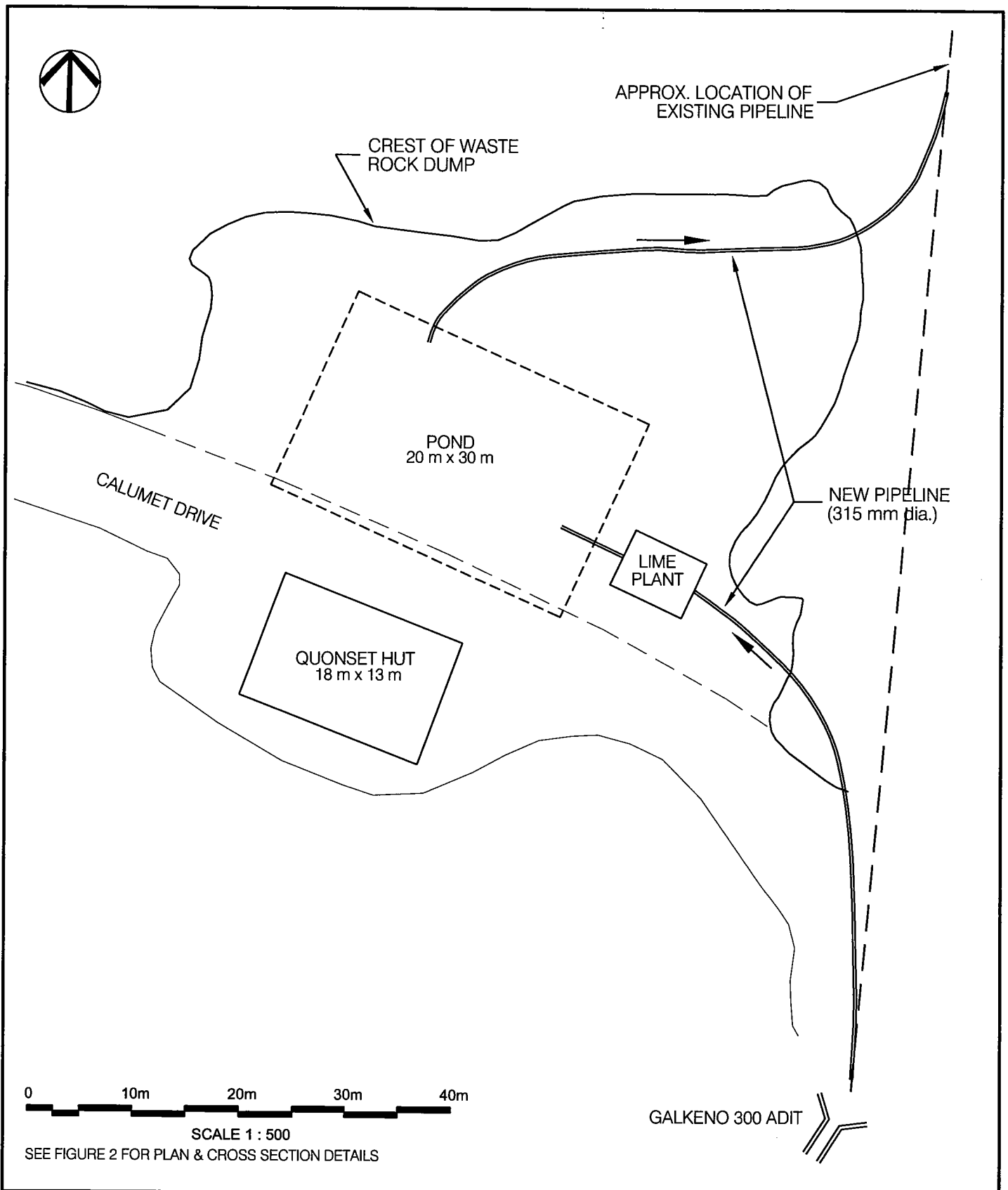
James S. Buyck
Engineering Technologist
(Direct Line: 867-668-2071 Ext. 26)
(Email: jbuyck@eba.ca)



