

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORTS

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ASSESSMENT REPORT

on

LINE CUTTING and DIAMOND DRILLING

ABITIBI MINING CORPORATION

BARR PROPERTY

Palmer Bar Creek Area

Fort Steele Mining Division

NTS 82 G/5W

Lat. $49^{\circ} 29'N$
Long. $115^{\circ} 57'W$

Owner and Operator: Abitibi Mining Corporation
1000-675 West Hastings Street
Vancouver, B.C. V6B 1N2

Work performed from July 15 to August 9, 1996

Report by: Peter Klewchuk, P.Geo
October, 1996

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

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1.00 INTRODUCTION

1.10 Location and Access

The Barr Property is located approximately 14 kilometers west of Cranbrook, B.C., in the drainage of Palmer Bar Creek, a south-flowing tributary of the Moyie River. The claims are in the Fort Steele Mining Division, centered approximately at $49^{\circ} 29'$ N latitude, $115^{\circ} 57'$ W longitude on NTS map sheet 82 G/5 W (Figs. 1 & 2).

Good road access to the claims exists from south of Cranbrook off Highway 3/95 via the Lumberton logging road.

1.20 Physiography

The property is situated west of the Rocky Mountain Trench, within the Moyie Range of the Purcell Mountains. Topography is moderate to steep with glacially rounded ridges; within the property area elevations range from 1220 to 2130 meters.

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.

1.30 Property

The Barr Property consists of 65 claim units in 13 2-post and 3 modified grid claims (Fig. 2). The claims are owned by G.M. Rodgers of Skookumchuck, B.C. and Abitibi Mining Corp. of Vancouver, B.C.

1.40 History of Previous Exploration

Moyie River, Perry Creek and numerous of their tributary streams have produced considerable placer gold, with many small placer operations worked on a small scale basis. The knowledge of significant placer gold in the main drainages and tributaries of Moyie River and Perry Creek has resulted in long-standing exploration activity for bedrock sources.

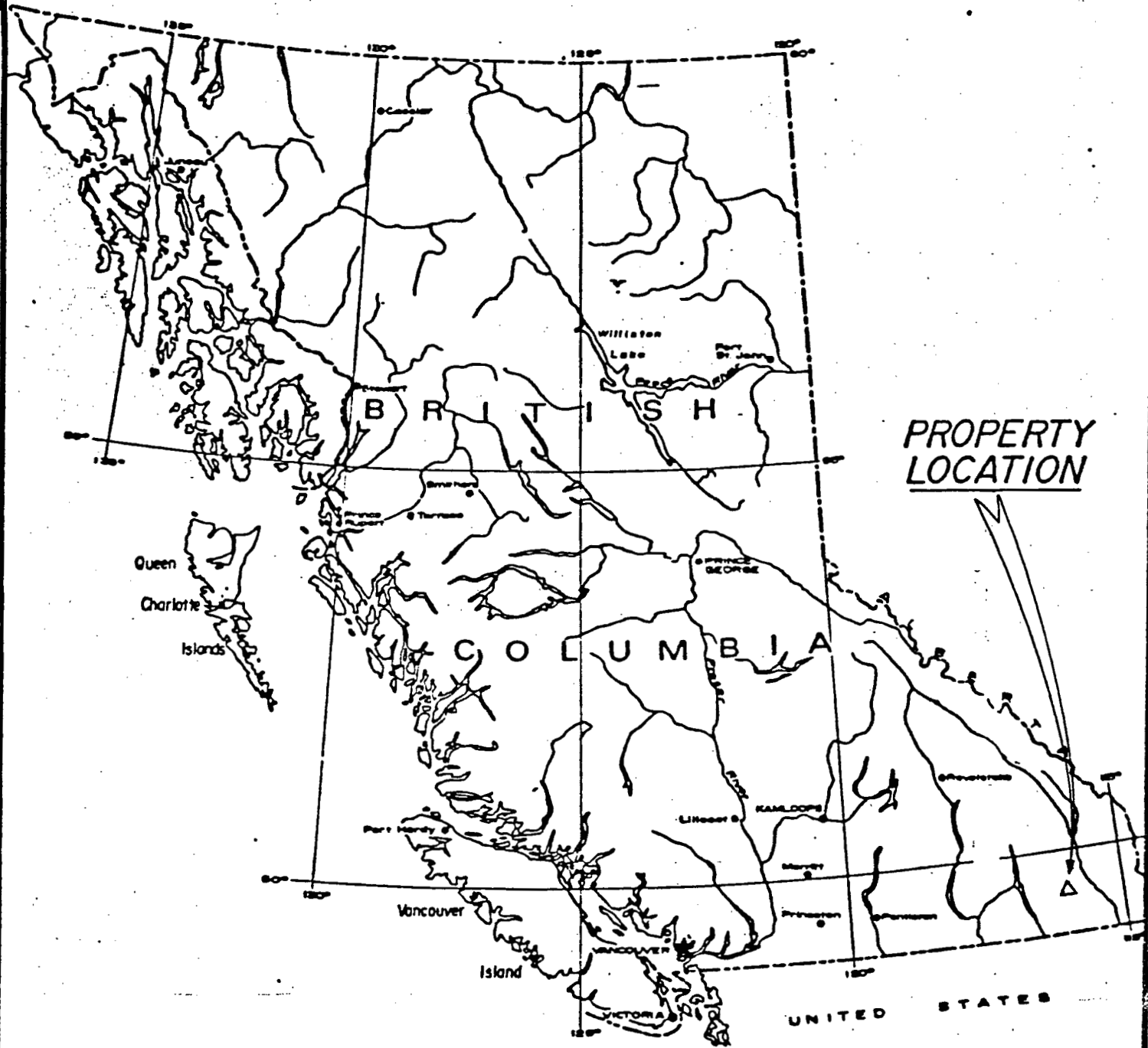
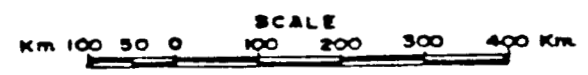


