Part II

Assessment Report on Geology and Geochemistry

Yahk 1-8 Claim Groups
Yahk River Area

Fort Steele Mining Division
British Columbia

NTS Map 82 G/4W, 82F/1E
Lattitude 49°05'
Longitude 115°55'

Owner:
Abitibi Mining Corp
1000-675 W. Hastings Street
Vancouver, B.C., V6B 1N2

Operator:
Abitibi Mining Corp
Cranbrook Field Office
3380 Wilks Road
P.O. Box 215, Main Station
Cranbrook, B.C., V1C 4H7

December 1, 1997
Revised May 14, 1998

Cranbrook Field Office

WP7 File: Yahk97.wpd

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1.00 INTRODUCTION

1.10 Location and Access

The Yahk claim blocks are located approximately 15 kms to the east of the town of Yahk (figure 1). The claims are located along Hawkins Creek north to Mt. Mahon and east of Cold Creek. The property is accessed from highway 95 which runs through the town of Yahk, up the unimporved road on Hawkins Creek to secondary roads to Mt. Mahon and up Cold Creek.

1.20 History

The M. Mahon area has been examined by St. Eugene Mining, Chevron and Minova during the 1980 and early 1990's.

1.30 Physiography

The property is situated west of the Rocky Mountain Trench within the Purcell Mountains. Topography is moderate to steep with glacially rounded ridges. Within the property elevations range from 1000 to 2000 metres.

Vegetation cover varies from immature to mature forests of larch, pine, spruce and fir. Considerable clear-cut logging has occurred on the claim group in the recent past and the logged areas are in various stages of regeneration. Traverses are difficult necessitating cut lines and GPS survey control for location.

1.40 Property

The Yahk 1-8 claim groups consisting of 687 claim units (figure 2, in Appendix, Part 1) is a contiguous block of claims owned by Abitibi Mining Corp, 1000-675 W. Hastings Street, Vancouver, B.C. Table 1 (in Appendix) is a listing of the individual claims, their tenure numbers and current expiry dates.

1.50 Scope of Present Program

The 1997 program consists of:

1. Geological Mapping at 1:20,000 scale by two field crews consisting each of a geologist and GPS technician. Because of the intense overgrowth the location of old road and grids had to be reestablished. CJJ Exploration contracts rebuilt and improved the Mt. Mahon road for 4x4 access. Previous DDH by Chevron and Minova were located and surveyed by GPS methods.

2. Soil Sampling on a grid east of Cold Creek. CJJ Exploration Contracts cut lines,

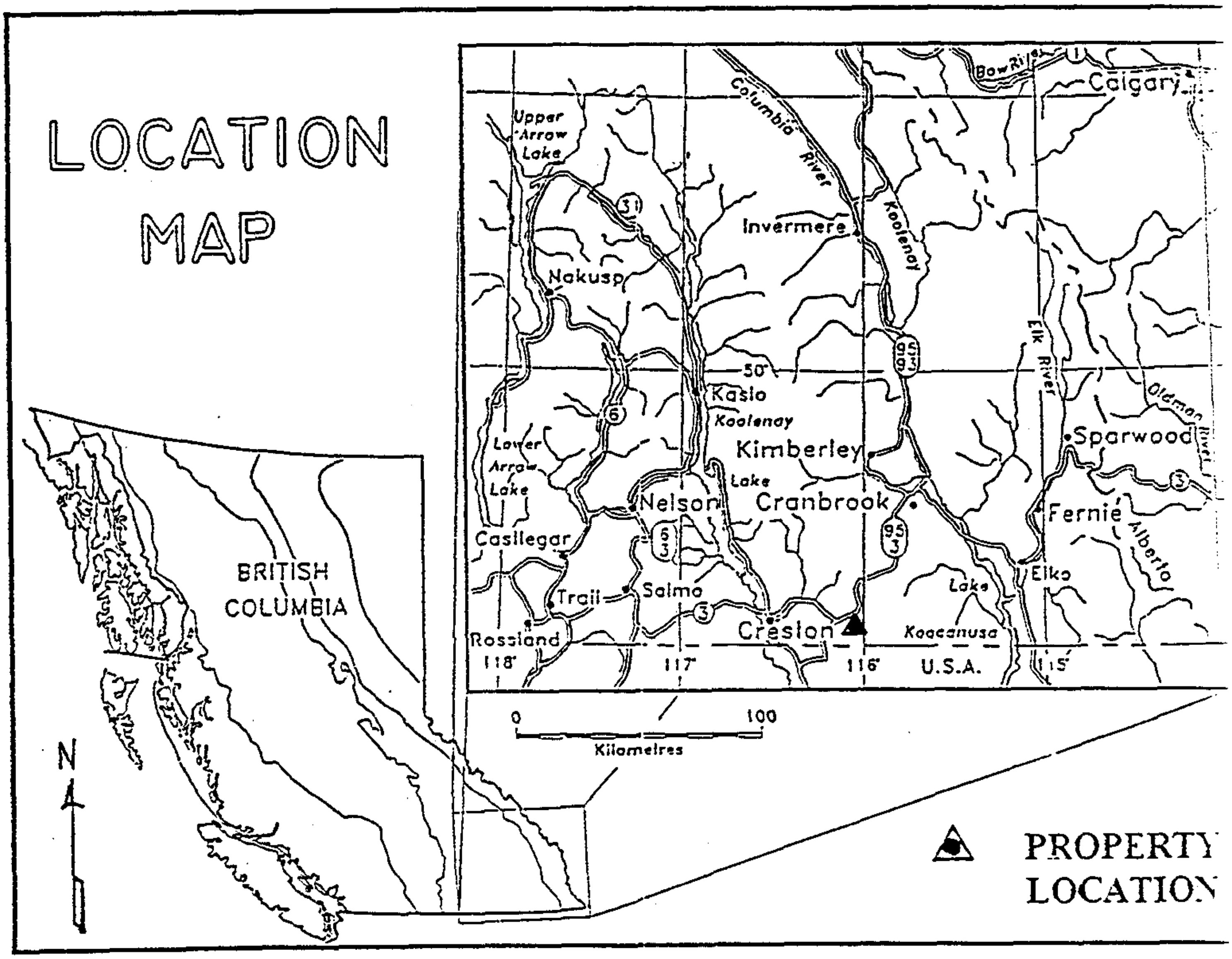


Figure 1.--Location Map.

established a 50 x 100 metre grid and collected 268 soil samples on the grid points. Samples were sent to Bondar Clegg, Vancouver for a 34 element ICP analysis. Results were plotted on AutoCad 14 and contoured using Surfer software.

3. Rock Sampling of 42 specimens during the geological mapping was done to aid in the identification of specific rock units and mineralization. Samples were sent to Bondar Clegg, Vancouver for a 34 element ICP analysis.

4. Thin Section and Petrographic Determinations were made on 17 samples collected during he geological mapping to aid in the identification of specific rock units and mineralization. Samples were sent to Vancouver Petrographic, Vancouver and the petrographic reports were made by Dr. Craig Leitch, formerly of the CGS.

2.00 GEOLOGY

2.10 Regional Geology

The area of the Yahk claim block is underlain by Precambrian Purcell Supergroup rocks of the Aldridge Formation (figure 3). These are fine-grained clastics that include impure quartzites, siltstones and argillites. The rocks have been metamorphosed to lower greenschist facies and have been intruded by a series of mafic sills and dykes.

2.20 GPS Survey Control

To aid in the geologic mapping, two Trimble Pro XL System consisting of a compact dome antenna, Pro LX receiver and TDC1 data collector was used for accurate field locations. A technician (GPS operator) accompanied the geologist in the field and entered station locations for outcrops and sample sites. The technician also collected sample/grid location, topographic and other information in a field book which describes information on the stations. At a later date, the technician down-loaded the data to a computer using a Trimble software program. The data was then corrected using a base station provided by Terra.Pro GPS Surveys Ltd., Prince George, B.C. (E-mail: terrapro@terrapro.bc.ca). Using this method, sample locations, grids, sample lines, DDH locations, roads, cultural features and other points of interest can be digitally incorporated into a map at any appropriate scale.

2.30 Geological Units Mapped

A geological table developed by Senior Geologist, Phil Van Angeren, of the units mapped in the Middle Proterozoic Purcell Supergroup in the Yahk area is:

UPPER SEDIMENTS

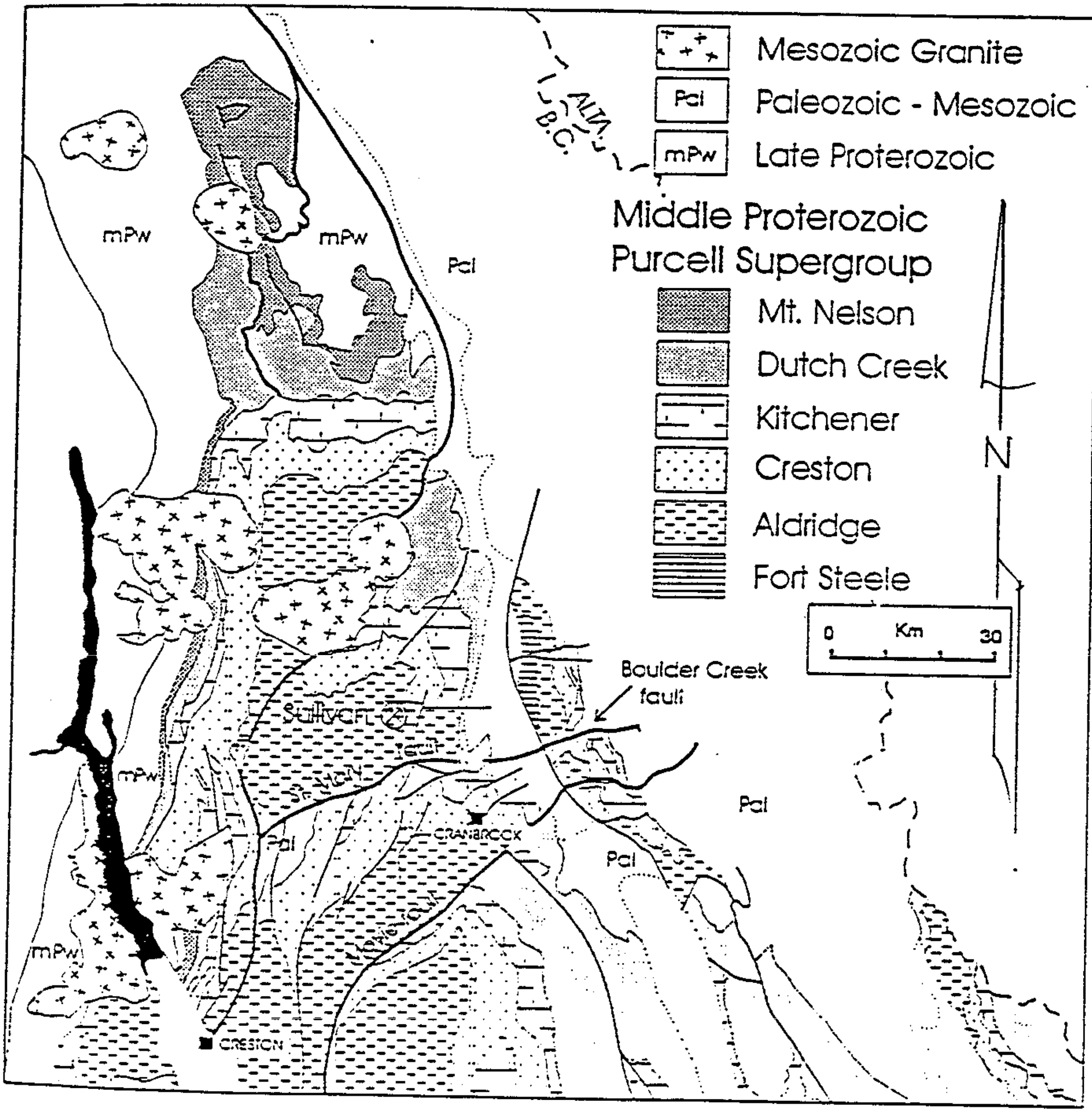


Figure 3.--Regional map of the Purcell Supergroup, Southeastern British Columbia.

8 Creston

a) Green Siltstone: --Grey-green, thin-bedded cherty siltstone.

7 Upper Aldridge

a) Laminated Siltstone: --Dark-grey, thinly-laminated to wispy bedded siltstone.

METAMORPHIC ROCKS

6 Felsic Granophyres

a) Granophyre --Crystalline quartzo-feldspathic migmatitic? unit.

5 Dykes and Sills

a) Gabbro M: --Dark-green, coarse-grained gabbro. Hornblende rich.

b) Gabbro D: --Grey-green, fine-grained "gabbro". Feldspathic, dioritic.

SEDIMENTARY ASSEMBLAGE

4 Fragmental

a) Sandy Fragmental: --Matrix-supported. Sparse rounded chips and pebbles of sandstone, siltstone and/or mudstone in silty and/or sandy matrix. Weak sorting.
4aq: Quartzitic, alteration rims.
4aT: Tourmaline replacement.

b) Wacke Fragmental: --Matrix-supported. Sparse rounded chips and pebbles of sandstone, siltstone and/or greywacke in coarse-grained wacke. Unsorted.

c) Blocky Fragmental: --Matrix- to clast-supported. With rounded to angular pebbles, blocks, rip-ups or slump-fragmentals of siltstone-sandstone. Jumbled.
4cT: Tourmaline replacement.

d) Chaotic Fragmental: --Clast-supported. Unsorted, chaotic mass of rounded to angular, pebbly to blocky, quartzite. Usually altered (tourmaline, silica, sericite, etc.).
4dT: Tourmaline replacement.

3 Laminites

a) Marker Horizon: --Laminated silt/argillite. Laminae are <0.5 cm thick. Parallel laminae characteristic.
3ap: Pyritic, disseminated and banded.

b) Mudstone: --Black, thinly laminated to thinly banded, may be massive. Quartzitic and argillaceous (graphitic?).
3bp: Pyritic, disseminated and banded.
3bT: Laminated aphanitic tourmaline.

2 Middle Aldridge

a) Silty Sandstone: --Grey, micaceous, little pyrrhotite. Well-bedded (ave: 5cm to 80cm), interlayered sandstone-wacke-siltstone. Cross-bedding, load casts and rip-ups frequent. Sandstone ranges from quartzite to greywacke.

2aq: Dominantly quartzitic.

2aT: Bedded aphanitic tourmaline.

b) Slumped: --Siltstone as per **2a**, but with distinct slumping and rip-up features. Contorted beds.

2bp: Pyritic.

2bT: Tourmalinized.

1 Lower Aldridge

a) Rusty Siltstone: --Rusty, pyrrhotitic, thin (10cm) beds of sandstone/wacke/siltstone.

b) Sandy Siltstone: --Pyrrhotitic, thin- to thick-beds of sandstone/quartzite/siltstone. Transitional between Lower and Middle Aldridge.

c) Footwall Quartzite: --Light-grey, thick-bedded, clean quartzite.

2.40 Property Geology

On the Yahk claim block, Precambrian-age Aldridge Formation rocks are generally flat-lying with local dips up to 25°. Outcrops comprise less than 12 percent of the area and are generally restricted to cliff faces and ridge crests. Considerable glacial material covers the slopes and valleys. Some outcrop exists in the stream beds. The area mapped was subdivided into three sub-areas (Yahk East, Yahk Central and Yahk West) as shown on the geologic map (figure 4, in pocket) and described by Phil Van Angeren's Summary Report, August 1, 1997 (the reader is directed to the report, given in the Appendix for a detailed description of the geology, rock units and rock samples collected).

3.00 Geochemistry

3.10 Soil Sampling Procedure and Analytical Methods

268 soil samples were collected by C.J.J. Exploration Contracts, 2445 DeWolfe Avenue, Kimberley, B.C., V1A 1R1. The samples were collected from the "B" soil horizon, placed in standard 4"x 6" Kraft soil sample bags and shipped to ITS--Bondar Clegg, 130 Pemberton Avenue, North Vancouver, B.C., V7P 2R5 for geochemical analysis by conventional ICP (Induc. Coup. Plasma) methods. ITS dried, disaggregated and sieved the samples to -80 Mesh. The samples then underwent an Aqua Regina digestion ($HCl-HNO_3$) and were analyzed using standard ICP (Induc. Coup. Plasma) methods for 34 elements including: Ag, Bi, Cr, K, Mn, Ni, Sn, Ti, Zn, Al, Ca, Cu, La, Mo, Pb, Sr, V, Zr, As, Cd, Fe, Li, Na, Sb, Ta, W, Ba, Co, Ga, Mg, Nb, Sc, Te and Y. Assay certificates showing the elements, lower detection limits, extraction analysis method and number of analyses is given in the Appendix.

3.20 Geochemical Results

Statistical parameters for the 268 soil samples collected on the Cold Creek grid are given in Table 1 (page 8). Only the values for lead and zinc were considered anomalous for the area.

Zinc Figure 5a (in pocket) is a contoured plot of zinc values. Values ranged from a minimum of 35 ppm to a maximum of 554 ppm with an average of 99.2 ppm. Therefore, values above 120 ppm were considered anomalous. A closed contour anomaly is shown on claims Cold 1, Cold 3, Cold 4 and Cold 2.

Lead Figure 5b (in pocket) is a contoured plot of lead values. Values ranged from a minimum of 7 ppm to a maximum of 146 ppm with an average of 23.5 ppm. Therefore, values above 25 ppm were considered anomalous. A large closed countour anomaly is shown on claims Cold 1-4 and is surrounded by several smaller anomalies.

Copper Figure 5c (in pocket) is a conttoured plot of copper values. Values ranged from a minimum of 11 ppm to a maximum of 273 ppm with an average of 48.1 ppm. Therefore, values above 50 ppm were considered anomalous. A small closed contour is positioned over the 273 ppm value on claim Hot 29 and a larger, open to the east anomaly is positioned on Cold 3.

4.00 PETROGRAPHY

17 rock samples were submitted for petrographic determinations to aid in the identification or rock units for geological mapping. See the 1:20,000 scale geologic map (figure 4, in pocket) for the location of the samples and Phil Van Angeren's summary report (in Appendix) for a hand specimen/field description of the samples. A complete petrographic report on each samples is given in the Appendix. A summary of the samples and their probable rock type is:

Sample No.	Probable Rock Type
201	Felsic intrusive, possibly tonalite
202	Chilled, porphyritic gabbro
203	Amphibole-biotite-chlorite-sericite-epidote-sphene altered gabbro
204	? Recrystallized Aldridge sediment
205	? Recrystallized Aldridge sediment
206	Fragmental rock
207	Recrystallized Aldridge sediment; rare biotite ? Fragments
208	Fragmental rock
209	Biotite-rich, sericite, plagioclase-quartz fine wacke/siltstone
210	Siltstone
211	Garnet-sericite rich meta-siltstone

Table 1: Listing of Statistical Values for Cold Creek Soil Samples

Element	Max:	Min:	Ave:	SD:	(n)
Ag	1	0.2	0.35	0.16	268
Cu	273	11	48.1	32.3	268
Pb	146	7	23.5	14.8	268
Zn	554	35	99.2	43.9	268
Mo	5	1	1.66	0.81	268
Ni	69	10	24.8	8.8	268
Co	57	3	15.6	6.37	268
Cd	2	0.2	0.59	0.41	268
Bi	5	5	5	0	268
As	13	5	5.6	1.37	268
Sb	11	5	5.03	0.37	268
Fe	5.49	1.55	3.28	0.83	268
Mn	2561	51	681	402	268
Te	25	10	16.9	7.48	268
Ba	675	59	300	183	268
Cr	75	3	22.4	10.2	268
V	163	7	65.3	25.9	268
Sn	20	20	20	0	268
W	20	20	20	0	268
La	268	6	23	19.4	268
Al	9.84	1.4	5.21	2.64	268
Mg	1.74	0.14	0.73	0.29	268
Ca	2.14	0.1	0.73	0.56	268
Na	4.53	0.01	0.65	0.73	268
K	1.89	0.06	0.68	0.49	268
Sr	304	7	78.8	73.9	268
Y	256	2	15.3	17.6	268
Ga	17	2	6.69	4.97	268
Li	73	9	33.9	10.7	268
Nb	7	3	4.62	0.65	268
Sc	16	5	7.79	3.23	268
Ta	12	5	8.13	2.27	268
Ti	0.99	0.08	0.28	0.18	268
Zr	136	1	32.4	33.2	268

Sample No.	Probable Rock Type (cont)
212	Recrystallized quartz-plagioclase-biotite-amphibole-Kspar-garnet fragmental rock with clots of pyrrhotite-feldspar-amphibole-epidote
213	Laminated siltstone
214	Fragmental tourmalite
215	Recrystallized quartz-plagioclase-biotite-Kspa-muscovite wacke
216	Fine quartz-plagioclase-biotite-tourmaline wacke
217	Laminated quartz-biottite-?plagioclase-muscovite, wisps/blebs of Pyrrhotite-epidote-allanite-sphene-?carbon

5.00 CONCLUSIONS AND RECOMMENDATIONS

Although considerable work has been done by exploration companies on Mt. Mahon in the past, detailed mapping during 1997 located a large area of fragmental rocks, tourmalinite occurrences and weak soil anomlies east of Cold Creek. This newly discovered area warrants follow-up mapping, sampling, trenching and drilling for undiscovered massive sulphide deposits.

The gravity survey did not detect any near surface massive sulphide deposits but infill stations are recommended for 1998, especially in the Cold Creek area.

5.00 STATEMENT OF COSTS

Part 1 (Geophysical Report)

Establish Base Stations, Data Acquisition and Inner Zone Terrain Corrections
(Quadra Surveys operator, report, instrument rentals, 4x4 field vehicle, expenses, computers, lodging plus helper and expenses)

83 gravity stations in June, 1997	$7,091.21
392 gravity stations in July, 1997	25,505.96

Part 2 (Geology and Geochemical Report)

Geology Field Crew of 10 (Mapping, sampling, GPS control, management)

Woodfill	$24,800	
Rodgers	1,500	
M. Johnson	8,450	
M. Kennedy	6,700	
T. Kennedy	6,300	
C. Kennedy	8,375	
P. Van Angeren	12,880	
B. Nassichuk	7,650	
P. Klewchuk	875	
Z. Jackson	250	
Total Salary	$77,780	$77,780

Field Expenses for 10 man crew (lodging/food)	$10,205
4x4 Vehicles for 10 man crew	$9,205
Road building/repair of Mt. Mahon Road (CJJ Exploration Contracts)	$3,745
Line Cutting and Soil Sampling (CJJ Exploration Contracts)	$4815

Geochemical ICP Determinations (Bondar Clegg)

124 soil samples	$1,187.49	
144 soil samples	1,617.84	
20 rock samples	572.45	
22 rock samples	638.47	
9 rock samples	257.60	
Total Geochemical	$4273.85	$4,273.85

Thin Section Preparation and Petrographic Reports (Vancouver Pet)

17 rock samples		$2,317.35

Miscellaneous

Shipment of samples to analytical lab	$49.59	
Rental of 2-way radios	116.00	
GPS base station rental	457.96	
Total Miscellaneous	623.55	623.55

Reduction of Data, Report Writing, AutoCad drafting of Maps

Apex Design	$2,760.30
Data reduction, statistics, report writing (Woodfill, 11d x $400/d)	$4,400.00
Total of Work on Claim Block	$152.722.22
Pac Withdrawal (Abitibi Mining Corp.)	$39,000.00
Grand Total	$191.722.22

7.00 STATEMENT OF QUALIFICATIONS

I, Glen Rodgers certify that:

1. I am a graduate of the University of Manitoba School of Geological Engineering (1977) and registered with the British Columbia Association of Professional Engineers and Geoscientists as a P. Eng.

2. I have based this report on work done by myself during 1997 on the claims including supervision of the project.

3. I do not expect to receive any share consideration as a result of writing this report.

4. I have practiced my profession continuously over the last 20 years as an exploration geologist working in Canada, Alaska and Central America.

Signed: ______________________

Glen M. Rodgers, P. Eng. Date: ______________________

Appendix

Summary Report of the Yahk Project, 1997

by: Phil Van Angeren, P. Geol.

SUMMARY REPORT

on the

YAHK PROJECT

1997

Cranbrook area
British Columbia
Fort Steele Mining Division
NTS 82 G/04 & F/01

centered at
49° 05' North Latitude
116° 00' West Longitude

for
Abitibi Mining Corp.

1000, 675 W.Hastings Str.
Vancouver B.C.
V6B-1N6

by
Phil Van Angeren P.Geol.

August 1, 1997

SUMMARY: YAHK PROPERTY; CRANBROOK, B.C.

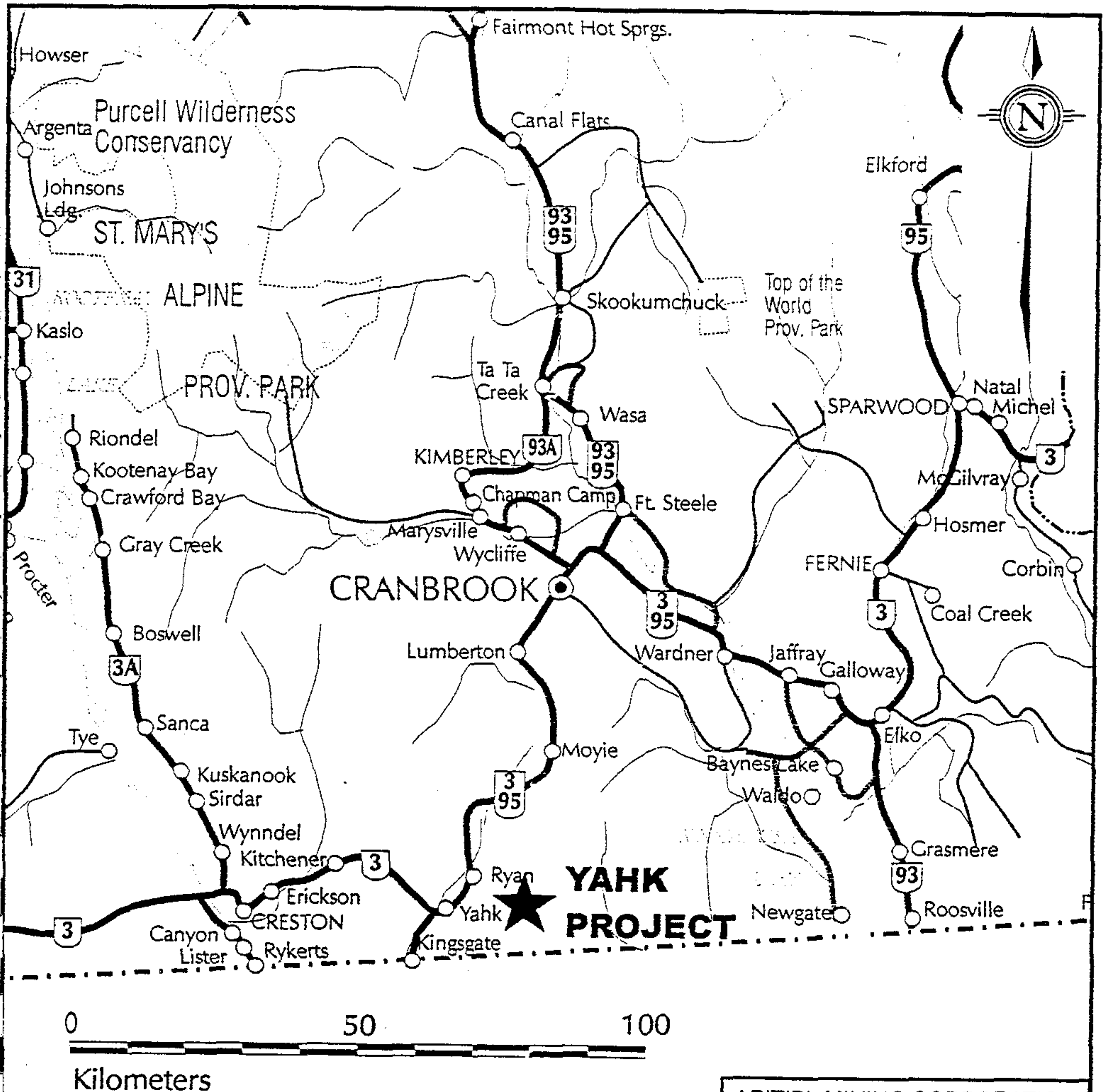
In June-July 1997, surface exploration was carried out on the YAHK property (East, West and Central geological panels). Work consisted of detailed prospecting, geological mapping and rock sampling of the area between Moyie River, Hawkins Creek and Freeman Creek (Figure 1). Emphasis was on detailed mapping of previously located soil anomalies, laminites, fragmentals and tourmalinites occurring at ?Moyie? time (Mt Mahon: YAHK Central block) and at Sundown to Meadowbrook time (Cold Cr: YAHK East block). These were confirmed and new exposures were added to the list. A total of 34 rockchip samples were taken from several exposures of tourmalinite, pyrrhotitic mudstone and laminite (Table 1). The geological interpretations outlined herein are derived from field observations combined with aeromagnetic data and drill logs from 14 DDH bored in 1979-1992. Discussions with Abitibi management in Cranbrook, prospectors Craig, Tom and Mike Kennedy, and with BCGS geologist Derek Brown was instrumental in these interpretations. Geology is shown on Figure 2.

GEOLOGY; YAHK EAST

Lithologies on the eastern slope of Cold Cr consist of an ESE-dipping sequence of middle Mid-Aldridge silty sandstones, dissected by four and possibly five non-magnetic mafic sills. Two of these are very mafic and coarse-grained. Both are accompanied by partial melting of adjacent sandstone, suggesting that they were emplaced within consolidated rock (feeders to upper Mid-Aldridge sills?).

