

2012 SUMMARY REPORT ON BASELINE MONITORING PROGRAM JENNINGS PROJECT

March 2012 – December 2012

Located 35 Kilometers SE of Rancheria, Yukon
Watson Lake, Mining District
NTS 105 B/01
60° 00' N Latitude; 130° 07' W Longitude

Grant Numer	Claim Name
YA36789	HOT 1
YA36791	HOT 3
YA36793	HOT 5
YA36795	HOT 7
YA36797	HOT 9
YA36799	HOT 11
YA36805 - YA36816	HOT 17-HOT28
YA36824	HOT 34
YA36824	HOT 36
YA36826	HOT 38
YA36828	HOT 40
YA36830	HOT 42
YA71565 - YA71569	HOT 81-HOT 85
YC28702 - YC28789	TOOZ 1-TOOZ 97
YC73950 - YC73969	TOOZ 98- TOOZ 117
YC73970 - YC73971	TOOZ 118 - TOOZ 119
YE85213 - YE85231	TOOZ 120 - TOOZ 138
YF40415 - YF40417	TOOZ 139 - TOOZ 141
YD121277 - YD121294	TOOZ 142 - TOOZ 159
YE43993 -YE44000	TOOZ 160 - TOOZ 167

Owned and Operated by Agnico-Eagle Mines Limited

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REPORT SUMMARY

The Jennings Project is an early stage porphyry molybdenum-tungsten prospect located 80 km west of Watson Lake, Yukon Territory. The project area consists of 206 claims for a total of 7,723.94 hectares claim block that straddles the British Columbia-Yukon border along the eastern flank of the Cassiar Mountain range. The property is road accessible and situated east of the Tootsee River on NTS Map Sheet 105B/01 and approximately 35 kilometers southeast of the village of Rancheria, Yukon Territory. The property has been explored by Agnico-Eagle Mines Limited (AEM) since 2008. AEM completed a 32,627.33 meters for 49 diamond drill holes and collected 1,100 soil samples on the property, conducted an environmental baseline study since 2010.

This report documents the methodology and results of the baseline monitoring program conducted on Jennings project by Golder Associates Limited. The baseline monitoring studies in 2012 consisted of maintenance/downloading data of the project's meteorological monitoring station, and on the 3rd consecutive year of the Aquatic baseline program.

The meteorological monitoring station records measurements an hourly interval for air temperatures, relative humidity, vapour pressure, air temperatures, solar radiation average, wind speed, rainfall total and snow depth. The meteorological monitoring station was also serviced for maintenance purposes in 2012.

The aquatic baseline program consists of collecting water samples that examine the pH, electrical conductivity, dissolve oxygen, hardness of CaCo_3 , total suspended solids, total dissolved solids and turbidity. Stream flow measurements were also taken during the three field visits in 2012. The results of the analysis of the benthic invertebrates samples collected in 2011 were included in the 2012 Repot on Baseline Monitoring Program.

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SECTION 1.0 INTRODUCTION

The Jennings Project is an early-stage porphyry molybdenum-tungsten-copper prospect located 80 km west of Watson Lake, Yukon Territory. The project area consist of 206 claims for a total 7,723.94 hectares claim block that straddles the British Columbia-Yukon border, along the eastern flank of the Cassiar Mountain range. The Yukon portion of the property is comprised of 195 contiguous Yukon Quartz mineral claims covering a 3,429.49 hectares area and is 100% owned and operated by Agnico-Eagle Mines Limited (AEM).

The 2012 baseline monitoring program was contracted to Golder Associates Limited of Burnaby BC. Golder Associates Limited has been working for the Environmental Base Line Studies for Jennings project since 2010. The technical staffs conducted field works on quarterly basis (March, June, September and December) in 2012. The technical staffs were camp at Rancheria Motel located 7140 miles along the Alaska Highway. Trans North Helicopter was contracted to fly the technical staffs to the work site and flew to reach all the sample sites.

1.1 RELIANCE ON OTHER EXPERTS

The author has relied on Golder Associate Limited expertise on the results of the base line monitoring study that incorporated in this assessment report. The author verified that the environmental base line data used are fact and current in all respects.

1.2 LOCATION AND ACCESS

The Jennings Project is located 80 kilometres west the community of Watson Lake, Yukon and is accessible by 35 kilometres of gravel road south and east from Kilometre 1085 on the Alaska Highway (Figure 1). Access utilizes the two-wheel drive Midway-Silvertip Road south from the Alaska Highway to Kilometre 18 with bridges in place at the Rancheria and Tootsee River crossings. A further 17 kilometres of four-wheel drive road provides access to a network of drill roads into the property.

1.3 TOPOGRAPHY AND VEGETATION

The Jennings Project area is situated at the extreme eastern limit of the Cassiar Mountain range flanked east and west by the Little Rancheria and Tootsee Rivers respectively. Views to the east overlook extensive, subdued glaciofluvial terrain of the Liard Plateau. Topography in the property is moderately steep with elevations ranging from 1,000 to 1,500 metres. Extensive lodgepole pine forest and swamp to the east gives way to well-forested hillsides with locally sizeable pine, spruce and deciduous trees in the mountainous regions further west. The extreme tops of the ridges and peaks in the central and western project area are at or just above treeline with alpine-type vegetation. Slopes are covered by a thin veneer of glacial till and colluviated till with discontinuous permafrost noted on east and north-facing slopes. Eskers and kame-kettle deposits are widespread east of the property with small isolated eskers occurring locally along valley floors in the central project area.

1.4 CLAIMS

Mineral tenure on the Jennings Project in the portion of the project in Yukon is comprised of 195 contiguous Quartz Claims for a total of 3,429.49 hectares (Figure 2). The value of the assessment work on quartz claims YA36805, YA36807, YA36820, YA36824, YC28712, YC28743, YC28745, YC28763, YC28764, YC28765, YC2866 AND YC28774 described in this report will be applied to the entire claim block. Claim data is presented below in Table 1.



0 150 300
kilometres



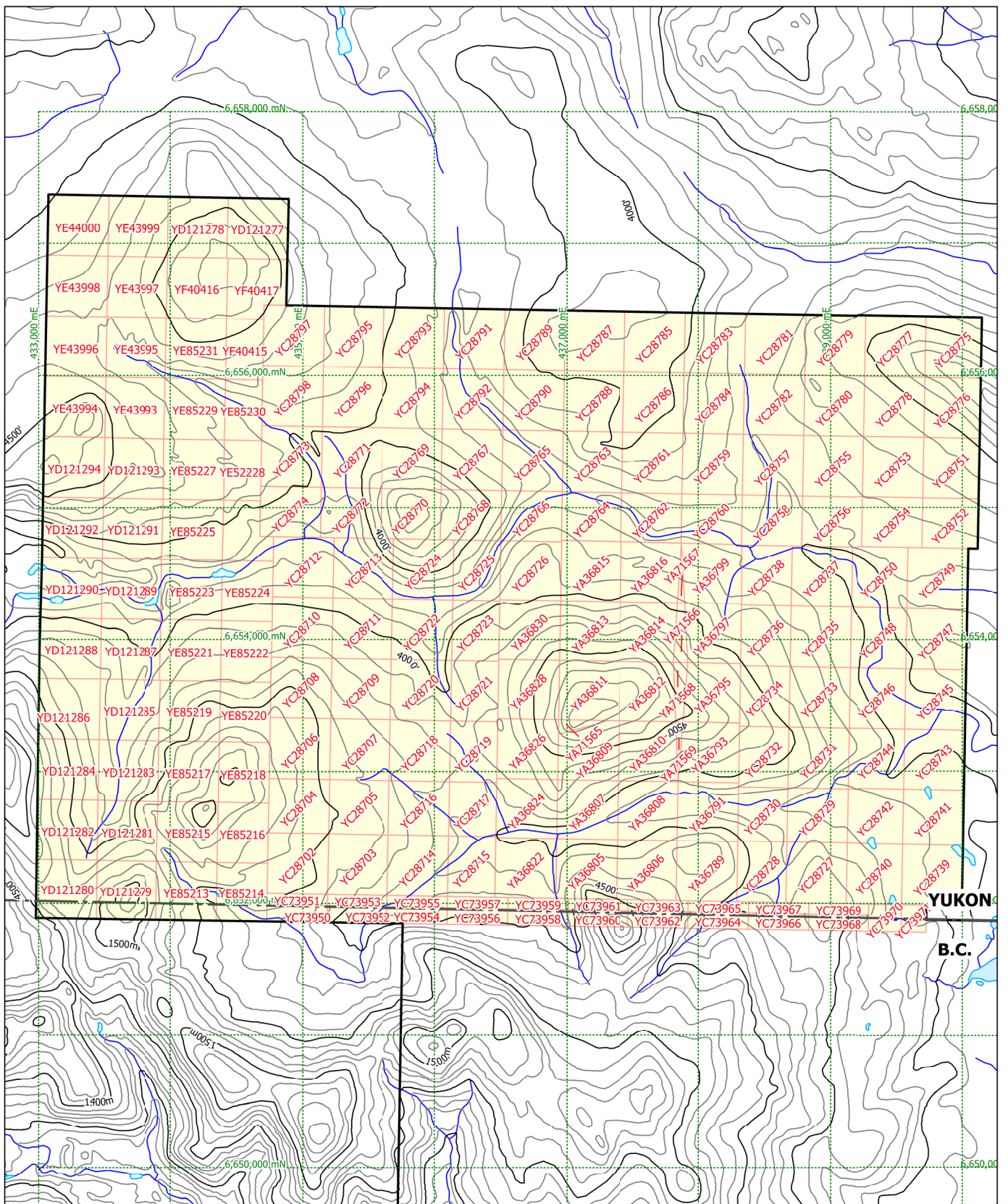
Agnico-Eagle Mines Limited

Yukon-British Columbia

**Jennings Project
LOCATION MAP**

NTS:1040/16, 1058/01	Mining Division: Liard Watson Lake
Scale: 1:7,000,000	Datum: NAD 83 Zone 9
Drawn by: HSC	Date: July 2013
Filename: Western Canada	

Figure 1



2 km

Agnico-Eagle Mines Limited

Yukon-British Columbia

Jennings Project CLAIMS MAP

NTS: 1040/16, 1058/01	Mining Division: Liard Watson Lake
Scale: 1:35,000	Datum: NAD 83 Zone 9
Drawn by: HSC	Date: July 2013

Figure 2

Table 1: TENURE DATA

Grant Number	Claim Name	Owner & Operator	Recorded Date	Expiry Date	Claim Size
YA36789	HOT 1	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.78
YA36791	HOT 3	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.67
YA36793	HOT 5	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	19.99
YA36795	HOT 7	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	18.65
YA36797	HOT 9	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	18.67
YA36799	HOT 11	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.22
YA36805	HOT 17	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.70
YA36806	HOT 18	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.68
YA36807	HOT 19	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.68
YA36808	HOT 20	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.66
YA36809	HOT 21	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	18.65
YA36810	HOT 22	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.11
YA36811	HOT 23	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.67
YA36812	HOT 24	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	19.00
YA36813	HOT 25	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.67
YA36814	HOT 26	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	18.95
YA36815	HOT 27	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	21.07
YA36816	HOT 28	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.37
YA36822	HOT 34	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.70
YA36824	HOT 36	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.69
YA36826	HOT 38	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.68
YA36828	HOT 40	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.68
YA36830	HOT 42	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	20.67
YA71565	HOT 81	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	2.03
YA71566	HOT 82	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	3.68
YA71567	HOT 83	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	1.25
YA71568	HOT 84	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	3.67
YA71569	HOT 85	AGNICO-EAGLE MINES LIMITED	05/06/1979	22/01/2019	1.22
YC28702	TOOZ 1	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28703	TOOZ 2	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28704	TOOZ 3	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	18.87
YC28705	TOOZ 4	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	18.87
YC28706	TOOZ 5	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28707	TOOZ 6	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28708	TOOZ 7	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28709	TOOZ 8	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28710	TOOZ 9	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28711	TOOZ 10	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28712	TOOZ 11	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28713	TOOZ 12	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28714	TOOZ 13	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28715	TOOZ 14	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.34

YC28716	TOOZ 15	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	18.87
YC28717	TOOZ 16	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	14.72
YC28718	TOOZ 17	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28719	TOOZ 18	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.28
YC28720	TOOZ 19	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28721	TOOZ 20	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.25
YC28722	TOOZ 21	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28723	TOOZ 22	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.22
YC28724	TOOZ 23	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28725	TOOZ 24	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.20
YC28726	TOOZ 25	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.63
YC28727	TOOZ 26	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28728	TOOZ 27	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.00
YC28729	TOOZ 28	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	18.87
YC28730	TOOZ 29	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	15.39
YC28731	TOOZ 30	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28732	TOOZ 31	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.08
YC28733	TOOZ 32	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28734	TOOZ 33	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.13
YC28735	TOOZ 34	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28736	TOOZ 35	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.17
YC28737	TOOZ 36	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28738	TOOZ 37	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.32
YC28739	TOOZ 38	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28740	TOOZ 39	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28741	TOOZ 40	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	18.87
YC28742	TOOZ 41	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.50
YC28743	TOOZ 42	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28744	TOOZ 43	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28745	TOOZ 44	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28746	TOOZ 45	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28747	TOOZ 46	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28748	TOOZ 47	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28749	TOOZ 48	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28750	TOOZ 49	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28751	TOOZ 50	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28752	TOOZ 51	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.08
YC28753	TOOZ 52	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28754	TOOZ 53	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28755	TOOZ 54	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28756	TOOZ 55	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28757	TOOZ 56	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28758	TOOZ 57	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28759	TOOZ 58	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28760	TOOZ 59	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.08
YC28761	TOOZ 60	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90

YC28762	TOOZ 61	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.97
YC28763	TOOZ 62	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28764	TOOZ 63	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	16.86
YC28765	TOOZ 64	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28766	TOOZ 65	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28767	TOOZ 66	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28768	TOOZ 67	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28769	TOOZ 68	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28770	TOOZ 69	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28771	TOOZ 70	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28772	TOOZ 71	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28773	TOOZ 72	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28774	TOOZ 73	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	17.35
YC28775	TOOZ 74	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28776	TOOZ 75	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	19.38
YC28777	TOOZ 76	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28778	TOOZ 77	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28779	TOOZ 78	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28780	TOOZ 79	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28781	TOOZ 80	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28782	TOOZ 81	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28783	TOOZ 82	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28784	TOOZ 83	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28785	TOOZ 84	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28786	TOOZ 85	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28787	TOOZ 86	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28788	TOOZ 87	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28789	TOOZ 88	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28790	TOOZ 89	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28791	TOOZ 90	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28792	TOOZ 91	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28793	TOOZ 92	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28794	TOOZ 93	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28795	TOOZ 94	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28796	TOOZ 95	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28797	TOOZ 96	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC28798	TOOZ 97	AGNICO-EAGLE MINES LIMITED	02/06/2005	22/01/2019	20.90
YC73950	TOOZ 98	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.71
YC73951	TOOZ 99	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.96
YC73952	TOOZ 100	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.68
YC73953	TOOZ 101	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.94
YC73954	TOOZ 102	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.66
YC73955	TOOZ 103	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.93
YC73956	TOOZ 104	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.64
YC73957	TOOZ 105	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.92
YC73958	TOOZ 106	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.61

YC73959	TOOZ 107	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.92
YC73960	TOOZ 108	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.59
YC73961	TOOZ 109	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.93
YC73962	TOOZ 110	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.57
YC73963	TOOZ 111	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.93
YC73964	TOOZ 112	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.55
YC73965	TOOZ 113	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.87
YC73966	TOOZ 114	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.52
YC73967	TOOZ 115	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.86
YC73968	TOOZ 116	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.50
YC73969	TOOZ 117	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.85
YC73970	TOOZ FR. 118	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	5.08
YC73971	TOOZ FR. 119	AGNICO-EAGLE MINES LIMITED	30/08/2005	22/01/2019	3.85
YE85213	TOOZ 120	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	19.98
YE85214	TOOZ 121	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	16.65
YE85215	TOOZ 122	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85216	TOOZ 123	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	17.45
YE85217	TOOZ 124	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85218	TOOZ 125	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	17.46
YE85219	TOOZ 126	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85220	TOOZ 127	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	17.46
YE85221	TOOZ 128	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85222	TOOZ 129	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	17.47
YE85223	TOOZ 130	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85224	TOOZ 131	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	17.48
YE85225	TOOZ 132	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85226	TOOZ 133	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	14.72
YE85227	TOOZ 134	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85228	TOOZ 135	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	12.79
YE85229	TOOZ 136	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YE85230	TOOZ 137	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	12.80
YE85231	TOOZ 138	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YF40415	TOOZ 139	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	12.80
YF40416	TOOZ 140	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	20.90
YF40417	TOOZ 141	AGNICO-EAGLE MINES LIMITED	01/10/2012	01/10/2014	18.64
YD121277	TOOZ 142	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121278	TOOZ 143	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.59
YD121279	TOOZ 144	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.01
YD121280	TOOZ 145	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.04
YD121281	TOOZ 146	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121282	TOOZ 147	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121283	TOOZ 148	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121284	TOOZ 149	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121285	TOOZ 150	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121286	TOOZ 151	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90

YD121287	TOOZ 152	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121288	TOOZ 153	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121289	TOOZ 154	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121290	TOOZ 155	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121291	TOOZ 156	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121292	TOOZ 157	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121293	TOOZ 158	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YD121294	TOOZ 159	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43993	TOOZ 160	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43994	TOOZ 161	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43995	TOOZ 162	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43996	TOOZ 163	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43997	TOOZ 164	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43998	TOOZ 165	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE43999	TOOZ 166	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
YE44000	TOOZ 167	AGNICO-EAGLE MINES LIMITED	20/12/2012	20/12/2014	20.90
					3429.49

1.4 EXPLORATION HISTORY

- 1978 Elevated scheelite grain counts were detected in panned concentrates east of the project area by Amax Minerals Exploration Ltd. during the course of a regional exploration program.
- 1979 Hot (Yukon) and Heap (BC) claims were staked followed by linecutting (40 km) and preliminary geological mapping on the Tootsee River Property.
- 1980 Geological mapping, rock sampling, soil sampling, pan and stream sediment sampling and a VLF-EM and magnetic surveys were conducted. A public company was spun off to explore Canadian assets resulting in ownership change to Canamax Resources Incorporated.
- 1983 Limited geological mapping, soil geochemistry and a ground magnetic survey was conducted in BC. A fall diamond drill program consisted of one hole in BC and two holes in the Yukon for a total of 783 metres. Significant results were returned from TR83-02 in the Central Hornfels Zone, Yukon which reportedly intersected 174 metres of stockwork mineralization assaying 0.07% MoS₂ and 0.12% WO₃.
- 1984 Infill soil sampling at the Central Hornfels Zone and extended soil sampling and geological mapping at the Northwest Hornfels Zone. Drill pads and a water line were cut for an anticipated drill program.
- 1985 Detailed geological mapping, infill soil sampling, 11.3 kilometres of access, drill road and drill site construction, and a 163 line kilometre helicopter-borne magnetic-EM survey.
- 1989 Canamax Resources Inc. assets acquired by Canada Tungsten Mining Corporation.
- 1996 Canada Tungsten Mining Corporation-Aur Resources merger. Tungsten assets spun off to a new company, North American Tungsten Corporation Limited.
- 2005 Cumberland Resources Ltd. staked Yukon and BC claims peripheral to the 28 core HOT claims held by North American Tungsten Corporation Limited.
- 2006 Cumberland Resources Ltd. and North American Tungsten Corporation Ltd. finalized an option agreement to facilitate the exploration and development of the Tootsee River Property (subsequent name change to Jennings Project). Cumberland drilled three diamond holes for 1494.00 meters.