Figure 1
BARR PROPERTY
LOCATION MAP



116°00'00"
49°30'00"

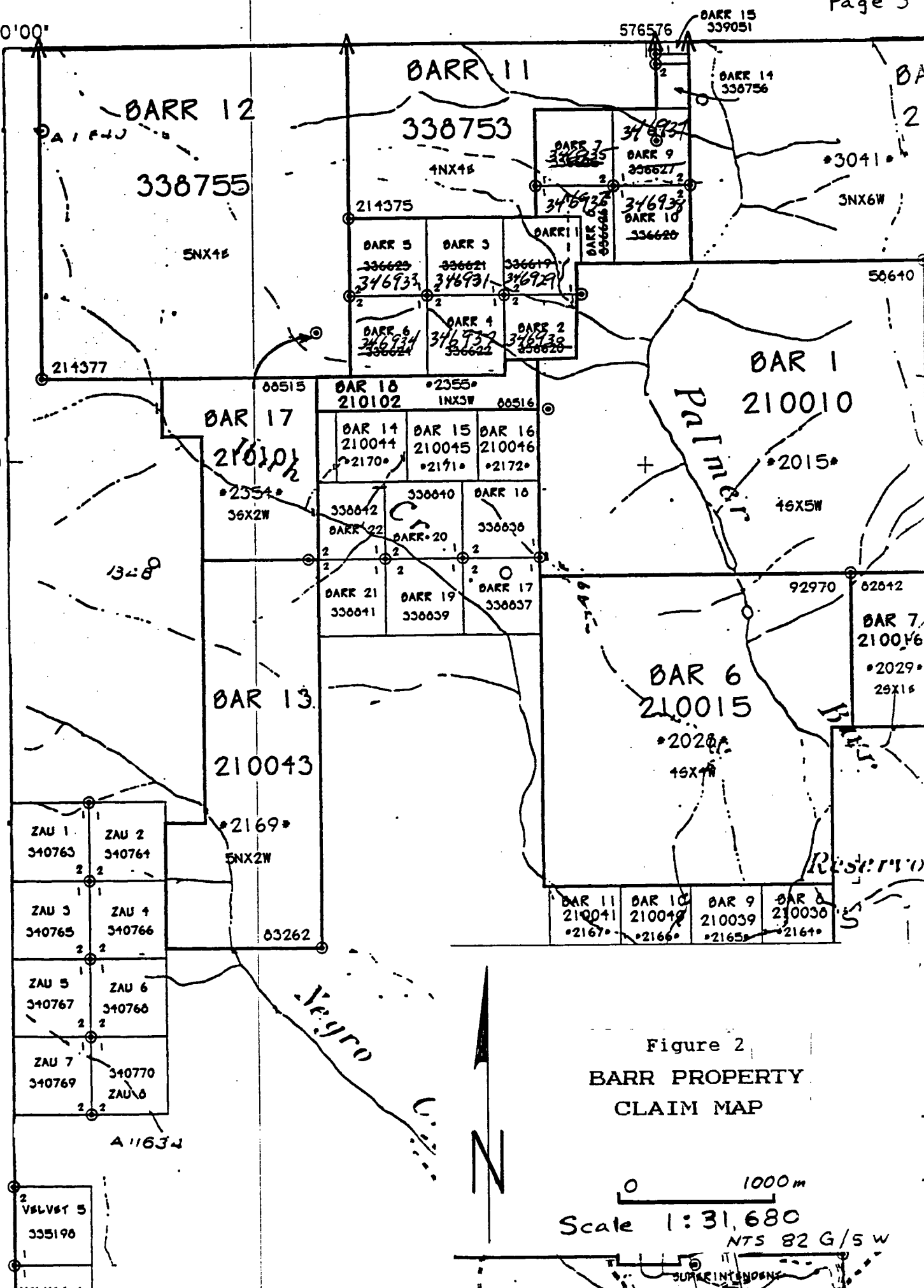
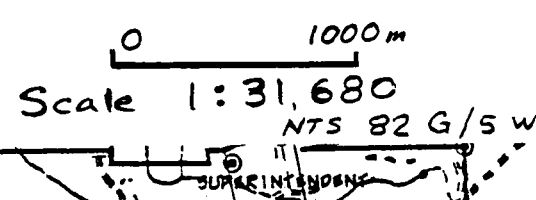