Travelling eastward (up-sequence) from Cold Cr to Freeman Cr, is the following general stratigraphy: i) gabbro (subcrop), ii) thin band of Aldridge sediments, iii) 150-250m of fine to coarse fragmentals traced for more than 2.0 km, iv) Sundown marker (P-3,4,6), v) Aldridge sediments ± minor fragmentals + two 40m thick sills, vi) thick section of Aldridge sediments containing two bands of unknown marker (P-1, P-2) + thin fragmental + po-rich disturbed mudstone, vii) thin gabbro, viii) thick sequence of Aldridge sediments + four localized tourmalinized fragmental units + pyrrhotitic mudstone, capped by ix) gabbro (Meadowbrook sill) and x) a very thick succession of Aldridge sediments down towards Freeman Cr. At least one marker (P-15: Meadowbrook?) was noted in float within this latter segment. The two "unknown" markers (P-1,2) are positioned immediately above thin fragmental units, and may represent either interrupted Sundown sedimentation OR "quiet" sedimentation within localized tertiary basins (ie: local psuedomarkers). All "in-place" markers (P1,2,3,4,6) span a true thickness of ~50m, excluding the intervening sills (v). A marker list is shown in Table 2.

Three features of interest warrant further discussion; the tourmalinized horizon (viii), a Pb-Zn soil anomaly on the grid and the pyrrhotitic markers/mudstones found both on the property (vi & viii) and immediately north of it.



ABITIBI MINING CORPORATION

YAHK PROJECT

LOCATION MAP

CRANBROOK M.D., B.C.	
N.T.S. 82 F/1, 82 G/2, 82 G/5	
DRAWN BY: TLM	DATE: SEPTEMBER 1997
SCALE 1:1,000,000	FIGURE: 1

QUADRA SURVEYS

The four tourmalinized occurrences are aligned along a 2.0km belt in a NE direction across the YAHK grid. The largest **tourmaline** occurrence is located at the NE corner of the grid (GPS Vent). It includes a strongly altered breccia (tourmaline, sericite), as well as an overlying siliceous mudstone bed and a sericitized quartzite band. The largest **fragmental/mudstone** package is located at the SW end of the grid (Big Skid Vent). This consists of sporadically tourmalinized wacke fragmental and pyrrhotitic mudstone. The "Skid" and "Little Skid" Vents occur between the GPS and Big Skid Vents. They comprise small outcrops of tourmalinized and sericitized fragmental similar to the GPS Vent. In all four cases, the tourmaline is brown, sericitic and of replacement type (ThinSection sample #214). The mudstone (eg: GPS, Big Skid and Little Skid Vents) is a finely laminated siltstone defined by laminae of sulphide, quartz, epidote and ms-Kspar (ThinSection #213). All four tourmalinized zones may occur at the same stratigraphic level, representing time-separated, though spatially related, events.

Preliminary sampling was conducted on the various exposures of mudstone and tourmaline (#136401-420 & 430, Table 1). The GPS Vent is strongly anomalous in base, precious and lithophile elements (#136411, 414, 415, 431). Sample 136411, from altered breccia, contains Au (20ppb), Ag (47.6ppm), Pb (3069ppm), Bi (474ppm), As (101ppm), Hg (3040ppb) and Te (32ppm). N° 136414, from mudstone, contains base metals (Cu 274, Pb 638, Zn 455 ppm, Fe >10%). Other vents and mudstones are barren, but this may reflect the preliminary level of sampling which was by no means exhaustive.

The strong Pb-Zn soil anomaly on line 500N of the 1996 grid was found to be located in the footwall of the Meadowbrook sill. The anomaly occurs upslope from the tourmalinized event. Indications are that the sill footwall is the source of the high values (up to 554ppm Zn and 103ppm Pb). An additional 144 soil samples were collected on new lines on the 1996 grid in 1997. New base metal anomalies were uncovered below the GPS Vent (up to 307ppm Zn, and 146ppm Pb) and at the Big Skid Vent (144 to 209ppm Zn). Both anomalies are 250m long by 100m wide.

The black mudstone horizons are sulphide rich and were thought to portray quiet sedimentation in local basins; a good indicator of potential exhalative mineralization affiliated with said basins. All were found to be barren of lead and zinc (#136402, 403, 406, 408, 412, 416). At the far northern end of the work area, beyond the YAHK property, are outcrops of strongly pyrrhotized mudstone and marker horizon (P-5,7). These are barren (#136409, 410, 417-420).

.. The region between these markers and the grid consists of gabbro and thick sequences of Aldridge, with little or no fragmental.

CONCLUSIONS: YAHK EAST

Fragmental packages are uncommon in the Middle Aldridge formation. Their presence in the Cold Cr area is an anomaly. It is felt that the thick, massive "fragmentals" below Sundown represent incipient "secondary" sub-basin formation due to growth faulting. These faults became active immediately prior to Sundown time and persisted sporadically until Ginty-Meadowbrook times. The boundaries of this basin cannot be determined at this time, although the thick, "basal" fragmental unit is traceable for more than 2.0km in a northerly direction. A similar fragmental unit outcrops a further 3.0km to the north. This suggests N-trending growth faulting along the axis of Cold Cr, or perhaps downdip of the fragmental.

The thinner fragmental-mudstone-marker horizons which pepper the Sundown - Meadowbrook sequence may represent smaller tertiary basins related to E-trending transform faulting (Vine-trend?). Most of these "basins" are located between two such faults, as indicated below. The major "tourmalinization-sulphide mudstone" event also occurred within one of these tertiary basins, after Ginty time. This event is traceable for more than 2.0km, with two possible causative sources (syn-depositional transform faults), one north of the grid (near GPS Vent), the other SW of the grid (near Big Skid Vent). The two creeks may represent the edges of a syndepositional transform graben, which explains the abundance of "tertiary" basins between them. Substantial replacement tourmalinization was developed in both fragmental and Aldridge sediments near these postulated faults (feeder vents?). The northern creek apparently arches the Meadowbrook sill; what is thought to be the northern projection of the sill is down-dropped by ~200m in this creek. The sill may have travelled up the creek (feeder fault - GPS Vent core) as a dike from below the GPS vent to above the tourmalinized horizon which traverses the grid. Furthermore, the GPS Vent progresses from bedded tourmalinite away from the creek, to brecciated, sericitized and mineralized tourmalinite near the creek. This suggests proximity to "hydrothermal venting" in the creek, where there is a 300-500m gap in geology (float of black-brown bedded tourmaline, and po-rich mudstone is found within the drainage). The GPS mudstone is also the only mineralized mudstone so far found on the property. The southern creek (Big Skid) is located 2.5km from the GPS Vent. This is sufficiently close to warrant the possibility of simultaneous hydrothermal activity in both creeks. Unfortunately, the totality of that "fault" is buried under till.

The single true soil anomaly on the grid is located within the basal section of the Meadowbrook sill. It could be attributable to sulphide veining in the basal part of the sill, or to digestion of sulphide mineralization by the sill during its emplacement ***through*** the tourmalinized horizon near the GPS Vent. It should be noted that both the GPS and Big Skid Vents are also well represented as anomalies in the soils.

Despite location at Sundown to Meadowbrook times, the YAHK East panel contains numerous Sullivan-type sulphide indicators, such as tourmalinite, pyrrhotized mudstone, and thick accumulations of fragmental. All are constrained within a fairly narrow time period. Although the YAHK East panel is located well above the LMC, it nevertheless provides an attractive exploration target for massive sulphide mineralization.

GEOLOGY; YAHK CENTRAL

The Central block is characterized by NE-dipping and ESE-dipping, wavy-bedded, sandstone and siltstone of the Middle Aldridge formation. These units are interfingered by thicker quartzitic beds which may belong to Ramparts formation. The quartzite occurs throughout the Central block, though more prominently so at the southern end. Comparison of bedding attitudes between the Central and West blocks confirms the presence of a NE-trending antiform centered along Mahon Cr, south of Mt.Mahon. The Central block lies on the SE limb of this antiform. Several "hidden" faults account for sudden variations in bedding, such as on Mt.Mahon proper.

Only a few narrow, discontinuous gabbro sills are noted, except along the base of the eastern slope of Mt Mahon where a large sill/dike complex is indicated in outcrop and in old drillholes. This gabbro appears to be linked with a sill/dike complex located along Manson Cr (West block). A narrow N-trending magnetic gabbro dike crosscuts all structural fabric in the middle of the block. This is a very late intrusive event; the dike was emplaced along a fracture belonging to a regionally persistent set of N-trending, 2-3m wide, brittle fracture zones.

The dominant features of the central block are i) a major NE-trending fault along Mahon Cr, ii) several difficult-to-recognize SE-trending "transform" faults, and iii) a laminated tourmalinite horizon extending from Mt.Mahon to Mt.Manson.

The Mahon fault is a regional linear which occurs along the axis of the antiform, and appears to "block" many of the "transform" faults in both the West and Central blocks. It may project across Hawkins Cr into Canuck Cr. This fault offsets the magnetic linear which has been attributed to the narrow magnetic dike. Mahon Fault is therefore a late feature, although it may involve reactivation of an old "growth" fault.

The sudden variation in bedding attitude on Mt.Mahon may best be ascribed to SE-trending faulting (Vine-trend?). Of particular interest is a tentatively identified fault passing between DDH Y-13-81 and MM-84-1. This separates N-dipping tourmalinized sediments (Y-13-81) from NE-dipping barren sediments (MM-84-1). A similar fault may be the reason for an apparent thickening of tourmalinized sediments at Mt.Manson.

The tourmalinized horizon consists of up to 50m of laminated black aphanitic tourmaline interlaminated with sandstone (occasionally with ripped-up tourmaline clasts and slump features), including thick-bedded sandy fragmental which is locally pervasively tourmalinized (black/brown cherty quartzite).

The oft fault-offset horizon has been traced in outcrop, float and drill holes for over 5 km from the ridge SE of Mt.Mahon (where it appears to parallel the ridge and is noted downdip in hole MM-87-1) to Mt.Mahon (incl holes Y-13-81 & MM-92-4) and to Mt.Manson. The tourmaline laminae are "graded" and are separated by unaltered siltstone and sandstone. At Mt.Manson, brown and black pyrrhotitic tourmalinization occurs as stacked and discontinuous zones in quartzite and fragmental over an apparent thickness of more than 80m. This "thickening" may be due to faulting, to thickening by "barren" sediments or to the presence of a vent (Manson Vent). All of the Mt.Mahon rock samples are from tourmalinized zones (#136426-430 & 616-617). All samples are devoid of mineralization except for #136428 which contains 855ppm As in a black quartzite. Sampling was by no means complete, a result of lack of exposure.

The mineralized bands noted in holes Y-12-81 (west of Mahon Fault) and YA-6 (1979; lower slope Mt.Mahon) were not uncovered at surface, and remain unexplained. Outcrops of regular Middle Aldridge in the area of Y-12-81 are siliceous and locally pervaded by a chloritic stockwork, but are barren (#136425). This structural deformation and alteration may be related to the Mahon Fault. The area is also characterized by high magnetic background, probably due to a flat-lying gabbro sill exposed nearby.

CONCLUSIONS: YAHK CENTRAL

The Central block covers "middle" Middle Aldridge formation.

Mt.Mahon saw the development of a shallow "secondary" basin which was filled in part with a fragmental unit and with bedded tourmaline. This basin may be more than 5km in length, though not much more than 50m thick. Based on the graded and laminated character of the tourmaline, and on its interlamination with unaltered sandstone and siltstone, it is believed that the tourmaline is exhalative in nature. The tourmaline likely occurs at the same stratigraphic level as exhalative massive sulphides would, since the process which produces sulphide mineralization would also have produced the exhalative tourmaline. The source of the tourmaline (hydrothermal vent) is possibly located at Mt.Manson, where brown "replacement" tourmaline occurs in quartzite and fragmental. No obvious "transform-feeder" fault has yet been mapped at Mt.Manson, nor have any of the altered zones proven mineralized, but this is a function of the paucity of outcrops.

If the thick-bedded quartzites of Central block belong to Ramparts formation, then this formation reached much higher into the Middle Aldridge formation than originally thought, and altitude above LMC will be much greater than anticipated, even when excluding sills. Total thickness of Ramparts units is unknown. The remainder of the central block is insufficiently exposed and cannot be interpreted.

GEOLOGY; YAHK WEST

The West block is generally devoid of "active" geology. Only one true fragmental unit was observed, and no significant tourmalinization is encountered. The block encompasses a large mass of gabbro sills and dikes intruded into the lower portion of a thick and monotonous sequence of wavy-bedded Middle Aldridge sandstone and siltstone.

Undifferentiated and interbedded within this sequence are slightly thicker units of quartzite, believed to be representative of the Ramparts facies. An as yet unidentified marker horizon (?Lamb?) is mapped 1.5km north of Manson Cr. It may provide the only stratigraphic control in the West block. Several other "pseudomarkers" may yet prove to be real markers. Sediments in the south half of the West block dip to the NW, compared to SE dips in the Central and East blocks. This reflects the presence of a NE-trending antiform on the YAHK property. However, sudden variations in bedding attitudes in the north half of the West block, from E-dipping to NE-dipping, is suggestive of SE-trending faulting rather than of folding. This faulting is evidenced by the sudden termination of gabbro sills against sediments in the vicinity of Highway #3 and along Mahon Road. Large sill-dike complexes are believed to have penetrated three of these postulated faults at Hawkins, Charlie and Manson Creeks. There is no evidence for the presence of either LMC or Lower Aldridge pyrrhotitic siltstone in the West block. Thick-bedded, wavy-banded, oxidized sandstone along the lower reaches of Hawk Road (HAWK Claims) are interpreted to be Middle Aldridge sediments which were affected by faulting along Hawkins Cr.

There is a large exposure of fragmental unit (originally mapped as gabbro by BCGS) on Mahon Spur, south of Charlie Cr confirmed to be a wacke fragmental by thin section (ThinSection #215). Preliminary investigation shows this to be a wide (>150m), SE-trending, greywacke clastic "dike" which crosscuts well-bedded, quartzitic sandstone at a high angle. The contact zone is gradational over a few metres. The wacke is seemingly fragmental, and has been traced for well over 250m along "strike". Its NE contact zone is hidden under till, in a creek. It also disappears under till along strike. Lack of further exposure precludes determination of the nature of this unit. It may represent a localized "channel" deposit, possibly developed along a transform fault. The two samples from this zone are barren (#136419 & 133215).

The more interesting formations occurs along Mahon Road between Charlie and Manson creeks. Near Manson Cr is a 0.5m "pseudomarker" horizon (P-12; unidentifiable) with trace sulphides (po & gal). It can only be traced for 50m, but is probably more extensive than this. It is encased in normal sandstone, and may represent either the outer fringe of a local "tertiary" basin, or a regional marker horizon. Samples from this unit contain up to 415ppm Pb and 499ppm Zn (#133218, 219). The other horizon of interest lies near the hangingwall of the sill-dike complex along Charlie Cr. This consists of a single layer of black, siliceous, tourmalinized quartzite encased in otherwise normal sandstone. Both thin section work and assaying shows this tourmaline horizon to contain trace amounts of galena and sphalerite (ThinSection #216 & #133216 @ 669ppm Pb, 657ppm Zn). It has not been traced beyond the limits of the outcrop.

CONCLUSIONS: YAHK WEST

The West block represents a Ramparts-contaminated and Ramparts-thickened **lower** Middle Aldridge facies which has been repeatedly intruded by younger gabbro which fed sills higher up in the sequence. Because of this, few marker horizons are present, except in the northern, up-sequence, portion of the block. Growth and transform faulting was triggered during mid-upper Middle Aldridge sub-basin development in the Central and East blocks **after** deposition of the West block. This explains why there is abundant faulting and coincident dike complexes in the West block, but no associated "sub-basin" fragmentals and tourmalinization. The wacke fragmental shows evidence that the Charlie Cr fault (or splay thereof) may actually have been active in lower Middle Aldridge times. Black tourmalinized quartzite and weakly mineralized "marker" horizon (P-12) in the up-sequence portion of the block indicates that some hydrothermal activity was nevertheless present during deposition of the West block. Structural features may have been exacerbated by repeated intrusion of gabbro, and may in fact have facilitated said intrusion. The large mass of gabbro observed along Hawkins Cr and Moyie River may represent "source" intrusions which fed the thinner sills higher up in the upper Middle Aldridge formation. The gabbro had to percolate upwards, along some of the recurrent faults, in order to reach the Moyie, Sundown and Meadowbrook levels of the Central and East blocks. This may explain the large sill-dike complexes seen in Hawkins, Charlie and Manson creeks, all of which are believed to occupy recurrent transform faults.

RECOMMENDATIONS

Recommendations involve soil sampling, trenching and drilling of postulated "feeder fault" axes near tourmalinized horizons. Specifically:

i. Several of the old drill holes should be re-logged if they are accessible (eg: YA-6, Y-12-81, Y-13-81, MM-84-1, MM-87-1, MM-92-04),
ii. Combine soil sampling with trenching on the GPS-Big Skid tourmalinized horizons in order to potentially expose altered "vents" for drill target definition,
iii. Trenching is required in order to verify the presence of venting and "feeder" faulting at Mt.Manson,
iv. Lithogeochemical study on any future drill core,
v. Possibly re-drill DDH Y-12-81and MM-84-1 to verify the nature of previously defined sulphides and markers,
vi. Diamond drilling of "vent" areas: GPS vent, Big Skid vent and Manson vent, contingent upon trench sampling results.

Phil van Angeren P.Geol
Brent Nassichuk

GEOLOGICAL TABLE

(Yahk & Pyramid Areas; Purcell Supergroup)

MIDDLE PROTEROZOIC

UPPER SEDIMENTS:

8 Creston:

a) *Green Siltstone*: -Grey-green, thin bedded cherty siltstone.

7 Upper Aldridge:

a) *Laminated Siltstone*: -Dark grey, thinly laminated to wispy bedded siltstone.

VOLCANICS:

6 Felsic Granophyres:

a) *Granophyre*: -Crystalline quartzo-feldspathic ?migmatitic? unit.

5 Dikes and Sills:

a) *Gabbro M*: -Dark green, coarse-grained gabbro. Hornblende rich.

b) *Gabbro D*: -Grey-green, fine-grained "gabbro". Feldspathic, dioritic.

SEDIMENTARY ASSEMBLAGE:

4 Fragmental:

a) *Sandy Frag*: -Matrix-supported. Sparse rounded chips and pebbles of sandstone, siltstone and/or mudstone in silty and/or sandy matrix. Weak sorting.
4aq: Quartzitic, alteration rims.
4aT: Tourmaline replacement.

b) *Wacke Frag*: -Matrix-supported. Sparse rounded chips and pebbles of sandstone, siltstone and/or greywacke in coarse-grained wacke. Unsorted.

c) *Blocky Frag*: -Matrix- to Clast- supported. With rounded to angular pebbles, blocks, rip-ups or slump-fragments of siltstone-sandstone. Jumbled.
4cT: Tourmaline replacement.

d) *Chaotic Frag*: -Clast-supported. Unsorted, chaotic mass of rounded to angular, pebbly to blocky, quartzite. Usually altered (tourmaline, silica, sericite etc).
4dT: Tourmaline replacement.

3 Laminites:

a) *Marker Horizon*: -Laminated silt/argillite. Laminae are <0.5 cm thick. Parallel laminae characteristic.
3ap: Pyritic, disseminated & banded.

b) *Mudstone*: -Black, thinly laminated to thinly banded, may be massive. Quartzitic and argillaceous (graphitic?).
3bp: Pyritic, disseminated & banded.
3bT: Laminated aphanitic tourmaline.

2 Middle Aldridge:

a) *Silty Sandstone*: -Grey, micaceous, little pyrrhotite. Well bedded (avg: 5cm to 80 cm), interlayered sandstone-wacke-siltstone. Cross-bedding, load casts and rip-ups frequent. Sandstone ranges from quartzite to greywacke.
2aq: Dominantly quartzitic.
2aT: Bedded aphanitic tourmaline.

b) *Slumped*: -Siltstone as per 2a, but with distinct slumping and rip-up features. Contorted beds.
2bp: Pyritic.
2bT: Tourmalinized.

1 Lower Aldridge:

a) *Rusty Siltstone*: -Rusty, pyrrhotitic, thin (10cm) beds of sandstone/wacke/siltstone.

b) *Sandy Siltstone*: -Pyrrhotitic, thin to thick beds of sandstone/quartzite/siltstone. Transitional between Lower and Middle Aldridge.

c) *Footwall Quartzite*: -Light grey, thick bedded, clean quartzite.

TABLE 1 -- 1997 SAMPLE DESCRIPTIONS & ASSAYS

YAK SAMPLES: 1997

Sample #	Zone	Location	t (m)	Rock Type
136401	YAK East	SKID Vent (OC/0010)	Panel	Tourmalinized chaotic fragmental (brown)
136402	YAK East	IM Vent (OC/0018)	Panel	Slumped chloritic siltstone
136403	YAK East	Ginty Rd @ 1573m (OC/0019, IM Vent'	1.50	Laminated mudstone + limonite clots (po)
136404	YAK East	Off West edge YAK Grid (OC/0023)	1.00	20 cm band tourmalinized siltstone (brown)
136405	YAK East	Sundown Marker (OC/34)	0.50	Regular laminite
136406	YAK East	Float @ 000N Grid (OC/0052,)	Float	Laminated mudstone + diss po in bands .
136407	YAK East	BIG SKID Vent (OC/0050)	0.40	Tourmalinized quartzite fragmental (banded)
136408	YAK East	Creek North of YAK Grid (GPS Vent?)	Float	Laminated mudstone + limonite clots (po)
136409	YAK East	Cold Cr Rd North of YAK (OC/2009)	Panel	"R" laminite + diss po
136410	YAK East	Cold Cr Rd North of YAK (OC/2009)	Panel	Laminated mudstone + limonite clots (po)
136411	YAK East	GPS Vent (OC/0061)	Panel	Tourmalinized chaotic fragmental (brown)
136412	YAK East	Tour Rd 500m N of Grid (OC/0074)	0.20	Laminated mudstone + diss po in bands
136413	YAK East	1km NE of Grid (OC/2030)	1.00	Laminated mudstone + diss po in bands
136414	YAK East	GPS Vent (OC/0065)	Float	Laminated mudstone + diss po in bands
136415	YAK East	GPS Vent (OC/0065)	Panel	Tourmalinized quartzite fragmental (banded)
136416	YAK East	2km N of Grid (OC/0097)	Panel	Laminated mudstone + diss po
136417	YAK East	Ryan Cr Rd North of YAK (OC/2052)	1.00	Laminated mudstone + diss po in bands
136418	YAK East	Ryan Cr Rd North of YAK (OC/2052)	Panel	"Meadowbrook" laminite, Sericitized siltstone
136420	YAK East	Ryan Cr Rd North of YAK (OC/2052)	1.00	Laminated mudstone + diss po in bands
136431	YAK East	GPS Vent (OC/0197)	Float	Laminated mudstone + diss po in bands
136419	YAK West	Mahon Rd spur (OC/0103)	Panel	Wacke fragmental
136421	YAK West	Mahon Rd S of Manson Cr (OC/0115)	Panel	Laminite? + diss po
136422	YAK West	Mahon Rd S of Manson Cr (OC/0115)	Panel	Laminite? + diss po, Pb?, Zn?
136423	YAK West	Mahon Rd S of 136422 (OC/0116)	1.00	Black quartzite (Tourmalinized?)
136424	YAK West	Mahon Rd S of 136423 (OC/0116)	0.50	Qtz vein + asp/po @ gabbro contact
136432	YAK West	Lower Hawk Rd (OC/0211)	1.00	Sericitic siltstone + diss po in clots (fault?)
136425	YAK Central	MtMahon near DDH Y-12-81 (OC/2117	Panel	Qtzite + silica stwk + sericite alt'n
136426	YAK Central	MtMahon East of 136425 (OC/0165)	Panel	Laminated mudstone + limonite clots (po)
136427	YAK Central	S slope MtMahon (OC/0168)	0.50	Black laminated Tourmaline
136428	YAK Central	MtMahon near DDH Y-13-81 (OC/0169	Panel	Black quartzite (Tourmalinized?)
136429	YAK Central	MtManson 2km NE MtMahon (OC/0178	Float	Black quartzite? (Tourmalinized?)
136430	YAK Central	MtManson peak (OC/0179)	Panel	Fragmented & tourmalinized quartzite + po
136616	YAK Central	200m SW MtManson peak (OC/0214)	0.50	Brown laminated Tourmaline
136617	YAK Central	200m SW MtManson peak (OC/0214)	Panel	Brown tourmalinized quartzite

TABLE 2 – 1997 TABLE of MARKER SAMPLES

YAK MARKER SAMPLES: 1997

Sample #	Outcrop #	Location	Assumed Marker	Identified Marker
P-1	0019	Ginty Rd; west of grid	Mark - Ginty	
P-2	0025	West of grid	Sundown	
P-3	0029	West of grid	Sundown	
P-4	0034	West of grid	Sundown	Sundown
P-5	2009	North of YAK property	R - Meadowbrook	R
P-6	0089	West of grid	Sundown	Sundown
P-7	2052	North of YAK property	Sundown	Meadowbrook
P-8	Float	South end of grid	Mark - Ginty	Unidentifyable
P-9	0065	NE end of grid	Ginty - Meadowbrook	PseudoMarker
P-10	0109	N end Mahon Road	?	PseudoMarker
P-11	0112	N end Mahon Road	Lamb	
P-12	0115	S of Manson Cr @ Mahon Rd	Lamb	PseudoMarker
P-13	0148	SW ridge Mt.Mahon	?	
P-14	2113	SW ridge Mt.Mahon	?	
P-15	Float	Beyond NE end of grid	Ginty - Meadowbrook	
P-16	Float	Mt.Mahon; west flank	Lamb - Falls	
P-17	0165	Mt.Mahon; north flank	Lamb - Falls	
P-18	0167	Mt.Mahon ridge crest	Lamb - Falls	
P-19	SubCrop	Mt.Manson north flank	Moyie	
P-20	Float	Hawk claims	?	

Petrographic Reports on Yahk Area Rock Samples

Vancouver Petrographics Ltd.

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PETROGRAPHIC REPORT ON 17 SAMPLES FROM CRANBROOK PROJECT, B.C.

Report for: Dr. R.D Woodfill — Invoice 970516
Hastings Management Corp./Abitibi Mining Corp.
3380 Wilks Road
Cranbrook, B.C. V1C 4H7. — July 31, 1997.

SUMMARY:

This is a suite of lower middle greenschist facies metamorphosed, mainly sedimentary rocks; some have vaguely (samples #204, 205, 207, 212, 214, 215) to rarely well defined (samples 206, 208) fragmental texture. The clasts in these fragmental rocks are variably defined by variations in grain size or mineralogy (e.g. biotite-rich, plagioclase-rich and biotite-poor). **Sample 208** contains significant fine hydrothermal tourmaline in the rock matrix (not in the clasts) and significant iron sulfide; **sample 214** is finely fragmental, and is thoroughly tourmalinized (clasts and matrix). Layered rocks include biotite-muscovite-rich, plagioclase-quartz bearing fine wacke/siltstone containing oribicular structures rimmed by biotite and cored by quartz (sample 209); ?Mn garnet-rich, quartz-muscovite-biotite siltstone with minor ilmenite-allanite-tourmaline (sample 211); a fine quartz-plagioclase-biotite-minor tourmaline wacke with clots of K-feldspar-pyrrhotite-sphene-minor galena-sphalerite-chalcopyrite (**sample 216**); and markers (samples 210, 213, 217) composed of laminated quartz-biotite-plagioclase +/- muscovite-Kspar siltstone with wispy concentrations of sphene-epidote-allanite-?carbon +/-apatite and clots of pyrrhotite +/- sphalerite-galena-Kspar-calcite-tremolite.

Intrusive rocks include two samples of Moyie gabbro (#202 with a chilled porphyritic texture from the margin of the body, and #203 from the coarse-grained phase). The chilled margin consists of plagioclase, amphibole and sphene-ilmenite/magnetite phenocrysts in a matrix of similar finer material (alteration is to biotite-chlorite-epidote-sericite). The coarse phase consists of relict clinopyroxene and calcic plagioclase plus minor magnetite, altered to amphibole, biotite, chlorite, sericite, epidote and sphene. Sample #201 appears to be a biotite tonalite (quartz diorite), composed of medium-grained quartz, sodic plagioclase, biotite and minor K-feldspar.

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201: FELSIC INTRUSIVE, POSSIBLY TONALITE (COMPOSED OF QUARTZ-SODIC PLAGIOCLASE-BIOTITE-KSPAR)

Mapped as a Laramide intrusive rock, but believed on field evidence to possibly be an anatectic rock formed from melted quartz wackes. Hand specimen is medium-grained, with a black-and-white "salt and pepper" appearance caused by abundant black biotite; vugs are partly stained by iron oxides. The etched slab shows significant quartz and minor yellow stain for K-feldspar. The rock is not magnetic and shows no reaction to cold dilute HCl; modal mineralogy in thin section is roughly:

Quartz (partly secondary)	40%
Plagioclase (sodic)	35%
Biotite	20%
K-feldspar	3%
Sericite, clay	1%
Limonite	<1%
Opaque (?rutile, in biotite)	<1%
Epidote	tr

Quartz is abundant, forming ragged subhedra that are optically continuous for up to 1 mm; the outer margins are ragged and have a secondary aspect, commonly replacing or forming micrographic intergrowths with adjacent feldspar. The quartz tends to be clear (free of inclusions) and relatively little strained (minor undulose extinction). The micrographic texture looks like a late-magmatic igneous feature.

Plagioclase forms subhedral crystals rarely up to 1.5 mm in length (although most are ragged due to attack by quartz). Relief mainly at or below that of adjacent quartz suggests a sodic composition; there are only traces of incipient alteration to very fine (<5 micron) clay-sericite along fractures, or less commonly to discrete euhedral flakes of sericite and subhedral epidote to 60 microns in diameter. Twinning is only rarely seen, making plagioclase dificult to distinguish from K-feldspar except by the low relief of the latter, which is seen only as fine (generally less than 50 micron) rounded inclusions in the plagioclase, especially close to biotite.

Biotite forms subhedral to ragged dark blackish brown flakes up to 0.7 mm in diameter rarely associated with or including minor fine opaques (?rutile).

