

ASSESSMENT REPORTS

WHITEHORSE M.D.

MAP No. 115 I 5 TYPE OF WORK: TRENCHING

REPORT FILED UNDER	Archer Cathro and Associates (1981) Ltd.	091619
DATE PERFORMED	Sept. 14-21, 1984	DATE FILED: March 15, 1985
LOCATION - LAT.	62°25'N	
LONG.	137°38'W	
CLAIM Nos.	FOX 1 Y80425	
	FOX 23 Y91074	
	BEAR 5 Y80435	
	CASH 1-13 YA82667-YA82679	
WORK DONE BY	M.P. Phillips	
WORK DONE FOR	Archer Cathro and Associates (1981) Ltd.	
REMARKS	The property straddles the contact of Paleozoic schists and gneisses with the Mid-Cretaceous granodiorite and feldspar porphyry intrusive complex that trends west-northwesterly from Freegold Mountain to Prospector Mountain (34 km) (Figure 1). The trend of this intrusive contact is parallel to the regional tectonic fabric and the Big Creek Fault (just north of the property).	

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FOX 85 / 217

Rocks over most of the property have been subject to pervasive phyllic and argillic alteration. Alteration is most intense in the feldspar porphyry dykes but is also extensive in the granodiorite and metamorphic rocks (Figure 1). Minor skarn occurs in the metamorphic rocks and ranges from pale calc-silicate horizons to a 15m (diameter) massive magnetite body.

Work in the 1970's outlined a 900 x 250m copper-molybdenum soil geochemical anomaly surrounded by a halo of anomalous lead, zinc, silver and gold values. Drilling at 500m centres tested the area, and the average of 16 holes gave a grade of 0.17% Cu, and 0.018% MoS₂. The "porphyry" type mineralization is associated with the Mid-Cretaceous feldspar porphyry dykes and plugs.

In 1984, a review was made of geochemistry and geophysics done in 1974 by Klotassin. In September two bulldozer trenches were cut on the east bank of Styan Creek (Figure 1) to test the west end of the soil gold geochemical anomaly. One trench exposed syenite cut by porphyry dykes. Adjacent to the dykes, syenite is strongly propylitized and minor chalcopyrite, malachite and azurite with traces of molybdenite and magnetite occur as disseminations within the syenite. The second trench exposed two phases of feldspar porphyry which are phyllitized. Disseminated pyrite and chalcopyrite occur with chlorite in the porphyries.

Chip samples from the trenches returned consistently strong anomalous gold values in the range of 79 to 253ppb Au, with strong copper and molybdenum values (110-2300ppm Cu and 21-131ppm Mo). All other metals were background to weakly anomalous.

ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

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ASSESSMENT REPORT
on
BULLDOZER TRENCHING
at
BEAR, FOX and CASH CLAIMS



NTS 115I/5

Latitude 62°25'N; Longitude 137°38'W

M.P. Phillips, B.Sc.

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

February, 1985

Work done between September 14 and 21, 1984

091619

INTRODUCTION

From September 14 to 21, 1984 Archer, Cathro & Associates (1981) Limited conducted a bulldozer trenching program at its Cash property. Two trenches were cut to test a broad gold anomaly outlined by a 1974 grid soil geochemical survey performed by Klotassin Joint Venture. The work was directed by M.P. Phillips and was done with a ripper-equipped Caterpillar D7E provided by E. Caron Diamond Drilling of Whitehorse. Appendix I contains the authors' Statements of Qualifications.

PROPERTY, LOCATION AND ACCESS

The property consists of 16 claims in an irregular but contiguous, northeast-trending block. They are registered in the name of Archer, Cathro & Associates (1981) Limited in the Whitehorse Mining District as follows:

<u>Claim Name</u>	<u>Grant Number</u>	<u>Expiry Date</u>
Fox 1	Y80425	1 February, 1989
Fox 23	Y91074	1 February, 1989
Bear 5	Y80435	1 February, 1989
Cash 1-13	YA82667-YA82679	1 February, 1990

The property is located on the south flank of Big Creek 75 km west-northwest of Carmacks, at latitude 62°25'N and longitude 137°38'W on NTS map sheet 1151/5.