- 2007 AEM acquired Cumberland Resources Limited, the company that explored the Jennings Project.
- 2008 AEM conducted 4,000.24 metres diamond drilling program on the Jennings Property in Yukon Claims from July to November for 8 holes. Additional 22 Yukon Quartz claims were staked (TOOZ 98-119) in September 2008 along the BC-Yukon border.
- 2009 AEM completed 8,400 metres of diamond drilling at Jennings Property in Yukon Claims from July 1 to October 29, 2009 for 12 holes. AEM also acquired the remaining interest in the property from North American Tungsten Corporation Ltd. The property is now 100% owned and operated by AEM. Equity Exploration Consultant was contracted for geochemical soil survey in BC claims.
- 2010 AEM completed 18,732.33 metres of diamond drilling at the Jennings Property in Yukon Claims from June 1 to October 30, 2010 for 27 holes, begins environmental base line study and First Nation consultation.
- 2011 AEM completed a soil geochemical survey at BC claims and collected 350 soil samples; Golder Associate continued collecting environmental base line data and continued consultation with the First Nations.
- 2012 AEM completed a 3 diamond drill holes for 1450meters in BC claims, collected 400 soil samples, collected three composite samples for metallurgical study, continue environmental monitoring study and staked additional 48 block claims in Yukon.

SECTION 2.0 PROJECT GEOLOGY

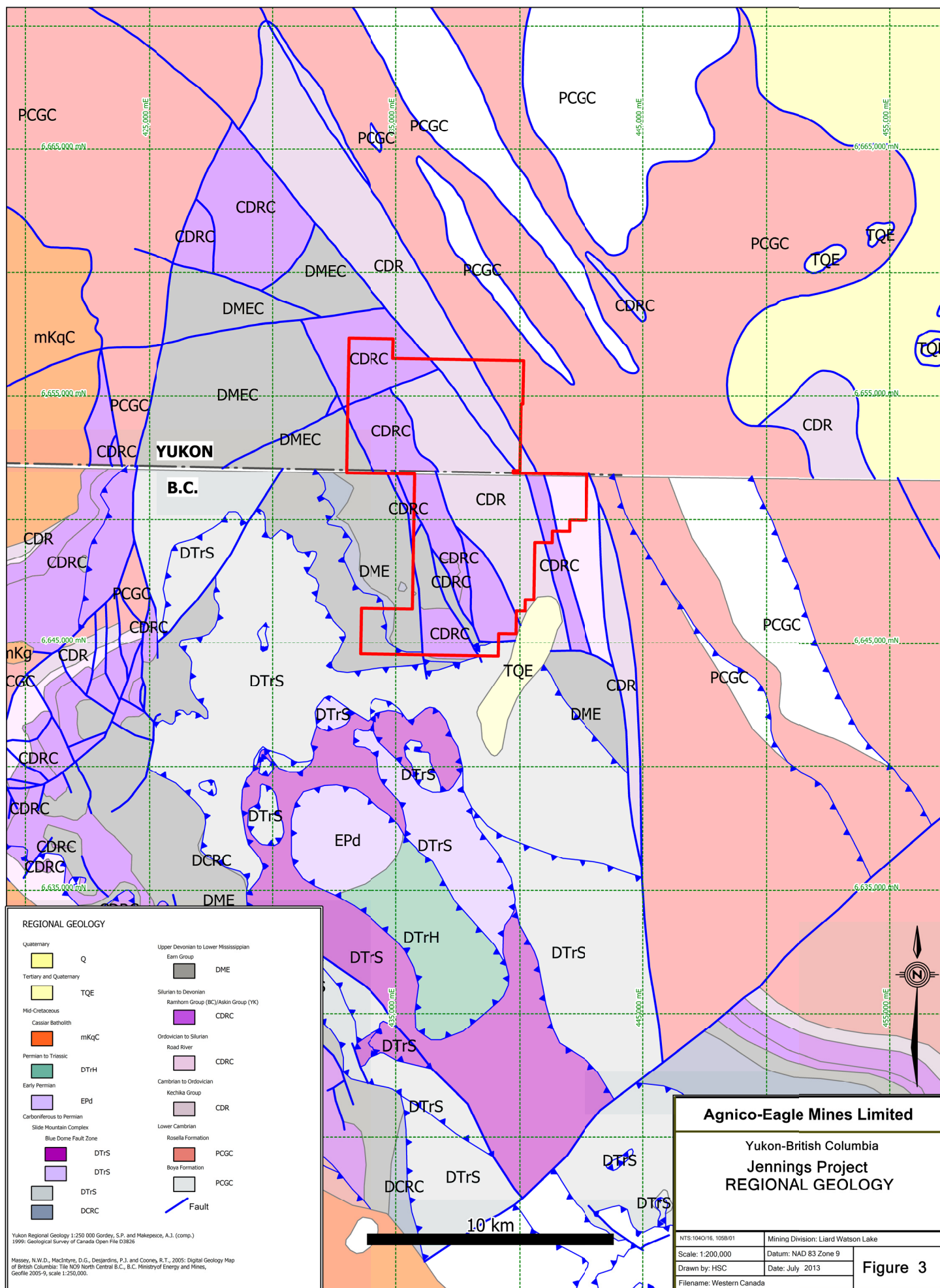
2.1 REGIONAL GEOLOGY

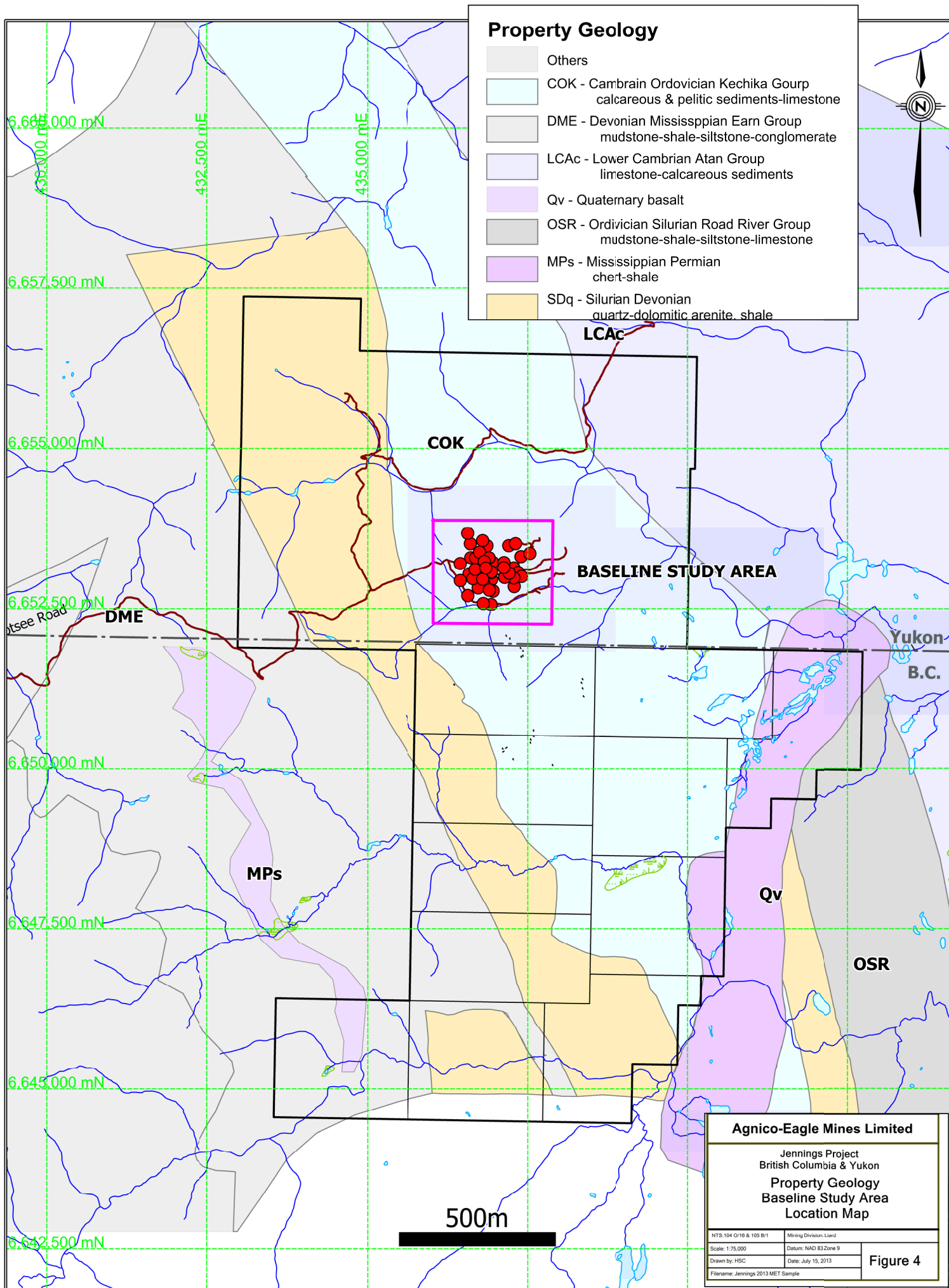
The Jennings Project area occurs within carbonate and clastic rocks of the ancestral North American continental shelf (Figure 3). Miogeoclinal strata range from Lower Cambrian to Lower Mississippian in age and form the footwall of a regional north-east directed thrust fault. Hanging wall to the thrust are marine sediments, mafic volcanics and related mafic to ultramafic intrusives of the Late Devonian to Late Triassic Sylvester Allochthon.

Emplacement of the allochthon took place between Late Triassic and Mid-Cretaceous followed by the intrusion of the Early to Mid-Cretaceous Cassiar batholith. Cryptic Late Cretaceous to Early Tertiary intrusives are marginal to the Cassiar Batholith. Two major structural events are documented in the area. An Early Jurassic collisional event caused major shortening of the North American continental margin and emplacement of the Sylvester Allochthon. A younger structural event is related to Late Cretaceous to Early Tertiary strike-slip faulting along the dextral Cassiar and Tintina fault systems that bound the project area. Quaternary to Recent continental basaltic magmatism is represented by valley fill flows and associated intrusive feeders that locally dominate regional aeromagnetic datasets.

2.2 PROPERTY GEOLOGY

Jennings claims are underlain predominantly by a north-northwest trending, moderately to steeply west dipping package of calcareous and pelitic siltstone, shale and minor limestone of the Cambrian-Ordovician Kechika Group (Figure 4). Kechika Group sediments are flanked to the west by dolomitic quartzite and arenite with minor limestone and limy graphitic argillite of Silurian-Devonian age. Geological mapping in 1984 has placed a strongly foliated amphibolite at the probable thrust contact between the Kechika Group and Silurian-Devonian sediments. The northeastern project area is reportedly underlain by calcareous phyllite and limestone of the Lower Cambrian Atan Group but stratigraphic-type airborne geophysical conductors and government mapping in British Columbia suggest a component of Ordovician-Silurian Road River Group black shale or possibly thrust and/or fold repeated graphitic units of Silurian-Devonian age. Strongly magnetic flood basalts occur in the extreme southeastern project area. Kechika Group rocks are internally tightly folded and imbricated. A seven kilometre long, northwest trending aureole of pyrrhotite-bearing calc-silicate and pelitic hornfels and skarn has been mapped from southeast to northwest across the central and northern property area. Sedimentary rocks are converted to a strongly banded white to light green calc-silicate hornfels and lesser maroon biotite hornfels with intercalated





pyroxene skarn or marble. Rare exposures of north-northwest trending aplite and quartz-feldspar porphyry dykes and a small plug are coincident with areas of strongly fractured and sulphidized hornfels in the Central Hornfels Zone (CHZ) and Northwest Hornfels Zone (NWHZ). References to lamprophyre and diorite dykes suggest a minor mafic intrusive component.

SECTION 3.0: SUMMARY ON 2012 BASELINE MONITORING PROGRAM (FOR COMPLETE REPORT SEE APPENDIX A)

3.1 METEOROLOGICAL MONITORING STATION

The meteorological monitoring station was installed on site on November 9, 2011 as part of the baseline studies program (Figure 5). Several instrumentation components was installed at the met station and consist of CM106 3 meter tripod, MSX20R regulated solar panel, SC115 Flash Memory Drive, CR1000 series Data Logger, 0513 R.M. Young Wind Monitor, Model 109L Temperature Probe, HMP45C212 Temperature and Relative Humidity Probe, TE525 Tipping Bucket Rain Gauge, SR50 A Sonic Ranging Sensor and NR-LITE2 Net Radiometer.

Data recording that were read on an hourly basis on the instruments are: the Air Temperature HMP Minimum, time of Minimum, Maximum, time of Maximum and Average; the Relative Humidity Average and Instantaneous; the Vapour Pressure Average; the Saturation Vapour Pressure Average; the Air Temperature 109 Minimum, time of Minimum, Maximum, time of Maximum and Average; the Solar Radiation Average; Wind Speed Average; Wind Vector Average, Wind Vector Standard Deviation, Wind Speed Maximum, time of Maximum; Rainfall Total; Snow Depth Instantaneous; and Snow Depth Quality Signal. During the water sampling visit on August 30, 2012, data was downloaded. On October 3, 2012 the meteorological monitoring station was inspected and the digital damage parts were identified and repaired on site.