This sample appears to be an igneous rock of felsic composition, possibly about biotite tonalite (quartz diorite) since quartz content is over 20%, and ratio of plagioclase to total feldspar is over 0.9. The size of the plagioclase crystals, which are partly replaced by quartz, is not typical of Aldridge sediments, which tend to contain finer (50-100 micron) plagioclase distinctly subordinate in size and interstitial to the larger (0.1-0.2, less commonly to 0.5 mm) detrital quartz grains. Also, note that muscovite flakes, typical of Aldridge sediments, are lacking.

202: CHILLED, PORPHYRITIC GABBRO (PLAGIOCLASE, AMPHIBOLE, SPHENE-ILMENITE-MAGNETITE PHENOCRYSTS IN SIMILAR GROUNDMASS)

Dark green, fine-grained phase of a basic intrusive rock; etched slab shows a porphyritic texture, with 20-25% 1 to 1.5 mm white plagioclase and 15-20% similar sized dark green mafic crystal relics in a fine, but phaneritic groundmass of the same minerals. Traces of yellow stain for K-feldspar appear to be located in plagioclase crystals, suggesting they are secondary. The rock is slightly magnetic but shows no reaction to cold dilute HCl. Modal mineralogy in thin section is approximately:

Plagioclase	50%
Amphibole	35%
Chlorite	5%
Biotite	2-3%
Epidote	2-3%
Sericite	2-3%
Sphene	2-3%
Opaques (*?ilmenite, magnetite*)	1-2%

Plagioclase forms subhedral, in places corroded, lath-like phenocrysts up to about 2 mm long that generally lack primary compositional zoning but are twinned, with moderate extinction angles suggesting intermediate composition. Minor alteration to sericite (flakes to 25 microns) and epidote (subhedra to 0.1 mm) is common, especially at cores.

Amphibole phenocrysts are mainly less than 1.5 mm in diameter, with subhedral to rounded outlines and sea-green pleochroism suggesting actinolite; they are commonly replaced by fibrous secondary amphibole, or chlorite, biotite and epidote all less than 0.1 mm in size, plus abundant finer (15-25 micron) sphene. Chlorite has strong anomalous (Berlin blue), length-slow birefringence and green pleochroism, indicating high Fe content (Fe:Fe+Mg, or F/M, ratio probably about 0.5-0.6). Biotite forms pale brown flakes that are intimately mixed with the amphibole and are themselves partly chloritized in places.

Opaque minerals are mainly skeletal aggregates of ?ilmenite, found in the cores of sphene aggregates, but some more equant subhedra to 0.2 mm are likely magnetite and/or hematite.

The groundmass consists of 0.1-0.2 mm plagioclase (altered to sericite and minor epidote similar to the phenocrysts) and smaller (50-100 micron) brownish-green altered amphibole crystals, plus similar sized biotite, chlorite, epidote sphene and opaques.

This is a fine-grained (chilled) gabbro, probably initially very similar in composition to the coarse-grained phase of the intrusion (#203). The amphibole in the phenocrysts and groundmass is not likely primary; it probably was originally pyroxene.

203: AMPHIBOLE-BIOTITE-CHLORITE-SERICITE-EPIDOTE-SPHENE ALTERED GABBRO (RELICT CLINOPYROXENE-CALCIC PLAGIOCLASE-MAGNETITE BEARING)

Medium- to coarse-grained mafic intrusive rock composed of dark green hornblende and lesser altered plagioclase. The rock is weakly magnetic but shows no reaction to cold dilute HCl; only traces of yellow stain for K-feldspar are present. Modal mineralogy in polished thin section is approximately:

Amphibole (partly secondary)	45%
Plagioclase (partly sericitized)	20%
Biotite	10%
Relict clinopyroxene	5%
Chlorite (mainly after biotite)	5%
Sericite	5%
Epidote	3%
Sphene, rutile, ilmenite	3%
Magnetite, hematite	1%
Apatite	1%
K-feldspar (?secondary)	1%
Pyrrhotite, limonite	<1%

Plagioclase forms stubby, rounded to subhedral crystals or aggregates up to 1.5 mm in diameter that in places show relict primary zoning from calcic cores to sodic rims. Cores are partly altered to fine (25-30 micron) shreddy sericite and in places epidote (euhedra to 0.25 mm), and trace ?carbonate. Traces of K-feldspar appear to replace margins of some plagioclase crystals. Since plagioclase crystals are approximately equal in size to amphibole, the texture is sub-ophitic.

Amphibole forms stubby, subhedral crystals about 1 to 1.5 mm long that are commonly partly surrounded by biotite, apatite and opaque oxides (magnetite/hematite, sphene/ilmenite, etc.). Rare clinopyroxene remnants are mainly subhedral to rounded, less than 1 mm in size, and rimmed/replaced by amphibole. Most of the amphibole crystals show evidence of pseudomorphing by fine, fibrous secondary amphibole and minor ragged 25-50 micron seconary biotite. Pleochroism in the amphibole ranges from pale green at cores to deep green in minor rims of ?actinolitic secondary amphibole. Biotite forms deep brown sub- to euhedral flakes up to 1 mm in diameter that are partly chloritized in places; apatite occurs as stubby euhedra to 0.25 mm or rarely slender needles to 0.5 mm long. In places chlorite, likely after biotite, is mixed with minor epidote as stubby subhedra up to 0.15 mm in diameter. Chlorite is relatively Fe-rich (F/M probably about 0.5-0.6).

Abundant psuedomorphs of former ?ilmenite or ilmeno-magnetite crystals generally about 0.25-0.5 mm in diameter; they are now replaced by sphene and hematite, with inclusions of ?rutile and remnant ?ilmenite. Magnetite, partially replaced by hematite, forms sub- to euhedral crystals to about 0.35 mm diameter. Minor pyrrhotite forms subrounded aggregates to 0.35 mm across that are cracked and partly altered to limonite.

This sample is atypical of the Moyie intrusives in the presence of relict pyroxene, calcic plagioclase and minor magnetite/ilmenite; most are more thoroughly altered to amphibole and sodic plagioclase. The rock is gabbroic in composition.

204: ?RECRYSTALLIZED ALDRIDGE SEDIMENT (QUARTZ-PLAGIOCLASE-BIOTITE-MUSCOVITE WACKE WITH MINOR PYRRHOTITE); RARE ?FRAGMENTS

Believed to be a fragmental rock which shows some sedimentary structures. However, neither the hand specimen nor the etched slab show any obvious clasts that I can distinguish. There is no significant stain for K-feldspar (pale yellowish wash could be due to sericite). The rock shows traces of magnetism due to minor pyrrhotite but shows no reaction to cold dilute HCl. Modal mineralogy in polished thin section is approximately:

Quartz	40%
Plagioclase	35%
Biotite	15-20%
Muscovite	5%
Pyrrhotite	1-2%
K-feldspar	1-2%
?Rutile	tr
?Allanite	tr
Apatite	tr

In thin section, this sample is relatively massive and homogeneous, composed of a tightly interlocked mosaic of quartz, plagioclase, biotite and muscovite. Quartz crystals are mainly less than 0.5 mm in diameter, and have a recrystallized look; they are not recognizable as detrital grains. Plagioclase is almost impossible to distinguish from quartz in thin section due to virtual absence of twinning and lack of relief difference against quartz, plus lack of any clay-sericite alteration. However, the etched slab clearly indicates the relative proportions of the two minerals (quartz is grey, plagioclase is etched white or is pale yellowish). In the etched slab, both appear to have about the same dimensions. Lack of relief difference suggests a composition near oligoclase for the plagioclase; traces of low-relief ?K-feldspar to 30 microns may be present, possibly as replacements of the plagioclase.

Biotite forms subhedral light brown flakes rarely over 0.3 mm in diameter, commonly intergrown with lesser muscovite as sub- to euhedral flakes up to 0.2 mm in diameter. Traces of pyrrhotite as subhedral crystals to 0.35 mm, in places aggregating to 1 mm across, are associated with scattered clots of biotite; the pyrrhotite shows minor oxidation along rims and fractures to FeSx phases and limonite. Traces of a radioactive mineral (?allanite or zircon to 25 microns in size) show pleochroic haloes in the biotite, and there may be minor rutile.

There no obvious fragments or clasts in the section, but there are rare elongate to ellipsoid patches up to 5 mm long with finer-grained texture that might be indicative of former clasts. Although broadly similar to #201 in composition (abundant quartz and plagioclase), and lacking any obvious sedimentary features such as detrital quartz, the presence of significant muscovite sets it apart from the ?intrusive of #201 and suggests it is in fact a recrystallized Aldridge sediment. There is no tourmaline visible in the thin section.

205: ?RECRYSTALLIZED ALDRIDGE SEDIMENT (QUARTZ-PLAGIOCLASE-BIOTITE-MUSCOVITE-KSPAR WACKE WITH MINOR BIOTITIC ?RELICT FRAGMENTS)

Described as similar to #204, except weathered. Hand specimen shows scattered patches up to about 1 cm in diameter that are richer in biotite; minor but discrete crystals appear to stain yellow for K-feldspar. The rock is not magnetic and shows no reaction to cold dilute HCl; modal mineralogy in polished thin section is approximately:

Quartz	35%
Plagioclase	35%
Biotite	20%
Muscovite	5%
K-feldspar	3-5%
Limonite	<1%
?Rutile, sphene	<1%
?Allanite	<1%

This rock has a recrystallized appearance similar to that of #204; again, in thin section it is hard to distinguish quartz and plagioclase feldspar due to lack of twinning in the latter, and similarity of relief. Both tend to form rounded subhedra, but the plagioclase tends to be somewhat finer (0.1-0.2 mm) whereas quartz is coarser (to 0.45 mm). Plagioclase is therefore somewhat interstitial, associated with the biotite and muscovite in the rock.

Biotite forms pale to medium brown, eu- to subhedral crystals up to 0.2 mm in diameter (in places aggregating to 0.5 mm) except in the biotite-rich areas (possible former clasts) in which the crystals are up to 0.4 mm and aggregate to 1 mm. Muscovite forms euhedral flakes mainly less than 0.15 mm in diameter. Minor ?allanite forms ragged subhedra to 0.15 mm long that are marked by pleochroic haloes in adjacent biotite. Rare fractures are filled by fine-grained (<10 micron) scaley secondary biotite ("hydrobiotite").

This is not an obviously fragmental rock, either in hand specimen or thin section; it is possible that recrystallization during metamorphism, which appears to be strong, could have partly obliterated the fragmental character, but I suspect it was not strongly fragmental to begin with. Otherwise, it appears to be a typical biotite-facies metamorphosed Aldridge sediment. No boron mineralogy (tourmaline) was observed in the section. Based on my experience with several hundred sections in the Sullivan and adjacent areas, it is rare indeed to see Aldridge rocks that do not contain at least a few, likely detrital, crystals of tourmaline; these samples (204, 205) do not appear to contain any such tourmaline.

Rare opaques appear to be mainly limonite (hematite and goethite), likely pseudomorphs after former minor pyrrhotite up to 0.15 mm in diameter. Rare ?rutile (very dark brown to opaque) forms euhedra to 20 microns commonly hosted in quartz or muscovite; ?sphene forms subhedra to 25 microns in similar locations.

206: FRAGMENTAL ROCK (PLAGIOCLASE-RICH CLASTS IN PLAGIOCLASE-QUARTZ-KSPAR WACKE MATRIX; BIOTITE-MUSCOVITE-ILMENITE-APATITE-ALLANITE CLOTS

Distinctly fragmental rock containing both vague clast boundaries (due to grain size variation) and sharply defined, angular clasts up to 2.5 cm long. The coarser-grained portion of the rock is rich in clots of biotite; the finer-grained portion is richer in K-feldspar (yellow stain in etched slab). The rock is not magnetic and shows no reaction to cold dilute HCl; modal mineralogy in polished thin section is roughly:

Plagioclase (?albitic)	40%
Quartz (recrystallized)	30%
Biotite	15%
K-feldspar	10%
Muscovite	2-3%
Ilmenite	1-2%
Apatite	<1%
?REE-bearing epidote, allanite	<1%
Tourmaline	<1%
Zircon	rare

In thin section, most of this rock consists of a granular mosaic of quartz and feldspars (mainly sodic plagioclase, but including variable proportions of K-feldspar) with clotty concentrations of biotite, muscovite, opaques, minor REE-bearing epidote and apatite, and rare tourmaline.

Quartz crystals (?recrystallized detrital grains) are subrounded to irregular/anhedral and mainly less than 0.5 mm in diameter, but rarely to 1.5 mm. Most are somewhat strained (undulose extinction) and intergrown with feldspar at their margins.

Feldspars include twinned ?albite (relief significantly less than adjacent quartz) as subhedral crystals up to 1 mm in length, and finer, more anhedral crystals to 0.5 mm across of ?microcline (grid twinning visible in places).

In the clots, which are up to about 1 mm across, biotite forms subhedral medium brown flakes up to 0.35 mm in diameter, with pleochroic haloes near ragged crystals (to 0.2 mm diameter) of REE-bearing epidote and/or allanite. Minor muscovite forms subhedral flakes up to 0.2 mm in diameter; apatite forms rounded euhedra to 0.1 mm in size. Opaques are mainly tabular to subhedral ilmenite, rarely over 0.25 mm in size (ilmenite is not unusual in certain Aldridge rocks). No sulfide or magnetite are visible. Rare tourmaline forms euhedral crystals to 0.1 mm that are deep greenish-brown, probably schorlitic with F/M perhaps in the 0.7-0.8 range. Zircon is very rare, forming euhedral crystals to 60 microns in diameter.

In the distinctive finer-grained clasts, mineralogy is dominated by plagioclase crystals with average grain size about 0.1 mm; quartz and K-feldspar are rare, and biotitic clots to about 0.5 mm are similar to those described above.

Although most sedimentary textures have been obliterated by metamorphic recrystallization, heterolithic clasts are clearly defined

207: RECRYSTALLIZED ALDRIDGE SEDIMENT (QUARTZ-PLAGIOCLASE-BIOTITE-KSPAR WACKE WITH MINOR PYRRHOTITE-ALLANITE); RARE BIOTITIC ?FRAGMENTS

Described as similar to #204, from another locality; however, the only possible clasts visible in hand specimen are irregular patches less than 1 cm in diameter rich in sulfide (magnetic; pyrrhotite) and biotite. Otherwise, the sample is basically a recrystallized wacke. There is no reaction to cold dilute HCl, and only trace yellow stain for K-feldspar (?possibly secondary, after plagioclase) The etching also outlines some large quartz aggregates (to 5 mm across). Modal mineralogy in polished thin section is approximately:

Quartz (recrystallized, partly secondary)	50%
Plagioclase (?albite-oligoclase)	25%
Biotite	20%
K-feldspar (?partly secondary)	1-2%
Pyrrhotite, trace chalcopyrite	1-2%
Allanite, REE-bearing epidote	1%
Ilmenite	<1%
Apatite	<1%
Chlorite (after biotite)	<1%
?Zircon	tr

Quartz is abundant in this rock, forming large sub- to anhedral crystals or aggregates that are optically continuous in places for up to 3 mm in diameter. The crystals are strained (undulose extinction, lamellar texture) and recrystallized; in many cases they look secondary, having significantly overgrown and replaced the adjacent plagioclase. The relief difference against plagioclase is less noticeable than in #206, possibly partly due to a less sodic composition for the plagioclase, and partly to incipient clay-sericite alteration of the plagioclase. Plagioclase crystals are sub- to anhedral, mainly less than 0.5 mm long, and distinctly interstitial to the quartz. Rarely observed K-feldspar has distinctly negative relief, forming minor fine anhedra mostly less than 50 microns in diameter interstitial to quartz and plagioclase, or in places possibly replacing plagioclase.

Clotty concentrations of biotite up to 0.5 cm across contain subhedral medium brown flakes up to 0.25 mm in diameter, associated with opaques (see below), apatite as slender needles to 0.2 mm long, and subhedral allanite/REE-bearing epidote aggregates up to 0.15 mm in diameter. The allanite/REE-epidote is unusually abundant in this sample. Biotite is rarely chloritized (zero birefringence, F/M probably near 0.5); slender euhedral needles to 250 microns long (a very unusual form in the Aldridge) are possibly ?zircon. Tourmaline is not seen. As in #206, ilmenite is the TiO_2 phase, forming subhedral to tabular crystals mostly less than 0.2 mm in diameter. Sulfides include partly oxidized pyrhotite as subhedral crystals to 0.25 mm, in places mixed with minor chalcopyrite (rounded, to 0.1 mm) in aggregates up to 1 mm across.

There is no distinctly fragmental character to this sample, but it may have been obliterated by the intense recrystallization. Concentrations of sulfide, REE-minerals and apatite with biotite may be of exploration interest.

208: FRAGMENTAL ROCK (FELDSPAR-RICH CLASTS IN BIOTITE-MUSCOVITE-TOURMALINE-PYRRHOTITE-SPHENE-APATITE-ALLANITE RICH MATRIX)

Distinctly clast-rich fragmental rock, containing subrounded to subangular clasts up to 5 cm in diameter of variable lithology in 10-20% biotitic, in places sulfide-rich matrix. The clasts are partly feldspar-rich (minor yellow stain could be due to K-feldspar or to biotite-muscovite). This is a prospective-looking fragmental rock, containing significant sulfide (weathered to limonite on outer surfaces). The pyrrhotite is weakly magnetic; the rock shows no reaction to cold dilute HCl. Modal mineralogy in polished thin section is approximately:

Plagioclase (?calcic)	40%
Quartz	25%
Biotite	20%
Muscovite	5%
K-feldspar	2-3%
Tourmaline (?dravite-schorl)	2-3%
Pyrrhotite, trace chalcopyrite	1-2%
Limonite (after sulfide)	1%
Sphene	1%
Apatite, trace zircon	<1%
Allanite/REE-epidote	1%

Clasts in this sample mainly consist of fine-grained (average 0.1-0.2 mm) feldspar, quartz and biotite. Feldspar, which dominates over quartz, appears to be coarser (subhedra to 1 mm) and mostly with positive relief compared to quartz, which is finer-grained (mainly less than 0.1 mm); this suggests a calcic plagioclase, found in some altered rocks such as at the North Star and Fors deposits. Incipient clay-sericite alteration of the plagioclase renders comparison of refractive indices difficult, however. Minor K-feldspar forms very fine (50 micron) crystals with negative relief. Biotite forms sub- to anhedral flakes up to 0.2 mm in diameter, commonly associated with subhedra of sphene to 75 microns in diameter (rarely needle-like; could explain the unusual-shaped ?zircon tentatively identified in #207), opaques (mainly sulfide; see below), apatite, REE epidote/allanite and stubby zircon to 55 microns. Tourmaline is relatively rare, forming slender euhedra to 75 microns with pale greenish-brown colour.

The mineralogy of matrix includes major biotite, plagioclase, quartz and muscovite, but is distinguished by being an incipient **tourmalinite**, with very fine-grained (10-15 micron long by 2-3 micron thick) needles of pale greenish tourmaline (intermediate dravite-schorl composition) present in the matrix and to a minor degree in certain clasts. The tourmaline mainly replaces plagioclase, and is associated with biotite and sphene (both of which are concentrated in the matrix). Thus this is not a massive tourmalinite occurence, typical of the bulk of the Sullivan pipe; it is similar to certain areas in the Sullivan footwal, with alteration and sulfide mineralization mainly confined to the matrix of the fragmental. Sphene, allanite/REE-epidote and partly oxidized pyrrhotite (+/- trace chalcopyrite) form subhedral crystals or aggregates up to 0.35 mm in diameter; note that rare coarser (?detrital or recrystallized) tourmaline euhedra to 0.1 mm long also occur, distinct from fine tourmaline. Coarse biotite-limonite clots contain biotite flakes to 0.5 mm and are rimmed by concentrations of allanite.

209: BIOTITE-RICH, SERICITIC, PLAGIOCLASE-QUARTZ FINE WACKE/SILTSTONE WITH QUARTZ-BIOTITE-LIMONITE ORBICULAR CLOTS

Described as layered, possibly of sedimentary or ?volcanic origin; hand sample is dark grey, with curious clotty-textured ?layers up to 0.5 cm thick containing rounded "orbicular" features less than 3 mm in diameter that are cored by quartz and rimmed by biotite (faint yellow stain in etched slab; there probably is no K-feldspar present). The rock is not magnetic and shows no reaction to cold dilute HCl; modal mineralogy in thin section is approximately:

Plagioclase	30%
Quartz	25%
Biotite	25%
Sericite	15-20%
Chlorite	2-3%
Opaque (?limonite after sulfide)	1%
Allanite	<1%

This sample mainly consists of a mosaic of quartz, sericitized plagioclase, and biotite that hosts the orbicular-textured quartz-biotite clots. Quartz in the matrix is finer-grained than in the clots (50 microns and up to 0.1 mm respectively). Aggregates of quartz crystals up to 0.2 mm across could represent original ?detrital grains. Due to the sericitization of plagioclase, it is difficult to estimate the relief difference against quartz; plagioclase crystals appear to have been about 50 microns in diameter and are at least half replaced by fine (25-30 micron) euhedral sericite or muscovite ("white mica").

Biotite flakes are abundant, sub- to euhedral, and up to about 0.15 mm in diameter except 0.5 mm in the "orbicular" rims. The outermost flakes of biotite books are commonly ?replaced or intergrown with a magnesian chlorite (pale green, length-fast, grey birefringence; F/M perhaps 0.4). In places similar chlorite (euhedral flakes to 0.5 mm) encloses slender needle-like opaque crystals up to almost 1 mm long that are enclosed in the orbicules. These opaques are mainly limonite (?hematite/goethite) that could be after sulfide such as pyrrhotite; lack of a polished surface precludes further identification. Traces of ?allanite are indicated by pleochroic haloes in the chlorite and biotite.

There are no obvious features suggestive of a volcanic origin for this sample; the mineralogy and textures are mainly typical of metamorphosed Aldridge sedimentary rocks. The orbicular "clots" are commonly seen in the Sullivan-North Star area, where they are mostly (but not always) interpreted to indicate either alteration related to intrusion of Moyie gabbro sills, or less commonly weak alteration peripheral to the sulfide system. The significance of the sericitic alteration in this sample is difficult to be sure of: it could be related to a hydrothermal system (note that at Sullivan-North Star, the sericite/muscovite is developed as a metamorphic mineral from a clay/sericite precursor; biotite is usually absent from the more strongly muscovite-altered rocks there).

210: SILTSTONE (QUARTZ-BIOTITE-PLAGIOCLASE), LAMINAE OF ?CARBON-SPHENE-EPIDOTE-ALLANITE-APATITE; CLOTS OF CALCITE-KSPAR-SULFIDE-TREMOLITE

Described as marker horizon formed as a laminated argillite/fine siltstone during times of low sediment input within a sequence of high-energy turbidites; hand sample is dark grey, with laminations marked by common vugs (?weathered sulfides). Fine K-feldspar is indicated by yellow stain in the etched slab, and common 0.5-1.0 mm spots in the rock react to HCl, but the rock is not magnetic. Modal mineralogy in polished thin section is approximately:

Quartz	40%
Biotite	30%
Plagioclase	15%
K-feldspar	5%
Carbonate (mainly calcite; trace ?malachite)	5%
Pyrrhotite (mainly oxidized to limonite)	1-2%
Limonite	1-2%
?Carbonaceous matter	1%
Sphene	<1%
Galena	<1%
Epidote (variably REE-bearing), allanite	<1%
Tourmaline	<1%
Apatite, trace zircon	<1%
Sphalerite	<1%
Tremolite	<1%

This sample consists of a fine mosaic of quartz and biotite with lesser interstitial feldspar (plagioclase and Kspar) that is distinctive from other similar fine siltstones in the Aldridge by the fine wispy laminae composed of extremely fine (2-3 micron) ?carbonaceous matter. There are also concentrations of sphene and subhedral REE-bearing epidote and/or allanite crystals up to 50 microns in diameter along these laminae; rare euhedral crystals of greenish-brown tourmaline to 75 microns and apatite to 50 microns are also seen in places. The ?carbon-sphene-allanite laminae mainly cut through the silicate crystals, suggesting they were original and have remained in place during metamorphic recrystallization and growth around them. Tourmaline in places shows deeper green cores, suggestive of some ?detrital cores that have been overgrown by a less Fe-rich mantle during alteration or metamorphism. Rare tiny zircon crystals (to 20 microns) are likely detrital.

Clots scattered throughout the rock consist of sulfides, K-feldspar, carbonate, epidote, rare sphene, allanite, tremolite and muscovite, and are surrounded by biotite. Carbonate forms subhedra to 0.25 mm, likely mostly calcite (minor bright green crystals could be ?malachite). These clots are typical of the "spots" associated with peripheral alteration in the Sullivan-North Star corridor, and are likely to be of exploration significance. Sulfides include pyrrhotite (commonly oxidized to FeSx phases and limonite), intergrown with galena, both forming subhedra to 0.25 mm. Most of the pyrrhotite is fractured and replaced by limonite along the fractures. Rare sphalerite forms subhedra to 0.2 mm with red-brown colour indicating moderately high Fe content. The sulfides are intergrown with minor tourmaline (euhedra to 0.1 mm, greenish-brown colour indicates moderately Fe-rich schorl-dravite with F/M possibly 0.6-0.7). A late fracture cutting the slide is marked by bleaching of biotite.

211: GARNET-SERICITE RICH META-SILTSTONE (MINOR BIOTITE, ILMENITE, ALLANITE, ?DETRITAL TOURMALINE)

Described as garnet schist; contains about 15-20% bright pink or lavender-coloured, euhedral 1-2 mm garnets that on the basis of their colour are likely Mn-rich. The host is fine-grained and softer than steel, probably sericitic. The rock is not magnetic and shows no reaction to cold dilute HCl; there is no stain for K-feldspar. Modal mineralogy in polished thin section is approximately:

Quartz	50%
Sericite (muscovite)	30%
Garnet	15-20%
Biotite	1-2%
Ilmenite	1-2%
Allanite/REE-epidote	<1%
Tourmaline	<1%

This sample is composed of a fine-grained mosaic of quartz and sericite (muscovite) with scattered flakes of biotite and crystals of ilmenite.

Quartz forms mainly sub- to euhedral, polygonal (recrystallized) crystals with triple junctions indicating annealing; most crystals are less than 0.1 mm in diameter. They could have been detrital but are now completely recrystallized due to ?alteration and metamorphism.

Sericite, or muscovite, forms euhedral flakes also mainly less than 0.1 mm in diameter; they likely represent the alteration of the former feldspar component in the rock. Biotite is minor to rare and forms scattered medium brown subhedra to 0.1 mm diameter, in places associated with tabular euhedral ilmenite up to 0.15 mm in diameter. Rare patches of ?allanite or REE-bearing epidote form anhedral aggregates up to 0.2 mm across composed of 10-30 micron subhedral crystals. Rare tourmaline crystals are found in both the matrix and included in the garnets (euhedra to 75 microns long, with pale green to deep green pleochroism indicating variable F/M ratios possibly due to their ?detrital character).

Garnet forms euhedral crystals up to 2 mm in diameter (in places aggregating to 3 mm) that are full of sieve-like inclusions of quartz and ?feldspar, mostly less than 75 microns in diameter. In some crystals, similar-sized inclusions of ilmenite are common. The composition of the garnet is of course not determinable optically; I would guess from its colour and my experience at Sullivan that it is Mn-rich, and this would fit with a metamorphic grade of lower to middle greenschist in which garnet only develops where the bulk Mn content of the rock is high enough. If you feel that confirmation of the Mn nature of the garnet is important, you may wish to have tghe sample subjected to SEM, or scanning electron microscope, examination (contact Jim McLeod at Cominco Exploration Research Laboratory, 1486 East Pender Street, Vancouver, B.C.; 682-0611). Note that this analysis is semi-quantitative at best; for quantitative results, microprobe anlaysis, is needed (e.g at University of British Columbia; contact Matty Rautsepp, 822-6396).

212: RECRYSTALLIZED QUARTZ-PLAGIOCLASE-BIOTITE-AMPHIBOLE-KSPAR-GARNET FRAGMENTAL ROCK WITH CLOTS OF PYRRHOTITE-FELDSPAR-AMPHIBOLE-EPIDOTE

Described as fragmental rock; hand specimen shows vaguely defined, light grey to dark grey, variably biotitic or sulfidic patches that may be the remnants of recrystallized clasts. The rock is magnetic, due to the abundant pyrrhotite, but shows no reaction to cold dilute HCl. Yellow stain in parts of the etched slab suggests some Kspar (and ?biotite) are reacting in some of the clasts; rare pale pink garnets are present. Modal mineralogy in polished thin section is approximately:

Quartz	50%
Plagioclase	20%
Biotite	10%
Amphibole	10%
K-feldspar	5%
Pyrrhotite, trace chalcopyrite	2-3%
Garnet	1-2%
Limonite	1%
Ilmenite	<1%
Apatite	<1%
Epidote	tr

The relict fragmental character of this rock is not evident in thin section; instead, the thoroughly recrystallized nature is highlighted by the microscopic examination. The sample consists mainly of coarse aggregates of quartz (optically continuous for over 2.5 mm) that has clearly overgrown and replaced the adjacent, interstitial feldspar. The texture is almost igneous, but the fragmental character of the hand specimen strongly suggests that this impression is a product of intense recrystallization (likely both hydrothermal and metamorphic). The original composition was probably clasts of quartz-feldspar wacke similar to other Aldridge rocks in this series.

Feldspar is mainly plagioclase with traces of incipient clay alteration and only slight relief difference against the quartz (slightly below No of quartz, implying oligoclase), but in places includes lesser K-feldspar (mostly strongly fractured and stained by limonite). Both feldspars form sub- to anehdral crystal remnants mainly less than about 0.2 mm in diameter.

Biotite forms deep brown sub- to euhedral flakes and books up to 0.6 mm in diameter, commonly intergrown with a very strongly pleochroic amphibole (yellowish to very deep green) that forms sub- to anhedral crystals up to 1 mm in size. Rare pale pink, likely Mn-rich, garnets that in places are intergrown with the mafic minerals are euhedral in outline and up to 2 mm in diameter, with minor inclusions of quartz and opaques. Apatite forms euhedra (stubby to elongate needles up to 0.5 mm long) scattered in quartz and in places associated with the mafics.

