Pelly River Aquatic Effects Assessment - 2004
Draft

Selkirk First Nation

Date:

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Prepared by:

Laberge ENVIRONMENTAL SERVICES

ACCESS CONSULTING GROUP

WHITE MOUNTAIN
ENVIRONMENTAL CONSULTING

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1.0 INTRODUCTION

1.1 PURPOSE AND STUDY OBJECTIVE

The Faro Mine complex is located at the headwaters of the Rose/Anvil Creeks and Vangorda Creek. These creeks flow eventually into the Pelly River, an important resource for the Selkirk First Nation (SFN) as it flows through SFN traditional territory. As a downstream user of this water, the SFN has expressed concern for the water quality and possible effects to the aquatic ecosystem in the drainages affected by the Faro Mine complex. The SFN Final Agreement states that

> *"…a Yukon First Nation has the right to have water which is on or flowing through or adjacent to its Settlement Land remain substantially unaltered as to quantity, quality, and rate of flow, including seasonal rate of flow."*

In 2000, the SFN Lands and Resource Branch commenced aquatic environmental studies in their traditional territory. The first water quality investigation was undertaken in 2001 by Laberge Environmental Services (LES). Follow up water quality sampling occurred in 2002, 2003 and again in 2004. The results of the 2001, 2002, and 2003 water quality investigation are reported in Pelly River Water Quality Investigations 2001, Pelly River Water Quality 2002 Surveillance Survey, and Pelly River Water Quality Surveillance Survey 2003 (LES 2001, 2002, 2003). Specific fisheries investigations in the Pelly River drainages have also been undertaken by SFN. These included: the collection of baseline information on Pelly River broad whitefish and their migration within the Tatlmain/Mica Creek and Pelly River drainages in 2001 by Can-nic-a-nick Environmental, and fish habitat utilization assessments of tributaries to the Pelly River between Harvey Creek and the confluence with the Macmillan River in 2002 (Sparling 2003). Collection of Chinook salmon DNA was conducted by SFN in conjunction with DFO during 2003 and 2004 from the Earn River.

The principle area for investigation for the aquatic assessment was Anvil Creek. Secondary sample locations were located along the Pelly River both up and downstream of the confluence with Anvil Creek with a single control site on Blind Creek just upstream of its confluence with the Pelly River. A general location map and Pelly River Drainage overview map are provided as Figures 1 and 2 respectively.

Pelly River Aquatic Effects Assessment

Drawn By: HD	Figure 1
Checked By: DC	Date: Jan. 10, 2005

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Selkirk First Nation

Faro Mine Remediation Plan

Pelly River Basin
Faro Mine Remediation Plan
Pelly River Aquatic Effects Assessment

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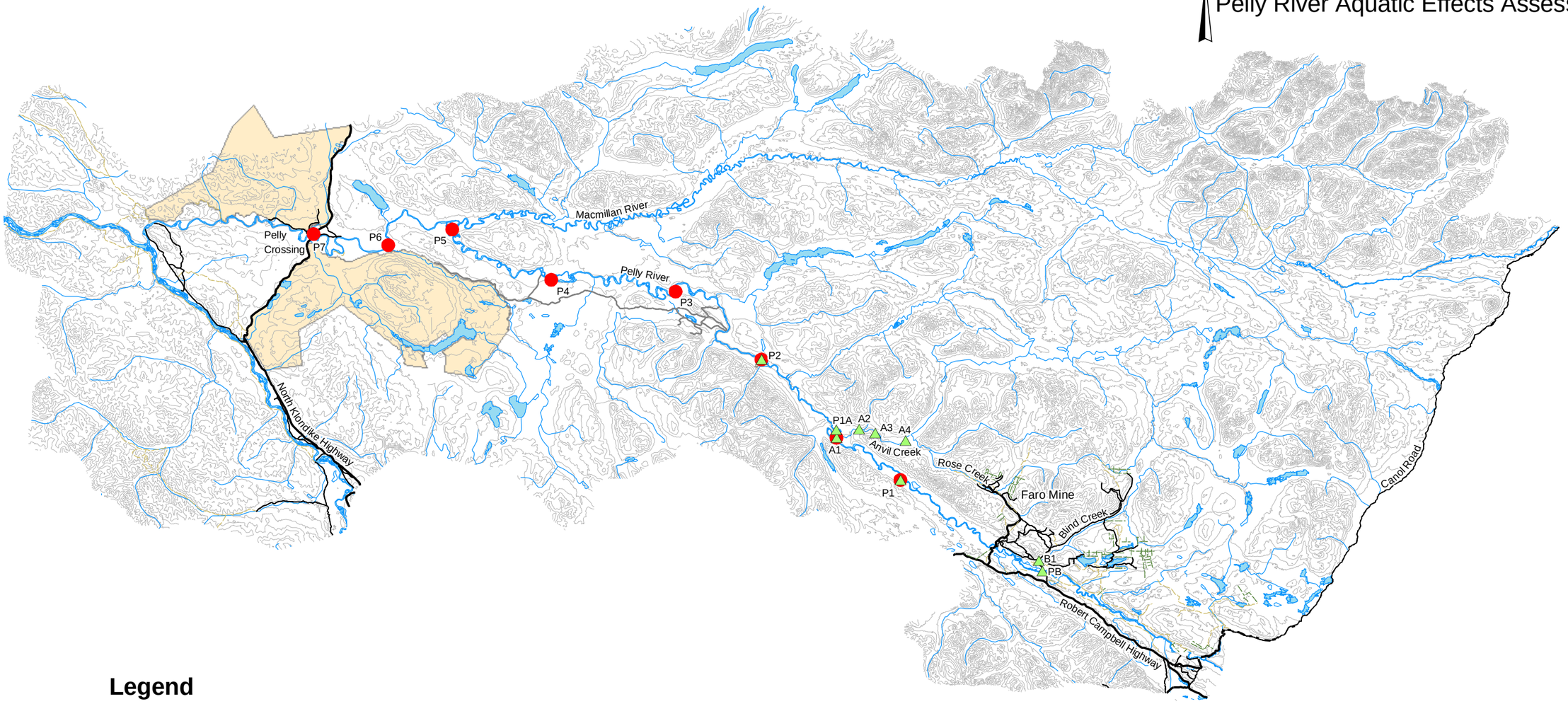

Legend

- Selkirk First Nation Monitoring Station
- Aquatic Effects Monitoring Station
- 100ft Topographical Contour
- Watercourses
- Cut line
- Limited-used road
- Road
- Trail
- Selkirk First Nation Settlement Lands
- Wetlands
- Waterbodies

1:1,000,000

0 10 20 40 60 80 km

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Date: June 3, 2004

Drawn by: PI | Checked by: DC

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The primary goal of the Pelly River aquatic effects investigation was to sample specific sites to determine water quality, sediment and soil quality and to track the presence, relative abundance and condition of benthos and fish within Pelly River and Anvil Creek. Slimy sculpin (*Cottus cognatus*), Arctic grayling (*Thymallus arcticus*) and benthic invertebrates were also collected to determine the level of metals in their tissue. The data would enable the assessment of possible effects from the Faro mine complex on Anvil Creek and provide information to Selkirk First Nation members on the environmental quality in downstream receiving waters.

The sampling also collected fish utilization data to document long term fisheries resource use and to establish an adequate level of reference data. The sampling methods were designed for the ability to repeat the sampling procedure in subsequent years. The sample sites were selected so as to dovetail with, but not duplicate, other monitoring efforts by the Faro Mine receiver or government agencies as part of Water Use Licence QZ03-059.

The following report details the results of field activities conducted on the Pelly River and its tributaries between the towns of Faro and Pelly Crossing, Yukon, between July 27th and August 4th, 2004. Figures 1 and 2 provide a general location map and overview of the Pelly River drainage, and monitoring station locations.

The specific objectives of the Pelly River aquatic effects assessment were:

- Gather water quality and aquatic resources data (metals levels in stream sediments; benthos and fisheries abundance and distribution and metals levels) in local streams (Anvil Creek, Blind Creek) within the Pelly River watershed, located down gradient of the Faro Mine site;
- Integrate the data collected with the existing SFN dataset as well as the Faro and Vangorda Mine water licensed monitoring data;
- Assess the Anvil Creek drainage for possible effects to aquatic resources resulting from historic operation of the Faro mine;
- Enable an assessment of the possible effects of the Faro mine complex on local aquatic resources to support the Faro Mine Complex Remediation Plan environmental assessment; and

- Partner with the Faro mine office and local First Nations in collecting the aquatic resources data; and
- Build local capacity within the SFN to undertake environmental monitoring programs.

2.0 METHODS

The principle field investigation was conducted between July 27 and August 4, 2004 when water levels were low and fish distribution at its seasonal peak.

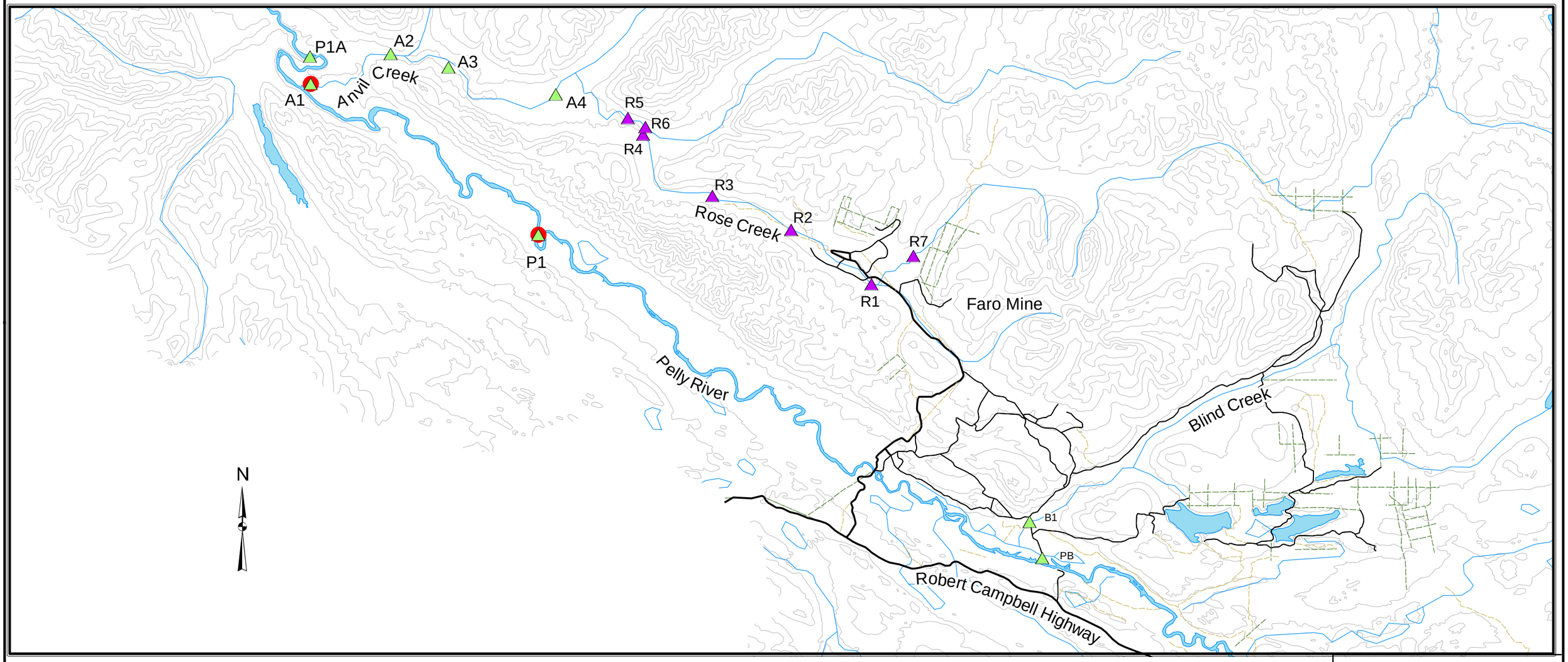
A helicopter reconnaissance survey was initially undertaken on July 27, 2004 to establish monitoring stations on Anvil Creek. Monitoring stations were selected on the basis of the following criteria:

- Site accessibility;
- Channel cross section with depositional zones; and
- Downstream distance from the Faro Mine Complex on Anvil Creek.

The locations for the nine sample sites that were established within the Pelly River watershed for data collection, shown in Figure 2, include six stations that were new and three sites that SFN has sampled in the past. Figure 3 shows the location of the new Anvil Creek monitoring stations along with existing water licence monitoring stations on Rose Creek. Table 1 provides a listing of the monitoring stations, their location and assessment parameters:

Selkirk First Nation

Pelly River Aquatic Effects Assessment
Faro Mine Remediation Plan



Legend

- Selkirk First Nation Monitoring Station
- Aquatic Effects Monitoring Station
- Faro Mine Licence Monitoring Station
- 100ft Topographical Contour
- Watercourses
- Cut line
- Limited-used road
- Road
- Trail
- Waterbodies

1:250,000

0 2.5 5 10 15 20 km

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Table 1 Monitoring Station Assessment Parameters

Station Code	Location Description	Assessment Parameters
	Glenlyon River	**WQ, B**
	Tummel River	**WQ,**
	Tay River	**WQ, B**
	Earn River	**WQ, B**
	Macmillan River	**WQ**
PB	Pelly River U/S Blind Creek	**WQ, SS, B**
B1	Blind Creek U/S Pelly River	**WQ, SS, B**
P1	Pelly River	**WQ, SS, B**
A4	Anvil Creek D/S of Rose Creek	**WQ, SS, FS, B, F**
A3	Anvil Creek	**WQ, SS, FS, B, F**
A2	Anvil Creek	**WQ, SS, FS, B, F**
A1	Anvil Creek at mouth	**WQ, SS, FS, B, F**
P1A	Pelly River D/S Anvil Creek	**WQ, SS, B**
P2	Pelly River	**B**
P3	Pelly River	**B**

List of abbreviations:
WQ - water quality, **SS** - stream sediment, **FS** - floodplain soils, **B** - benthos, **F**– fisheries.

At four locations on Anvil Creek a representative reach of creek, 100 m in length, was selected for assessment. The selected reaches had a representative variety of fish habitats and provided opportunities for fish sampling. All sites on Anvil Creek were accessed with a helicopter. UTM coordinates for the downstream end of each sample reach were recorded, along with stream characteristics (Appendix I).

Figure 3 Anvil Creek and Rose Creek Monitoring Station Locations

At each Anvil Creek station, the following information was collected

- Water quality analysis, and *in situ* measurements;
- Stream sediments replicates for metals analysis;
- Soils within test pits across the channel flood plain for metals analysis;
- Benthic invertebrates for community abundance, distribution and metals analysis;
- Fish sampling for abundance, utilization, distribution and specimen collections for metals levels in tissue was conducted; and
- Evaluation of fish habitats.

Appendix I provides a summary of the monitoring station descriptions.

Pelly River sample locations were located between Faro and Pelly Crossing to measure downstream effects from the mine sites located near Faro. Pelly River sites were not sampled for fish utilization. For these sites; an assessment of habitats and benthic and water quality information was collected.

2.1 WATER QUALITY MONITORING PROGRAM

Water quality sampling occurred once in late July at all station locations. Three representative water samples were collected and analyzed for dissolved and total metals and general parameters at Norwest Labs in Vancouver. Water samples were collected following standard protocols in clean new plastic bottles, kept cool, and shipped to Norwest Labs for analysis of a suite of parameters comparable to those used in 2001, 2002 and 2003 LES sampling programs (see Plate 1). Parameters were selected to enable both a “snapshot” of the water quality of the Pelly River and its major tributaries, as well as a low detection limit background data set. Table 2 provides a listing of the water quality parameters and their detection limit. In situ measurements shown in ppendix… were made of pH, conductivity, temperature, turbidity, total dissolved solids, and dissolved oxygen using either LES or SFN Land and Resources scientific equipment .

Table 2. Comprehensive Results - Water Quality 2004

Location Description	Anvil Creek A2	Anvil Creek A3	Anvil Creek A4	Pelly River Upstream Blind Creek PB	Blind Creek Upstream Pelly River B1	Earn River	Tay River	Pelly River	Pelly River - P1A	Anvil Creek - A1	Pelly River - P3	Pelly River - P4	Pelly River - P5	Needle Rock Creek	Pelly River @ PC	Macmillan River	Tummel River	Glenlyon River	Detection Limit	CCME Guidelines
Sampler	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN		
Station ID																				Water: Freshwater Aquatic Life
Lab	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest		
Lab Lot ID	324033-3	324033-2	324033-1	324033-4	324033-5	324989-1	324989-2	324989-3	324989-4	324989-5	324989-6	324989-7	324989-8	324989-9	324989-10	324989-11	324989-12	324989-13		
Date	29-Jul-04	29-Jul-04	29-Jul-04	30-Jul-04	30-Jul-04	2-Aug-04	2-Aug-04	2-Aug-04	1-Aug-04	31-Jul-04	3-Aug-04	3-Aug-04	3-Aug-04	4-Aug-04	4-Aug-04	4-Aug-04	4-Aug-04	1-Apr-04		
Parameter [1]																				
Dissolved Metals (Trace)																				
Silicon	3.8	3.92	3.91	2.58	4.52	2.92	3.63	2.6	2.67	4.06	2.75	2.84	2.82	4.08	2.94	2.96	3.86	3.36	0.05	
Sulpher	10.7	10.5	11.2	18.4	4.64	38.3	15.2	18.2	18	10.5	17.8	17.8	17.4	4.63	17	17.8	6.28	4.94	0.05	
Aluminum	<0.005	<0.005	<0.005	0.014	0.009	<0.005	<0.005	0.01	0.012	<0.005	0.011	0.01	0.011	<0.005	0.024	0.064	0.01	0.008	0.005	**0.005-0.1**
Antimony	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0003	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	
Arsenic	0.0006	0.0006	0.0004	0.0005	0.0008	0.0012	0.0008	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0015	0.0007	0.0004	0.0004	<0.0002	0.0002	**0.005**
Barium	0.067	0.066	0.07	0.077	0.063	0.057	0.065	0.079	0.078	0.066	0.076	0.075	0.076	0.108	0.079	0.067	0.074	0.046	0.001	
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	
Bismuth	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	
Boron	0.002	0.002	0.002	0.004	0.005	0.008	0.008	0.004	0.004	0.002	0.004	0.004	0.003	0.003	0.004	0.004	0.002	<0.002	0.002	
Cadmium	<0.00001	<0.00001	<0.00001	**0.00004**	<0.00001	**0.00002**	0.00001	**0.00004**	**0.00005**	0.00001	**0.00004**	**0.00004**	**0.00003**	0.00001	**0.00004**	0.00005	<0.00001	<0.00001	0.00001	**0.000017**
Chromium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	
Cobalt	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	
Copper	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.003	0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001	**0.002-0.004**
Lead	<0.0001	<0.0001	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	**0.001-0.007**
Lithium	0.003	0.003	0.003	0.004	0.002	0.007	0.005	0.004	0.004	0.003	0.004	0.004	0.004	0.002	0.004	0.004	0.002	0.001	0.001	
Molybdenum	0.001	0.001	0.001	0.001	<0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	<0.001	<0.001	<0.001	0.001	**0.073**
Nickel	<0.0005	<0.0005	<0.0005	0.0016	<0.0005	0.0007	<0.0005	0.0007	0.0007	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.0009	<0.0005	<0.0005	0.0005	**0.025-0.15**
Selenium	0.0005	0.0005	0.0005	**0.0012**	<0.0002	**0.0012**	0.0006	**0.0013**	**0.0012**	0.0006	**0.001**	**0.0012**	**0.001**	0.0002	**0.0012**	**0.0012**	0.0003	<0.0002	0.0002	**0.001**
Silver	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	**0.0001**
Strontium	0.137	0.136	0.14	0.186	0.101	0.274	0.164	0.186	0.181	0.137	0.185	0.18	0.183	0.223	0.184	0.163	0.174	0.104	0.001	
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	
Tin	<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	
Titanium	0.0006	0.0006	0.0006	0.0012	<0.0005	0.0024	0.0011	0.0017	0.0018	0.0011	0.0018	0.0018	0.0017	0.0005	0.0017	0.0023	0.0008	0.0007	0.0005	
Uranium	0.0016	0.0016	0.0016	0.0016	0.0006	0.0014	<0.0005	0.0011	0.0016	0.0016	0.0016	0.0015	0.0016	0.0011	0.0012	<0.0005	0.0019	0.0009	0.0005	
Vanadium	0.0001	0.0001	0.0001	0.0003	0.0002	<0.0001	<0.0001	0.0002	0.0002	<0.0001	0.0001	0.0002	0.0002	<0.0001	0.0003	0.0002	<0.0001	<0.0001	0.0001	
Zinc	0.002	0.002	0.007	0.003	<0.001	0.002	0.004	0.002	0.003	0.001	0.002	0.003	0.002	0.002	0.001	0.003	0.004	0.003	0.001	**0.03**
Total Metals (Trace)																				
Calcium	41.6	41.9	43.1	43	23.4	62.4	42.7	42	41.8	40.1	42.7	42.8	42.8	51.5	40.5	31	42	20.4	0.2	
Iron	<0.1	0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1	0.1	**0.3**	1.5	0.2	<0.1	1.8	**0.4**	0.1	<0.1	0.1	**0.3**
Magnesium	9.4	9.6	10.2	15.4	5.7	25.6	9.2	15.3	15	8.8	14.4	14.4	14.3	11.9	13.6	10.4	10.8	5.3	0.1	
Manganese	0.014	0.02	0.031	0.006	0.012	0.014	0.009	0.013	0.014	0.013	0.017	0.051	0.013	0.01	0.08	0.016	0.014	<0.005	0.005	
Potassium	1.3	1.2	1.2	0.7	0.8	1.3	1	0.7	0.8	1.3	0.9	1.1	0.9	2	1.3	0.9	1	0.6	0.4	
Silicon	3.53	3.86	3.75	2.49	4.14	2.83	3.28	2.55	2.59	3.74	2.8	3.82	2.73	3.81	4.5	3.41	3.8	3.2	0.05	
Sodium	2.7	2.7	2.6	1.6	2.8	3.5	3.3	1.6	1.7	2.6	1.9	1.9	1.9	3.6	2.2	1.9	2.3	1.9	0.4	
Sulphur	10.4	10.5	10.7	18.3	4.34	35.4	13.9	17.7	16.9	9.55	16.5	17.2	16.1	4.3	16.1	16.7	5.98	4.71	0.05	
Aluminum	0.035	0.051	0.007	0.034	0.034	<0.005	0.019	0.055	0.077	0.041	**0.167**	**0.858**	0.091	0.022	**1.22**	**0.45**	0.091	0.024	0.005	**0.005-0.1**
Antimony	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0003	<0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.0002	
Arsenic	0.0006	0.0006	0.0004	0.0006	0.0009	0.0011	0.0008	0.0006	0.0006	0.0007	0.0007	0.0015	0.0007	0.0014	0.0017	0.0006	0.0004	<0.0002	0.0002	**0.005**
Barium	0.071	0.073	0.075	0.083	0.066	0.056	0.066	0.08	0.083	0.066	0.085	0.146	0.08	0.107	0.146	0.078	0.077	0.046	0.001	
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	
Bismuth	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	
Boron	0.004	0.004	0.005	0.005	0.007	0.009	0.008	0.006	0.006	0.004	0.006	0.006	0.006	0.006	0.007	0.007	0.004	0.004	0.002	
Cadmium	0.00001	0.00001	**0.00002**	**0.00006**	0.00001	**0.00003**	**0.00003**	**0.00007**	**0.00006**	**0.00002**	**0.00007**	**0.00016**	**0.00005**	0.00001	**0.0002**	**0.00009**	0.00001	<0.00001	0.00001	**0.000017**
Chromium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.0021	<0.0005	<0.0005	0.0026	0.0008	<0.0005	<0.0005	0.0005	
Cobalt	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	0.0004	<0.0001	<0.0001	0.0002	0.0007	<0.0001	0.0031	0.0008	0.0005	<0.0001	<0.0001	0.0001	
Copper	<0.001	0.001	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	<0.001	0.001	0.003	<0.001	<0.001	0.003	0.001	<0.001	<0.001	0.001	**0.002-0.004**
Lead	0.0001	0.0004	0.0005	0.0001	<0.0001	0.0003	0.0003	0.0003	0.0003	0.0004	0.0005	0.0014	0.0004	<0.0001	0.0011	0.0003	0.0003	0.0003	0.0001	**0.001-0.007**
Lithium	0.004	0.004	0.004	0.005	0.003	0.007	0.005	0.004	0.004	0.003	0.004	0.004	0.004	0.002	0.005	0.005	0.002	0.002	0.001	
Molybdenum	0.001	0.001	0.001	0.001	<0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	<0.001	<0.001	0.001	**0.073**
Nickel	0.0007	0.001	0.0009	0.0019	0.0006	0.0015	<0.0005	0.0016	0.0014	<0.0005	0.0014	0.0037	0.0011	<0.0005	0.0042	0.0018	<0.0005	<0.0005	0.0005	**0.025-0.15**
Selenium	0.0006	0.0004	0.0005	**0.0012**	<0.0002	**0.0012**	0.0008	**0.0014**	**0.0014**	0.0007	**0.001**	**0.0013**	**0.001**	0.0002	**0.0013**	**0.0014**	0.0004	<0.0002	0.0002	**0.001**
Silver	**0.0002**	**0.0002**	**0.0002**	**0.0002**	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	**0.0001**
Strontium	0.139	0.142	0.145	0.193	0.1	0.28	0.164	0.194	0.194	0.14	0.19	0.184	0.194	0.233	0.198	0.168	0.185	0.11	0.001	
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	
Tin	<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	
Titanium	0.0016	0.0018	0.0009	0.0016	0.0011	0.0024	0.0014	0.0027	0.0028	0.0024	0.0061	0.0299	0.0035	0.0008	0.0352	0.0125	0.0035	0.0011	0.0005	
Uranium	0.0018	0.0018	0.0017	0.0018	0.0007	0.0014	0.0009	0.0017	0.0017	0.0016	0.0016	0.0016	0.0016	0.0012	0.0014	0.0005	0.0019	0.001	0.0005	
Vanadium	0.0003	0.0003	0.0002	0.0004	0.0003	0.0002	0.0003	0.0005	0.0006	0.0003	0.001	0.0042	0.0006	0.0002	0.006	0.002	0.0005	0.0002	0.0001	
Zinc	0.004	**0.039**	0.015	0.005	0.002	0.022	0.005	0.007	0.01	0.007	0.012	0.016	0.005	0.004	0.019	0.011	0.005	0.004	0.001	**0.03**
Zirconium	<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	

Table 2. Comprehensive Results - Water Quality 2004

Location Description	Anvil Creek A2	Anvil Creek A3	Anvil Creek A4	Pelly River Upstream Blind Creek PB	Blind Creek Upstream Pelly River B1	Earn River	Tay River	Pelly River	Pelly River - P1A	Anvil Creek - A1	Pelly River - P3	Pelly River - P4	Pelly River - P5	Needle Rock Creek	Pelly River @ PC	Macmillan River	Tummel River	Glenlyon River	Detection Limit	CCME Guidelines
Sampler	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN		
Station ID																				Water: Freshwater Aquatic Life
Lab	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest		
Lab Lot ID	324033-3	324033-2	324033-1	324033-4	324033-5	324989-1	324989-2	324989-3	324989-4	324989-5	324989-6	324989-7	324989-8	324989-9	324989-10	324989-11	324989-12	324989-13		
Date	29-Jul-04	29-Jul-04	29-Jul-04	30-Jul-04	30-Jul-04	2-Aug-04	2-Aug-04	2-Aug-04	1-Aug-04	31-Jul-04	3-Aug-04	3-Aug-04	3-Aug-04	4-Aug-04	4-Aug-04	4-Aug-04	4-Aug-04	1-Apr-04		
Parameter [1]																				
Physical and Aggregate Properties																				
Turbidity	1	0.8	0.4	0.9	1	1	1.1	1.8	3.1	1.6	4.8	13.6	3.2	1.6	40.1	17.6	5.9	0.4	0.1	
Temp. of observed pH and EC	20.2	20.3	21.6	20.2	20.6	19.8	19.7	19.7	19.7	19.8	20	19.8	19.7	19.7	19.6	19.7	19.8	20.1		
Solids (Total Suspended)	2	2	2	<5	13	1	2	5	7	2	10	81	7	1	<3	13	3		1	
Solids (Fixed Suspended)	1	2	1	<3	1	1	2	4	7	2	10	78	7	<1	<1	13	3		1	
Solids (Volatile Suspended)	1	0	1	<2	12	0	1	1	0	0	0	3	0	1	<2	0	0		2	
Colour (Apparent in NTU)	8	9	7	7	15	18	10	5	6	7	5	25	5	13	80	35	7	8	5	
Routine Water																				
pH	8.45	8.41	8.34	8.43	8.29	8.3	8.33	8.3	8.31	8.35	8.35	8.34	8.33	8.4	8.3	8.14	8.41	8.15		
Electrical Conductivity (µS/cm at 25C)	281	279	299	319	173	501	304	327	324	274	324	322	322	337	297	241	284	151	1	
Calcium (Dissolved)	42.7	41.5	43	43.6	24.6	66.7	45.9	43.7	43.5	41.2	43.3	43.5	43.5	52.2	39.7	30.9	41.4	20.2	0.2	
Magnesium (Dissolved)	9.7	9.4	10.1	15.6	6	26.5	10.1	15.5	15.3	9.3	14.8	14.7	14.7	12.2	13.2	10.4	10.7	5.4	0.1	
Sodium (Dissolved)	2.8	2.7	2.7	1.6	2.9	3.8	3.6	1.8	1.8	2.8	2	2	2	3.6	2.2	1.9	2.4	1.9	0.4	
Potassium (Dissolved)	1.3	1.3	1.2	0.8	0.8	1.4	1.2	0.8	0.8	1.3	0.8	0.8	0.8	1.7	0.9	0.7	0.9	0.6	0.4	
Iron (Dissolved)	0.03	0.06	0.07	0.02	0.06	0.03	0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	0.01	0.01	0.02	0.02	<0.01	0.01	
Manganese (Dissolved)	0.008	0.014	0.022	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.009	<0.005	<0.005	<0.005	0.005	
Chloride (Dissolved)	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	1	0.6	0.5	0.5	0.5	0.5	1.4	0.5	0.6	<0.5	0.9	0.5	0.5	
Nitrate - N	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	
Nitrite - N	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	
Nitrate and Nitrite - N	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		0.2	
Sulphate-S (Dissoved)	10.7	10.5	11.2	18.4	4.64	38.3	15.2	18.2	18	10.5	17.8	17.8	17.4	4.63	17	17.8	6.28	4.94	0.05	
Hardness (Dissolved as CaCO3)	146	142	149	173	86.2	276	156	173	172	141	169	169	169	181	154	120	147	72.9		
Inorganic Nonmetallic Parameters																				
Dissolved Orthophosphate-P	<0.05	0.06	0.07	<0.05	0.07	0.07	0.08	0.06	0.06	0.07	0.05	0.06	0.06	0.07	0.06	0.06	0.07	0.06	0.05	

Notes:

[1] All units are in mg/L unless otherwise indicated.

Values in red indicate results in exceedence of CCME guideline for protection of aquatic life

2.2 STREAM SEDIMENT SAMPLING

Three replicate stream sediment samples were collected at each of the sample sites and analyzed for total metals, total organic carbon, loss of ignition, and particle size at Norwest Labs in Vancouver, B.C. (see Plate 2). Additional soil samples were collected at the Anvil Creek stations to document possible historic mine effects (see Section 2.3). The Blind Creek station served as a control station for the project.

2.3 FLOODPLAIN SOIL SAMPLING

Soil sampling was undertaken at the Anvil Creek stations to document soil metal and pH levels and to look for the remains of the 1975 tailings spill (see Appendix 7, Plates 3 and 4). The sample site selection technique was judgmental. Hand dug test pits were sampled across the channel flood plain along a transect at each location on Anvil Creek (see Appendix 7, Plate 6.). Care was taken to collect one or two samples at the edge of the stream channel where no fugitive tailings were expected – these served as local control samples within the flood plain transect. Within each transect, deposition areas of the floodplain were deliberately targeted to see if there was any distinct "signature" of fugitive tailings in the soil profile. A 0.5 to 0.75m test pit was dug using a stainless steel shovel. A single composite sample was collected for the individual soil horizons within the test pit. The composite sample was collected using standardized protocol, placed in clean plastic bags, kept cold and shipped to Norwest Labs in Vancouver for metals analysis. Soil profiles were logged at each test pit.

Several of these test pit samples revealed slightly depressed pH and elevated metals levels, perhaps indicating that fugitive tailings can still be detected in the stream channel flood plain soils.

2.4 BENTHOS

Between July 29 and August 4th, 2004, benthic invertebrates were collected from several sites as a component of the study (see Appendix 7, Plate 7). At each site, triplicate samples were collected with a Surber sample equipped with a 300 micron mesh net, and placed together into a one-litre Nalgene bottle. One set of triplicates was preserved with formalin and later sorted, identified and enumerated to determine the invertebrate

assemblage at that site. The other sets were frozen until it could be sorted, identified and sent refrozen to Norwest Labs in Surrey for tissue analysis of metal content.

2.5 FISHERIES

The principle fish collection technique used was electro-fishing. Secondary techniques included minnow trapping, angling, and seining (see Appendix 7, Plates 8 and 9). Crew members wore polarized glasses at all times to enhance fish viewing abilities. All visual observations of fish were recorded.

Electro-fishing was conducted with a Smith-Route POW type 12A battery powered, backpack electro-fisher. The electro-fisher operator was accompanied by two crew members with dip nets. All of the sites investigated had flows that precluded the use of stop nets and a single pass technique was used. Each site was sampled by moving in an upstream direction and sweeping from side to side through each reach; all shoreline areas were fished and attempts at covering all mid-stream habitats were made.

Minnow trapping, targeting juvenile Chinook salmon was conducted with “Gee type” minnow traps (¼” mesh), using a technique known to be effective for the capture of Yukon River juvenile chinook salmon (jcs). Traps were baited with salmon roe (Yukon River origin) suspended in the trap in a perforated plastic bag, and were set in a variety of habitat types. Traps were set for an overnight period with soak times varying from 16 to 24 hours.

Beach seining was conducted at each sampling location as a tool to denote fish presence/absence and to collect metal analysis specimens. Catch per unit effort from seining was not calculated as the effectiveness of seine pulls varied due to such factors as shoreline configuration water depth and velocity. Area seined and seine catches were recorded in a field notebook.

Angling was conducted with light spin casting gear and a variety of small lures. Effort was recorded as minutes fished.

All fish captured were handled delicately to allow for live release after sampling. Anaesthetics were not used. All fish captured or observed were identified as to species and general life stage (fry, juvenile, sub-adult, adult), a sub-sample was measured for fork length (±1 mm) and then released unharmed as near as possible to the location from which they were sampled. All fish captured or observed were recorded into a field book and the information was later entered into computer format.

Fish samples for metal content analysis were collected during the course of general sampling. A maximum of 5 Arctic grayling and 5 slimy sculpins samples were collected from each site for analysis of metals in tissue.

Arctic grayling with a fork length >200 mm were selected for tissue sampling and sculpins 80 mm or longer were selected when possible. At sites where less than 5 sculpins over 80 mm in length were caught, composite samples of 2 or more individual sculpins were utilized.

Specimens collected for metal samples were placed into zip loc bags immediately after capture. The collected specimens were sampled later, in a controlled environment. For sacrificed Arctic grayling, fork length and round weight were recorded. From each grayling a sample of approximately 50 grams was taken from the caudal area and placed in separate labeled bags. Specimens were stored frozen until shipped to the lab.

For slimy sculpins sacrificed, the total length for each specimen was recorded, including the individuals from composite samples. Each sculpin sample was bagged separately; each composite sample was bagged separately as a single sample. The samples were then placed in separate bags for each site.

The tissue samples were submitted to Norwest Labs for metals analysis. Metal analysis included microwave acid digest for ICP metals, mercury in tissue and metals semi trace in tissue. The metal results were expressed as ug/gram (wet). Moisture content was also measured so the results can be converted to dry weight measurements.

A miscommunication between WMEC and Norwest Labs resulted in the individual slimy sculpin samples from each site being combined into a single sample. The result being

that instead of 16 slimy sculpin samples a total of only 6 samples for metals content in slimy sculpin at each station were compiled.

The general description of fish habitats recorded for each site included; the site location, flow parameters including velocities (floating object method), depth, wetted and channel widths, substrates, channel configuration, bank stability, water temperature, riparian vegetation and an assessment of available fish cover. Photographs representative of each site were taken. obtain these photos from Paul and include them in site description appendix

3.0 DATA RESULTS

All information was recorded on field forms and field books during the field assessments, and then transferred to a computer format at the completion of the field session.

3.1 WATER QUALITY MONITORING PROGRAM

The project team conducted the sampling event in late July 2004 with the assistance of SFN Land and Resources staff. The comprehensive results for all parameters including dissolved and total metal analysis are displayed in Table 2. Concentrations that exceed the CCME guidelines for the protection of freshwater aquatic life are displayed as red value entries. Appendix 2 contains the Norwest Labs analytical water quality reports.

All samples tested returned results that met the CCME guidelines for total arsenic, molybdenum and nickel. Total iron concentration levels met the guidelines for all sampling locations except for the Macmillan River and Pelly River – P3. Anvil Creek – A3 was the only sampling location that exceeded the guidelines for total zinc. Most sampling locations excluding Tummel River, Glenlyon River, Needle Rock Creek, Blind Creek – B1 and Anvil Creek sites A2 and A3, returned total cadmium concentrations exceeding CCME guidelines. It is also worth noting that the Pelly River at Pelly Crossing sample returned the highest total cadmium concentrations recorded. All Pelly River, Macmillan River and Earn River sampling locations returned total selenium concentrations exceeding the guidelines. Total aluminum concentration levels at Pelly River – P3 and P4, Pelly River at Pelly Crossing and Macmillan River sampling locations exceeded the CCME guidelines.

Note that the foregoing discussion related to total metals analysis. This method often returns values above CCME guidelines in Yukon streams when the dissolved value for the same sample is below the guideline concentration. Figures 4, 5 and 6 present selected water quality results for total zinc, cadmium and selenium by station within the Anvil Creek, Pelly River and Blind Creek stations. The Blind Creek metal values are quite low representative of the control station. The Pelly River stations P1A and PA had higher concentrations of total cadmium and selenium than those recorded in either Anvil or Blind Creeks (Figures 5 and 6). The highest concentration of total zinc was recorded

at Anvil Creek station A3 (Figure 4). This is due to the effect of metals adsorption onto suspended solids.