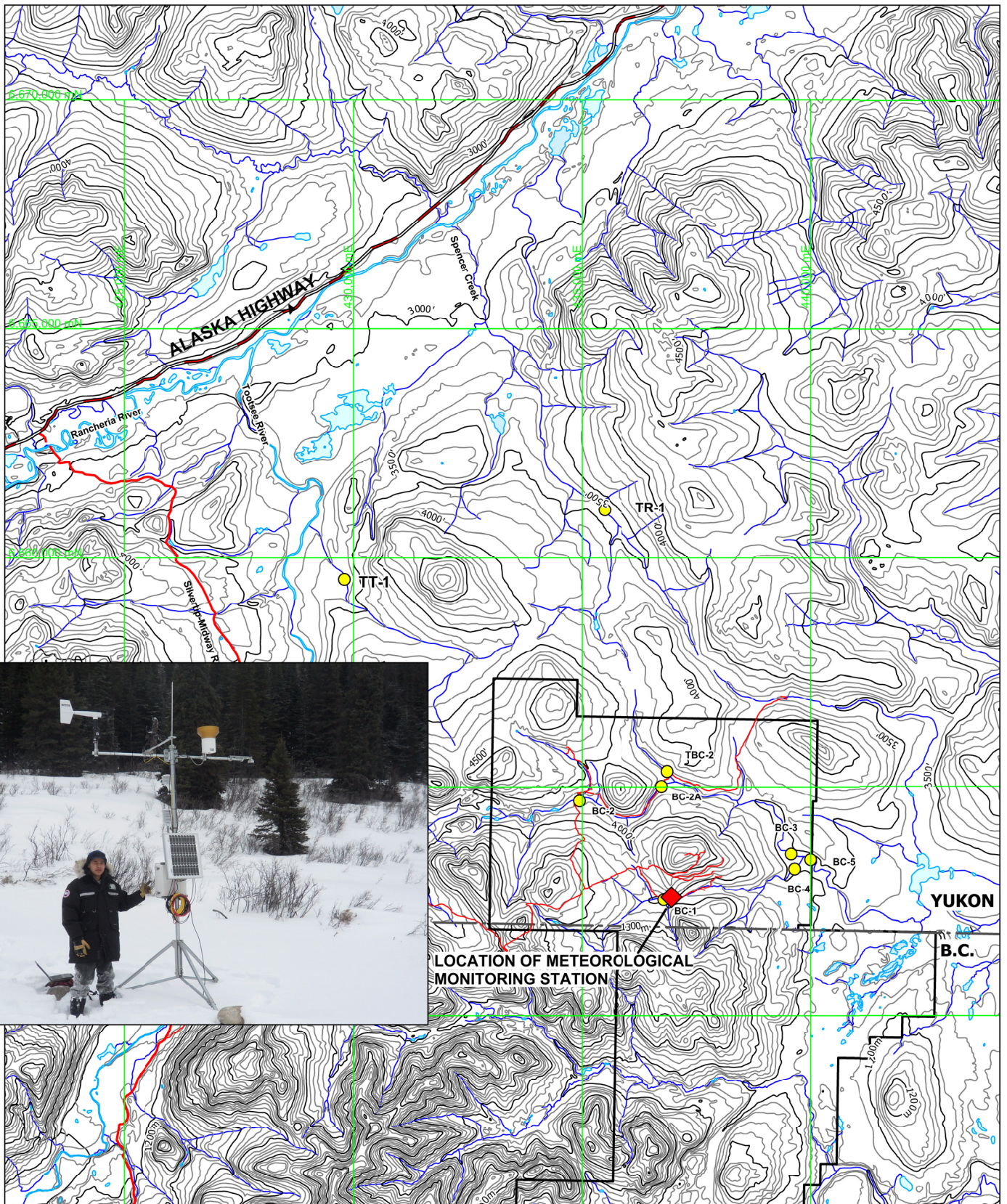
3.2 AQUATIC BASELINE PROGRAM

The primary objectives of the 2012 aquatics baseline study were to characterize seasonal variation in water quality, stream flows, and water levels in the project area. The aquatics program consisted of water quality sampling and stream flow measurements at eight sites on five unnamed water course (Figure 6). The sites were sampled on three occasions throughout the open water season (June, August, and October). The water level data loggers were installed at four of these eight sites in June and recovered in October.

The regional drainages include the Tootsee River, located west of the Jennings Project area, which flows approximately 15 kilometers northward until it joins the Rancheria River. The Rancheria River flows in an east-north-easterly direction and eventually flows into the Liard River upstream of the community of Upper Liard. Unnamed streams in the project area are tributaries of the Rancheria River catchment basin.

3.3 BENTHIC INVERTEBRATES

Benthic invertebrates were sampled at sites BC-4, BC-5 and TR-1 in September 2011 (Figure 7). Three replicate samples were collected for each of the three sites using a 250 micron Surber Sampler with an opening of 20 cm X 25 cm. Samples were preserved with 10% neutral buffer formalin. These samples were submitted to Jack Zloty Limited Environmental Research and Consulting for analysis of Taxonomy and biomass. The results of the 2011 benthic invertebrates sampling program were included in 2012 because the results were unavailable in 2011.



Agnico-Eagle Mines Limited

Yukon-British Columbia

**Jennings Project
METEOROLOGICAL MONITORING
STATION-LOCATION MAP**

NTS:103P/12-13

Mining Division: Skeena

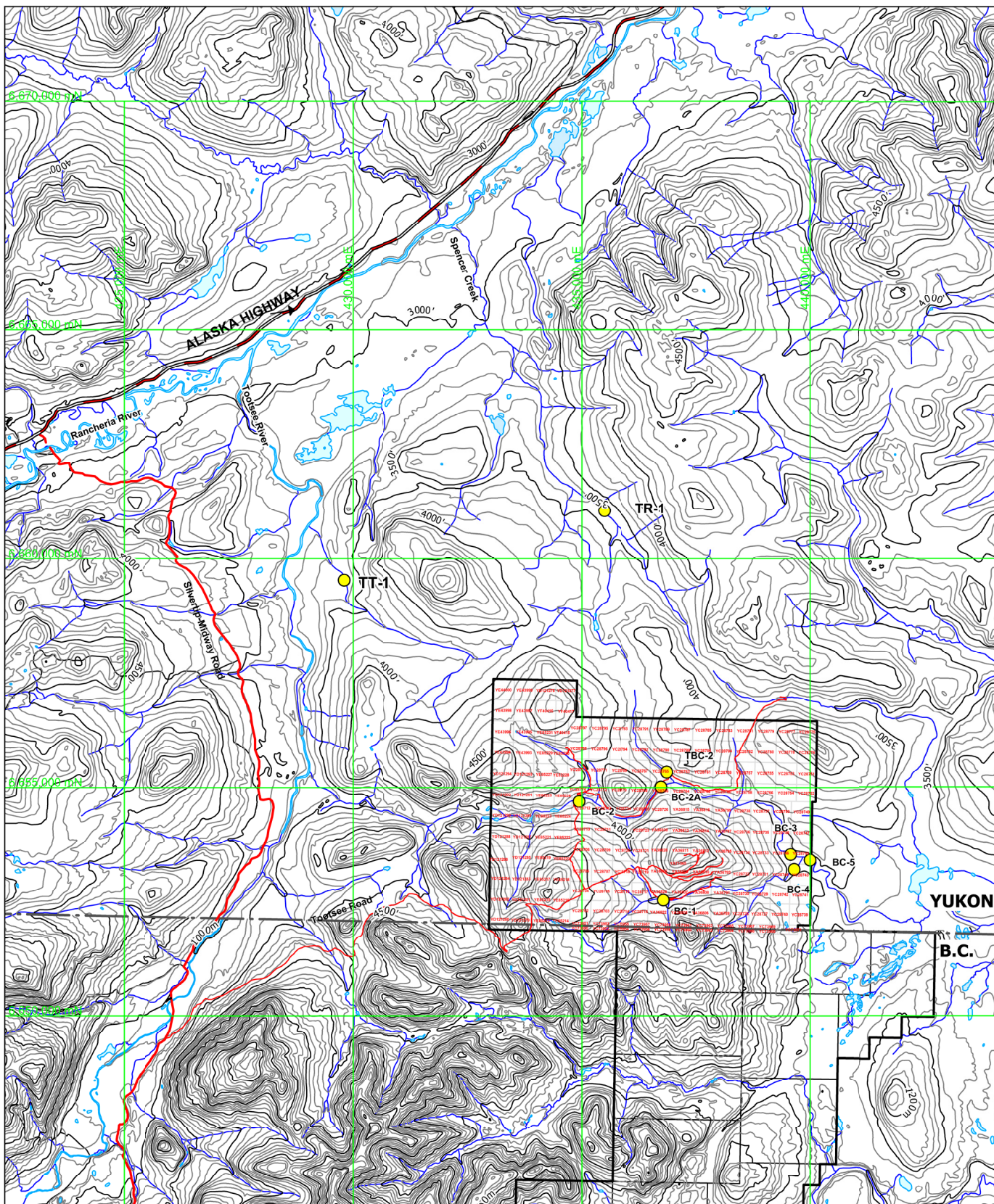
Scale: 1:120,000

Datum: NAD 83 Zone 9

Drawn by: HSC

Date: July 15, 2013

Figure 5



2 km



Agnico-Eagle Mines Limited

Yukon-British Columbia

**Jennings Project
ACQUATIC SAMPLE STATIONS
LOCATION MAP**

NTS:103P/12-13

Mining Division: Skeena

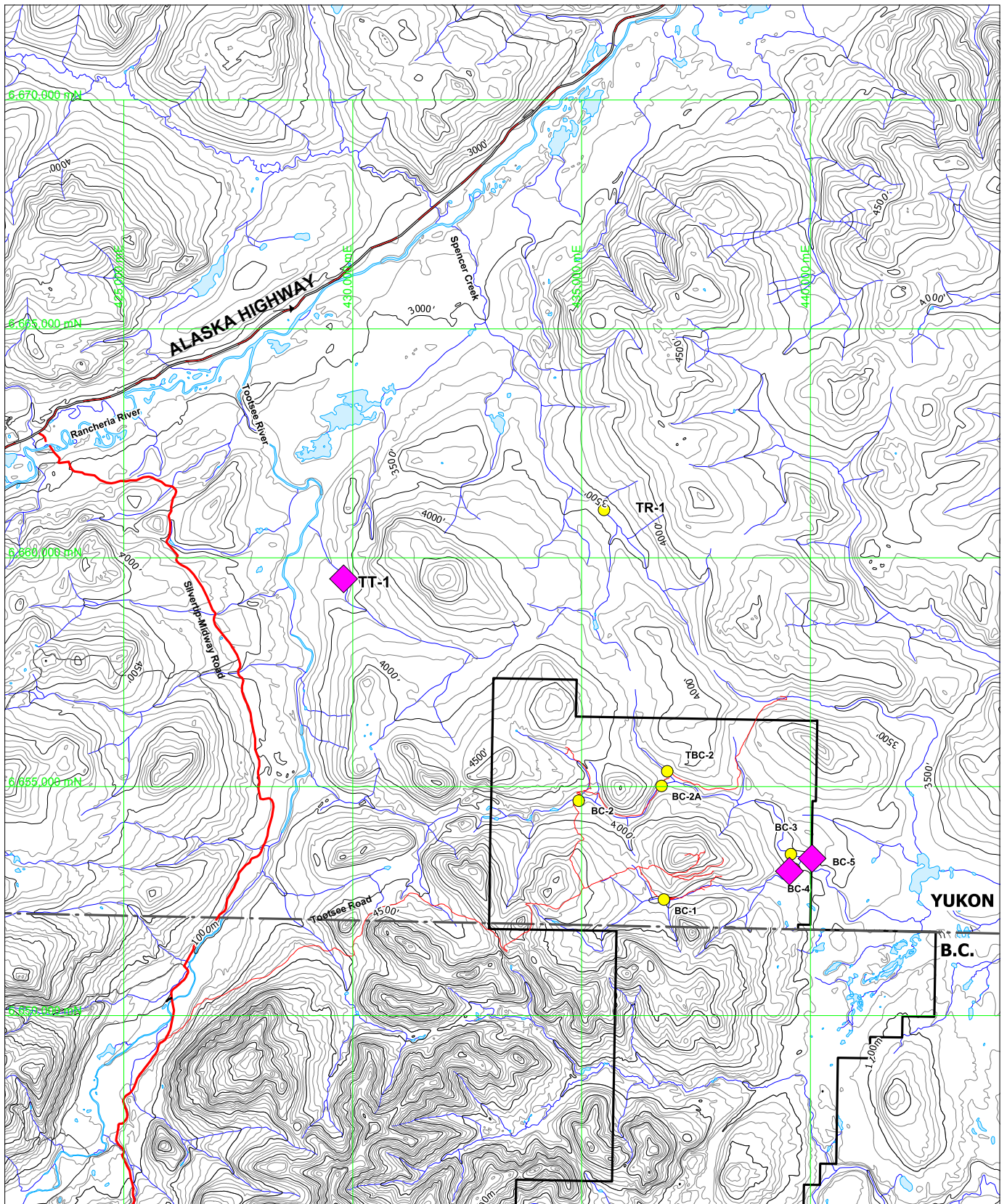
Scale: 1:120,000

Datum: NAD 83 Zone 9

Drawn by: HSC

Date: July 15, 2013

Figure 6



2 km



Agnico-Eagle Mines Limited

Yukon-British Columbia

**Jennings Project
BENTHIC INVERTEBRATES
SAMPLE - LOCATION MAP**

NTS:103P/12-13	Mining Division: Skeena	Figure 7
Scale: 1:120,000	Datum: NAD 83 Zone 9	
Drawn by: HSC	Date: July 15, 2013	

SECTION 4: CONCLUSIONS AND RECOMMENDATION

Golder Associates Limited has been contracted by AEM since 2010 for environmental base line monitoring study on Jennings project. Since then, data compilation over three years period (2010, 2011 and 2012) had been important to AEM in identifying potential environmental impacts over the project should the project go to the development stage. It is recommended to continue the baseline monitoring program on the project.

SECTION 5: REFERENCES

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- Nelson, J. and Bradford, J (1987): Geology of the Midway Area, Northern British Columbia; BCGS Open File 1987-5; 5 maps @ 1:50,000 scale plus notes
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SECTION 6: STATEMENT OF EXPENDITURES

The total expenditure for geochemical soil sampling program completed on the Yukon Quartz claims 513792, 515237 and 515238 is **\$125,091.79** and includes the following direct costs:

Table 4: 2012 Baseline Monitoring Study

STATEMENT OF EXPENDITURES		
Jennings Project		
March 1, 2012-December 31, 2012		
PROFESSIONAL FEES AND WAGES:		
F. Frolich, Level-7		
11.00 hours @ \$225/hour	\$	2,475.00
J. Bailey, Level-7		
6.50 hours @ \$235/hour		1,527.50
C. Schmidt, Level-7		
40.50 hours @ \$234/hour		9,459.59
M. Johannes, Level-6		
1.50 hours @ \$200/hour		300.00
C. Shewen, Level-5		
76.50 hours @ \$177/hour		13,540.50
C. Madland, Level-5		
3.00 hours @ \$175/hour		525.00
R. Wyles, Level-5		
3.25 hours @ \$175/hour		568.75
M. Chiarandini, Level-4		
9.50 hours @ \$160/hour		1,520.00
J. Birett, Level-3		
1.00 hours @ \$135/hour		135.00
J. Taylor, Level-3		
1.00 hours @ \$135/hour		135.00
D. Guertin, Level-2		
1.50 hours @ \$135/hour		202.50
J. Pokotylo, Level-1		
6.25 hours @ \$114/hour		712.50
R. Sung, Level-1		
1.00 hours @ \$115/hour		115.00
H. Narita, Level-B		
0.75 hours @ \$52/hour		39.00
K. Rankin, Level-B		
1.75 hours @ \$54/hour		94.50
K. Joyce, Level-B		
0.75 hours @ \$52/hour		39.00
M. Wilson, Level-B		
4.25 hours @ \$52/hour		221.00
A. Dioquino, Level-C		
2.00 hours @ \$75/hour		150.00
J. Cabral, Level-C		
0.25 hours @ \$75/hour		18.75
K. Linther, Level-C		
2.00 hours @ \$74/hour		147.00
L. Kraeker, Level-C		
0.50 hours @ \$74/hour		36.75
D. Pickup, Level-D		
110.25 hours @ \$136/hour		14,975.83
J. Marquardson, Level-D		
311.00 hours @ \$130/hour		40,430.00
	\$	87,368.17

EQUIPMENT RENTALS

Satellite Phone	36 minutes @ \$5.33/min	\$	190.39	
Helicopter (Direct Bill to AEM)	11.92 hours @ \$1200/hour			\$ 14,308.80
Measuring Hip Chain	6 days @ \$4/day		24.00	
Electrofishing/Backpack	149 days @ \$4/day		594.00	
Fish Sampling, Length Board	4 days @ \$2/day		8.00	
Net, Plankton	4 days @ \$23/day		90.00	
Hydrology Current Meter, Marsh Mcbirney	4 days @ \$115/day		460.00	1,366.39

EXPENSES:

Chemical Analyses (Direct Bill to AEM)		\$	10,378.30	
Coporate Couriers Logistic Ltd	\$	9.30		
Puralator		327.82		
Vision 200 Travel Group		1,180.96		
Liard First Nation Development Corp.		458.48		
Air North		1,714.54		
Taxis and Airporters		148.05		
Formalin 10% Buffered Acetate Certified		138.00		
Jar White Plastic 1.5L Widemouth		1.44		
Squirt Bottle		8.27		
Loomis Expenses		13.38		
Food/Accommodation/Other expenses		1,986.62		5,986.85

SUB-TOTAL: AEM and Golder Associates \$ 24,687.10 \$ 94,721.41

PROJECT SUPERVISION CHARGES: Golder Associates

6% on \$94,721.41 5,683.28

SUB-TOTAL: Golder and AEM \$ 125,091.79

GST: 5% on 125091.79 6,254.59

TOTAL: \$ 131,346.38

SECTION 8: STATEMENT OF QUALIFICATIONS

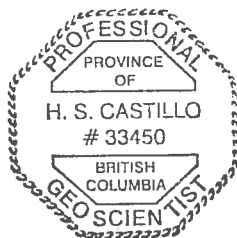
The field work described in this report was conducted and supervised by Henry S. Castillo.

I, Henry S. Castillo of Vancouver, British Columbia, hereby certify that:

1. I am Senior Geologist, of Western Canada Exploration office, for Agnico-Eagle Mines Limited, with business address at 400-543 Granville Street, Vancouver, B.C. V6C 1X8.
2. I am a Project Manager for Jennings Project from 2008 to present.
3. I am a graduate of Adamson University, Manila Philippines, with the B.S. degrees in Geology.
4. I have practiced my profession in mineral exploration for 17 years.
5. I am a Professional Geologist registered Association Professional Engineers and Geoscientists of British Columbia (Registration No.-33450).