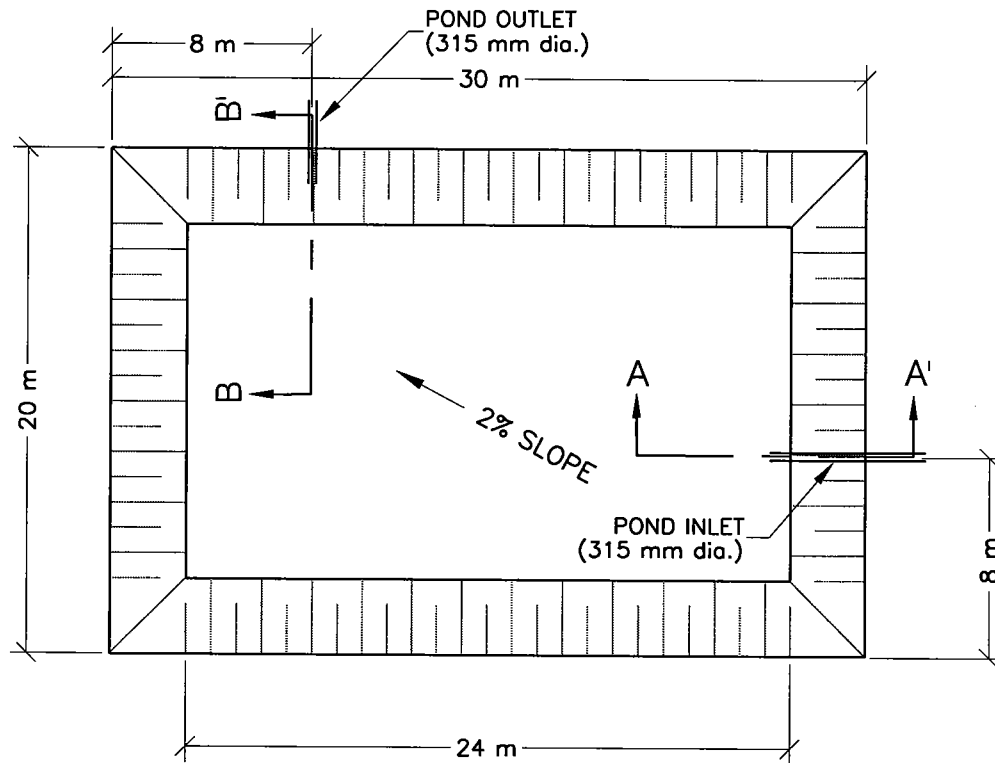
J. Richard Trimble, P.Eng.
Project Director, Yukon Region
(Direct Line: 867-668-2071 Ext. 22)
(Email: rtrimble@eba.ca)

Attachments: "As-builts" – Figures 1 and 2 (2 pages)
Daily Field Reports (3 pages)
CD (.pdf version of this letter, and 79 photos)



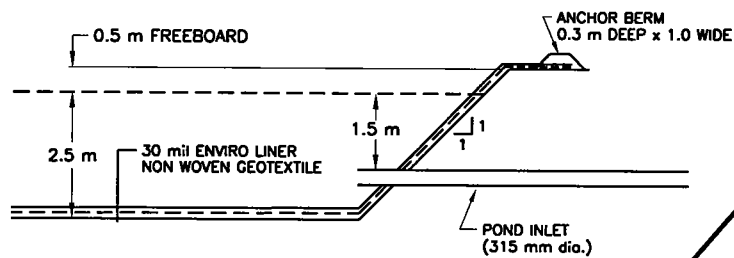


 EBA Engineering Consultants Ltd.			PROJECT NEW WATER TREATMENT POND GALKENO 300 ADIT - GALENA HILL, YUKON		
CLIENT ACCESS CONSULTING GROUP			TITLE TREATMENT POND LOCATION & LAYOUT ASBUILT		
DATE	APRIL, 2004	DWN.	JSB	CHKD.	JRT
FILE NO.	1200076	DRWG.	FIGURE 1		

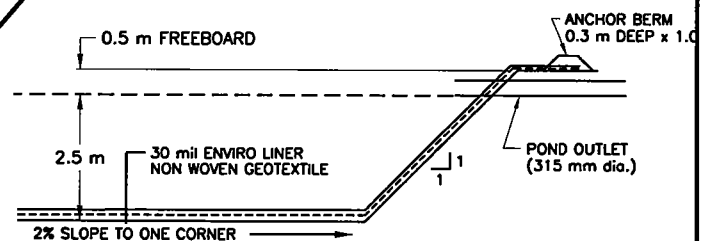


TYPICAL PLAN
SCALE 1 : 300

NOTES: POND VOLUME AT 1:1 SLOPE WITH 0.5 m FREEBOARD
= 1,778 m³
= 1 DAY STORAGE AT 13 L/s FLOW



SECTION A-A'
SCALE 1 : 150



SECTION B-B'
SCALE 1 : 150



EBA Engineering Consultants Ltd.