Figure 2
BARR PROPERTY
CLAIM MAP



Many small lode gold occurrences have been discovered within the Moyie River and Perry Creek drainages and a few have seen minor production. Virtually all of the lode gold has come from relatively small quartz veins, usually in association with base metal sulfides. The advent of historically high gold prices in the late 1970's prompted staking which blanketed these areas of known placer gold production.

Exploration activity has been constrained by the extensive coverage of glacial drift, and, although many small exploration programs have been undertaken, few have been successful at delineating drill targets.

Recent logging activity in the general area of the claims has enhanced the exploration process by providing road access and exposing bedrock along haul roads, skid roads and in burned clear-cut areas.

Modern interest in the Barr claim area arose when prospecting discovered widespread quartz float with visible gold in the Palmer Bar Creek area. Reconnaissance work in the area by Chapleau Resources Ltd. in 1986 and 1987 provided a progressive understanding of sources of lode gold mineralization and a genetic model for the gold deposits.

In 1988, within the present Barr claim block, Chapleau Resources Ltd. discovered a large quartz flooded zone associated with syenite dikes at the intersection of the Cranbrook and Palmer Bar Faults. A 2500 meter diamond drill program defined much of the geology of the deposit and demonstrated that widespread anomalous copper and gold mineralization is present although no commercial deposit was outlined. Smaller drill programs in subsequent years tested specific aspects of the deposit.

1.50 Scope of Present Program

In 1996 Abitibi Mining Corporation drilled one hole to test the Cranbrook Fault portion of the Bar Deposit for the presence of gold mineralization. Further to the east, east of Palmer Bar Creek, on claims held by White Knight Resources Ltd. and Goldpac Investments Ltd., significant gold mineralization exists in association with a syenite dike within the Cranbrook Fault. The western extension of this gold mineralization was tested by the 1996 drill hole.

2.00 GEOLOGY

2.1 Regional Geology

The area of the Barr claims is underlain by Precambrian (Helikian) Purcell Supergroup rocks of the Aldridge, Creston and Kitchener Formations. These are intruded by Precambrian age diorite and gabbro composition sills and dikes of the Moyie Intrusions. Cretaceous quartz monzonite and granodiorite stocks occur just off the property to both east and west and related, fault-controlled syenite dikes occur within some fault zones.

