ARCHER, CATHRO
& ASSOCIATES (1981) LIMITED
CONSULTING GEOLOGICAL ENGINEERS

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Report On

PROSPECTING AND GEOCHEMICAL PROGRAM

ULTRA 1-20 CLAIMS

(YA96740-YA96759)

NTS 115B/16

Latitude 60°54'; Longitude 138°15'

092130

W.D. Eaton, B.A., B.Sc.

February, 1988

Work done between June 29 and September 9, 1987

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 10 000.00 .

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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INTRODUCTION

The Ultra claims were staked in January, 1987 by Kluane Joint Venture (Chevron Minerals Ltd. and All-North Resources Ltd.) and were optioned in late spring to Nordac Mining Corporation, which subsequently changed its name to Big Creek Resources Ltd. The property covers mafic and ultramafic sills similar to those hosting nickel, copper and platinum group element (PGE) mineralization at the former Wellgreen Mine, 60 km to the northwest (see Figure 1 on the following page). Mineralization at Wellgreen consists principally of pyrrhotite, pentlandite and chalcopyrite occurring as massive lenses, disseminations and fracture fillings in gabbro, pyroxenite and peridotite phases of the sills. Previous exploration in the area now covered by the Ultra claims located chalcopyrite and pyrite filling fractures in gabbro float, a specimen of which assayed 1.15% Cu, 0.86% Ni, 0.036 oz/ton Pt and 0.150 oz/ton Pd.

The main part of the 1987 exploration program was conducted between July 30 and August 12 and consisted of claim surveys and tagging, geological mapping, prospecting and soil and rock geochemistry. It was done under the author's supervision by two men working from a fly camp 900 m northeast of the property. After results of the first phase of exploration were reviewed, the author and two fieldmen flew to the property by helicopter and spent the day prospecting in the main areas of interest. Appendix I contains the Author's Statement of Qualifications while Appendix II lists the personnel who worked on the claims.