Figure 4: Water Quality Results (2004) - Total Zinc by Station

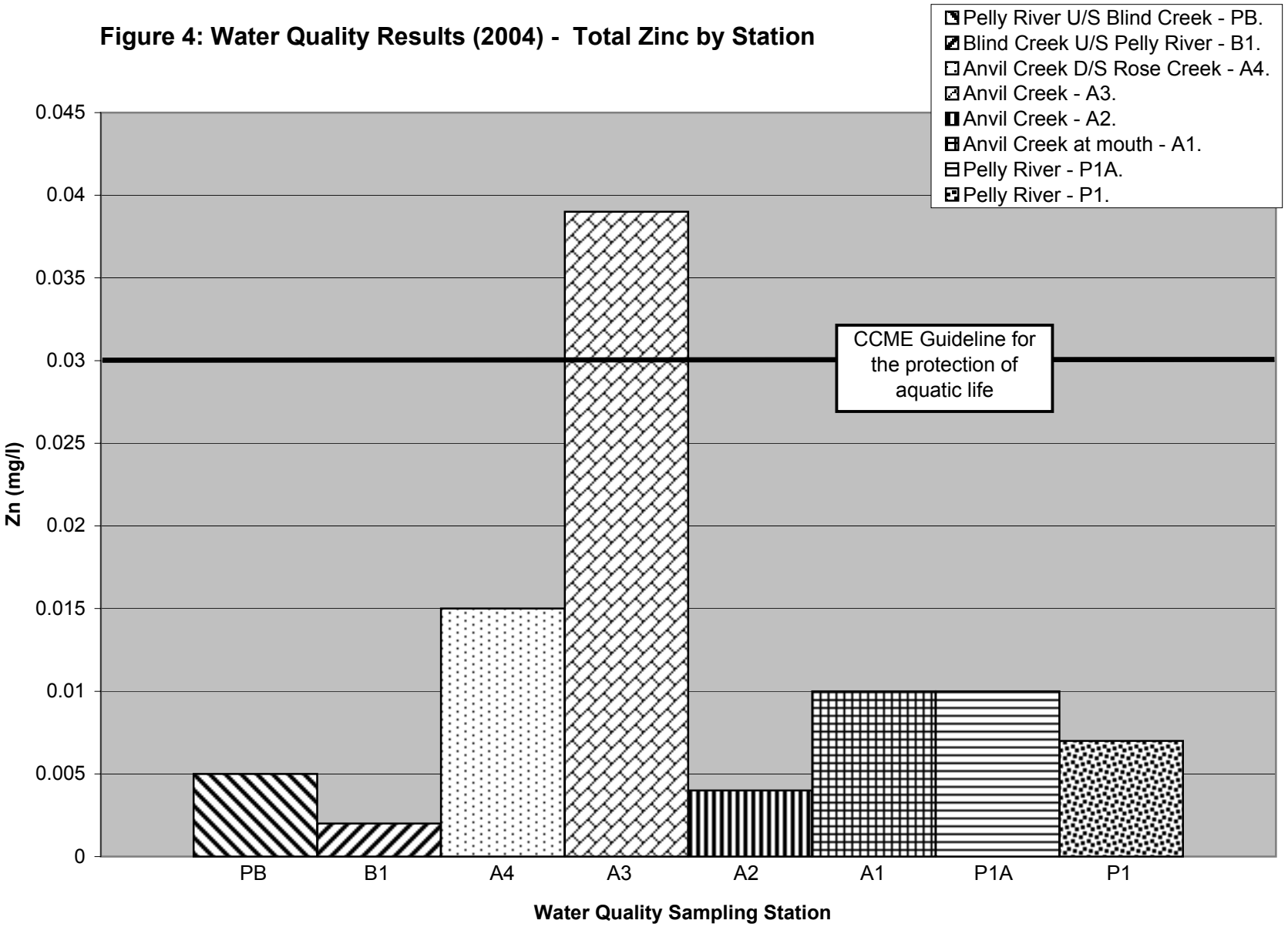


Figure 5: Water Quality Results (2004) - Total Zinc by Station

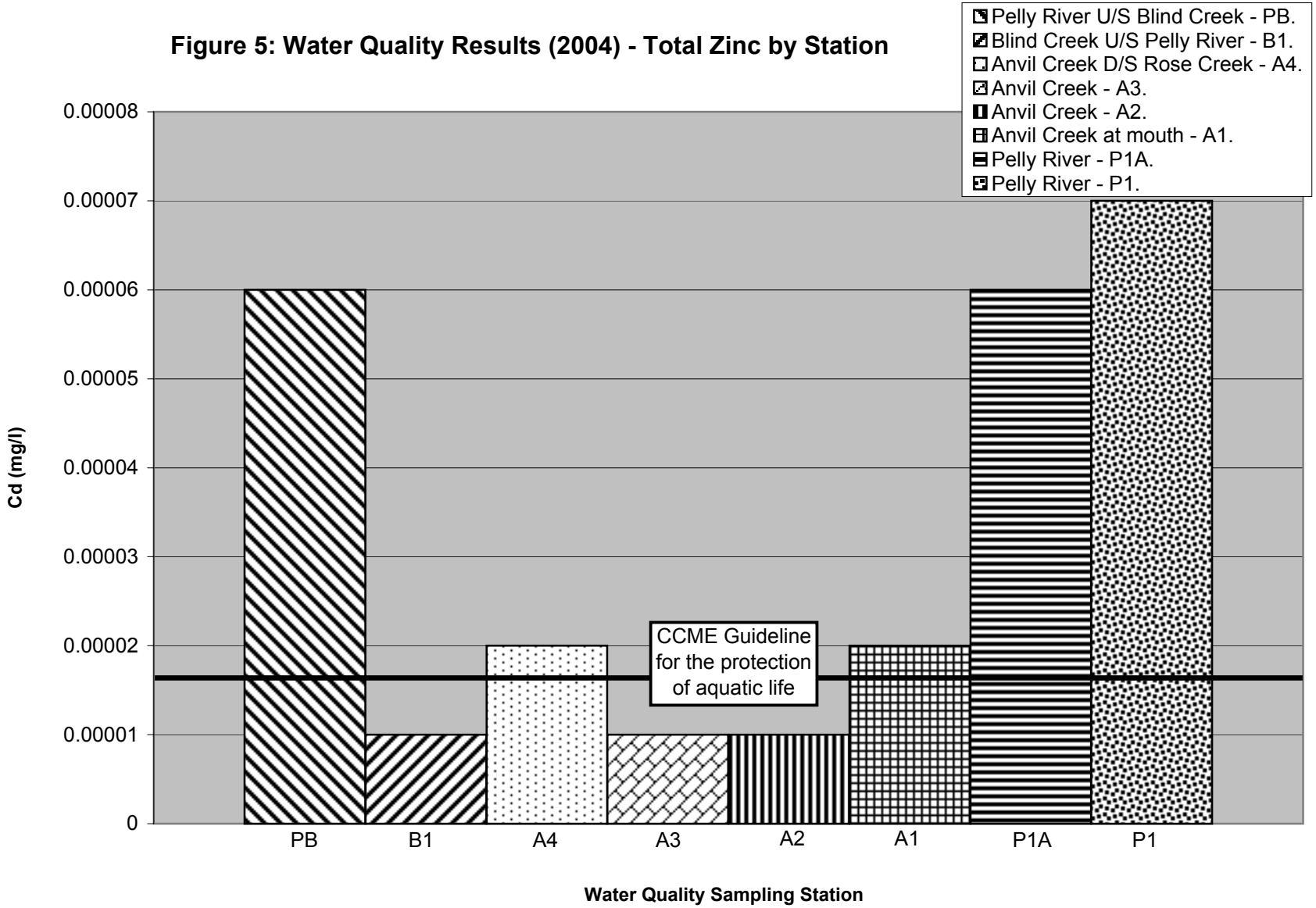
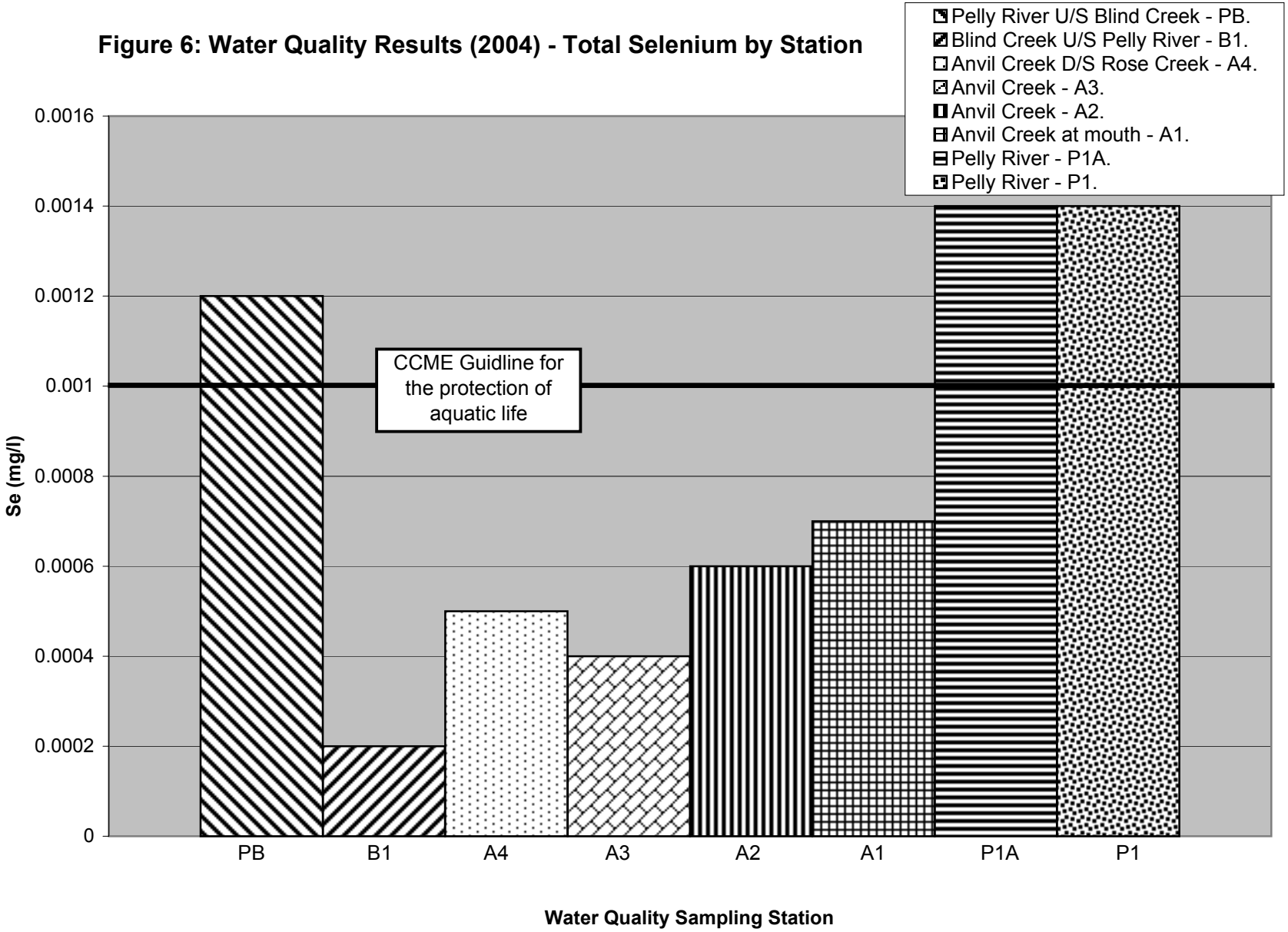


Figure 6: Water Quality Results (2004) - Total Selenium by Station



3.2 STREAM SEDIMENT SAMPLING

The results of the stream sediment sampling program are shown in Table 3. The accompanying graphs, Figures 7 to 9, compare the monitoring 2004 results with results from previous and water licence monitoring studies conducted on Rose Creek. Concentrations that exceed the CCME Canadian Environmental Quality Guidelines, Interim Sediment Quality Guide, are displayed as red value entries in Table 3.

Figures 7 – 9 present copper, lead and zinc concentrations by site and year to demonstrate the overall trends of these selected metals concentrations in sediments decreasing over time and with distance from the Faro site influence. The metals total copper, lead and zinc were selected for further analysis as indicator metals from the Faro mine complex. Metal concentrations in sediments were recorded in 1973, 1983, 1996, and 2004 in Anvil Creek.

Metals analysis results recorded in 1973 are limited to Rose Creek sites R2, R3, Anvil Creek Site A1, and Pelly River Site P1A, as they were the only locations sampled. Results recorded in 1973 compared with results from the same sites in later years generally reveal higher total metals concentrations in stream sediments at R1, A1 and P1A, and lower metals concentration at sites R2 and R3. Metals concentrations in sediments at Rose Creek sites downstream of R1 seem to reach peak levels in 1983 for copper, lead and zinc with concentration levels decreasing each subsequent water quality analysis. The 1983 spike in metals concentrations in sediments may be a reflection of the 1975 tailings spill, as it is the first known analysis conducted after the spill. It should be noted however, that the 1983 data lacks quality control and therefore confidence in the anomaly is low. Further demonstration this trend is the visible decrease in zinc concentrations over time at Site P1A, observable in Figure 9. Site P1A is a good representation of Faro mine site aquatic effects to Pelly River as it is the point in which the Pelly River is first influenced by Anvil Creek. Certain exceptions to this trend can be noticed for example in Figures 7 - 9 where copper, lead, and zinc concentrations recorded for site R-5 are lower in 1996 than observed in 2004.

Table 3. Comprehensive Results - Stream Sediment (2004)

Location Description	Anvil Creek A1	Anvil Creek A2	Anvil Creek A3	Anvil Creek A4	Blind Creek B1	Pelly u/s Blind PB	Pelly u/s Anvil P1	Pelly d/s Anvil P1A	Detection Limit	Canadian Environmental Quality Guidelines - Interim Sediment Quality Guide (ISQG)
Sampler	KN	KN	KN	KN	KN	KN	KN	KN		
Station ID										
Lab	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest		
Lab Lot ID	325006-1	325006-2	325006-4	325006-3	325006-23	325006-24	330674-1	330674-2		
Date	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	23-Aug-04	23-Aug-04		
Parameter [1]										
Metals Strong Acid Extractable										
Mercury	0.04	0.06	0.06	0.05	0.04	0.09			0.01	0.17
Aluminum	9840	12200	11100	10500	11900	8010	4660	5920	0.4	
Antimony	1.3	1	1.4	1	0.9	1.3	<1	1.2	0.3	
Arsenic	**11**	**13.6**	**13**	**11.5**	**10.6**	**12.3**	**7.3**	**8.9**	0.5	5.9
Barium	287	500	326	453	270	766	380	790	0.01	
Beryllium	0.37	0.52	0.47	0.42	0.4	0.39	0.261	0.35	0.03	
Bismuth	0.7	0.6	0.8	0.5	0.6	0.6	<1	<1	0.4	
Cadmium	0.46	**0.78**	**0.73**	**0.71**	0.53	**1.55**	**0.79**	**1**	0.03	0.6
Calcium	7210	6800	6170	5020	4640	17800	11400	17600	10	
Chromium	29.5	**55.1**	**42.1**	**50.7**	24	21.4	16	21.9	0.04	37.3
Cobalt	7.48	10.7	10.8	13.5	8.01	7.04	5.12	5.97	0.04	
Copper	18	27.5	26.8	24	16.6	23.6	12.9	15.5	0.05	35.7
Iron	21200	25600	24500	25300	24800	23100	14400	16700	0.2	
Lead	19.4	**52.9**	**62**	**98**	11.6	9.9	5.99	7.32	0.1	35
Magnesium	6130	7080	6360	5640	4620	8880	7380	9150	3	
Manganese	381	862	1020	3580	440	386	293	359	0.01	
Molybdenum	0.77	1.08	1.12	1.75	0.8	1.89	1	2	0.05	
Nickel	30.8	45.5	40.4	47.6	24	36.2	29.2	28.9	0.05	
Phosphorus	765	933	952	851	763	1200	1180	1260	2	
Selenium	<0.2	<0.2	<0.2	<0.2	0.7	0.6	<5	<5	0.2	
Silicon	2430	2620	2540	2010	2900	2560			0.2	
Silver	<0.05	0.16	0.11	0.18	<0.05	0.12	0.11	0.16	0.05	
Strontium	37.1	41.5	34.8	36.6	31.8	71.2	42.6	59.5	0.005	
Thallium	<0.2	<0.2	<0.2	0.4	<0.2	<0.2			0.2	
Tin	0.5	0.7	0.5	0.5	0.9	0.3	<0.5	<0.5	0.2	
Titanium	452	516	453	429	473	160	70.6	101	0.02	
Vanadium	35.1	44.7	39.6	34.7	34.2	49.4	33.2	38.9	0.05	
Zinc	89.7	**167**	**184**	**274**	70.8	**167**	96.7	120	0.03	123
Zirconium	2.22	2.31	2.27	2.1	2	2.5	2.4	3.12	0.05	
Soil Acidity										
pH	8.1	8.3	8	8	7.7	8.1				

Notes:

[1] All units are in ug/g unless otherwise indicated.

Values in red indicate results in Exceedence of ISQG

The decrease in metals concentrations with distance from the Faro Mine site influence is also apparent in Figures 7 –15. Metals Concentrations seem to increase at first moving downstream from the Faro mine site starting at site R1 reaching maximum concentrations between sites R2 and R4 as metals are mobilized. Metals concentrations downstream from site R4 decrease moving towards the Pelly River. A different pattern is observed with the 1973 results. Metals concentrations in sediments consistently decrease moving downstream from R1 to R2, then increase from R2 to R3. Also unique to the 1973 results is that copper and zinc concentrations in sediments increase from A1 to P1A, which may indicate the presence of an unrelated influence to the Pelly River at that time.

3.3 FLOODPLAIN SOIL SAMPLING

The results of the floodplain soil sampling program are provided in Table 4 and in Figures 10 - 13, which illustrate the general trends in soil metals from the Anvil Creek upstream sampling location A4, to A1 downstream before the Pelly River Confluence.

A decrease in metals concentrations and an increase in pH in soils at upstream site A4 downstream to site A1, is apparent in Figures 10 to 13. Also, copper, lead, zinc, and pH results from samples taken at each station across the channel floodplain along a transect are shown in Figures 10 to 13. Test pit 2 (T2), deliberately chosen as a deposition area returned high metals concentrations and low pH values, (see stations A4 and A2). The same trend is observed for T5 at station A4, and T1 at station A1, although to a lesser degree. As previously noted in this report, it is possible that the effects of the 1975 tailings spill may still be detectable in the form of high metal concentrations and depressed pH values in deposition areas along the Anvil Creek channel floodplain. However, this investigation was not designed to collect enough information to speak to the flux of metals within the soil matrix.

For comparative purposes, the results from the 2004 stream sediments are also shown in Figures 7 to 9.

Table 4. Comprehensive Results - Floodplain Soils (2004)

Location Description	Anvil A1 T1	Anvil A1 T2	Anvil A1 T3	Anvil A1 T4	Anvil A1 T5	Anvil A2 T1	Anvil A2 T2	Anvil A2 T3	Anvil A2 T4	Anvil A3 T1	Anvil A3 T2	Anvil A3 T3	Anvil A3 T4	Anvil A4 T1	Anvil A4 T2	Anvil A4 T3	Anvil A4 T4	Anvil A4 T5	Detection Limit
Sampler	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	KN	
Station ID																			
Lab	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	
Lab Lot ID	325006-5	325006-6	325006-7	325006-8	325006-9	325006-10	325006-11	325006-12	325006-13	325006-14	325006-15	325006-16	325006-17	325006-18	325006-19	325006-20	325006-21	325006-22	
Date	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	13-Aug-04	
NAD 27 UTM mE/mN						8	2	3	3	8	4	9	2	9	5	0			
Parameter [1]																			
Metals Strong Acid Extractable																			
Mercury	0.06	0.03	0.02	0.02	0.02	0.06	0.12	0.07	0.06	0.07	0.39	0.17	0.05	0.11	0.7	0.12	0.09	0.44	0.01
Aluminum	12300	9560	9850	8830	9460	14600	14100	13000	14600	14200	16100	13300	13800	12400	12900	10700	9300	10900	0.4
Antimony	1.4	0.8	1.1	0.7	0.8	1.1	1.4	1.1	0.7	1.2	1.8	1.9	1.1	1	3.2	2	1.5	3.1	0.3
Arsenic	12.2	9.9	9	8.5	8.8	11.5	12.3	12.5	6.2	12.8	24.2	16.1	14.2	11.2	33.7	15.7	12	39.2	0.5
Barium	407	248	263	228	264	464	550	452	353	372	1310	579	311	303	1720	779	269	1410	0.01
Beryllium	0.5	0.36	0.32	0.33	0.33	0.45	0.61	0.55	0.6	0.62	0.76	0.59	0.57	0.45	0.56	0.48	0.38	0.49	0.03
Bismuth	0.6	0.5	0.6	0.6	0.4	0.4	0.6	0.7	0.7	0.9	1.3	0.7	0.7	0.8	1.5	0.8	0.7	1.8	0.4
Cadmium	0.85	0.43	0.4	0.37	0.35	0.69	1.02	0.86	0.5	0.63	1.03	0.93	0.72	0.57	0.33	0.66	0.74	0.52	0.03
Calcium	8090	7150	7310	5330	7230	13500	6130	6760	6260	6140	6050	5520	5130	6940	3020	4570	3560	3260	10
Chromium	36.1	29.3	29.1	35.4	36.5	54.4	41.8	35.1	37.3	39.7	44	46.6	66.5	36.2	37.7	44.2	57.6	33.2	0.04
Cobalt	10.3	7.15	6.67	6.84	6.82	11	12	9.08	8.52	10.4	14.2	12.1	9.77	9.39	9.86	13.2	15.1	12.2	0.04
Copper	28.8	16.6	16.1	14.9	16.3	32.5	53.2	27	29.9	28.1	69	40	26	26	68	36.2	33.6	60	0.05
Iron	24200	19400	18000	17800	19300	28100	27600	25200	22800	28700	34400	32800	28700	26800	39400	28400	24200	38600	0.2
Lead	30.3	15.6	13	14.2	14.7	9.1	89.8	14.6	13.4	19.4	355	81.5	18.2	104	755	168	171	302	0.1
Magnesium	7330	5990	5940	5670	6070	11800	7390	6660	7060	7250	7610	6960	6920	6240	5980	5870	5370	5440	3
Manganese	658	336	338	419	396	304	287	352	314	382	640	782	383	422	330	2390	2410	259	0.01
Molybdenum	1.09	0.64	0.82	0.88	0.8	1.02	1.58	1.18	1.02	1.04	1.37	1.42	1.84	1.09	1.46	1.58	1.81	1.62	0.05
Nickel	41.6	29.8	29	31	30.5	55.8	49.2	38.3	37.7	42.6	45	49	53.6	32.3	33	42.4	47.9	32.9	0.05
Phosphorus	896	732	771	693	963	996	917	986	942	931	946	902	957	877	870	814	621	876	2
Selenium	0.4	<0.2	0.4	0.2	<0.2	1.1	0.9	0.8	0.8	0.4	0.4	0.5	0.5	0.4	<0.2	<0.2	<0.2	0.4	0.2
Silicon	2640	2380	2740	2170	1920	2500	3130	3230	3030	3490	3020	2450	3160	3460	2390	2500	2300	2590	0.2
Silver	0.12	<0.05	0.07	0.06	0.12	0.08	0.26	0.21	0.12	0.11	0.78	0.23	0.13	0.11	1.12	0.29	0.25	0.94	0.05
Strontium	43.6	38.2	40.9	32.6	41.1	50.6	40.1	43.1	40.6	38.3	44.8	39.2	33.3	38.8	36.5	34	28.8	33.7	0.005
Thallium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	0.5	0.2
Tin	0.8	0.6	0.3	0.5	0.4	0.4	0.6	0.7	0.8	0.8	0.7	0.8	0.8	0.6	0.5	0.7	0.3	0.8	0.2
Titanium	569	438	371	390	420	746	546	481	552	499	581	536	432	514	610	468	268	535	0.02
Vanadium	43.1	33.2	30.7	30.7	33.2	56.7	48.1	48.6	50.6	48.5	51.6	46.4	53	43.5	40.4	36.9	26.9	35.9	0.05
Zinc	145	78.7	72.5	66.6	66.4	74.4	218	98	93.8	94.8	352	181	96.1	114	258	245	272	273	0.03
Zirconium	2.6	2.44	2.41	2.28	2.34	3.01	2.64	2.59	2.09	2	2.56	2.49	2.26	1.87	2.82	1.65	2.46	2.7	0.05
Soil Acidity																			
pH	7.5	7.9	8.2	8.2	8.3	8.2	6.7	7.2	7	7.5	6.7	6.4	6.8	7.1	4.4	7.3	7.6	4.9	

Notes:

[1] All units are in ug/g unless otherwise indicated.

