

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
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ASSESSMENT REPORT

describing

GEOLOGICAL MAPPING, LITHOGEOCHEMICAL SAMPLING AND WATER SAMPLING

Field work performed on August 23, 2015

at the

HEC PROPERTY

Hec 1-26 YF47204-YF47229

NTS 105D/11
Latitude 60°43'N; Longitude 135°14'W

located in the

Whitehorse Mining District
Yukon Territory

prepared by

Archer, Cathro & Associates (1981) Limited

for

Strategic Metals Ltd.

by

Heather Burrell, P.Geo

April 2016

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INTRODUCTION

The Hec property covers a series of limestone outcrops, which may be suitable for conversion to lime for use in industrial purposes. The property lies within the historical Whitehorse Copper Belt in southern Yukon, and is 100% owned by Strategic Metals Ltd.

The report describes a short program of geological mapping, lithogeochemical sampling and water sampling that was conducted to determine the size potential and purity of the limestone exposures on the Hec property. The field work was performed on August 23, 2015 by Archer, Cathro & Associates (1981) Limited on behalf of Strategic Metals. The author participated in this work, and her Statement of Qualifications appears in Appendix I. A Statement of Expenditures is located in Appendix II.

PROPERTY LOCATION, CLAIM DATA AND ACCESS

The Hec property consists of 26 contiguous mineral claims located in southern Yukon at latitude 60°43' north and longitude 135°14' west on NTS map sheet 105D/11 (Figure 1). The property covers an area of approximately 520 ha (5.2 km²) and is located in the traditional territory of the Kwanlin Dun First Nation. The claims are registered with the Whitehorse Mining Recorder in the name of Archer Cathro, which holds them in trust for Strategic Metals. Specifics concerning claim registration are tabulated below, while the locations of individual claims are shown on Figure 2.

<u>Claim Name</u>	<u>Grant Number</u>	<u>Expiry Date*</u>
Hec 1-26	YF47204-YF47229	April 29, 2021

* Expiry date includes 2015 work, which has been filed for assessment credit.

The road accessible Hec property lies within and immediately outside the Whitehorse City Limits. In 2015, the crew accessed the property by truck from the Alaska Highway via Fish Lake road, Haeckel Hill road and an existing trail, which cuts through the southern part of the property. Neither the property nor the access route overlies first nation settlement land; however, the first 500 m of the Haeckel Hill road crosses private land owned by Icy Waters Ltd.

PREVIOUS WORK

There are no known mineral occurrences on the Hec property, but a system of trails and overgrown roads likely date from historical exploration done when mining was active within the Whitehorse Copper Belt. The most well used trail extends across the southern part of the claim block.

The Hec claims were staked in July 2015.

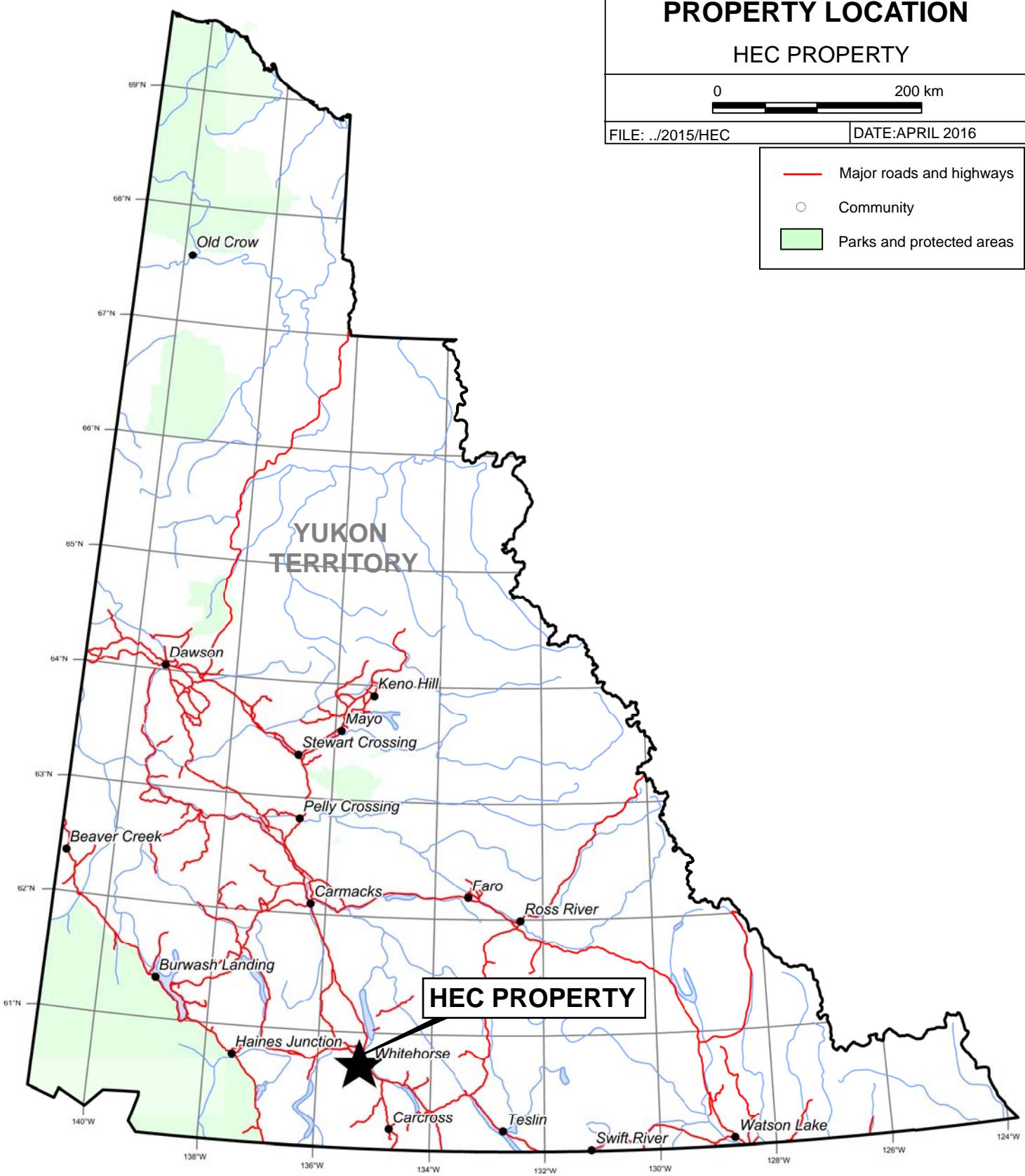
STRATEGIC METALS LTD.**FIGURE 1**
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
PROPERTY LOCATION
HEC PROPERTY

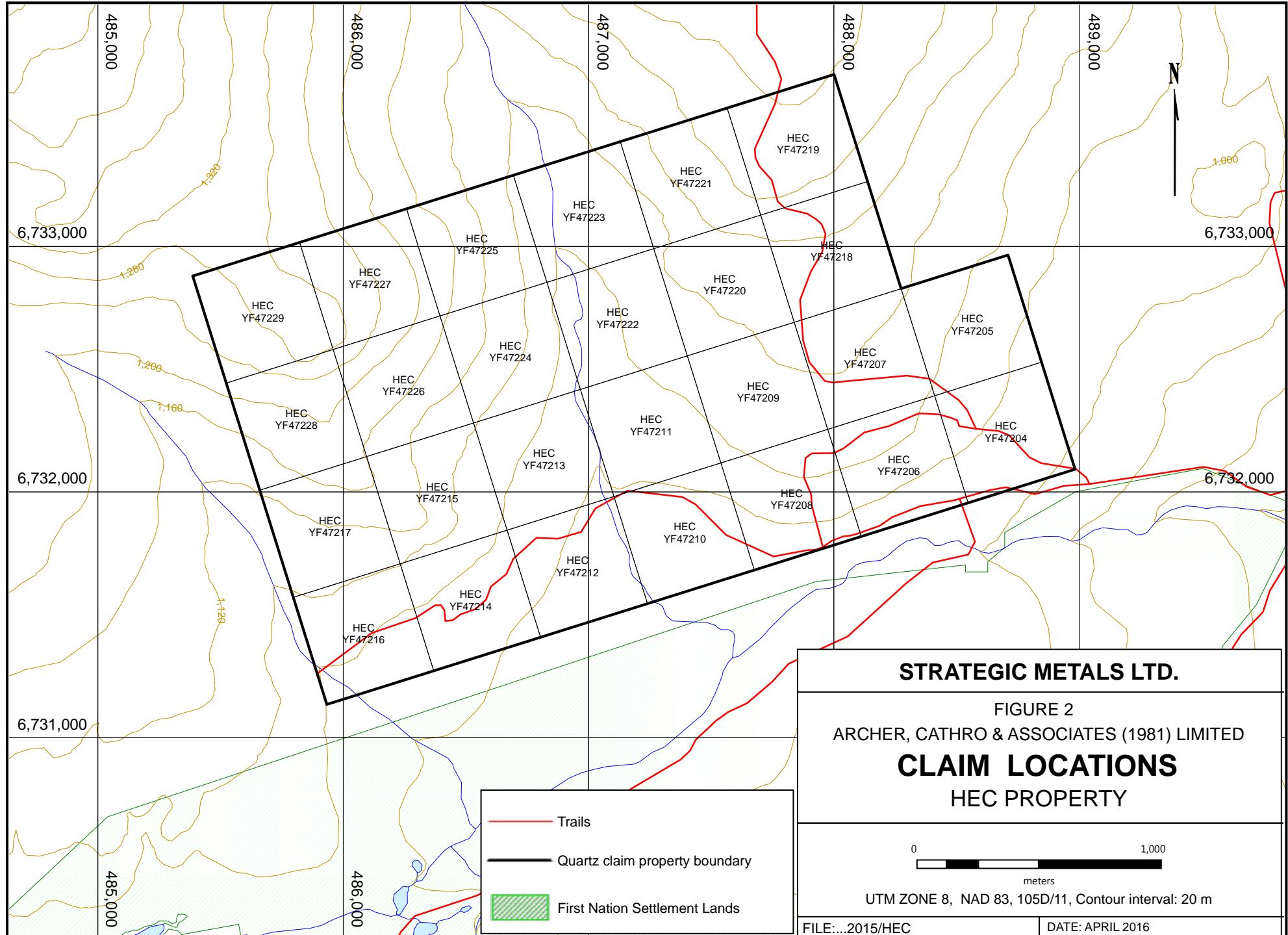
0 200 km

FILE: ./2015/HEC

DATE: APRIL 2016

- Major roads and highways
- Community
- Parks and protected areas





GEOMORPHOLOGY

The Hec property is located on the south side of Mount Sumanik or Haeckel Hill, as it is more commonly referred to, immediately north of Porter Creek. The property is drained by two small tributaries of Porter Creek, which flows into Hidden Lake and is part of the Yukon River watershed.

The property lies within subalpine terrain at elevations ranging from about 960 to 1320 m above sea level. The area is below treeline and is forested with black spruce, pine, poplar and willow with an understory of buckbrush, alder and moss.

This part of the Yukon was glaciated during the Late Pleistocene (26,000 to 10,000 years ago) McConnell Glaciation. The local ice direction was from south to north. Local evidence of glaciation includes till and other glaciofluvial material, moraines, erratics and glacial striations on bedrock surfaces.

The Hec property is generally snow-free from late May until early October. The climate in the area is typical of northern continental regions with long, cold winters, truncated fall and spring seasons and relatively temperate summers.

GEOLOGY

The Hec property lies within Stikinia, a predominantly island-arc terrane that extends through northern British Columbia into central Yukon (Figure 3). Northern Stikinia is composed of the Upper Triassic Lewes River arc and its plutonic roots.

The Hec area was mapped by the Yukon Geological Survey (YGS) in 1990 by C.J.R. Hart, and J.K. Radloff. In 2015, the YGS completed a Yukon-wide geological compilation and updated unit names (YGS, 2016).

The Hec property is underlain by the Aksala Formation of the Upper Triassic Lewes River Group, which is subdivided into the Mandanna and Hancock members (Figure 4). The southern part of the property is covered by the Hancock Member, a 217 to 204 million year old package of massive to thick bedded limestone; minor thin bedded argillaceous to sooty limestone; coarsely crystalline, massive dolostone; minor laminated chert; and, limestone conglomerate debris flows (uTrAK2). The Hancock Member is overlain to the north by the Mandanna Member, a 204 to 200 million year old sequence of red weathering, medium bedded, grey and red greywacke and pebble conglomerate; red shale partings and minor interbedded bioturbated siltstone; and, crystal-rich greywacke and shale (uTrAK3).

In 2015, property-scale mapping was completed in parts of the property using a hand-held GPS unit for control. Six outcrops of the Handcock Member comprising medium grey, medium grained, fossiliferous limestone were mapped within a 700 by 200 m area (Figure 5). The limestone outcrops are crudely bedded, striking north-northeast and dipping approximately 80° to the east. The limestone outcrops span a strike length of 600 m and indicate a width of at least 200 m. The elevation change from the lowest to highest outcrop is 53 m. No attempt was made