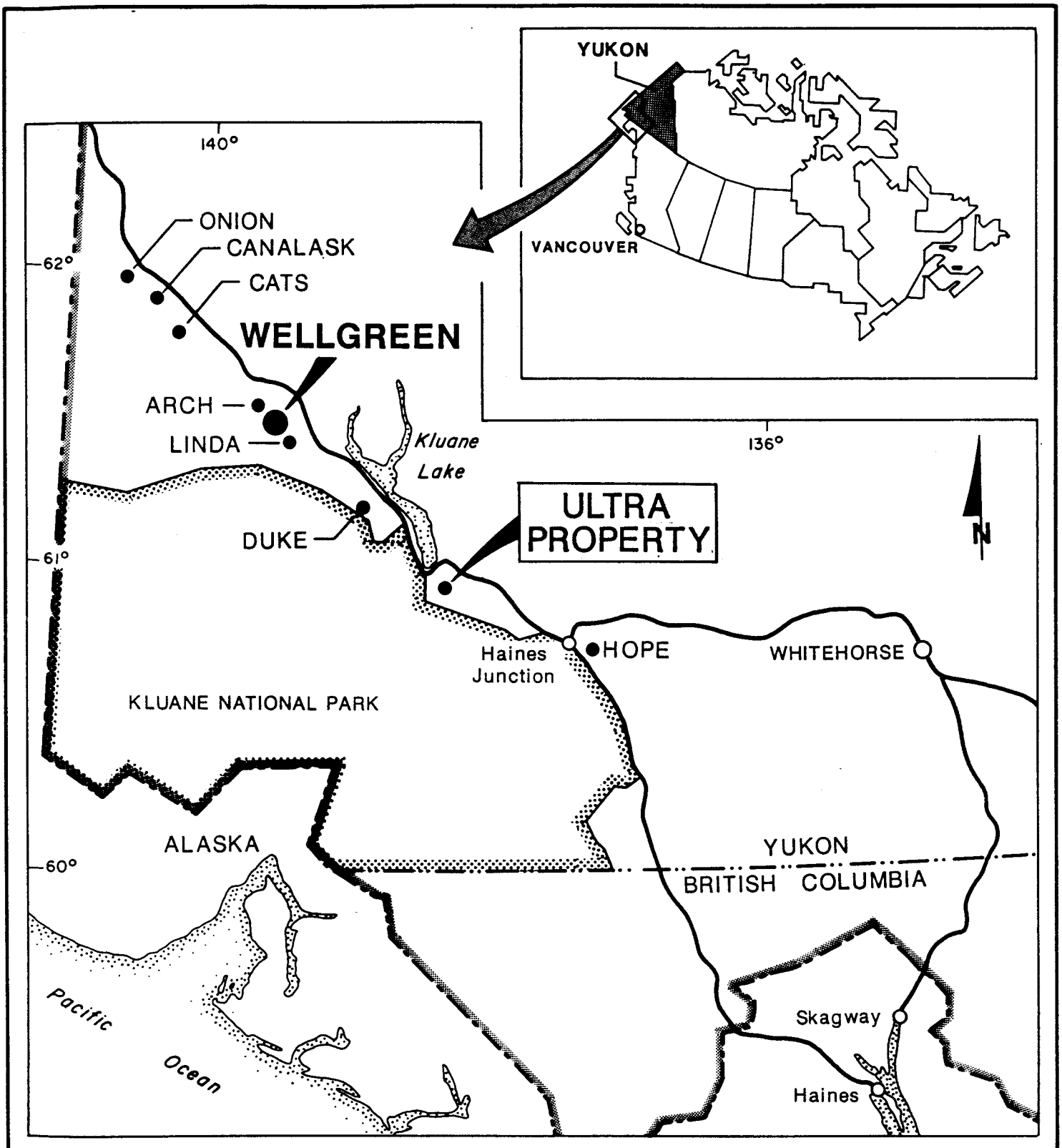


Figure 1

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LOCATION MAP

ULTRA PROPERTY

NORDAC MINING CORPORATION

PROPERTY, LOCATION AND ACCESS

The property consists of twenty contiguous mineral claims registered with the Whitehorse Mining Recorder as follows:

Claim Name	Grant Numbers	Expiry Date
Ultra 1-20	YA96740-YA96759	January 16, 1988

The expiry date shown above does not include assessment credits filed for work done in 1987.

The claims are located 11 km southwest of the Alaska Highway at latitude 60°54' and longitude 138°15' on NTS map sheet 115B/16, as shown on Figure 2 in the pocket. Access in 1987 was by Bell 206B helicopter operating from a permanent base at Haines Junction, 37 km to the east.

HISTORY

The copper-nickel-PGE showing on the Ultra claims is called the Frohberg Showing and is one of two mineral occurrences located in a north-facing glacial valley. The other occurrence (the Telluride Showing) lies 500 m southwest of the property and consists of Kuroko-type, banded massive copper-zinc-lead sulphides. Float from the two showings was first discovered by placer miners in glacial till at the mouth of the valley, according to the Geological Survey of Canada Annual Report of 1904.

The first lode claims were staked in 1955 by Gaymont Prospecting Syndicate (Teck Exploration and Iso Uranium). Although the Frohberg showing was discovered in 1958, early work by Gaymont in 1955-58, Canex Aerial Exploration in 1962, Meridian Syndicate (Canex, Noranda and Asbestos Corp.) in 1964, Coranex Syndicate (Frobex, McIntyre Porcupine, Inco, Dome Mines and Denison) in 1965-67 and a joint venture between Coranex Syndicate, Dynasty Exploration, Atlas Exploration and Canadian Industrial Gas & Oil in 1969 was directed toward the banded Kuroko-type ore. Most of the work was performed in the lower valley in the immediate vicinity of the float occurrence and included prospecting, numerous geophysical surveys, a soil geochemical survey and a number of shallow drill holes.

In 1977, the area was restaked and explored by Archer, Cathro on behalf of Aquitaine Oil. A small, largely eroded lens of Kuroko-type massive sulphides (presumed source of the banded float) was located at an elevation of 2530 m on a cirque face at the head of the valley, 4.5 km south of the float occurrence. The Archer, Cathro crew also relocated the Frohberg copper-nickel showing and collected a few specimens for analysis, one of which returned high PGE values. The property was inactive from 1977 until it was restaked by Kluane Joint Venture.