Date at Vancouver, British Columbia, this July 15, 2013


Henry S. Castillo, BSc. P.Geo



Appendix A: Summary Report on 2012 Baseline Monitoring Program



April 18, 2013

AEM JENNINGS PROPERTY

Summary Report on 2012 Baseline Monitoring Program

Submitted to:
Agnico-Eagle Mines Limited
400 - 543 Granville Street
Vancouver, BC
V6C 1X8

REPORT



Report Number: 1210210002-005-R-Rev0

Distribution:

2 copies - Agnico-Eagle Mines Limited

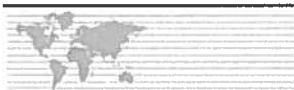
2 copies - Golder Associates Ltd.





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AEM JENNINGS PROPERTY - SUMMARY REPORT ON 2012 BASELINE MONITORING PROGRAM

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FIGURES

Figure 1: BASELINE MONITORING SITES

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APPENDIX A

AEM Jennings Property, Yukon – Summary of November 2011 to September 2012 Climate Data

APPENDIX B

AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

APPENDIX C

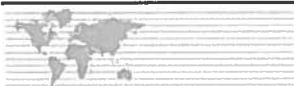
AEM Jennings Property, Yukon - 2012 Field Photograph

APPENDIX D

Taxonomic Enumeration of Benthic Invertebrate Samples Collected at the Jennings Property, Yukon - September 2011

APPENDIX E

Calculated Biomass for Benthic Invertebrate Samples Collected for Jennings Property, Yukon - September 2011



AEM JENNINGS PROPERTY - SUMMARY REPORT ON 2012 BASELINE MONITORING PROGRAM

1.0 INTRODUCTION

This report provides a summary of Golder Associates Ltd. (Golder) environmental baseline monitoring program completed during 2012 at the Agnico-Eagle Mines Ltd. (AEM) Jennings Project (the Project) in the southern Yukon. The Project is a porphyry molybdenum-tungsten prospect consisting of a 7160 ha claim block that straddles the Yukon-British Columbia border, and is located approximately 80 km west of Watson Lake, Yukon. Exploration activities are currently focused on the southern Yukon portion of the claim block.

Baseline monitoring studies in 2012 consisted of maintenance of the Project's meteorological monitoring station (summarized in Section 2), and the third year of aquatic baseline program (summarized in Section 3.0).

2.0 METEOROLOGICAL MONITORING STATION MAINTENANCE

2.1 Introduction

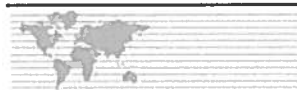
This section provides details on maintenance of the meteorological monitoring station (i.e., met station) installed November 9, 2011 as part of the baseline studies program for the Project. Calibrations and maintenance were recommended by Golder for several of the sensors at the met station on an annual basis. Other sensors require calibration or maintenance on a longer term cycle, such as every two or three years.

During a water quality sampling visit and met station data download at the Project on August 30, 2012, a Golder technician noticed that the met station had sustained some damage, possibly via an ungulate, as the technician observed ungulate tracks near the met station. After assessing the data download, a Golder air quality scientist determined that instrumentation damage occurred on June 10, 2012, and further instrument data loss occurred on June 24, 2012. Subsequent to the August 30, 2012 site visit, Golder suggested that a site visit for calibration, maintenance, and repairs on the met station was necessary (as communicated in Golder's letter dated September 25, 2012). Approval for the site visit by an air quality specialist from Golder was subsequently provided by AEM.

2.2 Site Visit Details

2.2.1 Location and Logistics

The station was installed on November 9, 2010 at UTM NAD 83 9V 436859 6652535 (Photo 1). This location is at 1209 m elevation adjacent to recent drilling activity, and approximately 700 m north of the Yukon-BC border. The site was chosen for its proximity to the defined mineral resource, accessibility for maintenance and data recovery, and lack of tree cover.



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Photo 1: Meteorological Station at Jennings Project Area (Photo: A. Pickup, 2011)

A site visit was performed by a Golder air quality scientist on October 3, 2012 in conjunction with the scheduled water quality sampling visit. A helicopter was available for accessing the station, as an AEM drilling program was in progress at a nearby location, making the helicopter available for Golder's work. Previous site visits for data downloads had been performed in conjunction with scheduled water quality visits in March, June and August of 2012.

2.2.2 Data Logger and Instruments

As a summary, the following instrumentation was installed at the met station by Golder in November 2011:

- CM106 3 metre tripod: Note that this was intended as a temporary sensor support as the Meteorological Service of Canada recommends that a 10 metre tower be used for long-term installations. Golder recommends that when conditions are favourable, the sensors be moved to a new permanent, 10 metre tower;
- MSX20R regulated solar panel – charges an on-board 12 volt battery (BP26);
- SC115 Flash Memory Drive with USB interface;
- CR1000 series Data Logger with BP26 battery and enclosure;
- 05103 R.M. Young Wind Monitor;
- Model 109L Temperature Probe;



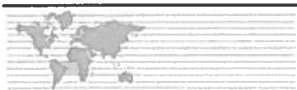
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- HMP45C212 Temperature and Relative Humidity Probe;
- TE525 Tipping Bucket Rain Gage;
- SR50A Sonic Ranging Sensor (Snow Depth); and
- NR-LITE2 Net Radiometer.

Measurements are recorded on an hourly interval as follows:

- Air Temperature HMP Average;
- Air Temperature HMP Maximum;
- Air Temperature HMP time of Maximum;
- Air Temperature HMP Minimum;
- Air Temperature HMP time of Minimum;
- Relative Humidity Instantaneous;
- Relative Humidity Average;
- Vapour Pressure Average;
- Saturation Vapour Pressure Average;
- Air Temperature 109 Average;
- Air Temperature 109 Maximum;
- Air Temperature 109 time of Maximum;
- Air Temperature 109 Minimum;
- Air Temperature 109 time of Minimum;
- Solar Radiation Average;
- Wind Speed Average;
- Wind Vector Average;
- Wind Vector Standard Deviation;
- Wind Speed Maximum;
- Wind Speed time of Maximum;
- Rainfall Total (snowfall data may be useful, and warrants consideration for future met station development);
- Snow Depth Instantaneous; and
- Snow Depth Quality Signal.

Note that the TE525 rain gauge will not work in below zero degrees Celsius conditions.



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2.2.3 Maintenance Performed

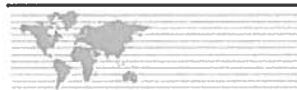
An overall inspection of the met station was completed on October 3, 2012 to assess the level of damage caused by wildlife. The CM106 tripod was still well supported and all components were level. The damage to the station causing data loss was restricted to the cabling of instruments. The following maintenance and repairs were completed on October 3, 2012.

- The cable for the 109L temperature probe had been snapped in two, and so the 109L was not functioning. This occurred on June 10, 2012. The 109L output is used as a scaling input for the SR50A snow depth sensor, so the snow depth sensor was not functioning accurately either. As the HMP45C212 records the primary temperature reading, and snow depth was minimal, there was no effective data loss for either temperature or snow depth during the period of June 10 to October 3. The cable was repaired and reinforced, and the 109L is functioning normally;
- The plug boot for the NRLITE2 net radiometer had sustained some minor damage, as it had been forcefully pulled out of its socket on June 24. The NRLITE2 plug had been reinserted during the water quality visit on August 30, however, to establish a firm connection some minor repairs had to be made. A rewire of the boot and cable would be required to fully repair the boot, but this was not necessary or cost effective. There was no net radiation balance data acquired from this instrument during the period June 24 to August 30;
- A number of cables on various instruments had sustained chaffing and sheathing scars due to what appeared to be pulling of cables by an animal, but there were no cables that had a penetration through the outer sheathing to the wires, other than the broken 109L cable. All chaffing and scarring was reinforced, and should not be of immediate concern. All cabling was re-bundled and repositioned to make it more difficult to sustain damage from wildlife. Cabling will be re-inspected on a visual basis on future site visits;
- The SR50A snow depth sensor was repositioned, as it was determined that there was some interference from a tripod leg preventing low levels of snow from being detected. The station software was updated and compiled with the new SR50A height;
- The probe tip for the HMP45C212 was replaced with a calibrated probe as we recommend that this probe tip be calibrated once per year. The TE525M rain gauge was also calibrated and adjustments were not required; and
- The 05103 wind sensor velocity bearings were replaced as we recommend that this bearing be replaced every year. The 05103 direction bearings and potentiometer are recommended for replacement every two years (so would be due for replacement in 2013).

Data were downloaded successfully from the met station for all sensors on October 3, 2012.

2.2.4 Meteorological Data

The meteorological data set from installation in November 2011 to October 3, 2012, has been provided to AEM in the form of Excel data files. A summary of the data is provided in Appendix A. A full analysis of the data record has not yet been undertaken.



3.0 AQUATICS BASELINE PROGRAM

3.1 Introduction

This section summarizes activities of the third year (2012) of the aquatics baseline program conducted by Golder for the Project. The primary objectives of the 2012 aquatics baseline study were to characterize seasonal variation in water quality, stream flows, and water levels in the Project area. Aquatics programs consisted of water quality sampling and stream flow measurements at eight sites on five unnamed watercourses (Figure 1). The sites were sampled on three occasions throughout the open water season (June, August and October). Water level data loggers were installed at four sites in June and recovered in October.

This Technical Memorandum also includes results from the 2011 benthic invertebrate sampling program, including species identifications and estimates that were not available in time to be included with the 2010 - 2011 Technical Memorandum (dated December 14, 2011 and previously provided to AEM).

Regional drainages include the Tootsee River, located west of the Jennings Project area, which flows approximately 15 km northward until it joins the Rancheria River. The Rancheria River flows in an east-north-easterly direction and eventually flows into the Liard River upstream of the community of Upper Liard. Unnamed streams in the Project area are tributaries of the Rancheria River system.

3.2 Methodology

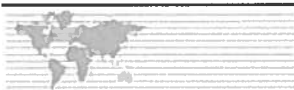
3.2.1 Water Quality

Surface samples were collected from water quality sites and sent to ALS Laboratory for analysis of physical parameters, anions, nutrients, total organic carbon, and total and dissolved metals. Sample sites and a full schedule of sampling dates are provided on Figure 1. Sample bottles were filled at mid-stream at a depth of 0.3 m, where feasible. At sites where water depth was less than 0.3 m, bottles were filled mid-depth. Preservatives were added (where required) to samples immediately after collection as per instructions from ALS Laboratories, with the exception dissolved metal samples which were filtered at the lab and then preserved. Samples were delivered to ALS Laboratories in Whitehorse within 24 hours of collection. One travel blank bottle set of de-ionized water was carried in the field for each seasonal site visit and analyzed by ALS Laboratory for quality control and assurance.

In situ parameters measured by Golder included temperature, specific conductivity, dissolved oxygen and pH; these parameters were measured with a YSI Multimeter at the same depth and location as the bottle samples. The meter was calibrated in the morning prior to sampling.

3.2.2 Hydrology

Stream flow measurements were collected with a Flow Tracker Acoustic Doppler Velocimeter for seven of the eight sites in June, August and October 2012. Water level data-loggers were installed at gauging sites BC-1, BC-2A, BC-5, and TR-1 on 04 Jun 2012 and removed on 03 October 2012; the data-loggers were removed in October to prevent loss or damage from ice. Site BC-2A was selected as a more favourable hydrological gauging station location since its channel characteristics are more confined and incised in comparison to the unconfined, broad channel found at BC-2. BC-2 was originally chosen for its convenience, being located at a road crossing; however, physical characteristics of the stream channel at that location are not conducive for long term monitoring. Sample sites are provided on Figure 1.



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Data from the gauges were processed and compiled to show water level over time. Data from the gauges along with the flow measurements can be used to develop a rating curve (water level / flow relationships) to calibrate a hydraulic model at a later date.

3.2.3 Benthic Invertebrates

Benthic invertebrates were sampled at sites BC-4, BC-5 and TR-1 in September 2011 (sample sites are provided on Figure 1). Three replicate samples were collected for each of the three sites using a 250 µm Surber Sampler with an opening of 20 cm X 25 cm. Samples were preserved with 10% neutral buffered formalin. These samples were submitted to Jack Zloty Ltd. Environmental Research and Consulting for analysis of taxonomy and biomass.

Supporting field data collected at the invertebrate sample sites included:

- Substrate composition and % "embeddedness";
- In-situ physical water quality parameters;
- Riparian vegetation and shading;
- Aquatic macrophyte species and % cover;
- Wetted and channel width;
- Water depth and velocity; and
- Distance from shore.

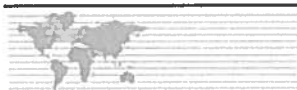
3.3 Results

3.3.1 Water Quality

Between 2010 and 2012 water quality samples were collected from up to 8 surface water sampling locations. These locations are presented on Figure 1 and a summary of the analytical data for the collected samples is presented in Appendix B.

Surface water data were compared against the Canadian Council of Ministers of the Environment (CCME) environmental quality guidelines for surface water. These guidelines are presented in a CCME compendium document titled, "Canadian Environmental Quality Guidelines" (CCME 1999, last revision November 2012). The CCME surface water guidelines are divided into two categories based on the type of aquatic life (freshwater or marine). Based on the location of the site, freshwater (AW) guidelines were considered applicable to the site.

The following subsections provide a summary of surface water sampling results to date.



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3.3.1.1 General Physical Parameters

During sampling, geochemical parameters including pH, dissolved oxygen and electrical conductivity were measured in the field. In addition, hardness, total suspended solids, total dissolved solids and turbidity were measured in the lab. The results of these measurements are summarized below:

- pH – ranged between 7.0 and 8.9 and, on average, was slightly basic;
- Electrical Conductivity – ranged between 123 $\mu\text{S}/\text{cm}$ and 966 $\mu\text{S}/\text{cm}$;
- Dissolved Oxygen – ranged from 9.7 mg/L to 15.2 mg/L;
- Hardness as CaCO_3 – ranged between 68 mg/L and 293 mg/L;
- Total Suspended Solids - ranged from 3 mg/L to 22.4 mg/L;
- Total Dissolved Solids – ranged from 95 mg/L to 294 mg/L; and
- Turbidity – ranged from 0.13 to 8.90 NTU.

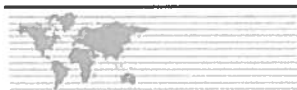
3.3.1.2 Anions, Nutrients, and Organic Carbon

With the exception of fluoride in one or more samples collected at BC-3, BC-4 and BC-5, measured concentrations of anions, nutrients and organic carbon were below the CCME guidelines. In general fluoride concentrations ranged from 0.02 mg/L to 0.261 mg/L, with the CCME guideline being 0.12 mg/L.

The total alkalinity ranged from approximately 64.2 mg/L to 274 mg/L and was predominantly in the bicarbonate form. In general, water bodies with total alkalinity greater than 20 mg/L are considered to have a relative low sensitivity to acidic inputs.

Other observations include:

- Bromide and chloride were below laboratory detection limits in all of the analysed samples;
- Sulphate (as SO_4) ranged from approximately 3.7 mg/L to 28 mg/L;
- Total phosphorous ranged from below the laboratory detection limit to 0.386 mg/L;
- Nitrate (as N) ranged from below the laboratory detection limit to 0.255 mg/L;
- Nitrite (as N) was below the laboratory detection limit in all of the analysed samples;
- Ammonia (as N) ranged from below the laboratory detection limit to 0.0181 mg/L;
- Total Kjeldahl Nitrogen (TKN) ranged from 0.051 to 0.351 mg/L. Comparison of measured TKN concentrations to ammonia concentrations indicates that some organic nitrogen is likely present in the collected water samples; and
- Total organic carbon ranged from 0.98 to 11.7 mg/L.



3.3.1.3 Total and Dissolved Metals

Of the analysed metal parameters with detectable concentrations, aluminum, cadmium, copper, iron, lead and zinc were found to be above the CCME guidelines in one or more samples.

- Total aluminum was measured at concentrations above the CCME guideline in one or more samples collected at TR-1, BC-1, BC-3, BC-4, and BC-5. Total aluminum concentrations ranged 0.0062 mg/L to 1.06 mg/L, relative to the CCME guideline of 0.005 mg/L to 0.1 mg/L, which is pH dependent;
- Total cadmium was measured at concentrations above the CCME guideline in one or more samples collected at TR-1, BC-1, BC-2, BC-3, and BC-4. Total cadmium concentrations ranged from below the laboratory detection limit to 0.000135 mg/L relative to the CCME guideline of 0.000003 mg/L to 0.0000830 mg/L, which is hardness dependent;
- Total copper was measured at concentrations above the CCME guideline in one sample collected from TR-1. Total copper concentrations ranged from below the laboratory detection limit to 0.0024 mg/L relative to the CCME guideline of 0.0002 mg/L to 0.0059 mg/L, which is hardness dependent;
- Total iron was measured at concentrations above the CCME guideline in one or more samples collected at TR-1, BC-2, and BC-3. Total iron concentrations ranged from below the laboratory detection limit to 1.52 mg/L relative to the CCME guideline of 0.3 mg/L;
- Total lead was measured at concentrations above the CCME guideline in one or more samples collected at TR-1 and BC-2. Total lead concentrations ranged from below the laboratory detection limit to 0.00259 mg/L relative to the CCME guideline of 0.0001 mg/L to 0.012 mg/L, which is hardness dependent; and
- Total zinc was measured at concentrations above the CCME guideline in one or more samples collected at BC-2. Total zinc concentrations ranged from below the laboratory detection limit to 0.0486 mg/L relative to the CCME guideline of 0.03 mg/L.