FIGURE 3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

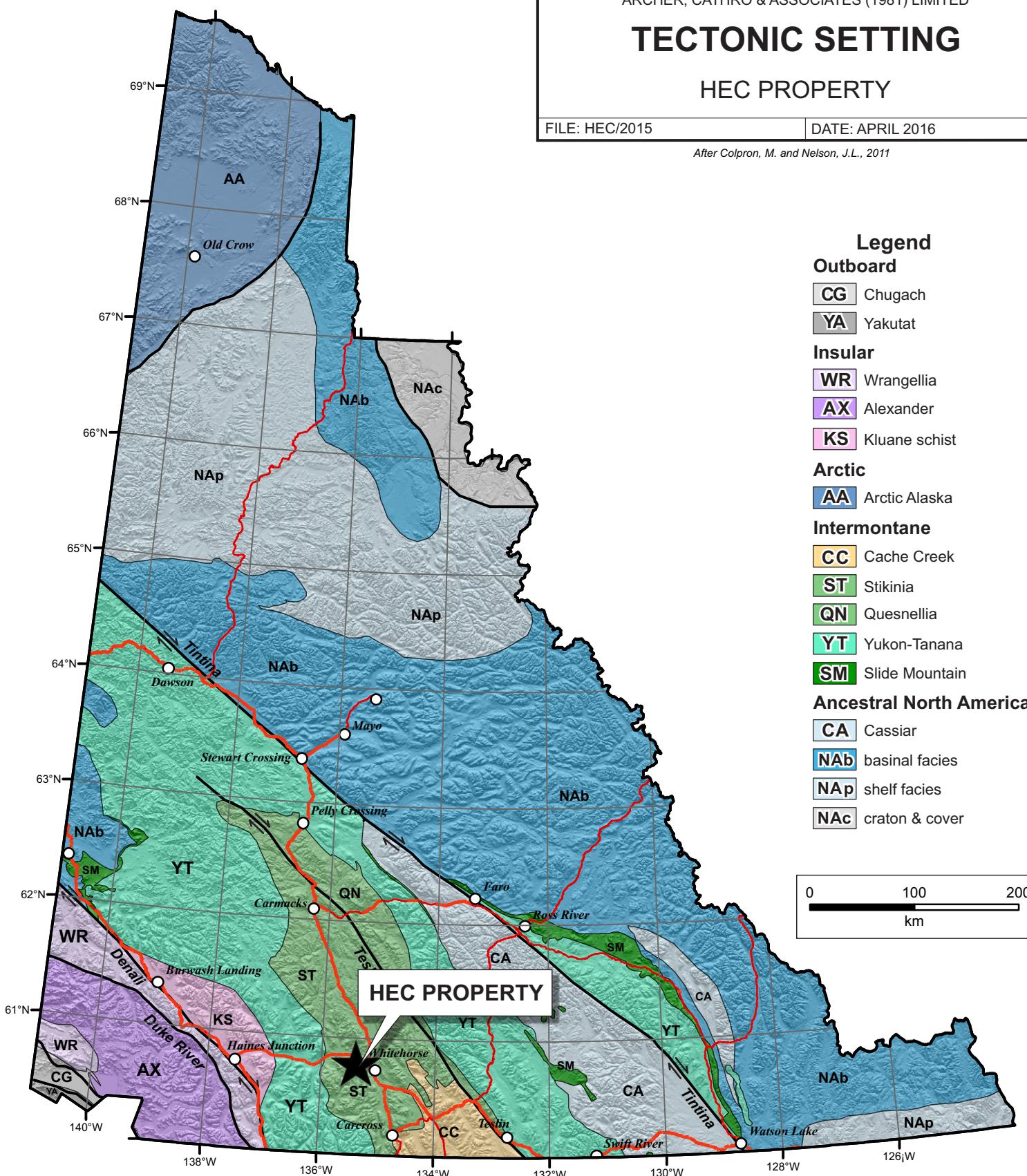
TECTONIC SETTING

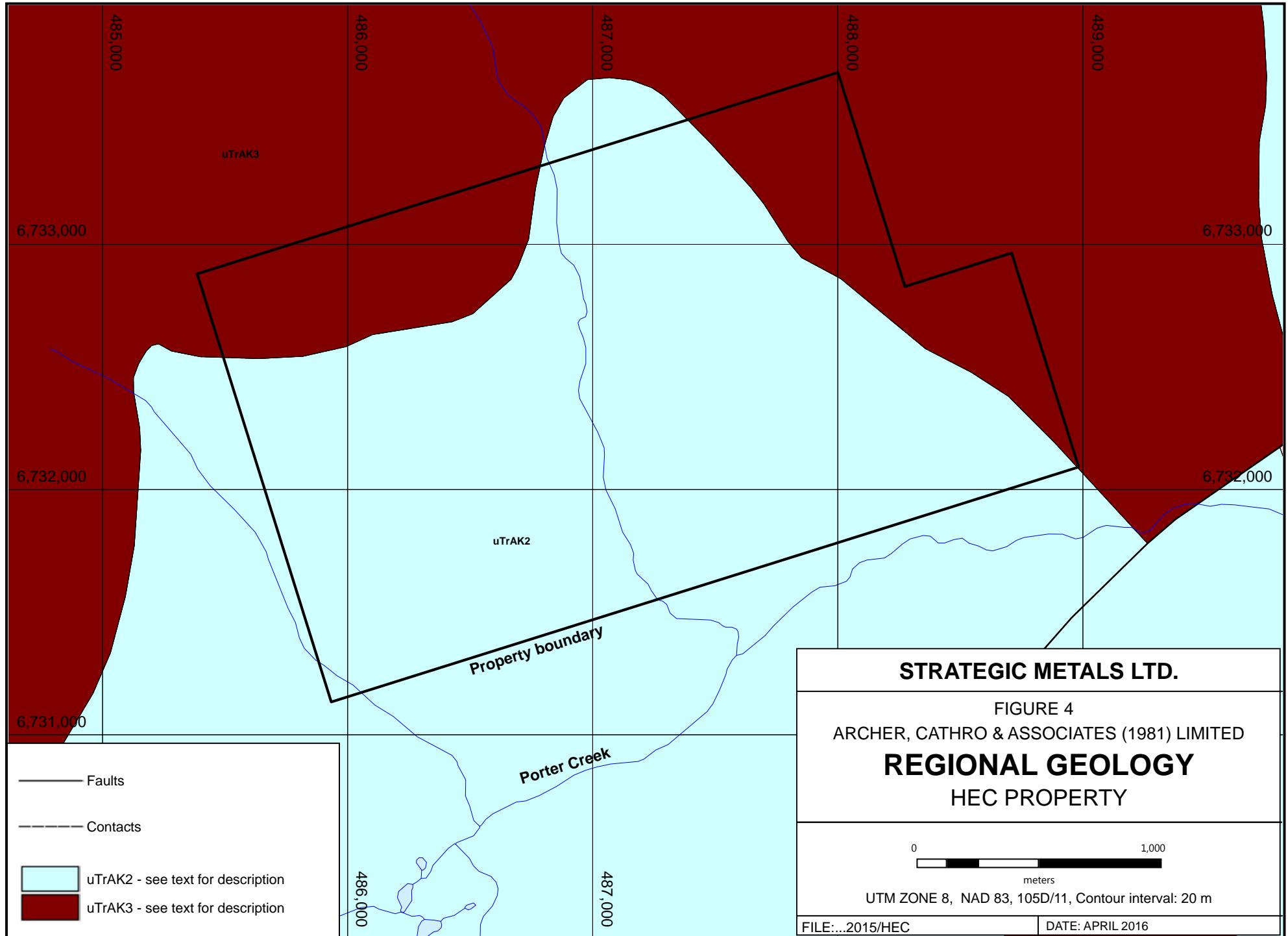
HEC PROPERTY

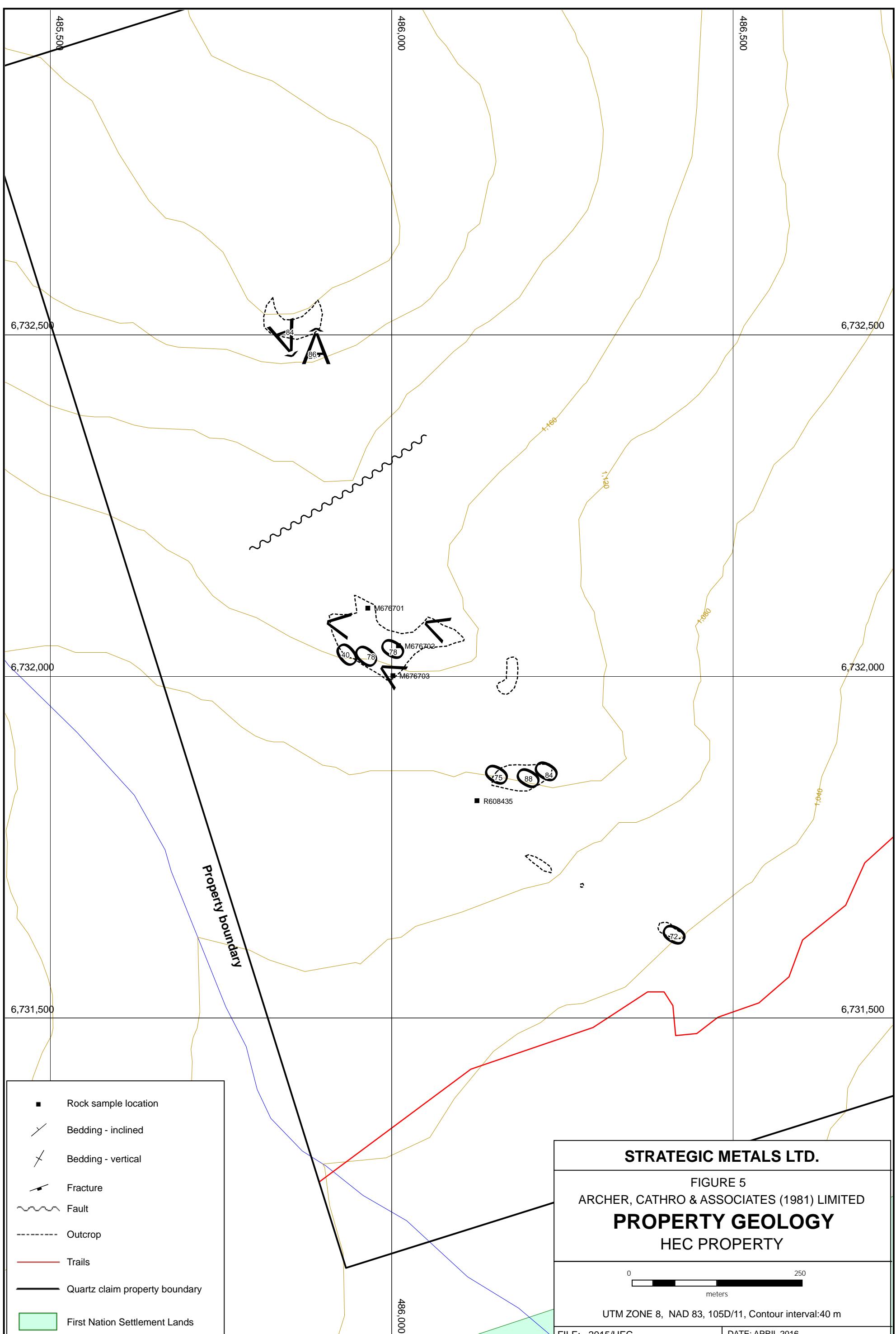
FILE: HEC/2015

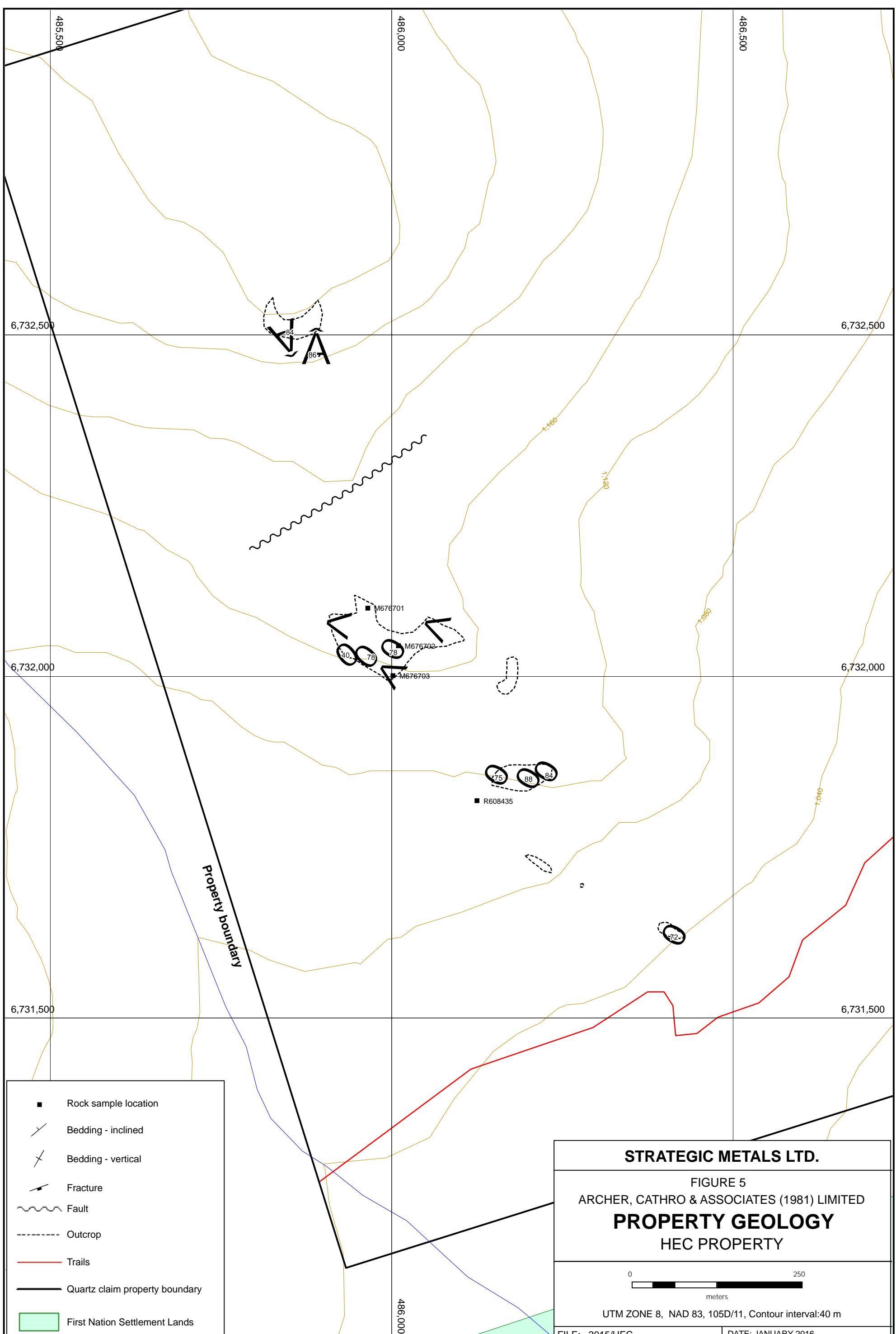
DATE: APRIL 2016

After Colpron, M. and Nelson, J.L., 2011









to expose the limestone bedrock between the outcrops. Assuming continuity between outcrops, the surface area is about 120,000 m².

LITHOGECHEMISTRY

In 2015, four continuous chip samples were taken from four of the six limestone outcrops on the property. Chip sample locations are shown on Figure 4.

Sample preparation was carried out by ALS Minerals in Whitehorse, where the samples were dried, fine crushed to better than 70% passing -2mm before a 250 g split was pulverized to better than 85% passing 75 micron. The fine fractions were then sent to ALS Minerals in North Vancouver, where they were analysed for 48 elements using a four acid digestion and inductively coupled plasma with atomic emission spectrometry (ME-MS61). Additionally, whole rock composition was determined using a 13 element whole rock fusion package with sample decomposition in lithium borate fusion and analysis by x-ray fluorescence (XRF) spectroscopy (ME-XRF26) and loss-on-ignition (LOI) at 1000 °C (OA-GRA05). Certificates of Analysis are given in Appendix III.

The calcium carbonate (CaCO₃) content of the samples was calculated from the XRF analysis by adding the CaO and LOI values. This calculation assumes that all CaO in the sample was CaCO₃ before the 1000 °C lithium borate fusion process calcinated the limestone to lime, with the evolution of CO₂ accounting for the entire LOI value.

The four chip samples returned an average grade of 98.36% CaO, with all samples grading over 97.26% CaCO₃. ME-MS61 results indicate that the samples contain only trace amounts of elements that are considered impurities for the production of chemical lime. For most industrial uses, the levels of impurities are more important than the quality of the lime because various calcium compounds can form. This can reduce the reactivity of the lime by blocking the pores that form during the calcination process. Impurities can also exclude lime from being used in certain processes because of unwanted interactions between the impurities and other elements in the process.

ME-XRF26 results indicate that the samples have very low (<0.76%) magnesium carbonate content, which is important because elevated magnesium carbonate contents will yield dolomitic lime, which is less versatile than chemical lime. Table I below shows the length of sample, and the CaCO₃, LOI and MgO contents of each sample as determined by XRF analysis. CaCO₃ content is calculated using the technique described above.

Table I – Chip Sample Results

Sample Number	Length (m)	CaO (%)	LOI (%)	CaCO ₃ (%)	MgO (%)
M676701	0.7	54.6	42.66	97.26	0.76
M676702	1.4	55.9	43.26	99.16	0.35
M676703	1.4	54.9	43.24	98.14	0.43
R608435	3.0	55.9	42.98	98.88	0.38

The limestone sampled on the Hec property would make excellent feedstock for the production of chemical lime due to its high CaCO₃ content, low magnesium carbonate values and low levels of other impurities.

WATER QUALITY BASELINE DATA

In winter 2015, J. Gibson Environmental Consulting of Whitehorse, Yukon was contracted to compile the publically available water and air quality data in the Hec property area. Information was gathered from the following sources: National Air Pollution Surveillance Network; Fish Creek at Station PS-1 and PS-3; McIntyre Creek at Station PS-5a; Porter Creek Upstream of the City of Whitehorse landfill; and, Ibex River Water Survey of Canada (Gibson, 2015). Appendix IV contains a digital copy of the compiled results.

Tables II and III below provide comparisons of water quality data from McIntyre Creek (PS-1 and PS-5a) and Porter Creek (PCUS) from 2004 to 2015 and from 2003 to 2012, respectively.

Table II – Water Quality Comparisons on McIntyre Creek

Element	Units	PS-1	PS-1	PS-5a	PS-5a
		2004	2015	2004	2015
Calcium	mg/L	49.60	52.40	29.9	37.5
Iron	mg/L	<0.1	0.008	0.1	0.826
Magnesium	mg/L	12.1	11.4	6.6	7.3
Manganese	mg/L	<0.005	0.0011	0.006	0.021
Potassium	mg/L	1.3	1.4	1.2	1.3
Silicon	mg/L	5.24	6.06	4.41	7.04
Sulfur	mg/L	3.83	n/a	3.57	n/a
Sodium	mg/L	4.2	4.6	3.4	3.4
Titanium	mg/L	0.0005	<0.0001	0.0073	0.0358
Aluminum	mg/L	0.008	0.007	0.152	0.756
Antimony	mg/L	<0.0002	<0.0001	<0.0002	<0.0001
Arsenic	mg/L	0.001	0.00108	0.0011	0.00139
Barium	mg/L	0.027	0.0283	0.034	0.0347
Beryllium	mg/L	<0.0001	<0.00005	<0.0001	<0.00005
Bismuth	mg/L	<0.0005	<0.0001	<0.0005	<0.0001
Boron	mg/L	0.005	0.026	0.003	0.008
Cadmium	mg/L	<0.00001	<0.00001	0.00001	0.00001
Chromium	mg/L	0.0013	0.0012	0.0006	0.0014
Cobalt	mg/L	<0.0001	<0.0005	<0.0001	0.0004
Copper	mg/L	<0.001	0.0006	<0.001	0.0021
Lead	mg/L	<0.0001	<0.0001	0.0001	0.0004
Lithium	mg/L	0.001	0.0008	0.001	0.0011
Mercury	mg/L	n/a	n/a	n/a	n/a
Molybdenum	mg/L	0.002	0.00318	0.001	0.00109
Nickel	mg/L	0.0012	<0.0002	0.0008	0.0006

Selenium	mg/L	0.0003	0.0004	<0.0002	0.0002
Silver	mg/L	<0.0001	<0.00005	<0.0001	<0.00005
Strontium	mg/L	0.267	0.277	0.179	0.18
Thallium	mg/L	<0.0005	<0.00001	<0.00005	<0.00001
Tin	mg/L	<0.001	<0.0001	<0.001	<0.0001
Uranium	mg/L	0.0021	0.00205	0.0008	0.00125
Vanadium	mg/L	0.0011	0.0013	0.0008	0.0024
Zinc	mg/L	0.004	0.0009	0.003	0.0045
Zirconium	mg/L	<0.001	<0.0005	<0.001	<0.0005

The Porter Creek monitoring site is located upstream from the City of Whitehorse landfill, but downstream from Icy Waters.