A complex system of NE to NNE striking normal and reverse faults occur parallel to the regional strike while a series of easterly-striking normal and reverse transverse faults cut across the regional trend at an oblique angle. This block-faulted area appears centered on the area of the best known placer gold and it seems probable that gold mineralization is genetically related to both the structural complexity and the spatially-associated felsic intrusives.

2.20 Property Geology

The central focus of exploration attention on the area of the Barr claims has been the Bar Deposit. This is a structurally-controlled hydrothermally-emplaced deposit of quartz, sulfides and syenite dikes within an envelope of argillic, chloritic, silicic and carbonate altered wallrock. The known part of the deposit consists of a northwest-oriented "West Limb" syenite dike and an east to northeast-oriented "North Limb" syenite dike. The two limbs coalesce in the northwest part of the deposit and on surface they form a wishbone-shaped, fold-like feature which verges to the northwest (Fig.3). The West Limb of the deposit dips steeply to the east and the North Limb dips moderately to the north, producing a deposit similar in shape to a recumbent fold with a northwest-striking, northeast-dipping axis. The axial trace of the deposit rakes steeply to the northwest.

The Bar Deposit is developed at the intersection of the Cranbrook and Palmer Bar Faults. Both faults are regionally-extensive structures and are probably deep-seated.

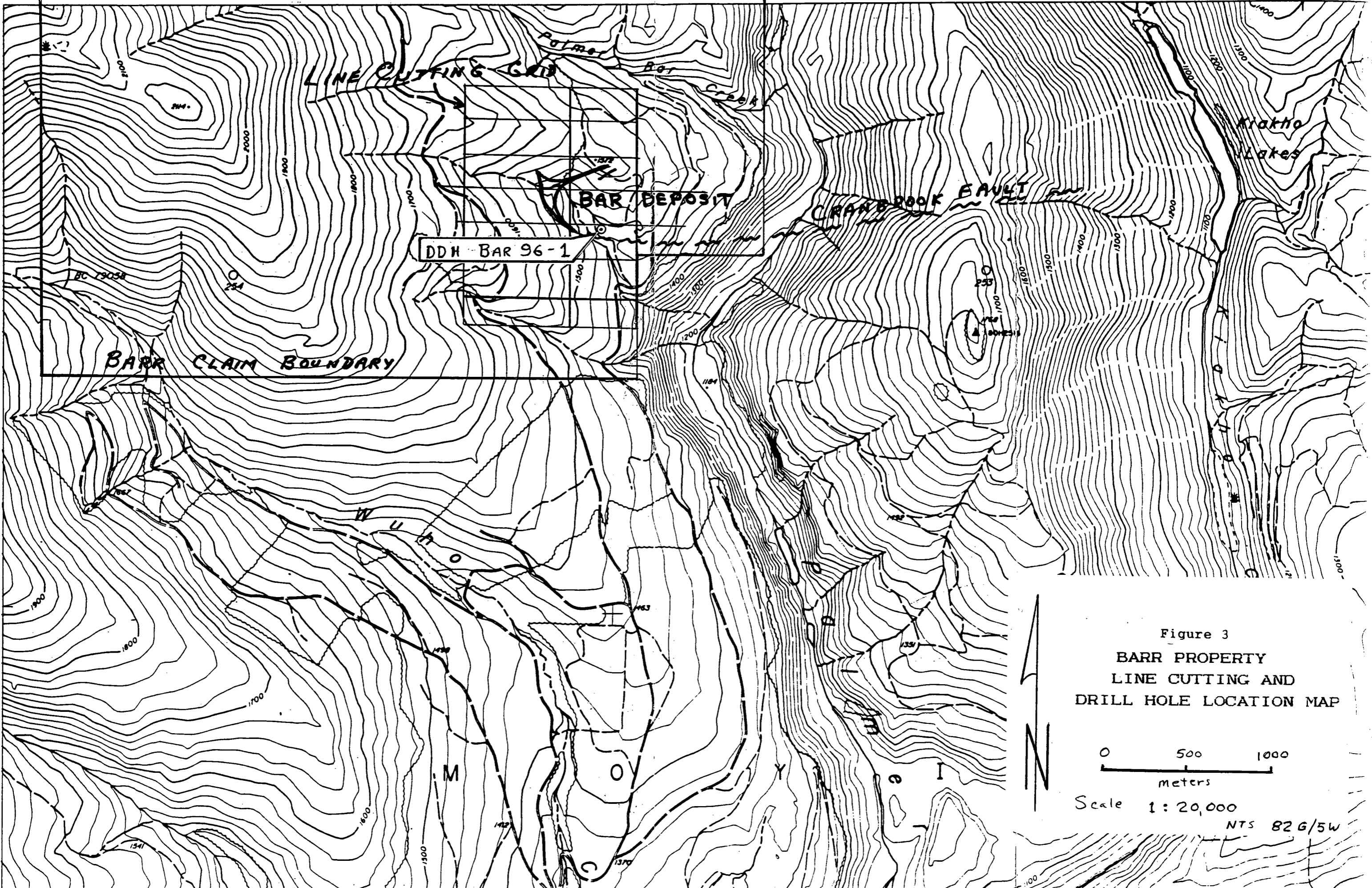
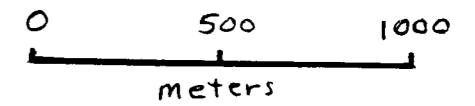
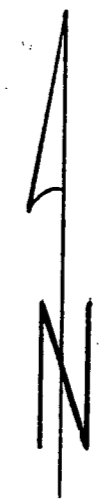