GEOMORPHOLOGY

The claims are located along the northeast edge of the Kluane Range immediately southwest of the broad, flat-bottomed Shakwak Valley. Local terrane is extremely rugged and includes parts of three cirque valleys that are floored by wasting alpine glaciers and associated moraines. The heads of the valleys are ringed by up to 600 m high cliffs, while the flanks are normally comprised of long steep talus slopes and smaller cliffs. Elevations range from 1500 m on the valley floor to 2500 m on the ridges separating the cirques. Aside from lichen, the area is unvegetated. One kilometre northeast of the property, the terrane abruptly flattens giving way to grass and moss covered, low rolling hills that form a transition zone between the mountains and the Shakwak Valley.

GEOLOGY

Regional

The Ultra property is located in Wrangellia, a suspected island arc assemblage that was one of several terranes accreted to the west side of North America during Mesozoic times. Rocks belonging to this terrane occur in a string of fault bounded slices that extend intermittently from Vancouver Island to central Alaska. In the Kluane area, the Wrangellia rocks are bounded on the northeast by the Shakwak Fault and the southwest by a series of interconnected sinusoidal faults that roughly parallel the Shakwak Fault.

All known nickel-copper-PGE showings in the Kluane area occur within or directly adjacent to Lower Triassic mafic to ultramafic sills. The sills intrude Pennsylvanian to Permian, Hasen Creek Formation clastic sedimentary rocks and limestone and conformably overlying Lower Permian Station Creek Formation andesitic volcanic and volcaniclastic rocks but do not intrude unconformably overlying Upper Triassic Nikolai Group basalt and limestone. Other intrusive rocks in the area include Upper Triassic gabbroic dykes and stocks that appear to be feeders to the Nikolai Group, Cretaceous plutons related to Coast Plutonic Complex and Oligocene porphyritic latite to trachyte dykes and plugs. No nickel or PGE mineralization is associated with the younger intrusives, however copper occurrences are common within and adjacent to them.

The larger Lower Triassic sills are strongly differentiated and typically exhibit a variety of mafic and ultramafic phases, or serpentinized equivalents, while the smaller sills are relatively homogeneous and are normally comprised of gabbro. Cumulate textures are common in the larger sills. Chemically the

rocks most resemble komatiites and are characterized by high TiO2:MgO ratios, low Fe:Mg ratios and anomalously high Mg, Ni, Cr and PGE backgrounds.

Property

Figure 2 illustrates the property geology which consists of northwest-trending, moderate southwesterly dipping, volcanic and sedimentary rocks that are intruded by several relatively small mafic and ultramafic sills.

The oldest rocks are Hasen Creek Formation phyllites and limestones. The phyllite (Unit Ps) is dark grey and graphitic and contains occasional calcareous interbeds plus a few green to buff non-calcareous horizons. The limestone (Unit Pc) is light to dark grey weathering, dark grey to black, non-fossiliferous and exhibits weak brecciation in a few areas.

The volcanic rocks (Unit Pv) are Station Creek Formation andesitic flows that include some pillowed and brecciated horizons. They weather to blocky, dark green talus and consist of 2% subhedral plagioclase phenocrysts in a medium to dark green, chlorite- and epidote-rich matrix. The unit is pervasively saussuritized and propylitically altered.

Two large ultramafic and several narrow mafic sills (Unit R̄ ub) have been identified on the property. The largest ultramafic body is 1800 m long, about 200 m wide and straddles the northeastern property boundary. Approximately 70% of the body's surface area is covered by the claims and it dips onto the property at depth. The other ultramafic is located 1500 m to the south and is totally covered by the claims. It is 400 by 200 m in plan and appears to be an erosional remnant. The mafic sills lie 300 to 500 m southwest of the larger ultramafic body and are oriented subparallel to it. They are mostly obscured by talus but appear to range from 1 to 10 m in width. Both ultramafic bodies

consist of dunite with lesser pyroxenite, serpentine and gabbro phases while the narrower sills are comprised solely of gabbro.