Pyrrhotite forms sub- to anhedral crystals up to 1 mm in diameter, in places aggregating in masses up to 0.5 cm across associated with garnet and amphibole as well as biotite, feldspar and rare epidote (subhedra to 0.1 mm). The pyrrhotite contains or is associated with minor chalcopyrite (sub- to anhedral crystals to 0.4 mm) and tabular to subhedral ilmenite crystals generally less than 0.2 mm in diameter; ilmenite also occurs as euhedra to 0.4 mm in the matrix. Pyrrhotite is partly to completely oxidized to limonite near some late fractures.

213:LAMINATED SILTSTONE; LAMINAE MARKED BY QUARTZ-PYRRHOTITE-MUSCOVITE-FELDSPAR-SPHENE-ALLANITE-EPIDOTE, PLAGIOCLASE INCIPIENTLY ALTERED

Described as another marker horizon; hand sample is dark grey, laminated, with rusty partings marking the oxidation of sulfide-rich laminae. The rock is not magnetic and shows no reaction to cold dilute HCl; minor K-feldspar is indicated in some layers by yellow stain in the etched slab. Modal mineralogy in polished thin section is approximately:

Quartz	50%
Biotite	25%
Plagioclase (altered)	15%
K-feldspar	3-5%
Muscovite, sericite	3-5%
Pyrrhotite, trace chalcopyrite	1-2%
Sphene	<1%
Limonite (after sulfide)	<1%
Allanite, epidote	<1%

This sample consists of a granular mosaic of quartz, feldspar and biotite, with slight variations in the quartz-feldspar content marking most of the laminations (some are better defined, by concentrations of sulfide that have been partly oxidized to limonite). In the sulfide-rich laminae, quartz forms coarser crystals up to 0.25 mm in diameter, and muscovite is much more common (and coarse).

Quartz crystals in most of the rock are about 0.1 mm in diameter, with rounded to subhedral shapes suggestive of recrystallized detrital grains. Both biotite and lesser muscovite form sub- to euhedral flakes mainly less than 0.0.2 mm in diameter, but in places showing porphyroblastic growth up to 1 mm across (particularly in the sulfide-quartz rich laminae).

Feldspars are subordinate in this rock, forming mainly very fine crystals that are mainly incipiently altered to fine ?limonite, clay and sericite, and are distinctly interstitial to quartz and micas. The crystals appear to be subhedral and mainly less than about 50 microns in diameter; staining tests indicate that most is likely plagioclase (white in etched slab) although K-feldspar is also present in places.

Sphene is common, scattered throughout as fine (50-75 micron) subhedra, in places associated with similar sized aggregates composed of cores of ?allanite rimmed by epidote or zoisite, and/or minor sulfide. Minor radioactive damage is apparent in biotite adjacent to the ?allanite; in places, concentrations of sphene and allanite define wispy laminae up to 0.1 mm thick.

Sulfides consist principally of partly oxidized pyrrhotite as sub- to euhedral crystals up to 0.7 mm in diameter, rarely including laths of chalcopyrite to 0.15 mm long. The "black minerals" may also be pyrrhotite, partly coated by FeSx and limonite phases.

This is a laminated siltstone, with laminae marked by concentrations of sulfide, quartz, muscovite, feldspar, sphene, allanite and epidote.

214: FRAGMENTAL TOURMALINITE: DETRITAL QUARTZ-INTERSTITIAL TOURMALINE-MUSCOVITE-MINOR SPHENE-OPAQUES

Described as tourmalinite; hand sample is pale buff-brown, very fine-grained, and distinctly harder than steel. The rock is not magnetic and shows no reaction to cold dilute HCl or stain for K-feldspar in the etched slab. Modal mineralogy in thin section is approximately:

Quartz	40%
Tourmaline	40%
Muscovite	15-20%
Sphene	1-2%
Opaques	1-2%

As described in the field, this rock consists of major proportions of tourmaline and quartz; there is also significant muscovite and traces of sphene and opaques. Note that although it cannot be discerned in hand specimen, this is a **fragmental rock**, with clast outlines clearly defined in thin section by variations in tourmaline content and quartz grain size. Clasts range from common angular shards less than 1 mm long (aligned parallel to the long axis of the section) to large areas up to several cm across marked by coarser quartz and lesser tourmaline (coarser siltstone; clearly faulted in places). A larger section might reveal whether the sample is truly coarsely fragmental.

Quartz forms subhedral to ragged crystals, likely relict detrital grains, mainly less than 0.1 mm in diameter. The borders are strongly corroded and intergrown with the tourmaline, which forms minute (rarely exceeding 2x10 micron) stubby euhedra replacing some mineral, likely formerly feldspar, that was interstitial to quartz and roughly 50 microns in grain size. The tourmaline has very pale greenish colour, suggesting an intermediate dravite-schorl composition with F/M perhaps around 0.4-0.5, similar to that at Sullivan; note that the pale colour in hand specimen may imply an even more Mg-rich composition with F/M as low as ?0.2-0.3, as suggested by J. Slack for pale brownish tourmalines at Sullivan.

Muscovite forms randomly oriented subhedral to slightly ragged flakes mainly less than 0.15 mm in diameter. Although these could possibly be relict detrital flakes, they are unusually abundant for such an origin compared to 3-5% commonly ascribed to detrital muscovite in other Aldridge samples I have examined. Many tourmalinite samples from Sullivan and North Star commonly contain such muscovite flakes; one speculation is that they possibly formed from the excess potassium in the rock (?formerly in biotite and Kspar) that would not fit into the tourmaline lattice.

Very fine, wispy, discontinuous laminae mainly less than 25 microns thick by up to 0.5 mm long are composed of concentrations of fine (5-10 micron) sphene and even finer opaque that could be ?carbon, sphene, or rutile. These laminae are parallel to the long axis of the section and the orientation of the small shards described above.

In summary, this appears to be a finely fragmental, thoroughly tourmalinized rock in which boron addition was very likely a replacement feature (see Slack, J. in GSC Current Research 93-1E, p. 33-40).

215: RECRYSTALLIZED QUARTZ-PLAGIOCLASE-BIOTITE-KSPAR-MUSCOVITE WACKE WITH VAGUELY DEFINED CLASTS OF ?SILTSTONE AND SILTY SANDSTONE

Described as wacke fragmental rock; in hand sample, clasts are poorly defined but appear (in part) to be elongate, subangular to subrounded, up to 2 cm long by 0.5 cm thick, and slightly darker than the surrounding whitish matrix. Elsewhere the vague clasts are more equant, and paler grey than the matrix. Staining of the etched slab shows minor K-feldspar but does not highlight the fragmental nature of the rock. The rock is not magnetic and shows no reaction to cold dilute HCl. Modal mineralogy in polished thin section is approximately:

Quartz	40%
Plagioclase	25%
Biotite	20%
K-feldspar	5-10%
Muscovite	5%
Limonite	1-2%
?Ilmenite	tr

This sample consists of a granular intergrowth of quartz, feldspars and biotite, with vaguely defined clasts (to 2 cm and 3 mm long) marked respectively by decrease of and near absence of biotite. Quartz generally forms subhedral crystals mainly less than about 0.6 mm in diameter that are clearly recrystallized (partly overgrow adjacent feldspar crystals). Most feldspar is plagioclase (rarely twinned, slightly negative relief compared to quartz suggests albite-oligoclase composition) as subhedral crystals mainly less than about 0.25 mm in diameter. In places there are inclusions/?replacements of K-feldspar to 25 microns, and Kspar with minor grid twinning also forms subhedra to 0.35 mm in size. Some coarser "clots" of quartz and feldspar contain plagioclase euhedra up to 0.8 mm long.

The composition of clasts is difficult to quantify since the boundaries are very vaguely defined in thin section; larger clasts appear to be marked by lesser, more scattered biotite flakes and an increase in plagioclase. Smaller ?clasts (or clots) appear to be marked by lack of biotite and increase in quartz and muscovite. These clast types could represent, respectively, siltstone and silty sand fragments.

Biotite forms euhedral to subhedral medium brown flakes up to 0.4 mm in diameter, in places aggregating in clumps up to almost 1 mm across. Lesser muscovite forms euhedral flakes mainly less than 0.15 mm in diameter.

There are no sulfides visible; rare very fine (<15 micron) opaques appear to be ?ilmenite. Patches up to 0.8 mm across composed mainly of limonite with light red-brown to orange-brown colour (goethite) are possibly after former ?pyrrhotite.

216: FINE QUARTZ-PLAGIOCLASE-BIOTITE-TOURMALINE WACKE; CLOTS OF KSPAR-PYRRHOTITE-SPHENE-ALLANITE-GALENA-SPHALERITE-TRACE CHALCOPYRITE

Described as black quartzite containing unidentified black minerals; hand sample is a fine- to medium-grained siliceous rock with common fine sulfide, associated with fine-grained K-feldspar (yellow stain in etched slab). The rock is not magnetic and shows no reaction to cold dilute HCl; modal mineralogy in polished thin section is approximately:

Quartz	40%
Plagioclase	25%
Biotite	20%
K-feldspar	10%
Pyrrhotite, trace chalcopyrite	2-3%
Tourmaline	1%
?Carbonaceous matter	1%
Sphene, trace ilmenite	<1%
Apatite	<1%
Allanite (?)	<1%
Galena, sphalerite	tr

In thin section, this sample is mainly fine-grained (less than 0.1 mm average grain size), composed of quartz, feldspar, biotite, sphene and minor tourmaline and apatite. There are significant grain size variations, with common coarse clots rich in K-feldspar and sulfide, and apparently finer-grained zones marked by concentrations of very fine opaques.

The background mineralogy consists of interlocking subhedral to anhedral quartz, subhedral biotite, and finer (50 micron) interstitial plagioclase. Quartz crystals are rounded to polygonal, suggesting recrystallization; biotite forms subhedral pale brown flakes. Plagioclase forms such small, fine-grained aggregates that it is not possible to evaluate its relief difference against quartz. Scattered euhedral crystals of tourmaline and sphene are up to 0.25 mm long and 50 microns in diameter respectively; tourmaline is pale to medium green (intermediate schorl-dravite, with F/M perhaps about 0.6-0.7; could be detrital, or the product of recrystallization of a minor hydrothermal tourmaline component since the abundance is higher than normal for Aldridge sediments). Sphene is rarely cored by ilmenite (subhedra to 25 microns). Rare apatite forms euhedral stubby crystals to 60 microns long; ?allanite euhedra to 40 microns, in places in rounded aggregates up to 0.25 mm across, are marked by pleochroic haloes in adjacent biotite.

The coarse clots (up to 1.5 mm across) consist of K-feldspar subhedra up to 0.5 mm in diameter, with grid twinning suggesting microcline, pyrrhotite (subhedral crystals to 0.5 mm), and minor sphene. Apparently finer-grained areas are caused by partial texture obliteration by very fine opaques (2-5 microns in diameter; could be ?carbon). Pyrrhotite rarely contains subhedral inclusions of chalcopyrite to 25 microns in diameter, and is associated with minor galena (subhedra to 0.2 mm) and sphalerite (subhedra to 0.15 mm).

217: LAMINATED QUARTZ-BIOTITE-?PLAGIOCLASE-MUSCOVITE, WISPS/BLEBS OF PYRRHOTITE-EPIDOTE-ALLANITE-SPHENE-?CARBON; MASSIVE QUARTZ-MUSCOVITE-BIOTITE SILTSTONE WITH CLOTS OF KSPAR-EPIDOTE-SPHENE-PYRRHOTITE

Described as another marker; lower half of the section is a white "waste band" over 1 cm thick. The main mineralogical difference between the two parts of the section is that the waste band is poorer in biotite (and richer in muscovite); the laminated marker is richer in biotite and sulfides (slightly magnetic, likely pyrrhotite). Slight yellow stain in the etched slab indicates that the waste band is also slightly enriched in K-feldspar. Modal mineralogy in polished thin section is approximately:

Marker laminae		**Waste band**	
Quartz	50%	Quartz	40%
Biotite	30%	Muscovite (sericite)	25%
Plagioclase (?)	10%	Biotite	20%
Muscovite	5%	K-feldspar	10%
Pyrrhotite	2-3%	Epidote/clinozoisite	1-2%
Epidote/clinozoisite	1%	Sphene	1-2%
Allanite	<1%	Pyrrhotite	1%
Sphene	<1%	?Allanite	<1%
?Carbon	<1%	Limonite	<1%

The marker laminae consist of fine-grained (50-75 micron) quartz and biotite +/- muscovite, with lesser interstitial ?plagioclase and fine wispy laminae of sphene-?carbon-allanite, with blebs of pyrrhotite. Quartz forms mainly subhedral crystals with polygonal (recrystallized) outlines; the crystals are clear and relatively unstrained. Biotite forms pale brown subhedral flakes with random orientations; muscovite flakes are generally euhedral and smaller (<50 microns). Plagioclase is difficult to detect in thin section, due to fine grain size, lack of twinning and lack of relief against quartz; its abundance is estimated from the etched slab. Wispy concentrations of extremely fine-grained opaques (<5 microns in diameter, possibly carbonaceous matter) are associated with fine-grained aggregates up to 0.2 mm long of ?allanite or REE-bearing epidote and small subhedral sphene to 35 microns.

Pyrrhotite is much more common in the laminated marker portion of the slide, forming elongate blebs up to 2 mm long composed of subhedral to ragged crystals mainly less than 0.5 mm in diameter. Minor inclusions of sphene and rare ?ilmenite to 25 microns are seen in the pyrrhotite. Most pyrrhotite blebs are associated with clotty areas of coarser quartz (up to 150 microns), epidote or clinozoisite (subhedra to 0.15 mm with sieve texture due to inclusions of pyrrhotite and sphene), sphene to 75 microns, and allanite to 100 microns.

The "waste band" is composed of finely intergrown quartz, muscovite (sericite) and biotite, with scattered crystals of K-feldspar. Quartz and muscovite are intimately intergrown as subhedral 50-75 micron crystals and 35-50 micron flakes respectively; biotite is more scattered, forming separate subhedral flakes mainly less than about 75 microns in diameter. If plagioclase is present, it is not detectable; traces of sphene form fine (25 micron) subhedra. K-feldspar crystals are subhedral to rounded, occurring in scattered clots up to about 0.6 mm diameter that also contain epidote or clinozoisite in places; both are sieved by fine inclusions of quartz and mica. Minor sphene, pyrrhotite (partly oxidized to limonite), and rare ?allanite also occur in these clots.

Certificates of Assay from Bondar Clegg

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

REPORT: V97-01876.0 (COMPLETE)

REFERENCE: P.O. #97-003

CLIENT: KENNECOTT CANADA INC.
PROJECT: YAK

SUBMITTED BY: P. VAN ANGREREN
DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
970805	1 Ag	Silver	144	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	2 Cu	Copper	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	3 Pb	Lead	144	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	4 Zn	Zinc	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	5 Mo	Molybdenum	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	6 Ni	Nickel	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	7 Co	Cobalt	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	8 Cd	Cadmium	144	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	9 Bi	Bismuth	144	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	10 As	Arsenic	144	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	11 Sb	Antimony	144	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	12 Fe	Iron	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	13 Mn	Manganese	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	14 Te	Tellurium	144	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	15 Ba	Barium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	16 Cr	Chromium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	17 V	Vanadium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	18 Sn	Tin	144	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	19 W	Tungsten	144	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	20 La	Lanthanum	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	21 Al	Aluminum	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	22 Mg	Magnesium	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	23 Ca	Calcium	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	24 Na	Sodium	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	25 K	Potassium	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	26 Sr	Strontium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	27 Y	Yttrium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	28 Ga	Gallium	144	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	29 Li	Lithium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	30 Nb	Niobium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	31 Sc	Scandium	144	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	32 Ta	Tantalum	144	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	33 Ti	Titanium	144	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970805	34 Zr	Zirconium	144	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOIL	144	1 -80	144	DRY, SIEVE -80	144

REPORT COPIES TO: DR. ROBERT WOODFILL

INVOICE TO: DR. ROBERT WOODFILL

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This report must not be produced except in full. The data presented in this report is specific to those samples identified under "Sample Number" and is applicable only to the samples as received expressed on a dry basis unless otherwise indicated

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CLIENT: KENNECOTT CANADA INC. PROJECT: YAK

REPORT: V97-01876.0 (COMPLETE) DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

SAMPLE NUMBER	ELEMENT	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr
	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM
BL 50S		<.2	20	17	98	<1	23	18	<.2	<5	<5	<5	2.40	1097	<10	142	15	34	<20	<20	24	2.57	0.53	0.19	0.02	0.25	12	12	<2	24	3	<5	<10	0.12	2
BL 100S		<.2	25	17	79	1	29	16	<.2	<5	<5	<5	2.58	854	<10	143	15	41	<20	<20	23	2.91	0.49	0.20	0.02	0.26	14	12	<2	26	4	<5	<10	0.13	4
BL 150S		<.2	21	15	75	1	26	15	<.2	<5	<5	<5	2.65	627	<10	182	14	39	<20	<20	21	3.00	0.48	0.16	0.02	0.27	11	9	<2	26	5	<5	<10	0.13	5
BL 200S		<.2	21	15	70	1	25	15	<.2	<5	<5	<5	2.65	275	<10	156	15	39	<20	<20	19	2.61	0.50	0.16	0.02	0.29	13	8	<2	25	4	<5	<10	0.13	4
BL 250S		<.2	50	26	83	2	41	30	<.2	<5	<5	<5	3.25	1145	<10	134	17	43	<20	<20	67	3.89	0.53	0.32	0.02	0.40	27	48	2	35	5	5	<10	0.12	3
L250 50WS		<.2	25	15	81	<1	27	13	<.2	<5	<5	<5	2.45	308	<10	140	19	39	<20	<20	22	2.48	0.85	0.24	0.02	0.30	16	8	<2	35	4	<5	<10	0.13	3
L250 100WS		<.2	13	13	70	<1	20	12	<.2	<5	<5	<5	1.99	186	<10	68	19	32	<20	<20	15	2.26	0.82	0.26	0.03	0.19	18	6	<2	42	4	<5	<10	0.13	1
L250 150WS		<.2	42	27	166	1	41	19	0.3	<5	<5	<5	3.28	1176	<10	126	19	39	<20	<20	87	4.51	0.85	0.45	0.02	0.29	46	61	4	53	5	6	<10	0.13	4
L250 200WS		<.2	31	23	144	<1	40	15	0.3	<5	<5	<5	2.79	964	<10	211	18	36	<20	<20	22	3.91	0.78	0.29	0.03	0.31	33	10	2	38	4	<5	<10	0.14	12
L250 250WS		<.2	28	27	200	<1	32	15	0.7	<5	<5	<5	2.67	585	<10	216	20	35	<20	<20	19	3.69	0.95	0.23	0.03	0.35	24	8	3	38	4	<5	<10	0.14	7
L250 300WS		<.2	90	64	77	2	50	14	0.9	<5	9	<5	3.33	1432	<10	107	12	44	<20	<20	268	5.23	0.40	0.71	0.02	0.32	51	256	5	50	4	7	<10	0.09	9
L250 350WS		<.2	31	16	127	1	46	22	<.2	<5	<5	<5	3.16	2095	<10	225	18	34	<20	<20	60	3.57	0.60	0.21	0.01	0.45	25	31	<2	52	4	<5	<10	0.12	2
L250 400WS		<.2	16	15	86	<1	16	10	<.2	<5	<5	<5	1.75	655	<10	242	12	29	<20	<20	10	1.94	0.34	0.25	0.03	0.20	17	4	<2	17	3	<5	<10	0.09	3
L250 450WS		<.2	43	15	84	1	27	14	<.2	<5	<5	<5	2.45	304	<10	232	14	35	<20	<20	15	3.10	0.52	0.17	0.02	0.33	14	6	<2	25	4	<5	<10	0.12	9
L250 500WS		<.2	29	12	78	<1	20	13	<.2	<5	<5	<5	1.93	369	<10	151	14	32	<20	<20	13	2.20	0.47	0.23	0.03	0.27	13	6	<2	22	3	<5	<10	0.10	2
L250 50ES		<.2	23	15	114	<1	27	15	<.2	<5	<5	<5	2.61	562	<10	208	17	34	<20	<20	24	2.86	0.74	0.25	0.02	0.41	20	10	<2	29	4	<5	<10	0.13	4
L250 100ES		<.2	16	17	138	<1	37	21	<.2	<5	<5	<5	2.32	729	<10	239	14	34	<20	<20	22	2.84	0.47	0.21	0.03	0.22	17	9	<2	29	3	<5	<10	0.12	8
L250 150ES		<.2	28	17	93	<1	16	11	<.2	<5	<5	<5	2.40	513	<10	120	16	39	<20	<20	24	2.25	0.61	0.20	0.02	0.26	11	8	<2	33	4	<5	<10	0.12	2
L250 200ES		<.2	22	13	71	1	17	13	<.2	<5	<5	<5	2.47	415	<10	201	13	40	<20	<20	15	2.84	0.44	0.18	0.02	0.27	13	5	<2	24	5	<5	<10	0.13	7
L250 250ES		<.2	25	9	75	<1	15	9	<.2	<5	<5	<5	1.70	943	<10	295	8	32	<20	<20	6	2.17	0.22	0.26	0.03	0.13	21	3	<2	17	3	<5	<10	0.10	11
L250 300ES		<.2	34	10	98	<1	20	12	<.2	<5	<5	<5	2.12	1090	<10	225	9	39	<20	<20	8	3.00	0.30	0.25	0.03	0.13	14	4	<2	19	3	<5	<10	0.11	13
L250 350ES		<.2	30	12	78	<1	15	12	<.2	<5	<5	<5	2.14	1261	<10	182	9	46	<20	<20	7	2.12	0.34	0.35	0.04	0.11	12	3	<2	15	4	<5	<10	0.09	3
L250 400ES		<.2	65	11	67	1	16	12	<.2	<5	<5	<5	2.77	492	<10	147	11	61	<20	<20	8	2.77	0.42	0.37	0.03	0.10	13	4	<2	19	5	<5	<10	0.11	5
L250 450ES		<.2	66	13	92	1	22	18	<.2	<5	<5	<5	3.45	863	<10	157	13	66	<20	<20	11	3.80	0.46	0.38	0.03	0.17	20	9	2	25	5	5	<10	0.12	3
L250 500ES		<.2	68	10	66	1	26	21	<.2	<5	<5	<5	2.75	600	<10	170	10	58	<20	<20	9	3.52	0.34	0.30	0.03	0.13	18	7	2	22	5	<5	<10	0.12	8
L250 50WN		<.2	31	18	100	1	35	20	<.2	<5	<5	<5	3.03	886	<10	165	20	41	<20	<20	29	3.17	0.72	0.14	0.02	0.40	12	14	<2	31	5	<5	<10	0.14	2
L250 100WN		<.2	24	20	95	1	27	16	<.2	<5	<5	<5	2.74	626	<10	164	19	39	<20	<20	20	3.44	0.78	0.15	0.02	0.31	15	9	2	30	4	<5	<10	0.14	5
L250 150WN		<.2	22	26	131	1	29	15	0.5	<5	<5	<5	2.83	711	<10	175	24	40	<20	<20	17	3.71	1.11	0.22	0.04	0.21	20	5	2	36	5	<5	<10	0.15	7
L250 200WN		<.2	18	20	111	<1	25	14	<.2	<5	<5	<5	2.42	971	<10	246	20	39	<20	<20	15	2.87	0.68	0.19	0.02	0.21	12	6	<2	32	4	<5	<10	0.14	5
L250 250WN		<.2	44	19	85	<1	26	18	<.2	<5	<5	<5	2.30	996	<10	181	14	45	<20	<20	11	2.67	0.43	0.23	0.03	0.17	12	5	<2	24	5	<5	<10	0.11	7

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-01876.0 (COMPLETE)

PROJECT: YAK

DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
L250 300WN		<.2	60	11	124	1	30	23	<.2	<5	<5	<5	2.98	840	<10	206	11	61	<20	<20	8	3.18	0.41	0.22	0.03	0.18	10	4	<2	24	5	<5	<10	0.12	6
L250 350WN		<.2	52	13	68	<1	31	25	<.2	<5	<5	<5	2.40	821	<10	173	12	50	<20	<20	12	2.81	0.34	0.21	0.02	0.13	13	10	3	27	4	<5	<10	0.10	2
L250 400WN		<.2	35	12	69	<1	30	16	<.2	<5	<5	<5	2.17	519	<10	167	12	41	<20	<20	9	3.07	0.35	0.20	0.03	0.17	12	5	<2	21	4	<5	<10	0.11	9
L250 450WN		<.2	32	13	59	<1	18	9	<.2	<5	<5	<5	1.73	146	<10	90	12	35	<20	<20	9	1.91	0.39	0.16	0.03	0.12	9	5	<2	21	3	<5	<10	0.10	1
L250 500WN		<.2	39	16	72	<1	20	15	<.2	<5	<5	<5	2.44	353	<10	131	16	41	<20	<20	15	2.61	0.46	0.16	0.03	0.22	13	9	<2	23	3	<5	<10	0.11	3
L250 50EN		<.2	21	16	125	1	21	18	<.2	<5	<5	<5	2.77	534	<10	194	15	40	<20	<20	19	3.07	0.44	0.15	0.02	0.20	11	7	2	29	5	<5	<10	0.12	5
L250 100EN		<.2	21	19	92	1	17	16	<.2	<5	<5	<5	2.45	330	<10	126	15	41	<20	<20	13	2.86	0.60	0.20	0.02	0.22	13	5	3	29	4	<5	<10	0.12	2
L250 150EN		<.2	50	17	79	1	16	14	<.2	<5	<5	<5	2.57	695	<10	181	12	50	<20	<20	14	2.94	0.49	0.25	0.03	0.21	13	7	<2	20	4	<5	<10	0.12	8
L250 200EN		<.2	39	19	78	1	15	14	<.2	<5	<5	<5	2.93	463	<10	130	14	56	<20	<20	13	2.81	0.56	0.23	0.03	0.20	8	5	<2	21	5	<5	<10	0.12	2
L250 250EN		<.2	41	17	85	1	14	12	<.2	<5	<5	<5	2.83	510	<10	102	13	53	<20	<20	11	2.54	0.48	0.20	0.02	0.16	7	5	<2	21	4	<5	<10	0.11	2
L250 300EN		<.2	36	15	73	1	14	13	<.2	<5	<5	<5	2.77	407	<10	94	13	52	<20	<20	9	2.58	0.37	0.18	0.02	0.13	7	4	<2	19	5	<5	<10	0.12	4
L250 350EN		<.2	61	13	73	1	17	23	<.2	<5	<5	<5	2.66	412	<10	103	11	52	<20	<20	9	2.84	0.40	0.26	0.03	0.13	9	5	<2	20	4	<5	<10	0.12	10
L250 400EN		<.2	63	11	64	<1	16	14	<.2	<5	<5	<5	2.56	555	<10	114	10	53	<20	<20	7	2.95	0.33	0.20	0.03	0.09	9	3	<2	19	5	<5	<10	0.11	8
L250 450EN		<.2	136	7	35	<1	15	12	<.2	<5	<5	<5	2.39	249	<10	80	6	77	<20	<20	6	2.02	0.44	0.50	0.05	0.07	7	4	<2	11	5	<5	<10	0.08	1
L250 500EN		<.2	23	14	49	<1	10	7	<.2	<5	<5	<5	1.70	131	<10	67	8	43	<20	<20	6	1.40	0.14	0.18	0.02	0.06	10	2	3	9	4	<5	<10	0.09	3
L750 50WN		<.2	24	19	78	<1	17	16	<.2	<5	<5	<5	2.27	391	<10	72	16	39	<20	<20	21	2.26	0.59	0.20	0.02	0.20	13	12	<2	29	4	<5	<10	0.12	2
L750 100WN		<.2	25	16	81	<1	16	11	<.2	<5	<5	<5	1.92	265	<10	76	15	34	<20	<20	14	2.26	0.58	0.19	0.03	0.17	14	8	<2	29	3	<5	<10	0.12	3
L750 150WN		<.2	34	46	75	<1	29	17	<.2	<5	<5	<5	2.66	743	<10	184	22	44	<20	<20	12	3.40	0.63	0.18	0.03	0.26	14	7	2	30	4	<5	<10	0.14	6
L750 200WN		<.2	104	34	62	1	27	27	<.2	<5	<5	<5	3.19	468	<10	149	22	58	<20	<20	31	3.83	0.67	0.26	0.03	0.28	26	25	3	31	5	5	<10	0.12	2
L750 250WN		<.2	83	11	70	1	24	21	<.2	<5	<5	<5	2.83	394	<10	181	12	61	<20	<20	8	3.08	0.38	0.20	0.03	0.14	12	4	<2	19	4	<5	<10	0.13	13
L750 300WN		<.2	37	12	80	1	26	17	<.2	<5	<5	<5	2.33	876	<10	149	11	46	<20	<20	8	3.18	0.26	0.17	0.03	0.10	10	4	2	19	4	<5	<10	0.11	7
L750 350WN		0.3	35	11	77	<1	28	18	<.2	<5	<5	<5	2.98	206	<10	182	16	63	<20	<20	10	3.09	0.76	0.21	0.03	0.36	12	4	<2	25	5	<5	<10	0.15	9
L750 400WN		<.2	13	35	60	<1	11	9	<.2	<5	<5	<5	1.93	184	<10	101	13	30	<20	<20	13	1.61	0.48	0.17	0.02	0.23	11	5	<2	17	3	<5	<10	0.09	<1
L750 450WN		0.2	67	25	91	<1	23	13	<.2	<5	<5	<5	2.32	433	<10	192	15	37	<20	<20	33	2.70	0.48	0.27	0.03	0.24	29	25	3	29	4	<5	<10	0.11	2
L750 500WN		<.2	95	28	88	1	29	19	<.2	<5	<5	<5	3.12	722	<10	226	20	51	<20	<20	37	3.29	0.76	0.33	0.03	0.49	33	29	<2	41	5	7	<10	0.12	2
L750 50EN		<.2	82	72	72	2	42	32	<.2	<5	<5	<5	3.27	1999	<10	142	14	44	<20	<20	51	3.59	0.35	0.22	0.03	0.16	22	36	4	29	4	<5	<10	0.14	5
L750 100EN		<.2	49	37	83	1	38	26	<.2	<5	<5	<5	3.50	425	<10	171	16	47	<20	<20	35	4.44	0.47	0.18	0.03	0.27	19	20	4	35	4	<5	<10	0.16	4
L750 150EN		0.2	15	14	86	1	15	16	<.2	<5	<5	<5	1.95	950	<10	117	10	34	<20	<20	12	2.23	0.21	0.12	0.02	0.09	8	6	2	17	4	<5	<10	0.10	3
L750 200EN		<.2	19	12	117	1	20	20	<.2	<5	<5	<5	2.73	323	<10	138	17	40	<20	<20	15	3.12	0.61	0.19	0.02	0.30	12	6	2	37	4	<5	<10	0.13	5
L750 250EN		<.2	23	24	118	<1	13	11	<.2	<5	5	<5	2.44	241	<10	100	14	41	<20	<20	66	1.83	0.48	0.22	0.02	0.30	11	16	<2	25	4	<5	<10	0.12	<1