3.3.1.4 Quality Assurance / Quality Control

During each sampling event, a travel blank was collected and analysed for the same parameters submitted to the lab for the collected surface water samples. Low level detections of turbidity, bicarbonate, ammonia and total Kjeldahl Nitrogen were found during one or more sampling events. Measured concentrations of ammonia and total Kjeldahl Nitrogen were also low or similar to the travel blank detections, which may indicate that detections were influenced by ambient concentrations and/or laboratory sources of contamination. These influences would need to be considered during any future analysis of the water quality data.



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3.3.1.5 Summary

Measured concentrations of fluoride and/or select total metals were found at concentrations above CCME guidelines in one or more of the samples collected at six of the eight sampling locations. At TT-1 and TBC-2, measured concentrations of analysed parameters were below the CCME guidelines. A summary of locations and the parameters that were above CCME guidelines during one or more sampling event is presented below:

- TR-1 – total aluminum, total cadmium, total copper, total iron and total lead;
- BC-1 – total aluminum and cadmium;
- BC-2 – fluoride and total cadmium, total iron, total lead and total zinc;
- BC-3 – total aluminum, total cadmium and total iron;
- BC-4 – fluoride and total aluminum and total cadmium; and
- BC-5 – fluoride and total aluminum.

3.3.2 Hydrology

Stream flow measurements were taken during all three field visits in 2012. Table 1 shows the calculated discharge results at the time of surveys. Charts 1 to 4 show water levels for gauging stations at BC-1, BC-2A, BC-5, and TR-1, respectively (Note: the data shown are for recorded water levels only, as rating curves have not yet been developed for the stations from which to calculate actual volume discharge). Photos of 2012 stream discharge stations are provided in Appendix C.

Hydrological data collected during 2012 are representative of a high water year with a significant flood event in early June, when watercourses in the southern Yukon experienced record high spring freshet flows due to melting of a relatively large snow pack coinciding with heavy spring rains. The hydrographs show a significant rise in flows during the freshet and precipitation event, with a fast and then slowing trend to much lower flows over the remainder of the period of record for 2012.

Table 1: Discharge Results Summary for 2012

Site	Discharge (m ³ /s)		
	04 Jun 2012	30 Aug 2012	03 Oct 2012
BC-1	0.1648	0.0131	0.0209
BC-2A	0.3644	0.1225	0.1066
BC-4	0.4777	0.0321	0.0275
BC-5	1.228	0.2164	0.2367
TBC-2	0.1333	0.0314	0.0233
TR-1	0.4702	0.0651	0.0800
TT-1	0.4213	0.0486	0.0517



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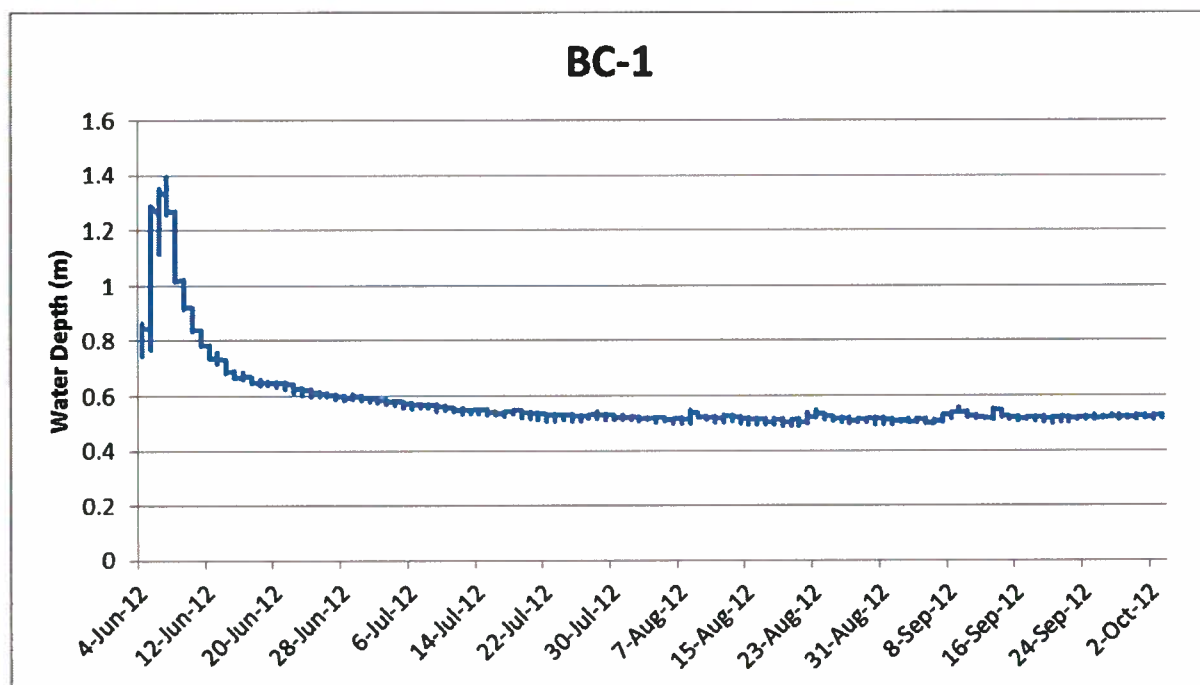


Chart 1: Water Level at BC-1 Gauging Station

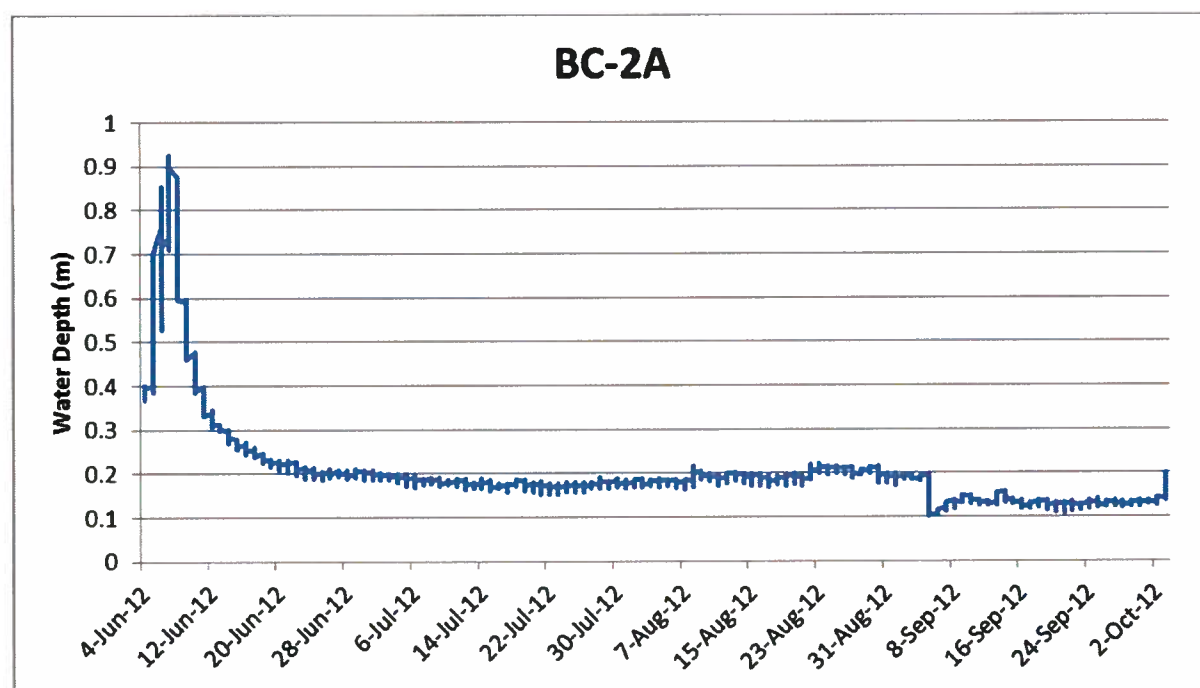


Chart 2: Water Level at BC-2A Gauging Station



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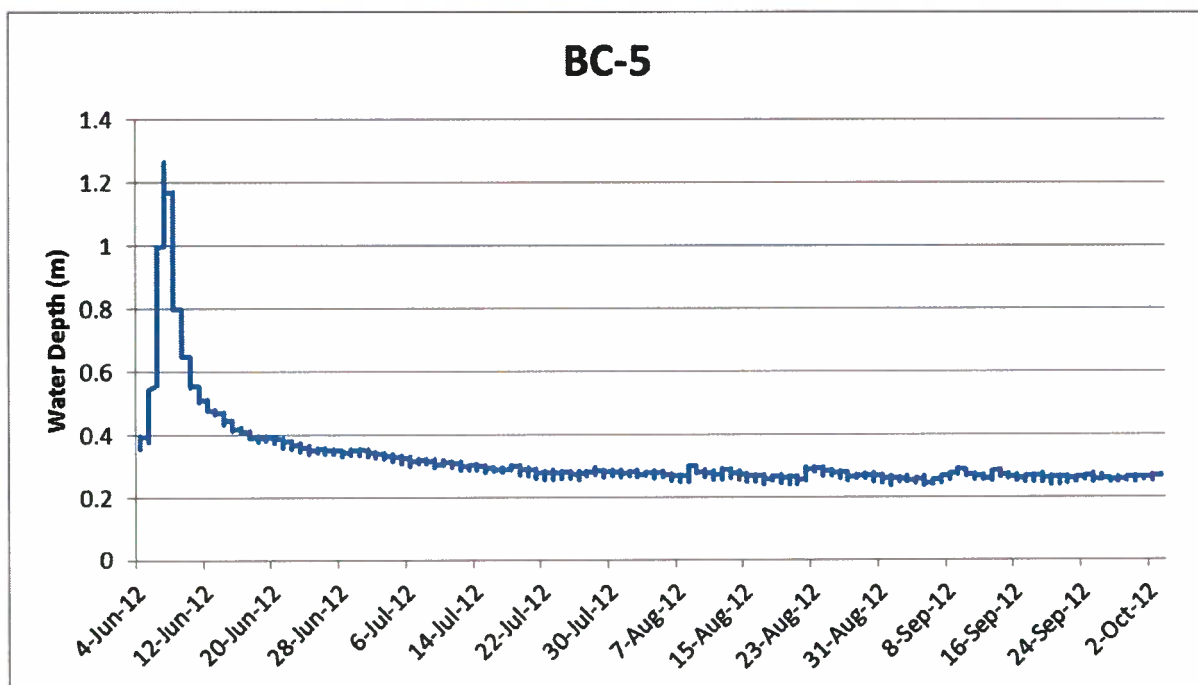


Chart 3: Water Level at BC-5 Gauging Station

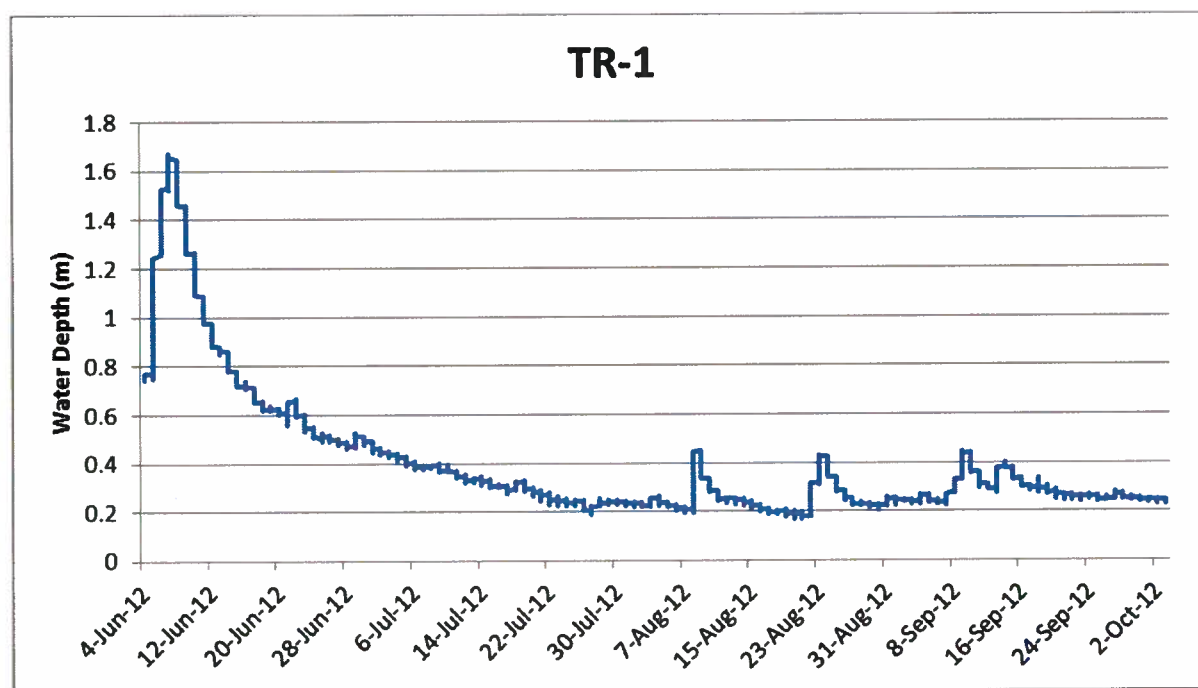


Chart 4: Water Level at TR-1 Gauging Station



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3.3.3 Benthic Invertebrates

Appendix D and Appendix E provide taxonomic enumeration and calculated biomass, respectively, for samples collected in September 2011 (sample sites are provided on Figure 1). A review and analysis of the data is summarized below.

Benthic community descriptors or metrics (i.e., total abundance, total density, richness, and Simpson's evenness¹) were calculated using the results of taxonomic identification and enumeration. Following the guidance provided by Environment Canada (2012), these metrics were based on identifying organisms to the family level. The metrics were used to provide a qualitative comparison between the stations. In addition to the metrics mentioned above, the relative invertebrate abundance and biomass according to major taxonomic group as a percentage of total abundance and biomass were calculated at each station. A summary of benthic community metrics is provided in Table 2, below.

Table 2: Community Metrics Calculated for Benthic Invertebrate Samples Collected for Jennings Property, Yukon - September 2011

Metric	Site BC-4				Site BC-5				Site TR-1			
	A	B	C	Mean	A	B	C	Mean	A	B	C	Mean
Total Abundance	236	656	135	342	996	387	131	505	135	255	332	241
Total Density (per m ²)	4720	13120	2700	6847	19920	7740	2620	10093	2700	5100	6640	4813
Richness	20	22	17	20	22	19	17	19	17	15	19	17
Simpson's Evenness Index	0.36	0.19	0.27	0.28	0.18	0.21	0.38	0.26	0.30	0.41	0.25	0.32
% EPT taxa	69%	86%	81%	79%	84%	89%	82%	85%	70%	59%	76%	68%
% Chironomids	10%	6%	7%	8%	7%	10%	8%	8%	14%	19%	8%	14%

Mean invertebrate abundance and density were highest at station BC-5, and among stations ranged from 241 to 505 species and 4,813 to 10,093 individuals per m², respectively. Mean family level richness ranged from 17 individual species at station TR-1 to 20 individual species at BC-4.

Simpson's evenness index (SEI) values range from 0 to 1; values closer to 1 indicate that the distribution of organisms among taxa is more even compared to stations with values closer to 0. SEI values for all replicates at the three stations were closer to 0 (SEI values ranged from 0.18 to 0.41), indicating that the benthic communities were not evenly distributed between taxonomic groups.

Measures of composition (or relative abundance) provide information on the relative contributions of different taxa (Barbour et al. 1999). Key taxa can provide important information about the condition of the benthic community. Relative abundance at all stations was dominated by Ephemeroptera, Plecoptera, and Trichoptera (EPT taxa: mayflies, stoneflies, and caddisflies) that are characteristic of fast flowing, lotic stream environments and are generally considered to be sensitive to a variety of contaminants (Chart 5; Barbour et al. 1999). The proportion of EPT taxa ranged from 59% at TR-1 to 89% at BC-5. Of the EPT taxa, plecopterans (stoneflies) and ephemeropterans (mayflies) were proportionally the most abundant. Chironomids were also common, although proportions of this group were variable among stations.

¹ Simpson's Evenness = $1 / \sum_{i=1}^S (p_i)^2 / S$ where: S = the total number of taxa at the station; P_i = the proportion of the ith taxon at the station.



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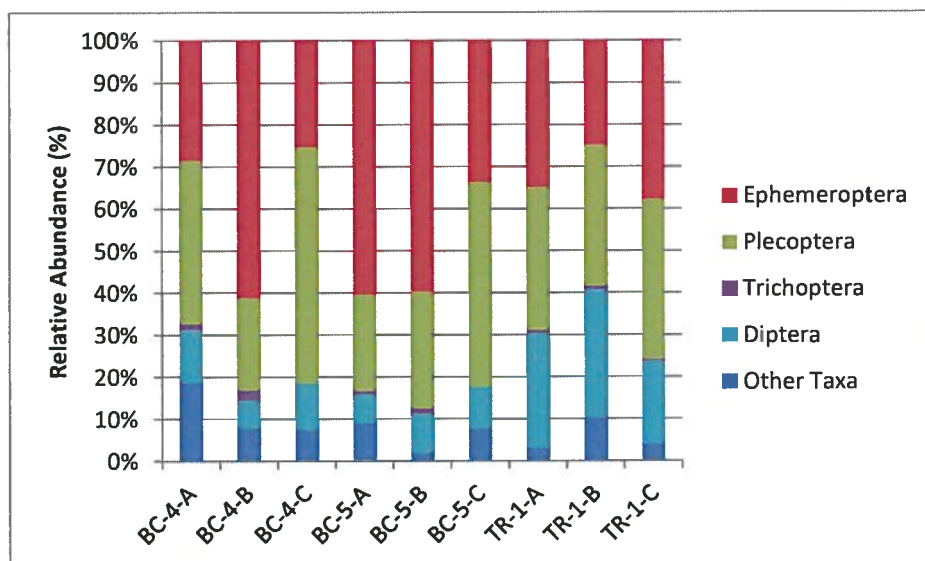


Chart 5: Relative Abundance of Benthic Invertebrates by Major Taxonomic Group for Samples Collected for Jennings Property, Yukon - September 2011

Relative biomass at all stations was also dominated by EPT taxa, with percent EPT taxa ranging from 65% to 82% of the total biomass (Appendix E).