CLIENT

ACCESS CONSULTING GROUP

PROJECT

NEW WATER TREATMENT POND
GALKENO 300 ADIT - GALENA HILL, YUKON

TITLE

PLAN AND CROSS-SECTIONS ASBUILT

DATE APRIL 2004

DWN.

JSB

CHKD.

JRT

FILE NO.

1200076

DRWG.

FIGURE 2

EBA ENGINEERING CONSULTANTS LTD.

DAILY FIELD REPORT

DATE: FEB. 26/04'
WEATHER: SUNNY -5°C

OPERATIONAL:
DOWN TIME:

EBA PERSONNEL	DRILLING CONTRACTOR PERSONNEL	OTHERS
1 J. Guyon	1 Two DRIVERS	1
2	2 TWO EXCAVATOR OPERATORS	2
3	3 ONE DOZEN OPERATIONS	3
4	4 TWO LABOURERS	4
5	5	5
6	6	6
7	7	7

SIGNIFICANT EVENTS

[illegible]

SIGNED:

EBA PROJECT NUMBER:

~~120032.~~
120076

EBA ENGINEERING CONSULTANTS LTD.
DAILY FIELD REPORT

DATE: FEB. 27/04
WEATHER: SUNNY - some cloud

OPERATIONAL:
DOWN TIME:

EBA PERSONNEL	DRILLING Contractor PERSONNEL	OTHERS
1 J. BUNCH	1 D. BUNCH	1
2	2 5 WORKERS	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7

SIGNIFICANT EVENTS

SIGNIFICANT EVENTS	
TIME	
9:30	JSA ON SITE; CONTRACTOR CLOSE TO FINAL EXCAVATION
10:00	BEGIN CLEAN-UP OF SIDE SLOPES; CONTRACTOR WILL FINISH SIDE SLOPES THEN BEGIN ~~SETTING~~ UP SNOW REMOVAL OVER PIPE LOCATION THEN SET UP HEATING & HOARDING. LINER WILL NOT BE PLACED UNTIL PIPE IS IN PLACE.
12:00-12:30	LUNCH
2:00-1:15	ONE EXCAVATOR CLEANING UP SIDE SLOPES
1:15-4:30	BEGIN CLEARING SNOW FROM ADIT TOWARDS POND TO SET UP HEATING & HOARDING.
5:00	PHOTOGRAPHS TAKEN THROUGHOUT VARIOUS STAGES OF ON-SITE WORK.
5:30	JSA DEPART SITE

SIGNED:

EBA PROJECT NUMBER:

12400032.
120076

EBA ENGINEERING CONSULTANTS LTD.
DAILY FIELD REPORT

DATE: MARCH 9, 2004
WEATHER: CLOUDY -10°C

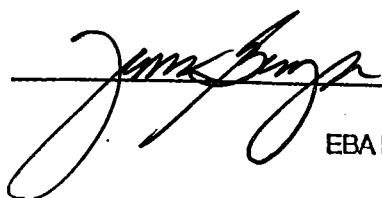
OPERATIONAL:
DOWN TIME:

EBA PERSONNEL	DRILLING PERSONNEL	OTHERS
1 J. GUYCH	1 ~~ENT~~	1 ROB MCINTYRE (ACCESS)
2	2 2 OPERATORS	2
3	3 4 LABOURED	3
4	4	4
5	5	5
6	6	6
7	7	7

SIGNIFICANT EVENTS

TIME	
2:40	JSG ON-SITE.
	CONTRACTOR HAD COMPLETED PLACEMENT OF LINER.
	"BOOTS" WHERE PIPE ENTER & EXIT POND WERE INSTALLED.
	- BACKFILL BEING PLACED ALONG OUTSIDE EDGE OF LINER TO SECURE. LINER HAD BEEN FORDED OVER 2x4 ALUMINUM PERIMETER & SPIKED INTO GROUND PREVIOUS TO BEING COVERED
3:30	ROB MCINTYRE ON SITE
	PIPE PIPE INTAKE & DISCHARGE ^{WERE} ~~ARE~~ BOTH INSTALLED PREVIOUSLY ALONG WITH LIME INJECTION BOX.
	PHOTOGRAPHS WERE TAKEN THROUGHOUT VARIOUS STAGES OF ON-SITE WORK. 11 digital photos taken.
5:30	JSG DEPART SITE.

SIGNED:



EBA PROJECT NUMBER:

1200032.