Figure 7: Copper in Sediments Trend by Site and Year

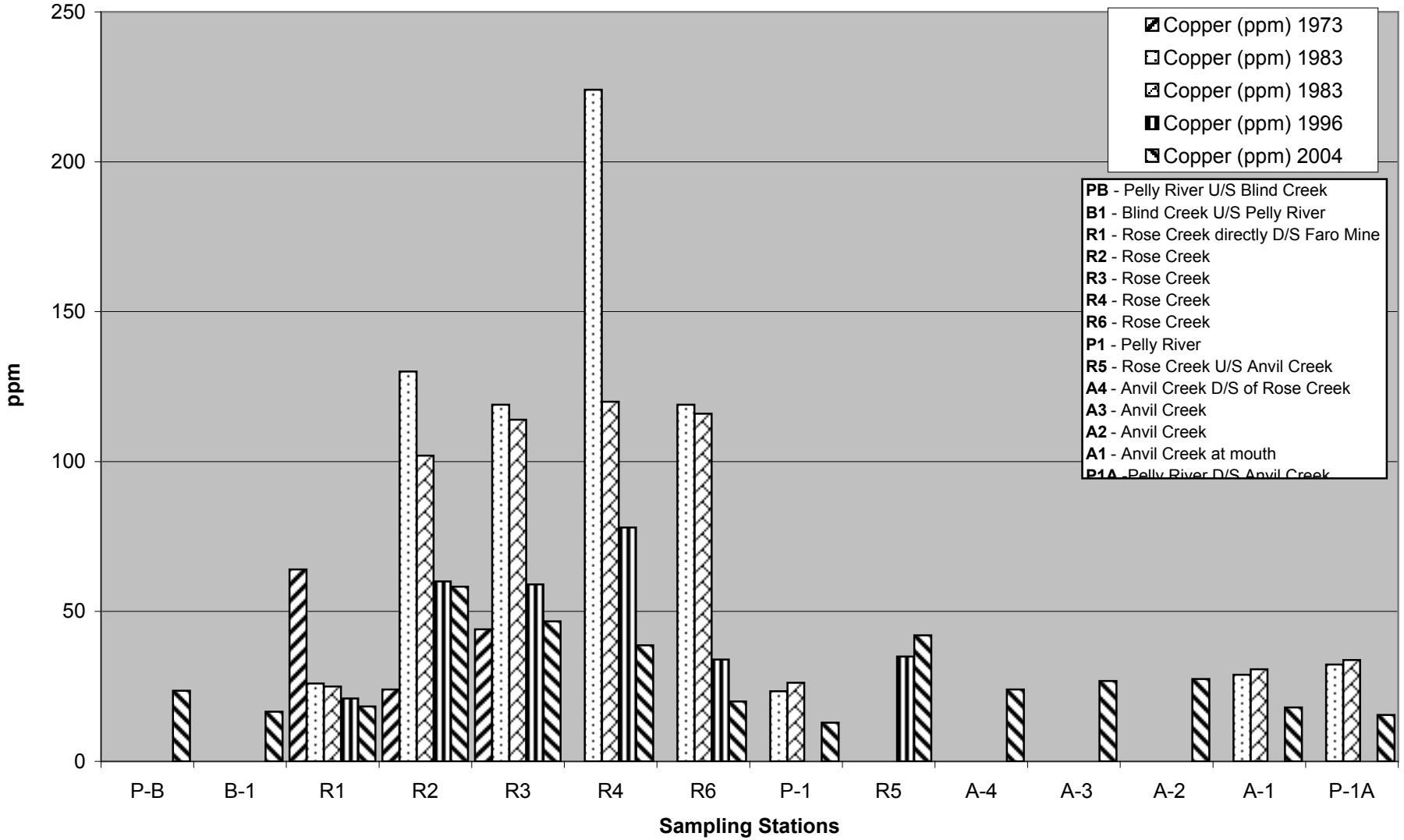


Figure 8: Lead in Sediments Trend by Site and Year

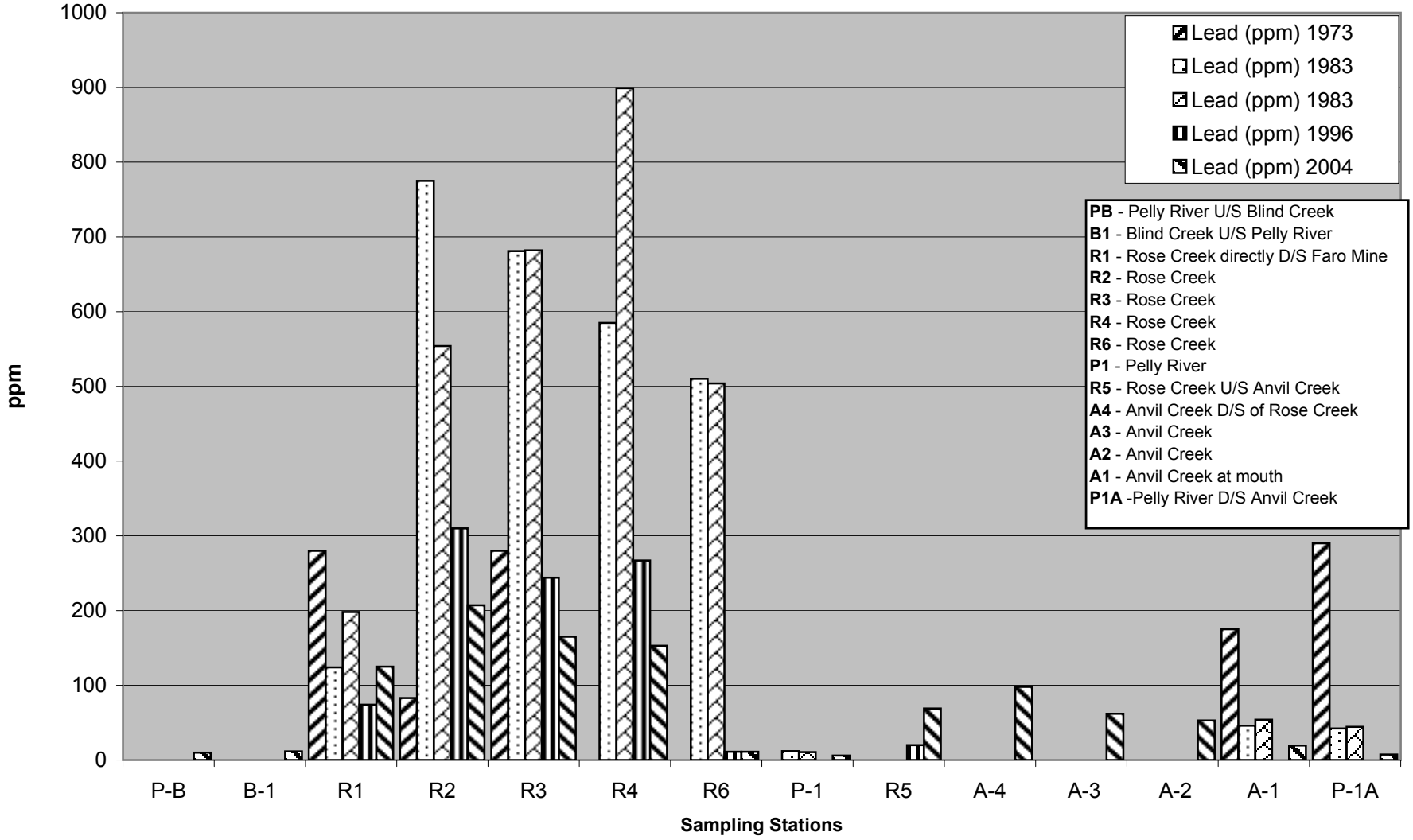


Figure 9: Zinc in Sediments Trend by Site and Year

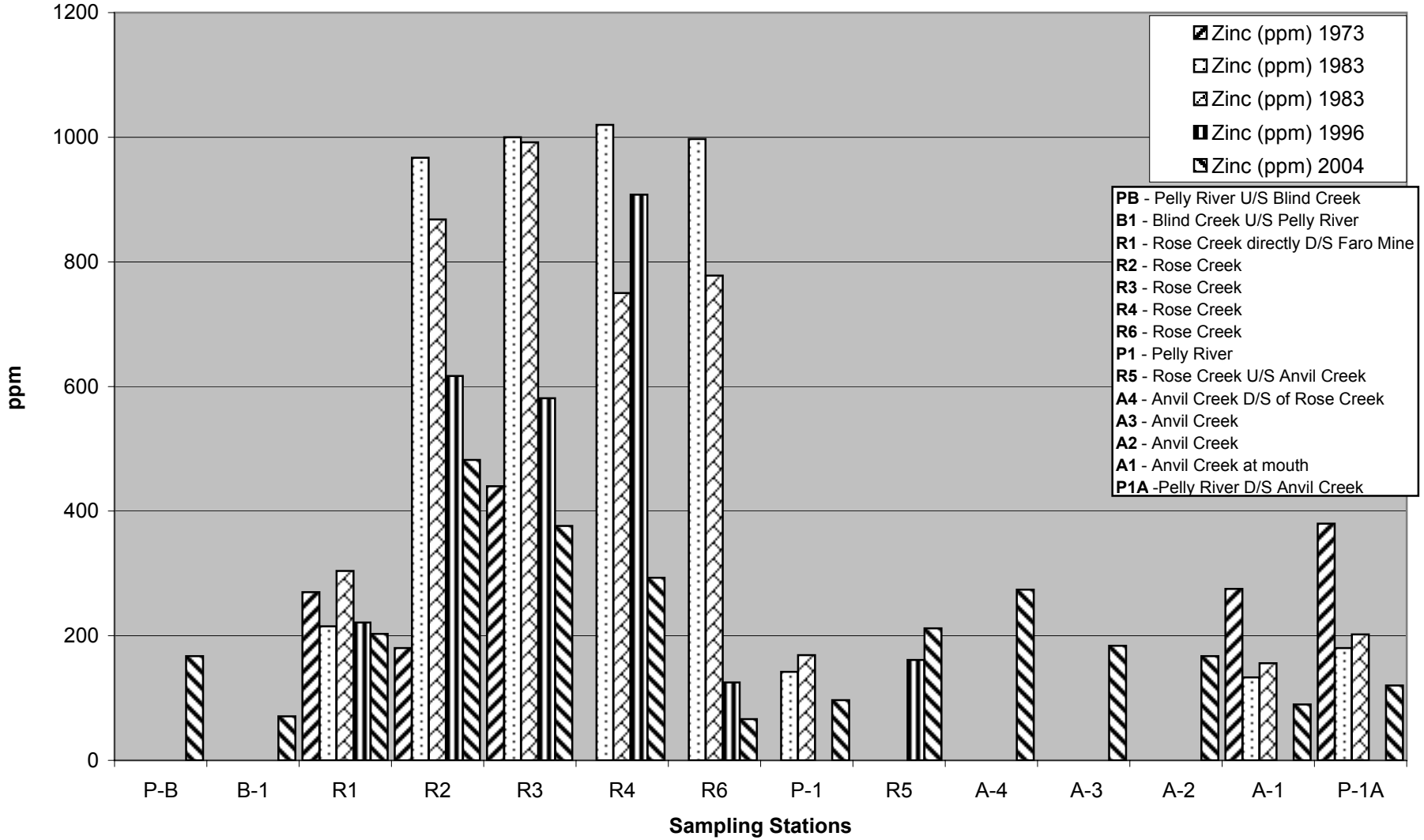


Figure 10: Anvil Creek Floodplain Soil Results (2004) - Copper

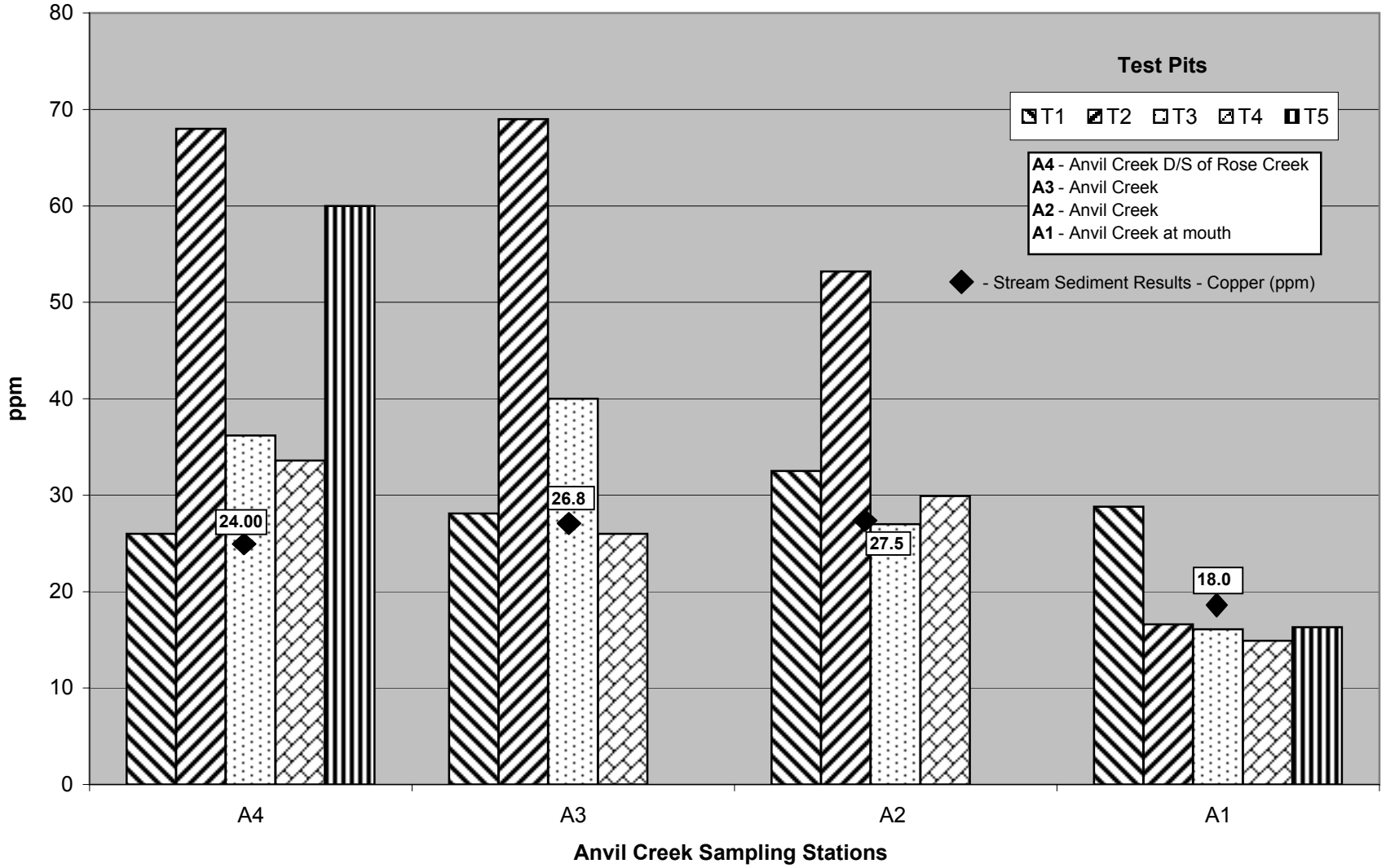


Figure 11: Anvil Creek Floodplain Soil Results (2004) - Lead

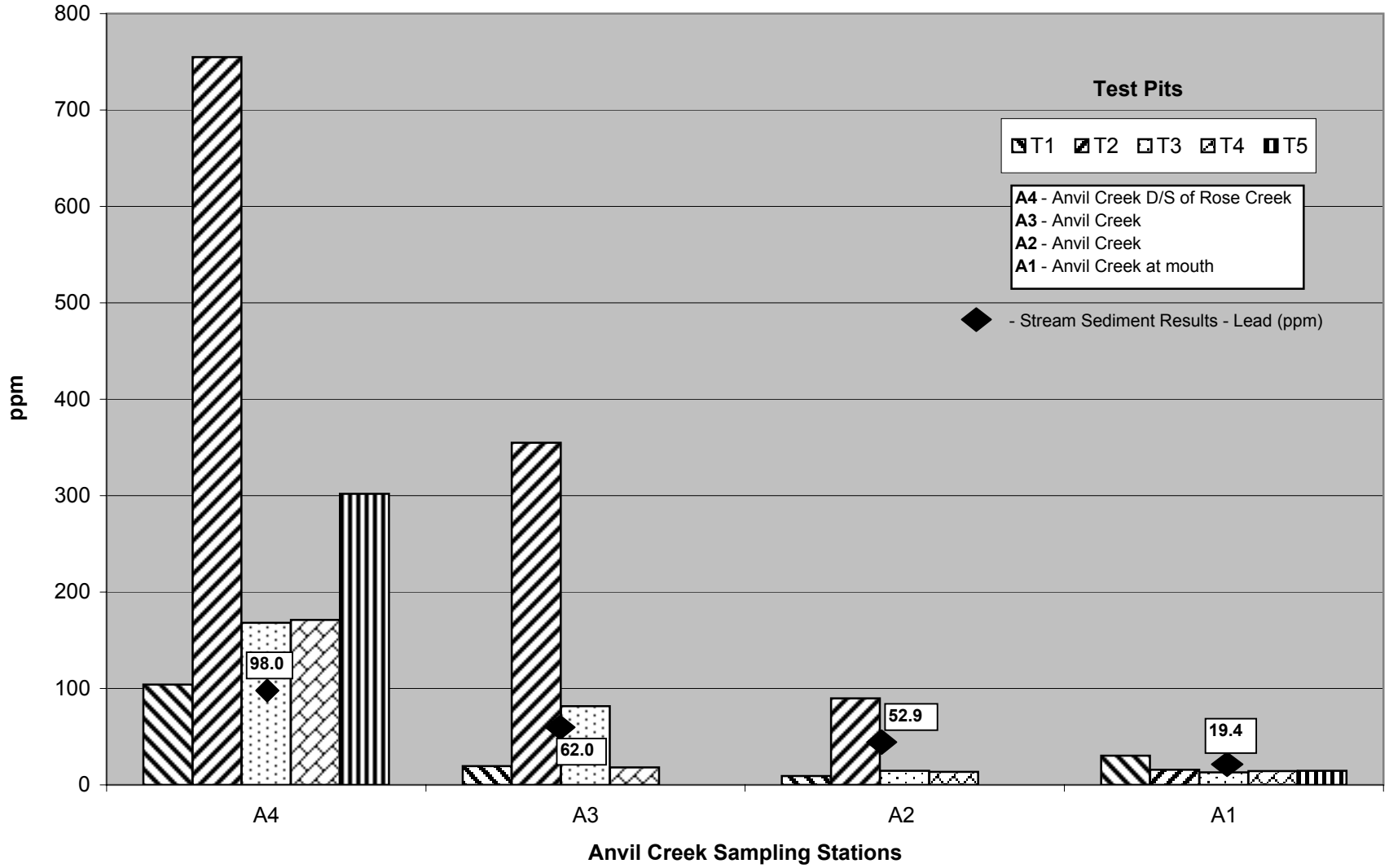


Figure 12: Anvil Creek Floodplain Soil Results (2004) - Zinc

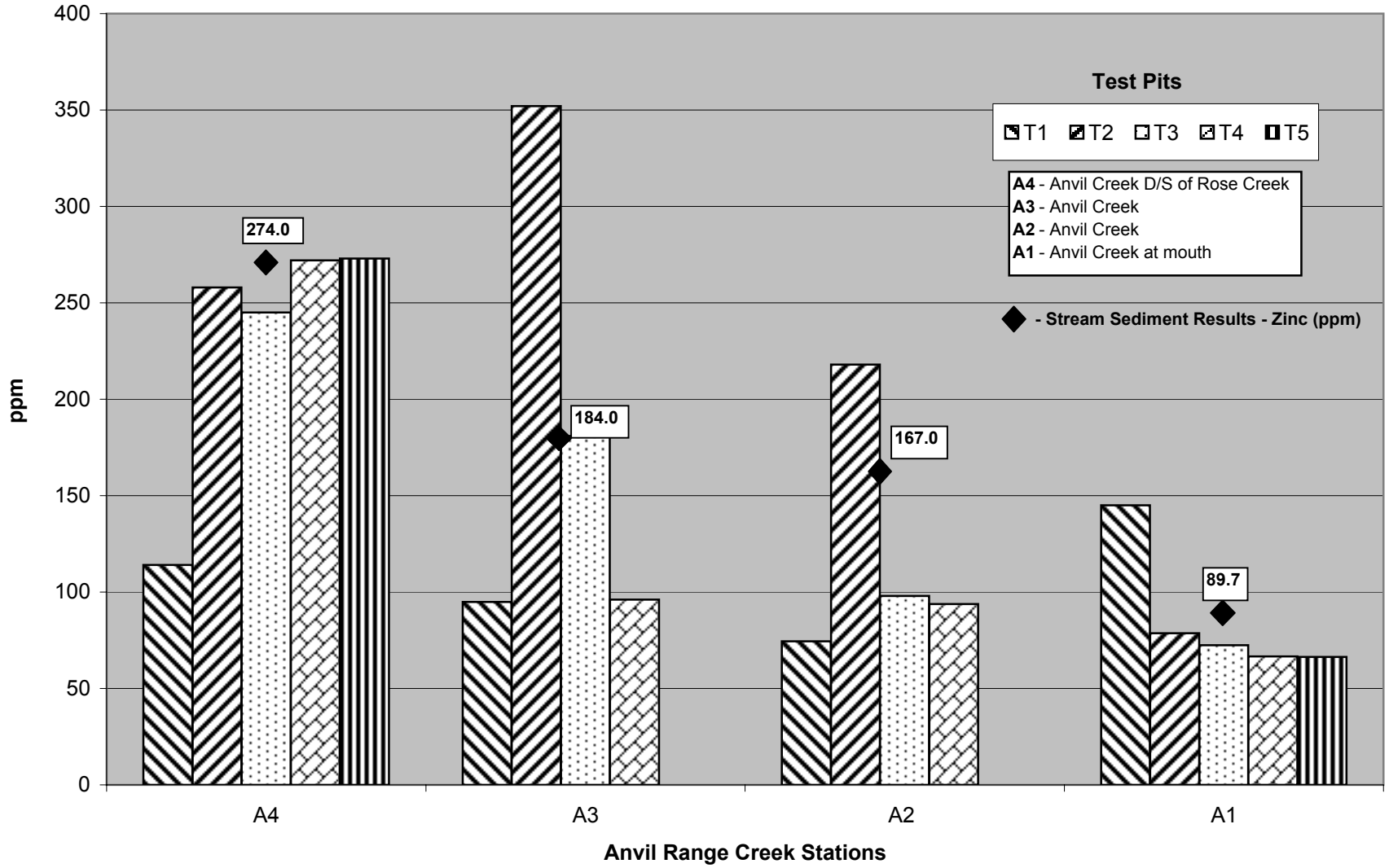
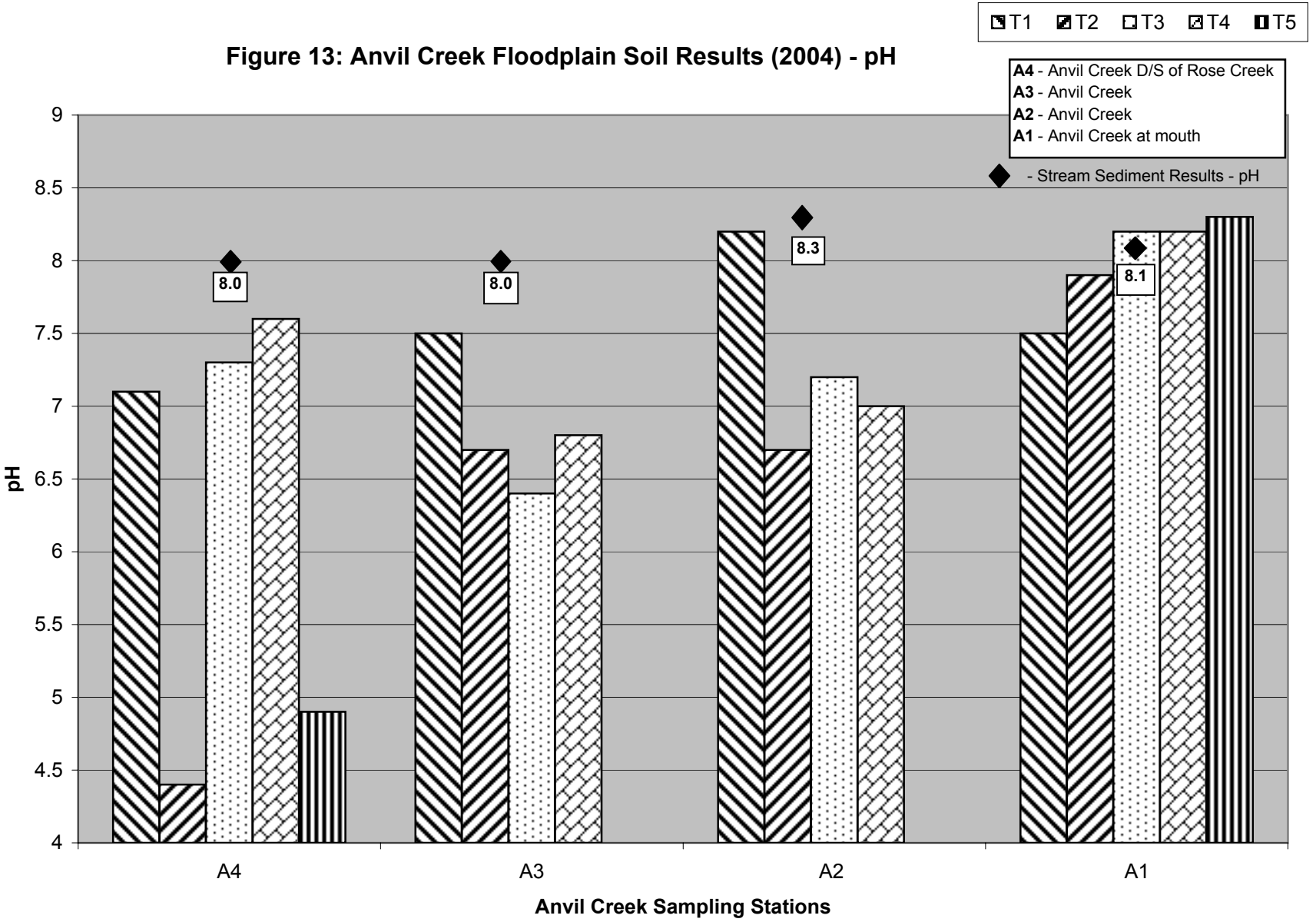


Figure 13: Anvil Creek Floodplain Soil Results (2004) - pH



3.4 BENTHOS

All communities had fairly low populations ranging from 11 individuals at P2 (Pelly River downstream of Tay River) to 183 individuals at A2 on Anvil Creek. Most of the lower populations were situated in the communities on the main stem of the Pelly River.

Diversity ranged from 3 different taxa at P2 to 16 different taxa at Glenlyon River. The composition of the communities was fairly similar. They were dominated by either Ephemeroptera (mayflies) or Diptera (true flies). Ephemeroptera dominated the communities at Glenlyon River, Blind Creek, A2, A3, A4, P1A, and P1. The communities at Tay River, Earn River, A1, PB, P2 and P3 were dominated by Dipterans.

Benthos community data by station location have been summarized in Table 5 below. Table 6 provides detailed community data.

Table 5 Total Benthos and Diversity by Site

SITE	TOTAL NUMBER	DIVERSITY	DOMINANT TAXA
Glenlyon River	117	16	Ephemeroptera
Tay River	75	14	Diptera
Earn River	156	10	Diptera
Blind Creek	119	11	Ephemeroptera
A1	136	10	Diptera
A2	183	14	Ephemeroptera
A3	143	12	Ephemeroptera
A4	60	14	Ephemeroptera
PB	170	11	Diptera
P1A	29	6	Ephemeroptera
P1	37	8	Ephemeroptera
P2	11	3	Diptera
P3	58	8	Diptera

In addition to Benthos community analysis, samples were collected at select stations for total metals analysis.

There was not a great deal of biomass collected from most of the sites, however the lab managed to analyze most of the individual samples for total metals levels. There was insufficient biomass in samples P5 and P7. Since both of these sites are located on the Pelly River and are not too far apart, they were combined to achieve a result, rather than be discarded.

TABLE 6. BENTHIC INVERTEBRATE DATA, PELLY RIVER AQUATIC STUDY, 2004

Location Description	Glenlyon River	Tay River	Earn River	Blind Creek	Anvil Creek				Pelly River				
					A1	A2	A3	A4	PB	P1	P1A	P2	P3
PHYLUM ARTHROPODA													
Class Insecta													
Order Ephemeroptera						20							
Family Heptageniidae	30	1	21	48	4	33	32	22	8	11	12	1	3
Family Baetidae	27	11	23	20	6	42	41	8	19	8	6	1	4
Family Ephemereliidae	3	4		21	3	4	7	1	3		4		1
Drunella sp								2					
Order Trichoptera													
Family Brachycentridae	1	8		3	42	7	1	5			2		1
Family Hydropsychidae	2	2	2			2	2	1		1	7		3
Family Rhyacophilidae	1			1	1	2	1	1					
Family Limnephilidae							1						
Family Hydroptilidae		2											
Order Plecoptera										1			
Family Nemouridae	5		1	7	1	11	5	1			2		
Family Perlodidae	31	1			5	9		2	2				
Family Chloroperlidae		1	5	7		10	11	1	2				
Family Perlidae		2	1										
Order Diptera													
Family Chironomidae - larvae	6	38	77	7	71	35	37	1	14	6	2	9	39
Family Chironomidae - pupae		1	1	1	2	1	2						4
Family Simulidae - larvae	5		21	3				1	116				3
Family Simulidae - pupae					1				1				
Family Tipulidae	1	1								2	2		
Hexatoma sp	1							1	1				
Family Culicidae - adult		2				1	3	13					
Family Athericidae			4										
Family Blephariceridae				1					2				
Philorus sp	1												
Order Hemiptera													
Order Hydracarina	1					6			2				
PHYLUM ANNELIDA													
Class Oligochaeta													
Family Lumbriculidae	1												
PHYLUM MOLLUSCA													
Class Gastropoda													
Family Valvatidae	1												
Family Lymnaeidae		1											
Total:	117	75	156	119	136	183	143	60	170	29	37	11	58
Taxonomic Richness:	16	14	10	11	10	14	12	14	11	6	8	3	8

The data has been summarized in Table 7. Of the 32 metals analyzed, bismuth and sodium were not detected in any of the tissues. The highest concentration (indicated in bold in Table 7) of the most metals (10) was recorded in the tissues from invertebrates collected at the Pelly River station upstream of Blind Creek (PB). This is the uppermost site sampled on the Pelly River system for this study, representing a background site, yet had the highest concentrations of the most metals. The next site with high concentrations in the tissues was in the combined sample of P5 and P7, where 8 metals had the greatest concentration. Within these eight metals were several metals of concern, including cadmium, lead and zinc, where concentrations were significantly elevated over those at the other sites. These two sites are located in the lower section of the Pelly River just below the Macmillan River and at Pelly Crossing. Pelly River downstream of Needlerock Creek (P6) is located between P5 and P7, and very low levels of all metals were documented in the invertebrate tissues here. Low levels of metals were also documented in the invertebrate tissues further upstream on the Pelly at P3 and P2, indicating that the high concentrations documented in the combined sample may be due to natural mineralization or a localized point source of contamination at the site near Pelly Crossing.

Chemical sensitive organisms, Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies) formed the majority of the biomass analyzed at each site. There were two sites where Diptera (true flies) formed the majority of the biomass, PB and the Earn River. Most families of Diptera, such as chironomidae and tipulidae, are more tolerant of metals. This information is also included in Table 6.

TABLE 7. METAL CONCENTRATIONS IN BENTHIC INVERTEBRATE TISSUES, 2004

Total (wet weight) ug/g	Detection Limit	Needle Rock Creek	Earn River	Blind Creek	Anvil Creek				Pelly River					
					A1	A2	A3	A4	PB	P1A	P2	P3	P6	P5 & P7
Aluminum	2.5	183	26.6	86.6	60.8	86.1	92.1	33.9	**225**	25.2	97.9	58.7	45.5	220
Antimony	0.1	0.02	<0.03	0.01	0.02	0.02	0.02	0.03	**0.09**	<0.02	0.03	<0.02	0.02	<0.2
Arsenic	0.1	0.36	0.12	0.18	0.11	0.18	0.17	0.1	0.38	0.07	0.18	0.09	0.09	**0.39**
Barium	0.5	14.3	3.65	8.05	10.7	7.14	8.5	8.45	**21.6**	3.34	9.36	8.93	5.72	17.9
Beryllium	0.05	**0.01**	<0.02	<0.005	<0.009	<0.007	0.006	<0.004	<0.02	<0.008	<0.009	<0.01	<0.008	<0.1
Bismuth	0.3	<0.02	<0.08	<0.02	<0.04	<0.03	<0.02	<0.02	<0.08	<0.04	<0.05	<0.06	<0.04	<0.5
Cadmium	0.005	0.0201	0.0643	0.173	0.0842	0.214	0.121	0.15	0.256	0.574	0.161	0.216	0.236	**0.926**
Calcium	100	342	250	499	424	558	642	616	**847**	261	332	180	210	350
Chromium	0.3	0.78	0.21	0.21	0.24	0.27	0.29	0.15	0.65	0.14	0.3	0.24	0.17	**1.2**
Cobalt	0.05	0.174	0.061	0.082	0.054	0.102	0.104	0.104	**0.226**	0.041	0.093	0.061	0.066	0.2
Copper	0.5	1.05	2.53	2.98	1.67	2.36	2.36	2.17	3.94	**6.97**	1.48	0.84	1.29	6
Iron	5	518	113	167	99.5	169	185	114	**587**	58.9	208	119	109	485
Lead	0.05	0.666	0.96	1.02	0.491	6.39	0.578	0.491	4.3	0.085	0.404	0.315	1.02	**24.3**
Lithium	0.5	0.24	<0.2	0.13	0.1	0.13	0.14	0.06	**0.33**	<0.08	0.14	<0.1	<0.08	<1
Magnesium	100	137	<30	68	47	62	106	70	**210**	68	86	46	50	<200
Manganese	2.5	**191**	15.3	34.2	43.8	28	47.2	65.1	32.2	5.9	10.7	17.7	7.6	31
Molybdenum	0.5	**0.26**	<0.2	<0.05	<0.09	<0.07	0.08	0.06	<0.2	<0.08	<0.09	<0.1	<0.08	<1
Nickel	0.3	0.58	0.27	0.26	0.22	0.37	0.42	0.27	**1.54**	0.25	0.62	0.33	0.45	1.1
Phosphorus	15	87	342	278	174	182	372	326	393	318	123	110	113	**638**
Potassium	200	40	<70	26	<40	<30	26	<20	**64**	<30	<40	<50	<30	<400
Selenium	0.1	0.07	0.14	0.16	0.12	0.11	0.18	0.16	0.26	**0.67**	0.11	0.06	0.22	0.57
Silicon	25	134	101	124	120	138	133	79	301	51	161	120	90	**420**
Silver	0.05	0.009	<0.02	0.019	0.011	0.019	0.012	0.011	0.028	**0.048**	0.011	<0.01	0.011	<0.1
Sodium	200	<10	<70	<20	<40	<30	<20	<20	<60	<30	<40	<50	<30	<400
Strontium	0.5	1.59	1.1	1.52	1.21	1.53	1.58	1.62	**3.71**	0.94	1.2	0.72	0.83	2.6
Tin	0.5	0.44	2.58	0.86	1.39	1.53	0.75	0.7	2.21	1.32	1.45	1.99	1.29	**15.1**
Titanium	0.3	**11.1**	0.78	3.1	2.61	3.28	2.96	1.26	6.33	0.68	3.59	1.64	1.4	6.58
Uranium	0.3	0.03	<0.08	0.06	<0.04	0.07	0.06	0.06	**0.09**	<0.04	<0.05	<0.06	<0.04	<0.5
Vanadium	0.05	0.674	0.219	0.324	0.309	0.421	0.422	0.168	1.32	0.222	0.617	0.367	0.308	1.34
Zinc	0.5	5.81	23.9	18.3	35.1	48.9	44.8	63.6	46.3	45.7	18.3	14.5	19.6	**112**
Zirconium	0.5	0.09	<0.2	0.07	<0.09	<0.07	0.05	<0.04	<0.2	<0.08	**0.1**	<0.1	<0.08	<1
Mercury	0.01	<0.003	<0.02	<0.005	<0.009	<0.007	<0.004	<0.004	<0.02	**0.008**	<0.009	<0.01	<0.008	<0.1
Taxa with greatest biomass:		Plecoptera	Diptera	Trichoptera	Trichoptera	Trichoptera	Ephemer.	E and T	Diptera	Plecoptera	Plecoptera	Trichopera	Trichoptera	E and T

Note: The greatest concentration per parameter has been displayed in **bold**.

3.5 FISH HABITAT AND UTILIZATION

Fish utilization of Anvil Creek at the time of investigation decreased moving upstream from the Pelly River (station A4 to A1). Juvenile chinook salmon (jcs) were common near the outlet of Anvil Creek (A4), however, became increasingly less common further up the system. Data collected as part of the Faro mine aquatics program (Sparling 2004) indicated that this trend continued to Rose Creek and upstream on Rose Creek to a point above the Faro mine influence where jcs utilization again became common. The lower reaches of Anvil Creek supported similar numbers of jcs to the Tay and Glenlyon River systems; however utilization of Blind and Vangorda Creeks by jcs was substantially higher.

3.5.1 Site A1

Electro-fishing was conducted through a 260 meter reach in a single pass consisting of 1213 seconds of effort. A total of 21 jcs, 147 slimy sculpin and 1 juvenile lake chub were recorded (Table 8).

Minnow trapping consisted of 8 traps set for approximately 19.6 hours each. The total catch from the minnow trapping consisted of 43 juvenile chinook salmon (jcs) and 4 slimy sculpin (Table 9).

Seining effort of 6 pulls captured 2 sub adult Arctic grayling, 4 fry and 3 sub adult slimy sculpin and 8 juvenile round whitefish.

No fish were captured during a total of 40 minutes angling effort.

3.5.2 Site A2

3.5.2.1 Fishing Habitat and Utilization

Electro-fishing was conducted through the 100 meter reach in a single pass consisting of 783 seconds of effort. A total of 118 jcs, >20 fry and 125 adult slimy sculpin were recorded (Table 8).

Minnow trapping consisted of 6 traps set for approximately 18.6 hours each. The total catch from the minnow trapping consisted of 148 jcs and 1 slimy sculpin (Table 9).

Seining effort of 4 pulls captured 2 adult and 1 sub adult Arctic grayling, 2 fry and 2 adult slimy sculpin and 18 jcs.

Angling effort of 20 minutes produced 2 adult Arctic grayling and 2 others escaped.

3.5.3 Site A3

3.5.3.1 Fishing Habitat and Utilization

Electro-fishing was conducted through the 100 meter reach in a single pass consisting of 763 seconds of effort. A total of 8 jcs, numerous fry and 98 adult slimy sculpin were recorded (Table 8).

Minnow trapping consisted of 6 traps set for approximately 18.8 hours each. The total catch from the minnow trapping consisted of 41 jcs (0+), 5 jcs (1+) and 4 adult slimy sculpins (Table 9).

Angling effort of 20 minutes captured 1 adult and 1 sub adult Arctic grayling.

3.5.4 Site A4

3.5.4.1 Fishing Habitat and Utilization

Electro-fishing was conducted through the 100 meter reach in a single pass consisting of 701 seconds of effort. A total of 3 jcs - and 47 slimy sculpin were recorded (Table 8).

Minnow trapping consisted of 8 traps set for approximately 19.6 hours each. The total catch from the minnow trapping consisted of 43 juvenile chinook salmon and 4 adult slimy sculpin (Table 9).

Seining effort of 7 pulls captured 8 juvenile Arctic grayling, 3 jcs and 10 slimy sculpin fry.

Angling effort of 20 minutes was unsuccessful in capturing fish.

At site A-4 a number of (20+) dead juvenile Artic grayling (fork length 40-50 mm) were found in a small side pool connected to the main flow. No explanation for the dead fish has been presented. The dead grayling were collected and a special sample for metal content was prepared from these dead fish.

Table 8 Summary of Electro-Fishing Results
(Collected during investigations conducted during the Pelly River Aquatic Life Sampling and Testing program - conducted on Anvil Creek during July and August of 2004)

Sample Site	Date Sampled	Effort (seconds)	Sampled area (meters)	Slimy Sculpin	jcs	Lake chub
A-1	Aug 1	1,213	260	147 (30-80 mm)	21	1 (57 mm)
A-1	Aug. 1	246	60 (small side chan.)	45 (30-95 mm)	8	8 (56-70 mm)
A-1	Aug. 1	525	80 (d/s of sample area)	47 (small)	16	18
A-2	July 30	783	100	125 adult >20 fry	118	0
A-3	July 30	763	150 left bank	98 adult abundant fry	8	0
A-4	July 30	701	100	47 adult and sub. ad.	3	0

Abbreviations used: jcs= juvenile chinook salmon, juv.= juvenile, sub. ad.= sub adult

Table 9 Summary of Minnow Trapping Results

(For traps set on Rose Creek during the Pelly River Aquatic Life Sampling and Testing Program, during July and August of 2004)

Sample Site	Date Set	Number Set	Average Hours set	Slimy Sculpin	jcs	1+ chinook salmon
A-1	July 31	6	14.5	2 adult (65,65)	141	0
A-2	July 30	6	18.6	1 (adult)	148	0
A-3	July 30	6	18.8	4 adult (89,101,84)	41	5
A-4	July 30	8	19.6	4 adult (95,85,86,69)	43	

Bracketed numbers refer to length in mm.

3.6 FISH TISSUE

The maximum number of fish samples from each site was not attained. A total of 2 Arctic grayling from site A2 and 3 Arctic grayling from site A3 were collected; no grayling were captured at the other sites. Five slimy sculpin samples from each site were collected. A special sample from Site A4 was prepared from dead juvenile Arctic grayling found at the bottom of the reach.

Miscommunication with Norwest Lab personnel resulted in sculpin samples from the Rose Creek sites being combined into composite samples for each site. Of the 5 slimy sculpin samples from each site, 12 were individual fish and 8 were composite samples of smaller fish.

Results from the metal concentrations in fish tissues analysis (Table 10), indicated little variation between sites in metal concentrations in fish flesh.

Table 10. Metal Concentrations in Fish Tissues Analysis - 2004

Location Description	A3 - AG5 Tissue	A2 - AG1 Tissue	A3 - AG4 Tissue	A3 - AG6 Tissue	A2 - AG2 Tissue	A1 S Tissue	A2 S Tissue	A3 S Tissue	A4 S Tissue	A2 S2 Tissue	A3 S2 Tissue	A4 Special Tissue	Detection Limit
Sampler	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	
Station ID													
Lab	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	Norwest	
Lab Lot ID	336665-1	336665-2	336665-3	336665-4	336665-5	336673-1	336673-2	336673-3	336673-4	336681-1	336681-2	336680-1	
Date	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	
Parameter [1]													
Metals Total (Wet Weight)													
Aluminum	15	<2	<2	<2	<2	17	14	15	3.7	38	12	157	2.5
Antimony	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.08	0.1
Arsenic	0.1	<0.1	<0.1	<0.1	<0.1	0.12	0.17	0.18	0.14	0.27	0.14	0.19	0.1
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	3.8	4.2	3	5.7	2.2	6.27	0.5
Beryllium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.04	0.05
Bismuth	<0.2	0.36	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.6	<0.2	<0.2	0.3
Cadmium	0.035	0.006	<0.005	0.017	<0.005	0.199	0.0795	0.048	0.045	0.066	0.123	0.0953	0.005
Calcium	130	<100	150	210	400	10100	12600	11800	10500	10400	7120	3150	100
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.32	<0.2	<0.2	<0.6	<0.2	0.26	0.3
Cobalt	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	0.1	0.14	0.05
Copper	0.87	0.66	0.69	0.97	0.64	1.2	1.1	1.1	0.92	1.7	1.1	1.4	0.5
Iron	12	8.4	9.3	10	9.2	31	24	41	20	57	42	238	5
Lead	0.17	<0.05	0.06	<0.05	<0.05	0.35	0.16	0.17	0.16	0.22	0.24	1.14	0.05
Lithium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.4	0.5
Magnesium	150	140	150	160	150	270	330	290	260	290	240	270	100
Manganese	3	<2	<2	3	<2	11	26.4	21	36.6	44	16	84.5	2.5
Molybdenum	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.4	0.5
Nickel	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.6	<0.2	0.38	0.3
Phosphorus	2010	1840	2000	2070	2130	6620	7990	7480	6680	7220	5550	3040	15
Potassium	3770	3610	3470	3700	3460	2700	2730	2670	2780	2900	3570	1730	200
Selenium	1.28	1.15	0.87	1.17	1.21	1.45	1.18	1.05	1.21	1.2	2.01	0.58	0.1
Silicon	<20	<20	<20	<20	<20	35	28	31	<20	82	25	96	25
Silver	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.04	0.05
Sodium	800	990	700	860	890	1000	1200	1100	1100	880	940	450	200
Strontium	<0.5	<0.5	<0.5	<0.5	<0.5	11	12.6	12.7	10.6	12	6.94	3.7	0.5
Tin	0.92	0.87	0.84	0.92	0.92	0.85	0.89	0.84	0.88	2.3	0.9	0.66	0.5
Titanium	0.34	0.26	0.31	0.31	0.35	1.4	0.87	0.95	0.62	1.9	0.95	5.32	0.3
Uranium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.6	<0.2	<0.2	0.3
Vanadium	0.072	0.054	<0.05	<0.05	<0.05	0.21	0.17	0.22	0.15	0.35	0.11	0.396	0.05
Zinc	8.68	7.4	7.23	8.99	7.55	48.6	48.1	47.2	47.5	43.2	29.4	34.4	0.5
Zirconium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.4	0.5
Mercury	0.045	0.073	0.099	0.065	0.045	0.032	0.025	0.027	0.02	<0.01	0.015	0.007	0.01
Physical & Aggragate Properties													
Moisture % Wet Weight	78.3	80.2	78.8	77.8	78.4	77.8	76	76.2	77.7	72.4	75.3	77.6	0.1

Notes:

[1] All units are in ug/g unless otherwise indicated.

4.0 CONCLUSIONS/RECOMMENDATIONS

Based on the results of this study, most water samples met the CCME guidelines for the protection of freshwater aquatic life. The Pelly River and its tributaries sometime exceed national drinking water CCME guidelines for colour, turbidity, and suspended solids. Keep in mind that the national guidelines are meant for ***treated water***, and that all health agencies recommend boiling surface waters before consumption because of potential microbial contamination.

Compared with results from previous years and from previous studies, it is noteworthy that metals concentrations in sediments appear to be decreasing over time and appear to decrease with distance from the Faro site. However, there is also a trend towards possible increasing levels of metals in Anvil Creek. Soil samples collected in testpits across a transect of the Anvil Creek floodplain indicate evidence of the historic 1975 tailing spills. Elevated levels of zinc, lead, copper and depressed pH were recorded in certain testpits. Further sampling and study is warranted to document the source of these metals and potential metals flux into the environment. Isotope study may assist in documenting the source of heavy metals in soil samples along Anvil Creek.

Benthic population numbers were low, however the significant proportion of chemical sensitive organisms present at each site, is indicative of good water quality and substrate conditions. Metals levels in benthos biomass have now been documented.

Fisheries data collected is considered typical of other Pelly River tributaries. The lower portion and mid-reaches of Anvil Creek are more productive for jcs. Metals levels in fish tissue were documented and not atypical.

The results of this investigation are sufficiently interesting to warrant further study. It is recommended that a similar multidisciplinary study be conducted again in 2005 to document trends and refine study results.

The investigation of the March 1975 dam failure and tailings spill component to this study was worthwhile and results indicate that further follow-up is warranted. The spill was certainly a spectacular, if not historic event in the site record. At the very least, the

documentation of the spill and subsequent follow up investigations should be thoroughly researched and brought forward to be part of the site, and Yukon's history before paper records are lost or destroyed. It is recommended that soil and sediment sampling be repeated in 2005 with emphasis on quantifying the leachability of the soil matrix and its contribution potential, if any, to metals burden in the local aquatic ecosystem. Isotope analysis would provide certainty to the source of metals in floodplain soils in Anvil Creek.

5.0 CLOSURE

Access Consulting Group[1] (ACG) of Whitehorse has prepared this Pelly River Aquatic Effects Assessment Report in conjunction with Selkirk First Nation, Laberge Environmental Services, and White Mountain Environmental Consulting.

The assistance of the following people is gratefully acknowledged:

→ Darin Isaac and the Selkirk First Nation Renewable Resources Department (Dean Gill, _____ etc.)
→ Paul Sparling, White Mountain Environmental Consulting
→ Ken Nordin, Laberge Environmental Services
→ Frank Patch, FCRP Office

We trust the above report fulfils your present requirements. If you have any questions or require additional details, please contact the undersigned.

Dan Cornett, B.Sc., P.Biol, CCEP
Access Consulting Group

[1] Access Consulting Group is a registered trade name for Access Mining Consultants Ltd.

6.0 REFERENCES

Laberge Environmental Services. 2003. Pelly River Water Quality Surveillance Survey. 2003

Laberge Environmental Services, 2002. Pelly River Water Quality Surveillance Survey. November 2002

Laberge Environmental Services, 2001. Pelly River Water Quality Investigations. March 2002

White Mountain Consulting, 2004. Aquatic Life Sampling and Testing Program for the Pelly River and its main Tributaries between Faro and Earn River Prepared for Selkirk First Nation. October 2004

Selkirk First Nation. 2001. Salmonid Habitat Restoration and Monitoring of Three Subdrainages of the Pelly River, Yukon Territory*, 2000.* Prepared by Selkirk First Nation with Can-nic-a-nick Environmental and Laberge Environmental Services & S.P. Withers. January 2001.

Canadian Environmental Quality Guidelines, Canadian Council of Ministers of the Environment, 1999.

Yukon Territory Water Board, 2004. Water Use Licence QZ03-059. March 2004.

PELLY RIVER AQUATIC EFFECTS ASSESSMENT

APPENDIX 1

GENERAL SITE DESCRIPTIONS

APPENDIX 1
GENERAL SITE DESCRIPTIONS

LOCATION: A-1, Anvil Creek

UTM: downstream end of reach, Zone 8V 05 45 145 E / 69 24 161 N
Site Location Description: Anvil Creek 500 meters upstream of its confluence with the Pelly River.
Date Sampled: July 31, 2004

CHANNEL CHARACTERISTICS:

Surveyed Length:	100 meters
Average Channel Width:	26 meters
Average Wetted Width:	22 meters
Average Depth:	0.5 meters
Average Velocity	>1 meter per second
Conductivity	204.5 us/sec
Dissolved Oxygen	9.45 mg/l
Total Dissolved Solids	135 mg/l
Water Temperature	13.9°C
% Pool, Riffle, Run / Glide:	10% rapid, 50% riffles, 30% run and 10% corner pools
Cover	depth, light turbidity and extensive cut bank areas
Overhead vegetation	15% of channel has overhead vegetation
Riparian Vegetation	poplar/alder with some spruce and occasional birch with high bush cranberry, willow, osier dogwood, sedges and equisetum.

BED MATERIAL: Substrates are loosely compacted and shifting consisting of 80 % cobble and 20% gravel over sand

BANK CHARACTERISTICS: Banks are abrupt or under cut opposite shores of stranded gravels or deposition points. Open flood plain above 2 meter rise from creek level on both sides.

CHANNEL MORPHOLOGY CHARACTERISTICS: Channel is partially braided with a large island formed at the upper end of the reach. A small side channel at the outside of the island captures less than 5% of creek flow a time of investigation. Deep pools form under large woody debri at outside corners.

LOCATION: Site A-2, Anvil Creek

UTM: downstream end of site zone 8V 5 52 750 E / 69 25 950 N
Site Location Description: Approximately 7 km, by creek flow upstream of the confluence with the Pelly River
Date Sampled: July 29, 2004

CHANNEL CHARACTERISTICS:

Surveyed Length:	120 meters
Average Channel Width:	15 meters
Average Wetted Width:	15 meters

Average Depth:	0.35 meters
Average Velocity	>0.5 meters per second
% Pool, Riffle, Run / Glide:	80% riffles and 20% run
Cover	Limited. Some shallow bank areas with overhanging vegetation.
Overhead vegetation	>5% willow and alder
Riparian Vegetation	alder, willow on right bank; spruce, willow alder on left bank

BED MATERIAL: Substrates are well sorted and loosely compacted consisting of;
50% boulder, 30% cobble, 20% coarse gravel.

BANK CHARACTERISTICS: Confined on right bank by eroding cliff, 40 meters in height, left bank graded gravel onto island.

CHANNEL MORPHOLOGY CHARACTERISTICS
Channel flows around an island at this site, fish collections and site description conducted on the Right side channel. Left side channel is 100% rapid. Right side channel is shallow with gravel margins exposed on both banks and very confined by high cut bank on right bank rising 40 meters above creek level.

LOCATION: Site A-3, Anvil Creek

UTM: down stream end of sample site, zone 8V 5 57 272 E/ 69 23 759 N
Site Location Description: Approximately 12 km, by creek flow upstream of the confluence with the Pelly River.
Date Sampled: July 29, 2004

CHANNEL CHARACTERISTICS:

Surveyed Length:	115 meters
Average Channel Width:	18 meters
Average Wetted Width:	17 meters
Average Depth:	0.4 meters
% Pool, Riffle, Run / Glide:	30% riffles and 70% run
Cover	cut bank, light turbidity and deep pools near large boulder
Riparian Vegetation	spruce, alder and willow

BED MATERIAL: substrates well consolidated consisting of;
5% boulder, 80% cobble and 15% grave.

BANK CHARACTERISTICS: Deposition on left bank and right bank undercut or with abrupt rise of 1 meter to open flood plain.

CHANNEL MORPHOLOGY CHARACTERISTICS: Site is on a wide curve with the left bank the inside. Channel grades from shallow to deep against right bank with an even and mostly flat bottom. Deep holes (pools) occur along the right bank below a large boulder.

LOCATION: Site A-4, Anvil Creek

UTM: at downstream end zone 8V 5 63 796 E / 69 24 470 N
Site Location Description: Approximately 18 km, by creek flow upstream of the confluence with the Pelly River.
Date Sampled: July 29, 2004

CHANNEL CHARACTERISTICS:

Surveyed Length:	100 meters
Average Channel Width:	19 meters
Average Wetted Width:	17 meters
Average Depth:	0.4 meters
Average Velocity	<1 meters per second
% Pool, Riffle, Run / Glide:	30% riffles and 70% run
Cover	turbulence and depth against deep bank
Riparian Vegetation	poplar, alder, spruce, with willow in flood areas

BED MATERIAL: Substrates varied from well compacted to small areas of shifting and consisted of;
30% boulder, 50% cobble, 15% gravel, 5% sand

BANK CHARACTERISTICS: Abrupt opposite of deposition point, the abrupt, right bank has a small and vegetated levee 0.3 meters in height.

CHANNEL MORPHOLOGY CHARACTERISTICS: A "V" shaped channel with a steep partially cut bank that rises 0.5 meters in the lower half of the sample area. Upper half of the sample reach has a flat channel that curves in a riffle to the lower portion of the area.

LOCATION: P2, Pelly River downstream of Anvil Creek

UTM: 5 48 315 E / 69 21 848 N
Site Location Description: Pelly Rive, approximately 19 km upstream of Anvil Creek
Date Sampled: July 31, 2004

SITE CHARACTERISTICS:

Conductivity	292 us/sec
Dissolved Oxygen	7.48 mg/l
Total Dissolved Solids	193 mg/l
Water Temperature	9.8°C

BED MATERIAL:

50% cobble, 50% gravel

LOCATION: P2, Pelly River

UTM: zone 8V 5 26 817 E / 69 42 229 N
Site Location Description: Pelly River, approximately 7.5 km downstream of the Taye River
Date Sampled: August 3, 2004

SITE CHARACTERISTICS:

Conductivity	255 us/sec
Dissolved Oxygen	7.9 mg/l
Total Dissolved Solids	169 mg/l
Water Temperature	16.8°C

BED MATERIAL: Cobbles with boulders and occasional gravel ridge.

CHANNEL MORPHOLOGY CHARACTERISTICS: Sample site is at the bottom of a long gravel bar/island on left bank. Right bank is steep with some collapsing rising 30 to 40 meters.

LOCATION: P-4, Pelly River

UTM: zone 8V 4 74 714 E / 69 59 388 N
Site Location Description: Pelly River, 32 km upstream of the Macmillan River
Date Sampled: August 3, 2004

SITE CHARACTERISTICS:

Conductivity	257 us/sec
Dissolved Oxygen	8.9 mg/l
Total Dissolved Solids	169 mg/l
Water Temperature	15.8°C

LOCATION: P-5, Pelly River

UTM: zone 8V 4 52 505 E / 69 69 354 N
Site Location Description: Approximately 3 km upstream of the Macmillan River (Little John Slough)
Date Sampled: August 4, 2004

SITE CHARACTERISTICS:

Conductivity	260 us/sec
Dissolved Oxygen	9.8 mg/l
Total Dissolved Solids	171 mg/l
Water Temperature	15.5°C

BED MATERIAL: Gravel with silting in slow areas

LOCATION: Macmillan River

UTM: zone 8V 4 55 712 E / 69 72 317 N
Site Location Description: Approximately 1 km upstream of the confluence with the Pelly River.
Date Sampled: August 4, 2004

SITE CHARACTERISTICS:

Conductivity	205 us/sec
Dissolved Oxygen	9.15 mg/l
Total Dissolved Solids	136 mg/l
Water Temperature	17.3°C

BED MATERIAL: sand

LOCATION: Needle Rock Creek

UTM: zone 8V 4 38 169 E / 69 64 603 N
Site Location Description: 60 meters upstream of the Pelly River
Date Sampled: August 4, 2004

SITE CHARACTERISTICS:

Conductivity	207 us/sec
Dissolved Oxygen	9.74 mg/l
Total Dissolved Solids	137 mg/l
Water Temperature	14.5°C

BED MATERIAL: cobble gravel mix with sand deposits along shore

LOCATION: Pelly River at Pelly Crossing

UTM: 4 19 786 E / 69 67 388 N
Site Location Description: Pelly River, 500 meters upstream of the Klondike Highway Bridge.
Date Sampled: August 4, 2004

SITE CHARACTERISTICS:

Conductivity	247 us/sec
Dissolved Oxygen	8.98 mg/l
Total Dissolved Solids	163 mg/l
Water Temperature	17.2°C

BED MATERIAL: cobble

PELLY RIVER AQUATIC EFFECTS ASSESSMENT

APPENDIX 2

WATER QUALITY DATA

NORWEST LABS

324033

Control Number E 133793

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:		**Copy of Report To:**		**Copy of invoice:** ✓
Company: LES		Company: SELKIRK FIRST NATION		
Address: BOX 21072 WHITEHORSE, Y.T. Y1A 6P7	QA/QC Report ✓	Address: BOX 40 PELLY CROSSING Y0B 1P0		Mail invoice to this address for approval ✓
Attention: KEN NORDIN	Report Result:	Attention: DARIN ISAAC		Report Result:
Phone: 867 668 6838	Fax ☐	Phone: 867 537 3331		Fax ☐
Fax: 867 668 6838	Mail ✓	Fax:		Mail ✓
Cell:	Courier ☐	Cell:		Courier ☐
e-mail: laberge@internorth.com	e-mail ✓	e-mail:		e-mail ☐

Information to be included on Report and Invoice

Project ID: PELLY AQ
Project Name: PELLY R. – AQUATIC EFFECTS Jul04
Project Location:
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID: 17654

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ or ☐

Date Required: _____

Signature: _____

Norwest Authorization: _____

Sample Custody (Please Print)

Sampled by: [signature] Date: Aug 1, 2004

Company LES Sampled by: KEN NORDIN

Relinquished by: KEN NORDIN

Company LES Date Aug 1, 2004

Waybill number:

Received by: JK

Company NWL-SRY Date Aug 4/04

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

diss. metals filtered & preserved. JK (as per bottle labels).