Table III – Water Quality Comparisons on Porter Creek

Element	Unit	PSUS	PSUS
		2003	2012
Aluminum	mg/L	<0.01	<0.005
Antimony	mg/L	<0.02	<0.0002
Arsenic	mg/L	<0.02	0.001
Barium	mg/L	0.0223	0.025
Beryllium	mg/L	<0.0006	<0.00004
Bismuth	mg/L	<0.02	<0.001
Boron	mg/L	n/a	0.004
Cadmium	mg/L	<0.0006	<0.00001
Calcium	mg/L	43.9000	51.4
Chromium	mg/L	<0.001	0.0015
Cobalt	mg/L	<0.001	0.00008
Copper	mg/L	<0.001	<0.001
Iron	mg/L	0.0310	0.045
Lead	mg/L	<0.005	<0.0001
Lithium	mg/L	<0.005	0.001
Magnesium	mg/L	10.0000	10.5
Manganese	mg/L	0.0123	0.004
Molybdenum	mg/L	<0.01	0.0028
Nickel	mg/L	<0.001	<0.001
Phosphorus	mg/L	<0.06	0.033
Potassium	mg/L	0.8000	1.2
Selenium	mg/L	0.1900	<0.0006
Silicon	mg/L	6.2000	4.96
Silver	mg/L	<0.002	<0.00001
Sodium	mg/L	3.3300	3.8
Strontium	mg/L	0.2140	0.253
Sulphur	mg/L	3.4000	4.6
Thallium	mg/L	n/a	<0.00001

Thorium	mg/L	<0.005	<0.0004
Tin	mg/L	<0.005	<0.0001
Titanium	mg/L	<0.001	<0.01
Uranium	mg/L	<0.06	0.0017
Vanadium	mg/L	<0.001	0.00075
Zinc	mg/L	0.0390	<0.001
Zirconium	mg/L	<0.005	<0.0001

DISCUSSION AND CONCLUSIONS

The Hec property hosts a limestone body that appears to be chemically suitable for lime production. Cursory exploration has identified a prospective area covering at least 120,000 m². Assuming the limestone body connects between exposures and continues homogeneously to depth, the Hec property could justify development as a lime source.

The 2015 work successfully identified a limestone body with size and composition that warrant follow up work. The geometry of the limestone body and its proximity to Whitehorse support the potential for quarrying of the prospect to help meet the increased demand for chemical lime expected to occur if new mines are put into production in Yukon or northern British Columbia.

The next phase of exploration should include the use of a track- or skid-mounted diamond drill to obtain data regarding the continuity of the limestone along strike and down-dip; its subsurface chemistry and average density; wallrock contacts and composition; future orientation and density; and, subsurface water quality and flow rates. A detailed survey, including upgrade requirements for the existing access route should also be conducted. This survey should pay particular attention to material underlying the proposed route and potential sources of gravel for its construction. Ongoing water quality information should be collected to compare with the known baseline data.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

Heather Burrell, P.Geo

REFERENCES

- Colpron, M. and Nelson, J.L.,
2011 A Digital Atlas of Terranes for the Northern Cordillera; Accessed online from Yukon Geological Survey (www.geology.gov.yk.ca).
- Hart, C.J.R. and Radloff, J.K.
1990 Geology of Whitehorse, Alligator Lake, Fenwick Creek, Carcross and part of Robinson Map Areas (105D/11, 6, 3, 2 and 7).
- Gibson, J.
2015 Compilation report on air and water quality data in the Hec property area.
- Yukon Geological Survey,
2016 Yukon Digital Bedrock Geology,
http://www.geology.gov.yk.ca/update_yukon_bedrock_geology_map.html,
accessed: January 5, 2016.

APPENDIX I
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Heather Burrell, geologist, with business addresses in Vancouver and Squamish, British Columbia and Whitehorse, Yukon Territory and residential address in Squamish, British Columbia do hereby certify that:

1. I graduated from the University of British Columbia in 2006 with a B.Sc in Geological Sciences.
2. From 2004 to present, I have been actively engaged in mineral exploration in the Yukon Territory, British Columbia and Northwest Territories.
3. I am a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia.
4. I am a partner in Archer, Cathro & Associates (1981) Limited.
5. I have interpreted all data resulting from this work.



H. Burrell, B.Sc., P.Geo

APPENDIX II
STATEMENT OF EXPENDITURES

Statement of Expenditures
Hec 1-26 Mineral Claims
April 30, 2016

Labour

D. Eaton (geologist) 9 hours August to January at \$120/hr	1,134.00
H. Burrell (geologist) 85 hours August to January at \$106/hr	9,460.50
J. Stevens (EIT) 83 hours August to January at \$85/hr	7,407.75
A. Mitchell (geologist) 8 hours August to January at \$82/hr	688.80
S. Newman (office) 11 1/2 hours August to January at \$64/hr	<u>772.80</u>
	19,463.85

Expenses (including management)

Field room and board 2 days at \$180/day	406.80
J. Gibson Environmental Consulting	1,152.60
ALS Chemex	<u>50.32</u>
	1,609.72
	<u>\$21,073.57</u>

APPENDIX III
CERTIFICATES OF ANALYSIS



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Page: 1
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Plus Appendix Pages
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Account: MTT

CERTIFICATE WH15129654

Project: HEC

This report is for 1 Rock sample submitted to our lab in Whitehorse, YT, Canada on 27-AUG-2015.

The following have access to data associated with this certificate:

HEATHER BURRELL

JOAN MARIACHER

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-XRF26	Whole Rock By Fusion/XRF	XRF
OA-GRA05x	LOI for XRF	WST-SEQ
ME-MS61	48 element four acid ICP-MS	

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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Colin Ramshaw, Vancouver Laboratory Manager



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CERTIFICATE OF ANALYSIS WH15129654

Sample Description	Method	WEI-21	ME-MS61													
	Analyte	Revd Wt.	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe
	Units	kg	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%
R608435		2.32	0.01	0.03	0.9	10	<0.05	0.02	36.4	0.30	0.24	0.2	2	<0.05	8.0	0.03



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CERTIFICATE OF ANALYSIS WH15129654

Sample Description	Method Analyte Units LOR	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-MS61 K %	ME-MS61 La ppm 0.01	ME-MS61 Li ppm 0.5	ME-MS61 Mg %	ME-MS61 Mn ppm 0.2	ME-MS61 Mo ppm 0.01	ME-MS61 Na %	ME-MS61 Nb ppm 0.05	ME-MS61 Ni ppm 0.1	ME-MS61 P ppm 0.2	ME-MS61 Pb ppm 10	ME-MS61 ppm 0.5
R608435		0.08	0.12	<0.1	<0.005	0.01	<0.5	0.4	0.26	39	0.67	0.01	0.1	0.3	90	<0.5	



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Sample Description	Method Analyte Units LOR	ME-MS61 Rb ppm 0.1	ME-MS61 Re ppm 0.002	ME-MS61 S %	ME-MS61 Sb ppm 0.01	ME-MS61 Sc ppm 0.05	ME-MS61 Se ppm 0.1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.2	ME-MS61 Ti %	ME-MS61 Tl ppm 0.005	ME-MS61 U ppm 0.02	ME-MS61 V ppm 0.1	ME-MS61 1
R608435		0.4	<0.002	0.01	0.09	0.1	<1	<0.2	324	<0.05	<0.05	<0.2	<0.005	<0.02	1.1	3	



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CERTIFICATE OF ANALYSIS WH15129654

Sample Description	Method Analyte Units LOR	ME-MS61 W ppm 0.1	ME-MS61 Y ppm 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	ME-XRF26 Al2O3 %	ME-XRF26 BaO %	ME-XRF26 CaO %	ME-XRF26 Cr2O3 %	ME-XRF26 Fe2O3 %	ME-XRF26 K2O %	ME-XRF26 MgO %	ME-XRF26 MnO %	ME-XRF26 Na2O %	ME-XRF26 P2O5 %	ME-XRF26 SO3 %
R608435		<0.1	0.4	2	0.8	0.07	<0.01	55.9	<0.01	0.05	0.02	0.38	0.02	<0.01	0.02	0.02



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Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 9-SEP-2015
Account: MTT

Project: HEC

CERTIFICATE OF ANALYSIS WH15129654

Sample Description	Method	ME-XRF26	ME-XRF26	ME-XRF26	ME-XRF26	OA-GRA05x
	Analyte	SiO2	SrO	TiO2	Total	LOI 1000
	Units	%	%	%	%	%
	LOR	0.01	0.01	0.01	0.01	0.01
R608435		0.30	0.04	0.02	99.86	42.98



ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
www.alsglobal.com

To: STRATEGIC METALS LTD.
C/O ARCHER, CATHRO & ASSOCIATES (1981)
LIMITED
1016-510 W HASTINGS ST
VANCOUVER BC V6B 1L8

Page: Appendix 1
Total # Appendix Pages: 1
Finalized Date: 9-SEP-2015
Account: MTT

Project: HEC

CERTIFICATE OF ANALYSIS WH15129654

CERTIFICATE COMMENTS	
Applies to Method:	ANALYTICAL COMMENTS REE's may not be totally soluble in this method. ME-MS61
Applies to Method:	LABORATORY ADDRESSES Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada. CRU-31 CRU-QC LOG-21 PUL-31 PUL-QC SPL-21 WEI-21
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. ME-MS61 ME-XRF26 OA-GRA05x

APPENDIX IV
WATER QUALITY BASELINE DATA

**Heather Burrell
Archer Cathro & Assoc 1981
Vancouver BC**

RE: Heackle Hill Data

Attached is the following data for the Heackle Hill area. Surface water quality and flow volume data is limited to the south and east side of the hill – there is nothing for the north and west sides.

1. **National Air Pollution Surveillance network (NAPS).** An Environment Canada program measuring pollutants nationally (particulates / PM2.5, nitrogen dioxide and ground level ozone). Site is now located in downtown Whitehorse. Data is monthly summaries / means for 2010 to 2014. There is data for before 2010 if you wish, 2015 data is yet to be published but will be available some time in 2016.
2. **Fish Creek at Station PS-1 and PS-3 and McIntyre Creek at PS-5a.** Data from Icy Water fish hatchery license monitoring and Water Resources regulatory monitoring. Data is hit and miss for period 2004 to 2015. Big data gap 2005 to 2010. There is data for that period but is mostly pH, BOD5 and flow volumes – felt that was not applicable so did not include. It was a 400 page excel file so had to pick the relevant data out.
3. **Porter Creek Upstream. City Whitehorse Landfill data.** Data includes routine chemistry, total metals and dissolved metals (not always both) for twice annual samples June 2002 to October 2012. 2013, 2014 and 2015 data is available but cannot access till later in January.
4. **Ibex River Water Survey of Canada Flow Volumes 2003 to 2013.** Data is mean daily flow volumes. I have included data from 1989 to 2002 on the disc but not printed. 2014 and 2015 data is not available yet.

There is other data available but you can decide if you want it or not. Data includes:

Yukon Energy – Daily temperatures and wind speed for Heackle Hill wind turbine site. They are also collecting data for Mt Sumanik (to southwest) that can be obtained later.

Daily weather data for Whitehorse (historical data) available on EC weather web site – major amount of data if you need it.

YTG is expanding the pollutant surveillance network but no definitive locations or time frame yet.

If you need anything else – let me know.


John

J.Gibson Env. Consulting

*Box 20913 Whitehorse, Yukon Y1A 6P2
Ph: (867) 633-4522*

December 31, 2015

**Archer Cathro & Associates 1981 Ltd.
1016 – 510 West Hastings St.
Vancouver , B.C.
V6B 1L8**

Attention: Joan M., Heather B.

RE: Data Research – Heackle Hill Project

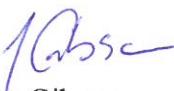
I N V O I C E # 15 – 57

Data Research and Compile 12 hrs @ \$85	\$	1020.00
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GST @ 5% (BN122893829)	<u>51.00</u>
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TOTAL	\$	1'071.00
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Thank you,


John Gibson

**Payment to: J. Gibson Env Consulting
Box 20913 Whitehorse, Yukon Y1A 6P2**

National Air Pollution Surveillance Whitehorse 2010 – 2014.

NAPS Means Data Whitehorse 2010

NAPS ID	City	Location	Elev.	LandUse	Pollutant	%Completeness												
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Aver.
119003	Whitehorse	1091-1st Avenue	643	Commercial	O3	26	29	37	38	32								41
119003	Whitehorse	1091-1st Avenue	643	Commercial	CO	0.2	0.4	0.4	0.6	0.7								41
119003	Whitehorse	1091-1st Avenue	643	Commercial	PM2.5 (TEOM)	2	2	2	3	2	2	2	2	2	1	2	3	99

NAPS Means Datafile

Units:

SO2 NO2 O3 NO and NOx are ppb

CO is ppm

PM10 and PM2.5 are in ug/m3

Reporting criteria:

Monthly averages are reported if at least 50% of the hours during the month have valid measurements

Annual average and standard deviation are reported if 50% of hours in year are valid and each quarter has at least 2 valid months

NAPS Means Data Whitehorse 2011

NAPS															StdDev	%Complete				
ID	City	Location	Elev (m)	LandUse	Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Aver	.	%Complete
119003	Whitehorse	1091-1st Avenue	643	Commercial	O3	23		32	39			18								40
119003	Whitehorse	1091-1st Avenue	643	Commercial	CO	0.3	0.3	0.4	0.2	0.2	0.2									51
119003	Whitehorse	1091-1st Avenue	643	Commercial	PM2.5 (TEOM)	2	2	4	3	4	3	2	1		2	3	2	2	3	89
119004	Whitehorse	410 Steele Street	640	Residential	NO2										5	8	9			26
119004	Whitehorse	410 Steele Street	640	Residential	O3										21	22	25			26
119004	Whitehorse	410 Steele Street	640	Residential	NO										3	6	6			26
119004	Whitehorse	410 Steele Street	640	Residential	CO										0.5	0.8	0.3			26
119004	Whitehorse	410 Steele Street	640	Residential	NOX										8	14	16			26

NAPS Means Datafile

Units:

SO2 NO2 O3 NO and NOx are ppb

CO is ppm

PM10 and PM2.5 are in ug/m3

Reporting criteria:

Monthly averages are reported if at least 50% of the hours during the month have valid measurements

Annual average and standard deviation are reported if 50% of hours in year are valid and each quarter has at least 2 valid months

NAPS Means Data Whitehorse 2012

NAPS ID	City	Location	Elev. e	Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Aver.	e	
119003	Whitehorse	1091-1st Avenue	643	Commercial PM2.5 (TEOM)													0		
119004	Whitehorse	410 Steele Street	640	Residential NO2	12	7	9	6	2	2	2	2	2	5	9	11	6	7	98
119004	Whitehorse	410 Steele Street	640	Residential O3	21	29	30	35	37	27	21	22	26					77	
119004	Whitehorse	410 Steele Street	640	Residential NO	9	3	4	2	1	2	2	2	2	3	5	10	4	8	98
119004	Whitehorse	410 Steele Street	640	Residential CO	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.3	0.2	89	
119004	Whitehorse	410 Steele Street	640	Residential NOX	21	11	13	8	4	4	4	5	8	14	21	10	14	98	
119004	Whitehorse	410 Steele Street	640	Residential PM2.5 (SHARP)	10	6	6	6	3	4	5	4	3	5	8	9	6	7	97