The dunite is typically dark green to rusty brown weathering, fine- to medium-grained, and hypidiomorphic. It consists of 60 to 70% subhedral olivine, 5 to 10% tabular orthopyroxene, 20 to 25% dark green serpentine and 3 to 5% primary and secondary, subhedral disseminated magnetite.

The pyroxenite is dark green, fine- to coarse-grained, hydromorphic and granular. It contains 15 to 25% coarse-grained anhedral to subhedral enstatite phenocrysts in a fine-grained groundmass of 60 to 70% subhedral olivine, 15 to 20% amorphous serpentine and 1% disseminated, anhedral magnetite.

Gabbro occurs at the southeast end of the larger ultramafic, along the northwestern end of the smaller ultramafic, and in the narrow sills. It is typically dark green to medium grey weathering, dark green on fresh surfaces, fine- to medium-grained, hypidiomorphic to xenomorphic, and relatively massive with no foliation or mineral layering. The rock is comprised of 70 to 80% subhedral plagioclase, 20% anhedral to subhedral, fine-grained interstitial pyroxene, up to 5% epidote after pyroxene, up to 5% hornblende and/or biotite and traces of fine-grained pyrite.

Serpentinite zones comprise about 30% of the ultramafic bodies and are characteristically medium to dark green, waxy and fine-grained. They contain 5 to 10% magnetite as primary disseminations and secondary stringers. Epidote- and quartz-rich skarn float was discovered in till downhill from the larger ultramafic bodies and appears to have originated from alteration zones in the sedimentary rocks adjacent to the sills.

MINERALIZATION

Trace to minor amounts of pyrite and/or pyrrhotite are found in most units on the property while traces of malachite occur in narrow shear zones on the margins of the ultramafic bodies. The only significant mineralization is at the Frohberg Showing which is located on the west side of a glacier about 50 m horizontally and 30 m vertically above an extensive lateral moraine, as shown on Figure 2. The showing is associated with the most southeasterly of a series of narrow gabbro sills that are largely obscured by phyllite and limestone talus. The mineralized sill is 2 m wide, intermittently exposed over a 40 m strike length and marked by a gossan. Contacts between it and adjacent quartz-flooded and locally skarnified wallrocks are usually sheared. Mineralization consists of 1 to 5% disseminated pyrite and pyrrhotite with traces of chalcopyrite in the sills, and 1 to 20% chalcopyrite, pyrite, pyrrhotite and rare sphalerite in quartz-carbonate veins cutting the sills and skarnified phyllite. Malachite and azurite commonly coat fractures in the wallrocks.

Table 1 on the following page lists assays obtained from specimens collected from the Frohberg Showing by Gaymont, Archer, Cathro and Big Creek. All samples were well mineralized and returned relatively high copper values (0.32 to 18.90%). The nickel assays were lower (0.03 to 1.85%) with the higher values coming from samples of the sill and the lower values from quartz veins and silicified country rocks. Platinum analyses returned anomalous but economically insignificant values except for one sample taken in 1977 which returned 1234 ppb (0.036 oz/ton). Palladium is more abundant (5143 ppb or up to 0.150 oz/ton) and is closely associated with nickel. One specimen of mineralized gabbro containing 300 ppb Pt and 1600 ppb Pd was analyzed for the complete suite of PGEs but returned only background values.