JULY 2004

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers	TW21/TW22	AN1	COL4	pH/EC/TURB	AL3/2/DP04	TSSV	HARD	COUL			
							↓	Enter tests above (✓ relevant samples below)										
1	ANVIL CREEK	A4	—	29	H2O	GRAB	4	✓	✓	✓	✓	✓	✓	✓				
2	ANVIL CREEK	A3	—	29				✓	✓	✓	✓	✓	✓	✓				
3	ANVIL CREEK	A2	—	29				✓	✓	✓	✓	✓	✓	✓				
4	PELLY U/S BLIND	PB	—	30				✓	✓	✓	✓	✓	✓	✓				
5	BLIND U/S PELLY	B1	—	30				✓	✓	✓	✓	✓	✓	✓				
6			—															
7			—															
8			—															
9			—															
10			—															
11			—															
12			—															
13			—															
14			—															
15			—															

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

NWL008 (08/01)

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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Contact	Company	Address	
Ken Nordin	Laberge Environmental Services	Box 21072, 1-405 Ogilvie Street	
Web x		Whitehorse, YT Y1A 6P7	
Email Notification x		Phone: (867) 668-1043	Fax: (867) 667-6956
		Email: laberge@internorth.com	

Copies	Delivery Strategy	Format
1	Post	
1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:
Some total metal results were less than dissolved metal results for samples 324033-3, 4, and 5 . The results were checked and are within the method uncertainty. 040809 JD

Sample Notes:
1243922 There was insufficient sample volume to reach the low level detection limit for Total Suspended Solids. TBlush Aug 11/04

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
579381 Envir2QC 3 Smp & DL		

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.

Sample Custody

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Sample Disposal Date: Sep 11, 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 Sep 11, 2004.

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

			NWL Number	324033-1	324033-2	324033-3	
			Sample Description	Anvil Creek / A4 / 29-Jul-04	Anvil Creek / A3 / 29-Jul-04	Anvil Creek / A2 / 29-Jul-04	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Inorganic Nonmetallic Parameters							
Orthophosphate-P	Dissolved	mg/L		0.07	0.06	<0.05	0.05
Metals Dissolved							
Silicon	Dissolved	mg/L		3.91	3.92	3.80	0.05
Sulphur	Dissolved	mg/L		11.2	10.5	10.7	0.05
Aluminum	Dissolved	mg/L		<0.005	<0.005	<0.005	0.005
Antimony	Dissolved	mg/L		<0.0002	<0.0002	<0.0002	0.0002
Arsenic	Dissolved	mg/L		0.0004	0.0006	0.0006	0.0002
Barium	Dissolved	mg/L		0.070	0.066	0.067	0.001
Beryllium	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L		0.002	0.002	0.002	0.002
Cadmium	Dissolved	mg/L		<0.00001	<0.00001	<0.00001	0.00001
Chromium	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L		<0.001	<0.001	<0.001	0.001
Lead	Dissolved	mg/L		0.0004	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L		0.003	0.003	0.003	0.001
Molybdenum	Dissolved	mg/L		0.001	0.001	0.001	0.001
Nickel	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Selenium	Dissolved	mg/L		0.0005	0.0005	0.0005	0.0002
Silver	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Strontium	Dissolved	mg/L		0.140	0.136	0.137	0.001
Thallium	Dissolved	mg/L		<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L		<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L		0.0006	0.0006	0.0006	0.0005
Uranium	Dissolved	mg/L		0.0016	0.0016	0.0016	0.0005
Vanadium	Dissolved	mg/L		0.0001	0.0001	0.0001	0.0001
Zinc	Dissolved	mg/L		0.007	0.002	0.002	0.001
Metals Total							
Calcium	Total	mg/L		43.1	41.9	41.6	0.2
Iron	Total	mg/L		0.1	0.1	<0.1	0.1
Magnesium	Total	mg/L		10.2	9.6	9.4	0.1
Manganese	Total	mg/L		0.031	0.020	0.014	0.005
Potassium	Total	mg/L		1.2	1.2	1.3	0.4
Silicon	Total	mg/L		3.75	3.86	3.53	0.05

NORWEST LABS

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

Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

			NWL Number	324033-1	324033-2	324033-3	
			Sample Description	Anvil Creek / A4 / 29-Jul-04	Anvil Creek / A3 / 29-Jul-04	Anvil Creek / A2 / 29-Jul-04	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued							
Sodium	Total	mg/L		2.6	2.7	2.7	0.4
Sulphur	Total	mg/L		10.7	10.5	10.4	0.05
Aluminum	Total	mg/L		0.007	0.051	0.035	0.005
Antimony	Total	mg/L		<0.0002	<0.0002	<0.0002	0.0002
Arsenic	Total	mg/L		0.0004	0.0006	0.0006	0.0002
Barium	Total	mg/L		0.075	0.073	0.071	0.001
Beryllium	Total	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Total	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L		0.005	0.004	0.004	0.002
Cadmium	Total	mg/L		0.00002	0.00001	0.00001	0.00001
Chromium	Total	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Total	mg/L		<0.0001	0.0002	<0.0001	0.0001
Copper	Total	mg/L		0.001	0.001	<0.001	0.001
Lead	Total	mg/L		0.0005	0.0004	0.0001	0.0001
Lithium	Total	mg/L		0.004	0.004	0.004	0.001
Molybdenum	Total	mg/L		0.001	0.001	0.001	0.001
Nickel	Total	mg/L		0.0009	0.0010	0.0007	0.0005
Selenium	Total	mg/L		0.0005	0.0004	0.0006	0.0002
Silver	Total	mg/L		0.0002	0.0002	0.0002	0.0001
Strontium	Total	mg/L		0.145	0.142	0.139	0.001
Thallium	Total	mg/L		<0.00005	<0.00005	<0.00005	0.00005
Tin	Total	mg/L		<0.001	<0.001	<0.001	0.001
Titanium	Total	mg/L		0.0009	0.0018	0.0016	0.0005
Uranium	Total	mg/L		0.0017	0.0018	0.0018	0.0005
Vanadium	Total	mg/L		0.0002	0.0003	0.0003	0.0001
Zinc	Total	mg/L		0.015	0.039	0.004	0.001
Zirconium	Total	mg/L		<0.001	<0.001	<0.001	0.001
Physical and Aggregate Properties							
Turbidity		NTU		0.4	0.8	1.0	0.1
Temp. of observed pH and EC		°C		21.6	20.3	20.2	
Solids	Total Suspended	mg/L		2	2	2	1
Solids	Fixed Suspended	mg/L		1	2	1	1
Solids	Volatile Suspended	mg/L		1	0	1	2
Colour	Apparent	Colour units		7	9	8	5
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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

			NWL Number	324033-1	324033-2	324033-3	
			Sample Description	Anvil Creek / A4 / 29-Jul-04	Anvil Creek / A3 / 29-Jul-04	Anvil Creek / A2 / 29-Jul-04	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued							
pH				8.34	8.41	8.45	
Electrical Conductivity		µS/cm at 25 C		299	279	281	1
Calcium	Dissolved	mg/L		43.0	41.5	42.7	0.2
Magnesium	Dissolved	mg/L		10.1	9.4	9.7	0.1
Sodium	Dissolved	mg/L		2.7	2.7	2.8	0.4
Potassium	Dissolved	mg/L		1.2	1.3	1.3	0.4
Iron	Dissolved	mg/L		0.07	0.06	0.03	0.01
Manganese	Dissolved	mg/L		0.022	0.014	0.008	0.005
Chloride	Dissolved	mg/L		<0.5	<0.5	<0.5	0.5
Nitrate - N		mg/L		<0.1	0.3	<0.1	0.1
Nitrite - N		mg/L		<0.05	<0.05	<0.05	0.05
Nitrate and Nitrite - N		mg/L		<0.2	0.3	<0.2	0.2
Sulphate-S	Dissolved	mg/L		11.2	10.5	10.7	0.05
Hardness	Dissolved as CaCO3	mg/L		149	142	146	

NORWEST LABS

Norwest Labs
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Surrey, BC. V3S 8P8
Phone: (604) 514-3322
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Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 324033
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

	NWL Number	324033-4	324033-5		
	Sample Description	Pelly u/s Blind / PB / 30-Jul-04	Blind u/s Pelly / B1 / 30-Jul-04		
	Matrix	Water - General	Water - General		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Inorganic Nonmetallic Parameters						
Orthophosphate-P	Dissolved	mg/L	<0.05	0.07		0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	2.58	4.52		0.05
Sulphur	Dissolved	mg/L	18.4	4.64		0.05
Aluminum	Dissolved	mg/L	0.014	0.009		0.005
Antimony	Dissolved	mg/L	0.0002	<0.0002		0.0002
Arsenic	Dissolved	mg/L	0.0005	0.0008		0.0002
Barium	Dissolved	mg/L	0.077	0.063		0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Boron	Dissolved	mg/L	0.004	0.005		0.002
Cadmium	Dissolved	mg/L	0.00004	<0.00001		0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005		0.0005
Cobalt	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Copper	Dissolved	mg/L	<0.001	<0.001		0.001
Lead	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Lithium	Dissolved	mg/L	0.004	0.002		0.001
Molybdenum	Dissolved	mg/L	0.001	<0.001		0.001
Nickel	Dissolved	mg/L	0.0016	<0.0005		0.0005
Selenium	Dissolved	mg/L	0.0012	<0.0002		0.0002
Silver	Dissolved	mg/L	<0.0001	<0.0001		0.0001
Strontium	Dissolved	mg/L	0.186	0.101		0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005		0.00005
Tin	Dissolved	mg/L	<0.001	<0.001		0.001
Titanium	Dissolved	mg/L	0.0012	<0.0005		0.0005
Uranium	Dissolved	mg/L	0.0016	0.0006		0.0005
Vanadium	Dissolved	mg/L	0.0003	0.0002		0.0001
Zinc	Dissolved	mg/L	0.003	<0.001		0.001
Metals Total						
Calcium	Total	mg/L	43.0	23.4		0.2
Iron	Total	mg/L	<0.1	0.1		0.1
Magnesium	Total	mg/L	15.4	5.7		0.1
Manganese	Total	mg/L	0.006	0.012		0.005
Potassium	Total	mg/L	0.7	0.8		0.4
Silicon	Total	mg/L	2.49	4.14		0.05

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

Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

	NWL Number	324033-4	324033-5		
	Sample Description	Pelly u/s Blind / PB / 30-Jul-04	Blind u/s Pelly / B1 / 30-Jul-04		
	Matrix	Water - General	Water - General		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued						
Sodium	Total	mg/L	1.6	2.8		0.4
Sulphur	Total	mg/L	18.3	4.34		0.05
Aluminum	Total	mg/L	0.034	0.034		0.005
Antimony	Total	mg/L	0.0002	<0.0002		0.0002
Arsenic	Total	mg/L	0.0006	0.0009		0.0002
Barium	Total	mg/L	0.083	0.066		0.001
Beryllium	Total	mg/L	<0.0001	<0.0001		0.0001
Bismuth	Total	mg/L	<0.0005	<0.0005		0.0005
Boron	Total	mg/L	0.005	0.007		0.002
Cadmium	Total	mg/L	0.00006	0.00001		0.00001
Chromium	Total	mg/L	<0.0005	<0.0005		0.0005
Cobalt	Total	mg/L	<0.0001	<0.0001		0.0001
Copper	Total	mg/L	0.001	0.001		0.001
Lead	Total	mg/L	0.0001	<0.0001		0.0001
Lithium	Total	mg/L	0.005	0.003		0.001
Molybdenum	Total	mg/L	0.001	<0.001		0.001
Nickel	Total	mg/L	0.0019	0.0006		0.0005
Selenium	Total	mg/L	0.0012	<0.0002		0.0002
Silver	Total	mg/L	0.0002	0.0002		0.0001
Strontium	Total	mg/L	0.193	0.100		0.001
Thallium	Total	mg/L	<0.00005	<0.00005		0.00005
Tin	Total	mg/L	<0.001	<0.001		0.001
Titanium	Total	mg/L	0.0016	0.0011		0.0005
Uranium	Total	mg/L	0.0018	0.0007		0.0005
Vanadium	Total	mg/L	0.0004	0.0003		0.0001
Zinc	Total	mg/L	0.005	0.002		0.001
Zirconium	Total	mg/L	<0.001	<0.001		0.001
Physical and Aggregate Properties						
Turbidity		NTU	0.9	1.0		0.1
Temp. of observed pH and EC		°C	20.2	20.6		
Solids	Total Suspended	mg/L	<5	13		1
Solids	Fixed Suspended	mg/L	<3	1		1
Solids	Volatile Suspended	mg/L	<2	12		2
Colour	Apparent	Colour units	7	15		5
Routine Water						

Norwest Labs
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Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 324033
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

	NWL Number	324033-4	324033-5		
	Sample Description	Pelly u/s Blind / PB / 30-Jul-04	Blind u/s Pelly / B1 / 30-Jul-04		
	Matrix	Water - General	Water - General		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued						
pH			8.43	8.29		
Electrical Conductivity		µS/cm at 25 C	319	173		1
Calcium	Dissolved	mg/L	43.6	24.6		0.2
Magnesium	Dissolved	mg/L	15.6	6.0		0.1
Sodium	Dissolved	mg/L	1.6	2.9		0.4
Potassium	Dissolved	mg/L	0.8	0.8		0.4
Iron	Dissolved	mg/L	0.02	0.06		0.01
Manganese	Dissolved	mg/L	<0.005	0.007		0.005
Chloride	Dissolved	mg/L	<0.5	<0.5		0.5
Nitrate - N		mg/L	<0.1	<0.1		0.1
Nitrite - N		mg/L	<0.05	<0.05		0.05
Nitrate and Nitrite - N		mg/L	<0.2	<0.2		0.2
Sulphate-S	Dissolved	mg/L	18.4	4.64		0.05
Hardness	Dissolved as CaCO3	mg/L	173	86.2		

Approved by: Marie England
Marie England
Consulting Scientist

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Inorganic Nonmetallic Parameters

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Orthophosphate-P	mg/L	<0.05	0.00	-0.05	0.05	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Aug 09, 2004					
Acquired By:	Andrew Jong					

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Orthophosphate-P	mg/L	1.6	1.5	9.99	0.05	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Aug 09, 2004					
Acquired By:	Andrew Jong					

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Orthophosphate-P	mg/L	0.40	0.40	0.34	0.45	✓
Material Used:	Water Low					
Date Acquired:	Aug 09, 2004					
Acquired By:	Andrew Jong					

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Quality Control

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Report to: Laberge Environmental Services
Box 21072
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Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Dissolved

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	<0.05	0.00	-0.05	0.05	✓
Sulphur	mg/L	<0.05	0.08	-2.22	2.39	✓
Aluminum	ug/L	<5	-2	-8	4	✓
Antimony	ug/L	<0.2	0.0	-0.1	0.2	✓
Arsenic	ug/L	<0.2	0.0	0.0	0.0	✓
Barium	ug/L	<1	0	0	0	✓
Beryllium	ug/L	<0.1	0.0	0.0	0.0	✓
Bismuth	ug/L	<0.5	0.0	-0.1	0.1	✓
Boron	ug/L	<2	0	-2	2	✓
Cadmium	ug/L	<0.01	0.00	-0.01	0.01	✓
Chromium	ug/L	<0.5	-0.1	-0.4	0.2	✓
Cobalt	ug/L	<0.1	0.0	0.0	0.0	✓
Copper	ug/L	<1	0	-1	1	✓
Lead	ug/L	<0.1	0.0	0.0	0.0	✓
Lithium	ug/L	<1	0	0	0	✓
Molybdenum	ug/L	<1	0	0	0	✓
Nickel	ug/L	<0.5	0.0	-0.3	0.3	✓
Selenium	ug/L	<0.2	-0.1	-0.3	0.1	✓
Silver	ug/L	<0.1	0.0	0.0	0.0	✓
Strontium	ug/L	<1	0	0	0	✓
Thallium	ug/L	<0.05	0.00	0.00	0.01	✓
Tin	ug/L	<1	0	0	0	✓
Titanium	ug/L	<0.5	0.0	-0.2	0.1	✓
Uranium	ug/L	<0.5	0.0	0.0	0.0	✓
Vanadium	ug/L	<0.1	0.0	-0.1	0.0	✓
Zinc	ug/L	<1	0	-1	1	✓

Material Used: Edmonton Method Blank
Date Acquired: Aug 06, 2004
Acquired By: Jesse Dang

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

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Dissolved (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Silicon	mg/L	3.80	3.97	9.99	0.01	✓
Sulphur	mg/L	21.0	20.9	9.99	0.02	✓
Aluminum	ug/L	54	<50	10	11	✓
Antimony	ug/L	0.3	0.3	10.0	0.4	✓
Arsenic	ug/L	2.2	2.3	10.0	0.4	✓
Barium	ug/L	88	97	10	2	✓
Beryllium	ug/L	0.1	<1	10.0	0.2	✓
Bismuth	ug/L	<0.5	<5	10.0	1.1	✓
Boron	ug/L	55	<20	10	4	✓
Cadmium	ug/L	1.78	1.79	9.99	0.02	✓
Chromium	ug/L	0.5	<5	10.0	1.1	✓
Cobalt	ug/L	0.3	0.3	10.0	0.2	✓
Copper	ug/L	1	1	10	2	✓
Lead	ug/L	0.5	2.7	10.0	0.2	✓
Lithium	ug/L	5	5	10	2	✓
Molybdenum	ug/L	<1	<10	10	2	✓
Nickel	ug/L	2.8	2.9	10.0	1.1	✓
Selenium	ug/L	0.6	0.4	10.0	0.4	✓
Silver	ug/L	<0.1	<1	10.0	0.2	✓
Strontium	ug/L	283	300	10	2	✓
Thallium	ug/L	<0.05	<0.5	9.99	0.11	✓
Tin	ug/L	<1	<10	10	2	✓
Titanium	ug/L	3.0	3.2	10.0	1.1	✓
Uranium	ug/L	2.1	<5	10.0	1.1	✓
Vanadium	ug/L	1.2	1.3	10.0	0.2	✓
Zinc	ug/L	4	<10	10	2	✓

Material Used: Edmonton Duplicate
Date Acquired: Aug 06, 2004
Acquired By: Jesse Dang

NORWEST LABS

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Dissolved (Continued...)

Control Sample		Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Silicon		mg/L	26.0	25.0	22.5	27.5	✓
Sulphur		mg/L	48.0	49.8	44.6	55.0	✓
Material Used:	Metals High						
Date Acquired:	Aug 06, 2004						
Acquired By:	Fernando Maglalang						
Silicon		mg/L	0.49	0.50	0.45	0.55	✓
Sulphur		mg/L	0.93	1.02	0.81	1.23	✓
Aluminum		ug/L	972	1000	850	1150	✓
Antimony		ug/L	39.4	40.0	34.0	46.0	✓
Arsenic		ug/L	39.6	40.0	34.0	46.0	✓
Barium		ug/L	201	200	170	230	✓
Beryllium		ug/L	20.6	20.0	17.0	23.0	✓
Bismuth		ug/L	99.9	100	85	115	✓
Boron		ug/L	403	400	340	460	✓
Cadmium		ug/L	1.98	2.00	1.70	2.30	✓
Chromium		ug/L	99.5	100	85	115	✓
Cobalt		ug/L	20.4	20.0	17.0	23.0	✓
Copper		ug/L	198	200	170	230	✓
Lead		ug/L	20.9	20.0	17.0	23.0	✓
Lithium		ug/L	206	200	170	230	✓
Molybdenum		ug/L	197	200	170	230	✓
Nickel		ug/L	99.0	100	85	115	✓
Selenium		ug/L	39.0	40.0	34.0	46.0	✓
Silver		ug/L	20.7	20.0	17.0	23.0	✓
Strontium		ug/L	198	200	170	230	✓
Thallium		ug/L	10.4	10.0	8.5	11.5	✓
Tin		ug/L	195	200	170	230	✓
Titanium		ug/L	99.7	100	85	115	✓
Uranium		ug/L	99.6	100	85	115	✓
Vanadium		ug/L	20.2	20.0	17.0	23.0	✓
Zinc		ug/L	204	200	170	230	✓
Material Used:	Metals Low						
Date Acquired:	Aug 06, 2004						
Acquired By:	Jesse Dang						

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Dissolved (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	55	50	43	58	✓
Antimony	ug/L	2.0	2.0	1.7	2.3	✓
Arsenic	ug/L	2.0	2.0	1.7	2.3	✓
Barium	ug/L	10	10	9	12	✓
Beryllium	ug/L	1.1	1.0	0.9	1.2	✓
Bismuth	ug/L	5.0	5.0	4.3	5.8	✓
Boron	ug/L	22	20	17	23	✓
Cadmium	ug/L	0.11	0.10	0.09	0.12	✓
Chromium	ug/L	5.2	5.0	4.3	5.8	✓
Cobalt	ug/L	1.1	1.0	0.9	1.2	✓
Copper	ug/L	10	10	9	12	✓
Lead	ug/L	1.1	1.0	0.9	1.2	✓
Lithium	ug/L	11	10	9	12	✓
Molybdenum	ug/L	10	10	9	12	✓
Nickel	ug/L	5.2	5.0	4.3	5.8	✓
Selenium	ug/L	2.1	2.0	1.7	2.3	✓
Silver	ug/L	1.0	1.0	0.9	1.2	✓
Strontium	ug/L	9	10	9	12	✓
Thallium	ug/L	0.54	0.50	0.43	0.58	✓
Tin	ug/L	10	10	9	12	✓
Titanium	ug/L	5.1	5.0	4.3	5.8	✓
Uranium	ug/L	5.1	5.0	4.3	5.8	✓
Vanadium	ug/L	1.0	1.0	0.9	1.2	✓
Zinc	ug/L	11	10	9	12	✓

Material Used: Metals Trace
Date Acquired: Aug 06, 2004
Acquired By: Jesse Dang

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Total

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	<0.2	0.0	0.0	0.1	✓
Iron	mg/L	<0.1	0.0	0.0	0.0	✓
Magnesium	mg/L	<0.1	0.0	0.0	0.0	✓
Manganese	mg/L	<0.005	0.000	-0.001	0.001	✓
Potassium	mg/L	<0.4	0.0	-0.1	0.1	✓
Silicon	mg/L	<0.05	0.02	-0.04	0.09	✓
Sodium	mg/L	<0.4	0.1	-0.2	0.3	✓
Sulphur	mg/L	<0.05	0.01	-0.03	0.04	✓
Aluminum	ug/L	<5	0	-5	5	✓
Antimony	ug/L	<0.2	0.0	-0.2	0.2	✓
Arsenic	ug/L	<0.2	0.0	-0.2	0.2	✓
Barium	ug/L	<1	0	-1	1	✓
Beryllium	ug/L	<0.1	0.0	-0.1	0.1	✓
Bismuth	ug/L	<0.5	0.0	-0.5	0.5	✓
Boron	ug/L	<2	0	-2	2	✓
Cadmium	ug/L	<0.01	0.00	-0.01	0.01	✓
Chromium	ug/L	<0.5	0.0	-0.5	0.5	✓
Cobalt	ug/L	<0.1	0.0	-0.1	0.1	✓
Copper	ug/L	<1	0	-1	1	✓
Lead	ug/L	<0.1	0.0	-0.1	0.1	✓
Lithium	ug/L	<1	0	-1	1	✓
Molybdenum	ug/L	<1	0	-1	1	✓
Nickel	ug/L	<0.5	0.0	-0.5	0.5	✓
Selenium	ug/L	<0.2	0.0	-0.2	0.2	✓
Silver	ug/L	<0.1	0.0	-0.1	0.1	✓
Strontium	ug/L	<1	0	-1	1	✓
Thallium	ug/L	<0.05	0.00	-0.05	0.05	✓
Tin	ug/L	<1	0	-1	1	✓
Titanium	ug/L	<0.5	0.0	-0.5	0.5	✓
Uranium	ug/L	<0.5	0.0	-0.5	0.5	✓
Vanadium	ug/L	<0.1	0.0	-0.1	0.1	✓
Zinc	ug/L	<1	0	-1	1	✓
Zirconium	ug/L	<1	0	-1	1	✓

Material Used: Edmonton Method Blank
Date Acquired: Aug 05, 2004
Acquired By: Jesse Dang

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Calcium	mg/L	38.8	38.8	10.0	0.6	✓
Iron	mg/L	1.5	1.5	10.0	0.0	✓
Magnesium	mg/L	11.5	11.5	10.0	0.2	✓
Manganese	mg/L	0.030	0.031	9.990	0.001	✓
Potassium	mg/L	0.8	0.8	10.0	1.2	✓
Silicon	mg/L	3.24	3.35	9.99	0.01	✓
Sodium	mg/L	1.6	1.6	10.0	1.2	✓
Sulphur	mg/L	16.0	16.0	9.99	0.03	✓
Aluminum	ug/L	719	727	10	11	✓
Antimony	ug/L	<0.2	<0.2	10.0	0.4	✓
Arsenic	ug/L	2.2	2.2	10.0	0.4	✓
Barium	ug/L	66	68	10	2	✓
Beryllium	ug/L	<0.1	<0.1	10.0	0.2	✓
Bismuth	ug/L	<0.5	<0.5	10.0	1.1	✓
Boron	ug/L	7	6	10	4	✓
Cadmium	ug/L	0.28	0.28	9.99	0.02	✓
Chromium	ug/L	<0.5	<0.5	10.0	1.1	✓
Cobalt	ug/L	0.7	0.7	10.0	0.2	✓
Copper	ug/L	5	5	10	2	✓
Lead	ug/L	1.8	1.8	10.0	0.2	✓
Lithium	ug/L	7	7	10	2	✓
Molybdenum	ug/L	<1	<1	10	2	✓
Nickel	ug/L	8.7	8.9	10.0	1.1	✓
Selenium	ug/L	0.5	0.5	10.0	0.4	✓
Silver	ug/L	0.4	0.4	10.0	0.2	✓
Strontium	ug/L	143	141	10	2	✓
Thallium	ug/L	<0.05	<0.05	9.99	0.11	✓
Tin	ug/L	<1	<1	10	2	✓
Titanium	ug/L	3.2	3.3	10.0	1.1	✓
Uranium	ug/L	0.7	0.7	10.0	1.1	✓
Vanadium	ug/L	0.4	0.5	10.0	0.2	✓
Zinc	ug/L	75	75	10	2	✓
Zirconium	ug/L	<1	<1	10	2	✓

Material Used: Edmonton Duplicate
Date Acquired: Aug 05, 2004
Acquired By: Jesse Dang

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	49.0	49.6	45.6	53.7	✓
Iron	mg/L	2.0	2.0	1.8	2.2	✓
Magnesium	mg/L	19.8	20.3	18.6	22.0	✓
Manganese	mg/L	0.486	0.479	0.451	0.507	✓
Potassium	mg/L	47.5	47.8	43.5	52.1	✓
Silicon	mg/L	4.69	5.00	4.50	5.50	✓
Sodium	mg/L	47.7	49.1	44.4	53.8	✓
Sulphur	mg/L	9.35	9.68	8.74	10.62	✓
Aluminum	ug/L	364	322	273	371	✓
Antimony	ug/L	11.0	11.5	10.2	12.8	✓
Arsenic	ug/L	10.8	11.5	10.3	12.7	✓
Barium	ug/L	62	61	52	69	✓
Beryllium	ug/L	5.6	5.9	4.9	7.0	✓
Bismuth	ug/L	30.3	30.2	26.0	34.4	✓
Boron	ug/L	126	125	102	148	✓
Cadmium	ug/L	0.74	0.63	0.47	0.78	✓
Chromium	ug/L	33.0	31.8	27.5	36.2	✓
Cobalt	ug/L	6.5	6.4	5.4	7.5	✓
Copper	ug/L	62	63	55	70	✓
Lead	ug/L	6.5	6.2	5.4	7.0	✓
Lithium	ug/L	74	65	53	76	✓
Molybdenum	ug/L	60	61	53	69	✓
Nickel	ug/L	31.3	31.4	27.0	35.8	✓
Selenium	ug/L	10.1	11.0	9.7	12.3	✓
Silver	ug/L	6.4	6.2	5.5	7.0	✓
Strontium	ug/L	62	64	55	72	✓
Thallium	ug/L	3.18	3.14	2.56	3.72	✓
Tin	ug/L	58	59	52	66	✓
Titanium	ug/L	33.0	31.5	27.0	36.0	✓
Uranium	ug/L	31.2	30.8	26.9	34.7	✓
Vanadium	ug/L	6.6	6.5	5.4	7.6	✓
Zinc	ug/L	68	59	49	69	✓
Zirconium	ug/L	61	62	53	72	✓

Material Used: Edmonton Digestion Check
Date Acquired: Aug 05, 2004
Acquired By: Jesse Dang

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	245	253	232	274	✓
Iron	mg/L	9.6	9.7	9.1	10.3	✓
Magnesium	mg/L	95.2	102	92	112	✓
Manganese	mg/L	2.35	2.45	2.27	2.63	✓
Potassium	mg/L	248	253	226	280	✓
Silicon	mg/L	24.9	25.0	22.5	27.5	✓
Sodium	mg/L	253	251	221	281	✓
Sulphur	mg/L	48.9	50.0	46.3	53.7	✓

Material Used: Metals High
Date Acquired: Aug 05, 2004
Acquired By:

Norwest Labs
#104, 19575-55 A Ave.
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Fax: (604) 514-3323

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	4.8	4.7	4.3	5.2	✓
Iron	mg/L	0.2	0.2	0.2	0.2	✓
Magnesium	mg/L	1.8	1.9	1.7	2.1	✓
Manganese	mg/L	0.048	0.048	0.043	0.052	✓
Potassium	mg/L	4.8	5.0	4.4	5.6	✓
Silicon	mg/L	0.47	0.50	0.45	0.55	✓
Sodium	mg/L	4.9	5.2	4.4	6.1	✓
Sulphur	mg/L	0.92	0.98	0.82	1.13	✓
Aluminum	ug/L	924	1000	850	1150	✓
Antimony	ug/L	40.0	40.0	34.0	46.0	✓
Arsenic	ug/L	39.2	40.0	34.0	46.0	✓
Barium	ug/L	206	200	170	230	✓
Beryllium	ug/L	19.4	20.0	17.0	23.0	✓
Bismuth	ug/L	99.1	100	85	115	✓
Boron	ug/L	385	400	340	460	✓
Cadmium	ug/L	2.09	2.00	1.70	2.30	✓
Chromium	ug/L	95.7	100	85	115	✓
Cobalt	ug/L	20.2	20.0	17.0	23.0	✓
Copper	ug/L	196	200	170	230	✓
Lead	ug/L	20.5	20.0	17.0	23.0	✓
Lithium	ug/L	203	200	170	230	✓
Molybdenum	ug/L	199	200	170	230	✓
Nickel	ug/L	99.2	100	85	115	✓
Selenium	ug/L	39.2	40.0	34.0	46.0	✓
Silver	ug/L	21.1	20.0	17.0	23.0	✓
Strontium	ug/L	194	200	170	230	✓
Thallium	ug/L	10.4	10.0	8.5	11.5	✓
Tin	ug/L	196	200	170	230	✓
Titanium	ug/L	97.1	100	85	115	✓
Uranium	ug/L	98.1	100	85	115	✓
Vanadium	ug/L	19.7	20.0	17.0	23.0	✓
Zinc	ug/L	198	200	170	230	✓
Zirconium	ug/L	197	200	170	230	✓

Material Used: Metals Low
Date Acquired: Aug 05, 2004
Acquired By: Jesse Dang

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/L	53	50	43	58	✓
Antimony	ug/L	1.9	2.0	1.7	2.3	✓
Arsenic	ug/L	2.0	2.0	1.7	2.3	✓
Barium	ug/L	10	10	9	12	✓
Beryllium	ug/L	1.0	1.0	0.9	1.2	✓
Bismuth	ug/L	5.0	5.0	4.3	5.8	✓
Boron	ug/L	20	20	17	23	✓
Cadmium	ug/L	0.11	0.10	0.09	0.12	✓
Chromium	ug/L	5.1	5.0	4.3	5.8	✓
Cobalt	ug/L	1.0	1.0	0.9	1.2	✓
Copper	ug/L	10	10	9	12	✓
Lead	ug/L	1.0	1.0	0.9	1.2	✓
Lithium	ug/L	10	10	9	12	✓
Molybdenum	ug/L	10	10	9	12	✓
Nickel	ug/L	5.3	5.0	4.3	5.8	✓
Selenium	ug/L	2.1	2.0	1.7	2.3	✓
Silver	ug/L	1.0	1.0	0.9	1.2	✓
Strontium	ug/L	10	10	9	12	✓
Thallium	ug/L	0.51	0.50	0.43	0.58	✓
Tin	ug/L	9	10	9	12	✓
Titanium	ug/L	5.0	5.0	4.3	5.8	✓
Uranium	ug/L	5.0	5.0	4.3	5.8	✓
Vanadium	ug/L	1.0	1.0	0.9	1.2	✓
Zinc	ug/L	10	10	9	12	✓
Zirconium	ug/L	10	10	9	12	✓

Material Used: Metals Trace
Date Acquired: Aug 05, 2004
Acquired By: Jesse Dang

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Physical and Aggregate Properties

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Turbidity	NTU	<0.1	0.0	-0.1	0.1	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Aug 05, 2004					
Acquired By:	Alexsandra Robert					

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Turbidity	NTU	9.6	10.3	10.0	0.2	✓
Solids	mg/L	1	0	10	15	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Aug 12, 2004					
Acquired By:	Alexsandra Robert					

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Turbidity	NTU	2200	2197	1977	2417	✓
Material Used:	Turbidity High					
Date Acquired:	Aug 05, 2004					
Acquired By:	Alexsandra Robert					
Turbidity	NTU	8080	8065	7258	8872	✓
Material Used:	Turbidity Ultra High					
Date Acquired:	Aug 05, 2004					
Acquired By:	Alexsandra Robert					
Turbidity	NTU	169	169	152	186	✓
Solids	mg/L	192	200	180	220	✓
Material Used:	Water High					
Date Acquired:	Aug 12, 2004					
Acquired By:	Alexsandra Robert					
Turbidity	NTU	15.3	15.3	13.8	16.8	✓
Solids	mg/L	20	20	18	22	✓
Material Used:	Water Low					
Date Acquired:	Aug 12, 2004					
Acquired By:	Alexsandra Robert					
Turbidity	NTU	1.5	1.5	1.4	1.7	✓
Material Used:	Water Trace					
Date Acquired:	Aug 05, 2004					
Acquired By:	Alexsandra Robert					

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Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Routine Water

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Calcium	mg/L	<0.2	0.0	-0.2	0.2	✓
Magnesium	mg/L	<0.1	0.0	-0.1	0.1	✓
Sodium	mg/L	<0.4	0.0	-0.4	0.4	✓
Potassium	mg/L	<0.4	0.0	-0.4	0.4	✓
Iron	mg/L	<0.01	0.00	-0.01	0.01	✓
Manganese	mg/L	<0.005	0.000	-0.005	0.005	✓
Chloride	mg/L	<0.5	0.0	-0.5	0.5	✓
Nitrate - N	mg/L	<0.1	0.0	-0.1	0.1	✓
Nitrite - N	mg/L	<0.05	0.00	-0.05	0.05	✓

Material Used: Edmonton Method Blank
Date Acquired: Aug 06, 2004
Acquired By: Jodi Johnston

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH		8.34	8.36	9.99	0.10	✓
Electrical Conductivity	dS/m at 25 C	0.299	0.293	9.990	0.002	✓
Calcium	mg/L	58.3	58.1	10.0	0.6	✓
Magnesium	mg/L	9.7	9.8	10.0	0.2	✓
Sodium	mg/L	78.9	79.1	10.0	1.2	✓
Potassium	mg/L	2.2	2.3	10.0	1.2	✓
Iron	mg/L	0.09	0.09	9.99	0.01	✓
Manganese	mg/L	3.97	4.00	9.990	0.001	✓
Chloride	mg/L	8.0	8.2	10.0	0.5	✓
Nitrate - N	mg/L	<0.1	<0.1	10.0	0.0	✓
Nitrite - N	mg/L	<0.05	<0.05	9.99	0.01	✓

Material Used: Edmonton Duplicate
Date Acquired: Aug 06, 2004
Acquired By:

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Routine Water (Continued...)