Figure 3
 BARR PROPERTY
 LINE CUTTING AND
 DRILL HOLE LOCATION MAP



Scale 1:20,000

NTS 82G/5W

3.00 LINE CUTTING

As preparation for an Induced Polarization Geophysical Survey across the area of the Bar Deposit, approximately 13,000 meters of line were cut. Location of the cut lines is shown on Figure 3.

4.00 DIAMOND DRILLING

Previous diamond drilling of the Bar Deposit had not tested the Cranbrook Fault portion. To the east of the Barr Property, trenching activity undertaken by Goldpac Investments Ltd. and White Knight Resources Ltd. within the Cranbrook Fault identified significant gold mineralization associated with a syenite dike. In 1996, Abitibi Mining Corporation drilled one hole on the Barr property to test the western extension of this mineralization.

Location of the drill hole is shown on Figure 3. Drill hole Bar-96-1 was collared July 29, 1996 and completed July 31, 1996. The hole is of NQ size (7.3 cm diam.) and was oriented at an azimuth of 194 degrees and an inclination of minus 45 degrees. The total length of the hole is 131.0 meters.

Drill hole Bar 96-1 was collared on the north side of the north-dipping Cranbrook Fault zone and drilled southerly to cross the fault. The hole collared in thinly bedded and laminated siltstone and silty argillite of the Lower Creston Formation. Tectonic deformation, development of minor iron sulfides and quartz veining increase downward toward the Cranbrook Fault zone which was intersected from 85.6 meters to 106.7 meters. The middle part of the fault zone is composed of a 4 to 5 meter wide syenite dike, from 89.9 to 94.75 meters. Below the fault zone, altered siltstones are interpreted to be part of the Aldridge Formation, although they are very strongly tectonically disturbed.

Core was sampled across the fault zone, from 87.0 meters to 98.3 meters. Anomalous gold was identified within parts of the Cranbrook Fault, on both sides of the syenite dike.

A complete log of the drill hole is provided as Appendix 1 and complete geochemical analyses are provided as Appendix 2.

5.00 CONCLUSIONS

Drill hole Bar 96-1 tested the Cranbrook Fault zone on the east fringe of the Bar Deposit. It successfully penetrated the Cranbrook Fault and established that the fault zone hosts a 4 to 5 meter wide syenite dike with associated minor gold mineralization present within altered sedimentary rocks on both sides of the dike.