Overall, the relative composition of the benthic invertebrate communities sampled in September 2011 was characteristic of undisturbed, lotic stream environments with communities dominated by EPT taxa. Community composition was similar between stations, except that station TR-1 had proportionally more chironomids, and there appeared to be more within station variability in community structure at stations BC-4 and BC-5 compared to station TR-1.



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4.0 CLOSING

We trust this information is sufficient for your needs at this time. Should you have any questions, please do not hesitate to contact the undersigned at (604) 296-4200.

KEYEH NEJEH GOLDER CORPORATION

GOLDER ASSOCIATED LTD.

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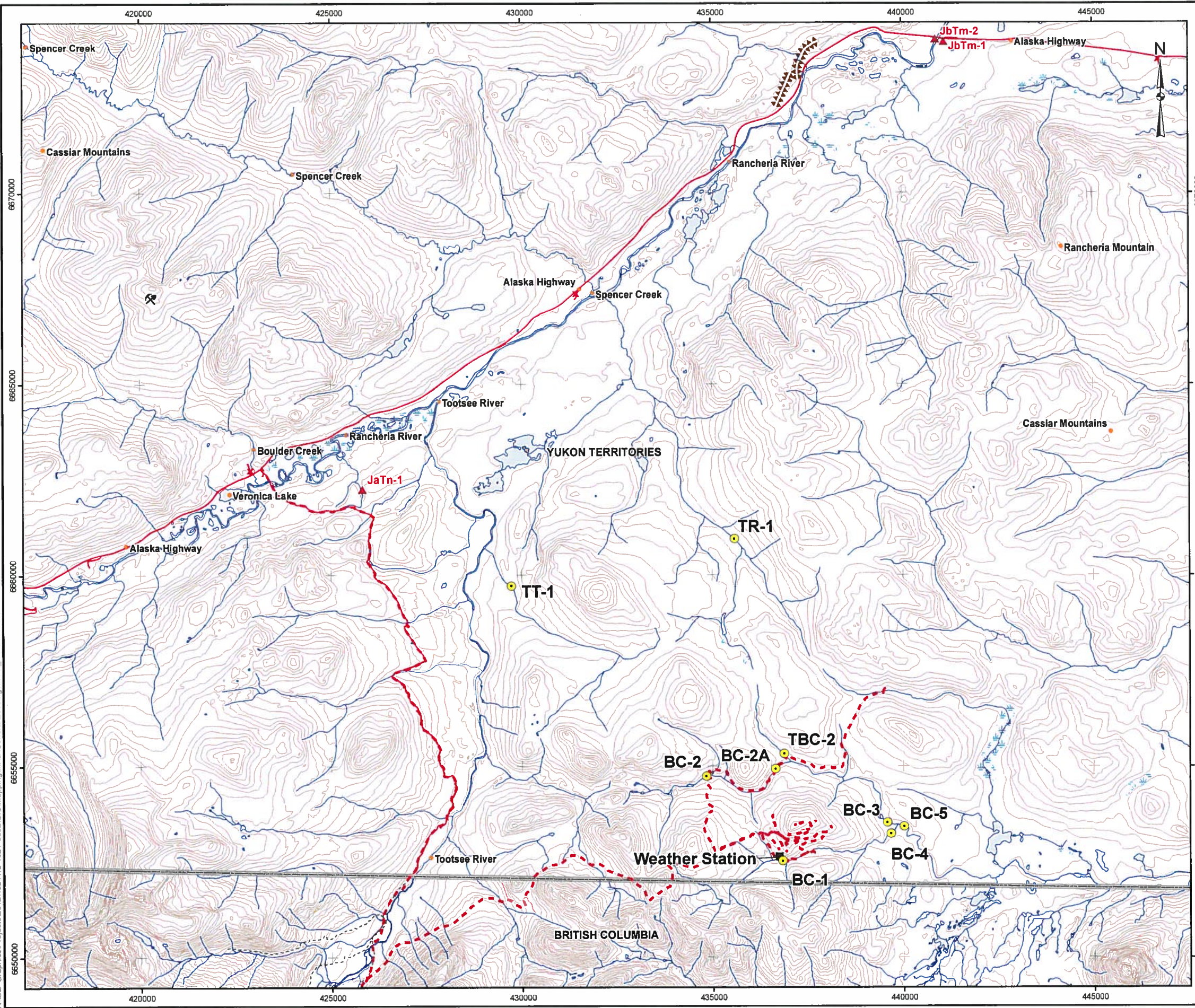
Jeff Bailey, M.A., RPCA
Managing Director Keyeh Neje Golder

Chris Schmidt, B.Sc., R.P.Bio.
Associate, Senior Wildlife Biologist

CS/CHS/lih

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LEGEND

- Archaeological Site
- Aquatic Sample Station
- Weather Station
- Provincial / Territorial Boundary
- Access Road
- Contour
- Road
- Watercourse
- Waterbody
- Wetland

LEGEND FOR AQUATIC SAMPLE STATIONS

Station	Water Quality	Stream Flow	Transducer (2012)	Benthic Invertebrates (Sep. 2011)	Periphyton (Sep. 2011)
BC-1	■	■	■		■
BC-2	■	■			
BC-3	■	■			
BC-4	■	■		■	
BC-5	■	■	■	■	■
BC-2A		■	■		
TBC-2	■	■			■
TR-1	■	■	■	■	■
TT-1	■	■			

REFERENCE

CanVec 1:50,000 data obtained from Natural Resources Canada.
Projection: UTM Zone 83 Datum: NAD 83

2,000 0 2,000
SCALE 1:100,000 METRES

PROJECT

AEM JENNINGS MINE

TITLE

BASELINE MONITORING SITES



Greater Vancouver Office, B.C.

PROJECT No. 12-1021-0002		PHASE No. 2000	
DESIGN	CO	08JUL10	SCALE AS SHOWN
GIS	JP	16MAR13	REV. 0
CHECK	CHS	18APR13	
REVIEW	CHS	18APR13	

FIGURE 1



5.0 REFERENCES

- Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. U.S. Environmental Protection Agency; Office of water; Washington, D.C. EPA 841-B-99-002.
- Environment Canada. 2011. Metal Mining Technical Guidance for Environmental Effects Monitoring. Chapter 4: Effects of Fish Habitat: Benthic Invertebrate Community Structure. Ottawa, ON, Canada.



APPENDIX A

AEM Jennings Property, Yukon – Summary of November 2011 to September 2012 Climate Data

Month	Temperature					Relative Humidity					Saturated Vapour Pressure			Vapour Pressure			Solar Radiation					Windspeed, Average			Windspeed, Maximum			Rain	Snow
	Hourly Max_max	Daily Max_avg	Hourly average	Daily Min_avg	Hourly Min_min	Hourly Max_max	Daily Max_avg	Hourly average	Daily Min_avg	Hourly Min_min	Hourly Max_max	Hourly average	Hourly Min_min	Hourly Max	Hourly average	Hourly min	Hourly Max	Daily Max	Hourly average	Daily Min	Hourly Min	Hourly Avg_max	Hourly average	Hourly Avg_min	Daily Max_max	Daily Max_avg	Daily Max_min	Total	Depth_Max
	Deg C	Deg C	Deg C	Deg C	Deg C	%	%	%	%	%	kPa	kPa	kPa	kPa	kPa	kPa	w/m2	w/m2	w/m2	w/m2	w/m2	m/s	m/s	m/s	m/s	m/s	m/s	mm	m
November	0.54	-14.32	-18.34	-11.53	-38.49	96.10	88.70	81.37	75.05	61.56	0.54	0.18	0.02	0.40	0.15	0.02	22.13	2.11	-12.36	-56.21	-67.06	5.51	1.26	0.01	9.56	4.67	1.43	0.00	0.37
December	0.99	-3.31	-8.42	-33.12	-25.66	97.40	93.20	74.72	56.33	34.92	0.99	0.36	0.08	0.68	0.26	0.06	4.30	-4.57	-33.27	-77.03	-106.70	9.12	2.38	0.05	22.17	9.31	0.00	9.00	0.25
January	0.64	-12.90	-17.44	-20.97	-41.04	96.20	88.88	78.04	64.95	46.16	0.64	0.21	0.02	0.47	0.16	0.01	17.06	-1.78	-20.15	-51.76	-71.12	6.32	1.44	0.01	15.70	6.09	1.53	0.00	0.44
February	0.80	-4.68	-10.89	-23.25	-28.51	98.60	93.57	77.13	57.69	28.03	0.80	0.30	0.06	0.51	0.22	0.05	20.31	-6.16	-23.58	-47.50	-100.60	6.52	1.65	0.07	13.64	6.85	2.10	0.30	0.44
March	0.79	-5.62	-11.55	-17.93	-29.52	99.90	93.46	78.33	57.26	27.66	0.79	0.29	0.06	0.56	0.21	0.04	51.69	0.32	-17.33	-38.63	-187.70	5.57	1.63	0.01	11.80	5.95	3.29	6.30	0.57
April	1.17	4.33	-1.96	-2.23	-18.50	99.20	93.85	71.05	41.26	19.85	1.17	0.57	0.15	0.65	0.36	0.13	180.80	17.80	-1.78	-34.52	-213.80	6.71	1.81	0.01	14.11	7.10	3.90	15.70	0.65
May	1.68	7.44	2.79	60.78	-9.59	100.00	92.20	65.51	40.08	27.53	1.68	0.78	0.30	0.86	0.48	0.25	620.60	185.80	65.65	-19.35	-244.70	7.23	1.85	0.06	13.09	7.46	2.67	23.80	0.40
Jun	2.89	13.87	8.22	105.54	-3.47	100.00	95.90	70.12	42.98	21.77	2.89	1.15	0.51	1.24	0.73	0.40	769.00	216.10	102.03	2.93	-73.36	3.88	1.64	0.05	8.60	6.76	3.65	133.40	0.36
July	3.27	17.74	10.59	—	-3.27	100.00	94.70	63.50	33.50	19.34	3.27	1.38	0.49	1.48	0.76	0.38	0.00	0.00	—	0.00	0.00	4.43	1.60	0.05	10.37	6.90	3.72	11.30	—
August	2.40	15.97	8.71	—	-4.31	100.00	97.76	73.92	42.28	19.31	2.40	1.20	0.46	1.32	0.80	0.41	428.80	0.00	132.24	0.00	-63.43	4.29	1.36	0.12	10.02	6.22	2.72	43.20	—
September	2.50	11.71	5.38	35.68	-6.57	100.00	95.37	71.32	41.08	20.61	2.50	0.95	0.40	1.13	0.62	0.31	457.40	93.80	33.23	-5.90	-104.20	4.94	1.78	0.08	13.58	7.98	4.86	47.40	—
October	0.77	1.17	-3.52	-3.31	-22.44	95.70	85.50	64.81	57.57	30.26	0.75	0.49	0.25	0.59	0.40	0.20	71.60	32.40	-14.20	-51.40	-53.20	2.80	1.18	0.07	17.00	9.25	6.98	4.43	0.38

Note: October does not have enough data to be representative of that month.



APPENDIX B

AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

APPENDIX B
AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

Location Date Sampled	CCME Protection of Aquatic Life		TT-1							TR-1							TBC-2										
			13-Jul-2010	22-Oct-2010	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	14-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012		
Field Measured	>9.5 or >6.5 6.5 - 9.0, 7.0 - 8.7	F F, M	Temperature (°C)	-	0.01	5.43	6.0	3.80	7.02	1.39	-	0.05	0.16	5.13	5.81	4.82	8.14	1.42	-	0.78	-	3.07	3.86	1.86	4.55	1.51	
			Conductivity (µS/cm)	-	316	219	190	138	330	756	-	410	524	327	242	266	406	966	-	353	-	329	226	272	358	846	
			Dissolved Oxygen	-	13.5	11.32	15.19	11.13	10.91	13.26	-	13.16	11.96	11.46	14.65	10.78	10.18	11.74	-	12.95	-	12.29	14.82	11.93	11.73	12.17	
			pH	-	7.87	8.09	8.44	7.67	8.34	8.37	-	7.85		7.96	8.73	7.75	8.04	8.20	-	7.88	-	8.13	8.58	7.91	8.11	8.30	
			Total Dissolved Solids	-	207	143	95	-	-	-	-	260	340	212	121	-	-	-	-	-	233	-	214	113	-	-	-
Physical Tests			Conductivity (µS/cm)	302	317	-	295	138	311	299	369	412	492	-	377	269	251	383	349	364	372	-	345	263	338	333	
			Hardness (as CaCO3)	178	186	126	173	80.7	192	181	220	245	293	188	223	159	238	236	204	212	221	187	203	163	204	205	
			pH	8.33	8.36	8.08	8.28	7.79	8.28	8.28	8.37	8.41	8.06	8.11	8.27	8.22	8.20	8.31	8.39	8.43	8.23	8.15	8.25	7.83	8.35	8.32	
			Total Suspended Solids	<3.0	<3.0	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	-	<3.0	22.4	<23	8.6	<3.0	<3.0	<3.0	-	<3.0	<3.0	<3.0	<3.0	
			Total Dissolved Solids	177	179	-	174	105	191	188	205	237	294	-	217	163	174	239	204	211	217	-	203	156	201	199	
Turbidity (NTU)	0.40	0.42	-	0.55	1.01	1.05	0.23	0.55	0.74	2.45	-	0.54	8.90	1.42	1.34	0.44	0.16	<0.10	-	0.36	0.52	0.17	0.51				
Anions and Nutrients	0.1 - 19 120 0.12 2.9 0.06	F/pH/T F F, int F F	Alkalinity, Bicarbonate (as CaCO3)	159	164	111	162	76.7	175	169	192	214	274	169	210	146	133	215	184	185	207	170	189	148	181	190	
			Alkalinity, Carbonate (as CaCO3)	6.1	6.0	<1.0	<1.0	<1.0	<1.0	<1.0	20.3	11.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.4	7.2	10.4	<1.0	<1.0	<1.0	<1.0	5.0	3.9
			Alkalinity, Hydroxide (as CaCO3)	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
			Alkalinity, Total (as CaCO3)	165	170	111	162	76.7	175	169	212	225	274	169	210	146	133	218	191	196	207	170	189	148	186	194	
			Ammonia as N	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0164	0.0086	<0.0050	<0.0050	0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
			Bromide (Br)	<0.050	<0.050	<0.050	<0.050	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	-	
			Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
			Fluoride (F)	0.073	0.057	0.057	0.076	0.039	0.080	0.050	0.041	0.029	0.037	0.038	0.043	0.020	0.045	0.026	0.042	0.031	0.029	0.039	0.046	0.034	0.045	0.042	
			Nitrate (as N)	<0.0050	<0.0050	<0.0050	<0.0050	0.0444	<0.0050	<0.0050	0.0122	0.0372	0.0775	0.0298	0.0096	0.0240	0.0094	0.0140	0.154	0.210	0.255	0.219	0.135	0.188	0.107	0.141	
			Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Phosphorus (P)-Total	0.0042	0.0022	0.239	0.180	-	-	-	0.0036	<0.0020	0.0072	0.245	<0.050	-	-	-	-	<0.0020	<0.0020	<0.0020	0.159	0.100	-	-	-			
Total Kjeldahl Nitrogen	-	-	-	-	0.331	0.165	0.142	-	-	-	-	-	0.243	0.160	0.161	-	-	-	-	-	0.187	0.114	0.077				
Sulfate (SO4)	7.40	8.98	6.20	6.82	3.70	7.53	8.43	7.68	12.0	14.7	9.85	9.24	8.43	8.36	11.8	8.41	9.82	7.72	8.35	9.04	9.19	8.07	8.46				
Organic / Inorganic Carbon																											
Total Organic Carbon			4.35	4.29	8.31	5.50	11.7	4.86	4.42	3.65	3.85	3.83	4.97	4.10	6.48	4.17	3.73	2.09	2.76	1.78	3.65	2.55	6.25	2.39	2.54		
Total Metals	0.005, 0.1 0.005 1.5 0.000003 - 0.000083 0.001^{VI}, 0.0089^{III} 0.0002 - 0.0059 0.3 0.0001 - 0.012	F, pH F F F, H F, V F, H F F, H F F, H	Aluminum (Al)-Total	0.0100	0.0154	0.0207	0.0228	0.0569	0.0082	0.0119	0.0115	0.0086	0.0077	1.06	0.0093	0.298	0.0062	0.0075	0.0098	0.0074	0.0096	0.0098	0.0357	0.0867	0.0149	0.0140	
			Antimony (Sb)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
			Arsenic (As)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00078	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00054	<0.00050	0.00053	0.00055	0.00055	0.00051	0.00051	
			Barium (Ba)-Total	0.269	0.253	0.201	0.261	0.145	0.294	0.261	0.119	0.126	0.164	0.135	0.131	0.092	0.131	0.128	0.153	0.145	0.207	0.135	0.151	0.100	0.167	0.157	
			Beryllium (Be)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
			Boron (B)-Total	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
			Cadmium (Cd)-Total	<0.000017	<0.000017	<0.000017	<0.000017	0.000021	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000041	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	
			Calcium (Ca)-Total	41.6	45.9	31.0	42.6	20.1	47.9	45.9	57.0	60.7	74.5	49.2	59.4	44.3	61.0	61.6	56.0	57.2	60.5	53.0	59.6	48.7	58.3	56.9	
			Chromium (Cr)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
			Cobalt (Co)-Total	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00077	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
			Copper (Cu)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	<0.0010	
			Iron (Fe)-Total	0.039	0.065	0.046	0.059	0.106	0.039	0.037	0.060	0.115	0.341	1.52	0.079	0.598	0.094	0.104	<0.030	<0.030	<0.030	<0.030	<0.030	0.063	<0.030	<0.030	
			Lead (Pb)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00259	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
			Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
			Magnesium (Mg)-Total	15.9</																							

[illegible]

All parameter units in milligrams per litre (mg/L), unless otherwise noted. Guidelines shown are from the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines (WQG) (updated to 2012) for freshwater (F) aquatic life. CCME WQGs are shown for long-term exposure, meant to protect against all negative effects during indefinite exposures. Where no site specific guideline existed Interim Guidelines (Int) were used.