Control Sample		Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Chloride		mg/L	2020	2087	1875	2299	✓
Material Used:	Chloride High						
Date Acquired:	Aug 06, 2004						
Acquired By:	Andrew Jong						
Calcium		mg/L	253	251	237	265	✓
Magnesium		mg/L	98.6	102	95	109	✓
Sodium		mg/L	259	250	236	264	✓
Potassium		mg/L	256	251	234	268	✓
Iron		mg/L	9.50	9.73	9.26	10.20	✓
Manganese		mg/L	2.38	2.42	2.32	2.53	✓
Material Used:	Metals High						
Date Acquired:	Aug 06, 2004						
Acquired By:	Fernando Maglalang						
Calcium		mg/L	5.1	4.8	4.3	5.3	✓
Magnesium		mg/L	1.9	2.0	1.7	2.2	✓
Sodium		mg/L	5.0	5.2	4.3	6.1	✓
Potassium		mg/L	5.0	5.0	4.5	5.4	✓
Iron		mg/L	0.24	0.20	0.15	0.24	✓
Manganese		mg/L	0.049	0.049	0.044	0.054	✓
Material Used:	Metals Low						
Date Acquired:	Aug 06, 2004						
Acquired By:	Fernando Maglalang						
pH			9.19	9.23	9.11	9.35	✓
Electrical Conductivity		dS/m at 25 C	2.72	2.73	2.61	2.85	✓
Chloride		mg/L	85.2	81.0	76.4	85.6	✓
Nitrate - N		mg/L	10.1	10.0	9.6	10.4	✓
Nitrite - N		mg/L	10.1	10.0	9.6	10.4	✓
Material Used:	Water High						
Date Acquired:	Aug 06, 2004						
Acquired By:							
pH			6.86	6.90	6.83	6.97	✓
Electrical Conductivity		dS/m at 25 C	0.077	0.076	0.070	0.081	✓
Chloride		mg/L	15.0	14.9	13.2	16.6	✓
Nitrate - N		mg/L	0.5	0.5	0.4	0.6	✓
Nitrite - N		mg/L	0.50	0.50	0.44	0.55	✓
Material Used:	Water Low						
Date Acquired:	Aug 06, 2004						
Acquired By:							

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

Methodology and Notes

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity - Laboratory Method, 2510 B	5-Aug-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	*	Electrometric Method, 4500-H+ B	5-Aug-04	Norwest Labs Edmonton
Anions (Routine) by Ion Chromatography	APHA		Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	6-Aug-04	Norwest Labs Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	6-Aug-04	Norwest Labs Edmonton
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	5-Aug-04	Norwest Labs Edmonton
Metals ICP-MS (Dissolved) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	9-Aug-04	Norwest Labs Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	5-Aug-04	Norwest Labs Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	6-Aug-04	Norwest Labs Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	6-Aug-04	Norwest Labs Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	5-Aug-04	Norwest Labs Edmonton
Orthophosphate-P in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	9-Aug-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Fixed and Volatile Solids Ignited at 550'C, 2540 E	10-Aug-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	10-Aug-04	Norwest Labs Edmonton
Turbidity in Water	APHA	*	Nephelometric Method, 2130 B	5-Aug-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:

Some total metal results were less than dissolved metal results for samples 324033-3, 4, and 5 . The results were checked and are within the method uncertainty. 040809 JD

Sample 4 There was insufficient sample volume to reach the low level detection limit for Total Suspended Solids. TBlush Aug 11/04

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

Methodology and Notes

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Ken Nordin
Company: LES

Project ID: Pelly AQ
Name: Pelly R. - Aquatic Effects Jul 04
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324033**
Control Number: E 133793
Date Received: Aug 04, 2004
Date Reported: Aug 12, 2004
Report Number: 579381

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Analytical Resources
Fort Saskatchewan, AB
780-992-5726
780-992-5701

Particle Size Distribution

Sample Name: SFN Pelly AQ PB Pelly U/S Blind

Analysed: Friday, August 06, 2004 3:05:03 PM

Run No. 5347 **SOP Name:** **Measured by:** Michelle

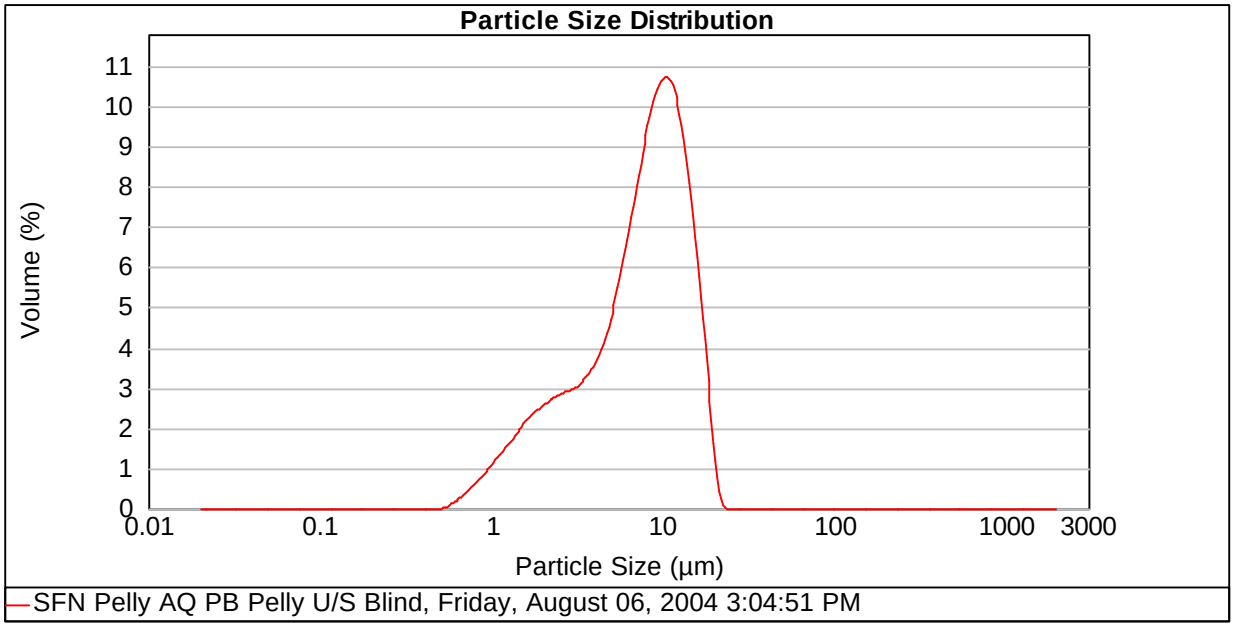
Particle Name: Fraunhofer **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 0.28 %

Particle RI: 0.000 **Absorption:** 0 **Analysis model:** General purpose **Dispersant RI:** 1.330

Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 8.811 %

D 10% 1.958 um **D 50% 7.856** um D 90% 14.523 um D(0.95) : 16.27 µm D(1.00) : 21.86 µm

Operator notes: *Lims # 46180*



Size (µm)	Volume In %
0.020	0.00
0.022	0.00
0.025	0.00
0.028	0.00
0.032	0.00
0.036	0.00
0.040	0.00
0.045	0.00
0.050	0.00
0.056	0.00
0.063	0.00
0.071	0.00
0.080	0.00
0.089	0.00
0.100	0.00
0.112	0.00
0.126	0.00
0.142	

Size (µm)	Volume In %
0.142	0.00
0.159	0.00
0.178	0.00
0.200	0.00
0.224	0.00
0.252	0.00
0.283	0.00
0.317	0.00
0.356	0.00
0.399	0.00
0.448	0.00
0.502	0.00
0.564	0.12
0.632	0.21
0.710	0.37
0.796	0.52
0.893	0.71
1.002	

Size (µm)	Volume In %
1.002	0.90
1.125	1.11
1.262	1.32
1.416	1.52
1.589	1.71
1.783	1.87
2.000	1.99
2.244	2.09
2.518	2.16
2.825	2.24
3.170	2.35
3.557	2.54
3.991	2.85
4.477	3.32
5.024	3.96
5.637	4.75
6.325	5.65
7.096	

Size (µm)	Volume In %
7.096	6.56
7.962	7.37
8.934	7.91
10.024	8.06
11.247	7.71
12.619	6.81
14.159	5.41
15.887	3.68
17.825	1.91
20.000	0.32
22.440	0.00
25.179	0.00
28.251	0.00
31.698	0.00
35.566	0.00
39.905	0.00
44.774	0.00
50.238	

Size (µm)	Volume In %
50.238	0.00
56.368	0.00
63.246	0.00
70.963	0.00
79.621	0.00
89.337	0.00
100.237	0.00
112.468	0.00
126.191	0.00
141.589	0.00
158.866	0.00
178.250	0.00
200.000	0.00
224.404	0.00
251.785	0.00
282.508	0.00
316.979	0.00
355.656	

Size (µm)	Volume In %
355.656	0.00
399.052	0.00
447.744	0.00
502.377	0.00
563.677	0.00
632.456	0.00
709.627	0.00
796.214	0.00
893.367	0.00
1002.374	0.00
1124.683	0.00
1261.915	0.00
1415.892	0.00
1588.656	0.00
1782.502	0.00
2000.000	

Control Number E 133786

NORWEST LABS

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:
Company: LES
Address: BOX 21072
WHITEHORSE, Y.T.
Y1A 6P7
QA/QC Report ☑
Attention: KEN NORDIN
Phone: 867 668 6838
Fax:
Cell:
e-mail: Laberge@internorth.com
Report Result: Fax ☐ Mail ☑ Courier ☐ e-mail ☑

Copy of Report To:
Company: SFN
Address: LANDS & RESOURCES
BOX 40 PELLY CROSSING, Y.T.
Y0B 1P0
Attention: STYD KLUGIE
Phone: 867 537 3331
Fax:
Cell:
e-mail:
Copy of invoice: ☑
Mail invoice to this address for approval ☑
Report Result: Fax ☐ Mail ☑ Courier ☐ e-mail ☐

Information to be included on Report and Invoice
Project ID: PELLY AQ
Project Name: PELLY R. - AQUATIC
Project Location: EFFECTS Jul/04
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID: 17654

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.
Upon filling out this section, client accepts that surcharges will be attached to this analysis
Required on: all analyses **or** as indicated ☐ or ☐
Date Required:
Signature:
Norwest Authorization:

Sample Custody (Please Print)
Sampled by: Paul Sparling Date July 31 - Aug 4 2004
Company WMEC Signature
Relinquished by:
Company Date
Waybill number:
Received by: Donna
Company 324989 Date Aug 9/04

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

2004

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers	TW21/TW22	AN1	COL A	pH/EC/TURB	N 3/2/OP04	TSSV	HARD	COUL			
							↓	Enter tests above (✓ relevant samples below)										
1	EARN RIVER ?		—	Aug 2		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
2	TAY RIVER		—	Aug 2		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
3	PELLY RIVER	P1	—	Jul 31	6	GRAB	4	✓	✓	✓	✓	✓	✓	✓	✓			
4	PELLY RIVER	P1A	—	Aug 01		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
5	ANVIL CREEK	A1	—	Jul 31		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
6	PELLY RIVER	P3	—	Aug 03		GRAB	4	✓	✓	✓	✓	✓	✓	✓	✓			
7	PELLY RIVER	P4	—	Aug 03		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
8	PELLY RIVER	P5	—	Aug 04		GRAB	4	✓	✓	✓	✓	✓	✓	✓	✓			
9	NEEDLEROCK CREEK		—	Aug 04		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
10	PELLY RIVER@PC	P7	—	Aug 04	4	GRAB	4	✓	✓	✓	✓	✓	✓	✓	✓			
11	MACMILLAN RIVER		—	Aug 04		GRAB	4	✓	✓	✓	✓	✓	✓	✓	✓			
12	TUMMEL RIVER		—	Aug 04		GRAB	4	✓	✓	✓	✓	✓	✓	✓				
13	GLENLYON RIVER		—	Aug 01		GRAB	3	✓	✓	✓	✓		✓					
14			—															
15			—															

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

NWL008 (08/01)

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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project
ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

Contact	Company	Address
Ken Nordin	Laberge Environmental Services	Box 21072, 1-405 Ogilvie Street
Web x		Whitehorse, YT Y1A 6P7
Email Notification x		Phone: (867) 668-1043 Fax: (867) 667-6956

Copies	Delivery Strategy	Format
1	Post	
1	Email - Multiple Reports	PDF

Email: laberge@internorth.com

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:
Some total metal results were less than dissolved metal results for LOT 324989. The results were checked and are within the method uncertainty. 040812 JD

Sample Notes:
1247942 There was insufficient sample volume to reach the low level detection limit for Total Suspended Solids. TBlush Aug 11/04

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
581250 Envir2 3 Smp & DL		

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.

Sample Custody

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

Sample Disposal Date: Sep 12, 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 Sep 12, 2004.

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

			NWL Number	324989-1	324989-2	324989-3	
			Sample Description	Earn River / Aug 02, 2004	Tay River / Aug 02, 2004	Pelly River - P1 / Jul 31, 2004	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Inorganic Nonmetallic Parameters							
Orthophosphate-P	Dissolved	mg/L		0.07	0.08	0.06	0.05
Metals Dissolved							
Silicon	Dissolved	mg/L		2.92	3.63	2.60	0.05
Sulphur	Dissolved	mg/L		38.3	15.2	18.2	0.05
Aluminum	Dissolved	mg/L		<0.005	<0.005	0.010	0.005
Antimony	Dissolved	mg/L		0.0003	<0.0002	0.0002	0.0002
Arsenic	Dissolved	mg/L		0.0012	0.0008	0.0005	0.0002
Barium	Dissolved	mg/L		0.057	0.065	0.079	0.001
Beryllium	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L		0.008	0.008	0.004	0.002
Cadmium	Dissolved	mg/L		0.00002	0.00001	0.00004	0.00001
Chromium	Dissolved	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L		0.001	<0.001	<0.001	0.001
Lead	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L		0.007	0.005	0.004	0.001
Molybdenum	Dissolved	mg/L		0.002	0.001	0.001	0.001
Nickel	Dissolved	mg/L		0.0007	<0.0005	0.0007	0.0005
Selenium	Dissolved	mg/L		0.0012	0.0006	0.0013	0.0002
Silver	Dissolved	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Strontium	Dissolved	mg/L		0.274	0.164	0.186	0.001
Thallium	Dissolved	mg/L		<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L		<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L		0.0024	0.0011	0.0017	0.0005
Uranium	Dissolved	mg/L		0.0014	<0.0005	0.0011	0.0005
Vanadium	Dissolved	mg/L		<0.0001	<0.0001	0.0002	0.0001
Zinc	Dissolved	mg/L		0.002	0.004	0.002	0.001
Metals Total							
Calcium	Total	mg/L		62.4	42.7	42.0	0.2
Iron	Total	mg/L		0.1	0.1	0.1	0.1
Magnesium	Total	mg/L		25.6	9.2	15.3	0.1
Manganese	Total	mg/L		0.014	0.009	0.013	0.005
Potassium	Total	mg/L		1.3	1.0	0.7	0.4
Silicon	Total	mg/L		2.83	3.28	2.55	0.05

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Analytical Report

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 324989
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

			NWL Number	324989-1	324989-2	324989-3	
			Sample Description	Earn River / Aug 02, 2004	Tay River / Aug 02, 2004	Pelly River - P1 / Jul 31, 2004	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued							
Sodium	Total	mg/L		3.5	3.3	1.6	0.4
Sulphur	Total	mg/L		35.4	13.9	17.7	0.05
Aluminum	Total	mg/L		<0.005	0.019	0.055	0.005
Antimony	Total	mg/L		0.0003	<0.0002	0.0002	0.0002
Arsenic	Total	mg/L		0.0011	0.0008	0.0006	0.0002
Barium	Total	mg/L		0.056	0.066	0.080	0.001
Beryllium	Total	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Total	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L		0.009	0.008	0.006	0.002
Cadmium	Total	mg/L		0.00003	0.00003	0.00007	0.00001
Chromium	Total	mg/L		<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Total	mg/L		0.0003	<0.0001	0.0004	0.0001
Copper	Total	mg/L		0.001	<0.001	0.001	0.001
Lead	Total	mg/L		0.0003	0.0003	0.0003	0.0001
Lithium	Total	mg/L		0.007	0.005	0.004	0.001
Molybdenum	Total	mg/L		0.002	0.001	0.001	0.001
Nickel	Total	mg/L		0.0015	<0.0005	0.0016	0.0005
Selenium	Total	mg/L		0.0012	0.0008	0.0014	0.0002
Silver	Total	mg/L		<0.0001	<0.0001	<0.0001	0.0001
Strontium	Total	mg/L		0.280	0.164	0.194	0.001
Thallium	Total	mg/L		<0.00005	<0.00005	<0.00005	0.00005
Tin	Total	mg/L		<0.001	<0.001	<0.001	0.001
Titanium	Total	mg/L		0.0024	0.0014	0.0027	0.0005
Uranium	Total	mg/L		0.0014	0.0009	0.0017	0.0005
Vanadium	Total	mg/L		0.0002	0.0003	0.0005	0.0001
Zinc	Total	mg/L		0.022	0.005	0.007	0.001
Zirconium	Total	mg/L		<0.001	<0.001	<0.001	0.001
Physical and Aggregate Properties							
Turbidity		NTU		1.0	1.1	1.8	0.1
Temp. of observed pH and EC		°C		19.8	19.7	19.7	
Solids	Total Suspended	mg/L		1	2	5	1
Solids	Fixed Suspended	mg/L		1	2	4	1
Solids	Volatile Suspended	mg/L		0	1	1	2
Colour	Apparent	Colour units		18	10	5	5
Routine Water							

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Analytical Report

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

			NWL Number	324989-1	324989-2	324989-3	
			Sample Description	Earn River / Aug 02, 2004	Tay River / Aug 02, 2004	Pelly River - P1 / Jul 31, 2004	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued							
pH				8.30	8.33	8.30	
Electrical Conductivity		µS/cm at 25 C		501	304	327	1
Calcium	Dissolved	mg/L		66.7	45.9	43.7	0.2
Magnesium	Dissolved	mg/L		26.5	10.1	15.5	0.1
Sodium	Dissolved	mg/L		3.8	3.6	1.8	0.4
Potassium	Dissolved	mg/L		1.4	1.2	0.8	0.4
Iron	Dissolved	mg/L		0.03	0.01	<0.01	0.01
Manganese	Dissolved	mg/L		<0.005	<0.005	<0.005	0.005
Chloride	Dissolved	mg/L		1.2	1.0	0.6	0.5
Nitrate - N		mg/L		<0.1	<0.1	<0.1	0.1
Nitrite - N		mg/L		<0.05	<0.05	<0.05	0.05
Nitrate and Nitrite - N		mg/L		<0.2	<0.2	<0.2	0.2
Sulphate-S	Dissolved	mg/L		38.3	15.2	18.2	0.05
Hardness	Dissolved as CaCO3	mg/L		276	156	173	

NORWEST LABS

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Analytical Report

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

	NWL Number	324989-4	324989-5	324989-6	
	Sample Description	Pelly River - P1A / Aug 01, 2004	Anvil Creek - A1 / Jul 31, 2004	Pelly Creek - P3 / Aug 03, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Inorganic Nonmetallic Parameters						
Orthophosphate-P	Dissolved	mg/L	0.06	0.07	0.05	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	2.67	4.06	2.75	0.05
Sulphur	Dissolved	mg/L	18.0	10.5	17.8	0.05
Aluminum	Dissolved	mg/L	0.012	<0.005	0.011	0.005
Antimony	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Arsenic	Dissolved	mg/L	0.0005	0.0006	0.0006	0.0002
Barium	Dissolved	mg/L	0.078	0.066	0.076	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L	0.004	0.002	0.004	0.002
Cadmium	Dissolved	mg/L	0.00005	0.00001	0.00004	0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L	<0.001	<0.001	0.001	0.001
Lead	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L	0.004	0.003	0.004	0.001
Molybdenum	Dissolved	mg/L	0.001	0.001	0.001	0.001
Nickel	Dissolved	mg/L	0.0007	<0.0005	0.0005	0.0005
Selenium	Dissolved	mg/L	0.0012	0.0006	0.0010	0.0002
Silver	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Strontium	Dissolved	mg/L	0.181	0.137	0.185	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L	0.0018	0.0011	0.0018	0.0005
Uranium	Dissolved	mg/L	0.0016	0.0016	0.0016	0.0005
Vanadium	Dissolved	mg/L	0.0002	<0.0001	0.0001	0.0001
Zinc	Dissolved	mg/L	0.003	0.001	0.002	0.001
Metals Total						
Calcium	Total	mg/L	41.8	40.1	42.7	0.2
Iron	Total	mg/L	0.1	0.1	0.3	0.1
Magnesium	Total	mg/L	15.0	8.8	14.4	0.1
Manganese	Total	mg/L	0.014	0.013	0.017	0.005
Potassium	Total	mg/L	0.8	1.3	0.9	0.4
Silicon	Total	mg/L	2.59	3.74	2.80	0.05

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Analytical Report

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Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
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Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
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	NWL Number	324989-4	324989-5	324989-6	
	Sample Description	Pelly River - P1A / Aug 01, 2004	Anvil Creek - A1 / Jul 31, 2004	Pelly Creek - P3 / Aug 03, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued						
Sodium	Total	mg/L	1.7	2.6	1.9	0.4
Sulphur	Total	mg/L	16.9	9.55	16.5	0.05
Aluminum	Total	mg/L	0.077	0.041	0.167	0.005
Antimony	Total	mg/L	0.0003	0.0003	0.0003	0.0002
Arsenic	Total	mg/L	0.0006	0.0007	0.0007	0.0002
Barium	Total	mg/L	0.083	0.066	0.085	0.001
Beryllium	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	0.006	0.004	0.006	0.002
Cadmium	Total	mg/L	0.00006	0.00002	0.00007	0.00001
Chromium	Total	mg/L	<0.0005	<0.0005	0.0006	0.0005
Cobalt	Total	mg/L	<0.0001	<0.0001	0.0002	0.0001
Copper	Total	mg/L	<0.001	<0.001	0.001	0.001
Lead	Total	mg/L	0.0003	0.0004	0.0005	0.0001
Lithium	Total	mg/L	0.004	0.003	0.004	0.001
Molybdenum	Total	mg/L	0.001	0.001	0.001	0.001
Nickel	Total	mg/L	0.0014	<0.0005	0.0014	0.0005
Selenium	Total	mg/L	0.0014	0.0007	0.0010	0.0002
Silver	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Strontium	Total	mg/L	0.194	0.140	0.190	0.001
Thallium	Total	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Total	mg/L	<0.001	<0.001	<0.001	0.001
Titanium	Total	mg/L	0.0028	0.0024	0.0061	0.0005
Uranium	Total	mg/L	0.0017	0.0016	0.0016	0.0005
Vanadium	Total	mg/L	0.0006	0.0003	0.0010	0.0001
Zinc	Total	mg/L	0.010	0.007	0.012	0.001
Zirconium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Physical and Aggregate Properties						
Turbidity		NTU	3.1	1.6	4.8	0.1
Temp. of observed pH and EC		°C	19.7	19.8	20.0	
Solids	Total Suspended	mg/L	7	2	10	1
Solids	Fixed Suspended	mg/L	7	2	10	1
Solids	Volatile Suspended	mg/L	0	0	0	2
Colour	Apparent	Colour units	6	7	5	5
Routine Water						

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Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
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NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

	NWL Number	324989-4	324989-5	324989-6	
	Sample Description	Pelly River - P1A / Aug 01, 2004	Anvil Creek - A1 / Jul 31, 2004	Pelly Creek - P3 / Aug 03, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued						
pH			8.31	8.35	8.35	
Electrical Conductivity		µS/cm at 25 C	324	274	324	1
Calcium	Dissolved	mg/L	43.5	41.2	43.3	0.2
Magnesium	Dissolved	mg/L	15.3	9.3	14.8	0.1
Sodium	Dissolved	mg/L	1.8	2.8	2.0	0.4
Potassium	Dissolved	mg/L	0.8	1.3	0.8	0.4
Iron	Dissolved	mg/L	<0.01	0.01	0.01	0.01
Manganese	Dissolved	mg/L	<0.005	<0.005	<0.005	0.005
Chloride	Dissolved	mg/L	0.5	0.5	0.5	0.5
Nitrate - N		mg/L	<0.1	<0.1	<0.1	0.1
Nitrite - N		mg/L	<0.05	<0.05	<0.05	0.05
Nitrate and Nitrite - N		mg/L	<0.2	<0.2	<0.2	0.2
Sulphate-S	Dissolved	mg/L	18.0	10.5	17.8	0.05
Hardness	Dissolved as CaCO3	mg/L	172	141	169	

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Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
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NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

	NWL Number	324989-7	324989-8	324989-9	
	Sample Description	Pelly Creek - P4 / Aug 03, 2004	Pelly Creek - P5 / Aug 04, 2004	Needle Rock Creek / Aug 04, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Inorganic Nonmetallic Parameters						
Orthophosphate-P	Dissolved	mg/L	0.06	0.06	0.07	0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	2.84	2.82	4.08	0.05
Sulphur	Dissolved	mg/L	17.8	17.4	4.63	0.05
Aluminum	Dissolved	mg/L	0.010	0.011	<0.005	0.005
Antimony	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Arsenic	Dissolved	mg/L	0.0006	0.0006	0.0015	0.0002
Barium	Dissolved	mg/L	0.075	0.076	0.108	0.001
Beryllium	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Dissolved	mg/L	0.004	0.003	0.003	0.002
Cadmium	Dissolved	mg/L	0.00004	0.00003	0.00001	0.00001
Chromium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Cobalt	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Copper	Dissolved	mg/L	0.003	0.001	<0.001	0.001
Lead	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Lithium	Dissolved	mg/L	0.004	0.004	0.002	0.001
Molybdenum	Dissolved	mg/L	0.001	0.001	0.002	0.001
Nickel	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Selenium	Dissolved	mg/L	0.0012	0.0010	0.0002	0.0002
Silver	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Strontium	Dissolved	mg/L	0.180	0.183	0.223	0.001
Thallium	Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Titanium	Dissolved	mg/L	0.0018	0.0017	0.0005	0.0005
Uranium	Dissolved	mg/L	0.0015	0.0016	0.0011	0.0005
Vanadium	Dissolved	mg/L	0.0002	0.0002	<0.0001	0.0001
Zinc	Dissolved	mg/L	0.003	0.002	0.002	0.001
Metals Total						
Calcium	Total	mg/L	42.8	42.8	51.5	0.2
Iron	Total	mg/L	1.5	0.2	<0.1	0.1
Magnesium	Total	mg/L	14.4	14.3	11.9	0.1
Manganese	Total	mg/L	0.051	0.013	0.010	0.005
Potassium	Total	mg/L	1.1	0.9	2.0	0.4
Silicon	Total	mg/L	3.82	2.73	3.81	0.05

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Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

	NWL Number	324989-7	324989-8	324989-9	
	Sample Description	Pelly Creek - P4 / Aug 03, 2004	Pelly Creek - P5 / Aug 04, 2004	Needle Rock Creek / Aug 04, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued						
Sodium	Total	mg/L	1.9	1.9	3.6	0.4
Sulphur	Total	mg/L	17.2	16.1	4.30	0.05
Aluminum	Total	mg/L	0.858	0.091	0.022	0.005
Antimony	Total	mg/L	0.0003	0.0002	<0.0002	0.0002
Arsenic	Total	mg/L	0.0015	0.0007	0.0014	0.0002
Barium	Total	mg/L	0.146	0.080	0.107	0.001
Beryllium	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	0.006	0.006	0.006	0.002
Cadmium	Total	mg/L	0.00016	0.00005	0.00001	0.00001
Chromium	Total	mg/L	0.0021	<0.0005	<0.0005	0.0005
Cobalt	Total	mg/L	0.0007	<0.0001	0.0031	0.0001
Copper	Total	mg/L	0.003	<0.001	<0.001	0.001
Lead	Total	mg/L	0.0014	0.0004	<0.0001	0.0001
Lithium	Total	mg/L	0.004	0.004	0.002	0.001
Molybdenum	Total	mg/L	0.001	0.001	0.002	0.001
Nickel	Total	mg/L	0.0037	0.0011	<0.0005	0.0005
Selenium	Total	mg/L	0.0013	0.0010	0.0002	0.0002
Silver	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Strontium	Total	mg/L	0.184	0.194	0.233	0.001
Thallium	Total	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin	Total	mg/L	0.001	<0.001	<0.001	0.001
Titanium	Total	mg/L	0.0299	0.0035	0.0008	0.0005
Uranium	Total	mg/L	0.0016	0.0016	0.0012	0.0005
Vanadium	Total	mg/L	0.0042	0.0006	0.0002	0.0001
Zinc	Total	mg/L	0.016	0.005	0.004	0.001
Zirconium	Total	mg/L	<0.001	<0.001	<0.001	0.001
Physical and Aggregate Properties						
Turbidity		NTU	13.6	3.2	1.6	0.1
Temp. of observed pH and EC		°C	19.8	19.7	19.7	
Solids	Total Suspended	mg/L	81	7	1	1
Solids	Fixed Suspended	mg/L	78	7	<1	1
Solids	Volatile Suspended	mg/L	3	0	1	2
Colour	Apparent	Colour units	25	5	13	5
Routine Water						

Norwest Labs
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Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
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	NWL Number	324989-7	324989-8	324989-9	
	Sample Description	Pelly Creek - P4 / Aug 03, 2004	Pelly Creek - P5 / Aug 04, 2004	Needle Rock Creek / Aug 04, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued						
pH			8.34	8.33	8.40	
Electrical Conductivity		µS/cm at 25 C	322	322	337	1
Calcium	Dissolved	mg/L	43.5	43.5	52.2	0.2
Magnesium	Dissolved	mg/L	14.7	14.7	12.2	0.1
Sodium	Dissolved	mg/L	2.0	2.0	3.6	0.4
Potassium	Dissolved	mg/L	0.8	0.8	1.7	0.4
Iron	Dissolved	mg/L	<0.01	<0.01	0.01	0.01
Manganese	Dissolved	mg/L	<0.005	<0.005	0.005	0.005
Chloride	Dissolved	mg/L	0.5	1.4	0.5	0.5
Nitrate - N		mg/L	<0.1	<0.1	<0.1	0.1
Nitrite - N		mg/L	<0.05	<0.05	<0.05	0.05
Nitrate and Nitrite - N		mg/L	<0.2	<0.2	<0.2	0.2
Sulphate-S	Dissolved	mg/L	17.8	17.4	4.63	0.05
Hardness	Dissolved as CaCO3	mg/L	169	169	181	

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Location: Effects Jul / 04
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NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

	NWL Number	324989-10	324989-11	324989-12	
	Sample Description	Pelly River @ PC / Aug 04, 2004	Macmillan River / Aug 04, 2004	Tummel River / Aug 04, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Inorganic Nonmetallic Parameters					
Orthophosphate-P Dissolved	mg/L	0.06	0.06	0.07	0.05
Metals Dissolved					
Silicon Dissolved	mg/L	2.94	2.96	3.86	0.05
Sulphur Dissolved	mg/L	17.0	17.8	6.28	0.05
Aluminum Dissolved	mg/L	0.024	0.064	0.010	0.005
Antimony Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Arsenic Dissolved	mg/L	0.0007	0.0004	0.0004	0.0002
Barium Dissolved	mg/L	0.079	0.067	0.074	0.001
Beryllium Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron Dissolved	mg/L	0.004	0.004	0.002	0.002
Cadmium Dissolved	mg/L	0.00004	0.00005	<0.00001	0.00001
Chromium Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Cobalt Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Copper Dissolved	mg/L	0.001	<0.001	<0.001	0.001
Lead Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Lithium Dissolved	mg/L	0.004	0.004	0.002	0.001
Molybdenum Dissolved	mg/L	0.001	<0.001	<0.001	0.001
Nickel Dissolved	mg/L	0.0006	0.0009	<0.0005	0.0005
Selenium Dissolved	mg/L	0.0012	0.0012	0.0003	0.0002
Silver Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Strontium Dissolved	mg/L	0.184	0.163	0.174	0.001
Thallium Dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin Dissolved	mg/L	<0.001	<0.001	<0.001	0.001
Titanium Dissolved	mg/L	0.0017	0.0023	0.0008	0.0005
Uranium Dissolved	mg/L	0.0012	<0.0005	0.0019	0.0005
Vanadium Dissolved	mg/L	0.0003	0.0002	<0.0001	0.0001
Zinc Dissolved	mg/L	0.001	0.003	0.004	0.001
Metals Total					
Calcium Total	mg/L	40.5	31.0	42.0	0.2
Iron Total	mg/L	1.8	0.4	0.1	0.1
Magnesium Total	mg/L	13.6	10.4	10.8	0.1
Manganese Total	mg/L	0.080	0.016	0.014	0.005
Potassium Total	mg/L	1.3	0.9	1.0	0.4
Silicon Total	mg/L	4.50	3.41	3.80	0.05

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 324989
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

	NWL Number	324989-10	324989-11	324989-12	
	Sample Description	Pelly River @ PC / Aug 04, 2004	Macmillan River / Aug 04, 2004	Tummel River / Aug 04, 2004	
	Matrix	Water - General	Water - General	Water - General	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total - Continued					
Sodium Total	mg/L	2.2	1.9	2.3	0.4
Sulphur Total	mg/L	16.1	16.7	5.98	0.05
Aluminum Total	mg/L	1.22	0.450	0.091	0.005
Antimony Total	mg/L	0.0003	<0.0002	<0.0002	0.0002
Arsenic Total	mg/L	0.0017	0.0006	0.0004	0.0002
Barium Total	mg/L	0.146	0.078	0.077	0.001
Beryllium Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Bismuth Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron Total	mg/L	0.007	0.007	0.004	0.002
Cadmium Total	mg/L	0.00020	0.00009	0.00001	0.00001
Chromium Total	mg/L	0.0026	0.0008	<0.0005	0.0005
Cobalt Total	mg/L	0.0008	0.0005	<0.0001	0.0001
Copper Total	mg/L	0.003	0.001	<0.001	0.001
Lead Total	mg/L	0.0011	0.0003	0.0003	0.0001
Lithium Total	mg/L	0.005	0.005	0.002	0.001
Molybdenum Total	mg/L	0.002	0.001	<0.001	0.001
Nickel Total	mg/L	0.0042	0.0018	<0.0005	0.0005
Selenium Total	mg/L	0.0013	0.0014	0.0004	0.0002
Silver Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Strontium Total	mg/L	0.198	0.168	0.185	0.001
Thallium Total	mg/L	<0.00005	<0.00005	<0.00005	0.00005
Tin Total	mg/L	<0.001	0.001	0.001	0.001
Titanium Total	mg/L	0.0352	0.0125	0.0035	0.0005
Uranium Total	mg/L	0.0014	0.0005	0.0019	0.0005
Vanadium Total	mg/L	0.0060	0.0020	0.0005	0.0001
Zinc Total	mg/L	0.019	0.011	0.005	0.001
Zirconium Total	mg/L	<0.001	<0.001	<0.001	0.001
Physical and Aggregate Properties					
Turbidity	NTU	40.1	17.6	5.9	0.1
Temp. of observed pH and EC	°C	19.6	19.7	19.8	
Solids Total Suspended	mg/L	<3	13	3	1
Solids Fixed Suspended	mg/L	<1	13	3	1
Solids Volatile Suspended	mg/L	<2	0	0	2
Colour Apparent	Colour units	80	35	7	5
Routine Water					

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Box 21072
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Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

			NWL Number	324989-10	324989-11	324989-12	
			Sample Description	Pelly River @ PC / Aug 04, 2004	Macmillan River / Aug 04, 2004	Tummel River / Aug 04, 2004	
			Matrix	Water - General	Water - General	Water - General	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Routine Water - Continued							
pH				8.30	8.14	8.41	
Electrical Conductivity		µS/cm at 25 C		297	241	284	1
Calcium	Dissolved	mg/L		39.7	30.9	41.4	0.2
Magnesium	Dissolved	mg/L		13.2	10.4	10.7	0.1
Sodium	Dissolved	mg/L		2.2	1.9	2.4	0.4
Potassium	Dissolved	mg/L		0.9	0.7	0.9	0.4
Iron	Dissolved	mg/L		0.01	0.02	0.02	0.01
Manganese	Dissolved	mg/L		0.009	<0.005	<0.005	0.005
Chloride	Dissolved	mg/L		0.6	<0.5	0.9	0.5
Nitrate - N		mg/L		<0.1	<0.1	<0.1	0.1
Nitrite - N		mg/L		<0.05	<0.05	<0.05	0.05
Nitrate and Nitrite - N		mg/L		<0.2	<0.2	<0.2	0.2
Sulphate-S	Dissolved	mg/L		17.0	17.8	6.28	0.05
Hardness	Dissolved as CaCO3	mg/L		154	120	147	

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NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

NWL Number: 324989-13
Sample Description: Glenlyon River / Aug 01, 2004
Matrix: Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Inorganic Nonmetallic Parameters						
Orthophosphate-P	Dissolved	mg/L	0.06			0.05
Metals Dissolved						
Silicon	Dissolved	mg/L	3.36			0.05
Sulphur	Dissolved	mg/L	4.94			0.05
Aluminum	Dissolved	mg/L	0.008			0.005
Antimony	Dissolved	mg/L	<0.0002			0.0002
Arsenic	Dissolved	mg/L	<0.0002			0.0002
Barium	Dissolved	mg/L	0.046			0.001
Beryllium	Dissolved	mg/L	<0.0001			0.0001
Bismuth	Dissolved	mg/L	<0.0005			0.0005
Boron	Dissolved	mg/L	<0.002			0.002
Cadmium	Dissolved	mg/L	<0.00001			0.00001
Chromium	Dissolved	mg/L	<0.0005			0.0005
Cobalt	Dissolved	mg/L	<0.0001			0.0001
Copper	Dissolved	mg/L	<0.001			0.001
Lead	Dissolved	mg/L	<0.0001			0.0001
Lithium	Dissolved	mg/L	0.001			0.001
Molybdenum	Dissolved	mg/L	<0.001			0.001
Nickel	Dissolved	mg/L	<0.0005			0.0005
Selenium	Dissolved	mg/L	<0.0002			0.0002
Silver	Dissolved	mg/L	<0.0001			0.0001
Strontium	Dissolved	mg/L	0.104			0.001
Thallium	Dissolved	mg/L	<0.00005			0.00005
Tin	Dissolved	mg/L	<0.001			0.001
Titanium	Dissolved	mg/L	0.0007			0.0005
Uranium	Dissolved	mg/L	0.0009			0.0005
Vanadium	Dissolved	mg/L	<0.0001			0.0001
Zinc	Dissolved	mg/L	0.003			0.001
Metals Total						
Calcium	Total	mg/L	20.4			0.2
Iron	Total	mg/L	<0.1			0.1
Magnesium	Total	mg/L	5.3			0.1
Manganese	Total	mg/L	<0.005			0.005
Potassium	Total	mg/L	0.6			0.4
Silicon	Total	mg/L	3.20			0.05

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Location: Effects Jul / 04
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NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

NWL Number: 324989-13
Sample Description: Glenlyon River / Aug 01, 2004
Matrix: Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Metals Total - Continued						
Sodium	Total	mg/L	1.9			0.4
Sulphur	Total	mg/L	4.71			0.05
Aluminum	Total	mg/L	0.024			0.005
Antimony	Total	mg/L	<0.0002			0.0002
Arsenic	Total	mg/L	<0.0002			0.0002
Barium	Total	mg/L	0.046			0.001
Beryllium	Total	mg/L	<0.0001			0.0001
Bismuth	Total	mg/L	<0.0005			0.0005
Boron	Total	mg/L	0.004			0.002
Cadmium	Total	mg/L	<0.00001			0.00001
Chromium	Total	mg/L	<0.0005			0.0005
Cobalt	Total	mg/L	<0.0001			0.0001
Copper	Total	mg/L	<0.001			0.001
Lead	Total	mg/L	0.0003			0.0001
Lithium	Total	mg/L	0.002			0.001
Molybdenum	Total	mg/L	<0.001			0.001
Nickel	Total	mg/L	<0.0005			0.0005
Selenium	Total	mg/L	<0.0002			0.0002
Silver	Total	mg/L	<0.0001			0.0001
Strontium	Total	mg/L	0.110			0.001
Thallium	Total	mg/L	<0.00005			0.00005
Tin	Total	mg/L	<0.001			0.001
Titanium	Total	mg/L	0.0011			0.0005
Uranium	Total	mg/L	0.0010			0.0005
Vanadium	Total	mg/L	0.0002			0.0001
Zinc	Total	mg/L	0.004			0.001
Zirconium	Total	mg/L	<0.001			0.001
Physical and Aggregate Properties						
Turbidity		NTU	0.4			0.1
Temp. of observed pH and EC		°C	20.1			
Colour	Apparent	Colour units	8			5
Routine Water						
pH			8.15			
Electrical Conductivity		µS/cm at 25 C	151			1
Calcium	Dissolved	mg/L	20.2			0.2

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Control Number: E 133786
Date Received: Aug 09, 2004
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NWL Number	324989-13
Sample Description	Glenlyon River / Aug 01, 2004
Matrix	Water - General

Analyte		Units	Results	Results	Results	Detection Limit
Routine Water - Continued						
Magnesium	Dissolved	mg/L	5.4			0.1
Sodium	Dissolved	mg/L	1.9			0.4
Potassium	Dissolved	mg/L	0.6			0.4
Iron	Dissolved	mg/L	<0.01			0.01
Manganese	Dissolved	mg/L	<0.005			0.005
Chloride	Dissolved	mg/L	0.5			0.5
Nitrate - N		mg/L	<0.1			0.1
Nitrite - N		mg/L	<0.05			0.05
Sulphate-S	Dissolved	mg/L	4.94			0.05
Hardness	Dissolved as CaCO3	mg/L	72.9			

Approved by: C William Warning

Bill Warning, B.Sc.
Lab Operations Manager

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Methodology and Notes

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NWL Lot ID: **324989**
Control Number: E 133786
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Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	*	Conductivity - Laboratory Method, 2510 B	11-Aug-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	*	Electrometric Method, 4500-H+ B	11-Aug-04	Norwest Labs Edmonton
Anions (Routine) by Ion Chromatography	APHA		Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	12-Aug-04	Norwest Labs Edmonton
Chloride in Water	APHA	*	Automated Ferricyanide Method, 4500-Cl- E	11-Aug-04	Norwest Labs Edmonton
Colour (Apparent) in water	APHA	*	Visual Comparison Method, 2120 B	11-Aug-04	Norwest Labs Edmonton
Metals ICP-MS (Dissolved) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	11-Aug-04	Norwest Labs Edmonton
Metals ICP-MS (Total) in water	US EPA	*	Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	11-Aug-04	Norwest Labs Edmonton
Metals Trace (Dissolved) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	12-Aug-04	Norwest Labs Edmonton
Metals Trace (Total) in water	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	11-Aug-04	Norwest Labs Edmonton
Orthophosphate-P in Water	APHA	*	Automated Ascorbic Acid Reduction Method, 4500-P F	12-Aug-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Fixed and Volatile Solids Ignited at 550'C, 2540 E	12-Aug-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	*	Total Suspended Solids Dried at 103-105'C, 2540 D	12-Aug-04	Norwest Labs Edmonton
Turbidity in Water	APHA	*	Nephelometric Method, 2130 B	11-Aug-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:

Some total metal results were less than dissolved metal results for LOT 324989. The results were checked and are within the method uncertainty. 040812 JD

Sample 10 There was insufficient sample volume to reach the low level detection limit for Total Suspended Solids. TBlush Aug 11/04

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

Methodology and Notes

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: Paul Sparling
Company: WMEC

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **324989**
Control Number: E 133786
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581250

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

Analytical Resources
Fort Saskatchewan, AB
780-992-5726
780-992-5701

Particle Size Distribution

Sample Name: Pelly River - P1 324989-3

Analysed: Wednesday, August 11, 2004 9:02:36 AM

Run No. 5409 **SOP Name:** **Measured by:** Jody

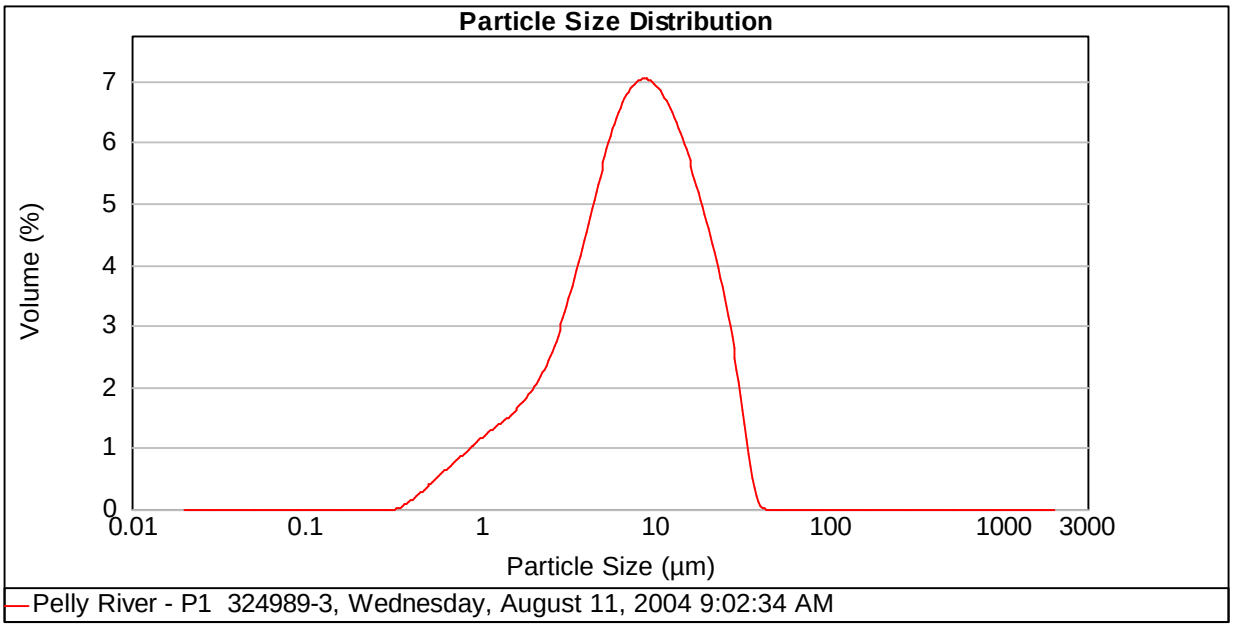
Particle Name: Fraunhofer **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 0.36 %

Particle RI: 0.000 **Absorption:** 0 **Analysis model:** General purpose **Dispersant RI:** 1.330

Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 6.263 %

D 10% 1.887 um **D 50% 7.724** um D 90% 20.691 um D(0.95) : 25.10 µm D(1.00) : 40.05 µm

Operator notes: *Lims # 46349*
The obscuration of this sample is < 1 therefore the result is suspect and may not reflect the true particle size in this sample. There are not enough particles to obtain a reliable measurement even though a result can be seen, particle size is below the malvern detection limit.