TABLE 1: ASSAYS FROM SAMPLE DESCRIPTIONS FOR SPECIMENS FROM THE FROHBERG SHOWING, ULTRA PROPERTY

Sample No.	% Cu	% Pb	% Zn	% Ni	oz/ton Ag	oz/ton Au	ppb Pt	ppb Pd	Description of Sample
Gaymont (1958)	18.90	NA	TR	0.40	0.22	0.10	NA	NA	Large chalcopyrite-rich partly weathered, aggregate of massive sulphides
Gaymont (1958)	1.15	NA	2.75	1.85	Nil	0.02	NA	NA	Massive pyrrhotite-chalcopyrite-sphalerite intergrowth
Gaymont (1958)	3.05	NA	Nil	0.11	Nil	Nil	NA	NA	Silicified host rock mineralized with pyrite, chalcopyrite and pyrrhotite
Gaymont (1958)	1.00	NA	Nil	0.21	Nil	Nil	NA	NA	Silicified host rock with scattered pyrite and chalcopyrite
Archer, Cathro (1977)	0.46	0.01	0.02	0.23	0.12	0.003	NA	NA	Quartz-carbonate with scattered chalcopyrite aggregates, malachite stained
Archer, Cathro (1977)	1.15	0.01	0.01	0.86	0.20	0.005	1234	5143	Fine-grained altered intrusive with disseminated chalcopyrite and pyrite
Big Creek (1987)	0.74	NA	NA	0.21	NA	TR	20	1900	Strongly malachite stained, quartz-flooded phyllite with minor disseminated pyrite, chalcopyrite and sphalerite
Big Creek (1987)	0.51	NA	NA	0.03	NA	TR	95	220	Limonite and manganese stained gabbro containing 10-20% disseminated pyrite and lesser chalcopryite
Big Creek (1987)	1.60	NA	NA	0.03	NA	TR	180	720	Limonite and malachite stained gabbro with 5-10% chalcopyrite and minor pyrite
Big Creek (1987)	0.52	NA	NA	0.08	NA	0.015	50	2200	Limonite, malachite, azurite and manganese stained white quartz with 3 to 5% chalcopyrite, mostly on fractures, and 10% pyrite
Big Creek (1987)	0.32	NA	NA	0.16	NA	TR	95	680	Disseminated pyrite, pyrrhotite and chalcopyrite in gabbro
Big Creek (1987)	0.90	NA	NA	0.10	NA	TR	300	1600	Disseminated pyrite, pyrrhotite and chalcopyrite in gabbro

NA - not assayed or not reported
TR - trace

ROCK AND SOIL GEOCHEMISTRY

A total of 126 soil and 43 rock samples was collected from the property during a series of prospecting traverses. All samples were sent to Bondar-Clegg & Company Ltd. in North Vancouver, B.C. where they were geochemically analyzed for copper and nickel using a hot nitric-hydrochloric acid extraction and atomic absorption finish, and gold, platinum and palladium using a fire assay preconcentration for direct coupled plasma-atomic emission spectroscopy (FA/DCP-AES).

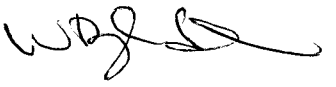
Figures 3 and 4 in the pocket illustrate results for copper and nickel, and platinum, palladium and gold, respectively. Most samples were taken directly over or downhill from ultramafic or mafic sills; and, therefore, copper and nickel values are generally high (100 to 300 ppm Cu and 300 to 1200 ppm Ni) reflecting the high backgrounds for these metals in those rocks. Platinum, palladium and gold produced uniformly low values except for samples taken from the Frohberg Showing which were described in the mineralization section.

CONCLUSIONS

Although the Ultra property covers several intrusions with the same age and chemistry as those that host the nickel-copper-PGE deposit at the former Wellgreen Mine, the only mineralization discovered to date (Frohberg Showing) is confined to one of the smaller satellite intrusions and is limited in extent. Specimens from the showing returned some high assays for copper, nickel and palladium but disappointingly low values for platinum and other PGEs. Reconnaissance soil and rock geochemistry did not outline any other targets. The only remaining exploration potential is for a buried deposit either downdip on the sills or beneath the glacier immediately southeast of the Frohberg Showing. Combined magnetic and electromagnetic surveys would be the most appropriate technique to test for such targets.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED



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W.D. Eaton, B.A., B.Sc.