NAPS Means Datafile

Units:

SO2 NO2 O3 NO and NOx are ppb

CO is ppm

PM10 and PM2.5 are in ug/m3

Reporting criteria:

Monthly averages are reported if at least 50% of the hours during the month have valid measurements

Annual average and standard deviation are reported if 50% of hours in year are valid and each quarter has at least 2 valid months

NAPS Means Data Whitehorse 2013

NAPS ID	City	Location	Elev.	LandUse	Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Aver.	.	e
119004	Whitehorse	410 Steele Street	640	Residential	NO2	10	10		4	4	2	2	2	3	4	6	10	5	6	89
119004	Whitehorse	410 Steele Street	640	Residential	O3	24	30	33	40	32	24			14	14	16	14			75
119004	Whitehorse	410 Steele Street	640	Residential	NO	6	6		1	1	2	2	2	3	4	4	8	4	7	89
119004	Whitehorse	410 Steele Street	640	Residential	CO	0.4	0.4	0.4	0.3			0.2	0.2	0.2	0.3	0.3				75
119004	Whitehorse	410 Steele Street	640	Residential	NOX	15	16		6	5	4	4	4	5	7	10	18	9	12	89
119004	Whitehorse	410 Steele Street	640	Residential	PM2.5 (SHARP)	7	6	8	5	5	5	7	4	4	5	9	10	6	9	99

NAPS Means Datafile

Units:

SO2 NO2 O3 NO and NOx are ppb

CO is ppm

PM10 and PM2.5 are in ug/m3

Reporting criteria:

Monthly averages are reported if at least 50% of the hours during the month have valid measurements

Annual average and standard deviation are reported if 50% of hours in year are valid and each quarter has at least 2 valid months

NAPS Means Data Whitehorse 2014

ID	City	Location		LandUse	Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Aver.		e	
119004	Whitehorse	410 Steele Street	640	Residential	NO2	8	12	7			2	2	3	3	5	7	8		81		
119004	Whitehorse	410 Steele Street	640	Residential	O3	20	21	32	37	34	24	20	21	19	19	21	21	24	11	99	
119004	Whitehorse	410 Steele Street	640	Residential	NO	8	7	4				1	1	2	3	3	5		78		
119004	Whitehorse	410 Steele Street	640	Residential	CO	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.2			80		
119004	Whitehorse	410 Steele Street	640	Residential	NOX	16	18	11			3	3	4	5	8	10	13		81		
119004	Whitehorse	410 Steele Street	640	Residential	PM2.5	7	12	8	6	6	3				6	7	6		82		
119004	Whitehorse	410 Steele Street	640	Residential	PM2.5 (SHARP)	7	12	8	6	6	3				6	7	6		82		

NAPS Means Datafile

Units:

SO2 NO2 O3 NO and NOx are ppb

CO is ppm

PM10 and PM2.5 are in ug/m3

Reporting criteria:

Monthly averages are reported if at least 50% of the hours during the month have valid measurements

Annual average and standard deviation are reported if 50% of hours in year are valid and each quarter has at least 2 valid months

Fish Creek and McIntyre Creek Water Quality Monitoring Data.

2004 to 2015

PS 1

Freshwater Impoundment

PS-1

Freshwater Impoundment

60.724083 N, 135.1805 W

Parameter		Date												2010	2015
		2004				2005				2010					
		Apr-28	Jun-17	Jul-29	Sep-09	Nov-23	Jan-26	Mar-31	Apr-24	Jun-01	Jun-29	Aug-02	Oct-05	Dec-14	May-13
pH (field)	ru														
pH (lab)	ru	7.9	7.9	8.1	8.1	8	8.1	7.94	7.94	7.98	8.05	7.94	798	8.03	7.95
Conductivity (lab)	us/cm	316	324	324	314	319	319	317	276	332	331	332	329	nr	308
Flow Volume	L/s														
Cyanide Total	mg/L														
Ammonia - N	mg/L														
Nitrate - N	mg/L														
Nitrite - N	mg/L														
T-Alkalinity	mg/L	167	168	174	168	164	171	171	145	162	186	163	160	150	156
Turbidity	NTU														
Chloride	mg/L														0.21
Flouride	mg/L														
Sulfate (SO4)	mg/L	11.4	105	9.98	10.7	9.84	10.9	10.8	10.6	10.4	10.4	10.4	10.4	nr	nr
Hardness total	mg/LCaCO3														
T.Suspended Solids	mg/L	<2	<2	<2	<3	<2	<2	<2	<2	<2	<2	<2	<2	<4	<5
T.Dissolved Solids	mg/L	580	193	198	205	181	203	190	182	200	190	198	196	150	196

PS-3.

60.7225 N 135.183611 W

Tailrace of YECL Power Plant #1

Parameter		Date													2010	2015		
		2004				2005												
		Apr-28	Jun-17	Jul-29	Sep-09	Nov-23	Jan-26	Mar-30	Apr-24	Jun-01	Jun-29	Aug-02	Oct-05	Dec-14				
pH (field)	ru	7.9	8	8	8	8.1	7.8	7.78	7.83	8	7.78	7.86	7.64	8	7.8			
pH (lab)	ru																	
Conductivity (lab)	us/cm	204	214	205	203	225		207	197	197	187	213	214		178			
Flow Volume	L/s	152	925	118	111	71	100	62	195	141	141	109	249.8		1169			
Cyanide Total	mg/L																	
Ammonia - N	mg/L																	
Nitrate - N	mg/L																	
Nitrite - N	mg/L																	
T-Alkalinity	mg/L	103	102	99	100	116	103	98	98	90	111	102	69	140	86			
Turbidity	NTU																	
Chloride	mg/L															0.19		
Flouride	mg/L																	
Sulfate (SO4)	mg/L	13	9.54	9.53				12.4	10			8.3	9.2					
Hardness total	mg/LCaCO3														140			
T.Suspended Solids	mg/L	8	1	<2	<3	<2	<2	8	4	6	8	4	8	<4	69			
T.Dissolved Solids	mg/L	538	136	130	144	137	150	131	138	134	131	138	149	150	136			

PS-3.

Tailrace of YECL Power Plant #1

Total Metals		Date													2010	2015		
		2004						2005										
		Apr-28	Jun-17	Jul-29	Sep-09	Nov-23	Jan-26	Mar-30	Apr-24	Jun-01	Jun-29	Aug-02	Oct-05	Dec-14				
Calcium	mg/L	30.8	31.4	29.8	29.4	32.4	31.1	31.8	28	30	29.3	31.3	35.5	39	32			
Iron	mg/L	0.1	<0.2	<0.5	<0.2	<0.1	<0.1	<0.1	0.1	0.3	0.2	0.1	0.2	0.05	1.25			
Magnesium	mg/L	6.9	6.1	5.5	5.9	7.3	7.5	7.5	6	5.4	4.4	5.9	6.2	10	5.83			
Manganese	mg/L	0.005	<0.01	<0.02	<0.01	<0.005	<0.005	<0.005	0.005	0.016	0.008	0.006	0.011	0.002	0.0295			
Potassium	mg/L	1.2	0.8	<2	<0.8	1	0.7	0.8	1	0.7	0.8	0.5	0.9	1	1.2			
Silicon	mg/L	4.41	3.82	3.69	3.66	4.36	4.7	4.9	4.6	5.04	4.55	4.45	4.71	5	6.8			
Sulfur	mg/L	3.52	2.89	3.14	3.13	3.84	3.95	4.4	3.5	3.1	2.5	2.4	3					
Sodium	mg/L	3.4	2.8	3.3	2.9	3.4	3.5	4.3	3	2.4	2.3	2.5	3.1	4	3.2			
Titanium	mg/L	0.0075	0.0034	0.0028	0.0011	0.004	0.0029	0.032	0.0064	0.0066	0.0077	0.0063	0.008	<0.01	0.0452			
Aluminum	mg/L	0.151	0.072	0.048	0.024	0.032	0.052	0.03	0.12	0.127	0.156	0.116	0.184	0.03	1.04			
Antimony	mg/L	<0.0002	<0.0004	<0.001	<0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0001		
Arsenic	mg/L	0.001	0.0008	<0.001	0.0009	0.0008	0.0011	0.001	0.001	0.0009	0.0008	0.0011	0.0009	0.0009	0.00155			
Barium	mg/L	0.034	0.025	0.033	0.033	0.031	0.034	0.037	0.03	0.027	0.026	0.03	0.028	0.027	0.0426			
Beryllium	mg/L	<0.0001	<0.0002	<0.0005	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.00005			
Bismuth	mg/L	<0.0005	<0.001	<0.002	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0001			
Boron	mg/L	0.003	0.027	0.051	0.01	<0.002	<0.002	0.006	0.004	0.007	0.003	0.002	0.002	<0.1	0.009			
Cadmium	mg/L	<0.00001	<0.00002	<0.00005	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00003		
Chromium	mg/L	0.0006	<0.001	<0.002	<0.001	<0.0005	<0.0005	<0.0005	0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	0.0017		
Cobalt	mg/L	<0.0001	<0.0002	<0.0005	<0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	0.0006		
Copper	mg/L	0.001	<0.002	<0.005	<0.002	<0.001	<0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.0031		
Lead	mg/L	0.0002	<0.0002	<0.0005	<0.0002	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0002	0.0005	0.0008			
Lithium	mg/L	0.001	<0.002	<0.005	<0.002	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001	<0.1	0.0013		
Mercury	mg/L																	
Molybdenum	mg/L	0.001	<0.002	<0.005	<0.002	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.00068		
Nickel	mg/L	0.0008	<0.001	<0.002	<0.001	0.0019	0.0007	0.001	<0.0005	0.001	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.001		
Selenium	mg/L	<0.0002	<0.0004	<0.001	<0.0004	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	<0.0001		
Silver	mg/L	<0.0001	<0.0002	<0.0005	<0.0002	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	<0.00005		
Strontium	mg/L	0.186	0.17	0.157	0.172	0.196	0.176	0.16	0.16	0.147	0.135	0.17	0.177	0.219	0.151			
Thallium	mg/L	<0.00005	<0.0001	<0.0002	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00001		
Tin	mg/L	<0.001	<0.002	<0.005	<0.002	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.001	<0.0002	<0.0002	<0.0002	<0.005	<0.0001		
Uranium	mg/L	0.0009	0.0012	<0.002	<0.001	0.0012	0.0008	0.0009	0.0009	0.0012	0.0012	0.0011	0.0012	0.0017	0.00093			
Vanadium	mg/L	0.0008	0.0006	0.0008	0.0006	0.0006	0.0006	0.0005	0.0007	0.0009	0.0008	0.0009	0.0009	0.0009	<0.005	0.0033		
Zinc	mg/L	0.004	0.002	0.02	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	0.0048		
Zirconium	mg/L	<0.001	<0.002	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.0005		

PS - 5A

McIntyre Creek upstream Fish Lake Road (at culvert)

60.7225 N

135.177417 W

Date

Parameter		2004	2005							2010	2015
		Apr-28	Mar-31	Apr-27	Jun-01	Jun-29	Aug-02	Oct-05	Dec-14	May-13	
pH (field)	ru	7.6	7.2	7.67	7.32	7.2	7.16	6.88	7.9	7.47	
pH (lab)	ru										
Conductivity (lab)	us/cm	200	194	183	184	207	210	207		219	
Flow Volume	L/s	328.5	371.2	380.3	354	406.9	320	416			
Cyanide Total	mg/L										
Ammonia - N	mg/L										
Nitrate - N	mg/L										
Nitrite - N	mg/L										
T-Alkalinity	mg/L	97	94	89	84	136	100	94	100	110	
Turbidity	NTU										
Chloride	mg/L									0.34	
Flouride	mg/L										
Sulfate (SO4)	mg/L	11.8	12.8	10.8		7.6	8.4	9.1			
Hardness total	mg/LCaCO3										
T.Suspended Solids	mg/L	8	6	<2	6	6	4	9	<4	11	
T.Dissolved Solids	mg/L	478	140	128	122	140	138	132	110	160	

PS 5A

McIntyre Creek upstream Fish Lake Road (at culvert)

Total Metals		Date								
		2004		2005						
		Apr-28	Mar-31	Apr-27	Jun-01	Jun-29	Aug-02	Oct-05	Dec-14	May-13
Calcium	mg/L	29.9	27.8	26.8	28.6	30.1	30.1	32.7	31	37.5
Iron	mg/L	0.1	<0.1	0.1	0.2	0.1	0.1	0.2	0.07	0.826
Magnesium	mg/L	6.6	6.5	5.6	4.7	4.8	5.3	5.2	7	7.3
Manganese	mg/L	0.006	<0.005	0.008	0.009	0.007	0.008	0.014	0.006	0.021
Potassium	mg/L	1.2	1	1	0.8	0.8	0.7	1	<1	1.3
Silicon	mg/L	4.41	4.6	4.6	4.7	4.46	4.26	4.5	4	7.04
Sulfur	mg/L	3.57	4.2	3.7	3	2.7	2.7	3.1	<60	
Sodium	mg/L	3.4	4	3	2.4	2.4	2.6	3.1	3	3.4
Titanium	mg/L	0.0073	0.002	0.0054	0.004	0.004	0.0048	0.0083	<0.1	0.0358
Aluminum	mg/L	0.152	0.03	0.11	0.085	0.087	0.098	0.19	0.05	0.756
Antimony	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0001
Arsenic	mg/L	0.0011	0.001	0.001	0.0009	0.0008	0.001	0.0009	0.001	0.00139
Barium	mg/L	0.034	0.04	0.03	0.026	0.025	0.029	0.629	0.033	0.0347
Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.00005
Bismuth	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0001
Boron	mg/L	0.003	0.005	0.004	0.005	0.006	0.002	<0.002	<0.1	0.008
Cadmium	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001	0.00001
Chromium	mg/L	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	0.0014
Cobalt	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	0.0004
Copper	mg/L	<0.001	<0.001	0.001	0.001	0.001	0.001	0.001	<0.001	0.0021
Lead	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0001	<0.0002	0.0004
Lithium	mg/L	0.001	0.001	0.001	<0.001	0.001	0.001	0.004	<0.01	0.0011
Mercury	mg/L									
Molybdenum	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.00109
Nickel	mg/L	0.0008	0.001	<0.0005	0.001	<0.0005	<0.0005	<0.0005	<0.001	0.0006
Selenium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	0.0002
Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	<0.00005
Strontium	mg/L	0.179	0.169	0.15	0.136	0.143	0.153	0.16	0.179	0.18
Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001
Tin	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0001
Uranium	mg/L	0.0008	0.0008	0.0007	0.0011	0.0012	0.0009	0.001	0.0011	0.00125
Vanadium	mg/L	0.0008	0.0003	0.0006	0.0007	0.0007	0.0007	0.0008	<0.005	0.0024
Zinc	mg/L	0.003	0.001	<0.001	<0.001	0.002	0.002	0.002	<0.01	0.0045
Zirconium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.0005

City of Whitehorse Landfill Data – Porter Creek upstream Station 2002 – 2012.