Size (µm)	Volume In %
0.020	0.00
0.022	0.00
0.025	0.00
0.028	0.00
0.032	0.00
0.036	0.00
0.040	0.00
0.045	0.00
0.050	0.00
0.056	0.00
0.063	0.00
0.071	0.00
0.080	0.00
0.089	0.00
0.100	0.00
0.112	0.00
0.126	0.00
0.142	0.00

Size (µm)	Volume In %
0.142	0.00
0.159	0.00
0.178	0.00
0.200	0.00
0.224	0.00
0.252	0.00
0.283	0.00
0.317	0.00
0.356	0.08
0.399	0.14
0.448	0.25
0.502	0.33
0.564	0.43
0.632	0.53
0.710	0.63
0.796	0.72
0.893	0.82
1.002	0.90

Size (µm)	Volume In %
1.002	0.90
1.125	0.99
1.262	1.07
1.416	1.16
1.589	1.27
1.783	1.40
2.000	1.56
2.244	1.77
2.518	2.03
2.825	2.35
3.170	2.72
3.557	3.15
3.991	3.58
4.477	4.02
5.024	4.43
5.637	4.78
6.325	5.05
7.096	5.22

Size (µm)	Volume In %
7.096	5.22
7.962	5.29
8.934	5.27
10.024	5.16
11.247	4.97
12.619	4.72
14.159	4.42
15.887	4.08
17.825	3.69
20.000	3.28
22.440	2.81
25.179	2.26
28.251	1.64
31.698	0.85
35.566	0.17
39.905	0.00
44.774	0.00
50.238	0.00

Size (µm)	Volume In %
50.238	0.00
56.368	0.00
63.246	0.00
70.963	0.00
79.621	0.00
89.337	0.00
100.237	0.00
112.468	0.00
126.191	0.00
141.589	0.00
158.866	0.00
178.250	0.00
200.000	0.00
224.404	0.00
251.785	0.00
282.508	0.00
316.979	0.00
355.656	0.00

Size (µm)	Volume In %
355.656	0.00
399.052	0.00
447.744	0.00
502.377	0.00
563.677	0.00
632.456	0.00
709.627	0.00
796.214	0.00
893.367	0.00
1002.374	0.00
1124.683	0.00
1261.915	0.00
1415.892	0.00
1588.656	0.00
1782.502	0.00
2000.000	0.00

Analytical Resources
Fort Saskatchewan, AB
780-992-5726
780-992-5701

Particle Size Distribution

Sample Name: Pelly Creek - P3 324989-6

Analysed: Wednesday, August 11, 2004 9:05:01 AM

Run No. 5410 **SOP Name:** **Measured by:** Jody

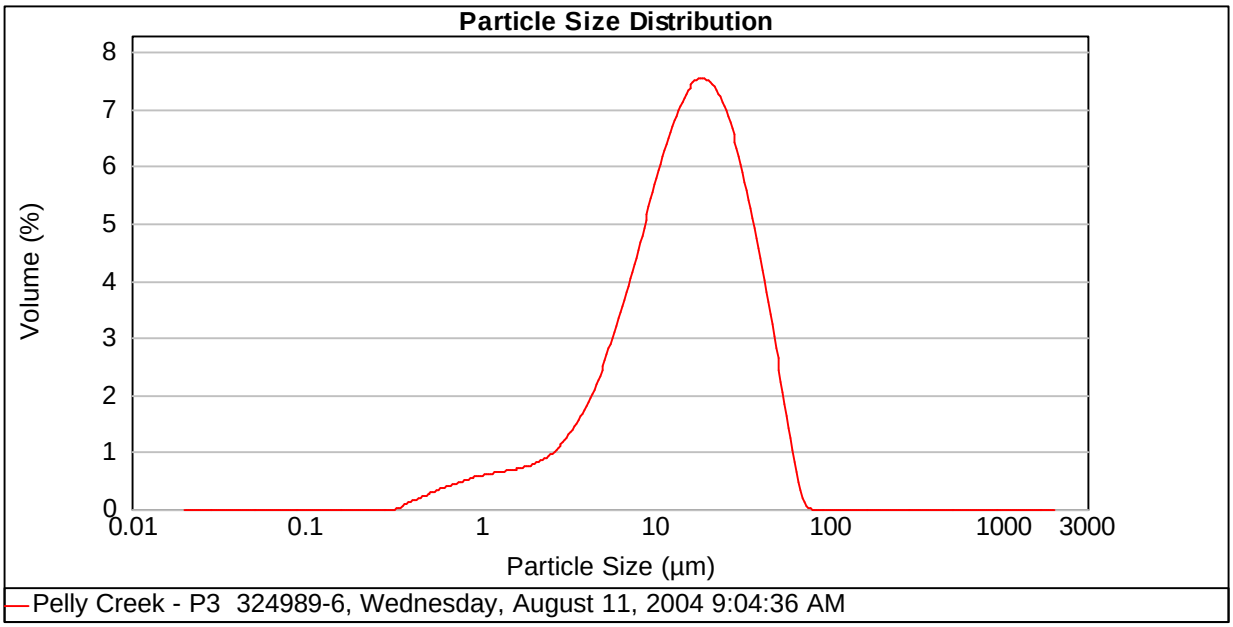
Particle Name: Fraunhofer **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 0.56 %

Particle RI: 0.000 **Absorption:** 0 **Analysis model:** General purpose **Dispersant RI:** 1.330

Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 3.847 %

D 10% 3.781 um **D 50% 15.280 um** D 90% 37.618 um D(0.95) : 45.22 µm D(1.00) : 71.56 µm

Operator notes: *Lims # 46350*
The obscuration of this sample is < 1 therefore the result is suspect and may not reflect the true particle size in this sample. There are not enough particles to obtain a reliable measurement even though a result can be seen, particle size is below the malvern detection limit.



Size (µm)	Volume In %
0.020	0.00
0.022	0.00
0.025	0.00
0.028	0.00
0.032	0.00
0.036	0.00
0.040	0.00
0.045	0.00
0.050	0.00
0.056	0.00
0.063	0.00
0.071	0.00
0.080	0.00
0.089	0.00
0.100	0.00
0.112	0.00
0.126	0.00
0.142	0.00

Size (µm)	Volume In %
0.142	0.00
0.159	0.00
0.178	0.00
0.200	0.00
0.224	0.00
0.252	0.00
0.283	0.00
0.317	0.00
0.356	0.08
0.399	0.12
0.448	0.18
0.502	0.22
0.564	0.27
0.632	0.31
0.710	0.35
0.796	0.39
0.893	0.42
1.002	0.45

Size (µm)	Volume In %
1.002	0.45
1.125	0.48
1.262	0.50
1.416	0.51
1.589	0.54
1.783	0.57
2.000	0.61
2.244	0.68
2.518	0.77
2.825	0.89
3.170	1.04
3.557	1.23
3.991	1.45
4.477	1.72
5.024	2.03
5.637	2.38
6.325	2.77
7.096	3.18

Size (µm)	Volume In %
7.096	3.18
7.962	3.63
8.934	4.06
10.024	4.49
11.247	4.88
12.619	5.21
14.159	5.47
15.887	5.62
17.825	5.67
20.000	5.60
22.440	5.40
25.179	5.10
28.251	4.69
31.698	4.20
35.566	3.62
39.905	2.99
44.774	2.32
50.238	1.64

Size (µm)	Volume In %
50.238	1.64
56.368	0.95
63.246	0.30
70.963	0.00
79.621	0.00
89.337	0.00
100.237	0.00
112.468	0.00
126.191	0.00
141.589	0.00
158.866	0.00
178.250	0.00
200.000	0.00
224.404	0.00
251.785	0.00
282.508	0.00
316.979	0.00
355.656	0.00

Size (µm)	Volume In %
355.656	0.00
399.052	0.00
447.744	0.00
502.377	0.00
563.677	0.00
632.456	0.00
709.627	0.00
796.214	0.00
893.367	0.00
1002.374	0.00
1124.683	0.00
1261.915	0.00
1415.892	0.00
1588.656	0.00
1782.502	0.00
2000.000	0.00

Analytical Resources
Fort Saskatchewan, AB
780-992-5726
780-992-5701

Particle Size Distribution

Sample Name: Pelly Creek - P5 324989-8

Analysed: Wednesday, August 11, 2004 9:08:44 AM

Run No. 5411 **SOP Name:** **Measured by:** Jody

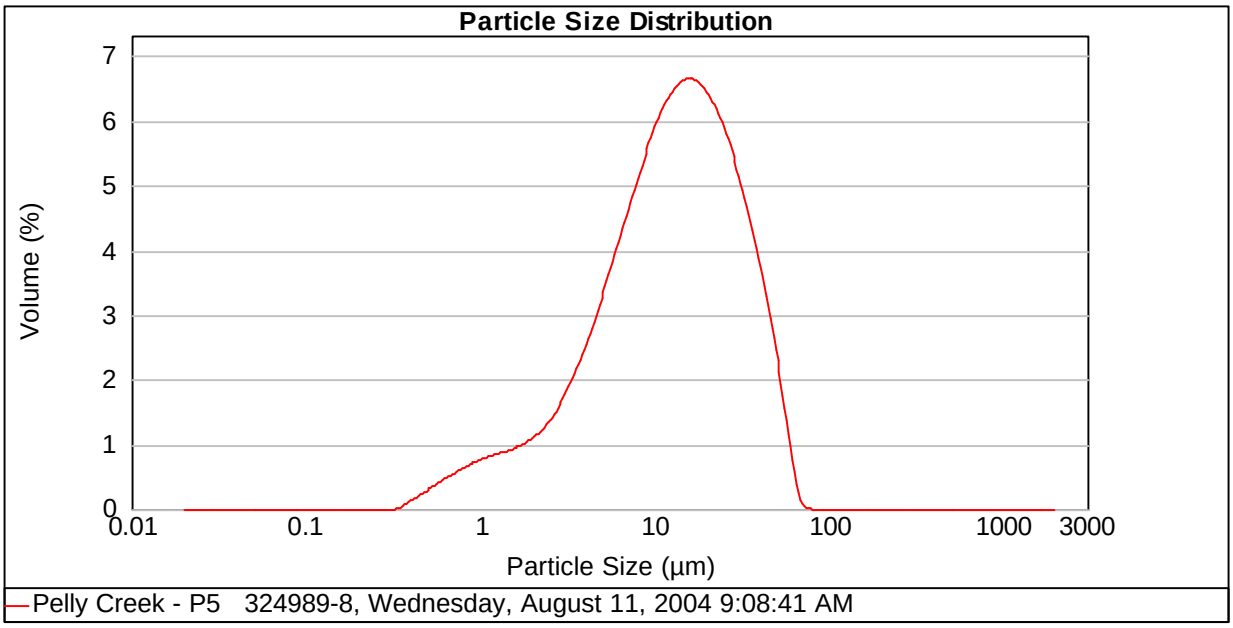
Particle Name: Fraunhofer **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 0.74 %

Particle RI: 0.000 **Absorption:** 0 **Analysis model:** General purpose **Dispersant RI:** 1.330

Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 3.938 %

D 10% 2.843 um **D 50% 12.855 um** D 90% 35.558 um D(0.95) : 43.36 µm D(1.00) : 71.56 µm

Operator notes: *Lims # 46351*
The obscuration of this sample is < 1 therefore the result is suspect and may not reflect the true particle size in this sample. There are not enough particles to obtain a reliable measurement even though a result can be seen, particle size is below the malvern detection limit.



Size (µm)	Volume In %
0.020	0.00
0.022	0.00
0.025	0.00
0.028	0.00
0.032	0.00
0.036	0.00
0.040	0.00
0.045	0.00
0.050	0.00
0.056	0.00
0.063	0.00
0.071	0.00
0.080	0.00
0.089	0.00
0.100	0.00
0.112	0.00
0.126	0.00
0.142	0.00

Size (µm)	Volume In %
0.142	0.00
0.159	0.00
0.178	0.00
0.200	0.00
0.224	0.00
0.252	0.00
0.283	0.00
0.317	0.00
0.356	0.07
0.399	0.12
0.448	0.20
0.502	0.26
0.564	0.32
0.632	0.39
0.710	0.45
0.796	0.50
0.893	0.55
1.002	

Size (µm)	Volume In %
1.002	0.59
1.125	0.63
1.262	0.66
1.416	0.69
1.589	0.73
1.783	0.79
2.000	0.87
2.244	0.98
2.518	1.12
2.825	1.30
3.170	1.51
3.557	1.76
3.991	2.03
4.477	2.34
5.024	2.66
5.637	3.00
6.325	3.34
7.096	

Size (µm)	Volume In %
7.096	3.68
7.962	4.01
8.934	4.31
10.024	4.57
11.247	4.78
12.619	4.93
14.159	5.00
15.887	4.99
17.825	4.91
20.000	4.75
22.440	4.53
25.179	4.25
28.251	3.91
31.698	3.52
35.566	3.08
39.905	2.58
44.774	2.02
50.238	

Size (µm)	Volume In %
50.238	1.42
56.368	0.75
63.246	0.14
70.963	0.00
79.621	0.00
89.337	0.00
100.237	0.00
112.468	0.00
126.191	0.00
141.589	0.00
158.866	0.00
178.250	0.00
200.000	0.00
224.404	0.00
251.785	0.00
282.508	0.00
316.979	0.00
355.656	

Size (µm)	Volume In %
355.656	0.00
399.052	0.00
447.744	0.00
502.377	0.00
563.677	0.00
632.456	0.00
709.627	0.00
796.214	0.00
893.367	0.00
1002.374	0.00
1124.683	0.00
1261.915	0.00
1415.892	0.00
1588.656	0.00
1782.502	0.00
2000.000	

Analytical Resources
Fort Saskatchewan, AB
780-992-5726
780-992-5701

Particle Size Distribution

Sample Name: Pelly River @ PC 324989-10

Analysed: Wednesday, August 11, 2004 9:11:01 AM

Run No. 5412 **SOP Name:** **Measured by:** Jody

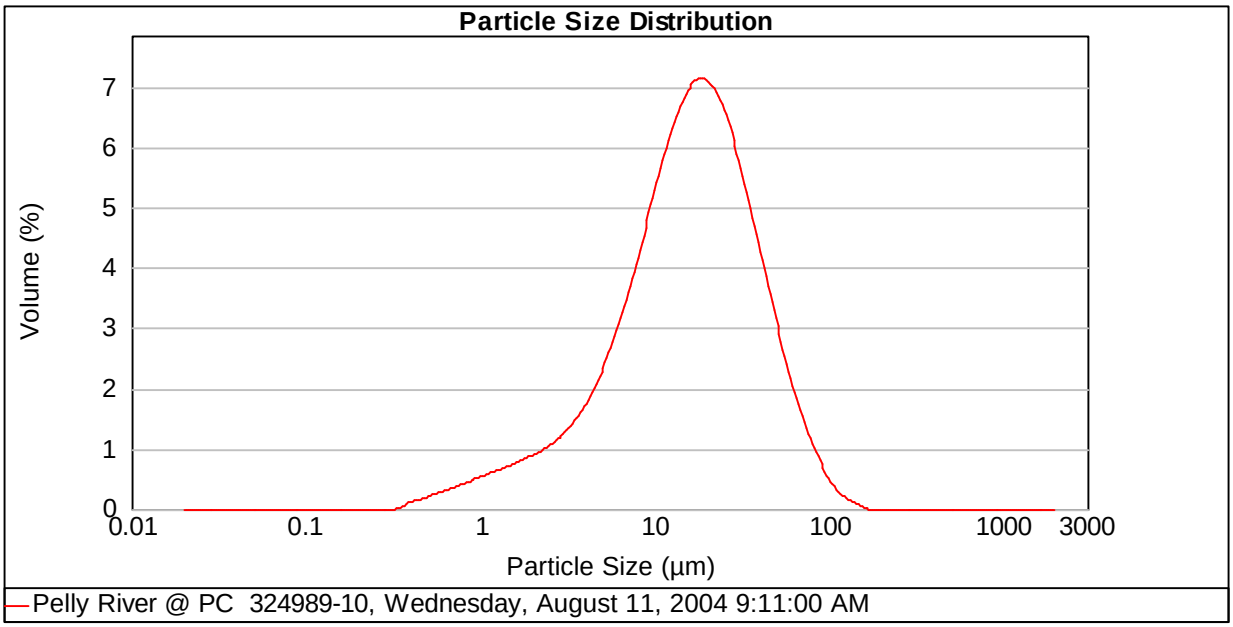
Particle Name: Fraunhofer **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 7.61 %

Particle RI: 0.000 **Absorption:** 0 **Analysis model:** General purpose **Dispersant RI:** 1.330

Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 0.368 %

D 10% 3.743 um **D 50% 16.149** um D 90% 45.030 um D(0.95) : 58.47 µm D(1.00) : 152.54 µm

Operator notes: *Lims # 46352*



Size (µm)	Volume In %
0.020	0.00
0.022	0.00
0.025	0.00
0.028	0.00
0.032	0.00
0.036	0.00
0.040	0.00
0.045	0.00
0.050	0.00
0.056	0.00
0.063	0.00
0.071	0.00
0.080	0.00
0.089	0.00
0.100	0.00
0.112	0.00
0.126	0.00
0.142	0.00

Size (µm)	Volume In %
0.142	0.00
0.159	0.00
0.178	0.00
0.200	0.00
0.224	0.00
0.252	0.00
0.283	0.00
0.317	0.00
0.356	0.07
0.399	0.10
0.448	0.14
0.502	0.18
0.564	0.21
0.632	0.25
0.710	0.29
0.796	0.34
0.893	0.38
1.002	

Size (µm)	Volume In %
1.002	0.42
1.125	0.47
1.262	0.51
1.416	0.55
1.589	0.60
1.783	0.65
2.000	0.70
2.244	0.77
2.518	0.84
2.825	0.94
3.170	1.06
3.557	1.21
3.991	1.40
4.477	1.62
5.024	1.89
5.637	2.19
6.325	2.54
7.096	

Size (µm)	Volume In %
7.096	2.92
7.962	3.34
8.934	3.77
10.024	4.19
11.247	4.59
12.619	4.92
14.159	5.18
15.887	5.33
17.825	5.37
20.000	5.28
22.440	5.08
25.179	4.78
28.251	4.39
31.698	3.94
35.566	3.47
39.905	2.98
44.774	2.51
50.238	

Size (µm)	Volume In %
50.238	2.06
56.368	1.64
63.246	1.27
70.963	0.95
79.621	0.67
89.337	0.45
100.237	0.29
112.468	0.17
126.191	0.09
141.589	0.04
158.866	0.00
178.250	0.00
200.000	0.00
224.404	0.00
251.785	0.00
282.508	0.00
316.979	0.00
355.656	

Size (µm)	Volume In %
355.656	0.00
399.052	0.00
447.744	0.00
502.377	0.00
563.677	0.00
632.456	0.00
709.627	0.00
796.214	0.00
893.367	0.00
1002.374	0.00
1124.683	0.00
1261.915	0.00
1415.892	0.00
1588.656	0.00
1782.502	0.00
2000.000	

Analytical Resources
Fort Saskatchewan, AB
780-992-5726
780-992-5701

Particle Size Distribution

Sample Name: Macmillan River 324989-11

Analysed: Wednesday, August 11, 2004 9:13:09 AM

Run No. 5413 **SOP Name:** **Measured by:** Jody

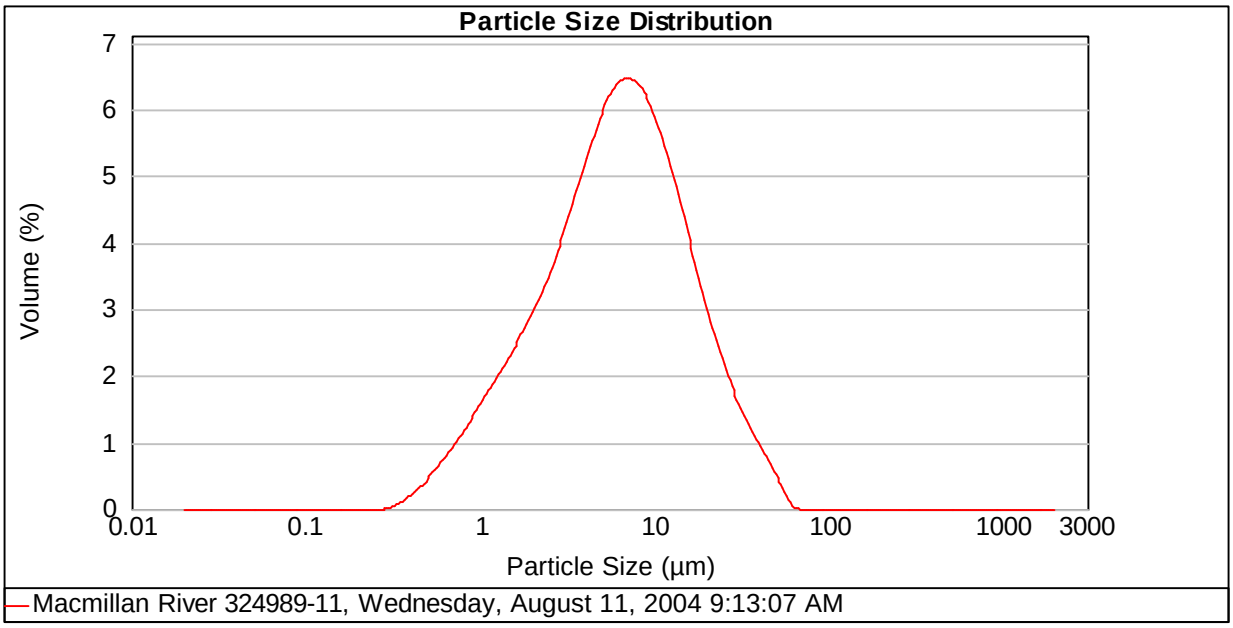
Particle Name: Fraunhofer **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 3.03 %

Particle RI: 0.000 **Absorption:** 0 **Analysis model:** General purpose **Dispersant RI:** 1.330

Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 1.797 %

D 10% 1.471 um **D 50% 6.162** um D 90% 19.664 um D(0.95) : 26.90 µm D(1.00) : 61.51 µm

Operator notes: *Lims # 46353*



Size (µm)	Volume In %
0.020	0.00
0.022	0.00
0.025	0.00
0.028	0.00
0.032	0.00
0.036	0.00
0.040	0.00
0.045	0.00
0.050	0.00
0.056	0.00
0.063	0.00
0.071	0.00
0.080	0.00
0.089	0.00
0.100	0.00
0.112	0.00
0.126	0.00
0.142	0.00

Size (µm)	Volume In %
0.142	0.00
0.159	0.00
0.178	0.00
0.200	0.00
0.224	0.00
0.252	0.00
0.283	0.01
0.317	0.06
0.356	0.12
0.399	0.20
0.448	0.30
0.502	0.41
0.564	0.53
0.632	0.66
0.710	0.80
0.796	0.95
0.893	1.11
1.002	

Size (µm)	Volume In %
1.002	1.27
1.125	1.43
1.262	1.59
1.416	1.76
1.589	1.94
1.783	2.12
2.000	2.33
2.244	2.56
2.518	2.82
2.825	3.12
3.170	3.43
3.557	3.76
3.991	4.07
4.477	4.37
5.024	4.61
5.637	4.77
6.325	4.85
7.096	

Size (µm)	Volume In %
7.096	4.84
7.962	4.74
8.934	4.55
10.024	4.28
11.247	3.96
12.619	3.59
14.159	3.20
15.887	2.81
17.825	2.42
20.000	2.06
22.440	1.74
25.179	1.45
28.251	1.21
31.698	1.00
35.566	0.80
39.905	0.62
44.774	0.44
50.238	

Size (µm)	Volume In %
50.238	0.27
56.368	0.08
63.246	0.00
70.963	0.00
79.621	0.00
89.337	0.00
100.237	0.00
112.468	0.00
126.191	0.00
141.589	0.00
158.866	0.00
178.250	0.00
200.000	0.00
224.404	0.00
251.785	0.00
282.508	0.00
316.979	0.00
355.656	

Size (µm)	Volume In %
355.656	0.00
399.052	0.00
447.744	0.00
502.377	0.00
563.677	0.00
632.456	0.00
709.627	0.00
796.214	0.00
893.367	0.00
1002.374	0.00
1124.683	0.00
1261.915	0.00
1415.892	0.00
1588.656	0.00
1782.502	0.00
2000.000	0.00

PELLY RIVER AQUATIC EFFECTS ASSESSMENT

APPENDIX 3

NORWEST LABS SOIL/ SEDIMENT REPORT

Control Number E 133788

NORWEST LABS

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:	**Copy of Report To:**	**Copy of invoice:** ✓
Company: LES	Company: SFN	Mail invoice to this address for approval ✓
Address: BOX 21072 WHITEHORSE, Y.T. Y1A 6P7	Address: LANDS & RESOURCES BOX 40 PELLY CROSSING, Y.T. Y0B 1P0	
QA/QC Report ✓		
Attention: KEN NORDIN	Attention: STYA KLUGIE	Report Result:
Phone: 867 668 6838	Phone: 867 537 3331	Fax ☐ Mail ✓ Courier ☐ e-mail ☐
Fax:	Fax:	
Cell:	Cell:	
e-mail: Laberge@internorth.com mail ✓	e-mail:	

Information to be included on Report and Invoice	**RUSH** Please contact the laboratory to confirm rush dates and times before submitting samples.	Sample Custody (Please Print)
Project ID: PELLY AQ	Upon filling out this section, client accepts that surcharges will be attached to this analysis	Sampled by: Date
Project Name: PELLY R. - AQUATIC	Required on: all analyses **or** as indicated	Company Signature
Project Location: EFFECTS Jul 04	☐ or ☐	Relinquished by:
Legal Location:	Date Required:	Company Date
PO#:	Signature:	Waybill number:
Proj. Acct. Code:	Norwest Authorization:	Received by: Donna
Agreement ID: 17654		Company 325006 Date Aug 9/04

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers: ST33	Enter tests above (✓ relevant samples below)
1	ANVIL CREEK	A 1	—		SED	COMP	1	✓
2	ANVIL CREEK	A 2	—		SED	COMP	1	✓
3	ANVIL CREEK	A 4	—		SED	COMP	1	✓
4	ANVIL CREEK	A 3	—		SED	COMP	1	✓
5	ANVIL A1	T. 1	—		SOIL	COMP	1	✓
6	ANVIL A1	T. 2	—		SOIL	COMP	1	✓
7	ANVIL A1	T. 3	—		SOIL	COMP	1	✓
8	ANVIL A1	T. 4	—		SOIL	COMP	1	✓
9	ANVIL A1	T. 5	—		SOIL	COMP	1	✓
10	ANVIL A2	A2 T. 1	—		SOIL	COMP	1	✓
11	ANVIL A2	A2 T. 2	—		SOIL	COMP	1	✓
12	ANVIL A2	A2 T. 3	—		SOIL	COMP	1	✓
13	ANVIL A2	A2 T. 4	—		SOIL	COMP	1	✓
14	ANVIL A3	A3 T. 1	—		SOIL	COMP	1	✓
15	ANVIL A3	A3 T. 2	—		SOIL	COMP	1	✓

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
Accredited by the Standards Council of Canada for specific tests

NWL008 (08/01)

NORWEST LABS

Control Number E 133787

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis
See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:		**Copy of Report To:**	**Copy of invoice:** ☐
Company:		Company:	Mail invoice to this address for approval ☐
Address:	QA/QC Report ☐	Address:	
Attention:	Report Result:	Attention:	Report Result:
Phone:	Fax ☐	Phone:	Fax ☐
Fax:	Mail ☐	Fax:	Mail ☐
Cell:	Courier ☐	Cell:	Courier ☐
e-mail:	e-mail ☐	e-mail:	e-mail ☐

Information to be included on Report and Invoice

Project ID: PELLY AQ
Project Name:
Project Location:
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ or ☐

Date Required: _____

Signature: _____

Norwest Authorization: _____

Sample Custody (Please Print)

Sampled by: Date

Company Signature

Relinquished by:

Company Date

Waybill number:

Received by:

Company Date

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled	Matrix	Sampling Method	Number of Containers	Enter tests above (✔ relevant samples below)
							S/T 33	
1	ANVIL A3	A3T.3	—		SOIL	COMP	1	
2	ANVIL A3	A3T.4	—		SOIL	COMP	1	
3	ANVIL A4	A4T.1	—		SOIL	COMP	1	
4	ANVIL A4	A4T.2	—		SOIL	COMP	1	
5	ANVIL A4	A4T.3	—		SOIL	COMP	1	
6	ANVIL A4	A4T.4	—		SOIL	COMP	1	
7	ANVIL A4	A4T.5	—		SOIL	COMP	1	
8	BLIND CREEK	B1	—		SED	COMP	1	
9	PELLY U/S BLIND	PB	—		SED	COMP	1	
10	PELLY U/S ANVIL	P1	—		SED	COMP	1	
11	PELLY D/S ANVIL	P1A	—		SED	COMP	1	
12			—					
13			—					
14			—					
15			—					

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.
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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project
ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

Contact	Company	Address
Ken Nordin	Laberge Environmental Services	Box 21072, 1-405 Ogilvie Street
Web x		Whitehorse, YT Y1A 6P7
Email Notification x		Phone: (867) 668-1043 Fax: (867) 667-6956
		Email: laberge@internorth.com

Copies	Delivery Strategy	Format
1	Post	
1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
581266 Envir2QC 3 Smp & DL		

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.

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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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

Sample Disposal Date: Sep 12, 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 Sep 12, 2004.

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

			NWL Number	325006-1	325006-2	325006-3	
			Sample Description	Anvil Creek - A1	Anvil Creek - A2	Anvil Creek - A4	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.04	0.06	0.05	0.01
Aluminum	Strong Acid Extractable	ug/g		9840	12200	10500	0.4
Antimony	Strong Acid Extractable	ug/g		1.3	1.0	1.0	0.3
Arsenic	Strong Acid Extractable	ug/g		11.0	13.6	11.5	0.5
Barium	Strong Acid Extractable	ug/g		287	500	453	0.01
Beryllium	Strong Acid Extractable	ug/g		0.37	0.52	0.42	0.03
Bismuth	Strong Acid Extractable	ug/g		0.7	0.6	0.5	0.4
Cadmium	Strong Acid Extractable	ug/g		0.46	0.78	0.71	0.03
Calcium	Strong Acid Extractable	ug/g		7210	6800	5020	10
Chromium	Strong Acid Extractable	ug/g		29.5	55.1	50.7	0.04
Cobalt	Strong Acid Extractable	ug/g		7.48	10.7	13.5	0.04
Copper	Strong Acid Extractable	ug/g		18.0	27.5	24.0	0.05
Iron	Strong Acid Extractable	ug/g		21200	25600	25300	0.2
Lead	Strong Acid Extractable	ug/g		19.4	52.9	98.0	0.1
Magnesium	Strong Acid Extractable	ug/g		6130	7080	5640	3
Manganese	Strong Acid Extractable	ug/g		381	862	3580	0.01
Molybdenum	Strong Acid Extractable	ug/g		0.77	1.08	1.75	0.05
Nickel	Strong Acid Extractable	ug/g		30.8	45.5	47.6	0.05
Phosphorus	Strong Acid Extractable	ug/g		765	933	851	2
Selenium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.2
Silicon	Strong Acid Extractable	ug/g		2430	2620	2010	0.2
Silver	Strong Acid Extractable	ug/g		<0.05	0.16	0.18	0.05
Strontium	Strong Acid Extractable	ug/g		37.1	41.5	36.6	0.005
Thallium	Strong Acid Extractable	ug/g		<0.2	<0.2	0.4	0.2
Tin	Strong Acid Extractable	ug/g		0.5	0.7	0.5	0.2
Titanium	Strong Acid Extractable	ug/g		452	516	429	0.02
Vanadium	Strong Acid Extractable	ug/g		35.1	44.7	34.7	0.05
Zinc	Strong Acid Extractable	ug/g		89.7	167	274	0.03
Zirconium	Strong Acid Extractable	ug/g		2.22	2.31	2.10	0.05
Soil Acidity							
pH	1:2 Soil:Water	pH		8.1	8.3	8.0	

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

	NWL Number	325006-4	325006-5	325006-6	
	Sample Description	Anvil Creek - A3	Anvil A1 - T.1	Anvil A1 - T.2	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable						
Mercury	Strong Acid Extractable	ug/g	0.06	0.06	0.03	0.01
Aluminum	Strong Acid Extractable	ug/g	11100	12300	9560	0.4
Antimony	Strong Acid Extractable	ug/g	1.4	1.4	0.8	0.3
Arsenic	Strong Acid Extractable	ug/g	13.0	12.2	9.9	0.5
Barium	Strong Acid Extractable	ug/g	326	407	248	0.01
Beryllium	Strong Acid Extractable	ug/g	0.47	0.50	0.36	0.03
Bismuth	Strong Acid Extractable	ug/g	0.8	0.6	0.5	0.4
Cadmium	Strong Acid Extractable	ug/g	0.73	0.85	0.43	0.03
Calcium	Strong Acid Extractable	ug/g	6170	8090	7150	10
Chromium	Strong Acid Extractable	ug/g	42.1	36.1	29.3	0.04
Cobalt	Strong Acid Extractable	ug/g	10.8	10.3	7.15	0.04
Copper	Strong Acid Extractable	ug/g	26.8	28.8	16.6	0.05
Iron	Strong Acid Extractable	ug/g	24500	24200	19400	0.2
Lead	Strong Acid Extractable	ug/g	62.0	30.3	15.6	0.1
Magnesium	Strong Acid Extractable	ug/g	6360	7330	5990	3
Manganese	Strong Acid Extractable	ug/g	1020	658	336	0.01
Molybdenum	Strong Acid Extractable	ug/g	1.12	1.09	0.64	0.05
Nickel	Strong Acid Extractable	ug/g	40.4	41.6	29.8	0.05
Phosphorus	Strong Acid Extractable	ug/g	952	896	732	2
Selenium	Strong Acid Extractable	ug/g	<0.2	0.4	<0.2	0.2
Silicon	Strong Acid Extractable	ug/g	2540	2640	2380	0.2
Silver	Strong Acid Extractable	ug/g	0.11	0.12	<0.05	0.05
Strontium	Strong Acid Extractable	ug/g	34.8	43.6	38.2	0.005
Thallium	Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.2
Tin	Strong Acid Extractable	ug/g	0.5	0.8	0.6	0.2
Titanium	Strong Acid Extractable	ug/g	453	569	438	0.02
Vanadium	Strong Acid Extractable	ug/g	39.6	43.1	33.2	0.05
Zinc	Strong Acid Extractable	ug/g	184	145	78.7	0.03
Zirconium	Strong Acid Extractable	ug/g	2.27	2.60	2.44	0.05
Soil Acidity						
pH	1:2 Soil:Water	pH	8.0	7.5	7.9	

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

Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: 325006
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

			NWL Number	325006-7	325006-8	325006-9	
			Sample Description	Anvil A1 - T.3	Anvil A1 - T.4	Anvil A1 - T.5	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.02	0.02	0.02	0.01
Aluminum	Strong Acid Extractable	ug/g		9850	8830	9460	0.4
Antimony	Strong Acid Extractable	ug/g		1.1	0.7	0.8	0.3
Arsenic	Strong Acid Extractable	ug/g		9.0	8.5	8.8	0.5
Barium	Strong Acid Extractable	ug/g		263	228	264	0.01
Beryllium	Strong Acid Extractable	ug/g		0.32	0.33	0.33	0.03
Bismuth	Strong Acid Extractable	ug/g		0.6	0.6	0.4	0.4
Cadmium	Strong Acid Extractable	ug/g		0.40	0.37	0.35	0.03
Calcium	Strong Acid Extractable	ug/g		7310	5330	7230	10
Chromium	Strong Acid Extractable	ug/g		29.1	35.4	36.5	0.04
Cobalt	Strong Acid Extractable	ug/g		6.67	6.84	6.82	0.04
Copper	Strong Acid Extractable	ug/g		16.1	14.9	16.3	0.05
Iron	Strong Acid Extractable	ug/g		18000	17800	19300	0.2
Lead	Strong Acid Extractable	ug/g		13.0	14.2	14.7	0.1
Magnesium	Strong Acid Extractable	ug/g		5940	5670	6070	3
Manganese	Strong Acid Extractable	ug/g		338	419	396	0.01
Molybdenum	Strong Acid Extractable	ug/g		0.82	0.88	0.80	0.05
Nickel	Strong Acid Extractable	ug/g		29.0	31.0	30.5	0.05
Phosphorus	Strong Acid Extractable	ug/g		771	693	963	2
Selenium	Strong Acid Extractable	ug/g		0.4	0.2	<0.2	0.2
Silicon	Strong Acid Extractable	ug/g		2740	2170	1920	0.2
Silver	Strong Acid Extractable	ug/g		0.07	0.06	0.12	0.05
Strontium	Strong Acid Extractable	ug/g		40.9	32.6	41.1	0.005
Thallium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.2
Tin	Strong Acid Extractable	ug/g		0.3	0.5	0.4	0.2
Titanium	Strong Acid Extractable	ug/g		371	390	420	0.02
Vanadium	Strong Acid Extractable	ug/g		30.7	30.7	33.2	0.05
Zinc	Strong Acid Extractable	ug/g		72.5	66.6	66.4	0.03
Zirconium	Strong Acid Extractable	ug/g		2.41	2.28	2.34	0.05
Soil Acidity							
pH	1:2 Soil:Water	pH		8.2	8.2	8.3	

Analytical Report

Norwest Labs
#104, 19575-55 A Ave.
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Phone: (604) 514-3322
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Report to: Laberge Environmental Services
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Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

	NWL Number	325006-10	325006-11	325006-12	
	Sample Description	Anvil A2 - A2 - T.1	Anvil A2 - A2 - T.2	Anvil A2 - A2 - T.3	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	0.06	0.12	0.07	0.01
Aluminum Strong Acid Extractable	ug/g	14600	14100	13000	0.4
Antimony Strong Acid Extractable	ug/g	1.1	1.4	1.1	0.3
Arsenic Strong Acid Extractable	ug/g	11.5	12.3	12.5	0.5
Barium Strong Acid Extractable	ug/g	464	550	452	0.01
Beryllium Strong Acid Extractable	ug/g	0.45	0.61	0.55	0.03
Bismuth Strong Acid Extractable	ug/g	0.4	0.6	0.7	0.4
Cadmium Strong Acid Extractable	ug/g	0.69	1.02	0.86	0.03
Calcium Strong Acid Extractable	ug/g	13500	6130	6760	10
Chromium Strong Acid Extractable	ug/g	54.4	41.8	35.1	0.04
Cobalt Strong Acid Extractable	ug/g	11.0	12.0	9.08	0.04
Copper Strong Acid Extractable	ug/g	32.5	53.2	27.0	0.05
Iron Strong Acid Extractable	ug/g	28100	27600	25200	0.2
Lead Strong Acid Extractable	ug/g	9.1	89.8	14.6	0.1
Magnesium Strong Acid Extractable	ug/g	11800	7390	6660	3
Manganese Strong Acid Extractable	ug/g	304	287	352	0.01
Molybdenum Strong Acid Extractable	ug/g	1.02	1.58	1.18	0.05
Nickel Strong Acid Extractable	ug/g	55.8	49.2	38.3	0.05
Phosphorus Strong Acid Extractable	ug/g	996	917	986	2
Selenium Strong Acid Extractable	ug/g	1.1	0.9	0.8	0.2
Silicon Strong Acid Extractable	ug/g	2500	3130	3230	0.2
Silver Strong Acid Extractable	ug/g	0.08	0.26	0.21	0.05
Strontium Strong Acid Extractable	ug/g	50.6	40.1	43.1	0.005
Thallium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.2
Tin Strong Acid Extractable	ug/g	0.4	0.6	0.7	0.2
Titanium Strong Acid Extractable	ug/g	746	546	481	0.02
Vanadium Strong Acid Extractable	ug/g	56.7	48.1	48.6	0.05
Zinc Strong Acid Extractable	ug/g	74.4	218	98.0	0.03
Zirconium Strong Acid Extractable	ug/g	3.01	2.64	2.59	0.05
Soil Acidity					
pH 1:2 Soil:Water	pH	8.2	6.7	7.2	