6.00 STATEMENT OF COSTS


Linecutting	13km @ \$500/km	\$6500.00
Diamond Drilling	131 meters @ \$73.28/meter	9600.00
Supervision and report		<u>900.00</u>
	Total Costs	<u>\$17000.00</u>

7.00 AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk, certify that:

1. I am an independent consulting geologist with offices at 246 Moyie Street, Kimberley, B.C.
2. I am a graduate geologist with a BSc. degree (1969) from the University of British Columbia and an MSc. degree (1972) from the University of Calgary.
3. I am a Fellow of the Geological Association of Canada and a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
4. I have been actively involved in mining and exploration geology, primarily in the province of British Columbia, for the past 21 years.
5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia, this 4th day of October, 1996.


The seal is an octagonal emblem with a double border. The outer border contains the text "PROFESSIONAL" at the top, "PROVINCE OF" in the middle, and "BRITISH COLUMBIA" at the bottom. The inner border contains the text "GEOLOGIST" at the bottom. In the center of the seal, the name "P. KLEWCHUK" is printed. A horizontal line is drawn across the seal, with a handwritten signature "Peter Klewchuk" written in cursive to the right of the seal.
Peter Klewchuk
P. Geo.

Appendix 1

Drill Hole Record

Property: Barr

District: Fort Steele

Hole No: Bar 96-1

Length of Hole: 131.0 m

Commenced: 29-Jul-96

Completed: 31-Jul-96

General Location: Head of Palmer Bar Creek

Co-ordinates: 115°57'05" longitude, 49°29'17" latitude

UTM: 5,482,000m N., 575,950m E.

Elevation: 1490 meters

Inclination: -45°

Azimuth: 194°

Dip Test Results: None

Hole/Core Size: NQ

Logged By: Peter Klewchuk

Objective: Test Cranbrook Fault

Location of Core: 3380 Wilks Road, Cranbrook

Drilled By: Lone Ranger Drilling

Type of Drill: Longyear 44

WP7 File No: Tplog.1

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

Operator: Abitibi Mining Corp.
P.O. Box 215
Cranbrook, B.C., V1C 4H7

0-51.2

CASING; NO CORE

51.2-60.5

SILTY ARGILLITE

Med. green with finely laminated dark grey to black bands. Thin bedded and laminated throughout. Extensive tectonic disturbance evident. Bedding is typically at 65° to core axis but is cut and folded by abundant close-spaced bedding-parallel fractures at 65° to core axis. Displacement on individual fractures is minor, few mm to few cm. Some fracture-related folding is near-isoclinal. Numerous fracture surfaces above 55.5 m are rusty from surface oxidation. A few thin quartz veins are present, ranging from thin bedding - parallel veins up to 1 cm wide to more irregular small masses of quartz. Quartz veins are typically chloritic. Minor py occurs throughout, dissem. & as thin irregular veins.

60.5-67.8

SILTSTONE, SILTY ARGILLITE, MINOR QUARTZITIC SILTSTONE

Medium gray-green, thin bedded, few medium thick beds. Bedding at 65° to core axis but extensively disturbed by parallel fractures. Numerous narrow zones of fault breccia are present. A few thin qv are present. Very minor py is disseminated through the interval.

67.8-69.8

ARGILLITE AND SILTY ARGILLITE

Generally similar to 51.2 - 60.5 interval. Gray-green with thin bands of finely laminated dark gray to black material. Minor pyrite is common with the finely laminated dark bands. Extensive small scale folding common throughout. Bottom 15 - 20 cm is brecciated, adjacent to underlying fault. A few bedding-sub parallel qv are present.