Porter Creek Upstream Station. City of Whitehorse Landfill Data. June 2002 to 2012

		Jun-02	Oct-02	Jun-03	Oct-03	Jun-04	Oct-04	Jun-05	Oct-05	Jun-06	Oct-06	Jun-07
Routine Chemistry												
pH (lab)	ru	8.09	7.7	8.16	8.09	8.11	7.9	8.1	7.7	8.3	8.1	8.18
Conductivity (lab)	uS/cm	300	327	313	330	312	330	330	298	306	343	335
pH (field)	ru	7.4	7.5	8.2	8.7	7.4	8.1	8.13	8.04	8.59	8.45	7.9
Conductivity (field)	uS/cm	371	355	320	350	320	350	297	324	358	5	351
Redox (field)				1.92	3.2	131	164	213	202			252
Ammonia	mg/L	<0.05	0.27	0.3	0.11	0.25	0.13	0.28	0.44	0.18	0.17	0.128
Alkalinity - T	mg/L	148	175	<5	167	178	170	167	170	157	163	165
Chloride	mg/L	1.7	1.8	<0.5	<0.5	1.2	0.46	<1	4	1	4	0.8
T. Phosphorus	mg/L	0.07	0.31	0.15	0.12					0.1		0.08
Phosphate	mg/L			0.13	0.08	0.13	0.078					0.048
Sulphate	mg/L	13	9.2	13.1		11	10.5	14.7	14.4	18	11.1	10.6
Nitrate	mg/L	0.18	0.244	0.463	11.2	0.5	0.41	0.7	0.2	0.4	0.5	0.8
Nitrite	mg/L	<0.002	<0.002	0.017	0.522	<.05	<0.1	0.07	<0.05	<0.05	<0.05	<0.05
T.Susp. Solids	mg/L	24	6	12	<0.002	7	<2				6	8
T.Diss.Solids	mg/L											196
Diss. Organic Carbon	mg/L	3.4	1.6	1.3	10	0.9				2	5	1.7
T. Organic Carbon	mg/L	3	1.7	1.1	0.9	1.2	0.7	2	3	3		1.8
Total Oil + Grease	mg/L	<1	<1	<1	1		<1	<1	<1	<1		<1
Hydroxide	mg/L			<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbonate	mg/L			<6	<6	<6	<6	<5	<5	<5	<5	<6
Bicarbonate	mg/L			207	204	217	207	204	208	191	199	201
Fecal Coliforms	MPN	<1	<1	3	<1			<1	<1	<1	<1	
Total Coliforms	MPN	1	147	2	13.7	21.8	400	3	21	11	12	9.2
E. coli	MPN					<1	500					<1
Flow Volume	(cms)	0.117	0.1268		0.18	0.1148	0.085			0.115	0.071	0.107

Porter Creek Upstream Station. City of Whitehorse Landfill Data. June 2002 to 2012

		Jun-07	Oct-07	Jun-08	Oct-08	May-09	Oct-09	10-May	10-Sep	Jun-11	Oct-11	May-12
Routine Chemistry												
pH (lab)	ru	8.18	8.12	8.21	8.01	7.88	7.82	8.04	7.91	8.22	7.8	7.19
Conductivity (lab)	uS/cm	335	310	311	298	314	318	286	310	319	303	285
pH (field)	ru	7.9	8.43	8.5	8.11	7.61	7.86	8.61	8.61	8.64	7.88	7.92
Conductivity (field)	uS/cm	351					333	316	333	282	325	312
Redox (field)		252	145+	201+	181+	248+	408+	153+	90+	148+	94+	101+
Ammonia	mg/L	0.128	0.18	0.12	0.16	0.34	0.34	0.12	0.14	0.07	0.33	0.39
Alkalinity - T	mg/L	165	167	162	156		165	151	161	157	154	155
Chloride	mg/L	0.8	0.76	0.45	0.66		0.5	0.56	0.73	0.58	1.1	1.7
T. Phosphorus	mg/L	0.08			0.05	0.03	0.11	0.106	<0.1	0.072	0.094	0.121
Phosphate	mg/L	0.048	0.079	0.038	0.064	0.046	0.054	0.049	0.037	0.045	0.025	0.048
Sulphate	mg/L	10.6	11	11	0.03	10.3	9.86	9.32	9.23	11	9	11
Nitrate	mg/L	0.8	0.46	0.3	0.38	0.17	0.13	0.3	0.12	0.39	0.11	0.15
Nitrite	mg/L	<0.05	0.03	0.09	0.03	<0.01	<0.01	0.03	<0.005	0.011	<0.005	<0.005
T. Susp. Solids	mg/L	8	4	<2	<2	5	5	10	4	<5	7	44
T.Diss.Solids	mg/L	196	200	202	298	198	196	176	116	180	196	164
Diss. Organic Carbon	mg/L	1.7	1.2	0.9	1	0.6	1.6	1.8	2.6	2.6	1.8	2.3
T. Organic Carbon	mg/L	1.8	1.4	1.2	1.1	0.8	1.6	2.1	2.7		2.1	2.9
Total Oil + Grease	mg/L	<1	2	<1	<1	<1	<1		<1	<1	1	<1
Hydroxide	mg/L	<5					<5	<5	<5	<5	<5	<5
Carbonate	mg/L	<6					<6	<6	<6	<6	<6	<6
Bicarbonate	mg/L	201					200	180	200	190	190	189
Fecal Coliforms					<2	1		1	98	1	37	12
Total Coliforms	MPN	9.2	66.3	2		224.7	172.2					
E. coli	MPN	<1	2	<1			4.1					
Flow Volume	(m)	0.107	0.145	0.159	0.143	0.1619	0.105	0.133	0.161	0.140	0.132	0.093

Porter Creek Upstream Station. City of Whitehorse Landfill Data. June 2002 to 2012
Oct-12

Routine Chemistry

pH (lab)	ru	7.6
Conductivity (lab)	uS/cm	298
pH (field)	ru	7.99
Conductivity (field)	uS/cm	351
Redox (field)		171+
Ammonia	mg/L	<0.01
Alkalinity - T	mg/L	153
Chloride	mg/L	2.28
T. Phosphorus	mg/L	0.033
Phosphate	mg/L	0.022
Sulphate	mg/L	14.7
Nitrate	mg/L	0.29
Nitrite	mg/L	<0.01
T.Susp. Solids	mg/L	<2
T.Diss.Solids	mg/L	190
Diss. Organic Carbon	mg/L	2.5
T. Organic Carbon	mg/L	2.2
Total Oil + Grease	mg/L	<1
Hydroxide	mg/L	<5
Carbonate	mg/L	<6
Bicarbonate	mg/L	187
Fecal Coliforms		5
Total Coliforms	MPN	
E. coli	MPN	
Flow Volume	(m)	0.152

Porter Creek Upstream Station. City of Whitehorse Landfill Data. June 2002 to 2012

Total Metal		Jun-02	Oct-02	Jun-03	Jun-04	Oct-04	Jun-05	Oct-05	Jun-06	Oct-06
Aluminum	mg/L	0.12	0.06	0.04	0.11	0.018	0.07	0.02	0.14	0.01
Antimony	mg/L	<0.02	<0.02	<0.02	<0.0002	<0.0002	<0.0004	0.001	<0.0004	0.0008
Arsenic	mg/L	<0.02	<0.02	<0.02	0.00	0.001	0.001	0.0011	0.0013	0.0011
Barium	mg/L	0.0246	0.0276	0.03	0.03	0.027	0.025	0.025	0.027	0.024
Beryllium	mg/L	<0.0006	<0.0006	<0.0006	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001
Bismuth	mg/L	<0.02	<0.02	<0.02	<0.0005	<0.0005	<1	<1	<1	<1
Boron	mg/L				0.02	0.006	<0.05	<0.05	<0.05	<0.05
Cadmium	mg/L	<0.0006	<0.0006	<0.0006	0.00	<0.00001	<0.0002	<0.0002	<0.0002	<0.0001
Calcium	mg/L	37.1	52.2	48.00	49.20	51.1	52.1	48.7	46.1	
Chromium	mg/L	<0.001	<0.001	0.00	0.00	0.0005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	<0.001	<0.001	<0.001	0.00	<0.0001	<0.002	<0.002	<0.002	<0.002
Copper	mg/L	0.033	0.006	0.01	0.00	0.001	<0.001	0.002	0.004	0.001
Iron	mg/L	0.454	0.297	0.24	0.40	0.1	0.052	0.128	0.265	0.029
Lead	mg/L	<0.006	<0.006	<0.006	0.00	<0.0001	<0.0001	0.0001	<0.0001	<0.0001
Lithium	mg/L	<0.006	<0.006	<0.006	0.00	0.001	<0.01	<0.01	<0.01	<0.003
Magnesium	mg/L	7.6	11.3	10.50	11.90	11.7	12	10.9	9.9	
Manganese	mg/L	0.0352	0.0416	0.03	0.03	0.013	0.008	0.014	0.016	0.012
Molybdenum	mg/L	<0.01	<0.01	<0.01	0.00	0.003	<0.005	<0.005	<0.005	<0.005
Nickel	mg/L	<0.001	<0.001	<0.001	<.00005	<0.0005	<0.002	<0.002	<0.002	<0.002
Phosphorus	mg/L	0.07	0.06	0.13			0.18	0.13		
Potassium	mg/L	1	1.1	1.10	1.20	1.4	0.7	1.6	1.1	
Selenium	mg/L	<0.02	<0.02	0.03	0.00	0.0002	0.0006	<0.0004	0.0004	0.0007
Silicon	mg/L	4.7	5.9	5.90	5.82	5.86	5.2	5	5.4	5.4
Silver	mg/L	<0.002	<0.002	<0.002	<.001	0.0001	<0.0004	<0.0004	<0.0004	<0.0001
Sodium	mg/L	2.74	3.77	3.51	3.50	3.7	4	4	3	
Strontium	mg/L	0.172	0.227	0.22	0.28	0.286				
Sulphur	mg/L	2.8	3.3	4.10	3.54	3.45	2.7	3.2	3	
Thallium	mg/L				<.00005	<0.00005	<0.0001	<0.0001	<0.05	<0.0001
Thorium	mg/L	<0.006	<0.006	<0.006						
Tin	mg/L	<0.006	<0.006	<0.006	<0.001	<0.001	<0.05	<0.05	<0.05	<0.05
Titanium	mg/L	0.004	<0.001	0.00	0.00	0.0009	0.004	0.002	0.006	<0.001
Uranium	mg/L	<0.07	<0.07	<0.07	0.00	0.0018	0.0019	0.0019	0.0019	0.0019
Vanadium	mg/L	0.003	0.002	0.01	0.00	0.001	0.001	0.002	0.002	0.001
Zinc	mg/L	0.003	0.006	0.00	0.00	0.002	0.011	<0.004	0.005	0.025
Zirconium	mg/L	<0.006	<0.006	<0.006	<.001	<0.001	<0.1	<0.1	<0.1	<0.05

Porter Creek Upstream Station. City of Whitehorse Landfill Data. June 2002 to 2012

Dissolved Metals	Oct-03	Jun-07	Oct-07	Jun-08	Oct-08	May-09	Oct-09	10-May	10-Sep	Jun-11	Oct-11	May-12
Aluminum	mg/L <0.01	0.009	0.018	0.019	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Antimony	mg/L <0.02	<0.0002	<0.0002	0.0005	0.0004	0.0007	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	0.0004
Arsenic	mg/L <0.02	0.0011	0.001	0.0008	0.0009	0.0008	0.001	0.001	0.0009	0.001	0.001	0.0011
Barium	mg/L 0.0223	0.029	0.029	0.028	0.025	0.027	0.027	0.026	0.025	0.027	0.025	0.027
Beryllium	mg/L <0.0006	<0.0001	<0.0001	<0.0001	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004	<0.00004
Bismuth	mg/L <0.02	<0.0005	<0.0005			<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	mg/L 0.002	0.002	0.002	0.003	<0.004	0.005	<0.004	0.005	<0.004	<0.004	<0.004	<0.001
Cadmium	mg/L <0.0006	0.00004	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	0.00002
Calcium	mg/L 43.9000	54.9	50.7	49	46.9	39.8	50.6	45.7	46.6	43.3	47.4	47.9
Chromium	mg/L <0.001	0.0013	<0.0005	0.0009	0.0008	0.0007	0.001	0.0013	0.0014	0.0012	0.0015	0.0011
Cobalt	mg/L <0.001	<0.0001	<0.0001	<0.0001	0.00012	0.00011	0.00015	0.00005	0.00006	0.00007	0.00006	<0.00002
Copper	mg/L <0.001	<0.001	0.001	0.002	<0.001	0.001	0.001	0.001	0.001	0.001	<0.001	<0.001
Iron	mg/L 0.0310	0.03	0.06	0.11	0.044	0.05	0.06	0.02	0.051	0.038	55	0.072
Lead	mg/L <0.005	0.0004	<0.0001	0.0001	<0.001	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lithium	mg/L <0.005	0.001	0.001	0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Magnesium	mg/L 10.0000	11.6	11.3	10.7	10.1	9.07	11.2	9.5	10.1	9.4	10.2	9.8
Manganese	mg/L 0.0123	0.021	0.011	0.021	0.01	0.0134	0.0157	0.0111	0.012	0.01	0.014	0.01
Molybdenum	mg/L <0.01	0.003	0.002	0.002	0.00185	0.00192	0.0024	0.0023	0.0025	0.0027	0.0015	0.0027
Nickel	mg/L <0.001	<0.0005	<0.0005	0.0008	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorus	mg/L <0.06	0.08			0.05	0.03	0.07	0.04	0.04	0.05	0.04	0.04
Potassium	mg/L 0.8000	1.2	2.3	1.4	1	1	1.3	1.1	1.5	1	1.2	1.4
Selenium	mg/L 0.1900	<0.0002	0.0004	0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Silicon	mg/L 6.2000	5.83	5.79	5.79	5.36	4.13	5.66	5.04	5.13	4.97	5.03	5.41
Silver	mg/L <0.002	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium	mg/L 3.3300	4.4	3.7	4.1	3.3	3.8	3.8	3.2	4	3.2	3.9	3.4
Strontium	mg/L 0.2140	0.263	0.25	0.245	0.23	0.254	0.232	0.235	0.231	0.243	0.22	0.239
Sulphur	mg/L 3.4000	4	3.5			3	4	3.7	3.5	3.6	3.6	3.6
Thallium	mg/L <0.00005	<0.00005	<0.00005	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Thorium	mg/L <0.005				<0.0001	<0.0001	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Tin	mg/L <0.005	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L <0.001	0.001	0.0006	0.0012	0.0006	0.0008	<0.0004	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	mg/L <0.06	0.0019	0.0017	0.0018	0.00017	0.0018	0.0017	0.0018	0.0015	0.0017	0.0016	0.0017
Vanadium	mg/L <0.001	0.002	0.019	0.0012	0.0008	0.00086	0.0009	0.001	0.001	0.001	0.001	0.001
Zinc	mg/L 0.0390	0.03		0.004	0.002	0.004	0.002	0.001	0.002	0.002	<0.001	0.002
Zirconium	mg/L <0.005					<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Porter Creek Upstream Station. City of Whitehorse Landfill Data. June 2002 to 2012

Dissolved Metals	Oct-12
Aluminum	mg/L <0.005
Antimony	mg/L <0.0002
Arsenic	mg/L 0.001
Barium	mg/L 0.025
Beryllium	mg/L <0.00004
Bismuth	mg/L <0.001
Boron	mg/L 0.004
Cadmium	mg/L <0.00001
Calcium	mg/L 51.4
Chromium	mg/L 0.0015
Cobalt	mg/L 0.00008
Copper	mg/L <0.001
Iron	mg/L 0.045
Lead	mg/L <0.0001
Lithium	mg/L 0.001
Magnesium	mg/L 10.5
Manganese	mg/L 0.004
Molybdenum	mg/L 0.0028
Nickel	mg/L <0.001
Phosphorus	mg/L 0.033
Potassium	mg/L 1.2
Selenium	mg/L <0.0006
Silicon	mg/L 4.96
Silver	mg/L <0.00001
Sodium	mg/L 3.8
Strontium	mg/L 0.253
Sulphur	mg/L 4.6
Thallium	mg/L <0.00001
Thorium	mg/L <0.0004
Tin	mg/L <0.0001
Titanium	mg/L <0.01
Uranium	mg/L 0.0017
Vanadium	mg/L 0.00075
Zinc	mg/L <0.001
Zirconium	mg/L <0.0001