Analytical Report

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Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

			NWL Number	325006-13	325006-14	325006-15	
			Sample Description	Anvil A2 - A2 - T.4	Anvil A3 - A3 - T.1	Anvil A3 - A3 - T.2	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.06	0.07	0.39	0.01
Aluminum	Strong Acid Extractable	ug/g		14600	14200	16100	0.4
Antimony	Strong Acid Extractable	ug/g		0.7	1.2	1.8	0.3
Arsenic	Strong Acid Extractable	ug/g		6.2	12.8	24.2	0.5
Barium	Strong Acid Extractable	ug/g		353	372	1310	0.01
Beryllium	Strong Acid Extractable	ug/g		0.60	0.62	0.76	0.03
Bismuth	Strong Acid Extractable	ug/g		0.7	0.9	1.3	0.4
Cadmium	Strong Acid Extractable	ug/g		0.50	0.63	1.03	0.03
Calcium	Strong Acid Extractable	ug/g		6260	6140	6050	10
Chromium	Strong Acid Extractable	ug/g		37.3	39.7	44.0	0.04
Cobalt	Strong Acid Extractable	ug/g		8.52	10.4	14.2	0.04
Copper	Strong Acid Extractable	ug/g		29.9	28.1	69.0	0.05
Iron	Strong Acid Extractable	ug/g		22800	28700	34400	0.2
Lead	Strong Acid Extractable	ug/g		13.4	19.4	355	0.1
Magnesium	Strong Acid Extractable	ug/g		7060	7250	7610	3
Manganese	Strong Acid Extractable	ug/g		314	382	640	0.01
Molybdenum	Strong Acid Extractable	ug/g		1.02	1.04	1.37	0.05
Nickel	Strong Acid Extractable	ug/g		37.7	42.6	45.0	0.05
Phosphorus	Strong Acid Extractable	ug/g		942	931	946	2
Selenium	Strong Acid Extractable	ug/g		0.8	0.4	0.4	0.2
Silicon	Strong Acid Extractable	ug/g		3030	3490	3020	0.2
Silver	Strong Acid Extractable	ug/g		0.12	0.11	0.78	0.05
Strontium	Strong Acid Extractable	ug/g		40.6	38.3	44.8	0.005
Thallium	Strong Acid Extractable	ug/g		<0.2	<0.2	<0.2	0.2
Tin	Strong Acid Extractable	ug/g		0.8	0.8	0.7	0.2
Titanium	Strong Acid Extractable	ug/g		552	499	581	0.02
Vanadium	Strong Acid Extractable	ug/g		50.6	48.5	51.6	0.05
Zinc	Strong Acid Extractable	ug/g		93.8	94.8	352	0.03
Zirconium	Strong Acid Extractable	ug/g		2.09	2.00	2.56	0.05
Soil Acidity							
pH	1:2 Soil:Water	pH		7.0	7.5	6.7	

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

	NWL Number	325006-16	325006-17	325006-18	
	Sample Description	Anvil A3 - A3 - T.3	Anvil A3 - A3 - T.4	Anvil A4 - A4 - T.1	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	0.17	0.05	0.11	0.01
Aluminum Strong Acid Extractable	ug/g	13300	13800	12400	0.4
Antimony Strong Acid Extractable	ug/g	1.9	1.1	1.0	0.3
Arsenic Strong Acid Extractable	ug/g	16.1	14.2	11.2	0.5
Barium Strong Acid Extractable	ug/g	579	311	303	0.01
Beryllium Strong Acid Extractable	ug/g	0.59	0.57	0.45	0.03
Bismuth Strong Acid Extractable	ug/g	0.7	0.7	0.8	0.4
Cadmium Strong Acid Extractable	ug/g	0.93	0.72	0.57	0.03
Calcium Strong Acid Extractable	ug/g	5520	5130	6940	10
Chromium Strong Acid Extractable	ug/g	46.6	66.5	36.2	0.04
Cobalt Strong Acid Extractable	ug/g	12.1	9.77	9.39	0.04
Copper Strong Acid Extractable	ug/g	40.0	26.0	26.0	0.05
Iron Strong Acid Extractable	ug/g	32800	28700	26800	0.2
Lead Strong Acid Extractable	ug/g	81.5	18.2	104	0.1
Magnesium Strong Acid Extractable	ug/g	6960	6920	6240	3
Manganese Strong Acid Extractable	ug/g	782	383	422	0.01
Molybdenum Strong Acid Extractable	ug/g	1.42	1.84	1.09	0.05
Nickel Strong Acid Extractable	ug/g	49.0	53.6	32.3	0.05
Phosphorus Strong Acid Extractable	ug/g	902	957	877	2
Selenium Strong Acid Extractable	ug/g	0.5	0.5	0.4	0.2
Silicon Strong Acid Extractable	ug/g	2450	3160	3460	0.2
Silver Strong Acid Extractable	ug/g	0.23	0.13	0.11	0.05
Strontium Strong Acid Extractable	ug/g	39.2	33.3	38.8	0.005
Thallium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.2
Tin Strong Acid Extractable	ug/g	0.8	0.8	0.6	0.2
Titanium Strong Acid Extractable	ug/g	536	432	514	0.02
Vanadium Strong Acid Extractable	ug/g	46.4	53.0	43.5	0.05
Zinc Strong Acid Extractable	ug/g	181	96.1	114	0.03
Zirconium Strong Acid Extractable	ug/g	2.49	2.26	1.87	0.05
Soil Acidity					
pH 1:2 Soil:Water	pH	6.4	6.8	7.1	

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Box 21072
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Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
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Location: Effects Jul / 04
LSD:
P.O.:
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NWL Lot ID: **325006**
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	NWL Number	325006-19	325006-20	325006-21	
	Sample Description	Anvil A4 - A4 - T.2	Anvil A4 - A4 - T.3	Anvil A4 - A4 - T.4	
	Matrix	Soil - general	Soil - general	Soil - general	
Analyte	**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable					
Mercury Strong Acid Extractable	ug/g	0.70	0.12	0.09	0.01
Aluminum Strong Acid Extractable	ug/g	12900	10700	9300	0.4
Antimony Strong Acid Extractable	ug/g	3.2	2.0	1.5	0.3
Arsenic Strong Acid Extractable	ug/g	33.7	15.7	12.0	0.5
Barium Strong Acid Extractable	ug/g	1720	779	269	0.01
Beryllium Strong Acid Extractable	ug/g	0.56	0.48	0.38	0.03
Bismuth Strong Acid Extractable	ug/g	1.5	0.8	0.7	0.4
Cadmium Strong Acid Extractable	ug/g	0.33	0.66	0.74	0.03
Calcium Strong Acid Extractable	ug/g	3020	4570	3560	10
Chromium Strong Acid Extractable	ug/g	37.7	44.2	57.6	0.04
Cobalt Strong Acid Extractable	ug/g	9.86	13.2	15.1	0.04
Copper Strong Acid Extractable	ug/g	68.0	36.2	33.6	0.05
Iron Strong Acid Extractable	ug/g	39400	28400	24200	0.2
Lead Strong Acid Extractable	ug/g	755	168	171	0.1
Magnesium Strong Acid Extractable	ug/g	5980	5870	5370	3
Manganese Strong Acid Extractable	ug/g	330	2390	2410	0.01
Molybdenum Strong Acid Extractable	ug/g	1.46	1.58	1.81	0.05
Nickel Strong Acid Extractable	ug/g	33.0	42.4	47.9	0.05
Phosphorus Strong Acid Extractable	ug/g	870	814	621	2
Selenium Strong Acid Extractable	ug/g	<0.2	<0.2	<0.2	0.2
Silicon Strong Acid Extractable	ug/g	2390	2500	2300	0.2
Silver Strong Acid Extractable	ug/g	1.12	0.29	0.25	0.05
Strontium Strong Acid Extractable	ug/g	36.5	34.0	28.8	0.005
Thallium Strong Acid Extractable	ug/g	0.3	<0.2	<0.2	0.2
Tin Strong Acid Extractable	ug/g	0.5	0.7	0.3	0.2
Titanium Strong Acid Extractable	ug/g	610	468	268	0.02
Vanadium Strong Acid Extractable	ug/g	40.4	36.9	26.9	0.05
Zinc Strong Acid Extractable	ug/g	258	245	272	0.03
Zirconium Strong Acid Extractable	ug/g	2.82	1.65	2.46	0.05
Soil Acidity					
pH 1:2 Soil:Water	pH	4.4	7.3	7.6	

Analytical Report

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
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NWL Lot ID: **325006**
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			NWL Number	325006-22	325006-23	325006-24	
			Sample Description	Anvil A4 - A4 - T.5	Blind Creek - B1	Pelly u/s Blind - PB	
			Matrix	Soil - general	Soil - general	Soil - general	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable							
Mercury	Strong Acid Extractable	ug/g		0.44	0.04	0.09	0.01
Aluminum	Strong Acid Extractable	ug/g		10900	11900	8010	0.4
Antimony	Strong Acid Extractable	ug/g		3.1	0.9	1.3	0.3
Arsenic	Strong Acid Extractable	ug/g		39.2	10.6	12.3	0.5
Barium	Strong Acid Extractable	ug/g		1410	270	766	0.01
Beryllium	Strong Acid Extractable	ug/g		0.49	0.40	0.39	0.03
Bismuth	Strong Acid Extractable	ug/g		1.8	0.6	0.6	0.4
Cadmium	Strong Acid Extractable	ug/g		0.52	0.53	1.55	0.03
Calcium	Strong Acid Extractable	ug/g		3260	4640	17800	10
Chromium	Strong Acid Extractable	ug/g		33.2	24.0	21.4	0.04
Cobalt	Strong Acid Extractable	ug/g		12.2	8.01	7.04	0.04
Copper	Strong Acid Extractable	ug/g		60.0	16.6	23.6	0.05
Iron	Strong Acid Extractable	ug/g		38600	24800	23100	0.2
Lead	Strong Acid Extractable	ug/g		302	11.6	9.9	0.1
Magnesium	Strong Acid Extractable	ug/g		5440	4620	8880	3
Manganese	Strong Acid Extractable	ug/g		259	440	386	0.01
Molybdenum	Strong Acid Extractable	ug/g		1.62	0.80	1.89	0.05
Nickel	Strong Acid Extractable	ug/g		32.9	24.0	36.2	0.05
Phosphorus	Strong Acid Extractable	ug/g		876	763	1200	2
Selenium	Strong Acid Extractable	ug/g		0.4	0.7	0.6	0.2
Silicon	Strong Acid Extractable	ug/g		2590	2900	2560	0.2
Silver	Strong Acid Extractable	ug/g		0.94	<0.05	0.12	0.05
Strontium	Strong Acid Extractable	ug/g		33.7	31.8	71.2	0.005
Thallium	Strong Acid Extractable	ug/g		0.5	<0.2	<0.2	0.2
Tin	Strong Acid Extractable	ug/g		0.8	0.9	0.3	0.2
Titanium	Strong Acid Extractable	ug/g		535	473	160	0.02
Vanadium	Strong Acid Extractable	ug/g		35.9	34.2	49.4	0.05
Zinc	Strong Acid Extractable	ug/g		273	70.8	167	0.03
Zirconium	Strong Acid Extractable	ug/g		2.70	2.00	2.50	0.05
Soil Acidity							
pH	1:2 Soil:Water	pH		4.9	7.7	8.1	

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Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: 325006
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

	NWL Number	325006-25	325006-26		
	Sample Description	Pelly u/s Anvil - P1	Pelly d/s Anvil - P1A		
	Matrix	Soil - general	Soil - general		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Strong Acid Extractable						
Mercury	Strong Acid Extractable	ug/g	0.15	0.05		0.01
Aluminum	Strong Acid Extractable	ug/g	9460	6740		0.4
Antimony	Strong Acid Extractable	ug/g	1.6	1.2		0.3
Arsenic	Strong Acid Extractable	ug/g	16.6	11.3		0.5
Barium	Strong Acid Extractable	ug/g	824	614		0.01
Beryllium	Strong Acid Extractable	ug/g	0.48	0.33		0.03
Bismuth	Strong Acid Extractable	ug/g	0.9	<0.3		0.4
Cadmium	Strong Acid Extractable	ug/g	2.63	1.09		0.03
Calcium	Strong Acid Extractable	ug/g	18700	15700		10
Chromium	Strong Acid Extractable	ug/g	27.7	21.2		0.04
Cobalt	Strong Acid Extractable	ug/g	9.56	6.27		0.04
Copper	Strong Acid Extractable	ug/g	33.2	18.1		0.05
Iron	Strong Acid Extractable	ug/g	30200	21500		0.2
Lead	Strong Acid Extractable	ug/g	13.3	8.6		0.1
Magnesium	Strong Acid Extractable	ug/g	10200	8720		3
Manganese	Strong Acid Extractable	ug/g	628	328		0.01
Molybdenum	Strong Acid Extractable	ug/g	2.20	1.46		0.05
Nickel	Strong Acid Extractable	ug/g	51.2	33.7		0.05
Phosphorus	Strong Acid Extractable	ug/g	1230	1310		2
Selenium	Strong Acid Extractable	ug/g	0.7	0.4		0.2
Silicon	Strong Acid Extractable	ug/g	4030	1950		0.2
Silver	Strong Acid Extractable	ug/g	0.32	<0.05		0.05
Strontium	Strong Acid Extractable	ug/g	70.9	64.5		0.005
Thallium	Strong Acid Extractable	ug/g	<0.2	0.3		0.2
Tin	Strong Acid Extractable	ug/g	0.3	0.2		0.2
Titanium	Strong Acid Extractable	ug/g	177	175		0.02
Vanadium	Strong Acid Extractable	ug/g	57.6	44.9		0.05
Zinc	Strong Acid Extractable	ug/g	230	119		0.03
Zirconium	Strong Acid Extractable	ug/g	2.50	2.97		0.05
Soil Acidity						
pH	1:2 Soil:Water	pH	8.0	8.2		

Approved by:

Marie England
Consulting Scientist

NORWEST LABS

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Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project
ID: Pelly AQ
Name: Pelly R - Aquatic
Location: Effects Jul / 04
LSD:
P.O.:
Acct. Code: (revision)

NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
Date Reported: Aug 13, 2004
Report Number: 581266

Metals Strong Acid Extractable

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Mercury	ug/g	<0.00	0.00	0.00	0.00	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Aug 11, 2004					
Acquired By:	To Thong					

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Mercury	ug/g	0.06	0.06	9.99	0.03	✓
Aluminum	ug/g	9840	10200	30.0	1.2	✓
Antimony	ug/g	1.8	2.1	30.0	0.9	✓
Arsenic	ug/g	24.2	24.3	30.0	1.5	✓
Barium	ug/g	287	302	30.00	0.03	✓
Beryllium	ug/g	0.76	0.72	30.00	0.09	✓
Bismuth	ug/g	1.3	1.4	30.0	1.2	✓
Cadmium	ug/g	1.03	0.99	30.00	0.09	✓
Calcium	ug/g	7210	7510	30	30	✓
Chromium	ug/g	44.0	42.0	30.00	0.12	✓
Cobalt	ug/g	7.48	7.93	30.00	0.12	✓
Copper	ug/g	69.0	68.2	30.00	0.15	✓
Iron	ug/g	34400	33500	30.0	0.6	✓
Lead	ug/g	355	342	30.0	0.3	✓
Magnesium	ug/g	7610	7280	30	9	✓
Manganese	ug/g	640	626	30.00	0.03	✓
Molybdenum	ug/g	1.37	1.36	30.00	0.15	✓
Nickel	ug/g	45.0	43.8	30.00	0.15	✓
Phosphorus	ug/g	946	893	30	6	✓
Selenium	ug/g	0.4	0.8	30.0	0.6	✓
Silicon	ug/g	3020	3020	30.0	0.6	✓
Silver	ug/g	0.78	0.69	30.00	0.15	✓
Strontium	ug/g	44.8	42.1	30.000	0.015	✓
Sulphur	ug/g	265	292	30.0	1.2	✓
Thallium	ug/g	<0.2	<0.2	30.0	0.6	✓
Tin	ug/g	0.7	1.1	30.0	0.6	✓
Titanium	ug/g	581	585	30.00	0.06	✓
Vanadium	ug/g	51.6	49.0	30.00	0.15	✓
Zinc	ug/g	89.7	95.0	30.00	0.09	✓
Zirconium	ug/g	2.56	2.56	30.00	0.15	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Aug 11, 2004					
Acquired By:	Fernando Maglalang					

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NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
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Metals Strong Acid Extractable (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Mercury	ug/g	1.46	1.45	1.18	1.72	✓
Aluminum	ug/g	30100	23838	15648	32028	✓
Antimony	ug/g	1.5	3.1	0.2	6.0	✓
Arsenic	ug/g	14.7	16.7	14.5	18.9	✓
Barium	ug/g	352	415	352	478	✓
Beryllium	ug/g	0.71	0.77	0.65	0.89	✓
Bismuth	ug/g	1.1	1.0	0.3	1.6	✓
Cadmium	ug/g	0.36	0.39	0.33	0.44	✓
Calcium	ug/g	12600	14275	12190	16360	✓
Chromium	ug/g	69.9	68.0	51.1	84.9	✓
Cobalt	ug/g	11.0	11.5	10.2	12.8	✓
Copper	ug/g	30.9	33.7	28.6	38.8	✓
Iron	ug/g	32600	34279	25531	43027	✓
Lead	ug/g	11.4	12.9	10.8	15.0	✓
Magnesium	ug/g	12200	13112	10787	15437	✓
Manganese	ug/g	426	483	411	555	✓
Molybdenum	ug/g	1.05	1.37	0.81	1.93	✓
Nickel	ug/g	70.4	76.4	67.7	85.1	✓
Phosphorus	ug/g	476	595	433	757	✓
Selenium	ug/g	1.5	1.2	-0.7	3.2	✓
Silicon	ug/g	2680	1351	-983	3685	✓
Silver	ug/g	0.22	0.35	0.16	0.54	✓
Strontium	ug/g	100	105	94	116	✓
Sulphur	ug/g	805	907	777	1037	✓
Thallium	ug/g	<0.2	0.2	0.0	0.4	✓
Tin	ug/g	1.1	0.8	0.2	1.3	✓
Titanium	ug/g	440	265	91	439	✓
Vanadium	ug/g	68.0	63.9	50.2	77.6	✓
Zinc	ug/g	86.0	89.4	73.3	105.5	✓
Zirconium	ug/g	3.59	4.18	2.30	6.06	✓

Material Used: Metals Soils
Date Acquired: Aug 11, 2004
Acquired By: Jodi Johnston

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Quality Control

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NWL Lot ID: **325006**
Control Number: E 133788
Date Received: Aug 09, 2004
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Soil Acidity

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
pH	pH	6.4	6.5	5.0	8.0	✓
Material Used:	Edmonton Method Blank					
Date Acquired:	Aug 12, 2004					
Acquired By:	Cristian Arce					

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
pH	pH	7.0	6.9	0.3	0.3	✓
Material Used:	Edmonton Duplicate					
Date Acquired:	Aug 12, 2004					
Acquired By:	Cristian Arce					

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
pH	pH	6.3	6.3	6.1	6.6	✓
Material Used:	2001 Farm Soil Standard					
Date Acquired:	Aug 12, 2004					
Acquired By:	Cristian Arce					

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Methodology and Notes

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Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Mercury (Hot Block) in Soil	US EPA	*	Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	12-Aug-04	Norwest Labs Edmonton
Metals Trace (BCMOE SALM) in soil	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	12-Aug-04	Norwest Labs Edmonton
Metals Trace (BCMOE SALM) in soil	APHA	*	Inductively Coupled Plasma (ICP) Method, 3120 B	12-Aug-04	Norwest Labs Edmonton
pH and Conductivity in general soil 1:2	McKeague		1:2 Soil:Water Ratio, 4.12	12-Aug-04	Norwest Labs Edmonton

* Norwest method(s) is based on reference method

References:

APHA	Standard Methods for the Examination of Water and Wastewater
McKeague	Manual on Soil Sampling and Methods of Analysis
US EPA	US Environmental Protection Agency Test Methods

Comments:

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

Control Number E 67076

Environmental Sample Information Sheet

NOTE Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:	**Report To:** X	**Copy of Report To:**	**Copy of invoice:** X
Company: [redacted] LES		Company: Selkirk First Nation	Mail invoice to this address for approval X
Address: [redacted] Box 21072	A/QC Report X	Address: Box 40 Pelly Crossing	
[redacted] Whitehorse, YT		YOB 1P0	
Y1A 6P7			
Attention: [redacted] Ken Nordin	Report Result:	Attention: Darin Isaac	Report Result:
Phone: [redacted] 867-668-6838	Fax X	Phone:	Fax
Fax: [redacted]	Mail X	Fax: 867-537-3331	Mail X
Cell:	Courier	Cell:	Courier
e-mail: Laberge@internorth.com	e-mail X	e-mail:	e-mail

Information to be included on Report and Invoice

Project ID: Pelly AQ
Project Name: Pelly R. Aquatic
Project Location: Effects July 04
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID: [redacted] 17654

RUSH

Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ or ☐

Date Required: _____
Signature: _____
Norwest Authorization: _____

Sample Custody (Please Print)

Sampled by: D. Carcel [redacted] Date Aug 23/04
Company LES Signature
Relinquished by: D. [redacted] Date Aug 23/04
Company LES
Waybill number: 014-26733560
Received by:
Company NWL Date Sept 3/04
Processed by: Donna
Norwest Labs 330674 Date Sept 4/04

Special Instructions / Comments

RECEIVED
SEP 03 2004

	Sample Identification	Location	Depth	Date / Time Sampled	Matrix	Sampling Method	Number of Containers: 5T32
							↓ Enter tests above (✓ relevant samples below)
1	Pelly U/S Anvil	P1	—	Aug 23/04	soil	comp	1
2	Pelly D/S Anvil	P1A	—	Aug 23/04	soil	comp	1
3			—				
4			—				
5			—				
6			—				
7			—				
8			—				
9			—				
10			—				
11			—				
12			—				
13			—				
14			—				

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.

Accredited by the Standards Council of Canada for specific tests

NWL008 (0-2000)

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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Contact	Company	Address
Ken Nordin	Laberge Environmental Services	Box 21072, 1-405 Ogilvie Street
Web x		Whitehorse, YT Y1A 6P7
Email Notification x		Phone: (867) 668-1043 Fax: (867) 667-6956
		Email: laberge@internorth.com

Copies	Delivery Strategy	Format
1	Post	
1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Sample Notes:

Batch Notes:

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

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
591744 Envir2QC 3 Smp & DL		

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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

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.

Sample Custody

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Sample Disposal Date: Oct 09, 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 Oct 09, 2004.

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

NWL Number	330674-1	330674-2
Sample Location	P1	P1A
Sample Description	P1 / Pelly U/S Anvil / 23-Aug-04	P1A / Pelly D/S Anvil / 23-Aug-04
Matrix	Soil - general	Soil - general

Analyte		Units	Results	Results	Results	Detection Limit
Metals Strong Acid Extractable						
Aluminum	Strong Acid Extractable	ug/g	4660	5920		1
Antimony	Strong Acid Extractable	ug/g	<1	1.2		2
Arsenic	Strong Acid Extractable	ug/g	7.3	8.9		4
Barium	Strong Acid Extractable	ug/g	380	790		0.05
Beryllium	Strong Acid Extractable	ug/g	0.261	0.350		0.05
Bismuth	Strong Acid Extractable	ug/g	<1	<1		2
Cadmium	Strong Acid Extractable	ug/g	0.79	1.00		0.05
Calcium	Strong Acid Extractable	ug/g	11400	17600		1
Chromium	Strong Acid Extractable	ug/g	16.0	21.9		0.1
Cobalt	Strong Acid Extractable	ug/g	5.12	5.97		0.1
Copper	Strong Acid Extractable	ug/g	12.9	15.5		0.1
Iron	Strong Acid Extractable	ug/g	14400	16700		0.2
Lead	Strong Acid Extractable	ug/g	5.99	7.32		1
Lithium	Strong Acid Extractable	ug/g	6.42	7.72		0.6
Magnesium	Strong Acid Extractable	ug/g	7380	9150		1
Manganese	Strong Acid Extractable	ug/g	293	359		0.05
Molybdenum	Strong Acid Extractable	ug/g	1	2		1
Nickel	Strong Acid Extractable	ug/g	29.2	28.9		0.2
Phosphorus	Strong Acid Extractable	ug/g	1180	1260		5
Potassium	Strong Acid Extractable	ug/g	908	1120		100
Selenium	Strong Acid Extractable	ug/g	<5	<5		10
Silver	Strong Acid Extractable	ug/g	0.11	0.16		0.2
Sodium	Strong Acid Extractable	ug/g	80.2	104		5
Strontium	Strong Acid Extractable	ug/g	42.6	59.5		0.5
Tin	Strong Acid Extractable	ug/g	<0.5	<0.5		1
Titanium	Strong Acid Extractable	ug/g	70.6	101		0.4
Uranium	Strong Acid Extractable	ug/g	<3	<3		6
Vanadium	Strong Acid Extractable	ug/g	33.2	38.9		0.1
Zinc	Strong Acid Extractable	ug/g	96.7	120		0.1
Zirconium	Strong Acid Extractable	ug/g	2.4	3.12		0.5

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Approved by: C William Warning

Bill Warning, B.Sc.
Lab Operations Manager

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Metals Strong Acid Extractable

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/g	1.3	0.00	-0.01	0.01	✓
Antimony	ug/g	<1	0.00	-0.02	0.02	✓
Arsenic	ug/g	<2	0.00	-0.04	0.04	✓
Barium	ug/g	0.14	0.0000	-0.0005	0.0005	✓
Beryllium	ug/g	<0.02	0.0000	-0.0005	0.0005	✓
Bismuth	ug/g	<1	0.00	-0.02	0.02	✓
Cadmium	ug/g	<0.02	0.00	0.00	0.00	✓
Calcium	ug/g	4.2	0.00	-0.01	0.01	✓
Chromium	ug/g	<0.050	0.000	-0.001	0.001	✓
Cobalt	ug/g	<0.05	0.000	-0.001	0.001	✓
Copper	ug/g	<0.05	0.000	-0.001	0.001	✓
Iron	ug/g	73.4	0.000	-0.002	0.002	✓
Lead	ug/g	<0.5	0.000	-0.010	0.010	✓
Lithium	ug/g	<0.3	0.000	-0.006	0.006	✓
Magnesium	ug/g	<0.5	0.00	-0.01	0.01	✓
Manganese	ug/g	0.15	0.0000	-0.0005	0.0005	✓
Molybdenum	ug/g	<0	0	0	0	✓
Nickel	ug/g	<0.1	0.000	-0.002	0.002	✓
Phosphorus	ug/g	3.9	0.00	-0.05	0.05	✓
Potassium	ug/g	<50	0.0	-1.0	1.0	✓
Selenium	ug/g	<5	0.00	-0.10	0.10	✓
Silicon	ug/g	<2	0.00	-0.05	0.05	✓
Silver	ug/g	<0.1	0.000	-0.002	0.002	✓
Sodium	ug/g	<2.5	0.00	-0.05	0.05	✓
Strontium	ug/g	<0.2	0.000	-0.005	0.005	✓
Sulphur	ug/g	<50	0.0	-1.0	1.0	✓
Thorium	ug/g	n	0.000	-0.005	0.005	✓
Tin	ug/g	<0.5	0.000	-0.010	0.010	✓
Titanium	ug/g	<0.2	0.000	-0.004	0.004	✓
Uranium	ug/g	<3	0.00	-0.06	0.06	✓
Vanadium	ug/g	<0.05	0.000	-0.001	0.001	✓
Zinc	ug/g	0.41	0.0000	-0.0010	0.0010	✓
Zirconium	ug/g	<0.2	0.000	-0.005	0.005	✓

Material Used: Metals Blank - solids
Date Acquired: Sep 07, 2004
Acquired By: Marie England

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Metals Strong Acid Extractable (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Aluminum	ug/g	5920	6090	30.00	0.05	✓
Antimony	ug/g	1.2	1.2	30.00	0.10	✓
Arsenic	ug/g	8.9	8.7	30.00	0.20	✓
Barium	ug/g	790	762	30.0000	0.0025	✓
Beryllium	ug/g	0.350	0.340	30.0000	0.0025	✓
Bismuth	ug/g	<1	<1	30.00	0.10	✓
Cadmium	ug/g	1.00	0.96	30.00	0.00	✓
Calcium	ug/g	17500	15100	30.00	0.05	✓
Chromium	ug/g	21.9	18.3	30.000	0.005	✓
Cobalt	ug/g	5.97	5.92	30.000	0.005	✓
Copper	ug/g	15.5	14.5	30.000	0.005	✓
Iron	ug/g	16700	16200	30.000	0.010	✓
Lead	ug/g	7.32	7.64	30.000	0.050	✓
Lithium	ug/g	7.71	8.49	30.000	0.030	✓
Magnesium	ug/g	9150	8630	30.00	0.05	✓
Manganese	ug/g	359	318	30.0000	0.0025	✓
Molybdenum	ug/g	2	2	30	0	✓
Nickel	ug/g	28.9	29.2	30.000	0.010	✓
Phosphorus	ug/g	1260	1140	30.00	0.25	✓
Potassium	ug/g	1120	1200	30.0	5.0	✓
Selenium	ug/g	<5	<5	30.00	0.50	✓
Silicon	ug/g	104	106	30.00	0.25	✓
Silver	ug/g	0.16	0.16	30.000	0.010	✓
Sodium	ug/g	104	110	30.00	0.25	✓
Strontium	ug/g	59.5	53.8	30.000	0.025	✓
Sulphur	ug/g	300	<500	30.0	5.0	✓
Thorium	ug/g	n	n	30.000	0.025	✓
Tin	ug/g	<0.5	<0.5	30.000	0.050	✓
Titanium	ug/g	101	107	30.000	0.020	✓
Uranium	ug/g	<3	<3	30.00	0.30	✓
Vanadium	ug/g	38.9	41.4	30.000	0.005	✓
Zinc	ug/g	119	118	30.0000	0.0050	✓
Zirconium	ug/g	3.12	3.39	30.000	0.025	✓

Material Used: Metals Int. Duplicate - solids
Date Acquired: Sep 07, 2004
Acquired By: Marie England

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project
ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Metals Strong Acid Extractable (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/g	18500	17000	11000	23000	✓
Antimony	ug/g	14	19.0	15.0	23.0	✓
Arsenic	ug/g	96	96.0	77.0	115.0	✓
Barium	ug/g	218	196	157	235	✓
Beryllium	ug/g	1.1	0.980	0.620	1.340	✓
Cadmium	ug/g	39.2	39.5	31.6	47.4	✓
Calcium	ug/g	21700	21000	15990	26010	✓
Chromium	ug/g	23.1	21.5	16.0	27.0	✓
Cobalt	ug/g	8.26	8.50	7.00	10.00	✓
Copper	ug/g	103	108	86	130	✓
Iron	ug/g	24400	22000	16000	28000	✓
Lead	ug/g	971	1150	921	1379	✓
Magnesium	ug/g	8210	7595	6076	9114	✓
Manganese	ug/g	556	512	410	614	✓
Molybdenum	ug/g	<5	2	1	3	✓
Nickel	ug/g	18.2	16.0	9.0	23.0	✓
Phosphorus	ug/g	746	685	510	860	✓
Potassium	ug/g	4820	3950	2600	5300	✓
Silver	ug/g	4.2	4.00	3.19	4.81	✓
Sodium	ug/g	249	245	200	290	✓
Strontium	ug/g	42.0	41.0	33.0	49.0	✓
Sulphur	ug/g	360	429	203	655	✓
Tin	ug/g	<5	2.50	1.99	3.01	✓
Titanium	ug/g	406	297	238	356	✓
Vanadium	ug/g	51.1	43.5	32.0	55.0	✓
Zinc	ug/g	359	320	256	384	✓

Material Used: S0529 NIST 2711 - metals in soil
Date Acquired: Sep 07, 2004
Acquired By: Marie England

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

Methodology and Notes

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By: D.Cornet
Company: LES

Project ID: Pelly AQ
Name: Pelly R. Aquatic
Location: Effects July / 04
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **330674**
Control Number: E 67076
Date Received: Sep 03, 2004
Date Reported: Sep 09, 2004
Report Number: 591744

Method of Analysis:

MethodName	Reference	Method	Date Analysis Started	Location
Metals SemiTrace (Strong Acid Leachable) in solids (Surey)	US EPA	Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	7-Sep-04	Norwest Labs Surrey

* Norwest method(s) is based on reference method

References:

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.
NWL-Edmonton ICP analysis does not include element Thorium; therefore reported results do not list "Th".

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

PELLY RIVER AQUATIC EFFECTS ASSESSMENT

APPENDIX 4

NORWEST LABS METALS IN BENTHIC INVERTEBRATES REPORT

NORWEST LABS

Control Number E 133791

Environmental Sample Information Sheet

NOTE: Proper completion of this form is required in order to proceed with analysis

See reverse for your nearest Norwest location and proper sampling protocol

Billing Address:	**Copy of Report To:**	**Copy of invoice:** ☐
Company: Laberge Environmental Services	Company:	Mail invoice to this address for approval ☐
Address: Box 21072 Whitehorse YT	Address:	
QA/QC Report ☑		
Attention: Bonnie Burns	Attention:	Report Result:
Phone: 867-668-6838	Phone:	Fax ☐
Fax:	Fax:	Mail ☐
Cell:	Cell:	Courier ☐
e-mail: laberge@internorth.com	e-mail:	e-mail ☐
Report Result: Fax ☐ Mail ☑ Courier ☐ e-mail ☑		

Information to be included on Report and Invoice

Project ID:
Project Name: Pelly R AQ
Project Location:
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

RUSH Please contact the laboratory to confirm rush dates and times before submitting samples.

Upon filling out this section, client accepts that surcharges will be attached to this analysis

Required on: all analyses **or** as indicated ☐ or ☐

Date Required: _____

Signature: _____

Norwest Authorization: _____

Sample Custody (Please Print)

Sampled by: Date

Company Signature

Relinquished by:

Company Date

Waybill number:

Received by: Donna

Company 341095 Date Oct/21/04

Special Instructions / Comments ☐ Check here if Norwest is required to report results directly to a regulatory body (Please include contact information)

- benthic invertebrate tissue samples.

Phone me if there are any samples that don't have enough biomass for analysis.

	Sample Identification	Location	Depth IN CM M	Date / Time Sampled (2004)	Matrix	Sampling Method	Number of Containers: ICP Scan - low level
							↓ Enter tests above (✔ relevant samples below)
1	Needle rock		—	Aug 4	tissue		✓
2	Farn R.		—	Aug 3	"		✓
3	B1 (Blind Cr)		—	July 30	"		✓
4	A1 (Anvil Cr)		—	July 31	"		✓
5	A2 (Anvil Cr)		—	July 29	"		✓
6	A3 (Anvil Cr)		—	July 29	"		✓
7	A4 (Anvil Cr)		—	July 29	"		✓
8	P1A (Pelly R)		—		"		✓
9	P2 (Pelly R)		—	Aug 3	"		✓
10	P3 (Pelly R)		—	Aug 3	"		✓
11	P5 (Pelly R)	*	—	Aug 4	"		✓
12	PB		—	July 30	"		✓
13	Pelly R		—	July 31	"		✓
14	Pelly R @ Pelly Crossing *		—	Aug 4	"		✓
15			—				✓

* Combine samples me

NOTE: All hazardous samples must be labelled according to WHMIS guidelines.

Accredited by the Standards Council of Canada for specific tests

Page 1 of ##

NWL008 (08/01)

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: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Contact	Company	Address
Ken Nordin	Laberge Environmental Services	Box 21072, 1-405 Ogilvie Street
Web x		Whitehorse, YT Y1A 6P7
Email Notification x		Phone: (867) 668-1043 Fax: (867) 667-6956
		Email: laberge@internorth.com

	Copies	Delivery Strategy	Format
	1	Post	
A	1	Email - Multiple Reports	PDF
A	1	Email - Multiple Reports	Standard List

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:
Do to the matrix type and amount of sample. A representative sample for duplicates was difficult to acheive. Some of the duplicate values are outside the expected deviation.

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
614711 Envir2QC 3 Smp & DL		

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.

Sample Custody

Norwest Labs
#104, 19575-55 A Ave.
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Report to: Laberge Environmental Services
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Name: Pelly R AQ
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Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Sample Disposal Date: Nov 25, 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 Nov 25, 2004.