H = guideline is dependent on hardness.

H = guideline is dependent on hardness.

T = guideline is dependent on temperature.

V = guideline is dependent on valence. Distinguishing chromium valences was not apart of this study.

CCME Guideline for dissolved oxygen is the lowest acceptable concentration for cold water biota at early life stages (9.5 mg/L) and other life stages (6.5 mg/L).

The pH for freshwater should fall within the range of 6.5 - 9.0. The pH of marine and estuarine waters should fall within the range of 7.0 - 8.7.

CCME Guideline for Nitrate presented is for the ion (NO_3^-), not as N.

CCME Guideline for Aluminum = 0.005 mg/L if pH < 6.5, otherwise 0.1 mg/L.

CCME Guideline for Cadmium = $(10^{0.85[\log_{10}(\text{hardness})]-3.2}) / 1000 \text{ mg/L}$

CCME Guideline for Copper = $(e^{0.8545(\ln(\text{hardness})-1.465)}) \times 0.2/1000 \text{ mg/L}$; where hardness is not known the guideline is 0.002 mg/L.

CCME Guideline for Lead = $(e^{1.73[\ln(\text{hardness})]} - 705) / 1000$ mg/L; where hardness is not known the guideline is 0.001 mg/L.

CCME Guideline for Nickel = $(e^{0.76(\ln(\text{hardness}))+1.06})/1000 \text{ mg/L}$; where hardness is not known the guideline is 0.025 mg/L

italics indicates that the method detection limit is higher than the CCME guideline.

* Guideline and exceedance cannot be determined without hardness concentration.

1.52 The constituent does not meet the CCME guideline

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AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

Location Date Sampled	CCME Protection of Aquatic Life		TT-1							BC-1							BC-2								
			13-Jul-2010	22-Oct-2010	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	12-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	14-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	14-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012
Field Measured																									
Temperature (°C)			-	0.01	5.43	6.0	3.80	7.02	1.39	-	0.32	0	7.98	3.31	0.65	3.9	0.81	-	0.54	0.07	7.98	6.24	6.29	9.51	2.71
Conductivity (µS/cm)			-	316	219	190	138	330	756	-	291	346	351	176	123	276	607	-	376	388	351	240	303	380	911
Dissolved Oxygen		>9.5 or >6.5	-	13.5	11.32	15.19	11.13	10.91	13.26	-	12.74	13.32	10.91	13.35	11.68	11.41	11.92	-	12.85	14.26	10.91	11.37	10.24	10.66	11.89
pH		6.5 - 9.0, 7.0 - 8.7	F, M	-	7.87	8.09	8.44	7.67	8.34	-	7.59	7.87	8.04	8.33	7.03	6.97	7.11	-	7.69		8.04	8.20	7.73	8.05	8.10
Total Dissolved Solids				-	207	143	95	-	-	-	183	225	228	88	-	-	-	-	245		228	120	-	-	-
Physical Tests																									
Conductivity (µS/cm)				302	317	-	295	138	311	254	294	327	-	270	122	259	261	363	387	366	-	368	295	359	361
Hardness (as CaCO3)				178	186	126	173	80.7	192	142	164	183	104	156	68.3	152	152	211	224	211	198	221	177	217	218
pH				8.33	8.36	8.08	8.28	7.79	8.28	8.27	8.31	8.15	7.89	8.13	7.90	8.20	8.08	8.34	8.32	8.16	8.10	8.17	8.02	8.31	8.28
Total Suspended Solids				<3.0	<3.0	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	-	<3.0	5.7	<3.0	<3.0	3.2	<3.0	8.0	-	<3.0	5.3	<3.0	<3.0
Total Dissolved Solids				177	179	-	174	105	191	150	166	205	-	157	95	161	159	209	220	224	-	214	183	220	230
Turbidity (NTU)				0.40	0.42	-	0.55	1.01	1.05	0.58	0.24	<0.10	-	0.26	1.42	0.16	0.13	1.24	0.88	1.93	-	0.43	1.47	1.08	0.93
Anions and Nutrients																									
Alkalinity, Bicarbonate (as CaCO3)				159	164	111	162	76.7	175	131	148	172	93.5	144	64.2	138	140	171	184	179	161	184	151	175	186
Alkalinity, Carbonate (as CaCO3)				6.1	6.0	<1.0	<1.0	<1.0	<1.0	<2.0	3.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.5	5.1	<1.0	<1.0	<1.0	<1.0	3.4	<1.0
Alkalinity, Hydroxide (as CaCO3)				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<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
Alkalinity, Total (as CaCO3)				165	170	111	162	76.7	175	131	152	172	93.5	144	64.2	138	140	179	189	179	161	184	151	178	186
Ammonia as N		0.1 - 19	F/pH/T	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0135	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0083	0.0062	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)				<0.050	<0.050	<0.050	<0.050	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	-
Chloride (Cl)		120	F	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)		0.12	F, int	0.073	0.057	0.057	0.076	0.039	0.080	0.041	0.038	0.050	0.033	0.047	<0.020	0.048	0.030	0.115	0.099	0.104	0.103	0.116	0.076	0.123	0.088
Nitrate (as N)		2.9	F	<0.0050	<0.0050	<0.0050	<0.0050	0.0444	<0.0050	0.0211	0.0569	0.155	0.0352	0.0383	0.0211	0.0370	0.0556	0.0398	0.106	0.129	0.0542	0.0934	0.0823	0.0593	0.0935
Nitrite (as N)		0.06	F	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total				0.0042	0.0022	0.239	0.180	-	-	0.0022	<0.0020	0.0024	0.145	0.158	-	-	-	0.0083	0.0052	0.0154	0.104	0.102	-	-	-
Total Kjeldahl Nitrogen				-	-	-	-	0.331	0.165	-	-	-	-	-	0.351	0.098	0.069	-	-	-	-	-	0.171	0.092	0.051
Sulfate (SO4)				7.40	8.98	6.20	6.82	3.70	7.53	6.63	8.66	10.1	5.20	7.80	3.73	7.13	7.96	26.4	26.8	27.8	27.9	26.5	23.2	27.3	27.4
Organic / Inorganic Carbon																									
Total Organic Carbon				4.35	4.29	8.31	5.50	11.7	4.86	2.70	2.80	1.70	5.97	3.03	10.7	2.61	5.86	1.03	0.98	1.40	1.94	1.23	4.21	1.11	1.28
Total Metals																									
Aluminum (Al)-Total		0.005, 0.1	F, pH	0.0100	0.0154	0.0207	0.0228	0.0569	0.0082	0.0115	0.0076	0.0132	0.0267	0.0204	0.116	0.0076	0.0083	0.0149	0.0207	0.0669	0.0846	0.0504	0.0764	0.0241	0.0443
Antimony (Sb)-Total				<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total		0.005	F	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00053	<0.00050	0.00061	0.00067	0.00058	0.00070	0.00060	0.00059
Barium (Ba)-Total				0.269	0.253	0.201	0.261	0.145	0.294	0.185	0.199	0.167	0.157	0.193	0.117	0.191	0.182	0.167	0.175	0.166	0.161	0.171	0.138	0.180	0.182
Beryllium (Be)-Total				<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total		1.5	F	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total		0.000003 - 0.000083	F, H	<0.000017	<0.000017	<0.000017	<0.000017	0.000021	<0.000017	0.000028	0.000050	0.000043	0.000024	0.000043	0.000055	0.000031	0.000031	0.000043	0.000094	0.000135	0.000090	0.000097	0.000083	0.000080	0.000093
Calcium (Ca)-Total				41.6	45.9	31.0	42.6	20.1	47.9	44.1	54.7	63.2	33.8	51.4	22.2	51.3	49.4	48.5	55.3	50.3	48.6	54.0	46.8	51.8	54.1
Chromium (Cr)-Total		0.001 ^{VI} , 0.0089 ^{III}	F, V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total				<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total		0.0002 - 0.0059	F, H	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Iron (Fe)-Total		0.3	F	0.039	0.065	0.046	0.059	0.106	0.039	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.101	<0.030	0.106	0.128	0.315	0.259	0.233	0.265	0.176	0.213
Lead (Pb)-Total		0.0001 - 0.012	F, H	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00137	0.00077	0.00074	0.00086	0.00053	0.00076
Lithium (Li)-Total				<																					

Notes:

All parameter units in milligrams per litre (mg/L), unless otherwise noted.

Guidelines shown are from the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines (WQG) (updated to 2012) for freshwater (F) aquatic life. CCME WQGs are shown for long-term exposure, meant to protect against all negative effects during indefinite exposures. Where no site specific guideline existed Interim Guidelines (Int) were used.

pH = guideline is dependent on pH.

H = guideline is dependent on hardness.

T = guideline is dependent on temperature.

V = guideline is dependent on valence. Distinguishing chromium valences was not apart of this study.

CCME Guideline for dissolved oxygen is the lowest acceptable concentration for cold water biota at early life stages (9.5 mg/L) and other life stages (6.5 mg/L).

The pH for freshwater should fall within the range of 6.5 - 9.0. The pH of marine and estuarine waters should fall within the range of 7.0 - 8.7.

CCME Guideline for Nitrate presented is for the ion (NO_3^-), not as N.

CCME Guideline for Aluminum = 0.005 mg/L if pH < 6.5, otherwise 0.1 mg/L.

CCME Guideline for Cadmium = $(10^{(0.86 \log(10(\text{hardness})) - 3.2)}) / 1000$ mg/L.

CCME Guideline for Copper = $(e^{(0.85 \log(10(\text{hardness})) - 1.46)}) \times 0.2 / 1000$ mg/L; where hardness is not known the guideline is 0.002 mg/L.

CCME Guideline for Lead = $(e^{(1.27 \log(10(\text{hardness})) - 4.70)}) / 1000$ mg/L; where hardness is not known the guideline is 0.001 mg/L.

CCME Guideline for Nickel = $(e^{(0.76 \log(10(\text{hardness})) - 1.06)}) / 1000$ mg/L; where hardness is not known the guideline is 0.025 mg/L.

#limits indicates that the method detection limit is higher than the CCME guideline.

* Guideline and exceedence cannot be determined without hardness concentration.

1.52 The constituent does not meet the CCME guideline.

APPENDIX B
AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

Location Date Sampled	CCME Protection of Aquatic Life		TT-1							BC-3							BC-4							
			13-Jul-2010	22-Oct-2010	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	13-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	6-Jun-2011	13-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012
Field Measured																								
Temperature (°C)			-	0.01	5.43	6.0	3.80	7.02	1.39	-	0.07	-0.17	6.9	4.93	3.18	7.09	0.34	-	0.02	3.73	3.23	1.47	4.39	0.18
Conductivity (µS/cm)			-	316	219	190	138	330	756	-	370	398	323	243	268	361	864	-	267	212	178	146	272	642
Dissolved Oxygen		>9.5 or >6.5	F	-	13.5	11.32	15.19	11.13	10.91	-	12.8	12.85	10.93	9.72	11.44	12.07	12.36	-	13.31	12.01	12.23	12	11.22	12.23
pH		6.5 - 9.0, 7.0 - 8.7	F, M	-	7.87	8.09	8.44	7.67	8.34	-	7.65	7.67	7.03	8.76	7.85	8.02	8.10	-	7.8	8.13	8.88	7.85	8.03	8.07
Total Dissolved Solids			-	207	143	95	-	-	-	-	240	260	210	-	-	-	-	-	177	138	89	-	-	-
Physical Tests																								
Conductivity (µS/cm)			302	317	-	295	138	311	299	339	370	375	-	351	265	340	346	267	275	-	260	141	378	254
Hardness (as CaCO3)			178	186	126	173	80.7	192	181	201	214	218	182	201	159	201	206	154	154	114	147	82.7	148	150
pH			8.33	8.36	8.08	8.28	7.79	8.28	8.28	8.07	8.29	8.13	8.14	8.22	7.95	8.33	8.23	8.17	8.34	8.09	8.25	7.63	8.30	8.16
Total Suspended Solids			<3.0	<3.0	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	-	<3.0	<3.0	5.9	<3.0	<3.0	<3.0	-	<3.0	3.7	<30	<3.0
Total Dissolved Solids			177	179	-	174	105	191	188	194	219	223	-	207	161	191	209	164	161	-	157	106	204	162
Turbidity (NTU)			0.40	0.42	-	0.55	1.01	1.05	0.23	1.81	1.05	0.61	-	0.85	0.76	2.28	0.71	0.44	0.27	-	0.23	2.05	0.35	0.31
Anions and Nutrients																								
Alkalinity, Bicarbonate (as CaCO3)			159	164	111	162	76.7	175	169	182	186	192	159	184	142	178	185	138	132	100	132	72.2	217	130
Alkalinity, Carbonate (as CaCO3)			6.1	6.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	4.5	<1.0	<1.0	<1.0	<1.0	4.5	<1.0	<2.0	4.2	<1.0	<1.0	<1.0	3.9	<1.0
Alkalinity, Hydroxide (as CaCO3)			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, Total (as CaCO3)			165	170	111	162	76.7	175	169	182	191	192	159	184	142	183	185	138	137	100	132	72.2	221	130
Ammonia as N		0.1 - 19	F/pH/T	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	0.0141	0.0066	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0051
Bromide (Br)			<0.050	<0.050	<0.050	<0.050	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	-	<0.050	<0.050	<0.050	<0.050	-	-	-
Chloride (Cl)		120	F	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)		0.12	F, int	0.073	0.057	0.057	0.076	0.039	0.080	0.097	0.071	0.078	0.083	0.082	0.059	0.093	0.064	0.188	0.196	0.162	0.208	0.079	0.261	0.178
Nitrate (as N)		2.9	F	<0.0050	<0.0050	<0.0050	<0.0050	0.0444	<0.0050	0.0536	0.152	0.167	0.137	0.100	0.154	0.0273	0.0975	0.0538	0.110	0.101	0.0771	0.0689	0.0541	0.0874
Nitrite (as N)		0.06	F	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total			0.0042	0.0022	0.239	0.180	-	-	-	0.0057	<0.0020	0.0060	0.299	0.250	-	-	-	0.0029	<0.0020	0.134	0.283	-	-	-
Total Kjeldahl Nitrogen			-	-	-	0.331	0.165	0.142	-	-	-	-	-	-	0.181	0.128	0.084	-	-	-	-	0.302	0.087	0.087
Sulfate (SO4)			7.40	8.98	6.20	6.82	3.70	7.53	8.43	13.5	16.2	20.3	14.3	15.2	12.0	16.8	17.3	11.1	12.0	8.77	11.1	5.72	11.8	12.0
Organic / Inorganic Carbon																								
Total Organic Carbon			4.35	4.29	8.31	5.50	11.7	4.86	4.42	2.29	2.33	2.76	3.47	2.46	5.56	2.19	2.35	2.30	2.72	5.01	2.81	9.76	2.81	2.83
Total Metals																								
Aluminum (Al)-Total		0.005, 0.1	F, pH	0.0100	0.0154	0.0207	0.0228	0.0569	0.0082	0.0173	0.0088	0.0196	0.0540	0.106	0.0348	0.138	0.0142	0.0309	0.0102	0.0218	0.0115	0.165	0.0076	0.0318
Antimony (Sb)-Total			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total		0.005	F	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00070	0.00066	0.00062	0.00072	0.00068	0.00063	0.00080	0.00061	0.00067	0.00070	0.00061	0.00067	0.00072	0.00075	0.00079
Barium (Ba)-Total			0.269	0.253	0.201	0.261	0.145	0.284	0.261	0.158	0.164	0.175	0.135	0.154	0.104	0.168	0.155	0.121	0.114	0.088	0.114	0.068	0.112	0.114
Beryllium (Be)-Total			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total		1.5	F	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total		0.000003 - 0.000083	F, H	<0.000017	<0.000017	<0.000017	<0.000017	0.000021	<0.000017	<0.000017	0.000021	0.000044	<0.000017	0.000031	<0.000017	0.000029	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000039	<0.000017	<0.000017
Calcium (Ca)-Total			41.6	45.9	31.0	42.6	20.1	47.9	45.9	55.1	61.8	56.9	52.6	57.9	48.0	56.9	56.9	49.6	53.4	40.3	52.7	29.6	51.8	53.1
Chromium (Cr)-Total		0.001 ^{VI} , 0.0089 ^{III}	F, V	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total			<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total		0.0002 - 0.0059	F, H	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010
Iron (Fe)-Total		0.3	F	0.039	0.065	0.046	0.059	0.106	0.039	0.376	0.190	0.128	0.159	0.270	0.192	0.330	0.091	0.044	<0.030	<0.030	<0.030	0.167	<0.030	0.031
Lead (Pb)-Total		0.0001 - 0.012	F, H	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total			15.9	18.7	12.2	16.9	8.11	18.9	18.8	14.1	16.8	19.6	13.2	15.4	10.2	16.8	16.4	6.56	4.88	3.57	4.62	2.53	4.52	4.85
Manganese (Mn)-Total			0.00561	0.0108	0.00374	0.00577	0.00649	0.00526	0.00607	0.0147	0.0149	0.0152	0.0132	0.0101	0.00920	0.00960	0.00732	0.00380	0.00054	0.00119	0.00087	0.00965	0.00060	0.00174