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-01876.0 (COMPLETE)

PROJECT: YAK
DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
L750 300EN		0.3	41	12	91	1	13	14	<.2	<5	<5	<5	2.38	357	<10	109	7	55	<20	<20	8	1.67	0.37	0.31	0.03	0.24	10	4	<2	13	4	<5	<10	0.15	4
L750 350EN		<.2	55	13	67	1	13	11	<.2	<5	<5	<5	2.45	393	<10	107	12	48	<20	<20	11	2.66	0.40	0.21	0.03	0.13	10	5	<2	17	5	<5	<10	0.10	7
L750 400EN		<.2	56	11	91	1	17	15	<.2	<5	<5	<5	2.64	539	<10	100	12	48	<20	<20	8	3.26	0.41	0.22	0.02	0.13	11	4	<2	20	5	<5	<10	0.10	12
L750 450EN		<.2	108	12	67	1	15	12	<.2	<5	<5	<5	2.72	279	<10	95	12	54	<20	<20	11	2.99	0.41	0.17	0.02	0.13	7	6	<2	18	4	<5	<10	0.11	8
L750 500EN		<.2	202	13	65	1	21	14	<.2	<5	<5	<5	2.91	319	<10	75	11	70	<20	<20	9	3.21	0.46	0.23	0.02	0.15	8	6	<2	20	5	<5	<10	0.12	13
L1250 50WN		<.2	42	12	53	<1	13	12	<.2	<5	<5	<5	2.11	347	<10	75	14	48	<20	<20	12	1.83	0.58	0.29	0.03	0.18	12	6	<2	25	4	<5	<10	0.11	<1
L1250 100WN		<.2	34	14	64	<1	16	11	<.2	<5	<5	<5	2.01	297	<10	117	12	37	<20	<20	14	2.17	0.40	0.20	0.03	0.17	17	8	<2	19	4	<5	<10	0.11	<1
L1250 150WN		0.2	75	17	66	1	23	17	<.2	<5	<5	<5	2.63	370	<10	164	16	53	<20	<20	20	2.98	0.51	0.25	0.03	0.17	21	13	2	25	5	<5	<10	0.12	2
L1250 200WN		<.2	17	10	40	<1	10	7	<.2	<5	<5	<5	1.55	147	<10	66	12	30	<20	<20	10	1.58	0.46	0.18	0.02	0.15	8	5	<2	18	3	<5	<10	0.09	<1
L1250 250WN		<.2	51	13	64	<1	18	14	<.2	<5	<5	<5	2.69	404	<10	158	21	56	<20	<20	17	2.18	0.88	0.28	0.03	0.64	12	10	<2	20	4	<5	<10	0.14	2
L1250 300WN		<.2	32	35	101	<1	19	14	<.2	<5	<5	<5	2.38	478	<10	148	16	37	<20	<20	19	2.89	0.59	0.17	0.03	0.31	16	9	<2	28	4	<5	<10	0.12	3
L1250 350WN		0.4	12	40	148	1	15	13	0.3	<5	<5	<5	2.20	301	<10	106	14	32	<20	<20	9	2.87	0.54	0.22	0.03	0.21	23	4	<2	23	4	<5	<10	0.13	9
L1250 400WN		0.8	17	110	111	1	19	14	0.3	<5	<5	<5	2.35	251	<10	113	13	33	<20	<20	11	2.85	0.41	0.14	0.02	0.20	12	4	<2	21	3	<5	<10	0.12	15
L1250 450WN		0.2	13	15	80	2	28	13	<.2	<5	7	<5	2.66	145	<10	93	13	45	<20	<20	11	2.76	0.26	0.12	0.02	0.18	11	4	2	23	5	<5	<10	0.13	17
L1250 500WN		<.2	22	8	52	<1	22	15	<.2	<5	<5	<5	1.91	185	<10	99	12	32	<20	<20	11	3.08	0.28	0.19	0.03	0.15	13	5	<2	20	4	<5	<10	0.11	20
L1250 50EN		0.5	82	21	132	2	39	21	<.2	<5	6	<5	5.10	292	<10	261	20	75	<20	<20	23	6.69	0.59	0.15	0.03	0.42	21	13	6	50	7	5	<10	0.20	14
L1250 100EN		0.3	22	11	63	1	15	11	<.2	<5	<5	<5	2.56	169	<10	98	15	48	<20	<20	7	3.42	0.26	0.19	0.03	0.09	9	3	3	20	5	<5	<10	0.10	13
L1250 150EN		<.2	51	14	59	<1	20	16	<.2	<5	<5	<5	2.55	495	<10	116	15	53	<20	<20	18	2.50	0.57	0.33	0.03	0.23	19	12	<2	34	4	<5	<10	0.12	<1
L1250 200EN		0.7	34	14	102	<1	21	17	<.2	<5	<5	<5	2.71	339	<10	176	12	46	<20	<20	12	3.31	0.31	0.16	0.03	0.17	11	6	3	28	4	<5	<10	0.12	9
L1250 250EN		<.2	98	24	96	2	37	26	<.2	<5	<5	<5	4.20	711	<10	197	20	74	<20	<20	58	3.94	0.77	0.35	0.03	0.53	26	45	<2	48	6	6	<10	0.16	2
L1250 300EN		<.2	38	14	78	1	16	14	<.2	<5	<5	<5	2.26	655	<10	118	12	42	<20	<20	22	2.05	0.40	0.25	0.03	0.23	14	15	<2	21	4	<5	<10	0.11	1
L1250 350EN		<.2	63	22	72	1	21	18	<.2	<5	<5	<5	3.12	571	<10	139	17	47	<20	<20	41	3.01	0.62	0.22	0.02	0.46	17	28	<2	31	5	<5	<10	0.13	3
L1250 400EN		<.2	40	15	58	<1	13	12	<.2	<5	<5	<5	2.51	389	<10	104	14	41	<20	<20	30	2.05	0.60	0.29	0.03	0.40	15	17	<2	28	4	<5	<10	0.12	2
L1250 450EN		<.2	58	19	113	1	19	19	<.2	<5	<5	<5	3.27	551	<10	175	15	54	<20	<20	21	3.09	0.57	0.26	0.03	0.37	18	12	<2	30	5	<5	<10	0.13	2
L1250 500EN		<.2	59	13	50	<1	12	13	<.2	<5	<5	<5	2.54	427	<10	88	11	59	<20	<20	16	2.00	0.56	0.46	0.04	0.22	17	15	<2	26	4	5	<10	0.10	<1
L1250 550EN		0.2	57	16	113	1	20	14	<.2	<5	<5	<5	3.16	325	<10	139	14	55	<20	<20	15	3.26	0.52	0.29	0.04	0.22	15	9	3	32	4	<5	<10	0.14	2
L1250 600EN		0.2	152	24	102	2	26	28	<.2	<5	<5	<5	4.41	1211	<10	185	21	77	<20	<20	27	4.59	0.74	0.28	0.03	0.38	22	20	3	34	6	6	<10	0.16	3
L1250 650EN		<.2	93	13	89	1	17	14	<.2	<5	<5	<5	2.79	326	<10	114	14	62	<20	<20	17	2.43	0.61	0.38	0.04	0.23	13	11	<2	30	5	<5	<10	0.12	2
L1250 700EN		<.2	54	17	91	1	17	17	<.2	<5	<5	<5	2.80	496	<10	117	17	46	<20	<20	27	2.56	0.64	0.23	0.02	0.29	20	15	<2	36	4	<5	<10	0.12	1
L1250 750EN		<.2	61	20	78	1	14	25	<.2	<5	<5	<5	2.66	586	<10	132	14	55	<20	<20	25	2.30	0.65	0.38	0.03	0.26	22	18	<2	35	5	<5	<10	0.12	<1

ITS Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
L1250 800EN		<.2	39	13	57	1	11	11	<.2	<5	<5	<5	2.54	277	<10	74	12	56	<20	<20	18	1.80	0.62	0.31	0.03	0.39	11	10	<2	24	4	<5	<10	0.11	1
L1250 850EN		<.2	26	29	101	1	22	18	<.2	<5	<5	<5	3.18	627	<10	144	18	41	<20	<20	30	3.34	0.60	0.18	0.03	0.32	19	16	<2	40	5	<5	<10	0.15	4
L1250 900EN		<.2	20	25	95	1	16	17	<.2	<5	<5	<5	2.56	588	<10	105	18	35	<20	<20	22	2.63	0.80	0.26	0.03	0.29	20	13	<2	42	4	<5	<10	0.13	1
L1250 950EN		<.2	16	24	94	1	15	13	<.2	<5	<5	<5	2.52	268	<10	101	14	35	<20	<20	19	2.44	0.42	0.14	0.02	0.20	13	8	3	27	4	<5	<10	0.13	2
L1250 1000EN		<.2	32	31	150	2	31	21	<.2	<5	5	<5	3.95	1011	<10	182	21	45	<20	<20	38	4.41	0.65	0.20	0.03	0.45	24	19	3	45	4	<5	<10	0.16	2
L1500 550EN		<.2	69	17	69	1	22	15	<.2	<5	<5	<5	2.69	453	<10	88	12	57	<20	<20	27	2.27	0.54	0.42	0.04	0.26	16	23	<2	33	5	<5	<10	0.11	1
L1500 600EN		<.2	71	24	90	1	33	18	<.2	<5	<5	<5	3.14	388	<10	152	12	59	<20	<20	20	3.08	0.49	0.34	0.04	0.26	18	13	<2	39	5	<5	<10	0.13	3
L1500 650EN		<.2	50	15	77	1	19	16	<.2	<5	<5	<5	2.78	384	<10	87	13	62	<20	<20	20	2.13	0.65	0.42	0.04	0.39	15	16	<2	34	4	<5	<10	0.12	1
L1500 700EN		<.2	35	19	72	1	23	16	<.2	<5	<5	<5	2.40	594	<10	82	12	39	<20	<20	28	2.04	0.46	0.34	0.03	0.26	20	24	<2	32	4	<5	<10	0.10	1
L1500 750EN		0.2	64	33	92	1	36	22	0.5	<5	6	<5	2.98	909	<10	140	15	40	<20	<20	44	2.82	0.53	0.41	0.03	0.30	28	34	<2	37	4	<5	<10	0.11	2
L1500 800EN		<.2	16	31	123	1	23	12	<.2	<5	<5	<5	2.67	255	<10	66	15	34	<20	<20	18	2.37	0.55	0.29	0.02	0.23	14	7	<2	36	5	<5	<10	0.12	2
L1500 850EN		<.2	19	36	101	1	18	15	<.2	<5	<5	<5	2.43	269	<10	86	15	36	<20	<20	17	2.14	0.58	0.27	0.02	0.19	14	6	<2	33	4	<5	<10	0.13	2
L1500 900EN		<.2	20	21	121	1	21	14	<.2	<5	<5	<5	2.54	467	<10	98	17	34	<20	<20	32	2.32	0.66	0.37	0.03	0.29	23	13	<2	45	4	<5	<10	0.13	<1
L1500 950EN		<.2	32	33	97	2	28	16	<.2	<5	6	<5	2.97	356	<10	99	16	43	<20	<20	50	2.88	0.45	0.29	0.02	0.25	25	30	3	40	4	<5	<10	0.14	2
L1500 1000EN		<.2	23	19	99	1	25	16	<.2	<5	<5	<5	2.90	411	<10	92	20	40	<20	<20	20	2.75	0.79	0.24	0.03	0.40	17	7	<2	37	4	<5	<10	0.13	2
L1750 50EN		0.2	26	28	108	1	20	16	<.2	<5	6	<5	2.69	532	<10	249	14	40	<20	<20	23	2.55	0.35	0.27	0.02	0.19	18	8	3	24	4	<5	<10	0.11	<1
L1750 100EN		0.3	60	36	85	1	24	25	<.2	<5	9	<5	3.01	654	<10	175	17	53	<20	<20	28	3.17	0.60	0.27	0.03	0.24	22	14	<2	34	5	<5	<10	0.12	2
L1750 150EN		<.2	34	17	68	<1	14	10	<.2	<5	6	<5	2.43	214	<10	96	16	50	<20	<20	15	1.92	0.76	0.33	0.03	0.41	13	5	<2	25	4	<5	<10	0.11	<1
L1750 250EN		<.2	31	12	59	<1	14	11	<.2	<5	<5	<5	2.13	206	<10	83	13	42	<20	<20	14	1.91	0.53	0.26	0.03	0.23	11	7	<2	23	3	<5	<10	0.11	2
L1750 300EN		<.2	42	14	56	1	16	14	<.2	<5	<5	<5	2.43	407	<10	96	14	46	<20	<20	17	2.31	0.56	0.34	0.03	0.21	14	10	<2	26	4	<5	<10	0.11	1
L1750 350EN		<.2	52	17	74	1	18	13	<.2	<5	<5	<5	2.62	359	<10	108	15	47	<20	<20	21	2.58	0.61	0.36	0.04	0.25	17	13	<2	33	4	<5	<10	0.13	2
L1750 400EN		<.2	50	18	85	1	19	14	<.2	<5	<5	<5	2.57	316	<10	110	15	48	<20	<20	15	2.62	0.57	0.31	0.03	0.22	16	9	<2	34	4	<5	<10	0.12	1
L1750 450EN		<.2	68	20	72	<1	18	14	<.2	<5	<5	<5	2.49	453	<10	122	14	48	<20	<20	20	2.66	0.48	0.31	0.03	0.19	16	16	<2	31	4	<5	<10	0.12	2
L1750 500EN		0.2	47	13	137	1	28	13	<.2	<5	<5	<5	3.00	188	<10	118	13	51	<20	<20	13	3.90	0.32	0.40	0.03	0.19	23	10	3	38	5	<5	<10	0.12	11
L1750 550EN		0.2	117	12	128	1	27	19	<.2	<5	<5	<5	2.88	534	<10	136	12	53	<20	<20	16	3.76	0.42	0.29	0.04	0.25	13	14	<2	26	3	5	<10	0.13	18
L1750 600EN		<.2	118	15	101	1	30	20	<.2	<5	<5	<5	3.02	874	<10	202	13	55	<20	<20	15	3.79	0.42	0.28	0.03	0.21	14	9	<2	27	5	<5	<10	0.12	10
L1750 650EN		<.2	273	23	124	2	27	23	0.2	<5	<5	<5	3.81	1097	<10	149	17	86	<20	<20	30	3.48	0.53	0.24	0.03	0.27	14	24	3	31	7	<5	<10	0.12	1
L1750 700EN		<.2	33	15	141	1	26	22	<.2	<5	<5	<5	2.83	444	<10	153	15	43	<20	<20	13	3.15	0.51	0.18	0.03	0.24	9	6	<2	34	4	<5	<10	0.12	4
L1750 750EN		<.2	50	18	98	1	28	16	<.2	<5	<5	<5	2.77	369	<10	153	16	48	<20	<20	18	2.84	0.62	0.19	0.03	0.31	11	8	<2	29	4	<5	<10	0.14	5
L1750 800EN		<.2	29	24	94	1	21	15	<.2	<5	<5	<5	2.83	256	<10	90	17	44	<20	<20	16	2.67	0.64	0.20	0.03	0.29	9	7	<2	37	5	<5	<10	0.13	2

ITS Intertek Testing Services
Bondar Clegg

CLIENT: KENNECOTT CANADA INC.
PROJECT: YAK
REPORT: V97-01876.0 (COMPLETE)
DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
L1750 850EN		<.2	29	33	138	2	27	25	<.2	<5	<5	<5	3.41	470	<10	115	18	48	<20	<20	22	3.34	0.63	0.18	0.02	0.33	12	11	<2	33	5	<5	<10	0.13	1
L1750 900EN		<.2	24	20	155	1	26	20	0.4	<5	<5	<5	2.64	366	<10	121	16	40	<20	<20	16	3.02	0.57	0.19	0.02	0.25	14	6	<2	30	4	<5	<10	0.12	7
L1750 950EN		0.3	22	113	129	2	17	11	<.2	<5	<5	<5	2.93	276	<10	73	17	46	<20	<20	19	2.40	0.56	0.13	0.02	0.27	7	7	<2	27	5	<5	<10	0.13	3
L1750 1000EN		<.2	21	17	95	2	18	13	<.2	<5	<5	<5	2.86	603	<10	92	17	45	<20	<20	17	2.87	0.56	0.16	0.02	0.26	9	6	<2	25	5	<5	<10	0.13	4
L2000 50EN		<.2	50	16	74	1	21	17	<.2	<5	<5	<5	2.81	837	<10	147	17	45	<20	<20	23	3.10	0.62	0.38	0.03	0.28	27	16	<2	28	4	<5	<10	0.12	1
L2000 100EN		<.2	24	10	68	<1	14	12	<.2	<5	<5	<5	1.99	385	<10	100	12	37	<20	<20	11	2.00	0.44	0.23	0.03	0.15	11	5	<2	22	4	<5	<10	0.09	2
L2000 150EN		<.2	43	15	82	1	29	22	<.2	<5	<5	<5	3.12	231	<10	147	14	52	<20	<20	17	4.03	0.40	0.17	0.03	0.19	12	12	3	35	5	<5	<10	0.12	8
L2000 200EN		<.2	14	13	46	<1	13	10	<.2	<5	<5	<5	1.79	440	<10	117	10	37	<20	<20	10	1.87	0.28	0.17	0.03	0.12	8	4	2	16	3	<5	<10	0.09	<1
L2000 250EN		<.2	45	24	61	1	17	18	<.2	<5	<5	<5	2.54	451	<10	102	13	51	<20	<20	19	2.36	0.59	0.27	0.03	0.30	13	10	<2	24	4	<5	<10	0.12	2
L2000 300EN		<.2	34	25	89	<1	24	13	<.2	<5	<5	<5	2.42	175	<10	160	12	42	<20	<20	11	2.76	0.38	0.33	0.03	0.20	21	6	2	33	4	<5	<10	0.11	2
L2000 350EN		<.2	32	48	80	1	17	12	<.2	<5	<5	<5	2.44	197	<10	93	10	54	<20	<20	9	2.14	0.40	0.28	0.03	0.21	13	4	<2	27	4	<5	<10	0.12	1
L2000 400EN		<.2	49	19	76	1	19	23	<.2	<5	<5	<5	2.63	640	<10	139	15	45	<20	<20	25	2.84	0.48	0.21	0.03	0.23	17	15	<2	22	4	<5	<10	0.12	<1
L2000 450EN		<.2	64	29	117	2	31	20	<.2	<5	<5	<5	3.45	448	<10	243	16	57	<20	<20	20	4.17	0.51	0.17	0.03	0.34	15	12	3	37	5	<5	<10	0.14	3
L2000 500EN		<.2	30	19	159	1	29	23	<.2	<5	<5	<5	2.73	830	<10	175	11	48	<20	<20	11	3.62	0.25	0.13	0.03	0.21	11	8	<2	25	5	<5	<10	0.13	11
L2000 550EN		<.2	79	13	109	1	21	15	<.2	<5	<5	<5	2.88	549	<10	104	13	62	<20	<20	12	2.55	0.51	0.34	0.03	0.19	11	8	<2	33	4	<5	<10	0.12	<1
L2000 600EN		<.2	84	14	117	<1	30	18	<.2	<5	<5	<5	2.99	571	<10	171	14	57	<20	<20	11	3.31	0.46	0.19	0.03	0.24	11	4	<2	35	5	<5	<10	0.13	4
L2000 650EN		<.2	74	11	74	1	17	15	<.2	<5	<5	<5	2.68	306	<10	106	13	67	<20	<20	10	2.29	0.55	0.25	0.03	0.21	9	5	<2	30	5	<5	<10	0.12	1
L2000 700EN		<.2	76	12	111	1	21	17	<.2	<5	<5	<5	2.69	628	<10	183	13	45	<20	<20	20	2.89	0.48	0.24	0.03	0.21	13	15	<2	30	4	5	<10	0.12	8
L2000 750EN		<.2	23	14	76	1	16	17	<.2	<5	<5	<5	2.86	632	<10	143	11	51	<20	<20	13	2.31	0.41	0.22	0.03	0.25	8	7	<2	23	4	<5	<10	0.12	1
L2000 800EN		<.2	47	11	52	1	13	11	<.2	<5	<5	<5	3.02	284	<10	100	17	59	<20	<20	35	2.11	0.77	0.32	0.03	0.47	14	22	<2	20	3	7	<10	0.14	2
L2000 850EN		<.2	104	146	307	3	69	57	1.6	<5	8	<5	4.81	1653	<10	158	22	61	<20	<20	78	5.33	0.69	0.23	0.03	0.46	27	72	3	39	6	7	<10	0.18	5
L2000 900EN		<.2	15	20	133	1	18	15	0.2	<5	<5	<5	2.43	337	<10	91	13	32	<20	<20	13	2.56	0.44	0.26	0.02	0.18	19	5	2	26	4	<5	<10	0.10	4
L2000 950EN		<.2	25	13	82	1	23	15	<.2	<5	5	<5	3.04	319	<10	128	18	51	<20	<20	24	3.03	0.55	0.13	0.02	0.30	13	8	<2	31	5	<5	<10	0.14	6
L2000 1000EN		<.2	11	15	69	2	14	10	<.2	<5	<5	<5	3.17	230	<10	59	16	50	<20	<20	16	2.10	0.48	0.10	0.02	0.18	8	6	<2	22	4	<5	<10	0.13	2

ITS Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-01876.0 (COMPLETE)

PROJECT: YAK
DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

STANDARD NAME / ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
BCC GEOCHEM STD 4	1.0	270	31	226	3	38	9	0.9	<5	27	<5	2.79	572	<10	61	70	7	<20	<20	4	0.82	1.17	1.42	0.05	0.15	37	3	<2	6	1	<5	<10	<.01	11
BCC GEOCHEM STD 4	1.1	272	30	227	3	40	9	0.9	<5	27	<5	2.76	579	<10	63	70	7	<20	<20	4	0.81	1.17	1.43	0.05	0.16	36	3	<2	6	1	<5	<10	<.01	11
Number of Analyses	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mean Value	1.1	271	30	226	3	39	9	0.9	3	27	3	2.78	575	5	62	70	7	10	10	4	0.81	1.17	1.43	0.05	0.15	37	3	1	6	1	3	5	.005	11
Standard Deviation	.03	1	1	0.3	.01	1	0.2	.01	-	.01	-	0.02	5	-	1	0.4	-	-	-	0.3	.001	.001	.002	.002	.010	0.9	.02	-	.10	.05	-	-	-	0.4
Accepted Value	0.8	290	33	255	4	42	9	0.8	1	30	1	2.60	600	0.1	55	80	9	5	1	4	0.77	1.34	1.43	0.04	0.14	39	4	2	7	1	12	1	0.01	8
ANALYTICAL BLANK	<.2	<1	<2	<1	<1	<1	<1	<.2	<5	<5	<5	<.01	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1
ANALYTICAL BLANK	<.2	<1	<2	<1	<1	<1	<1	<.2	<5	<5	<5	<.01	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1
ANALYTICAL BLANK	<.2	<1	<2	<1	<1	<1	<1	<.2	<5	<5	<5	<.01	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1
ANALYTICAL BLANK	<.2	<1	<2	<1	<1	<1	<1	<.2	<5	<5	<5	<.01	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1
Number of Analyses	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Mean Value	0.1	0.5	1	0.5	0.5	0.5	0.5	0.1	3	3	3	.005	0.5	5	0.5	0.5	0.5	10	10	0.5	.005	.005	.005	.005	.005	0.5	0.5	1	0.5	0.5	3	5	.005	0.5
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	0.2	1	2	1	1	1	1	0.1	2	5	5	0.05	1	.01	.01	1	1	.01	.01	.01	<.01	<.01	<.01	<.01	<.01	.01	.01	.01	.01	.01	.01	.01	<.01	.01
BCC GEOCHEM STD 6	0.4	136	15	125	4	122	31	0.6	<5	138	<5	7.10	1398	<10	6	176	46	<20	<20	2	1.90	2.56	3.63	0.01	0.05	76	3	<2	20	3	7	<10	<.01	5
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	0.4	136	15	125	4	122	31	0.6	3	138	3	7.10	1398	5	6	176	46	10	10	2	1.90	2.56	3.63	0.01	0.05	76	3	1	20	3	7	5	.005	5
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	0.2	140	18	140	4	135	35	0.2	1	145	1	6.50	1450	-	6	170	50	5	12	-	1.80	2.70	4.00	0.01	0.04	70	3	-	24	2	6	1	.003	5
BCC GEOCHEM STD 5	0.5	91	7	70	2	33	21	<.2	<5	8	<5	4.45	692	<10	201	49	130	<20	<20	7	3.18	1.61	1.05	0.06	0.36	35	8	<2	24	7	9	<10	0.20	13
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	0.5	91	7	70	2	33	21	0.1	3	8	3	4.45	692	5	201	49	130	10	10	7	3.18	1.61	1.05	0.06	0.36	35	8	1	24	7	9	5	0.20	13
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	0.7	90	11	80	2	40	18	0.1	1	8	1	4.74	720	0.2	200	54	133	4	2	5	3.09	1.83	1.08	0.06	0.32	39	9	4	-	1	18	1	-	9

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK

REPORT: V97-01876.0 (COMPLETE) DATE RECEIVED: 28-JUL-97 DATE PRINTED: 6-AUG-97

SAMPLE	ELEMENT	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr
NUMBER	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM
L250 100WS		<.2	13	13	70	<1	20	12	<.2	<5	<5	<5	1.99	186	<10	68	19	32	<20	<20	15	2.26	0.82	0.26	0.03	0.19	18	6	<2	42	4	<5	<10	0.13	1
Duplicate		<.2	13	12	71	<1	20	12	<.2	<5	<5	<5	1.98	186	<10	68	19	32	<20	<20	15	2.27	0.83	0.26	0.03	0.19	18	6	<2	43	3	<5	<10	0.13	1
L250 450ES		<.2	66	13	92	1	22	18	<.2	<5	<5	<5	3.45	863	<10	157	13	66	<20	<20	11	3.80	0.46	0.38	0.03	0.17	20	9	2	25	5	5	<10	0.12	3
Duplicate		<.2	67	13	92	1	21	18	<.2	<5	<5	<5	3.45	862	<10	159	13	67	<20	<20	12	3.79	0.46	0.37	0.03	0.17	21	9	3	25	5	5	<10	0.12	3
L250 450EN		<.2	136	7	35	<1	15	12	<.2	<5	<5	<5	2.39	249	<10	80	6	77	<20	<20	6	2.02	0.44	0.50	0.05	0.07	7	4	<2	11	5	<5	<10	0.08	1
Duplicate		<.2	136	8	35	<1	14	12	<.2	<5	<5	<5	2.36	250	<10	81	6	77	<20	<20	6	2.02	0.44	0.50	0.05	0.07	7	4	<2	11	5	<5	<10	0.08	1
L750 300EN		0.3	41	12	91	1	13	14	<.2	<5	<5	<5	2.38	357	<10	109	7	55	<20	<20	8	1.67	0.37	0.31	0.03	0.24	10	4	<2	13	4	<5	<10	0.15	4
Duplicate		0.2	41	12	92	<1	13	14	<.2	<5	<5	<5	2.38	354	<10	109	7	56	<20	<20	9	1.67	0.38	0.31	0.03	0.25	10	4	<2	13	4	<5	<10	0.15	4
L1250 300EN		<.2	38	14	78	1	16	14	<.2	<5	<5	<5	2.26	655	<10	118	12	42	<20	<20	22	2.05	0.40	0.25	0.03	0.23	14	15	<2	21	4	<5	<10	0.11	1
Duplicate		0.4	38	14	79	1	15	13	<.2	<5	<5	<5	2.24	651	<10	117	12	42	<20	<20	22	2.05	0.40	0.25	0.03	0.23	14	15	<2	21	4	<5	<10	0.11	1
L1500 650EN		<.2	50	15	77	1	19	16	<.2	<5	<5	<5	2.78	384	<10	87	13	62	<20	<20	20	2.13	0.65	0.42	0.04	0.39	15	16	<2	34	4	<5	<10	0.12	1
Duplicate		<.2	47	15	72	1	17	15	<.2	<5	<5	<5	2.62	367	<10	82	12	58	<20	<20	19	2.02	0.62	0.39	0.04	0.36	15	15	<2	32	4	<5	<10	0.12	1
L1750 700EN		<.2	33	15	141	1	26	22	<.2	<5	<5	<5	2.83	444	<10	153	15	43	<20	<20	13	3.15	0.51	0.18	0.03	0.24	9	6	<2	34	4	<5	<10	0.12	4
Duplicate		<.2	35	15	137	1	26	22	<.2	<5	<5	<5	2.92	439	<10	152	15	44	<20	<20	14	3.19	0.52	0.18	0.03	0.22	10	6	<2	35	4	<5	<10	0.12	4
L2000 550EN		<.2	79	13	109	1	21	15	<.2	<5	<5	<5	2.88	549	<10	104	13	62	<20	<20	12	2.55	0.51	0.34	0.03	0.19	11	8	<2	33	4	<5	<10	0.12	<1
Duplicate		<.2	78	12	101	<1	21	15	<.2	<5	<5	<5	2.87	531	<10	98	12	59	<20	<20	12	2.47	0.49	0.31	0.03	0.16	12	8	<2	32	4	<5	<10	0.11	<1