IBEX RIVER Water Survey of Canada

Hydrometric Data 2003 to 2013

Station	Ibex River	Water Survey of Canada Data																						
Year	2003																							
Date	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sept		Oct		Nov		Dec	
1	0.48	B	0.298	B	0.286	B	0.329	B	2.25		1.44		1.98		2.11		1.32		1.8		0.95	B	0.736	B
2	0.467	B	0.296	B	0.284	B	0.332	B	1.74		1.24		1.9		2.22		1.33		1.97		0.945	B	0.709	B
3	0.455	B	0.296	B	0.284	B	0.335	B	1.32		1.05		2.05		2.51		1.3		1.96		0.94	B	0.685	B
4	0.44	B	0.305	B	0.284	B	0.338	B	1.06		0.934		2.53		2.46		1.28		1.98		0.948	B	0.691	B
5	0.43	B	0.309	B	0.284	B	0.344	B	0.927		1		3.71		2.41		1.27		2.01		1.04	B	0.688	B
6	0.42	B	0.295	B	0.283	B	0.35	B	0.888		2.22		2.89		2.33		1.27		2		0.931	B	0.68	B
7	0.41	B	0.295	B	0.286	B	0.356	B	0.888		2.78		2.64		2.21		1.31		1.96		0.838	B	0.642	B
8	0.4	B	0.296	B	0.291	B	0.362	B	0.873		1.99		3.41		2.12		1.31		1.91		0.973	B	0.626	B
9	0.392	B	0.295	B	0.297	B	0.36	B	0.909		1.7		3.89		2.05		1.3		1.88		1.07	B	0.613	B
10	0.384	B	0.295	B	0.295	B	0.364	B	1.06		1.74		3.27		1.98		1.27		1.82		0.9	B	0.61	B
11	0.376	B	0.295	B	0.298	B	0.366	B	1.23		1.87		2.89		1.92		1.32		1.73		0.815	B	0.603	B
12	0.369	B	0.295	B	0.299	B	0.368	B	1.17		2.13		2.65		1.85		1.32		1.62		1.06	B	0.594	B
13	0.363	B	0.295	B	0.303	B	0.374	B	1.02		2.68		2.51		1.83		1.33		1.59		0.983	B	0.577	B
14	0.358	B	0.294	B	0.298	B	0.379	B	0.913		1.96		2.37		1.8		1.36		1.59		0.922	B	0.565	B
15	0.353	B	0.296	B	0.295	B	0.384	B	0.843		1.57		2.29		1.73		1.34		1.32		0.951	B	0.555	B
16	0.348	B	0.295	B	0.295	B	0.387	B	0.765		1.45		2.16		1.65		1.35		1.44		0.881	B	0.547	B
17	0.343	B	0.295	B	0.292	B	0.392	B	0.757		1.34		2.12		1.63		1.31		1.41		0.732	B	0.535	B
18	0.338	B	0.294	B	0.293	B	0.398	B	0.74		1.53		2.13		1.61		1.37		1.45		0.696	B	0.529	B
19	0.334	B	0.294	B	0.288	B	0.405	B	0.744		1.96		2.02		1.63		1.36		1.48		0.757	B	0.535	B
20	0.33	B	0.296	B	0.293	B	0.414	B	0.764		1.87		2.05		1.62		1.37		1.41		1.24	B	0.53	B
21	0.326	B	0.297	B	0.296	B	0.424	B	0.785		1.91		2.85		1.59		1.42		1.35		1.08	B	0.523	B
22	0.323	B	0.298	B	0.299	B	0.434	B	0.834		1.77		3.59		1.59		1.41		1.36		0.986	B	0.532	B
23	0.32	B	0.298	B	0.299	B	0.462	B	0.906		1.81		2.96		1.68		1.37		1.35		0.937	B	0.523	B
24	0.317	B	0.297	B	0.303	B	0.509	B	0.991		1.81		2.62		1.68		1.37		1.27		0.912	B	0.513	B
25	0.313	B	0.293	B	0.306	B	0.571	B	1.29		1.75		2.4		1.57		1.38		1.4		0.873	B	0.508	B
26	0.309	B	0.291	B	0.31	B	0.751	B	1.22		1.62		2.26		1.52		1.36		1.35		0.851	B	0.494	B
27	0.305	B	0.289	B	0.313	B	1.41	B	1.05		1.5		2.19		1.5		1.35		1.23		0.821	B	0.489	B
28	0.302	B	0.286	B	0.317	B	2.15	B	1.03		1.43		2.05		1.44		1.36		1.08		0.775	B	0.488	B
29	0.3	B			0.32	B	2.7	B	1.05		1.52		2		1.36		1.38		1.05		0.798	B	0.485	B
30	0.298	B			0.323	B	3.3	B	1.27		2.15		1.98		1.33		1.56		1.02		0.754	B	0.495	B
31	0.298	B			0.326	B			1.41				1.94		1.32				0.97	B			0.488	B
Mean	0.361		0.296		0.298		0.668		1.055		1.724		2.526		1.815		1.345		1.541		0.912		0.574	
Max	0.480		0.309		0.326		3.300		2.250		2.780		3.890		2.510		1.560		2.010		1.240		0.736	
Min	0.298		0.286		0.283		0.329		0.740		0.934		1.900		1.320		1.270		0.970		0.696		0.485	

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data																						
Year	2004																							
Date	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sept		Oct		Nov		Dec	
1	0.482	B	0.427	B	0.402	B	0.381	B	1.89	B	2.69		2.96		1.87		1.86		1.78		1.14	B	0.917	B
2	0.478	B	0.428	B	0.401	B	0.382	B	2.73	B	2.44		2.86		3.54		1.87		1.93		1.11	B	0.9	B
3	0.472	B	0.429	B	0.405	B	0.384	B	2.79		2.15		2.78		4.13		1.98		1.92		1.08	B	0.883	B
4	0.467	B	0.429	B	0.405	B	0.384	B	2.45		2.1		2.59		3.26		2.06		1.91		1.06	B	0.866	B
5	0.461	B	0.431	B	0.41	B	0.381	B	1.98		2.86		2.46		2.81		2.05		1.91		1.04	B	0.85	B
6	0.46	B	0.433	B	0.406	B	0.38	B	1.9		4.52		2.31		2.58		2		1.87		1.03	B	0.833	B
7	0.458	B	0.431	B	0.408	B	0.382	B	1.97		5.44		2.24		2.47		1.98		1.79		1.03	B	0.817	B
8	0.458	B	0.438	B	0.411	B	0.382	B	3.87		5.65		2.09		2.34		1.94		1.75		1.06	B	0.8	B
9	0.456	B	0.436	B	0.407	B	0.379	B	3.64		5.09		2.05		2.25		1.93		1.74		1.09	B	0.783	B
10	0.46	B	0.435	B	0.407	B	0.378	B	2.78		4.34		2.66		2.18		1.9		1.7		1.14	B	0.767	B
11	0.46	B	0.435	B	0.408	B	0.376	B	2.34		3.8		3.35		2.17		1.88		1.63		1.18	B	0.752	B
12	0.462	B	0.432	B	0.407	B	0.38	B	2.52		3.26		2.85		2.17		1.87		1.54		1.2	B	0.738	B
13	0.466	B	0.432	B	0.408	B	0.375	B	3.5		3.02		2.66		2.13		1.96		1.57		1.21	B	0.725	B
14	0.466	B	0.43	B	0.406	B	0.376	B	3.5		3.31		2.53		2.05		2.01		1.5		1.21	B	0.712	B
15	0.466	B	0.426	B	0.408	B	0.382	B	3.9		5.61		2.57		1.98		1.93		1.52		1.18	B	0.7	B
16	0.465	B	0.421	B	0.407	B	0.389	B	4.75		5		2.6		1.95		1.86		1.38		1.15	B	0.687	B
17	0.469	B	0.42	B	0.407	B	0.391	B	5.29		4.3		2.41		1.93		1.84		1.38		1.06	B	0.674	B
18	0.47	B	0.42	B	0.403	B	0.397	B	4.68		4.05		2.26		1.92		1.83		1.34		1.07	B	0.662	B
19	0.462	B	0.419	B	0.4	B	0.405	B	4.99		4.08		2.15		1.93		1.8		1.22	B	1.12	B	0.65	B
20	0.455	B	0.421	B	0.395	B	0.412	B	4.72		4.06		2.07		1.94		1.77		1.17	B	1.14	B	0.638	B
21	0.456	B	0.425	B	0.394	B	0.427	B	3.9		3.85		2.08		1.9		2.01		1.13	B	1.11	B	0.626	B
22	0.459	B	0.421	B	0.394	B	0.435	B	3.18		3.75		2.11		1.85		2.07		1.11	B	1.05	B	0.615	B
23	0.459	B	0.421	B	0.389	B	0.449	B	3.13		3.57		2.01		1.85		1.95		1.09	B	1.07	B	0.605	B
24	0.454	B	0.419	B	0.392	B	0.457	B	4.77		3.5		2.04		1.82		1.88		1.09	B	1.06	B	0.595	B
25	0.453	B	0.416	B	0.391	B	0.501	B	7.12		3.34		1.95		1.84		1.81		1.1	B	1.03	B	0.585	B
26	0.45	B	0.414	B	0.388	B	0.551	B	4.6		3.27		1.89		1.93		1.77		1.14	B	1	B	0.575	B
27	0.444	B	0.412	B	0.389	B	0.579	B	3.36		3.16		1.86		1.94		1.73		1.18	B	0.982	B	0.565	B
28	0.439	B	0.415	B	0.388	B	0.641	B	3.25		3.05		1.79		2.06		1.7		1.2	B	0.966	B	0.555	B
29	0.437	B	0.409	B	0.386	B	0.731	B	3.01		3.09		1.76		1.94		1.68		1.21	B	0.95	B	0.546	B
30	0.436	B			0.386	B	0.902	B	2.72		2.99		1.8		1.92		1.7		1.2	B	0.933	B	0.538	B
31	0.432	B			0.382	B			2.86				1.85		1.91				1.17	B			0.53	B
Mean	0.458		0.425		0.400		0.446		3.487		3.711		2.309		2.212		1.887		1.457		1.082		0.700	
Max	0.482		0.438		0.411		0.902		7.120		5.650		3.350		4.130		2.070		1.930		1.210		0.917	
Min	0.432		0.409		0.382		0.375		1.890		2.100		1.760		1.820		1.680		1.090		0.933		0.530	

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data																						
Year	2005																							
Date	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sept		Oct		Nov		Dec	
1	0.522	B	0.437	B	0.428	B	0.425	B	2.56		5.67		9.95		4.08		4.04		3.28		1.34	B	0.794	B
2	0.515	B	0.442	B	0.419	B	0.43	B	2.17		5.85		12.2		3.98		4.1		3.15		1.18	B	0.873	B
3	0.508	B	0.438	B	0.42	B	0.429	B	2.21		5.37		11.1		3.96		4.17		3.06		1.3	B	0.901	B
4	0.5	B	0.442	B	0.419	B	0.427	B	2.17		5.9		9.7		3.9		3.98		2.99		1.23	B	0.893	B
5	0.494	B	0.441	B	0.421	B	0.433	B	1.92		8.33		9.08		3.73		3.88		2.94		1.09	B	0.939	B
6	0.488	B	0.444	B	0.421	B	0.433	B	1.93		6.57		8.17		3.67		3.78		2.88		0.928	B	0.894	B
7	0.482	B	0.449	B	0.422	B	0.437	B	2.15		6.05		8.38		3.68		3.78		2.78		0.875	B	0.957	B
8	0.477	B	0.439	B	0.424	B	0.443	B	2.34		5.52		7.78		3.56		3.77		2.69		0.9	B	1	B
9	0.472	B	0.426	B	0.426	B	0.44	B	3.08		5.33		7.42		3.4		3.73		2.63		0.97	B	1.02	B
10	0.468	B	0.424	B	0.428	B	0.44	B	4.41		5.44		6.79		3.28		3.53		2.62		1.08	B	0.988	B
11	0.464	B	0.422	B	0.43	B	0.439	B	5.21		5.9		6.32		3.14		3.44		2.53		1.14	B	0.93	B
12	0.46	B	0.419	B	0.432	B	0.441	B	6.67		5.57		5.87		3.05		3.4		2.49		1.16	B	0.903	B
13	0.456	B	0.417	B	0.434	B	0.442	B	7.1		5.54		5.63		2.96		3.98		2.41		1.17	B	0.84	B
14	0.452	B	0.419	B	0.436	B	0.443	B	7.87		5.93		5.24		2.98		4.96		2.3		1.16	B	0.837	B
15	0.448	B	0.419	B	0.438	B	0.444	B	12.7		6.86		5.06		2.95		4.79		2.06	B	1.13	B	0.823	B
16	0.445	B	0.414	B	0.44	B	0.447	B	9.97		8.48		4.76		4.02		4.66		1.9	B	1.06	B	0.753	B
17	0.442	B	0.415	B	0.441	B	0.451	B	7.63		8.44		4.51		3.78		4.49		1.8	B	0.97	B	0.729	B
18	0.442	B	0.414	B	0.442	B	0.453	B	6.02		7.93		4.92		3.8		4.42		1.71	B	0.925	B	0.694	B
19	0.442	B	0.413	B	0.421	B	0.462	B	5.46		8.19		5.18		3.79		4.34		1.63	B	0.915	B	0.638	B
20	0.438	B	0.413	B	0.433	B	0.478	B	6.59		8.59		6.17		4.03		4.21		1.56	B	0.92	B	0.618	B
21	0.434	B	0.411	B	0.434	B	0.544	B	7.45		8.68		6.43		4.44		4.15		1.5	B	0.929	B	0.593	B
22	0.442	B	0.415	B	0.433	B	0.574	B	5.99		8.79		5.96		4.19		4.09		1.45	B	0.937	B	0.575	B
23	0.442	B	0.417	B	0.433	B	0.663	B	5.16		8.24		5.61		3.96		3.97		1.41	B	0.972	B	0.56	B
24	0.44	B	0.415	B	0.432	B	0.824	B	5.01		6.99		5.33		3.8		3.87		1.37	B	0.975	B	0.548	B
25	0.438	B	0.417	B	0.431	B	1.11	B	5.19		6.57		5.18		3.65		3.86		1.33	B	0.944	B	0.537	B
26	0.438	B	0.416	B	0.436	B	2.18	B	5.16		7.11		4.94		3.63		3.72		1.29	B	0.675	B	0.527	B
27	0.438	B	0.419	B	0.432	B	3.66		6.78		7.29		4.82		3.93		3.59		1.26	B	0.689	B	0.518	B
28	0.437	B	0.426	B	0.424	B	4.76		5.7		8.9		5.04		4.51		3.54		1.3	B	0.671	B	0.509	B
29	0.438	B			0.421	B	4.18		5.68		8.73		4.72		4.35		3.48		1.33	B	0.68	B	0.5	B
30	0.442	B			0.422	B	3.27		5.9		9.95		4.56		4.24		3.38		1.28	B	0.715	B	0.491	B
31	0.441	B			0.427	B			5.66				4.23		4.16				1.22	B			0.482	B
Mean	0.460		0.424		0.429		1.020		5.285		7.090		6.485		3.761		3.970		2.069		0.988		0.738	
Max	0.522		0.449		0.442		4.760		12.700		9.950		12.200		4.510		4.960		3.280		1.340		1.020	
Min	0.434		0.411		0.419		0.425		1.920		5.330		4.230		2.950		3.380		1.220		0.671		0.482	