69.8-69.95	<p>FAULT Gray-green gouge and wallrock fragments. Appears to be bedding parallel or sub-parallel at ~65° to core axis.</p>
69.95-85.6	<p>SILTSTONE, SILTY ARGILLITE, MINOR QUARTZITIC SILTSTONE Medium green to gray-green, locally with thin bands of black/dark grey laminae. Thin bedded and laminated, at 60 - 65° to core axis. Bedding is extensively disturbed by healed fractures at 60 - 75° to core axis, sub-parallel to bedding. Deformation increases down hole. Numerous narrow zones of crushed rock/fault gouge are present, increasing down hole. Minor quartz veining is common with both bedding parallel irregular cross-cutting veins. Veins are relatively barren, with minor chlorite and very minor fine disseminated py. Pyrite is locally common with bands of laminated dark gray to black argillite. Most qv are milky white but near 82.5m there are a few thin (2-3mm) chalcedonic light gray qv which cut earlier milky white qv. Locally, eg. at 84.2m, pyrite is developed as irregular veins within fractures.</p>
85.6-89.9	<p>FAULT ZONE; SHEARED SILTSTONE AND ARGILLITE 85.6m is an arbitrary point of increased shearing but fault-related deformation extends well up into preceding interval. Shearing intensity ranges from clay gouge with small wallrock fragments (87.65 - 88.1) to strongly brecciated siltstone with recognizable bedding. Minor fine disseminated py is present through parts of the interval. Minor quartz is locally present as typically irregular thin veins. Shear fabric is at 55 - 65° to core axis.</p>

SAMPLING:	BAR 1	87.0 - 87.65	0.65m	41	ppb Au
	BAR 2	87.65 - 88.1	0.45m	542	ppb Au
	BAR 3	88.1 - 88.65	0.55m	14	ppb Au
	BAR 4	88.65 - 89.3	0.65m	7	ppb Au
	BAR 5	89.3 - 89.9	0.60	<5	ppb Au

89.9-94.75

"SYENITE"

Massive, porphyritic, mottled gray-green. Undeformed. Large white phenocrysts of K-Spar comprise about 3% of the rock and range up to 4cm long. Pale green, more intensely altered plagioclase phenocrysts are smaller, averaging just under 1cm long. They make up est 50%. Groundmass is altered biotite, feldspar and quartz. Very minor fine pyrite is disseminated throughout.

SAMPLING:	BAR 6	89.9 - 90.5	0.60m	<5	ppb Au
	BAR 7	90.5 - 91.5	1.00m	<5	ppb Au
	BAR 8	91.5 - 92.5	1.00m	<5	ppb Au
	BAR 9	92.5 - 93.4	0.90m	<5	ppb Au
	BAR 10	93.4 - 94.3	0.80m	<5	ppb Au
	BAR 11	94.2 - 94.75	0.55m	<5	ppb Au

94.75-106.7

FAULT ZONE - SHEARED ARGILLITE AND SILTY ARGILLITE

Strong cataclastic texture throughout; more brecciated with unlithified clay gouge in the upper part, changing to a more competent, lithified fault zone below. Color changed as well, from weakly chloritic, mottled pale gray-green above to darker gray and more distinctly foliated with depth. Shear fabric at 50 - 60° to core angle throughout (80° dip inferred). Py occurs disseminated and in small irregular clots throughout, locally slightly concentrated.

Meters

Description

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SAMPLING:	BAR 12	94.75 - 95.4	0.65m	783 ppb Au
	BAR 13	95.4 - 96.3	0.90m	10 ppb Au
	BAR 14	96.3 - 97.3	1.00m	5 ppb Au
	BAR 15	97.3 - 98.3	1.00m	<5 ppb Au

106.7-131.0

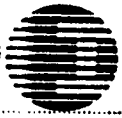
SILTSTONE, MINOR ARGILLACEOUS SILTSTONE & QUARTZITIC SILTSTONE; BRECCIA
Variably gray-green texture is healed breccia throughout with no 'normal' bedded sections. Fragments are apparently randomly oriented with no distinct fabric. Fragments range in size from few mm to at least 0.5m. Narrow zones of local faulting with gray fault gouge occur at 109.4m (50 - 70cm wide), 121.8m (15cm wide), 125.8m (10cm wide), and 128.6m (5cm wide). Minor quartz veining occurs in parts of the interval; most are thin and irregular in shape. Minor pyrite occurs as fine dissemination, small irregular aggregates and thin veins.