Inchcape Testing Services
Bondar Clegg

Geochemical Lab Report

REPORT: V97-00085.0 (COMPLETE) REFERENCE:

CLIENT: KENNECOTT CANADA INC. SUBMITTED BY: R. WOODFILL

PROJECT: YAK-COLD DATE PRINTED: 3-FEB-97

	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
1	Ag	Silver	124	0.5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
2	Cu	Copper	124	1 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
3	Pb	Lead	124	2 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
4	Zn	Zinc	124	2 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
5	Mo	Molybdenum	124	1 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
6	Ni	Nickel	124	1 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
7	Co	Cobalt	124	1 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
8	Cd	Cadmium	124	1 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
9	Bi	Bismuth	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
10	As	Arsenic	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
11	Sb	Antimony	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
12	Fe Tot	Total Iron	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
13	Mn	Manganese	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
14	Te	Tellurium	124	25 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
15	Ba	Barium	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
16	Cr	Chrome	124	2 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
17	V	Vanadium	124	2 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
18	Sn	Tin	124	20 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
19	W	Tungsten	124	20 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
20	La	Lanthanum	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
21	Al	Aluminum	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
22	Mg	Magnesium	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
23	Ca	Calcium	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
24	Na	Sodium	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
25	K	Potassium	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
26	Sr	Strontium	124	1 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
27	Y	Yttrium	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
28	Ga	Gallium	124	10 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
29	Li	Lithium	124	2 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
30	Nb	Niobium	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
31	Sc	Scandium	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
32	Ta	Tantalum	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
33	Ti	Titanium	124	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
34	Zr	Zirconium	124	5 PPM	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
P PREPARED PULP	124	4 AS RECEIVED	124	AS RECEIVED	124
				PULP HANDLING	124

REPORT COPIES TO: DR. ROBERT WOODFILL
MR. STEVE COOMBES

INVOICE TO: DR. ROBERT WOODFILL

Inchcape Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

SAMPLE NUMBER	ELEMENT	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe Tot	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr
	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM
BLO 0N		<.5	38	28	101	2	40	18	<1	<5	6	<5	4.19	1134	<25	457	37	81	<20	<20	45	7.44	0.88	1.03	0.93	1.10	73	34	10	41	<5	11	<5	0.47	52
BLO 50N		<.5	21	23	109	2	31	12	<1	<5	8	<5	4.18	709	<25	583	43	79	<20	<20	38	7.86	0.91	0.91	1.15	1.44	93	17	12	38	<5	10	7	0.43	57
BLO 100N		<.5	27	26	98	3	18	10	<1	<5	<5	<5	3.85	1364	<25	525	31	72	<20	<20	32	7.81	0.84	1.26	1.65	1.36	137	18	11	31	<5	9	6	0.39	77
BLO 150N		<.5	18	19	90	2	29	12	<1	<5	<5	<5	3.83	845	<25	514	36	79	<20	<20	23	7.39	0.84	0.94	1.10	1.31	99	15	11	34	<5	9	9	0.40	51
BLO 200N		<.5	25	19	116	2	27	19	<1	<5	6	<5	4.07	1485	<25	496	36	87	<20	<20	22	7.36	0.89	1.06	1.10	1.23	99	16	11	33	<5	10	6	0.44	50
BLO 250N		<.5	45	24	138	2	62	18	<1	<5	<5	<5	3.63	560	<25	534	33	71	<20	<20	26	8.32	0.82	1.05	1.39	1.16	152	19	12	51	<5	9	10	0.40	72
BLO 300N		<.5	17	32	133	2	26	14	<1	<5	<5	<5	3.88	1968	<25	578	34	82	<20	<20	24	7.61	0.80	1.14	1.37	1.31	136	14	12	34	<5	9	6	0.45	61
BLO 350N		<.5	21	24	120	2	35	14	<1	<5	<5	<5	3.60	597	<25	556	30	76	<20	<20	23	8.39	0.76	1.08	1.49	1.12	147	15	12	35	<5	9	<5	0.39	88
BLO 400N		<.5	42	26	124	2	49	18	<1	<5	<5	<5	4.07	558	<25	540	36	81	<20	<20	35	8.53	0.90	0.91	1.25	1.31	114	27	12	45	<5	10	<5	0.41	77
BLO 450N		<.5	26	28	120	2	29	10	1	<5	<5	<5	4.00	516	<25	559	41	79	<20	<20	35	8.89	1.06	1.05	1.50	1.59	128	19	12	54	<5	11	7	0.42	67
BLO 500N		<.5	40	32	129	2	37	13	<1	<5	<5	<5	3.97	663	<25	509	37	75	<20	<20	35	8.48	0.94	1.09	1.31	1.28	135	23	12	56	<5	10	7	0.39	68
BLO 550N		<.5	20	18	62	2	18	7	<1	<5	<5	<5	3.49	484	<25	490	37	87	<20	<20	17	7.21	0.90	0.96	1.09	1.49	75	13	<10	31	<5	12	<5	0.43	46
BLO 600N		<.5	34	20	134	2	30	15	<1	<5	<5	<5	3.69	717	<25	503	32	66	<20	<20	32	8.43	0.70	1.03	1.49	1.17	143	22	12	42	<5	9	<5	0.40	89
BLO 650N		<.5	38	20	74	2	32	14	<1	<5	<5	<5	3.44	539	<25	556	35	63	<20	<20	34	8.71	0.82	0.92	1.47	1.30	152	20	11	50	<5	8	7	0.37	75
BLO 700N		<.5	30	21	84	2	27	19	<1	<5	<5	<5	3.71	1004	<25	407	31	78	<20	<20	40	7.00	0.94	1.26	1.24	0.97	118	30	10	42	<5	10	7	0.43	55
BLO 750N		<.5	52	21	73	3	30	10	<1	<5	8	<5	3.55	434	<25	564	31	62	<20	<20	34	9.17	0.87	1.06	1.67	1.23	170	25	13	57	<5	9	<5	0.37	95
BLO 800N		<.5	29	19	68	2	23	14	<1	<5	<5	<5	4.65	993	<25	377	26	110	<20	<20	22	6.14	1.09	1.47	1.03	1.03	94	24	<10	28	<5	14	<5	0.80	43
BLO 850N		<.5	32	20	81	2	23	16	<1	<5	<5	<5	5.12	1137	<25	411	30	130	<20	<20	21	6.10	1.22	1.71	1.13	0.97	102	22	<10	25	<5	15	<5	0.99	47
BLO 900N		<.5	30	20	77	2	22	15	<1	<5	<5	<5	4.75	1087	<25	443	33	115	<20	<20	18	6.74	1.21	1.55	1.24	1.14	113	20	<10	29	<5	14	<5	0.81	53
BLO 1000N		<.5	16	24	72	2	20	9	<1	<5	<5	<5	3.49	577	<25	385	36	72	<20	<20	14	7.16	1.57	1.18	2.31	1.00	97	12	<10	26	<5	10	5	0.46	53
BLO 1050N		<.5	46	31	86	2	23	15	<1	<5	<5	<5	4.39	731	<25	417	42	109	<20	<20	14	7.42	1.74	1.66	1.86	1.08	112	15	<10	27	<5	14	7	0.52	52
BLO 1100N		<.5	40	25	108	4	27	16	<1	<5	<5	<5	4.04	656	<25	581	32	85	<20	<20	20	8.61	0.78	1.40	1.87	1.10	203	16	15	43	<5	9	<5	0.44	103
BLO 1150N		<.5	74	48	102	3	34	17	1	<5	<5	<5	4.79	704	<25	510	59	125	<20	<20	24	9.07	1.72	1.78	1.70	1.22	168	17	12	49	<5	15	<5	0.53	53
BLO 1200N		<.5	86	29	82	2	26	14	<1	<5	<5	<5	4.17	1269	<25	462	37	93	<20	<20	30	8.21	0.95	1.36	1.22	0.97	149	33	12	41	<5	13	12	0.40	53
BLO 1250N		<.5	31	24	112	2	19	14	<1	<5	<5	<5	3.41	714	<25	557	30	78	<20	<20	17	8.33	0.77	1.36	1.85	1.18	199	11	13	38	<5	9	7	0.43	86
BLO 1300N		<.5	82	22	109	3	33	19	<1	<5	<5	<5	3.85	1187	<25	627	30	75	<20	<20	23	9.26	0.85	1.32	1.89	1.17	219	16	14	60	<5	9	9	0.38	92
BLO 1350N		<.5	62	21	81	3	25	13	<1	<5	<5	<5	3.44	619	<25	591	24	85	<20	<20	20	8.70	0.86	1.62	2.01	1.30	225	16	13	43	<5	10	8	0.45	89
BLO 1400N		<.5	37	20	77	2	20	12	<1	<5	5	<5	3.57	652	<25	541	34	94	<20	<20	22	7.73	0.98	1.26	1.39	1.23	131	18	10	40	<5	12	6	0.45	57
BLO 1450N		<.5	39	21	83	2	20	10	1	<5	11	<5	4.04	658	<25	548	34	94	<20	<20	19	7.61	1.00	1.27	1.56	1.30	143	16	10	46	<5	11	6	0.57	78
BLO 1500N		<.5	39	22	79	4	20	10	<1	<5	8	<5	3.77	1334	<25	512	34	86	<20	<20	17	7.41	0.99	1.58	1.68	1.12	170	17	<10	32	<5	11	<5	0.49	76

Bondar-Clegg & Company Ltd., 130 Pemberton Avenue, North Vancouver, B.C., V7P 2R5, (604) 985-0681

Inchcape Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe Tot PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
BLO 1550N		<.5	67	25	93	1	25	11	<1	<5	<5	<5	4.15	694	<25	600	33	85	<20	<20	22	8.58	0.84	1.05	1.44	1.25	163	16	13	50	<5	10	12	0.44	76
BLO 1600N		<.5	64	23	79	2	26	11	<1	<5	<5	<5	3.97	701	<25	504	31	87	<20	<20	22	7.62	0.93	1.14	1.22	1.10	126	22	11	38	<5	12	<5	0.48	58
BLO 1650N		<.5	53	21	77	2	22	11	<1	<5	<5	<5	3.70	697	<25	460	30	86	<20	<20	25	7.01	0.97	1.25	1.17	1.05	127	21	10	34	<5	12	8	0.44	52
BLO 1700N		<.5	51	21	95	1	25	11	1	<5	<5	<5	3.94	836	<25	564	36	83	<20	<20	24	7.93	0.93	1.16	1.26	1.20	134	20	11	39	<5	11	6	0.43	62
BLO 1750N		<.5	68	25	102	4	26	17	<1	<5	6	<5	4.25	1207	<25	491	32	85	<20	<20	27	7.60	0.95	1.35	1.22	1.03	143	24	11	37	<5	11	<5	0.42	54
BLO 1800N		<.5	62	20	89	2	23	14	<1	<5	11	<5	4.08	833	<25	494	35	84	<20	<20	27	7.26	1.02	1.09	0.98	1.17	105	19	<10	39	<5	12	8	0.48	46
BLO 1850N		<.5	43	20	83	1	21	12	<1	<5	<5	<5	3.68	663	<25	519	32	81	<20	<20	23	7.05	0.97	1.07	0.98	1.19	105	19	10	40	<5	11	<5	0.38	43
BLO 1900N		<.5	44	37	73	2	23	9	<1	<5	<5	<5	3.69	526	<25	513	29	79	<20	<20	26	7.04	1.00	1.14	0.98	1.19	106	21	10	38	<5	11	6	0.41	45
BLO 1950N		<.5	74	39	95	3	30	15	<1	<5	<5	<5	4.24	905	<25	559	31	83	<20	<20	30	8.31	0.86	1.12	1.21	1.09	141	24	13	53	<5	11	6	0.36	67
BLO 2000N		<.5	31	20	75	2	21	9	<1	<5	<5	<5	3.25	422	<25	408	26	64	<20	<20	22	6.85	0.96	1.18	1.29	0.89	142	18	<10	35	<5	8	5	0.40	55
LON 50W		<.5	21	19	114	2	21	11	<1	<5	<5	<5	3.48	1343	<25	477	26	68	<20	<20	26	6.81	0.80	1.02	1.22	1.14	125	13	<10	32	<5	9	<5	0.39	52
LON 100W		<.5	25	20	103	2	33	13	<1	<5	6	<5	3.60	900	<25	529	31	75	<20	<20	27	7.37	0.93	1.02	1.05	1.08	116	16	10	39	<5	10	8	0.38	64
LON 150W		<.5	23	24	109	2	29	12	<1	<5	<5	<5	3.65	655	<25	488	30	63	<20	<20	20	7.72	1.20	1.00	0.96	1.00	124	15	10	42	<5	8	6	0.35	64
LON 200W		<.5	22	26	178	2	31	12	1	<5	<5	<5	3.27	669	<25	521	25	60	<20	<20	19	7.88	1.00	1.26	1.32	1.01	165	14	10	39	<5	8	10	0.35	89
LON 250W		<.5	22	40	174	2	26	11	1	<5	<5	<5	3.39	664	<25	447	22	63	<20	<20	16	7.54	0.92	1.53	1.45	0.99	199	11	11	39	<5	8	<5	0.36	66
LON 300W		<.5	32	44	90	2	31	18	<1	<5	<5	<5	3.46	1062	<25	475	30	67	<20	<20	24	7.09	1.04	1.01	1.06	0.96	118	14	10	39	<5	9	<5	0.33	56
LON 350W		<.5	36	24	118	2	48	32	<1	<5	<5	<5	3.77	1630	<25	675	31	77	<20	<20	33	8.82	0.81	1.09	1.32	1.30	165	11	12	48	<5	10	6	0.40	78
LON 400W		<.5	23	21	118	2	32	24	<1	<5	<5	<5	3.91	1362	<25	631	35	84	<20	<20	19	8.23	0.92	1.43	1.41	1.22	162	13	12	40	<5	11	10	0.43	66
LON 450W		<.5	49	20	95	4	28	20	<1	<5	8	<5	3.75	831	<25	480	33	94	<20	<20	22	7.65	1.11	1.63	1.39	1.25	173	18	11	42	<5	12	7	0.44	47
LON 500W		<.5	63	22	124	2	35	16	<1	<5	<5	<5	4.30	595	<25	474	30	105	<20	<20	15	8.22	1.04	1.48	1.23	1.07	151	11	13	39	<5	12	<5	0.47	51
LON 50E		<.5	32	28	111	2	33	14	1	<5	6	<5	4.17	662	<25	441	37	87	<20	<20	23	7.46	1.22	1.07	0.84	1.41	87	17	11	38	<5	11	<5	0.46	45
LON 100E		<.5	97	36	113	3	26	15	<1	<5	<5	<5	4.38	733	<25	503	34	95	<20	<20	59	8.40	1.01	1.00	0.87	1.23	90	28	13	41	<5	14	<5	0.45	48
LON 150E		<.5	52	22	116	2	23	14	<1	<5	6	<5	4.32	1607	<25	553	30	108	<20	<20	17	7.37	1.10	1.45	1.14	1.19	140	13	11	35	<5	12	<5	0.50	42
LON 200E		<.5	32	26	103	2	21	14	<1	<5	5	<5	4.49	1325	<25	509	32	113	<20	<20	21	7.68	1.21	1.61	1.17	1.28	134	14	11	31	<5	14	<5	0.52	46
LON 250E		<.5	20	30	130	2	21	15	<1	<5	<5	<5	4.57	1300	<25	492	30	115	<20	<20	18	7.39	0.97	1.59	1.34	1.15	161	12	13	34	<5	13	<5	0.55	50
LON 300E		<.5	31	23	104	4	20	15	<1	<5	<5	<5	4.09	1925	<25	481	23	102	<20	<20	15	8.04	0.96	1.82	1.57	1.14	199	11	13	33	<5	11	6	0.47	73
L500N 50E		<.5	25	26	74	2	20	8	<1	<5	<5	<5	3.90	562	<25	409	35	110	<20	<20	16	7.24	1.17	1.55	1.10	1.38	99	14	10	28	<5	14	7	0.49	36
L500N 100E		<.5	74	30	224	3	43	22	1	<5	7	<5	4.45	1862	<25	506	31	82	<20	<20	34	8.52	0.84	0.87	0.92	1.15	110	17	13	60	<5	10	<5	0.43	51
L500N 150E		<.5	67	60	320	2	28	11	1	<5	9	<5	3.60	391	<25	534	25	93	<20	<20	21	8.28	0.81	1.11	1.39	1.17	168	12	13	49	<5	9	<5	0.40	64
L500N 200E		<.5	112	103	554	2	31	21	<1	<5	5	<5	5.49	739	<25	430	31	163	<20	<20	18	7.97	1.41	1.66	1.44	1.17	143	15	12	38	<5	15	<5	0.64	39

Inchcape Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe Tot PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
L500N 250E		<.5	115	26	127	3	28	30	<1	<5	<5	<5	4.72	1695	<25	392	29	112	<20	<20	22	8.44	0.96	1.36	1.09	0.93	141	16	13	41	<5	12	<5	0.51	44
L500N 300E		<.5	131	23	92	2	22	17	<1	<5	7	<5	3.61	561	<25	449	23	87	<20	<20	17	8.46	0.76	1.35	1.56	1.10	191	14	15	36	<5	10	9	0.41	90
L500N 350E		<.5	69	24	105	2	20	14	<1	<5	<5	<5	4.48	1927	<25	380	24	122	<20	<20	15	7.24	1.05	1.81	1.38	1.02	155	11	11	28	<5	13	<5	0.51	52
L500N 400E		<.5	71	23	97	2	26	18	<1	<5	6	<5	4.52	888	<25	369	21	158	<20	<20	12	7.01	1.02	1.74	1.38	0.91	146	10	11	29	<5	13	<5	0.48	54
L500N 50W		<.5	106	48	106	2	46	20	<1	<5	<5	<5	4.46	865	<25	398	24	64	<20	<20	90	9.38	0.85	0.98	0.89	0.96	130	67	14	59	<5	11	<5	0.33	59
L500N 100W		<.5	83	42	140	3	47	19	<1	<5	8	<5	4.37	1315	<25	510	31	68	<20	<20	51	9.33	0.93	0.95	1.04	1.07	147	39	15	67	<5	10	<5	0.37	74
L500N 150W		0.9	90	38	131	3	45	14	1	<5	<5	<5	4.83	876	<25	536	35	76	<20	<20	46	9.77	1.02	1.01	1.05	1.24	143	34	15	65	<5	11	<5	0.42	67
L500N 200W		<.5	56	34	94	3	31	11	<1	<5	<5	<5	3.87	679	<25	453	34	84	<20	<20	30	7.95	1.15	1.40	1.29	1.08	151	26	11	48	<5	12	9	0.44	56
L500N 250W		<.5	66	21	105	4	26	16	<1	<5	10	<5	4.57	646	<25	464	31	104	<20	<20	19	8.32	1.11	1.60	1.43	1.16	183	14	12	41	<5	12	<5	0.53	57
L500N 300W		<.5	91	27	105	3	33	21	<1	<5	<5	<5	4.29	1080	<25	540	35	93	<20	<20	27	8.65	1.10	1.43	1.40	1.22	192	19	14	48	<5	12	<5	0.42	66
L500N 350W		<.5	78	22	124	2	35	19	1	<5	<5	<5	4.49	2561	<25	535	35	99	<20	<20	29	8.01	1.14	1.64	1.38	1.02	170	24	12	39	<5	13	<5	0.50	57
L500N 400W		<.5	47	20	97	3	43	18	<1	<5	8	<5	4.26	712	<25	374	61	95	<20	<20	13	8.55	1.29	1.90	1.26	0.97	155	10	11	41	<5	12	<5	0.39	63
L500N 450W		<.5	56	26	113	2	41	15	<1	<5	<5	<5	4.00	578	<25	453	36	89	<20	<20	15	8.87	1.10	1.63	1.44	1.09	178	11	12	42	<5	11	<5	0.42	80
L500N 500W		<.5	26	24	121	2	31	13	<1	<5	8	<5	3.57	632	<25	547	34	78	<20	<20	20	8.14	0.97	1.28	1.38	1.29	162	13	12	36	<5	10	<5	0.44	79
L1000N 50E		<.5	56	32	97	3	34	17	1	<5	6	<5	4.19	511	<25	492	34	71	<20	<20	28	9.67	1.09	1.01	1.86	1.03	178	21	17	49	<5	9	10	0.40	84
L1000N 100E		<.5	19	23	101	2	21	11	<1	<5	8	<5	3.99	632	<25	476	32	113	<20	<20	15	7.43	1.04	1.68	1.43	1.18	159	13	12	31	<5	13	6	0.55	59
L1000N 150E		<.5	23	24	101	3	19	11	<1	<5	9	<5	3.45	700	<25	552	22	66	<20	<20	17	9.62	0.66	1.39	1.82	1.37	238	14	14	37	<5	9	<5	0.43	136
L1000N 200E		<.5	23	28	114	3	23	9	<1	<5	7	<5	3.93	530	<25	487	30	102	<20	<20	17	8.01	0.92	1.34	1.53	1.32	175	13	14	45	<5	11	<5	0.58	68
L1000N 250E		<.5	31	28	146	2	36	13	1	<5	<5	<5	4.45	539	<25	491	34	94	<20	<20	25	8.39	0.91	1.18	1.36	1.31	151	16	13	41	<5	11	6	0.53	61
L1000N 300E		<.5	20	26	135	3	21	14	<1	<5	8	<5	3.98	541	<25	523	29	89	<20	<20	19	8.43	0.82	1.28	1.55	1.28	182	12	14	44	<5	10	<5	0.50	79
L1000N 350E		<.5	46	25	97	2	24	21	<1	<5	8	<5	5.01	1104	<25	416	26	135	<20	<20	49	7.33	1.16	1.96	1.22	1.09	133	35	11	43	<5	16	<5	0.57	41
L1000N 400E		<.5	28	23	77	2	19	9	<1	<5	<5	<5	3.19	530	<25	527	32	68	<20	<20	33	7.95	0.69	0.63	2.11	1.41	86	20	11	28	<5	10	7	0.39	54
L1000N 450E		<.5	100	26	164	3	31	22	<1	<5	10	<5	5.26	845	<25	561	33	115	<20	<20	26	9.29	1.13	1.28	1.32	1.30	154	16	14	62	<5	13	<5	0.55	75
L1000N 500E		<.5	146	23	147	2	25	24	<1	<5	7	<5	4.07	1428	<25	427	22	105	<20	<20	22	7.50	0.94	1.75	1.50	0.97	196	18	12	37	<5	12	6	0.49	69
L1000N 50W		<.5	53	26	137	4	29	15	1	<5	13	<5	4.27	649	<25	561	36	85	<20	<20	21	9.84	1.04	1.34	1.70	1.40	219	13	15	50	<5	10	<5	0.46	87
L1000N 100W		<.5	49	28	95	2	23	12	<1	<5	8	<5	3.24	545	<25	603	30	72	<20	<20	18	8.90	0.93	1.46	2.15	1.47	269	13	13	45	<5	9	<5	0.42	103
L1000N 150W		<.5	39	22	82	2	25	13	<1	<5	7	<5	4.25	596	<25	421	33	106	<20	<20	15	7.41	1.07	1.55	1.53	1.03	169	12	11	30	<5	12	<5	0.57	65
L1000N 200W		<.5	34	24	89	2	24	9	<1	<5	10	<5	4.33	579	<25	442	29	107	<20	<20	17	7.41	0.86	1.53	1.69	1.17	215	12	15	32	<5	11	8	0.52	79
L1000N 250W		<.5	50	19	121	1	27	15	<1	<5	<5	<5	4.39	609	<25	509	22	100	<20	<20	16	8.91	0.78	1.53	1.82	1.15	234	12	14	36	<5	10	6	0.57	108
L1000N 300W		<.5	66	25	78	2	30	14	<1	<5	12	<5	3.44	570	<25	547	25	84	<20	<20	27	7.82	0.80	1.25	1.67	1.10	204	17	12	56	<5	9	<5	0.45	65

Inchcape Testing Services
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Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

SAMPLE	ELEMENT	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe Tot	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr
NUMBER	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM
L1000N 350W		<.5	22	19	92	2	26	11	<1	<5	<5	<5	2.90	332	<25	480	23	53	<20	<20	17	8.35	0.61	0.92	1.46	1.17	176	10	11	40	<5	7	6	0.33	100
L1000N 400W		<.5	16	24	109	<1	21	7	<1	<5	<5	<5	2.50	459	<25	484	21	45	<20	<20	14	7.52	0.74	1.05	1.42	1.12	179	13	11	34	<5	7	5	0.30	95
L1000N 450W		<.5	13	40	227	<1	22	9	1	<5	8	<5	3.10	832	<25	515	26	55	<20	<20	15	7.61	0.84	1.02	1.28	1.27	176	12	13	38	<5	8	<5	0.36	70
L1000N 500W		<.5	25	36	98	2	28	10	<1	<5	7	<5	3.06	529	<25	518	35	66	<20	<20	19	7.79	0.89	1.05	1.31	1.54	147	13	11	35	<5	10	5	0.39	76
L1500N 50E		<.5	138	26	87	3	37	18	<1	<5	7	<5	4.93	1033	<25	466	34	120	<20	<20	33	8.17	1.15	1.45	1.15	1.06	152	35	12	49	<5	15	<5	0.49	52
L1500N 100E		<.5	118	27	100	2	32	18	<1	<5	<5	<5	4.25	1199	<25	460	28	102	<20	<20	32	7.92	1.00	1.27	1.18	1.21	137	30	12	42	<5	13	<5	0.43	51
L1500N 150E		<.5	94	20	83	2	24	16	<1	<5	<5	<5	3.49	755	<25	461	25	94	<20	<20	27	6.93	0.87	1.12	1.15	1.20	136	25	10	40	<5	13	<5	0.44	48
L1500N 200E		<.5	84	20	113	2	31	16	<1	<5	5	6	3.98	601	<25	476	30	93	<20	<20	19	8.04	0.87	1.28	1.40	1.19	172	16	13	50	<5	11	<5	0.48	64
L1500N 250E		<.5	61	20	84	2	21	12	<1	<5	<5	<5	4.12	819	<25	424	30	106	<20	<20	24	7.28	1.13	1.44	1.33	1.30	139	24	10	37	<5	14	8	0.58	52
L1500N 300E		<.5	35	20	102	2	20	9	1	<5	<5	<5	3.99	617	<25	425	29	92	<20	<20	20	7.44	0.98	1.18	1.23	1.48	129	15	10	37	<5	12	<5	0.53	54
L1500N 350E		<.5	86	29	121	3	28	17	<1	<5	8	<5	4.60	1074	<25	510	33	82	<20	<20	37	8.91	1.02	1.07	1.26	1.37	162	28	13	53	<5	11	<5	0.44	66
L1500N 400E		<.5	88	27	138	2	26	16	<1	<5	5	<5	4.72	941	<25	484	29	97	<20	<20	31	8.29	1.07	1.07	1.05	1.28	117	24	13	40	<5	12	<5	0.42	46
L1500N 450E		<.5	30	28	101	2	21	8	<1	<5	<5	<5	3.34	757	<25	597	24	90	<20	<20	19	7.51	0.83	1.25	1.37	1.38	151	12	13	34	<5	11	<5	0.44	52
L1500N 500E		<.5	108	28	78	4	27	9	2	<5	<5	<5	4.16	490	<25	365	26	95	<20	<20	29	7.24	0.90	1.21	1.00	1.16	124	20	10	38	<5	12	<5	0.43	42
L1500N 50W		<.5	54	25	107	2	22	12	1	<5	5	<5	3.29	1137	<25	341	18	56	<20	<20	23	6.37	0.64	0.98	0.80	0.71	127	19	10	38	<5	8	<5	0.27	42
L1500N 100W		<.5	53	24	94	2	19	11	<1	<5	<5	<5	2.89	626	<25	422	22	64	<20	<20	22	6.93	0.81	1.16	1.23	1.10	162	19	10	33	<5	10	<5	0.32	52
L1500N 150W		<.5	32	20	76	2	18	9	<1	<5	<5	<5	3.44	670	<25	427	30	86	<20	<20	23	6.76	1.05	1.36	1.27	1.23	132	20	10	33	<5	12	7	0.51	53
L1500N 200W		<.5	44	21	85	4	22	9	1	<5	10	11	3.53	641	<25	452	33	85	<20	<20	27	7.41	1.07	1.19	1.52	1.32	135	21	14	38	<5	12	<5	0.46	55
L1500N 250W		1.0	17	32	95	2	18	8	<1	<5	7	<5	3.19	474	<25	526	28	69	<20	<20	17	7.77	0.84	1.30	1.51	1.44	191	14	13	30	<5	9	5	0.46	85
L1500N 300W		<.5	18	20	78	2	22	8	<1	<5	<5	<5	3.76	561	<25	415	26	93	<20	<20	17	6.64	0.75	1.17	1.26	1.14	143	11	13	23	<5	10	6	0.70	54
L1500N 350W		<.5	24	20	86	2	20	7	<1	<5	6	<5	3.58	762	<25	419	33	78	<20	<20	15	7.30	0.88	1.06	1.20	1.27	134	9	11	30	<5	11	<5	0.47	67
L1500N 400W		<.5	50	24	121	2	40	53	<1	<5	7	<5	4.02	632	<25	507	36	71	<20	<20	32	8.41	0.68	0.77	1.05	1.43	138	14	15	46	<5	8	8	0.40	53
L1500N 450W		<.5	19	26	94	1	20	7	<1	<5	10	<5	3.47	364	<25	450	23	63	<20	<20	20	9.19	0.53	1.04	1.61	1.22	215	12	15	34	<5	7	<5	0.41	130
L1500N 500W		<.5	21	21	66	1	13	3	<1	<5	<5	<5	2.25	362	<25	562	23	52	<20	<20	20	8.48	0.53	1.24	2.01	1.68	270	12	16	27	<5	7	<5	0.47	118
L2000N 50W		<.5	37	20	69	2	21	10	<1	<5	7	<5	4.20	663	<25	350	25	101	<20	<20	16	6.04	1.01	1.41	0.97	0.96	109	15	<10	29	<5	13	7	0.60	35
L2000N 100W		<.5	43	23	67	2	24	9	<1	<5	6	<5	3.68	492	<25	391	31	86	<20	<20	27	6.77	0.94	1.20	1.13	0.97	127	21	10	29	<5	12	<5	0.44	51
L2000N 150W		<.5	56	22	99	2	20	12	<1	<5	6	<5	4.24	853	<25	564	36	90	<20	<20	31	6.54	1.12	1.29	1.14	1.39	145	20	12	44	<5	14	<5	0.57	52
L2000N 200W		<.5	41	20	86	2	26	15	<1	<5	8	<5	4.60	890	<25	397	45	106	<20	<20	29	6.95	1.35	1.70	1.03	1.19	130	21	10	33	<5	15	<5	0.61	43
L2000N 250W		<.5	64	24	69	3	16	56	<1	<5	<5	<5	3.94	2246	<25	395	21	83	<20	<20	28	9.36	1.06	2.14	2.51	1.16	304	20	14	29	<5	11	6	0.44	113
L2000N 300W		<.5	50	20	101	2	31	21	<1	<5	9	<5	3.77	559	<25	554	32	76	<20	<20	19	9.61	0.84	1.56	1.69	1.18	243	15	14	45	<5	10	7	0.43	117