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data																					
Year	2006																						
Date	Flow Volume (m³/s)																						
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec											
1	0.482	B	0.416	B	0.312	B	0.349	B	0.571	B	6.02	5.03	2.12	1.7	1.53	0.813	B	0.581	B				
2	0.481	B	0.414	B	0.309	B	0.352	B	0.611	B	7.07	4.25	2.11	1.66	1.48	0.858	B	0.586	B				
3	0.48	B	0.412	B	0.308	B	0.357	B	0.643	B	10.5	3.94	2.02	1.64	1.44	0.914	B	0.59	B				
4	0.48	B	0.41	B	0.306	B	0.364	B	0.662	B	13.5	3.77	2	1.61	1.42	0.945	B	0.592	B				
5	0.479	B	0.404	B	0.304	B	0.372	B	0.681	B	8.85	3.78	2.13	1.59	1.41	0.977	B	0.593	B				
6	0.479	B	0.4	B	0.303	B	0.376	B	0.723	B	5.83	3.68	2.13	1.6	1.4	0.977	B	0.593	B				
7	0.477	B	0.397	B	0.303	B	0.38	B	0.808	B	4.31	3.88	2.12	1.6	1.35	0.971	B	0.59	B				
8	0.474	B	0.393	B	0.302	B	0.388	B	0.885	B	3.94	3.85	2.17	1.6	1.3	0.957	B	0.588	B				
9	0.473	B	0.388	B	0.302	B	0.393	B	0.946	B	4.5	3.66	2.39	1.56	1.37	0.939	B	0.586	B				
10	0.472	B	0.384	B	0.302	B	0.399	B	1.02	B	6.58	3.74	2.5	1.56	1.34	0.923	B	0.584	B				
11	0.469	B	0.378	B	0.302	B	0.405	B	1.18	B	12.4	3.93	2.35	1.51	1.34	0.906	B	0.581	B				
12	0.467	B	0.376	B	0.303	B	0.412	B	1.25	B	9.11	3.84	2.24	1.55	1.31	0.892	B	0.579	B				
13	0.467	B	0.372	B	0.303	B	0.419	B	1.54		7.25	3.92	2.17	1.57	1.24	0.879	B	0.577	B				
14	0.466	B	0.364	B	0.303	B	0.425	B	1.84		5.97	3.82	2.08	1.56	1.32	0.84	B	0.575	B				
15	0.464	B	0.361	B	0.303	B	0.432	B	3.29		6.23	3.45	2.01	1.51	1.31	0.798	B	0.573	B				
16	0.462	B	0.358	B	0.304	B	0.437	B	3.35		8.23	3.1	1.98	1.48	1.23	0.767	B	0.57	B				
17	0.459	B	0.355	B	0.304	B	0.444	B	3.03		5.78	2.94	1.96	1.48	1.23	0.736	B	0.567	B				
18	0.457	B	0.348	B	0.306	B	0.449	B	2.58		4.91	2.82	1.97	1.47	1.33	0.701	B	0.565	B				
19	0.455	B	0.345	B	0.306	B	0.455	B	3.04		3.73	A	2.71	1.92	1.47	1.27	0.688	B	0.562	B			
20	0.45	B	0.343	B	0.308	B	0.46	B	3.3		3.46	E	2.64	1.89	1.48	1.24	0.676	B	0.56	B			
21	0.449	B	0.34	B	0.309	B	0.466	B	3.91		3.18	2.54	1.84	1.44	1.34	0.644	B	0.558	B				
22	0.448	B	0.338	B	0.311	B	0.476	B	4.13		2.92	2.44	1.78	1.43	1.37	0.631	B	0.556	B				
23	0.442	B	0.335	B	0.315	B	0.484	B	4.26		2.69	2.37	1.81	1.48	1.27	0.617	B	0.553	B				
24	0.438	B	0.331	B	0.319	B	0.49	B	4.71		2.5	2.35	1.85	1.65	1.32	0.601	B	0.55	B				
25	0.434	B	0.328	B	0.323	B	0.498	B	6.29		2.42	2.35	1.82	1.71	1.23	0.574	B	0.548	B				
26	0.43	B	0.324	B	0.327	B	0.504	B	7.39		2.37	2.34	1.77	1.67	1.05	0.569	B	0.546	B				
27	0.426	B	0.321	B	0.33	B	0.509	B	9.31		2.3	2.52	1.73	1.69	0.919	0.564	B	0.544	B				
28	0.424	B	0.318	B	0.332	B	0.533	B	13.3		2.7	2.49	1.69	1.74	0.768	B	0.567	B	0.542	B			
29	0.422	B			0.336	B	0.541	B	6.72		7.37	2.28	1.7	1.68	0.701	B	0.571	B	0.541	B			
30	0.419	B			0.339	B	0.558	B	4.25		7.15	2.15	1.68	1.59	0.716	B	0.574	B	0.54	B			
31	0.418	B			0.346	B			4.4		2.11	1.7			0.752	B		0.539	B				
Mean	0.456		0.366		0.312		0.438		3.246		5.792		3.184		1.988		1.576		1.235		0.769		0.568
Max	0.482		0.416		0.346		0.558		13.300		13.500		5.030		2.500		1.740		1.530		0.977		0.593
Min	0.418		0.318		0.302		0.349		0.571		2.300		2.110		1.680		1.430		0.701		0.564		0.539

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station Ibex River
Year 2007

Water Survey of Canada Data

Date	Flow Volume (m³/s)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
1	0.538	B	0.461	B	0.473	B	0.358	B	0.755	B	2.02	4.7	3.91
2	0.537	B	0.475	B	0.475	B	0.358	B	0.811	B	2.11	4.64	3.74
3	0.536	B	0.455	B	0.467	B	0.355	B	0.899	B	2.54	4.58	3.57
4	0.535	B	0.45	B	0.466	B	0.355	B	1.07	B	4.52	4.16	3.41
5	0.534	B	0.448	B	0.465	B	0.356	B	1.22	B	8.45	3.88	3.28
6	0.533	B	0.447	B	0.455	B	0.354	B	1.35	B	8.38	3.67	3.34
7	0.532	B	0.448	B	0.444	B	0.359	B	1.39	B	6.15	3.45	7.38
8	0.53	B	0.448	B	0.434	B	0.372	B	1.27		3.53	3.35	8.82
9	0.529	B	0.45	B	0.428	B	0.384	B	1.34		2.65	3.6	7.49
10	0.528	B	0.451	B	0.423	B	0.39	B	1.32		2.57	3.42	7.14
11	0.527	B	0.453	B	0.419	B	0.395	B	1.27		5.38	3.22	5.9
12	0.526	B	0.452	B	0.413	B	0.402	B	1.18		10.5	3.48	5.53
13	0.525	B	0.447	B	0.411	B	0.413	B	1.17		8.93	3.59	5.03
14	0.524	B	0.446	B	0.406	B	0.417	B	1.24		10.4	3.4	4.69
15	0.523	B	0.446	B	0.406	B	0.417	B	1.24		13.9	3.21	4.38
16	0.522	B	0.437	B	0.402	B	0.421	B	1.42		11.2	3.78	4.16
17	0.513	B	0.436	B	0.397	B	0.428	B	2.03		13.6	7.92	3.98
18	0.519	B	0.433	B	0.394	B	0.437	B	1.68		17.1	6.13	3.8
19	0.495	B	0.435	B	0.388	B	0.447	B	1.51		12.6	4.9	3.7
20	0.475	B	0.438	B	0.387	B	0.459	B	1.44		8.98	4.63	3.61
21	0.469	B	0.447	B	0.385	B	0.477	B	1.49		7.47	6.52	3.46
22	0.467	B	0.436	B	0.381	B	0.509	B	1.66		6.41	5.97	3.38
23	0.464	B	0.436	B	0.38	B	0.573	B	1.98		6.01	4.95	3.25
24	0.466	B	0.443	B	0.374	B	0.591	B	2.48		5.88	4.39	3.27
25	0.459	B	0.452	B	0.374	B	0.618	B	3.93		6.5	4.04	3.39
26	0.458	B	0.457	B	0.373	B	0.649	B	4.32		5.27	3.82	3.27
27	0.457	B	0.46	B	0.37	B	0.641	B	4.22		4.78	3.69	3.13
28	0.456	B	0.465	B	0.367	B	0.69	B	2.69		4.83	3.52	3.03
29	0.456	B			0.365	B	0.706	B	1.89		4.64	4.28	2.94
30	0.451	B			0.364	B	0.732	B	1.61		5.14	4.63	3.01
31	0.451	B			0.361	B			1.96		4.2	3.1	
Mean	0.501		0.448		0.408		0.469		1.757		7.081	4.314	4.261
Max	0.538		0.475		0.475		0.732		4.320		17.100	7.920	8.820
Min	0.451		0.433		0.361		0.354		0.755		2.020	3.210	2.940

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data																					
Year	2008																						
Date	Flow Volume (m³/s)																						
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec											
1	1	B	0.73	B	0.391	B	0.374	B	0.98	E	2.9	3.06	2.57	3.13	2.2	1	B	0.827	B				
2	1	B	0.71	B	0.387	B	0.376	B	1.06	E	2.87	3.11	2.35	3.03	2.25	0.97	B	0.818	B				
3	1.01	B	0.69	B	0.383	B	0.379	B	1.14	E	2.81	2.97	2.25	2.98	2.24	0.99	B	0.809	B				
4	1.01	B	0.67	B	0.379	B	0.382	B	1.22	E	2.52	3.12	2.2	2.91	2.19	1.02	B	0.8	B				
5	1.02	B	0.65	B	0.375	B	0.385	B	1.3	E	1.99	3.37	2.15	2.88	2.18	1.04	B	0.791	B				
6	1.02	B	0.63	B	0.372	B	0.39	B	1.42	A	1.76	3.54	2.09	2.82	2.09	1.06	B	0.782	B				
7	1.03	B	0.61	B	0.369	B	0.395	B	1.55		1.7	3.65	2.1	2.82	1.84	1.08	B	0.773	B				
8	1.04	B	0.59	B	0.366	B	0.408	B	1.58		1.65	3.41	2.07	3.11	1.9	1.07	B	0.764	B				
9	1.05	B	0.57	B	0.363	B	0.423	B	1.65		1.64	3.06	2.05	2.94	1.69	1.05	B	0.755	B				
10	1.06	B	0.55	B	0.36	B	0.436	B	1.65		1.79	3.26	2	2.86	1.91	1.03	B	0.746	B				
11	1.07	B	0.531	B	0.358	B	0.449	B	1.84		2.14	3.07	1.95	2.88	1.91	1.02	B	0.737	B				
12	1.08	B	0.515	B	0.356	B	0.462	B	1.76		4.01	2.93	1.98	2.73	1.84	1	B	0.728	B				
13	1.09	B	0.5	B	0.354	B	0.475	B	1.57	A	4.87	4.88	2.03	2.65	1.82	0.991	B	0.719	B				
14	1.09	B	0.49	B	0.352	B	0.488	B	1.64		5.4	4.87	1.94	2.66	1.73	0.982	B	0.71	B				
15	1.09	B	0.48	B	0.351	B	0.5	B	1.45		4.65	4.96	1.9	2.64	1.78	0.973	B	0.701	B				
16	1.09	B	0.47	B	0.35	B	0.52	B	1.38		4.7	4.48	1.92	2.57	1.74	0.964	B	0.692	B				
17	1.09	B	0.46	B	0.349	B	0.54	B	1.32		5.14	4.05	1.83	2.55	1.71	0.955	B	0.683	B				
18	1.08	B	0.45	B	0.348	B	0.56	B	1.57		5.34	3.83	1.84	2.51	1.56	0.946	B	0.674	B				
19	1.06	B	0.44	B	0.349	B	0.58	B	1.72		6.19	3.78	1.79	2.43	1.73	0.937	B	0.665	B				
20	1.03	B	0.43	B	0.35	B	0.6	B	1.81		7.46	3.55	1.74	2.33	1.45	0.926	B	0.656	B				
21	1	B	0.425	B	0.351	B	0.624	B	2.11		6.52	3.29	1.74	2.27	1.47	0.917	B	0.647	B				
22	0.97	B	0.42	B	0.352	B	0.648	B	2.38		6.09	3.06	1.76	2.23	1.72	0.908	B	0.638	B				
23	0.94	B	0.415	B	0.354	B	0.672	B	2.97		5.43	2.93	1.79	2.2	1.57	0.899	B	0.629	B				
24	0.91	B	0.413	B	0.356	B	0.696	B	4.45		5.12	2.85	1.89	2.19	1.57	0.89	B	0.62	B				
25	0.88	B	0.41	B	0.358	B	0.72	B	9.98		4.56	2.8	2.14	2.13	1.45	0.881	B	0.611	B				
26	0.85	B	0.407	B	0.36	B	0.76	B	14.8		4.11	2.62	2.76	2.11	1.52	0.872	B	0.602	B				
27	0.83	B	0.403	B	0.362	B	0.8	B	11.9		3.91	2.52	3.03	2.08	1.56	0.863	B	0.593	B				
28	0.81	B	0.399	B	0.364	B	0.84	B	10.1		3.71	2.43	3.09	2.06	1.5	0.854	B	0.584	B				
29	0.79	B	0.395	B	0.368	B	0.88	B	6.07		3.44	2.39	3.41	2.06	1.37	0.845	B	0.575	B				
30	0.77	B			0.37	B	0.92	B	4.19		3.11	2.32	3.37	2.12	1.25	0.836	B	0.566	B				
31	0.75	B			0.372	B			3.18			2.55	3.2		1.1	B		0.557	B				
Mean	0.984		0.512		0.362		0.556		3.282		3.918		3.313		2.224		2.563		1.737		0.959		0.692
Max	1.090		0.730		0.391		0.920		14.800		7.460		4.960		3.410		3.130		2.250		1.080		0.827
Min	0.750		0.395		0.348		0.374		0.980		1.640		2.320		1.740		2.060		1.100		0.836		0.557

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data											
Year	2009	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Date													
1	0.548	B	0.376	B	0.361	B	0.396	B	3.25	3.11	2.99	1.81	2.36
2	0.539	B	0.374	B	0.362	B	0.398	B	5.1	4.57	2.87	1.92	2.28
3	0.53	B	0.372	B	0.362	B	0.4	B	8.46	6.77	A	2.9	2.19
4	0.52	B	0.37	B	0.363	B	0.403	B	10.2	8.09	3.07	2.04	2.33
5	0.51	B	0.368	B	0.363	B	0.406	B	9.24	7.53	3	1.95	2.26
6	0.5	B	0.366	B	0.364	B	0.409	B	8.98	8.48	2.97	1.89	2.24
7	0.49	B	0.364	B	0.365	B	0.412	B	8.7	9.07	2.85	1.85	2.24
8	0.48	B	0.362	B	0.366	B	0.415	B	6.38	7.32	2.76	1.85	2.19
9	0.47	B	0.36	B	0.367	B	0.42	B	5.09	6.71	2.86	A	1.89
10	0.464	B	0.359	B	0.368	B	0.425	B	4.04	6.28	4.61	2.06	2.16
11	0.458	B	0.358	B	0.369	B	0.43	B	3.33	6.03	3.87	2.26	2.13
12	0.451	B	0.357	B	0.37	B	0.435	B	2.71	5.7	3.47	2.14	2.1
13	0.445	B	0.356	B	0.371	B	0.44	B	2.25	4.74	3.31	2.04	2.11
14	0.44	B	0.355	B	0.372	B	0.445	B	2.03	3.89	3.09	1.97	2.07
15	0.435	B	0.354	B	0.373	B	0.45	B	1.84	3.46	3	1.94	2.03
16	0.43	B	0.355	B	0.374	B	0.46	B	1.76	3.81	2.97	1.97	2.03
17	0.425	B	0.355	B	0.375	B	0.47	B	1.62	6.18	2.87	2.1	1.99
18	0.42	B	0.356	B	0.376	B	0.48	B	1.53	6.3	2.76	2.14	1.98
19	0.415	B	0.356	B	0.377	B	0.49	B	1.54	5.36	2.6	2.03	1.96
20	0.41	B	0.357	B	0.378	B	0.5	B	1.7	4.59	2.49	2.14	1.95
21	0.406	B	0.357	B	0.379	B	0.513	B	2.16	4.12	2.4	2.51	1.93
22	0.402	B	0.358	B	0.38	B	0.526	B	2.65	3.74	2.32	3.13	1.89
23	0.398	B	0.358	B	0.381	B	0.54	B	3.06	3.52	2.24	3.6	1.92
24	0.394	B	0.359	B	0.382	B	0.56	B	3.58	3.23	2.18	3.3	1.92
25	0.39	B	0.359	B	0.383	B	0.58	B	4.39	3.02	2.11	3.1	1.91
26	0.388	B	0.36	B	0.384	B	0.64	B	6.04	2.83	2.05	2.91	1.87
27	0.386	B	0.36	B	0.386	B	0.7	B	6.93	2.73	2.01	2.75	1.81
28	0.384	B	0.361	B	0.388	B	0.828		5.71	2.72	1.97	2.69	1.82
29	0.382	B			0.39	B	1.02		4.03	2.84	1.93	2.62	1.73
30	0.38	B			0.392	B	1.33		3.22	3.09	1.88	2.55	1.79
31	0.378	B			0.394	B			2.82		1.84	2.5	
Mean	0.441		0.361		0.375		0.531		4.334		4.994		2.717
Max	0.548		0.376		0.394		1.330		10.200		9.070		4.610
Min	0.378		0.354		0.361		0.396		1.530		2.720		1.840
Code		E= estimate B= ice conditions A= partial day D= dry R= revised											