131.0

END OF HOLE



Pete K



Bondar Clegg Inchcape Testing Services

Geoc.
Lab
Report

CLIENT: KENNECOTT CANADA INC.
REPORT: V96-01244.0 (COMPLETE)

PROJECT: CRANBROOK2
DATE PRINTED: 23-AUG-96 PAGE 2

SAMPLE NUMBER	Al ₂ O ₃		Ag	Cu	Pb	Zn	ZrOL	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	PPB	PPM	PPM	PPM	PPM	PCT	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
BAR-1	41	0.2	6	17	17	2	24	20	<0.2	6	60	<5	5.65	1320	<10	44	50	4	<20	<20	9	0.34	0.95	0.04	<.01	0.26	3	7	<2	<1	<1	<5	<10	<.01	2		
BAR-2	542	4.2	56	1211	263	3	42	42	1.7	8	979	<5	4.67	1470	<10	45	77	6	<20	<20	8	0.46	0.29	0.05	0.01	0.29	8	6	3	<1	<1	6	<10	<.01	3		
BAR-3	14	0.2	6	23	76	2	24	37	<0.2	14	50	<5	7.96	1936	<10	30	58	10	<20	<20	<1	0.68	2.56	0.10	<.01	0.26	5	7	5	3	1	6	<10	<.01	1		
BAR-4	7	0.2	9	33	152	2	23	34	<0.2	15	19	<5	>10.00	1982	<10	16	54	31	20	<20	3	2.97	3.15	0.09	<.01	0.12	4	5	10	27	1	14	<10	<.01	<1		
BAR-5	<5	<0.2	5	24	122	3	23	36	<0.2	22	21	<5	>10.00	3476	10	17	45	34	27	<20	12	3.14	3.03	0.15	<.01	0.12	5	7	15	33	1	11	<10	<.01	2		
BAR-6	<5	0.8	12	69	62	6	4	4	<0.2	8	8	<5	5.72	1951	<10	88	24	6	<20	<20	12	0.64	0.12	0.16	0.05	0.37	27	7	3	2	<1	<5	<10	<.01	8		
BAR-7	<5	<0.2	11	48	46	1	6	4	<0.2	5	<5	<5	4.01	1213	<10	93	22	10	<20	<20	16	0.84	0.12	0.15	0.04	0.44	52	8	4	3	<1	<5	<10	0.01	8		
BAR-8	<5	<0.2	7	59	33	<1	4	4	<0.2	<5	<5	<5	1.50	339	<10	97	32	14	<20	<20	20	1.18	0.19	0.15	0.04	0.37	214	8	6	4	<1	<5	<10	0.02	6		
BAR-9	<5	0.2	10	61	57	<1	3	3	0.2	<5	<5	<5	3.19	1090	<10	117	31	8	<20	<20	16	0.78	0.07	0.10	0.04	0.49	44	6	3	3	<1	<5	<10	0.02	10		
BAR-10	<5	0.3	13	71	110	<1	3	4	<0.2	<5	<5	<5	0.64	67	<10	132	28	7	<20	<20	22	0.79	0.05	0.05	0.04	0.51	34	7	<2	4	<1	<5	<10	0.02	9		
BAR-11	<5	0.2	20	61	64	2	6	6	<0.2	<5	<5	<5	2.30	579	<10	101	29	11	<20	<20	15	0.87	0.10	0.09	0.05	0.40	49	7	4	4	<1	<5	<10	0.01	12		
BAR-12	783	0.2	10	25	111	2	21	47	<0.2	<5	26	<5	3.20	113	<10	26	77	20	<20	<20	<1	2.01	2.21	0.01	<.01	0.19	4	3	6	13	<1	<5	<10	<.01	4		
BAR-13	10	<0.2	6	22	66	2	22	51	<0.2	7	18	<5	2.29	90	<10	28	68	19	<20	<20	1	1.69	1.87	0.01	<.01	0.20	7	3	5	9	<1	9	<10	<.01	3		
BAR-14	5	<0.2	3	18	31	<1	25	67	<0.2	<5	18	<5	1.73	49	<10	22	92	13	<20	<20	7	0.97	0.93	<.01	<.01	0.19	13	4	<2	4	<1	6	<10	<.01	3		
BAR-15	<5	<0.2	2	6	32	<1	6	5	<0.2	<5	<5	<5	0.41	38	<10	26	91	9	<20	<20	11	0.88	0.38	<.01	<.01	0.20	9	3	<2	2	<1	<5	<10	<.01	3		

APPENDIX 2
 GEOCHEMICAL
 ANALYSES