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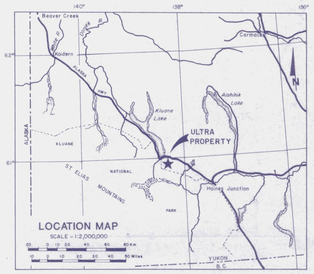
ULTRA CLAIMS

STAKED



LOCATION MAP

SCALE - 1:2,000,000

claim boundary

soil sample location and number

rock sample location and number

silt sample location and number

Figure 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

CLAIM AND SAMPLE LOCATIONS

ULTRA PROPERTY

BIG CREEK RESOURCES LTD.

KLUANE JOINT VENTURES

SCALE 1: 5000

0 50 100 200 300 400 500 Metres

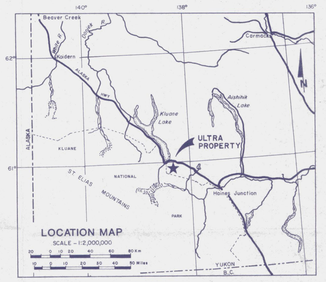
0 100 500 1000 1500

811

092130

To accompany report dated Feb 84

Cathro C
Feb 3/84



Pv — massive, dark to medium green, epidote rich meta-andesite

Pc — limestone;

Ps — undifferentiated sedimentary rocks, mainly grey graphitic calcareous and non-calcareous phyllite; rusty brown weathering, non-calcareous phyllite; minor brown weathering, light green pyritic tuff and volcanics

LOWER TRIASSIC

Trub — basic and ultrabasic rocks; unfoliated gabbro, dunite, pyroxenite and serpentinite;

- glacier
- glacial morraine
- approximate geological contact
- fault
- skarn
- outcrop
- sulphide showing
- soil sample and Cu, Ni in ppm.
- rock sample and Cu, Ni in ppm.
- silt sample and Cu, Ni in ppm.
- less than detection limit.

Figure 3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GEOLOGY AND Cu, Ni GEOCHEMISTRY

ULTRA PROPERTY

BIG CREEK RESOURCES LTD.
KLUANE JOINT VENTURES

SCALE 1:5000

0 50 100 200 300 400 500 Metres

0 100 500 1000 1500

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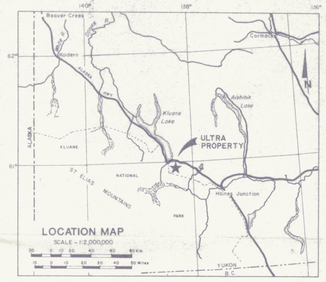
To accompany report dated [illegible]



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- sulphide showing
- soil sample and Pt, Pd, Au in ppb.
- rock sample and Pt, Pd, Au in ppb.
- silt sample and Pt, Pd, Au in ppb.
- less than detection limit.

Figure 4

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GEOLOGY AND Pt, Pd, Au GEOCHEMISTRY

ULTRA PROPERTY

BIG CREEK RESOURCES LTD.

KLUANE JOINT VENTURES

SCALE 1:5000

0 50 100 200 300 400 500 Metres

0 100 500 1000 1500

092130

To accompany report dated Feb '82

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FM 3/83

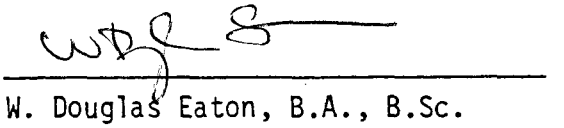
APPENDIX I

AUTHOR'S STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, W. Douglas Eaton, geologist, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in Burnaby, British Columbia, do hereby declare:

1. I graduated from the University of British Columbia in 1980 with a B.Sc.
2. From 1971 to present, I have been actively engaged in mineral exploration in British Columbia and Yukon Territory and on June 1, 1981, I became a partner in Archer, Cathro & Associates (1981) Limited.
3. I have personally participated in or supervised the field work reported herein and have interpreted all data resulting from this work.



W. Douglas Eaton, B.A., B.Sc.

APPENDIX II

LIST OF PERSONNEL

NAME	POSITION	DATES ON PROPERTY
I Talbot	Geologist	July 29-31
D. Parry	Fieldman	July 23-31
D. Eaton	Geologist	July 23, September 9
L. Cymbalisty	Fieldman	September 9
T. Becker	Fieldman	September 9