APPENDIX B
AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

Location Date Sampled	CCME Protection of Aquatic Life		TT-1							BC-3							BC-4							
			13-Jul-2010	22-Oct-2010	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	13-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	6-Jun-2011	13-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012
Mercury (Hg)-Total	0.000016	M	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Molybdenum (Mo)-Total	0.073	F, int	0.0019	0.0019	0.0017	0.0018	0.0011	0.0020	0.0018	0.0014	0.0017	0.0018	0.0014	0.0014	0.0011	0.0015	0.0016	0.0018	0.0021	0.0017	0.0011	0.0017	0.0018	
Nickel (Ni)-Total	0.01 - 0.22	F, H	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Potassium (K)-Total			<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Selenium (Se)-Total	0.001	F	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Silver (Ag)-Total	0.0001	F	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	
Sodium (Na)-Total			<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Thallium (Tl)-Total	0.0008	F	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Tin (Sn)-Total			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Titanium (Ti)-Total			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	0.015	F	0.00128	0.00194	0.00088	0.00144	0.00039	0.00182	0.00203	0.00151	0.00200	0.00238	0.00148	0.00176	0.00114	0.00183	0.00198	0.00089	0.00102	0.00059	0.00084	0.00032	0.00070	0.00087
Vanadium (V)-Total			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	0.03	F	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0112	<0.0050	0.0076	0.0052	0.0080	0.0056	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Dissolved Metals																								
Aluminum (Al)-Dissolved			0.0067	<0.0050	0.0111	0.0064	0.0271	0.0073	<0.0050	<0.0050	<0.0050	<0.0050	0.0060	0.0070	0.0065	<0.0050	<0.0050	0.0054	<0.0050	0.0094	0.0062	0.0379	0.0050	<0.0050
Antimony (Sb)-Dissolved			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Arsenic (As)-Dissolved			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	<0.00050	<0.00050	0.00056	0.00054	<0.00050	0.00057	<0.00050	0.00068	0.00071	0.00062	0.00072	0.00050	0.00074	0.00071
Barium (Ba)-Dissolved			0.279	0.239	0.191	0.249	0.136	0.286	0.240	0.159	0.153	0.167	0.127	0.143	0.100	0.157	0.151	0.122	0.112	0.086	0.107	0.063	0.111	0.107
Beryllium (Be)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Boron (B)-Dissolved			<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Cadmium (Cd)-Dissolved			<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000023	<0.000017	<0.000017	<0.000017	0.000019	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	
Calcium (Ca)-Dissolved			43.8	44.8	30.8	42.1	19.4	46.6	43.7	57.0	59.5	55.9	51.6	56.2	47.5	54.1	56.4	50.8	53.5	39.7	51.5	29.1	51.8	52.6
Chromium (Cr)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Cobalt (Co)-Dissolved			<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Copper (Cu)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Iron (Fe)-Dissolved			<0.030	<0.030	<0.030	0.031	0.055	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.032	0.092	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	
Lead (Pb)-Dissolved			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Lithium (Li)-Dissolved			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Magnesium (Mg)-Dissolved			16.7	18.0	11.9	16.6	7.83	16.5	17.4	14.3	16.0	19.0	12.8	14.7	9.94	16.1	15.8	6.65	4.83	3.51	4.42	2.46	4.52	4.51
Manganese (Mn)-Dissolved			0.00424	0.00488	0.00091	0.00358	0.00051	0.00102	0.00369	0.00635	0.0122	0.0111	0.00440	0.00797	0.00621	0.00091	0.00584	0.00094	<0.00030	<0.00030	0.00038	0.00040	<0.00030	0.00056
Mercury (Hg)-Dissolved			<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Molybdenum (Mo)-Dissolved			0.0018	0.0017	0.0016	0.0016	0.0011	0.0018	0.0017	0.0014	0.0015	0.0018	0.0014	0.0013	0.0011	0.0014	0.0015	0.0018	0.0020	0.0017	0.0016	0.0010	0.0018	0.0017
Nickel (Ni)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Potassium (K)-Dissolved			<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Selenium (Se)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010														

APPENDIX B
AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

Location Date Sampled	CCME Protection of Aquatic Life		TT-1							BC-5							Travel Blank							
			13-Jul-2010	22-Oct-2010	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	13-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	29-Mar-2011	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	4-Oct-2012
Field Measured																								
Physical Tests																								
Anions and Nutrients																								
Organic / Inorganic Carbon																								
Total Metals																								

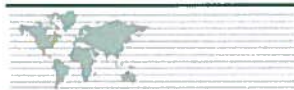
APPENDIX B
AEM Jennings Property, Yukon - Summary of 2010 to 2012 Surface Water Quality Data

Location Date Sampled	CCME Protection of Aquatic Life		TT-1							BC-5							Travel Blank							
			13-Jul-2010	22-Oct-2010	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	22-Oct-2010	29-Mar-2011	6-Jun-2011	13-Sep-2011	4-Jun-2012	30-Aug-2012	3-Oct-2012	13-Jul-2010	29-Mar-2011	6-Jun-2011	15-Sep-2011	4-Jun-2012	30-Aug-2012	4-Oct-2012
Mercury (Hg)-Total	0.000016	M	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Total	0.073	F, int	0.0019	0.0019	0.0017	0.0018	0.0011	0.0020	0.0018	0.0018	0.0019	0.0017	0.0017	0.0011	0.0017	0.0017	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	0.01 - 0.22	F, H	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total			<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Selenium (Se)-Total	0.001	F	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver (Ag)-Total	0.0001	F	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total			<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Thallium (Tl)-Total	0.0008	F	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	0.015	F	0.00128	0.00194	0.00088	0.00144	0.00039	0.00182	0.00203	0.00068	0.00155	0.00232	0.00078	0.00091	0.00068	0.00140	0.00131	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	0.03	F	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Metals																								
Aluminum (Al)-Dissolved			0.0067	<0.0050	0.0111	0.0064	0.0271	0.0073	<0.0050	0.0066	<0.0050	<0.0050	0.0104	0.0054	0.0221	<0.0050	<0.0050	<0.0050	-	-	-	-	<0.0050	-
Antimony (Sb)-Dissolved			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	<0.00050	-
Arsenic (As)-Dissolved			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00072	0.00060	<0.00050	0.00060	0.00063	0.00051	0.00063	0.00062	<0.00050	-	-	-	-	<0.00050	-
Barium (Ba)-Dissolved			0.279	0.239	0.191	0.249	0.136	0.286	0.240	0.112	0.133	0.168	0.095	0.110	0.080	0.145	0.124	<0.020	-	-	-	-	<0.020	-
Beryllium (Be)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-	-	-	<0.0010	-
Boron (B)-Dissolved			<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-	-	-	<0.10	-
Cadmium (Cd)-Dissolved			<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	0.000023	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	<0.000017	-	-	-	<0.000017	-
Calcium (Ca)-Dissolved			43.8	44.8	30.8	42.1	19.4	46.6	43.7	49.4	56.5	56.3	42.8	51.5	35.9	54.6	53.5	<0.10	-	-	-	-	<0.10	-
Chromium (Cr)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	-	-	-	<0.0010	-
Cobalt (Co)-Dissolved			<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	-	-	-	-	<0.00030	-
Copper (Cu)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	-	-	-	-	<0.0010	-
Iron (Fe)-Dissolved			<0.030	<0.030	<0.030	0.031	0.055	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.036	<0.030	<0.030	<0.030	-	-	-	-	<0.030	-
Lead (Pb)-Dissolved			<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	-	-	<0.00050	-
Lithium (Li)-Dissolved			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-	<0.0050	-
Magnesium (Mg)-Dissolved			16.7	18.0	11.9	16.6	7.83	18.5	17.4	4.34	10.3	19.0	5.65	5.24	5.60	12.5	8.87	<0.10	-	-	-	-	<0.10	-
Manganese (Mn)-Dissolved			0.00424	0.00488	0.00091	0.00358	0.00051	0.00102	0.00369	<0.00030	0.00426	0.0123	0.00108	0.00093	0.00150	0.00134	0.00248	<0.00030	-	-	-	-	<0.00030	-
Mercury (Hg)-Dissolved			<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	-	-	<0.000010	-
Molybdenum (Mo)-Dissolved			0.0018	0.0017	0.0016	0.0016	0.0011	0.0018	0.0017	0.0018	0.0018	0.0017	0.0016	0.0016	0.0012	0.0016	0.0016	<0.0010	-	-	-	-	<0.0010	-
Nickel (Ni)-Dissolved			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0									



APPENDIX C

AEM Jennings Property, Yukon - 2012 Field Photograph



APPENDIX C

AEM Jennings Property, Yukon - 2012 Field Photographs



Photo 1: Upstream view of BC-1 Discharge Transect, 04 Jun 2012



Photo 2: Upstream view of BC-4 discharge transect, 04 Jun 2012



APPENDIX C

AEM Jennings Property, Yukon - 2012 Field Photographs



Photo 3: Downstream view of BC-5 discharge transect, 04 Jun 2012



Photo 4: Upstream view of BC-2A discharge transect, 04 Jun 2012



APPENDIX C

AEM Jennings Property, Yukon - 2012 Field Photographs



Photo 5: Upstream view of TR-1 discharge transect, 04 Jun 2012



Photo 6: Upstream view of TT-1 discharge transect, 04 Jun 2012



APPENDIX C

AEM Jennings Property, Yukon - 2012 Field Photographs



Photo 7: Upstream view of BC-2A Discharge Transect, 30 Aug 2012



Photo 8: Upstream view of BC-4 discharge transect, 30 Aug 2012



APPENDIX C

AEM Jennings Property, Yukon - 2012 Field Photographs



Photo 9: Downstream view of BC-5 discharge transect, 30 Aug 2012



Photo 10: Upstream view of BC-1 discharge transect, 03 October 2012



APPENDIX C

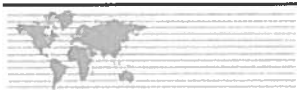
AEM Jennings Property, Yukon - 2012 Field Photographs



Photo 11: Upstream view of BC-4 discharge transect, 03 October 2012



Photo 12: Upstream view of BC-5 discharge transect, 03 October 2012



APPENDIX D

**Taxonomic Enumeration of Benthic Invertebrate Samples
Collected at the Jennings Property, Yukon - September 2011**

APPENDIX D

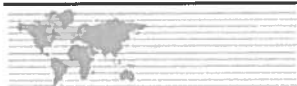
Taxonomic Enumeration of Benthic Invertebrate Samples Collected at the Jennings Property, Yukon - September 2011

Major Taxon	Family	Subfamily	Tribe	Genus/Species	Site BC-4			Site BC-5			Site TR-1		
					A	B	C	A	B	C	A	B	C
Platyhelminthes	Planariidae			<i>Polycelis coronata</i>		7		3	4				
Nematoda	-			-		6		1			1	1	1
Oligochaeta	Enchytraeidae			-	37	3	5			3			1
	Lumbriculidae			-			3	1		1			
	Naididae	Naidinae		-							4		2
	Naididae	Tubificinae		-						3	9		1
Hydracarina	-			-	1	3		4	1		2	12	8
Ostracoda	-			-	6	32	2	75	2	3	1		
Cladocera	Chydoridae			<i>Eurycerus</i>				5					
Ephemeroptera	Ameletidae			<i>Ameletus celer</i>	33	7	15	35	12	21	3	1	1
	Baetidae			<i>Baetis</i>	6	287	1	470	163	4	43	59	115
	Ephemerellidae (l/d)			-		58	1	25	22		1		7
	Ephemerellidae			<i>Drunella coloradensis</i>				1					
				<i>Drunella doddsii</i>	2	13	1	12	9	1			
				<i>Drunella grandis</i>		1					1	2	
	Heptageniidae (l/d)			-	11	10	8	40	11	12			1
	Heptageniidae			<i>Epeorus</i>	3	6	5	6	9	3			
				<i>Cinygmula</i>	9	18	2	10	5	2			1
				<i>Rhythrogena</i>	3	1	1	2		1			
Plecoptera (l/d)				-	1	6				1		1	
Plecoptera	Capniidae			-	44	12	56	86	18	36	21	49	69
	Chloroperlidae (l/d)			-	1	4	3	1	1	2			
	Chloroperlidae			<i>Sweltsa</i>		12	3	57	3	2			1
	Leuctridae			<i>Despaxia augusta</i>		4	2	5	1		1		3
	Nemouridae			<i>Visoka cataractae</i>	1					3			
	Nemouridae			<i>Zapada</i>	43	104	11	77	83	17	24	36	54
	Perlidae (l/d)			-					1				
	Perlidae			<i>Isoperla</i>		1		2					
				<i>Megarcys</i>	1	2	1	2	1	2			
				<i>Taenionema</i>	1					1			
Trichoptera	Glossosomatidae			<i>Glossosoma</i>		2		5	2		1		
	Hydropsychidae			<i>Parapsyche</i>									
	Lepidostomatidae			<i>Lepidostoma</i>				2					
	Limnephilidae (l/d)			-	1	2			1				
	Rhyacophilidae			<i>Rhyacophila</i>	2	11			1			2	1

APPENDIX D

Taxonomic Enumeration of Benthic Invertebrate Samples Collected at the Jennings Property, Yukon - September 2011

Major Taxon	Family	Subfamily	Tribe	Genus/Species	Site BC-4			Site BC-5			Site TR-1		
					A	B	C	A	B	C	A	B	C
Diptera	Chironomidae			(pupa)	2		1		5	1	4	1	2
		Tanypodinae	Pentaneurini	<i>Thienemannimyia</i> group							3	1	2
		Diamesinae	Protanyplini	<i>Diamesa</i>	1					2			
				<i>Pagastia</i>	2	30		11	16	2		2	2
				<i>Pseudodiamesa</i>	2		2		1	1		2	1
		Prodiamesinae		<i>Monodiamesa</i>									
				<i>Odontomesa</i>							1		
		Orthoclaadiinae	Orthoclaadiini	<i>Acricotopus</i>	2			5		3			
				<i>Bnllia</i>					1				
				<i>Cricotopus</i> / <i>Orthoclaadius</i>	3	6	1	10	1		5	26	11
				<i>Eukiefferella</i>					4				
				<i>Heterotriassoclaadius</i>				5					
				<i>Hydrobaenus</i>			1					1	
				<i>Melnicnemus</i>				5					
				<i>Parakiefferella</i>									
				<i>Parorthoclaadius</i>	4	1	1		2	1	1	1	
				<i>Psectrocladius</i>									
				<i>Tvelenia</i>	5				5			1	
		Chironominae	Chironomini	<i>Polypedium</i>								7	2
			Tanytarsini	<i>Micropsectra</i>				11	2		5	5	6
				<i>Micropsectra</i> / <i>Tanytarsus</i>	3	2	3	20				1	
	Ceratopogonidae	Ceratopogoninae		<i>Culicoides</i>		2					16	29	37
	Empididae			<i>Chelifera</i>									
				<i>Oreogelion</i>	2	1	1	1		1	1		
	Psychodidae			<i>Pericoma</i>	1								
	Simuliidae			<i>Helodon onychodactylus</i> (pupa)	1								
				<i>Simulium</i>									
	Tipulidae			<i>Dicranota</i>	2	2	5	1		2	1	1	1
Terrestrial	-	-	-	-	2		1	4		1		2	1
Total					238	656	136	1000	387	132	135	257	333



APPENDIX E

Calculated Biomass for Benthic Invertebrate Samples Collected for Jennings Property, Yukon - September 2011

4/18/2013

1210210002-005-R-Rev0

APPENDIX E

Calculated Biomass for Benthic Invertebrate Samples Collected for Jennings Property Yukon - September 2011

Biomass (g)	BC-4 A	BC-4 B	BC-4 C	BC-5 A	BC-5 B	BC-5 C	TR-1 A	TR-1 B	TR-1 C
Other taxa	0.0304	0.0932	0.0215	0.0661	0.0343	0.0419	0.0214	0.0702	0.0489
EPT	0.2188	0.3853	0.0769	0.1340	0.2621	0.0974	0.0986	0.0505	0.1136
Total	0.2492	0.4785	0.0984	0.2001	0.2964	0.1393	0.1200	0.1207	0.1625

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