Inchcape Testing Services
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Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe Tot PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
L2000N 350W		<.5	57	24	105	4	53	28	1	<5	6	<5	4.36	662	<25	518	39	97	<20	<20	19	9.17	1.04	1.57	1.50	1.09	218	11	14	49	<5	11	<5	0.49	74
L2000N 400W		<.5	78	19	73	3	30	14	<1	<5	<5	<5	3.16	861	<25	469	43	71	<20	<20	20	7.93	1.01	1.33	1.39	1.06	206	11	11	51	<5	10	<5	0.38	62
L2000N 450W		<.5	48	17	79	3	34	18	<1	<5	6	<5	5.00	828	<25	326	75	118	<20	<20	17	7.63	1.66	1.98	0.95	1.10	124	13	10	35	<5	15	<5	0.47	40
L2000N 500W		<.5	25	16	59	2	20	7	<1	<5	8	<5	3.37	528	<25	448	35	66	<20	<20	23	7.50	0.81	0.88	1.00	1.43	117	10	10	28	<5	10	8	0.56	47

Inchcape Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

STANDARD NAME / ELEMENT	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe Tot	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr
UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM
BCC GEOCHEM STD 5	<.5	92	11	85	3	45	21	<1	<5	9	<5	5.76	921	<25	755	94	169	<20	<20	12	8.56	2.22	2.04	1.97	1.04	256	12	<10	33	<5	20	<5	0.48	59
BCC GEOCHEM STD 5	<.5	95	14	81	3	45	19	<1	<5	8	<5	5.40	887	<25	684	92	165	<20	<20	11	8.64	2.24	1.98	1.74	1.05	311	11	<10	32	<5	20	<5	0.49	55
Number of Analyses	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mean Value	0.3	94	13	83	3	45	20	0.5	3	9	3	5.58	904	13	720	93	167	10	10	11	8.60	2.23	2.01	1.86	1.04	284	12	5	32	3	20	3	0.49	57
Standard Deviation	-	2	2	3	-	.06	0.9	-	-	0.6	-	0.26	24	-	50	1	3	-	-	0.2	0.06	0.01	0.04	0.17	.007	39	0.4	-	0.5	-	0.5	-	.007	3
Accepted Value	0.7	90	11	80	2	40	18	0.1	1	8	1	4.95	850	-	800	100	175	4	2	10	8.30	1.90	1.85	1.82	1.00	265	13	4	32	17	18	1	0.51	60
ANALYTICAL BLANK	<.5	<1	<2	<2	<1	<1	<1	<1	<5	<5	<5	<0.01	<5	<25	<5	<2	<2	<20	<20	<5	<.01	<.01	<.01	<.01	<.01	<1	<5	<10	<2	<5	<5	<5	<.01	<5
ANALYTICAL BLANK	<.5	<1	2	3	<1	<1	<1	<1	<5	<5	<5	<0.01	<5	<25	<5	<2	<2	<20	<20	<5	<.01	<.01	<.01	0.02	<.01	<1	<5	<10	<2	<5	<5	<5	<.01	<5
ANALYTICAL BLANK	<.5	<1	<2	<2	<1	<1	<1	<1	<5	<5	<5	<0.01	<5	<25	<5	<2	<2	<20	<20	<5	0.02	<.01	<.01	0.02	<.01	<1	<5	<10	<2	<5	<5	<5	<.01	<5
ANALYTICAL BLANK	<.5	<1	<2	<2	<1	<1	<1	<1	<5	<5	<5	<0.01	<5	<25	<5	<2	<2	<20	<20	<5	<.01	<.01	<.01	<.01	<.01	<1	<5	<10	<2	<5	<5	<5	<.01	<5
Number of Analyses	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Mean Value	0.3	0.5	1	2	0.5	0.5	0.5	0.5	3	3	3	0.005	3	13	3	1	1	10	10	3	.009	.005	.005	0.01	.005	0.5	3	5	1	3	3	3	.005	3
Standard Deviation	-	-	0.5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.009	-	-	.007	-	-	-	-	-	-	-	-	-	-
Accepted Value	0.2	1	2	1	1	1	1	0.5	2	5	5	0.05	1	.01	.01	1	1	.01	.01	.01	<.01	<.01	<.01	<.01	<.01	.01	.01	.01	.01	.01	.01	.01	<.01	.01
BCC GEOCHEM STD 4	1.0	309	35	250	4	48	9	1	<5	26	<5	3.19	587	<25	359	118	25	<20	<20	11	7.00	1.45	1.40	1.95	1.24	91	9	<10	11	<5	12	<5	0.09	70
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	1.0	309	35	250	4	48	9	1	3	26	3	3.19	587	13	359	118	25	10	10	11	7.00	1.45	1.40	1.95	1.24	91	9	5	11	3	12	3	0.09	70
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	0.8	290	33	255	4	42	9	0.8	1	30	1	2.81	600	-	305	136	29	5	1	8	6.88	1.34	1.43	1.82	0.89	90	8	8	10	7	12	1	0.12	68
BCC GEOCHEM STD 6	<.5	140	19	139	4	140	32	<1	<5	144	<5	6.88	1339	<25	173	249	141	<20	<20	8	6.01	2.78	3.62	0.85	1.38	111	5	10	23	<5	21	<5	0.16	62
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	0.3	140	19	139	4	140	32	0.5	3	144	3	6.88	1339	13	173	249	141	10	10	8	6.01	2.78	3.62	0.85	1.38	111	5	10	23	3	21	3	0.16	62
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	0.2	140	13	140	4	155	38	0.1	1	145	1	7.00	1500	1	185	300	170	5	12	12	5.70	2.80	4.00	0.90	1.60	110	3	5	24	6	18	1	0.18	70

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-00085.0 (COMPLETE)

PROJECT: YAK-COLD
DATE PRINTED: 3-FEB-97

SAMPLE NUMBER / ELEMENT UNITS	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe Tot PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
BLO 250N	<.5	45	24	138	2	62	18	<1	<5	<5	<5	3.63	560	<25	534	33	71	<20	<20	26	8.32	0.82	1.05	1.39	1.16	152	19	12	51	<5	9	10	0.40	72
Duplicate	<.5	42	24	132	2	60	19	<1	<5	<5	<5	3.43	524	<25	519	31	69	<20	<20	26	8.23	0.80	0.99	1.35	1.10	149	18	11	48	<5	9	8	0.36	69
BLO 1150N	<.5	74	48	102	3	34	17	1	<5	<5	<5	4.79	704	<25	510	59	125	<20	<20	24	9.07	1.72	1.78	1.70	1.22	168	17	12	49	<5	15	<5	0.53	53
Duplicate	<.5	61	40	90	2	30	16	<1	<5	7	<5	4.28	619	<25	481	54	112	<20	<20	20	7.88	1.47	1.51	1.60	1.09	148	15	<10	41	<5	13	<5	0.46	54
LON 150W	<.5	23	24	109	2	29	12	<1	<5	<5	<5	3.65	655	<25	488	30	63	<20	<20	20	7.72	1.20	1.00	0.96	1.00	124	15	10	42	<5	8	6	0.35	64
Duplicate	<.5	29	28	116	2	30	11	<1	<5	<5	<5	3.54	635	<25	476	31	64	<20	<20	21	8.12	1.27	1.05	1.08	1.10	135	15	11	44	<5	8	6	0.37	69
L500N 200E	<.5	112	103	554	2	31	21	<1	<5	5	<5	5.49	739	<25	430	31	163	<20	<20	18	7.97	1.41	1.66	1.44	1.17	143	15	12	38	<5	15	<5	0.64	39
Duplicate	<.5	110	110	533	2	30	19	1	<5	<5	<5	5.57	727	<25	416	28	156	<20	<20	21	7.60	1.35	1.60	1.36	1.17	140	14	11	37	<5	15	<5	0.65	39
L1000N 300E	<.5	20	26	135	3	21	14	<1	<5	8	<5	3.98	541	<25	523	29	89	<20	<20	19	8.43	0.82	1.28	1.55	1.28	182	12	14	44	<5	10	<5	0.50	79
Duplicate	<.5	19	20	122	2	20	12	<1	<5	5	<5	3.61	474	<25	472	22	81	<20	<20	17	7.91	0.74	1.17	1.44	1.19	172	12	13	42	<5	9	10	0.46	73
L1500N 150E	<.5	94	20	83	2	24	16	<1	<5	<5	<5	3.49	755	<25	461	25	94	<20	<20	27	6.93	0.87	1.12	1.15	1.20	136	25	10	40	<5	13	<5	0.44	48
Duplicate	<.5	92	18	76	2	21	14	<1	<5	8	<5	3.38	731	<25	444	23	89	<20	<20	25	6.79	0.83	1.12	1.07	1.18	127	29	10	39	<5	12	<5	0.42	48
L2000N 150W	<.5	56	22	99	2	20	12	<1	<5	6	<5	4.24	853	<25	564	36	90	<20	<20	31	6.54	1.12	1.29	1.14	1.39	145	20	12	44	<5	14	<5	0.57	52
Duplicate	<.5	46	20	101	4	19	10	1	<5	6	<5	4.45	847	<25	559	36	99	<20	<20	28	6.66	0.98	1.35	1.05	1.20	148	22	11	38	<5	13	<5	0.51	57

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

REPORT: V97-02042.0 (COMPLETE) REFERENCE: P.O. #97-005

CLIENT: KENNECOTT CANADA INC. SUBMITTED BY: P. VAN ANGEREN

PROJECT: YAK DATE RECEIVED: 15-AUG-97 DATE PRINTED: 3-SEP-97

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
970825	1 Au30	Gold	9	5 PPB	Fire Assay of 30g	30g Fire Assay - AA
970825	2 Ag	Silver	9	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	3 Cu	Copper	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	4 Pb	Lead	9	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	5 Zn	Zinc	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	6 Mo	Molybdenum	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	7 Ni	Nickel	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	8 Co	Cobalt	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	9 Cd	Cadmium	9	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	10 Bi	Bismuth	9	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	11 As	Arsenic	9	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	12 Sb	Antimony	9	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	13 Hg	Mercury	9	0.010 PPM	HCL:HNO3 (3:1)	COLD VAPOR AA
970825	14 Fe	Iron	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	15 Mn	Manganese	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	16 Te	Tellurium	9	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	17 Ba	Barium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	18 Cr	Chromium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	19 V	Vanadium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	20 Sn	Tin	9	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	21 W	Tungsten	9	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	22 La	Lanthanum	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	23 Al	Aluminum	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	24 Mg	Magnesium	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	25 Ca	Calcium	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	26 Na	Sodium	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	27 K	Potassium	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	28 Sr	Strontium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	29 Y	Yttrium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	30 Ga	Gallium	9	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	31 Li	Lithium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	32 Nb	Niobium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	33 Sc	Scandium	9	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	34 Ta	Tantalum	9	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	35 Ti	Titanium	9	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970825	36 Zr	Zirconium	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK	9	2 -150	9	CRUSH/SPLIT & PULV.	9

REPORT COPIES TO: DR. ROBERT WOODFILL INVOICE TO: DR. ROBERT WOODFILL

Intertek Testing Services

Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK

REPORT: V97-02042.0 (COMPLETE) DATE RECEIVED: 15-AUG-97 DATE PRINTED: 3-SEP-97

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM
136426		<5	<.2	25	11	29	2	5	1	<.2	<5	<5	<5	<.010	2.49	329	<10	83	59
136427		<5	<.2	7	21	5	<1	4	<1	<.2	<5	6	<5	<.010	0.40	113	<10	34	83
136428		<5	<.2	12	12	18	1	9	12	0.5	9	855	<5	<.010	0.95	164	<10	53	91
136429		<5	<.2	3	5	3	1	5	1	<.2	<5	<5	<5	<.010	0.18	28	<10	16	156
136430		<5	<.2	24	9	47	1	17	7	<.2	<5	7	<5	<.010	2.00	309	<10	32	140
136431		<5	<.2	35	38	157	5	29	9	1.3	<5	<5	<5	<.010	2.95	490	<10	70	77
136432		<5	<.2	7	3	86	2	5	<1	<.2	<5	<5	<5	<.010	2.83	460	<10	115	117
136616		<5	<.2	5	27	5	2	9	1	<.2	<5	<5	<5	<.010	0.39	33	<10	26	170
136617		<5	<.2	4	6	5	2	14	3	<.2	<5	<5	<5	<.010	0.31	21	<10	36	161

SAMPLE NUMBER	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
136426	13	<20	<20	22	1.39	0.52	0.16	0.03	0.68	20	13	<2	9	1	<5	<10	0.12	3
136427	2	<20	<20	20	0.55	0.03	0.15	0.02	0.22	9	19	<2	1	<1	<5	<10	0.04	3
136428	5	<20	<20	19	1.25	0.13	0.50	0.10	0.30	12	16	<2	5	<1	<5	<10	0.06	2
136429	1	<20	<20	18	1.02	<.01	0.62	0.05	0.05	21	20	<2	<1	1	<5	<10	0.04	2
136430	5	<20	<20	18	1.43	0.31	1.01	0.05	0.43	33	14	<2	8	<1	<5	<10	0.07	3
136431	29	<20	<20	24	2.63	1.44	0.78	0.21	1.35	40	13	<2	27	3	<5	<10	0.15	6
136432	22	<20	<20	28	1.67	1.29	0.02	0.04	1.26	5	4	<2	29	1	<5	<10	0.15	2
136616	2	<20	<20	17	0.26	0.01	0.10	0.03	0.13	7	7	<2	<1	<1	<5	<10	0.04	3
136617	2	<20	<20	13	0.27	<.01	0.06	0.01	0.16	3	8	<2	<1	<1	<5	<10	0.02	3

LIENT: KENNECOTT CANADA INC. PROJECT: YAK
EPORT: V97-02042.0 (COMPLETE) DATE RECEIVED: 15-AUG-97 DATE PRINTED: 3-SEP-97

TANDARD AME	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
NALYTICAL BLANK		<5	<.2	<1	<2	<1	<1	<1	<1	<.2	<5	<5	<5	<.010	<.01	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1
umber of Analyses		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ean Value		3	0.1	0.5	1	0.5	0.5	0.5	0.5	0.1	3	3	3	0.005	.005	0.5	5	0.5	0.5	0.5	10	10	0.5	.005	.005	.005	.005	.005	0.5	0.5	1	0.5	0.5	3	5	.005	0.5
tandard Deviation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ccepted Value		5	0.2	1	2	1	1	1	1	0.1	2	5	5	0.005	0.05	1	.01	.01	1	1	.01	.01	.01	<.01	<.01	<.01	<.01	<.01	.01	.01	.01	.01	.01	.01	.01	<.01	.01
annet Standard		189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
umber of Analyses		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ean Value		189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tandard Deviation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ccepted Value		192	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC GEOCHEM STD 5		-	0.3	79	10	67	2	32	14	<.2	<5	9	<5	0.050	4.20	658	<10	183	47	115	<20	<20	7	2.94	1.57	1.12	0.05	0.30	37	7	<2	25	3	10	<10	0.19	13
umber of Analyses		-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ean Value		-	0.3	79	10	67	2	32	14	0.1	3	9	3	0.050	4.20	658	5	183	47	115	10	10	7	2.94	1.57	1.12	0.05	0.30	37	7	1	25	3	10	5	0.19	13
tandard Deviation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ccepted Value		-	0.7	90	11	80	2	40	18	0.1	1	8	1	0.044	4.74	720	0.2	200	54	133	4	2	5	3.09	1.83	1.08	0.06	0.32	39	9	4	-	1	18	1	-	9

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK

REPORT: V97-02042.0 (COMPLETE) DATE RECEIVED: 15-AUG-97 DATE PRINTED: 3-SEP-97

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM
136428		<5	<.2	12	12	18	1	9	12	0.5	9	855	<5	<.010	0.95	164	<10	53
Duplicate		<5	<.2	12	14	18	1	10	13	0.5	9	907	<5	<.010	0.98	168	<10	54

SAMPLE NUMBER	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
136428	91	5	<20	<20	19	1.25	0.13	0.50	0.10	0.30	12	16	<2	5	<1	<5	<10	0.06	2
Duplicate	95	5	<20	<20	20	1.29	0.14	0.51	0.10	0.31	13	16	<2	5	<1	<5	<10	0.06	2

ITS Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

REPORT: V97-01695.0 (COMPLETE) REFERENCE: P.O. #97-001

CLIENT: KENNECOTT CANADA INC. SUBMITTED BY: P. VAN ANGEREN

PROJECT: YAK DATE RECEIVED: 18-JUL-97 DATE PRINTED: 30-JUL-97

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
970723	1 Au30	Gold	20	5 PPB	Fire Assay of 30g	30g Fire Assay - AA
970723	2 Ag	Silver	20	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	3 Cu	Copper	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	4 Pb	Lead	20	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	5 Zn	Zinc	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	6 Mo	Molybdenum	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	7 Ni	Nickel	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	8 Co	Cobalt	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	9 Cd	Cadmium	20	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	10 Bi	Bismuth	20	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	11 As	Arsenic	20	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	12 Sb	Antimony	20	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	13 Hg	Mercury	20	0.010 PPM	HCL:HNO3 (3:1)	COLD VAPOR AA
970723	14 Fe	Iron	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	15 Mn	Manganese	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	16 Te	Tellurium	20	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	17 Ba	Barium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	18 Cr	Chromium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	19 V	Vanadium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	20 Sn	Tin	20	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	21 W	Tungsten	20	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	22 La	Lanthanum	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	23 Al	Aluminum	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	24 Mg	Magnesium	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	25 Ca	Calcium	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	26 Na	Sodium	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	27 K	Potassium	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	28 Sr	Strontium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	29 Y	Yttrium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	30 Ga	Gallium	20	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	31 Li	Lithium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	32 Nb	Niobium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	33 Sc	Scandium	20	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	34 Ta	Tantalum	20	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	35 Ti	Titanium	20	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970723	36 Zr	Zirconium	20	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK	20	2 -150	20	CRUSH/SPLIT & PULV.	20

REPORT COPIES TO: DR. ROBERT WOODFILL INVOICE TO: DR. ROBERT WOODFILL

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK
REPORT: V97-01695.0 (COMPLETE) DATE RECEIVED: 18-JUL-97 DATE PRINTED: 30-JUL-97

SAMPLE NUMBER	ELEMENT UNITS Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
136401	<5	<0.2	1	8	5	<1	8	1	<.2	<5	<5	<5	0.027	0.18	23	<10	40	52	4	<20	<20	22	0.48	0.05	0.02	0.01	0.24	2	11	<2	2	<1	<5	<10	0.02	2
136402	<5	<0.2	1	12	69	2	20	8	<.2	<5	<5	<5	0.061	2.33	201	<10	77	46	19	<20	<20	14	2.19	2.06	0.06	0.03	1.34	3	2	7	44	<1	<5	<10	0.11	3
136403	<5	<0.2	18	8	38	1	24	6	<.2	<5	<5	<5	0.047	1.79	356	<10	83	103	52	<20	<20	7	1.50	0.91	0.91	0.12	0.17	48	5	6	8	<1	<5	<10	0.12	4
136404	<5	6.7	52	1732	76	5	10	7	1.2	25	<5	<5	0.101	3.99	498	<10	157	52	30	<20	<20	25	2.36	1.57	0.12	0.04	1.40	56	9	6	22	<1	<5	<10	0.19	3
136405	<5	<0.2	12	10	68	3	9	5	0.3	7	<5	<5	0.056	3.52	410	<10	159	53	32	<20	<20	45	1.86	0.90	0.09	0.04	1.11	10	14	6	20	2	<5	<10	0.16	3
136406	<5	<0.2	40	68	62	2	15	6	<.2	<5	<5	<5	0.043	2.57	374	<10	120	78	29	<20	<20	10	2.51	1.84	0.43	0.12	1.26	18	4	7	29	<1	<5	<10	0.13	2
136407	<5	<0.2	<1	8	8	<1	6	<1	<.2	<5	<5	<5	0.031	0.21	19	<10	65	65	5	<20	<20	10	0.75	0.21	0.07	0.02	0.33	2	3	<2	4	<1	<5	<10	<.01	3
136408	<5	<0.2	33	11	79	2	21	17	0.2	<5	<5	<5	0.052	2.72	442	<10	140	70	33	<20	<20	14	2.94	1.70	1.27	0.17	1.30	45	6	9	28	<1	<5	<10	0.15	2
136409	<5	<0.2	29	10	108	4	35	13	<.2	<5	<5	<5	0.032	2.76	278	<10	84	57	21	<20	<20	27	1.42	1.15	0.12	0.03	0.88	10	11	4	24	<1	<5	<10	0.10	3
136410	<5	<0.2	37	10	113	3	35	14	<.2	<5	<5	<5	0.036	3.16	324	<10	94	50	23	<20	<20	16	1.82	1.43	0.08	0.04	1.13	5	8	5	31	<1	<5	<10	0.12	3
136411	20	47.6	3	3069	39	2	28	15	0.5	474	101	10	0.304	0.72	167	32	34	59	10	<20	<20	15	1.28	1.46	0.05	0.02	0.66	3	2	3	18	<1	<5	<10	0.04	2
136412	<5	<0.2	29	9	12	<1	7	6	0.2	<5	<5	<5	0.032	0.81	48	<10	46	106	10	<20	<20	11	0.50	0.15	0.02	0.04	0.25	12	3	<2	6	<1	<5	<10	0.05	2
136413	<5	<0.2	29	23	108	4	25	12	<.2	<5	<5	<5	0.032	3.62	828	<10	108	62	56	<20	<20	25	4.32	2.05	1.23	0.31	1.87	99	8	13	34	<1	7	<10	0.17	1
136414	<5	1.2	274	638	455	3	37	36	1.8	11	47	<5	0.048	>10.00	728	<10	38	36	343	24	<20	24	5.80	2.91	1.50	0.09	1.33	34	6	9	47	<1	21	<10	0.19	<1
136415	<5	<0.2	1	10	5	<1	4	<1	<.2	<5	6	<5	0.027	0.18	14	<10	25	61	3	<20	<20	22	0.39	0.07	0.06	0.01	0.19	3	7	<2	2	1	<5	<10	<.01	3
136416	<5	<0.2	31	9	88	5	22	10	<.2	<5	<5	<5	0.012	3.28	463	<10	93	62	54	<20	<20	31	3.71	2.25	0.97	0.29	1.81	37	9	11	41	<1	6	<10	0.18	3
136417	<5	<0.2	37	18	104	7	24	11	0.2	<5	<5	<5	0.037	3.36	561	<10	140	74	41	<20	<20	29	3.73	2.00	1.25	0.22	1.65	45	12	11	39	<1	5	<10	0.17	1
136418	<5	<0.2	32	7	45	1	6	2	<.2	<5	<5	<5	0.021	2.50	178	<10	86	31	16	<20	<20	20	1.38	1.04	0.05	0.02	0.89	31	4	5	13	<1	<5	<10	0.08	5
136419	<5	<0.2	10	7	88	3	6	5	<.2	<5	<5	<5	0.041	3.77	549	<10	208	89	64	<20	<20	23	2.08	1.39	0.06	0.05	1.58	10	4	7	21	1	6	<10	0.28	<1
136420	<5	<0.2	28	14	97	5	23	10	<.2	<5	<5	<5	0.066	2.96	437	<10	125	57	34	<20	<20	26	2.25	1.87	0.37	0.11	1.43	14	11	8	34	<1	<5	<10	0.18	3

ITS Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V97-01695.0 (COMPLETE)

PROJECT: YAK
DATE RECEIVED: 18-JUL-97 DATE PRINTED: 30-JUL-97

STANDARD NAME	ELEMENT UNITS Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
ANALYTICAL BLANK	<5	<0.2	<1	<2	3	<1	<1	<1	<.2	<5	<5	<5	<.010	<0.01	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	3	0.1	0.5	1	3	0.5	0.5	0.5	0.1	3	3	3	0.005	0.005	0.5	5	0.5	0.5	0.5	10	10	0.5	.005	.005	.005	.005	.005	0.5	0.5	1	0.5	0.5	3	5	.005	0.5
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	5	0.2	1	2	1	1	1	1	0.1	2	5	5	0.005	0.05	1	.01	.01	1	1	.01	.01	.01	<.01	<.01	<.01	<.01	<.01	.01	.01	.01	.01	.01	.01	.01	<.01	.01
Gannet Standard	2366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Value	2366	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	2450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCC GEOCHEM STD 5	-	1.0	92	10	77	2	36	16	<.2	<5	<5	<5	0.043	4.43	726	<10	170	48	118	<20	<20	12	2.92	1.86	0.89	0.05	0.29	31	5	7	21	<1	8	<10	0.19	8
Number of Analyses	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	-	1.0	92	10	77	2	36	16	0.1	3	3	3	0.043	4.43	726	5	170	48	118	10	10	12	2.92	1.86	0.89	0.05	0.29	31	5	7	21	0.5	8	5	0.19	8
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	-	0.7	90	11	80	2	40	18	0.1	1	8	1	0.044	4.74	720	0.2	200	54	133	4	2	5	3.09	1.83	1.08	0.06	0.32	39	9	4	-	1	18	1	-	9

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC.
PROJECT: YAK
REPORT: V97-01695.0 (COMPLETE)
DATE RECEIVED: 18-JUL-97 DATE PRINTED: 30-JUL-97

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM
136406		<5	<0.2	40	68	62	2	15	6	<.2	<5	<5	<5	0.043	2.57	374	<10	120	78	29	<20	<20	10	2.51	1.84	0.43	0.12	1.26	18	4	7	29	<1	<5	<10	0.13	2
Duplicate		<5	<0.2	39	67	59	2	12	5	<.2	<5	<5	<5	0.051	2.36	348	<10	123	73	27	<20	<20	10	2.34	1.71	0.39	0.13	1.24	17	4	6	30	<1	<5	<10	0.12	2

ITS Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

REPORT: V97-01746.0 (COMPLETE)

REFERENCE: P.O. #97-002

CLIENT: KENNECOTT CANADA INC.
PROJECT: YAK

SUBMITTED BY: P. VAN ANGEREN
DATE RECEIVED: 23-JUL-97 DATE PRINTED: 31-AUG-97

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
970828	1 Au30	Gold	22	5 PPB	Fire Assay of 30g	30g Fire Assay - AA
970828	2 Ag	Silver	22	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	3 Cu	Copper	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	4 Pb	Lead	22	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	5 Zn	Zinc	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	6 Mo	Molybdenum	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	7 Ni	Nickel	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	8 Co	Cobalt	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	9 Cd	Cadmium	22	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	10 Bi	Bismuth	22	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	11 As	Arsenic	22	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	12 Sb	Antimony	22	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	13 Hg	Mercury	22	0.010 PPM	HCL:HNO3 (3:1)	COLD VAPOR AA
970828	14 Fe	Iron	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	15 Mn	Manganese	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	16 Te	Tellurium	22	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	17 Ba	Barium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	18 Cr	Chromium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	19 V	Vanadium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	20 Sn	Tin	22	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	21 W	Tungsten	22	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	22 La	Lanthanum	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	23 Al	Aluminum	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	24 Mg	Magnesium	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	25 Ca	Calcium	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	26 Na	Sodium	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	27 K	Potassium	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	28 Sr	Strontium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	29 Y	Yttrium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	30 Ga	Gallium	22	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	31 Li	Lithium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	32 Nb	Niobium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	33 Sc	Scandium	22	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	34 Ta	Tantalum	22	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	35 Ti	Titanium	22	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	36 Zr	Zirconium	22	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
970828	37 B	Boron	1	10 PPM	NAOH FUSION	INDUC. COUP. PLASM

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK	22	2 -150	22	CRUSH/SPLIT & PULV.	22

REMARKS: Arsenic concentration >1% will enhance Cadmium results. Therefore, Cadmium concentration would be greater than true value.
Thank you, RRD

REPORT COPIES TO: DR. ROBERT WOODFILL

INVOICE TO: DR. ROBERT WOODFILL

****
This report must not be produced except in full. The data presented in this report is specific to those samples identified under "Sample Number" and is applicable only to the samples as received expressed on a dry basis unless otherwise indicated
****

Intertek Testing Services
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK
REPORT: V97-01746.0 (COMPLETE) DATE RECEIVED: 23-JUL-97 DATE PRINTED: 31-AUG-97