E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data											
Year	2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Date													
1	0.64	B	0.479	B	0.37	B	0.346	B	1.96	7.71	9.16	2.01	2.15
2	0.635	B	0.473	B	0.367	B	0.349	B	1.72	7.86	7.03	1.96	2.21
3	0.63	B	0.468	B	0.364	B	0.352	B	1.58	8.39	6.49	1.87	2.55
4	0.625	B	0.463	B	0.362	B	0.356	B	1.6	6.5	5.53	1.82	2.93
5	0.62	B	0.458	B	0.36	B	0.36	B	1.56	5.12	4.67	1.8	2.97
6	0.614	B	0.454	B	0.358	B	0.37	B	1.58	4.44	4.2	1.8	3.13
7	0.608	B	0.45	B	0.356	B	0.38	B	1.66	4.1	3.94	1.77	3.18
8	0.602	B	0.446	B	0.354	B	0.391	B	1.7	3.94	3.79	1.78	3.21
9	0.596	B	0.442	B	0.352	B	0.402	B	1.66	3.81	3.58	1.72	3.53
10	0.59	B	0.438	B	0.35	B	0.415	B	1.57	3.81	3.47	1.71	3.58
11	0.586	B	0.434	B	0.348	B	0.428	B	1.54	3.91	3.46	1.69	3.7
12	0.582	B	0.43	B	0.346	B	0.44	B	1.43	3.59	3.29	1.66	3.73
13	0.578	B	0.426	B	0.344	B	0.462	B	1.32	3.26	3.09	1.63	3.57
14	0.574	B	0.424	B	0.342	B	0.485	B	1.23	3.05	3	1.62	3.44
15	0.57	B	0.418	B	0.34	B	0.515	B	1.25	3.04	3.18	1.59	3.31
16	0.566	B	0.414	B	0.339	B	0.55	B	1.25	3.14	3.06	1.54	3.21
17	0.562	B	0.41	B	0.338	B	0.6	B	1.24	2.92	2.92	1.55	3.13
18	0.558	B	0.406	B	0.337	B	0.65	B	1.33	2.97	2.74	1.65	3.04
19	0.554	B	0.402	B	0.336	B	0.72	B	1.63	3	2.6	1.81	2.93
20	0.55	B	0.398	B	0.335	B	0.8	B	2.07	3	2.53	2	2.86
21	0.546	B	0.395	B	0.335	B	0.92	B	2.07	3.11	2.5	2.06	2.85
22	0.542	B	0.392	B	0.334	B	1.04	B	2.4	3.26	2.41	1.95	2.8
23	0.538	B	0.389	B	0.34	B	1.2	B	3.27	3.32	2.39	1.87	2.77
24	0.534	B	0.385	B	0.335	B	1.18	B	5.81	3.38	2.55	2.13	2.8
25	0.53	B	0.382	B	0.335	B	1.22		10.5	3.5	2.41	2.5	2.78
26	0.521	B	0.379	B	0.336	B	1.27		8.64	3.48	2.26	2.51	2.81
27	0.513	B	0.376	B	0.337	B	1.37		7.88	3.19	2.19	2.42	2.88
28	0.506	B	0.373	B	0.338	B	1.68		9.53	3.02	2.12	2.33	2.82
29	0.499	B			0.339	B	2.06	A	10.2	2.88	2.07	2.25	2.76
30	0.492	B			0.34	B	2.12		9.05	6.39	2.01	2.22	2.71
31	0.485	B			0.343	B			8.36		1.99	2.18	
Mean	0.566		0.422		0.345		0.781		3.503	4.103	3.440	1.916	3.011
Max	0.640		0.479		0.370		2.120		10.500	8.390	9.160	2.510	3.730
Min	0.485		0.373		0.334		0.346		1.230	2.880	1.990	1.540	2.150

Code E= estimate
 B= ice conditions
 A= partial day
 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data																					
Year	2011																						
Date	Flow Volume (m³/s)																						
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec											
1	0.666	B	0.416	B	0.358	B	0.374	B	0.713	B	22.9	4.82	3.74	5.1	3.19	1.53	B	1.3	B				
2	0.644	B	0.412	B	0.359	B	0.374	B	0.947	A	16.8	4.29	3.73	5.08	3.09	1.47	B	1.29	B				
3	0.622	B	0.408	B	0.359	B	0.375	B	1.02		15.8	3.97	3.64	5.02	2.95	1.42	B	1.29	B				
4	0.6	B	0.404	B	0.36	B	0.375	B	1.1		14.3	3.64	3.46	4.98	2.96	1.37	B	1.29	B				
5	0.58	B	0.4	B	0.36	B	0.376	B	1.21		10.7	3.47	3.32	4.86	2.91	1.32	B	1.29	B				
6	0.56	B	0.396	B	0.361	B	0.376	B	1.41		8.43	3.33	3.32	4.76	2.86	1.29	B	1.08	B				
7	0.54	B	0.392	B	0.361	B	0.377	B	1.64		7.98	3.31	3.29	4.49	2.81	1.29	B	0.677	B				
8	0.52	B	0.388	B	0.362	B	0.377	B	1.89		8.78	3.25	3.28	4.31	2.75	1.3	B	1.27	B				
9	0.508	B	0.384	B	0.362	B	0.378	B	2.17		8.12	3.22	3.39	4.45	2.78	1.3	B	1.28	B				
10	0.496	B	0.38	B	0.363	B	0.378	B	1.97		6.85	3.01	3.39	4.36	2.69	1.3	B	1.28	B				
11	0.485	B	0.378	B	0.363	B	0.379	B	1.96		6.29	2.89	5.07	4.14	2.71	1.3	B	1.28	B				
12	0.479	B	0.376	B	0.364	B	0.379	B	2		5.82	3.03	12.1	3.92	2.71	1.3	B	1.28	B				
13	0.473	B	0.374	B	0.364	B	0.38	B	1.84		5.33	3.39	10.5	3.82	2.67	1.3	B	1.28	B				
14	0.466	B	0.372	B	0.365	B	0.38	B	1.84		5.01	4.75	8.78	3.72	2.53	1.3	B	0.957	B				
15	0.46	B	0.37	B	0.365	B	0.382	B	1.78		4.77	8.35	7.25	3.64	2.53	1.3	B	1.27	B				
16	0.459	B	0.368	B	0.366	B	0.385	B	1.95		4.46	8.77	6.52	3.58	2.48	1.3	B	1.26	B				
17	0.458	B	0.366	B	0.366	B	0.388	B	2.32		4.34	6.94	6.54	3.6	2.31	1.31	B	1.25	B				
18	0.457	B	0.364	B	0.367	B	0.391	B	3.75		4.06	5.84	6.35	3.62	2.44	1.31	B	1.24	B				
19	0.456	B	0.362	B	0.367	B	0.394	B	6.77		5.7	5.41	6.28	3.59	2.24	1.31	B	1.24	B				
20	0.455	B	0.36	B	0.368	B	0.397	B	6.83		6.94	5.46	6.82	3.59	2.1	0.864	B	1.23	B				
21	0.454	B	0.359	B	0.368	B	0.4	B	5.91		6.67	6.13	6.56	3.58	1.97	1.3	B	1.22	B				
22	0.453	B	0.358	B	0.369	B	0.403	B	7.78		6.52	5.26	6.04	3.52	2.12	1.31	B	1.21	B				
23	0.452	B	0.357	B	0.369	B	0.405	B	9.55		6.23	4.74	5.69	3.42	2.12	1.31	B	1.2	B				
24	0.451	B	0.356	B	0.37	B	0.408	B	8.23		6.01	4.62	5.49	3.33	2.07	1.31	B	1.19	B				
25	0.45	B	0.356	B	0.37	B	0.414	B	12.3		6.39	4.18	5.2	3.47	2.08	1.3	B	1.18	B				
26	0.445	B	0.357	B	0.371	B	0.428	B	13.3		6.68	3.94	A	4.99	3.42	2.06	1.3	B	1.17	B			
27	0.44	B	0.357	B	0.371	B	0.444	B	17.2		6.32	3.79	E	4.78	3.33	2.03	1.3	B	1.16	B			
28	0.435	B	0.358	B	0.372	B	0.46	B	21.5		6.12	3.67	A	4.77	3.33	2.03	1.3	B	1.15	B			
29	0.43	B			0.372	B	0.483	B	21.2		5.81	3.6	5.2	3.32	1.78	B	1.3	B	1.15	B			
30	0.425	B			0.373	B	0.522	B	19.9		5.31	3.6	5.3	3.31	1.64	B	1.3	B	1.14	B			
31	0.42	B			0.373	B			23.6			3.65	5.13		1.58	B		1.13	B				
Mean	0.492		0.376		0.366		0.399		6.632		7.848		4.462		5.481		3.955		2.425		1.307		1.201
Max	0.666		0.416		0.373		0.522		23.600		22.900		8.770		12.100		5.100		3.190		1.530		1.300
Min	0.420		0.356		0.358		0.374		0.713		4.060		2.890		3.280		3.310		1.580		0.864		0.677

Code E= estimate
 B= ice conditions
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 D= dry
 R= revised

Station	Ibex River	Water Survey of Canada Data											
Year	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Date													
1	1.12	B	0.813	B	0.814	B	0.824	B	1.59	2.69	5.43	3	3.73
2	1.11	B	0.847	B	0.814	B	0.828	B	1.54	2.5	5.24	2.82	3.7
3	1.1	B	0.864	B	0.813	B	0.831	B	1.55	2.33	5.51	2.74	3.61
4	1.1	B	0.865	B	0.812	B	0.835	B	1.46	2.46	5.57	2.73	3.53
5	1.09	B	0.866	B	0.811	B	0.839	B	1.44	4	5.26	2.62	3.46
6	1.08	B	0.866	B	0.81	B	0.843	B	1.43	6.45	4.93	2.6	3.35
7	1.07	B	0.865	B	0.81	B	0.846	B	1.42	10.7	4.72	2.53	3.28
8	1.06	B	0.861	B	0.809	B	0.85	B	1.61	20.3	4.6	2.48	3.57
9	1.05	B	0.858	B	0.808	B	0.854	B	1.7	18.3	4.31	3.04	4.03
10	1.05	B	0.854	B	0.807	B	0.858	B	1.58	11.9	4.36	4.34	3.86
11	1.04	B	0.85	B	0.807	B	0.874	B	1.42	10.5	3.99	4.55	3.6
12	1.03	B	0.847	B	0.806	B	0.897	B	1.42	8.58	3.68	3.93	3.47
13	1.02	B	0.843	B	0.805	B	0.92	B	1.53	6.54	3.57	3.77	3.37
14	1.01	B	0.84	B	0.804	B	0.943	B	1.51	5.29	3.59	3.56	3.53
15	0.992	B	0.836	B	0.803	B	0.968	B	1.45	4.63	3.52	3.32	3.37
16	0.975	B	0.833	B	0.803	B	0.993	B	1.41	4.34	3.73	3.12	3.23
17	0.959	B	0.829	B	0.802	B	1.03	B	1.4	4.37	3.93	2.98	3.18
18	0.934	B	0.826	B	0.801	B	1.11	B	1.6	6.44	5.07	2.93	3.06
19	0.895	B	0.823	B	0.8	B	1.28	B	1.93	8.97	4.77	2.82	3.01
20	0.847	B	0.822	B	0.8	B	1.7	B	2	12.3	4.35	2.7	3.14
21	0.801	B	0.822	B	0.799	B	1.7		2.25	12.4	4.14	2.59	3.46
22	0.762	B	0.821	B	0.798	B	1.66		2.95	12.7	3.96	2.59	3.28
23	0.741	B	0.82	B	0.797	B	1.67		3.65	12.5	3.85	3.58	3.14
24	0.751	B	0.819	B	0.796	B	1.51		4.4	11.7	3.77	3.32	3.01
25	0.755	B	0.818	B	0.798	B	1.52		6	10.8	3.65	3.1	2.97
26	0.76	B	0.818	B	0.802	B	1.53		5.79	9.19	3.48	3.17	2.98
27	0.764	B	0.817	B	0.805	B	1.5		5.12	7.86	3.43	3.03	3.12
28	0.768	B	0.816	B	0.809	B	1.46		4.51	6.67	3.57	3.32	3.05
29	0.772	B	0.815	B	0.813	B	1.52		3.95	6.16	3.34	3.51	2.98
30	0.776	B			0.816	B	1.58		3.38	5.88	3.14	3.51	2.83
31	0.782	B			0.82	B			3.03		3.02	3.69	
Mean	0.934		0.837		0.806		1.159		2.452	8.315	4.177	3.161	3.330
Max	1.120		0.866		0.820		1.700		6.000	20.300	5.570	4.550	4.030
Min	0.741		0.813		0.796		0.824		1.400	2.330	3.020	2.480	2.830

Code E= estimate
 B= ice conditions
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Station	Ibex River	Water Survey of Canada Data																					
Year	2013	Flow Volume (m³/s)																					
Date		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec										
1	0.774	B	0.629	B	0.527	B	0.439	B	0.734	B	24.5	4.24	5.69	4.08	3.75	1.84	B	1.26	B				
2	0.768	B	0.624	B	0.524	B	0.437	B	0.769	B	19.5	4.22	5.47	5.05	3.76	1.6	B	1.26	B				
3	0.763	B	0.62	B	0.521	B	0.434	B	0.8		11.3	3.93	5.21	4.51	3.67	1.39	B	1.26	B				
4	0.758	B	0.616	B	0.518	B	0.432	B	0.955		8.99	3.67	4.97	4.18	3.58	1.39	B	1.27	B				
5	0.753	B	0.612	B	0.515	B	0.429	B	1.23		6.97	3.42	4.88	3.94	3.44	1.4	B	1.28	B				
6	0.748	B	0.608	B	0.512	B	0.427	B	1.22		5.37	3.2	4.92	3.8	3.34	1.41	B	1.28	B				
7	0.743	B	0.604	B	0.509	B	0.424	B	1.99		4.78	3.08	4.69	A	3.77	3.24	1.42	B	1.29	B			
8	0.738	B	0.6	B	0.506	B	0.422	B	2.09		4.79	2.99	4.44	E	3.71	3.17	1.43	B	1.29	B			
9	0.733	B	0.596	B	0.503	B	0.43	B	2.16		8.65	2.9	4.2	E	3.58	3.26	1.43	B	1.3	B			
10	0.728	B	0.592	B	0.5	B	0.441	B	2.98		9.55	2.79	4.06		3.48	3.22	1.43	B	1.3	B			
11	0.724	B	0.588	B	0.497	B	0.452	B	4.41		8.94	2.9	3.84		3.43	3.08	1.42	B	1.31	B			
12	0.719	B	0.584	B	0.494	B	0.463	B	5.67		10.1	3.62	3.72		3.57	2.98	1.4	B	1.31	B			
13	0.714	B	0.58	B	0.491	B	0.474	B	8.09		9.36	3.1	3.66		3.44	2.92	1.38	B	1.32	B			
14	0.709	B	0.576	B	0.488	B	0.486	B	5.54		7.98	2.78	3.57		3.4	2.9	1.37	B	1.3	B			
15	0.704	B	0.572	B	0.485	B	0.498	B	4.05		7.59	2.66	3.9		3.37	2.81	1.35	B	1.28	B			
16	0.7	B	0.569	B	0.483	B	0.51	B	3.46		8.27	2.66	4.92		3.74	2.76	1.33	B	1.26	B			
17	0.695	B	0.565	B	0.48	B	0.522	B	2.95		9.67	2.59	4.39		4.29	2.67	1.31	B	1.24	B			
18	0.69	B	0.562	B	0.477	B	0.535	B	2.74		9.1	2.63	4.08		4.04	2.67	1.29	B	1.22	B			
19	0.686	B	0.559	B	0.474	B	0.548	B	2.76		7.37	2.56	3.88		3.88	2.66	1.27	B	1.21	B			
20	0.681	B	0.556	B	0.471	B	0.562	B	2.13		7.19	2.75	3.71		4.09	2.65	1.26	B	1.2	B			
21	0.677	B	0.552	B	0.469	B	0.576	B	1.73		7.33	8.49	3.59		4.18	2.59	1.25	B	1.19	B			
22	0.672	B	0.549	B	0.466	B	0.59	B	1.56		6.84	19.4	3.6	A	4.06	2.21	B	1.25	B	1.18	B		
23	0.668	B	0.546	B	0.463	B	0.604	B	1.5		6.24	11.8	3.47		4	2.13	B	1.25	B	1.17	B		
24	0.663	B	0.543	B	0.46	B	0.619	B	1.64		5.75	8.34	3.53		3.84	2.19	B	1.25	B	1.16	B		
25	0.659	B	0.54	B	0.458	B	0.634	B	2.73		5.86	6.91	4.02		3.71	E	2.2	B	1.25	B	1.15	B	
26	0.654	B	0.536	B	0.455	B	0.65	B	6.39		6.24	6.31	4.22		3.72	E	2.21	B	1.25	B	1.15	B	
27	0.65	B	0.533	B	0.452	B	0.666	B	11.1		5.96	6	4.39		3.74	2.1	B	1.26	B	1.14	B		
28	0.646	B	0.53	B	0.45	B	0.682	B	15.7		5.44	5.74	4.13		3.68	2.16	B	1.26	B	1.13	B		
29	0.641	B			0.447	B	0.699	B	18		4.93	5.58	3.87		3.72	2.22	B	1.26	B	1.12	B		
30	0.637	B			0.445	B	0.716	B	19.9		4.44	5.43	3.71		3.85	2.13	B	1.26	B	1.11	B		
31	0.633	B			0.442	B			18.3			5.51	3.49			2.05	B		1.11	B			
Mean	0.701		0.576		0.483		0.527		5.009		8.300		4.910		4.201		3.862		2.797		1.355		1.227
Max	0.774		0.629		0.527		0.716		19.900		24.500		19.400		5.690		5.050		3.760		1.840		1.320
Min	0.633		0.530		0.442		0.422		0.734		4.440		2.560		3.470		3.370		2.050		1.250		1.110

Code E= estimate
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