Analytical Report

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

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
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Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
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Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

			NWL Number	341095-1	341095-2	341095-3	
			Sample Description	Sampled: 4-Aug-04 / Needle rock	Sampled: 3-Aug-04 / Earn R.	Sampled: 30-July-04 / B1 (Blind Cr.)	
			Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total							
Aluminum	Total (wet weight)	ug/g		183	26.6	86.6	2.5
Antimony	Total (wet weight)	ug/g		0.02	<0.03	0.01	0.1
Arsenic	Total (wet weight)	ug/g		0.36	0.12	0.18	0.1
Barium	Total (wet weight)	ug/g		14.3	3.65	8.05	0.5
Beryllium	Total (wet weight)	ug/g		0.010	<0.02	<0.005	0.05
Bismuth	Total (wet weight)	ug/g		<0.02	<0.08	<0.02	0.3
Cadmium	Total (wet weight)	ug/g		0.0201	0.0643	0.173	0.005
Calcium	Total (wet weight)	ug/g		342	250	499	100
Chromium	Total (wet weight)	ug/g		0.78	0.21	0.21	0.3
Cobalt	Total (wet weight)	ug/g		0.174	0.061	0.082	0.05
Copper	Total (wet weight)	ug/g		1.05	2.53	2.98	0.5
Iron	Total (wet weight)	ug/g		518	113	167	5
Lead	Total (wet weight)	ug/g		0.666	0.960	1.02	0.05
Lithium	Total (wet weight)	ug/g		0.24	<0.2	0.13	0.5
Magnesium	Total (wet weight)	ug/g		137	<30	68	100
Manganese	Total (wet weight)	ug/g		191	15.3	34.2	2.5
Molybdenum	Total (wet weight)	ug/g		0.26	<0.2	<0.05	0.5
Nickel	Total (wet weight)	ug/g		0.58	0.27	0.26	0.3
Phosphorus	Total (wet weight)	ug/g		87	342	278	15
Potassium	Total (wet weight)	ug/g		40	<70	26	200
Selenium	Total (wet weight)	ug/g		0.07	0.14	0.16	0.1
Silicon	Total (wet weight)	ug/g		134	101	124	25
Silver	Total (wet weight)	ug/g		0.009	<0.02	0.019	0.05
Sodium	Total (wet weight)	ug/g		<10	<70	<20	200
Strontium	Total (wet weight)	ug/g		1.59	1.1	1.52	0.5
Tin	Total (wet weight)	ug/g		0.44	2.58	0.86	0.5
Titanium	Total (wet weight)	ug/g		11.1	0.78	3.10	0.3
Uranium	Total (wet weight)	ug/g		0.03	<0.08	0.06	0.3
Vanadium	Total (wet weight)	ug/g		0.674	0.219	0.324	0.05
Zinc	Total (wet weight)	ug/g		5.81	23.9	18.3	0.5
Zirconium	Total (wet weight)	ug/g		0.09	<0.2	0.07	0.5
Mercury	Total (wet weight)	ug/g		<0.003	<0.02	<0.005	0.01

NORWEST LABS

Norwest Labs
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Surrey, BC. V3S 8P8
Phone: (604) 514-3322
Fax: (604) 514-3323

Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

			NWL Number	341095-4	341095-5	341095-6	
			Sample Description	Sampled: 31-July-04 / A1 (Anvil Cr.)	Sampled: 29-July-04 / A2 (Anvil Cr.)	Sampled: 29-July-04 / A3 (Anvil Cr.)	
			Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total							
Aluminum	Total (wet weight)	ug/g		60.8	86.1	92.1	2.5
Antimony	Total (wet weight)	ug/g		0.02	0.02	0.02	0.1
Arsenic	Total (wet weight)	ug/g		0.11	0.18	0.17	0.1
Barium	Total (wet weight)	ug/g		10.7	7.14	8.50	0.5
Beryllium	Total (wet weight)	ug/g		<0.009	<0.007	0.006	0.05
Bismuth	Total (wet weight)	ug/g		<0.04	<0.03	<0.02	0.3
Cadmium	Total (wet weight)	ug/g		0.0842	0.214	0.121	0.005
Calcium	Total (wet weight)	ug/g		424	558	642	100
Chromium	Total (wet weight)	ug/g		0.24	0.27	0.29	0.3
Cobalt	Total (wet weight)	ug/g		0.054	0.102	0.104	0.05
Copper	Total (wet weight)	ug/g		1.67	2.36	2.36	0.5
Iron	Total (wet weight)	ug/g		99.5	169	185	5
Lead	Total (wet weight)	ug/g		0.491	6.39	0.578	0.05
Lithium	Total (wet weight)	ug/g		0.10	0.13	0.14	0.5
Magnesium	Total (wet weight)	ug/g		47	62	106	100
Manganese	Total (wet weight)	ug/g		43.8	28.0	47.2	2.5
Molybdenum	Total (wet weight)	ug/g		<0.09	<0.07	0.08	0.5
Nickel	Total (wet weight)	ug/g		0.22	0.37	0.42	0.3
Phosphorus	Total (wet weight)	ug/g		174	182	372	15
Potassium	Total (wet weight)	ug/g		<40	<30	26	200
Selenium	Total (wet weight)	ug/g		0.12	0.11	0.18	0.1
Silicon	Total (wet weight)	ug/g		120	138	133	25
Silver	Total (wet weight)	ug/g		0.011	0.019	0.012	0.05
Sodium	Total (wet weight)	ug/g		<40	<30	<20	200
Strontium	Total (wet weight)	ug/g		1.21	1.53	1.58	0.5
Tin	Total (wet weight)	ug/g		1.39	1.53	0.75	0.5
Titanium	Total (wet weight)	ug/g		2.61	3.28	2.96	0.3
Uranium	Total (wet weight)	ug/g		<0.04	0.07	0.06	0.3
Vanadium	Total (wet weight)	ug/g		0.309	0.421	0.422	0.05
Zinc	Total (wet weight)	ug/g		35.1	48.9	44.8	0.5
Zirconium	Total (wet weight)	ug/g		<0.09	<0.07	0.05	0.5
Mercury	Total (wet weight)	ug/g		<0.009	<0.007	<0.004	0.01

NORWEST LABS

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

Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

		NWL Number	341095-7	341095-8	341095-9	
		Sample Description	Sampled: 29-July-04 / A4 (Anvil Cr.)	P1A (Pelly R)	Sampled: 3-Aug-04 / P2 (Pelly R)	
		Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total						
Aluminum	Total (wet weight)	ug/g	33.9	25.2	97.9	2.5
Antimony	Total (wet weight)	ug/g	0.03	<0.02	0.03	0.1
Arsenic	Total (wet weight)	ug/g	0.10	0.07	0.18	0.1
Barium	Total (wet weight)	ug/g	8.45	3.34	9.36	0.5
Beryllium	Total (wet weight)	ug/g	<0.004	<0.008	<0.009	0.05
Bismuth	Total (wet weight)	ug/g	<0.02	<0.04	<0.05	0.3
Cadmium	Total (wet weight)	ug/g	0.150	0.574	0.161	0.005
Calcium	Total (wet weight)	ug/g	616	261	332	100
Chromium	Total (wet weight)	ug/g	0.15	0.14	0.30	0.3
Cobalt	Total (wet weight)	ug/g	0.104	0.041	0.093	0.05
Copper	Total (wet weight)	ug/g	2.17	6.97	1.48	0.5
Iron	Total (wet weight)	ug/g	114	58.9	208	5
Lead	Total (wet weight)	ug/g	0.491	0.085	0.404	0.05
Lithium	Total (wet weight)	ug/g	0.06	<0.08	0.14	0.5
Magnesium	Total (wet weight)	ug/g	70	68	86	100
Manganese	Total (wet weight)	ug/g	65.1	5.9	10.7	2.5
Molybdenum	Total (wet weight)	ug/g	0.06	<0.08	<0.09	0.5
Nickel	Total (wet weight)	ug/g	0.27	0.25	0.62	0.3
Phosphorus	Total (wet weight)	ug/g	326	318	123	15
Potassium	Total (wet weight)	ug/g	<20	<30	<40	200
Selenium	Total (wet weight)	ug/g	0.16	0.67	0.11	0.1
Silicon	Total (wet weight)	ug/g	79	51	161	25
Silver	Total (wet weight)	ug/g	0.011	0.048	0.011	0.05
Sodium	Total (wet weight)	ug/g	<20	<30	<40	200
Strontium	Total (wet weight)	ug/g	1.62	0.94	1.20	0.5
Tin	Total (wet weight)	ug/g	0.70	1.32	1.45	0.5
Titanium	Total (wet weight)	ug/g	1.26	0.68	3.59	0.3
Uranium	Total (wet weight)	ug/g	0.06	<0.04	<0.05	0.3
Vanadium	Total (wet weight)	ug/g	0.168	0.222	0.617	0.05
Zinc	Total (wet weight)	ug/g	63.6	45.7	18.3	0.5
Zirconium	Total (wet weight)	ug/g	<0.04	<0.08	0.10	0.5
Mercury	Total (wet weight)	ug/g	<0.004	0.008	<0.009	0.01

NORWEST LABS

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Analytical Report

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

			NWL Number	341095-10	341095-12	341095-13	
			Sample Description	Sampled: 3-Aug-04 / P3 (Pelly R)	Sampled: 30-July-04 / PB	Sampled: 31-July-04 / Pelly R	
			Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total							
Aluminum	Total (wet weight)	ug/g		58.7	225	45.5	2.5
Antimony	Total (wet weight)	ug/g		<0.02	0.09	0.02	0.1
Arsenic	Total (wet weight)	ug/g		0.09	0.38	0.09	0.1
Barium	Total (wet weight)	ug/g		8.93	21.6	5.72	0.5
Beryllium	Total (wet weight)	ug/g		<0.01	<0.02	<0.008	0.05
Bismuth	Total (wet weight)	ug/g		<0.06	<0.08	<0.04	0.3
Cadmium	Total (wet weight)	ug/g		0.216	0.256	0.236	0.005
Calcium	Total (wet weight)	ug/g		180	847	210	100
Chromium	Total (wet weight)	ug/g		0.24	0.65	0.17	0.3
Cobalt	Total (wet weight)	ug/g		0.061	0.226	0.066	0.05
Copper	Total (wet weight)	ug/g		0.84	3.94	1.29	0.5
Iron	Total (wet weight)	ug/g		119	587	109	5
Lead	Total (wet weight)	ug/g		0.315	4.30	1.02	0.05
Lithium	Total (wet weight)	ug/g		<0.1	0.33	<0.08	0.5
Magnesium	Total (wet weight)	ug/g		46	210	50	100
Manganese	Total (wet weight)	ug/g		17.7	32.2	7.6	2.5
Molybdenum	Total (wet weight)	ug/g		<0.1	<0.2	<0.08	0.5
Nickel	Total (wet weight)	ug/g		0.33	1.54	0.45	0.3
Phosphorus	Total (wet weight)	ug/g		110	393	113	15
Potassium	Total (wet weight)	ug/g		<50	64	<30	200
Selenium	Total (wet weight)	ug/g		0.06	0.26	0.22	0.1
Silicon	Total (wet weight)	ug/g		120	301	90	25
Silver	Total (wet weight)	ug/g		<0.01	0.028	0.011	0.05
Sodium	Total (wet weight)	ug/g		<50	<60	<30	200
Strontium	Total (wet weight)	ug/g		0.72	3.71	0.83	0.5
Tin	Total (wet weight)	ug/g		1.99	2.21	1.29	0.5
Titanium	Total (wet weight)	ug/g		1.64	6.33	1.40	0.3
Uranium	Total (wet weight)	ug/g		<0.06	0.09	<0.04	0.3
Vanadium	Total (wet weight)	ug/g		0.367	1.32	0.308	0.05
Zinc	Total (wet weight)	ug/g		14.5	46.3	19.6	0.5
Zirconium	Total (wet weight)	ug/g		<0.1	<0.2	<0.08	0.5
Mercury	Total (wet weight)	ug/g		<0.01	<0.02	<0.008	0.01

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Analytical Report

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Attn: Ken Nordin
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Company:

Project ID:
Name: Pelly R AQ
Location:
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Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

NWL Number	341095-15
Sample Description	Sampled: 4-Aug-04 / P5 (Pelly R) & Pelly R @ Pelly Crossing (Combined)
Matrix	Tissue

Analyte		Units	Results	Results	Results	Detection Limit
Metals Total						
Aluminum	Total (wet weight)	ug/g	220			2.5
Antimony	Total (wet weight)	ug/g	<0.2			0.1
Arsenic	Total (wet weight)	ug/g	0.39			0.1
Barium	Total (wet weight)	ug/g	17.9			0.5
Beryllium	Total (wet weight)	ug/g	<0.1			0.05
Bismuth	Total (wet weight)	ug/g	<0.5			0.3
Cadmium	Total (wet weight)	ug/g	0.926			0.005
Calcium	Total (wet weight)	ug/g	350			100
Chromium	Total (wet weight)	ug/g	1.2			0.3
Cobalt	Total (wet weight)	ug/g	0.20			0.05
Copper	Total (wet weight)	ug/g	6.0			0.5
Iron	Total (wet weight)	ug/g	485			5
Lead	Total (wet weight)	ug/g	24.3			0.05
Lithium	Total (wet weight)	ug/g	<1			0.5
Magnesium	Total (wet weight)	ug/g	<200			100
Manganese	Total (wet weight)	ug/g	31			2.5
Molybdenum	Total (wet weight)	ug/g	<1			0.5
Nickel	Total (wet weight)	ug/g	1.1			0.3
Phosphorus	Total (wet weight)	ug/g	638			15
Potassium	Total (wet weight)	ug/g	<400			200
Selenium	Total (wet weight)	ug/g	0.57			0.1
Silicon	Total (wet weight)	ug/g	420			25
Silver	Total (wet weight)	ug/g	<0.1			0.05
Sodium	Total (wet weight)	ug/g	<400			200
Strontium	Total (wet weight)	ug/g	2.6			0.5
Tin	Total (wet weight)	ug/g	15.1			0.5
Titanium	Total (wet weight)	ug/g	6.58			0.3
Uranium	Total (wet weight)	ug/g	<0.5			0.3
Vanadium	Total (wet weight)	ug/g	1.34			0.05
Zinc	Total (wet weight)	ug/g	112			0.5
Zirconium	Total (wet weight)	ug/g	<1			0.5
Mercury	Total (wet weight)	ug/g	<0.1			0.01

Norwest Labs
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Analytical Report

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Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Approved by:

Bill Warning, B.Sc.
Lab Operations Manager

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 341095
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Metals Total

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/g	<0.5	0.0	0.0	0.0	✓
Antimony	ug/g	<0.02	0.00	-0.02	0.02	✓
Arsenic	ug/g	<0.02	0.00	-0.04	0.04	✓
Barium	ug/g	<0.1	0.00	0.00	0.00	✓
Beryllium	ug/g	<0.01	0.000	-0.001	0.001	✓
Bismuth	ug/g	<0.05	0.00	-0.02	0.02	✓
Cadmium	ug/g	<0.001	0.0000	-0.0005	0.0005	✓
Calcium	ug/g	<20	0	0	0	✓
Chromium	ug/g	0.06	0.00	0.00	0.00	✓
Cobalt	ug/g	<0.01	0.000	-0.001	0.001	✓
Copper	ug/g	<0.1	0.00	0.00	0.00	✓
Iron	ug/g	<1	0.0	0.0	0.0	✓
Lead	ug/g	<0.01	0.000	-0.010	0.010	✓
Lithium	ug/g	<0.1	0.00	-0.01	0.01	✓
Magnesium	ug/g	<20	0	0	0	✓
Manganese	ug/g	<0.5	0.0	0.0	0.0	✓
Molybdenum	ug/g	<0.1	0.00	-0.01	0.01	✓
Nickel	ug/g	<0.05	0.00	0.00	0.00	✓
Phosphorus	ug/g	9	0	0	0	✓
Potassium	ug/g	<40	0	-1	1	✓
Selenium	ug/g	<0.02	0.00	-0.10	0.10	✓
Silicon	ug/g	<5	0	0	0	✓
Silver	ug/g	<0.01	0.000	-0.002	0.002	✓
Sodium	ug/g	<40	0	0	0	✓
Strontium	ug/g	<0.1	0.00	-0.01	0.01	✓
Sulfur	ug/g	<5	0	-1	1	✓
Tin	ug/g	1.62	0.00	-0.01	0.01	✓
Titanium	ug/g	<0.05	0.00	0.00	0.00	✓
Uranium	ug/g	<0.05	0.00	-0.06	0.06	✓
Vanadium	ug/g	0.026	0.000	-0.001	0.001	✓
Zinc	ug/g	0.88	0.00	0.00	0.00	✓
Zirconium	ug/g	<0.1	0.00	-0.01	0.01	✓
Mercury	ug/g	<0.01	0.000	-0.099	0.099	✓

Material Used: Metals Blank - solids
Date Acquired: Oct 25, 2004
Acquired By: Kelly Restiaux

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: 341095
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Metals Total (Continued...)

Replicates	Units	Replicate1	Replicate2	% RSD Criteria	Absolute Criteria	Passed QC
Aluminum	ug/g	1.0	60.7	30.0	0.1	✓
Antimony	ug/g	0.01	<0.01	30.00	0.10	✓
Arsenic	ug/g	2.46	0.17	30.00	0.20	✓
Barium	ug/g	<0.05	8.14	30.00	0.00	✓
Beryllium	ug/g	<0.005	<0.006	30.000	0.003	✓
Bismuth	ug/g	<0.02	<0.03	30.00	0.20	✓
Cadmium	ug/g	0.170	3.29	30.0000	0.0025	✓
Calcium	ug/g	324	142	30	0	✓
Chromium	ug/g	0.20	0.16	30.00	0.01	✓
Cobalt	ug/g	0.033	0.076	30.000	0.005	✓
Copper	ug/g	2.96	5.63	30.00	0.01	✓
Iron	ug/g	173	15.9	30.0	0.0	✓
Lead	ug/g	0.040	1.20	30.000	0.050	✓
Lithium	ug/g	0.13	<0.05	30.00	0.03	✓
Magnesium	ug/g	340	57	30	0	✓
Manganese	ug/g	34.3	4.2	30.0	0.0	✓
Molybdenum	ug/g	<0.05	0.07	30.00	0.05	✓
Nickel	ug/g	0.05	0.25	30.00	0.01	✓
Phosphorus	ug/g	269	1710	30	0	✓
Potassium	ug/g	2770	<20	30	5	✓
Selenium	ug/g	0.17	0.80	30.00	0.50	✓
Silicon	ug/g	6	105	30	0	✓
Silver	ug/g	0.019	0.226	30.000	0.020	✓
Sodium	ug/g	1470	<20	30	0	✓
Strontium	ug/g	1.57	1.41	30.00	0.03	✓
Sulfur	ug/g	3280	421	30	5	✓
Tin	ug/g	0.85	1.02	30.00	0.05	✓
Titanium	ug/g	0.22	2.18	30.00	0.02	✓
Uranium	ug/g	0.05	<0.02	30.00	0.30	✓
Vanadium	ug/g	0.154	0.258	30.000	0.005	✓
Zinc	ug/g	130	21.7	30.00	0.01	✓
Zirconium	ug/g	0.08	<0.05	30.00	0.03	✓
Mercury	ug/g	<0.005	<0.006	30.000	0.050	✓

Material Used: Metals Int. Duplicate - solids
Date Acquired: Oct 25, 2004
Acquired By: Kelly Restiaux

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

Quality Control

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Metals Total (Continued...)

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Aluminum	ug/g	43.4	197	168	227	✓
Arsenic	ug/g	9.24	7.65	6.50	8.80	✓
Cadmium	ug/g	2.48	2.48	2.11	2.85	✓
Calcium	ug/g	773	838	712	964	✓
Cobalt	ug/g	0.329	0.371	0.315	0.427	✓
Copper	ug/g	61.3	71.6	60.9	82.3	✓
Iron	ug/g	180	206	175	237	✓
Lead	ug/g	0.303	0.308	0.262	0.354	✓
Magnesium	ug/g	1110	1085	923	1247	✓
Manganese	ug/g	18.0	18.5	15.7	21.3	✓
Nickel	ug/g	0.90	1.04	0.88	1.20	✓
Potassium	ug/g	6100	6520	5542	7498	✓
Selenium	ug/g	2.88	2.06	1.75	2.37	✓
Silver	ug/g	0.622	0.666	0.567	0.765	✓
Sodium	ug/g	3020	3297	2802	3792	✓
Sulfur	ug/g	6050	6887	5855	7919	✓
Vanadium	ug/g	0.698	0.577	0.490	0.664	✓
Zinc	ug/g	1390	1424	1210	1638	✓
Mercury	ug/g	0.052	0.037	0.031	0.043	✓

Material Used: S0139 NIST 1566b - metals in oyster
Date Acquired: Oct 25, 2004
Acquired By: Kelly Restiaux

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

Methodology and Notes

Bill to: Laberge Environmental Services
Report to: Laberge Environmental Services
Box 21072
1-405 Ogilvie Street
Whitehorse, YT, Canada
Y1A 6P7
Attn: Ken Nordin
Sampled By:
Company:

Project ID:
Name: Pelly R AQ
Location:
LSD:
P.O.:
Acct. Code:

NWL Lot ID: **341095**
Control Number: E 133791
Date Received: Oct 20, 2004
Date Reported: Oct 26, 2004
Report Number: 614711

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Mercury in Tissue (Surrey)	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	25-Oct-04	Norwest Labs Surrey
Metals SemiTrace (Total) in tissue (Surrey)	US EPA		Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	22-Oct-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:

Do to the matrix type and amount of sample. A representative sample for duplicates was difficult to acheive. Some of the duplicate values are outside the expected deviation.

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

PELLY RIVER AQUATIC EFFECTS ASSESSMENT

APPENDIX 5

NORWEST LABS METALS IN FISH TISSUE REPORTS

A2	1 mid size fish	packaged together	
A3	2 tiny fish		1 set
A4 special		packaged alone	2 set

SFN-pelly AQ anvil Cr A-1		packaged together	
A2			3 set
A3	several small fish		
A4			

Pelly AQ A3-AG5 ✓		packaged together	4 set
Pelly AQ A2-A61 ✓			
Pelly AQ A3-AG1 AG4			
Pelly AQ A3-AG6 ✓			
Pelly AQ A2-AG2 ✓			

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: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336665**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603339

Contact	Company	Address	
Paul Sparling	White Mountain Environmental Consulting	PO Box 10140	
Web		Whitehorse, YT Y1A 7A1	
Email Notification		Phone: (867) 393-4189	Fax:
		Email: fish@polarcom.com	

	Copies	Delivery Strategy	Format
	1	Post	
A	1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes
Agreement Notes
Lot Notes
Sample Notes:

Notes to Clients
Lot Notes:
Sample Notes:
Batch Notes:
Method Notes:
Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
603339 Envir2 3 Smp & DL		

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.

Sample Custody

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336665**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603339

Sample Disposal Date: Nov 13, 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 Nov 13, 2004.

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336665**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603339

		NWL Number	336665-1	336665-2	336665-3	
		Sample Description	Pelly AQ - A3 - AG5	Pelly AQ - A2 - A6 1	Pelly AQ - A3 - AG 4	
		Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total						
Aluminum	Total (wet weight)	ug/g	15	<2	<2	2.5
Antimony	Total (wet weight)	ug/g	<0.1	<0.1	<0.1	0.1
Arsenic	Total (wet weight)	ug/g	0.10	<0.1	<0.1	0.1
Barium	Total (wet weight)	ug/g	<0.5	<0.5	<0.5	0.5
Beryllium	Total (wet weight)	ug/g	<0.05	<0.05	<0.05	0.05
Bismuth	Total (wet weight)	ug/g	<0.2	0.36	<0.2	0.3
Cadmium	Total (wet weight)	ug/g	0.035	0.0060	<0.005	0.005
Calcium	Total (wet weight)	ug/g	130	<100	150	100
Chromium	Total (wet weight)	ug/g	<0.2	<0.2	<0.2	0.3
Cobalt	Total (wet weight)	ug/g	<0.05	<0.05	<0.05	0.05
Copper	Total (wet weight)	ug/g	0.87	0.66	0.69	0.5
Iron	Total (wet weight)	ug/g	12	8.4	9.3	5
Lead	Total (wet weight)	ug/g	0.17	<0.05	0.060	0.05
Lithium	Total (wet weight)	ug/g	<0.5	<0.5	<0.5	0.5
Magnesium	Total (wet weight)	ug/g	150	140	150	100
Manganese	Total (wet weight)	ug/g	3.0	<2	<2	2.5
Molybdenum	Total (wet weight)	ug/g	<0.5	<0.5	<0.5	0.5
Nickel	Total (wet weight)	ug/g	<0.2	<0.2	<0.2	0.3
Phosphorus	Total (wet weight)	ug/g	2010	1840	2000	15
Potassium	Total (wet weight)	ug/g	3770	3610	3470	200
Selenium	Total (wet weight)	ug/g	1.28	1.15	0.87	0.1
Silicon	Total (wet weight)	ug/g	<20	<20	<20	25
Silver	Total (wet weight)	ug/g	<0.05	<0.05	<0.05	0.05
Sodium	Total (wet weight)	ug/g	800	990	700	200
Strontium	Total (wet weight)	ug/g	<0.5	<0.5	<0.5	0.5
Tin	Total (wet weight)	ug/g	0.92	0.87	0.84	0.5
Titanium	Total (wet weight)	ug/g	0.34	0.26	0.31	0.3
Uranium	Total (wet weight)	ug/g	<0.2	<0.2	<0.2	0.3
Vanadium	Total (wet weight)	ug/g	0.072	0.054	<0.05	0.05
Zinc	Total (wet weight)	ug/g	8.68	7.40	7.23	0.5
Zirconium	Total (wet weight)	ug/g	<0.5	<0.5	<0.5	0.5
Mercury	Total (wet weight)	ug/g	0.045	0.073	0.099	0.01
Physical and Aggregate Properties						
Moisture	Wet Weight	%	78.3	80.2	78.8	0.1

NORWEST LABS

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

Analytical Report

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336665**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603339

	NWL Number	336665-4	336665-5		
	Sample Description	Pelly AQ - A3 - AG 6	Pelly AQ - A2 - AG 2		
	Matrix	Tissue	Tissue		
Analyte		**Units**	**Results**	**Results**	**Results**	**Detection Limit**
Metals Total						
Aluminum	Total (wet weight)	ug/g	<2	<2		2.5
Antimony	Total (wet weight)	ug/g	<0.1	<0.1		0.1
Arsenic	Total (wet weight)	ug/g	<0.1	<0.1		0.1
Barium	Total (wet weight)	ug/g	<0.5	<0.5		0.5
Beryllium	Total (wet weight)	ug/g	<0.05	<0.05		0.05
Bismuth	Total (wet weight)	ug/g	<0.2	<0.2		0.3
Cadmium	Total (wet weight)	ug/g	0.017	<0.005		0.005
Calcium	Total (wet weight)	ug/g	210	400		100
Chromium	Total (wet weight)	ug/g	<0.2	<0.2		0.3
Cobalt	Total (wet weight)	ug/g	<0.05	<0.05		0.05
Copper	Total (wet weight)	ug/g	0.97	0.64		0.5
Iron	Total (wet weight)	ug/g	10	9.2		5
Lead	Total (wet weight)	ug/g	<0.05	<0.05		0.05
Lithium	Total (wet weight)	ug/g	<0.5	<0.5		0.5
Magnesium	Total (wet weight)	ug/g	160	150		100
Manganese	Total (wet weight)	ug/g	3.0	<2		2.5
Molybdenum	Total (wet weight)	ug/g	<0.5	<0.5		0.5
Nickel	Total (wet weight)	ug/g	<0.2	<0.2		0.3
Phosphorus	Total (wet weight)	ug/g	2070	2130		15
Potassium	Total (wet weight)	ug/g	3700	3460		200
Selenium	Total (wet weight)	ug/g	1.17	1.21		0.1
Silicon	Total (wet weight)	ug/g	<20	<20		25
Silver	Total (wet weight)	ug/g	<0.05	<0.05		0.05
Sodium	Total (wet weight)	ug/g	860	890		200
Strontium	Total (wet weight)	ug/g	<0.5	<0.5		0.5
Tin	Total (wet weight)	ug/g	0.92	0.92		0.5
Titanium	Total (wet weight)	ug/g	0.31	0.35		0.3
Uranium	Total (wet weight)	ug/g	<0.2	<0.2		0.3
Vanadium	Total (wet weight)	ug/g	<0.05	<0.05		0.05
Zinc	Total (wet weight)	ug/g	8.99	7.55		0.5
Zirconium	Total (wet weight)	ug/g	<0.5	<0.5		0.5
Mercury	Total (wet weight)	ug/g	0.065	0.045		0.01
Physical and Aggregate Properties						
Moisture	Wet Weight	%	77.8	78.4		0.1

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336665**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603339

Approved by:

Marie England
Consulting Scientist

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

Methodology and Notes

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336665**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603339

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Mercury in Tissue (Surrey)	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	6-Oct-04	Norwest Labs Surrey
Metals SemiTrace (Total) in tissue (Surrey)	US EPA		Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	6-Oct-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:

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

LOT# 336673.

A2	1 mid size fish	packaged together	
A3	2 tiny fish		1 set
A4 special		packaged alone	2 set

SFN-pelly AQ anvil Cr A-1		packaged together	
A2			3 set
A3	several small fish		
A4			

Pelly AQ A3-AG5		packaged together	4 set
Pelly AQ A2-A61			
Pelly AQ A3-AG1			
Pelly AQ A3-AG6			
Pelly AQ A2-AG2			

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: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336673**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603347

Contact	Company	Address	
Paul Sparling	White Mountain Environmental Consulting	PO Box 10140	
Web		Whitehorse, YT Y1A 7A1	
Email Notification		Phone: (867) 393-4189	Fax:
		Email: fish@polarcom.com	

	Copies	Delivery Strategy	Format
	1	Post	
A	1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
603347 Envir2 3 Smp & DL		

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.

Sample Custody

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336673**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603347

Sample Disposal Date: Nov 13, 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 Nov 13, 2004.

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336673**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603347

			NWL Number	336673-1	336673-2	336673-3	
			Sample Description	A1 / SFN - Pelly AQ Anvil Cr A-1	A2	A3	
			Matrix	Tissue	Tissue	Tissue	
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total							
Aluminum	Total (wet weight)	ug/g		17	14	15	2.5
Antimony	Total (wet weight)	ug/g		<0.1	<0.1	<0.1	0.1
Arsenic	Total (wet weight)	ug/g		0.12	0.17	0.18	0.1
Barium	Total (wet weight)	ug/g		3.4	3.8	4.2	0.5
Beryllium	Total (wet weight)	ug/g		<0.05	<0.05	<0.05	0.05
Bismuth	Total (wet weight)	ug/g		<0.2	<0.2	<0.2	0.3
Cadmium	Total (wet weight)	ug/g		0.199	0.0795	0.048	0.005
Calcium	Total (wet weight)	ug/g		10100	12600	11800	100
Chromium	Total (wet weight)	ug/g		<0.2	0.32	<0.2	0.3
Cobalt	Total (wet weight)	ug/g		<0.05	<0.05	<0.05	0.05
Copper	Total (wet weight)	ug/g		1.2	1.1	1.1	0.5
Iron	Total (wet weight)	ug/g		31	24	41	5
Lead	Total (wet weight)	ug/g		0.35	0.16	0.17	0.05
Lithium	Total (wet weight)	ug/g		<0.5	<0.5	<0.5	0.5
Magnesium	Total (wet weight)	ug/g		270	330	290	100
Manganese	Total (wet weight)	ug/g		11	26.4	21	2.5
Molybdenum	Total (wet weight)	ug/g		<0.5	<0.5	<0.5	0.5
Nickel	Total (wet weight)	ug/g		<0.2	<0.2	<0.2	0.3
Phosphorus	Total (wet weight)	ug/g		6620	7990	7480	15
Potassium	Total (wet weight)	ug/g		2700	2730	2670	200
Selenium	Total (wet weight)	ug/g		1.45	1.18	1.05	0.1
Silicon	Total (wet weight)	ug/g		35	28	31	25
Silver	Total (wet weight)	ug/g		<0.05	<0.05	<0.05	0.05
Sodium	Total (wet weight)	ug/g		1000	1200	1100	200
Strontium	Total (wet weight)	ug/g		11.0	12.6	12.7	0.5
Tin	Total (wet weight)	ug/g		0.85	0.89	0.84	0.5
Titanium	Total (wet weight)	ug/g		1.4	0.87	0.95	0.3
Uranium	Total (wet weight)	ug/g		<0.2	<0.2	<0.2	0.3
Vanadium	Total (wet weight)	ug/g		0.21	0.17	0.22	0.05
Zinc	Total (wet weight)	ug/g		48.6	48.1	47.2	0.5
Zirconium	Total (wet weight)	ug/g		<0.5	<0.5	<0.5	0.5
Mercury	Total (wet weight)	ug/g		0.032	0.025	0.027	0.01
Physical and Aggregate Properties							
Moisture	Wet Weight	%		77.8	76.0	76.2	0.1

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

Analytical Report

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336673**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603347

	NWL Number	336673-4
	Sample Description	A4
	Matrix	Tissue

Analyte		Units	Results	Results	Results	Detection Limit
Metals Total						
Aluminum	Total (wet weight)	ug/g	3.7			2.5
Antimony	Total (wet weight)	ug/g	<0.1			0.1
Arsenic	Total (wet weight)	ug/g	0.14			0.1
Barium	Total (wet weight)	ug/g	3.0			0.5
Beryllium	Total (wet weight)	ug/g	<0.05			0.05
Bismuth	Total (wet weight)	ug/g	<0.2			0.3
Cadmium	Total (wet weight)	ug/g	0.045			0.005
Calcium	Total (wet weight)	ug/g	10500			100
Chromium	Total (wet weight)	ug/g	<0.2			0.3
Cobalt	Total (wet weight)	ug/g	<0.05			0.05
Copper	Total (wet weight)	ug/g	0.92			0.5
Iron	Total (wet weight)	ug/g	20			5
Lead	Total (wet weight)	ug/g	0.16			0.05
Lithium	Total (wet weight)	ug/g	<0.5			0.5
Magnesium	Total (wet weight)	ug/g	260			100
Manganese	Total (wet weight)	ug/g	36.6			2.5
Molybdenum	Total (wet weight)	ug/g	<0.5			0.5
Nickel	Total (wet weight)	ug/g	<0.2			0.3
Phosphorus	Total (wet weight)	ug/g	6680			15
Potassium	Total (wet weight)	ug/g	2780			200
Selenium	Total (wet weight)	ug/g	1.21			0.1
Silicon	Total (wet weight)	ug/g	<20			25
Silver	Total (wet weight)	ug/g	<0.05			0.05
Sodium	Total (wet weight)	ug/g	1100			200
Strontium	Total (wet weight)	ug/g	10.6			0.5
Tin	Total (wet weight)	ug/g	0.88			0.5
Titanium	Total (wet weight)	ug/g	0.62			0.3
Uranium	Total (wet weight)	ug/g	<0.2			0.3
Vanadium	Total (wet weight)	ug/g	0.15			0.05
Zinc	Total (wet weight)	ug/g	47.5			0.5
Zirconium	Total (wet weight)	ug/g	<0.5			0.5
Mercury	Total (wet weight)	ug/g	0.020			0.01
Physical and Aggregate Properties						
Moisture	Wet Weight	%	77.7			0.1

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336673**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603347

Approved by:

Marie England
Consulting Scientist

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

Methodology and Notes

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336673**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603347

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Mercury in Tissue (Surrey)	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	6-Oct-04	Norwest Labs Surrey
Metals SemiTrace (Total) in tissue (Surrey)	US EPA		Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	6-Oct-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:

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

LOT# 336681

A2	1 mid size fish	packaged together	
A3	2 tiny fish		1 set
A4 special		packaged alone	2 set

SFN-pelly AQ anvil Cr A-1		packaged together	
A2			3 set
A3	several small fish		
A4			

Pelly AQ A3-AG5		packaged together	4 set
Pelly AQ A2-A61			
Pelly AQ A3-AG1			
Pelly AQ A3-AG6			
Pelly AQ A2-AG2			

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: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336681**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603366

Contact	Company	Address	
Paul Sparling	White Mountain Environmental Consulting	PO Box 10140	
Web		Whitehorse, YT Y1A 7A1	
Email Notification		Phone: (867) 393-4189	Fax:
		Email: fish@polarcom.com	

	Copies	Delivery Strategy	Format
	1	Post	
A	1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
603366 Envir2 3 Smp & DL		

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.

Sample Custody

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336681**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603366

Sample Disposal Date: Nov 13, 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 Nov 13, 2004.

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336681**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603366

			NWL Number	336681-1	336681-2		
			Sample Description	A2	A3		
			Matrix	Tissue	Tissue		
Analyte		**Units**		**Results**	**Results**	**Results**	**Detection Limit**
Metals Total							
Aluminum	Total (wet weight)	ug/g		38	12		2.5
Antimony	Total (wet weight)	ug/g		<0.2	<0.1		0.1
Arsenic	Total (wet weight)	ug/g		0.27	0.14		0.1
Barium	Total (wet weight)	ug/g		5.7	2.2		0.5
Beryllium	Total (wet weight)	ug/g		<0.1	<0.05		0.05
Bismuth	Total (wet weight)	ug/g		<0.6	<0.2		0.3
Cadmium	Total (wet weight)	ug/g		0.066	0.123		0.005
Calcium	Total (wet weight)	ug/g		10400	7120		100
Chromium	Total (wet weight)	ug/g		<0.6	<0.2		0.3
Cobalt	Total (wet weight)	ug/g		<0.1	0.10		0.05
Copper	Total (wet weight)	ug/g		1.7	1.1		0.5
Iron	Total (wet weight)	ug/g		57	42		5
Lead	Total (wet weight)	ug/g		0.22	0.24		0.05
Lithium	Total (wet weight)	ug/g		<1	<0.5		0.5
Magnesium	Total (wet weight)	ug/g		290	240		100
Manganese	Total (wet weight)	ug/g		44	16		2.5
Molybdenum	Total (wet weight)	ug/g		<1	<0.5		0.5
Nickel	Total (wet weight)	ug/g		<0.6	<0.2		0.3
Phosphorus	Total (wet weight)	ug/g		7220	5550		15
Potassium	Total (wet weight)	ug/g		2900	3570		200
Selenium	Total (wet weight)	ug/g		1.2	2.01		0.1
Silicon	Total (wet weight)	ug/g		82	25		25
Silver	Total (wet weight)	ug/g		<0.1	<0.05		0.05
Sodium	Total (wet weight)	ug/g		880	940		200
Strontium	Total (wet weight)	ug/g		12	6.94		0.5
Tin	Total (wet weight)	ug/g		2.3	0.90		0.5
Titanium	Total (wet weight)	ug/g		1.9	0.95		0.3
Uranium	Total (wet weight)	ug/g		<0.6	<0.2		0.3
Vanadium	Total (wet weight)	ug/g		0.35	0.11		0.05
Zinc	Total (wet weight)	ug/g		43.2	29.4		0.5
Zirconium	Total (wet weight)	ug/g		<1	<0.5		0.5
Mercury	Total (wet weight)	ug/g		<0.01	0.015		0.01
Physical and Aggregate Properties							
Moisture	Wet Weight	%		72.4	75.3		0.1

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336681**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603366

Approved by:

Marie England
Consulting Scientist

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

Methodology and Notes

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336681**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603366

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Mercury in Tissue (Surrey)	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	6-Oct-04	Norwest Labs Surrey
Metals SemiTrace (Total) in tissue (Surrey)	US EPA		Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	6-Oct-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:

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

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Lot# 336680

A2	1 mid size fish	packaged together	
A3	2 tiny fish		1 set
A4 special		packaged alone	2 set

SFN-pelly AQ anvil Cr A-1		packaged together	
A2			3 set
A3	several small fish		
A4			

Pelly AQ A3-AG5		packaged together	4 set
Pelly AQ A2-A61			
Pelly AQ A3-AG1			
Pelly AQ A3-AG6			
Pelly AQ A2-AG2			

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: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336680**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603362

Contact	Company	Address	
Paul Sparling	White Mountain Environmental Consulting	PO Box 10140	
Web		Whitehorse, YT Y1A 7A1	
Email Notification		Phone: (867) 393-4189	Fax:
		Email: fish@polarcom.com	

	Copies	Delivery Strategy	Format
	1	Post	
A	1	Email - Multiple Reports	PDF

NOTE: **P** indicates a preliminary report is required
NOTE: **A** indicates report is delivered using automated delivery

_____ # OF PAGES IN THIS TRANSMISSION

Report Transmission Notes

Agreement Notes

Lot Notes

Sample Notes:

Notes to Clients

Lot Notes:

Sample Notes:

Batch Notes:

Method Notes:

Method Result Notes:

Reports associated with this Lot

Id/Format/Reported Date	Id/Format/Reported Date	Id/Format/Reported Date
603362 Envir2 3 Smp & DL		

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.

Sample Custody

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336680**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603362

Sample Disposal Date: Nov 13, 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 Nov 13, 2004.

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336680**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603362

	NWL Number	336680-1
	Sample Description	A4 - Special
	Matrix	Tissue

Analyte		Units	Results	Results	Results	Detection Limit
Metals Total						
Aluminum	Total (wet weight)	ug/g	157			2.5
Antimony	Total (wet weight)	ug/g	<0.08			0.1
Arsenic	Total (wet weight)	ug/g	0.19			0.1
Barium	Total (wet weight)	ug/g	6.27			0.5
Beryllium	Total (wet weight)	ug/g	<0.04			0.05
Bismuth	Total (wet weight)	ug/g	<0.2			0.3
Cadmium	Total (wet weight)	ug/g	0.0953			0.005
Calcium	Total (wet weight)	ug/g	3150			100
Chromium	Total (wet weight)	ug/g	0.26			0.3
Cobalt	Total (wet weight)	ug/g	0.14			0.05
Copper	Total (wet weight)	ug/g	1.4			0.5
Iron	Total (wet weight)	ug/g	238			5
Lead	Total (wet weight)	ug/g	1.14			0.05
Lithium	Total (wet weight)	ug/g	<0.4			0.5
Magnesium	Total (wet weight)	ug/g	270			100
Manganese	Total (wet weight)	ug/g	84.5			2.5
Molybdenum	Total (wet weight)	ug/g	<0.4			0.5
Nickel	Total (wet weight)	ug/g	0.38			0.3
Phosphorus	Total (wet weight)	ug/g	3040			15
Potassium	Total (wet weight)	ug/g	1730			200
Selenium	Total (wet weight)	ug/g	0.58			0.1
Silicon	Total (wet weight)	ug/g	96			25
Silver	Total (wet weight)	ug/g	<0.04			0.05
Sodium	Total (wet weight)	ug/g	450			200
Strontium	Total (wet weight)	ug/g	3.7			0.5
Tin	Total (wet weight)	ug/g	0.66			0.5
Titanium	Total (wet weight)	ug/g	5.32			0.3
Uranium	Total (wet weight)	ug/g	<0.2			0.3
Vanadium	Total (wet weight)	ug/g	0.396			0.05
Zinc	Total (wet weight)	ug/g	34.4			0.5
Zirconium	Total (wet weight)	ug/g	<0.4			0.5
Mercury	Total (wet weight)	ug/g	0.007			0.01
Physical and Aggregate Properties						
Moisture	Wet Weight	%	77.6			0.1

Analytical Report

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

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336680**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603362

Approved by:

Marie England
Consulting Scientist

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

Methodology and Notes

Bill to: White Mountain Environmental Consulting
Report to: White Mountain Environmental Consulting
PO Box 10140
Whitehorse, YT, Canada
Y1A 7A1
Attn: Paul Sparling
Sampled By:
Company:

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

NWL Lot ID: **336680**
Control Number:
Date Received: Sep 21, 2004
Date Reported: Oct 14, 2004
Report Number: 603362

Method of Analysis:

MethodName	Reference		Method	Date Analysis Started	Location
Mercury in Tissue (Surrey)	APHA	*	Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	6-Oct-04	Norwest Labs Surrey
Metals SemiTrace (Total) in tissue (Surrey)	US EPA		Metals & Trace Elements by Ultrasonic Nebulization ICP-AES, 200.15	6-Oct-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:

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

Selkirk First Nation

PELLY RIVER AQUATIC EFFECTS ASSESSMENT

APPENDIX 6

SELECTED PHOTOGRAPHS

Plate 1. Collection of water samples for laboratory analysis and recording in situ measurements.

Plate 2. Sediment sample collection at deposition zones to look for evidence of the 1975 tailings spill in the soil profile across the stream.

Plate 3. Breach in tailings dam (1975).

Plate 4. Immediately downstream of tailings spill (1975).

Plate 5. Several kilometers downstream of tailing spill (1975).

Plate 6 Soil sampling at test pit 5 of transect across the stream at Site A4 to have analyzed for metals and pH.

Plate 7. Benthic invertebrate sample collection at Site A2 to have tissues analysed for metals.

Plate 8. Beach seining to identify species, count and measure fish.

Plate 9. Capturing fish using electroshocking method and collecting fish tissue for metals analysis.

Plate 10. Assessing fish habitat features in Anvil Creek