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	B PPM
133201		12	0.3	67	27	109	2	4	8	<.2	<5	10	<5	0.011	6.10	666	<10	334	102	17	<20	<20	17	2.30	0.44	0.07	0.07	1.57	11	8	11	27	2	14	<10	0.36	<1	
133202		12	0.5	49	32	148	1	19	27	0.4	<5	<5	<5	0.021	6.17	635	<10	229	45	155	<20	<20	20	2.39	1.29	2.42	0.18	0.66	86	16	8	20	<1	6	<10	0.20	1	
133203		6	<.2	44	7	58	<1	20	25	<.2	<5	<5	<5	0.011	6.58	456	<10	698	42	205	<20	<20	18	2.20	1.17	2.02	0.20	0.56	100	13	8	13	<1	6	<10	0.17	<1	
133204		<5	<.2	36	5	67	2	15	15	<.2	<5	<5	<5	<.010	4.11	601	<10	299	83	64	<20	<20	14	2.17	1.06	0.15	0.07	1.48	4	6	6	24	<1	6	<10	0.26	<1	
133205		<5	<.2	13	5	62	1	4	8	<.2	<5	<5	<5	<.010	3.99	515	<10	296	80	62	<20	<20	10	2.01	0.94	0.07	0.06	1.40	3	3	6	22	<1	6	<10	0.26	<1	
133206		<5	<.2	5	7	33	<1	14	12	<.2	<5	<5	<5	<.010	4.10	390	<10	176	72	49	<20	<20	16	1.73	0.52	0.08	0.07	1.29	1	12	9	25	<1	10	<10	0.26	<1	
133207		13	<.2	200	7	80	1	6	18	<.2	<5	<5	<5	<.010	4.40	348	<10	441	77	17	<20	<20	19	1.73	0.35	0.16	0.09	1.11	5	23	9	25	3	10	<10	0.24	<1	
133208		14	0.3	65	13	116	2	22	18	<.2	<5	<5	<5	0.012	6.40	857	<10	74	70	41	<20	<20	12	4.84	1.37	1.74	0.38	1.46	64	14	11	33	<1	6	<10	0.15	<1	
133209		6	<.2	5	24	155	1	18	14	<.2	<5	<5	<5	0.016	5.87	1151	<10	201	55	47	<20	<20	17	4.10	2.68	0.10	0.03	2.29	1	15	12	62	<1	6	<10	0.21	2	
133210		<5	1.3	26	635	710	1	18	12	3.9	<5	<5	<5	<.010	3.89	908	<10	78	80	47	<20	<20	21	4.24	1.66	1.86	0.41	1.65	98	17	11	31	<1	8	<10	0.17	<1	
133211		<5	<.2	23	7	40	1	19	5	<.2	<5	65	<5	<.010	2.97	46	<10	69	51	17	<20	<20	11	1.71	0.49	0.04	0.03	0.88	1	10	5	20	<1	<5	<10	0.10	<1	
133212		26	<.2	285	11	89	2	8	31	<.2	<5	33	<5	0.011	4.30	461	<10	101	109	7	<20	<20	11	1.46	0.23	0.80	0.13	0.42	5	30	8	11	2	10	<10	0.12	1	
133213		<5	0.3	26	124	86	2	17	10	0.2	<5	<5	<5	0.016	3.05	538	<10	120	140	40	<20	<20	17	4.98	1.71	1.57	0.39	1.52	51	16	10	40	<1	5	<10	0.15	3	
133214		<5	<.2	6	20	12	2	13	<1	<.2	<5	<5	<5	0.010	0.43	36	<10	19	276	3	<20	<20	2	0.29	0.04	0.03	0.02	0.12	2	2	<2	2	<1	<5	<10	<.01	2	6190
133215		<5	<.2	8	6	73	2	5	8	<.2	<5	<5	<5	<.010	3.59	539	<10	228	106	71	<20	<20	53	2.12	0.91	0.04	0.06	1.41	6	13	7	21	<1	7	<10	0.27	1	
133216		6	1.5	24	669	657	2	20	11	4.0	<5	<5	<5	<.010	3.76	764	<10	81	148	48	<20	<20	26	5.12	1.48	2.27	0.41	1.50	112	20	12	26	<1	8	<10	0.17	1	
133217		10	<.2	35	35	122	4	23	13	0.2	<5	<5	<5	<.010	3.17	386	<10	87	59	30	<20	<20	17	2.19	1.41	0.28	0.09	1.36	14	10	5	32	<1	<5	<10	0.18	5	
133218		13	<.2	32	14	125	2	9	8	0.6	<5	<5	<5	<.010	2.88	535	<10	183	77	40	<20	<20	24	2.13	1.08	0.42	0.12	1.12	17	15	7	23	<1	7	<10	0.17	1	
133219		13	0.9	23	415	499	2	16	10	2.6	<5	<5	<5	0.011	3.45	751	<10	78	84	46	<20	<20	22	4.44	1.47	1.77	0.34	1.43	90	18	11	27	<1	8	<10	0.15	<1	
133220		19	<.2	10	7	19	1	11	7	<.2	<5	<5	<5	0.011	2.75	398	<10	77	130	19	<20	<20	15	2.57	0.40	0.91	0.07	0.63	9	17	6	27	<1	<5	<10	0.14	<1	
133221		222	0.5	497	9	19	1	21	1093	<.2	34	>10000	11	0.011	7.11	272	<10	26	85	33	<20	<20	4	1.38	0.27	0.79	0.12	0.07	17	4	5	9	<1	5	<10	0.08	<1	
133222		7	<.2	35	8	28	1	9	10	<.2	<5	29	<5	<.010	1.97	263	<10	54	100	12	<20	<20	16	1.14	0.33	0.11	0.03	0.29	6	13	3	4	<1	<5	<10	0.09	<1	

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK

REPORT: V97-01746.0 (COMPLETE) DATE RECEIVED: 23-JUL-97 DATE PRINTED: 31-AUG-97

STANDARD NAME	Au30	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Hg	Fe
ELEMENT UNITS	PPB	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT
ANALYTICAL BLANK	<5	<.2	<1	<2	<1	<1	<1	<1	<.2	<5	<5	<5	<.010	<.01
ANALYTICAL BLANK	<5	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	3	0.1	0.5	1	0.5	0.5	0.5	0.5	0.1	3	3	3	0.005	.005
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	5	0.2	1	2	1	1	1	1	0.1	2	5	5	0.005	0.05
Garnet Standard	1085	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Value	1085	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	1050	-	-	-	-	-	-	-	-	-	-	-	-	-
BCC GEOCHEM STD 4	-	0.8	251	34	221	3	35	8	0.7	<5	20	<5	0.039	2.62
Number of Analyses	-	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	-	0.8	251	34	221	3	35	8	0.7	3	20	3	0.039	2.62
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	-	0.8	290	33	255	4	42	9	0.8	1	30	1	0.030	2.60
Garnet Standard	193	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Value	193	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	192	-	-	-	-	-	-	-	-	-	-	-	-	-

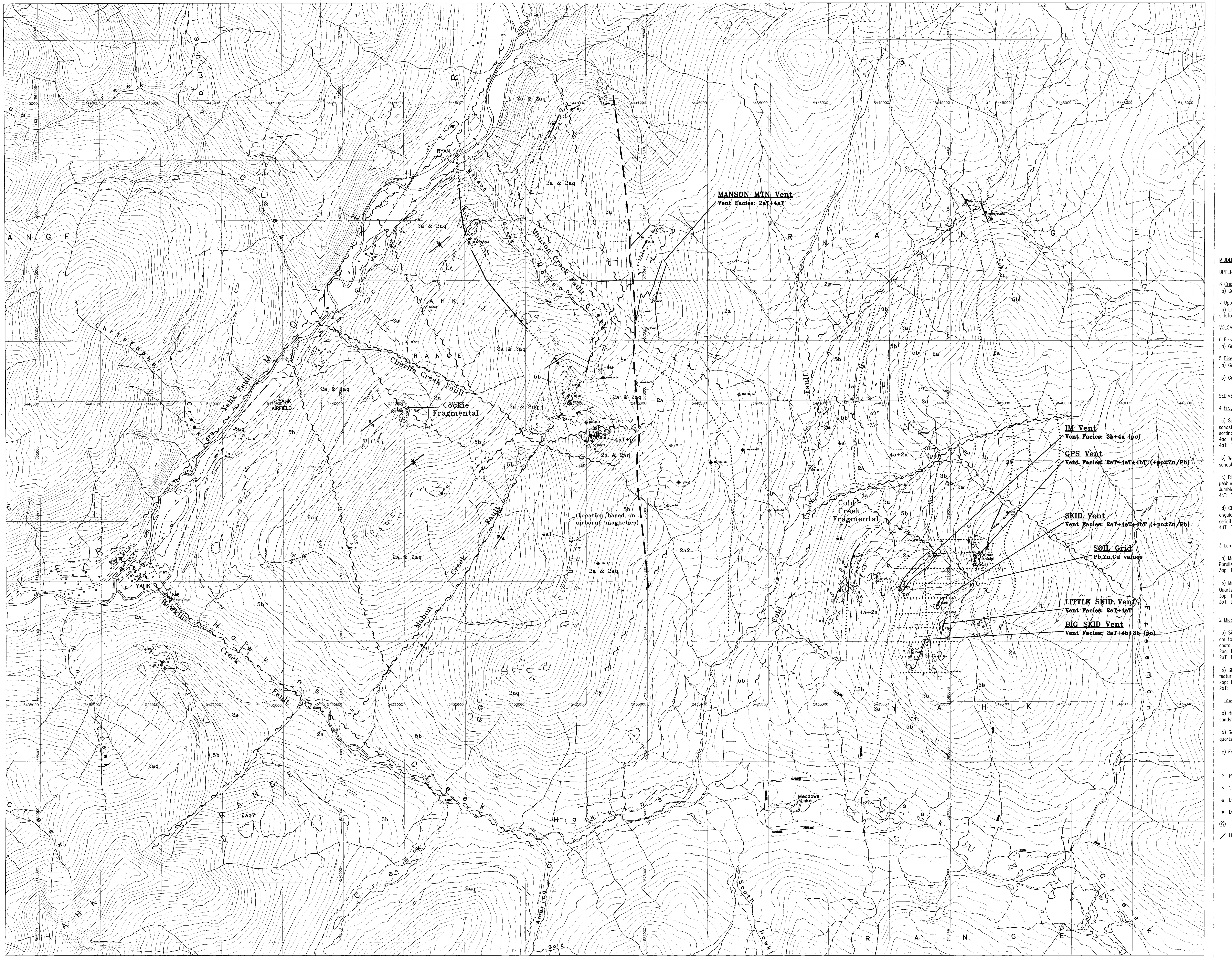
STANDARD NAME	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr	B
ELEMENT UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM
ANALYTICAL BLANK	<1	<10	<1	<1	<1	<20	<20	<1	<.01	<.01	<.01	<.01	<.01	<1	<1	<2	<1	<1	<5	<10	<.01	<1	22
ANALYTICAL BLANK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	0.5	5	0.5	0.5	0.5	10	10	0.5	.005	.005	.005	.005	.005	0.5	0.5	1	0.5	0.5	3	5	.005	0.5	22
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	1	.01	.01	1	1	.01	.01	.01	<.01	<.01	<.01	<.01	<.01	.01	.01	.01	.01	.01	.01	.01	<.01	.01	.005
Garnet Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BCC GEOCHEM STD 4	511	<10	53	70	7	<20	<20	3	0.68	1.06	1.25	0.05	0.11	32	3	<2	6	<1	<5	<10	<.01	8	102
Number of Analyses	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean Value	511	5	53	70	7	10	10	3	0.68	1.06	1.25	0.05	0.11	32	3	1	6	0.5	3	5	.005	8	102
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	600	0.1	55	80	9	5	1	4	0.77	1.34	1.43	0.04	0.14	39	4	2	7	1	12	1	0.01	8	28
Garnet Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Analyses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Standard Deviation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accepted Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ITS **Intertek Testing Services**
Bondar Clegg

Geochemical Lab Report

CLIENT: KENNECOTT CANADA INC. PROJECT: YAK
REPORT: V97-01746.0 (COMPLETE) DATE RECEIVED: 23-JUL-97 DATE PRINTED: 31-AUG-97

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Hg PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	B PPM
133207		13	<.2	200	7	80	1	6	18	<.2	<5	<5	<5	<.010	4.40	348	<10	441	77	17	<20	<20	19	1.73	0.35	0.16	0.09	1.11	5	23	9	25	3	10	<10	0.24	<1	
Prep Duplicate		10	<.2	218	8	84	1	8	19	<.2	<5	<5	<5	<.010	4.54	366	<10	432	94	17	<20	<20	19	1.81	0.38	0.17	0.09	1.15	6	24	10	26	2	10	<10	0.25	<1	
Duplicate		13	<.2	190	7	75	1	6	17	<.2	<5	<5	<5	<.010	4.11	324	<10	405	74	16	<20	<20	18	1.66	0.34	0.16	0.08	1.03	5	22	9	23	3	10	<10	0.23	<1	
133219		13	0.9	23	415	499	2	16	10	2.6	<5	<5	<5	0.011	3.45	751	<10	78	84	46	<20	<20	22	4.44	1.47	1.77	0.34	1.43	90	18	11	27	<1	8	<10	0.15	<1	
Prep Duplicate		11	0.9	21	377	484	2	16	10	2.4	<5	5	<5	0.010	3.53	745	<10	80	73	45	<20	<20	23	4.32	1.47	1.68	0.32	1.42	88	17	11	27	<1	8	<10	0.14	<1	
133222		7	<.2	35	8	28	1	9	10	<.2	<5	29	<5	<.010	1.97	263	<10	54	100	12	<20	<20	16	1.14	0.33	0.11	0.03	0.29	6	13	3	4	<1	<5	<10	0.09	<1	
Duplicate			<.2	34	8	30	1	9	9	<.2	<5	22	<5	<.010	2.04	273	<10	62	106	13	<20	<20	17	1.20	0.35	0.10	0.03	0.31	6	14	3	4	<1	<5	<10	0.09	<1	



GEOLOGICAL TABLE

(Purcell Supergroup)

MIDDLE PROTEROZOIC

UPPER SEDIMENTS

8 Creston:
a) Green Siltstone: –Grey-green, thin-bedded cherty siltstone.

7 Upper Aldridge:
a) Laminated Siltstone: –Dark grey, thinly-laminated to wispy bedded siltstone.

VOLCANICS

6 Felsic Granophyres:
a) Granophyre: –Crystalline quartz-feldspathic? migmatitic? unit.

5 Dikes and Sills:
a) Gabbro M: –Dark-green, coarse-grained gabbro. Hornblende rich.

b) Gabbro D: –Grey-green, fine-grained "gabbro". Feldspathic, dioritic.

SEDIMENTARY ASSEMBLAGE

4 Fragmental:

a) Sandy Frag: –Matrix-supported. Sparse rounded chips and pebbles of sandstone, siltstone and/or mudstone in silty and/or sandy matrix. Weak sorting.
4aq: Quartzitic, alteration rims.
4aT: Tourmaline replacement.

b) Wacke Frag: –Matrix-supported. Sparse rounded chips and pebbles of sandstone, siltstone and/or greywacke in coarse-grained wacke. Unsorted.

c) Blocky Frag: –Matrix- to Clast- supported. With rounded to angular pebbles, blocks, rip-ups or slump-fragments of siltstone-sandstone. Jumbled.
4cT: Tourmaline replacement.

d) Chaotic Frag: –Clast-supported. Unsorted, chaotic mass of rounded to angular, pebbly to blocky, quartzite. Usually altered (tourmaline, silica, sericite etc).
4dT: Tourmaline replacement.

3 Laminates:

a) Marker Horizon: –Laminated silt/argillite. Laminae are <0.5 cm thick. Parallel laminae characteristic.
3ap: Pyritic, disseminated & banded.

b) Mudstone: –Black, thinly laminated to thinly banded, may be massive. Quartzitic and argillaceous (graphitic?).
3bp: Pyritic, disseminated & banded.
3bT: Laminated aphanitic tourmaline.

2 Middle Aldridge:

a) Silty Sandstone: –Grey, micaceous, little pyrrhotite. Well bedded (avg: 5 cm to 80 cm), interlayered sandstone-wacke-siltstone. Cross-bedding, load casts and rip-ups frequent. Sandstone ranges from quartzite to greywacke.
2aq: Dominantly quartzitic.
2aT: Bedded aphanitic tourmaline.

b) Slumped: –Siltstone as per 2a, but with distinct slumping and rip-up features. Contorted beds.
2bp: Pyritic.
2bT: Tourmalinized.

1 Lower Aldridge:

a) Rusty Siltstone: –Rusty, pyrrhotitic, thin (10cm) beds of sandstone/wacke/siltstone.

b) Sandy Siltstone: –Pyrrhotitic, thin to thick beds of sandstone/quartzite/siltstone. Transitional between Lower and Middle Aldridge.

c) Footwall Quartzite: –Light grey, thick bedded, clean quartzite.

○ P-1 Laminite Location
× 130404 Sample Location
⊞ LCP Claim Post Location
◆ DDH Drill Hole Location
Ⓖ Garnet Outcrop
/ HIA Marker

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
G. M. RODGERS

SCALE: 1:20,000

0 500 1000 2000
METRES

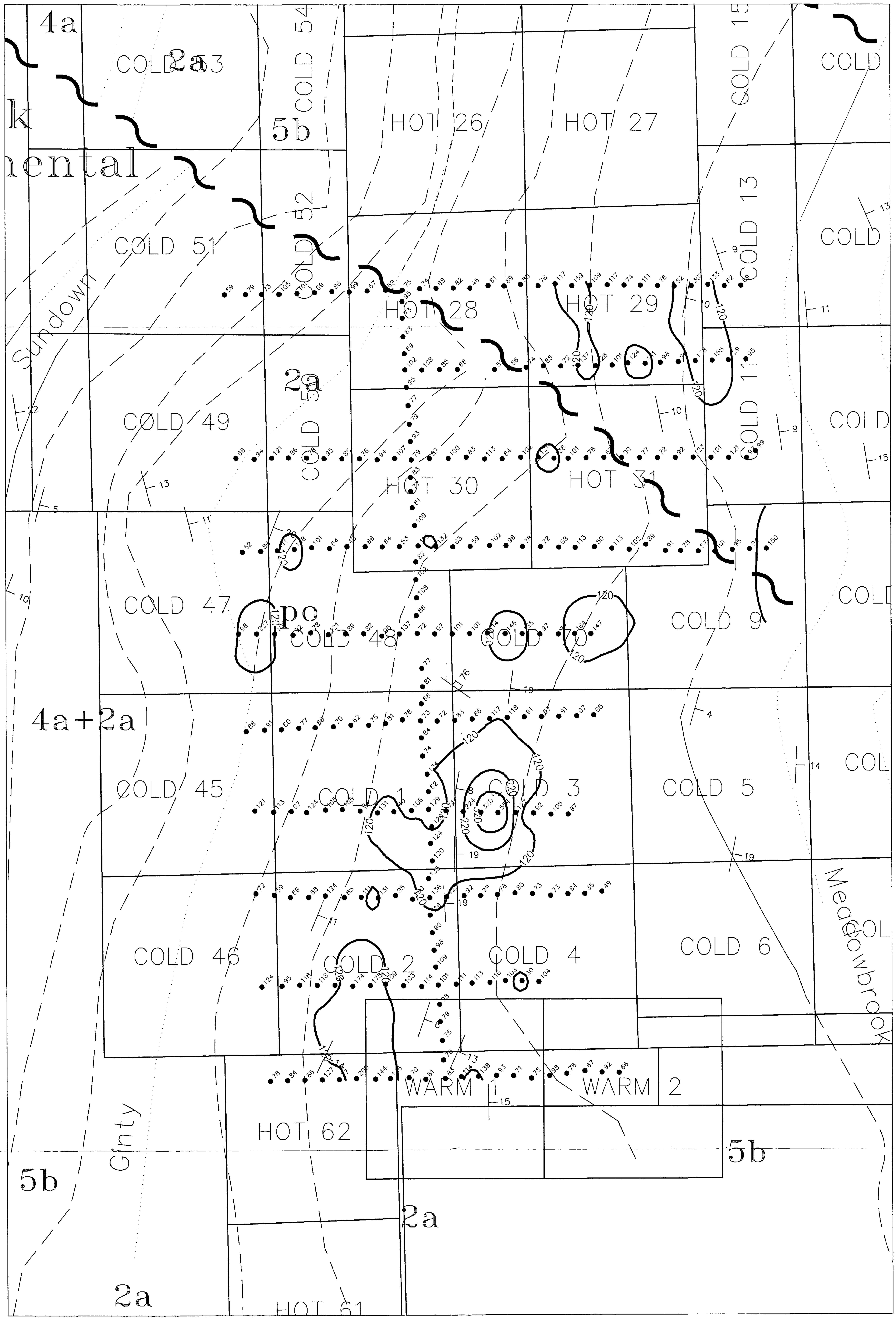
ABITIBI & SEDEX MINING CORP.
CRANBROOK FIELD OFFICE

YAHK PROJECT

GEOLOGY

FIG 4.

SCALE: 1:20,000	C.I.: 20 metres	FILE: Yahkgeomap20
AUTHOR: PVA/BN	DATE: Sept 97	DRAWN: CLT
TRIM: F10/20; G1/11	NTS: 82G/4; F/1	



SCALE: 1:5,000

0 250 500

METRES

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,271

ABITIBI & SEDEX MINING CORP.
CRANBROOK FIELD OFFICE

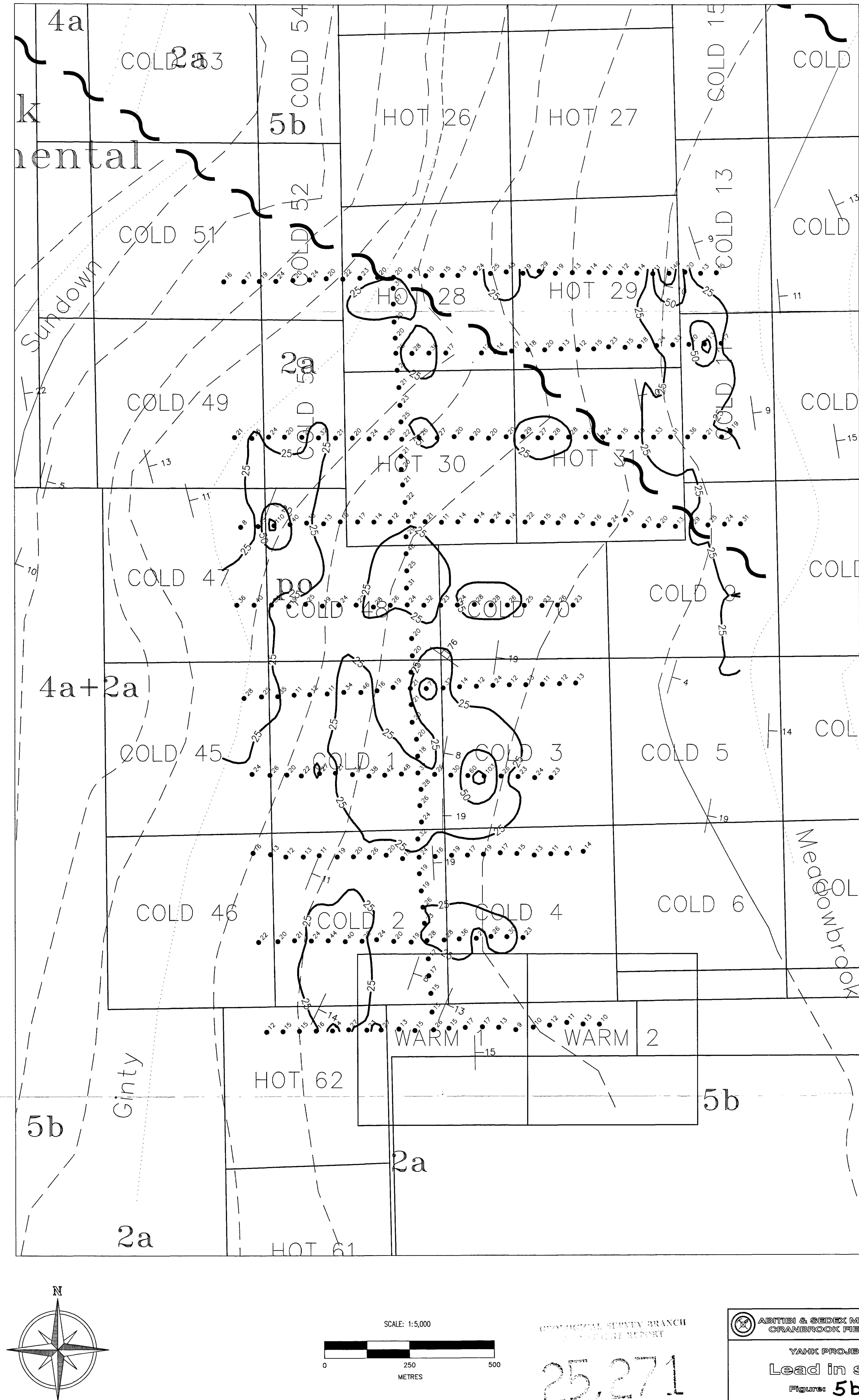
YAHK PROJECT

Zinc in soil

Figure: 5a

SCALE:	1:5,000	C.I.:	20 metres	FILE:	coldcreek
AUTHOR:	GMR	DATE:	May 14 98	DRAWN:	CLT
TRIM:	G1	NTS:	82G/4; F/1		

E:\hastings\Yak50\zincreport.dwg Thu May 07 12:43:59 1998



ABITIBI & SEDEX MINING CORP.
CRANBROOK FIELD OFFICE

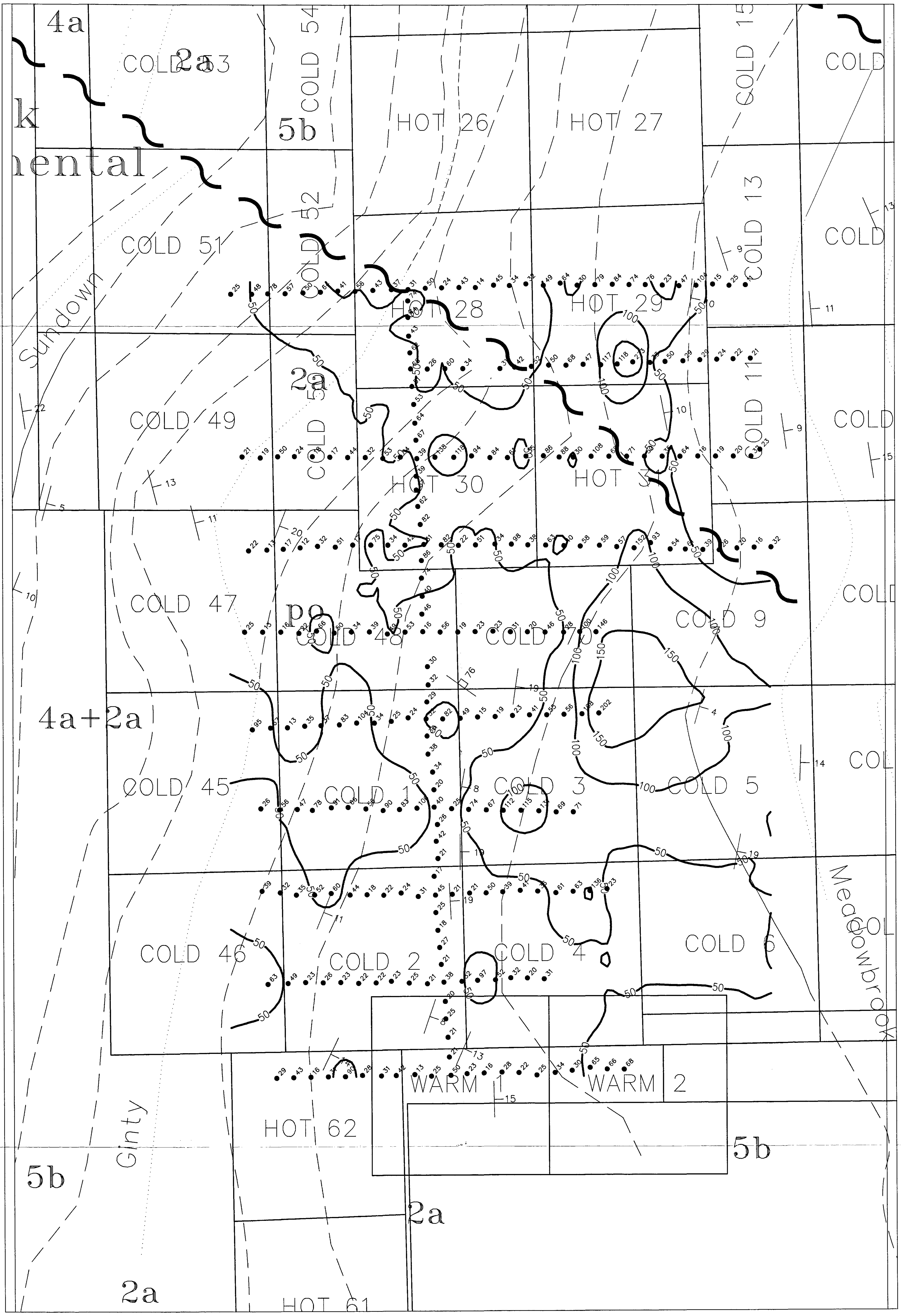
YAHK PROJECT

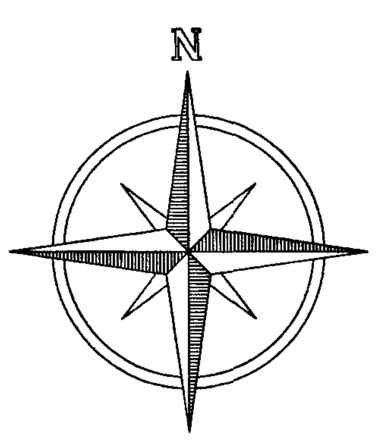
Lead in soil

Figure: 5b

SCALE:	1:5,000	C.I.:	20 metres	FILE:	coldcreek
AUTHOR:	GMR	DATE:	May 14 98	DRAWN:	CLT
TRIM:	G1	NTS:	82G/4; F/1		

E:\Hastings\Yak50\leadreport.dwg Thu May 07 12:48:43 1998





SCALE: 1:5,000

0 250 500

METRES

ABITIBI & SEDEX MINING CORP.
CRANBROOK FIELD OFFICE

YAHK PROJECT

Copper in soil

Figure: 5c

SCALE:	1:5,000	C.I.:	20 metres	FILE:	coldcreek
AUTHOR:	GMR	DATE:	May 14 98	DRAWN:	CLT
TRIM:	G1	NTS:	82G/4; F/1		

E:\Hastings\Yak50\copperreport.dwg Thu May 07 12:50:07 1998