The closest road suitable for two-wheel drive vehicles during summer conditions is the Freegold Road, which ends at the mouth of Mechanic Creek 17 km southeast of the Cash property. A bulldozer trail extends from Mechanic Creek to the property along the south side of Big Creek and can be used as a four-wheel drive winter road. A 500 m long winter airstrip is located 1 km north of the property.

In 1984, personnel and field equipment mobilized to and demobilized from the property on the bulldozer. Diesel fuel was flown in using a Trans North Turbo Air Ltd. Bell 206B helicopter based in Carmacks.

HISTORY

The occurrence was first staked as the Cash and Johnny claims in November, 1969 by E. Schiller and optioned to Atlas Exploration Ltd. which explored by silt sampling and mapping in 1970.

The west half was restaked as the Car claims in May, 1974 by the Carmacks Syndicate (Castlemaine Exploration Ltd., Welcome North Mines Ltd., W.M. Bath Investments Ltd. and Ventures West Capital Ltd.) and optioned to a joint venture between Western Mines Ltd., Belmoral Mines Ltd. and Cream Silver Mines Ltd., which conducted grid soil sampling and magnetic surveys in 1974, and drilled 12 holes totalling 1026.5 m in 1975. The east half was restaked as the Bear and Fox claims in August and September, 1974 by Klotassin Joint Venture (Newconex Canada Exploration Ltd., Marietta Resources International Ltd., and Molybdenum Corporation of America) which conducted a magnetic survey, grid soil sampling and hand pitting in 1974; and, constructed an airstrip and participated in an IP survey with Western Mines Ltd. et al in 1975. Klotassin Joint Venture optioned the Carmacks Syndicate property in 1976 and drilled 8 holes totalling 858.2 m in early 1977.

This work outlined a 900 by 2500 m copper-molybdenum soil geochemical anomaly surrounded by a halo of anomalous lead, zinc, silver and gold values. Drilling tested a 1050 by 2600 m area with holes at approximately 500 m centres. Ignoring four holes on the northwest side that were outside the deposit, the other 16 holes have an arithmetic average grade of 0.17% Cu and 0.018% MoS₂. The deposit is hosted by a variety of rock types but appears to be related to Middle Cretaceous feldspar porphyry dykes and plugs. It exhibits mineralogical and hypogene alteration patterns characteristic of most Cordilleran porphyry copper-molybdenum deposits.

Archer, Cathro acquired the Fox and Bear claims in 1981 when Klotassin Joint Venture disbanded. By 1984, all but three claims covering this deposit had lapsed and in July, Archer, Cathro added thirteen Cash claims to the three remaining Bear and Fox claims to cover an area that produced anomalous soil, silt and rock gold values.

PHYSIOGRAPHY

The property covers three distinct physiographic areas. The first, which occurs in the extreme northeast part of the property, is a 700 m wide swamp occupying the floor of the Big Creek Valley. The second lies immediately to the south and consists of a well drained, 450 to 650 m wide terrace that is separated from the swamp by an abrupt, 20 to 30 m high embankment. A more gradual break in slope marks the transition from the terrace to a long, gentle, north-facing hillside. All three areas are vegetated with sparse, stunted black spruce surrounded by either swamp grass or moss. Soils on the hillside are locally derived, except for a thin layer of volcanic ash which lies directly below the organic layer, while those on the terrace and in the swamp are fluvial in origin. Drilling has shown that the fluvial deposits average 20 to 30 m thick. North-flowing streams, such as Styan Creek which crosses the property, are actively depositing sediments in broad fans along the break in slope between the terrace and the hillside. Local elevations range from 850 m on the valley floor to 1400 m on a ridge top immediately south of the claims.

GEOLOGICAL SETTING

The Cash property lies on the south side of the Big Creek Fault near the northwest end of a 1 to 3 km wide, Middle Cretaceous intrusive complex that extends west-northwesterly from Freegold Mountain to Prospector Mountain, a distance of 34 km. The complex contains felsic intrusive rocks ranging from coarse-grained equigranular stocks through porphyry dykes and intrusive breccias to rare volcanic flows and tuffs. It parallels the regional tectonic fabric and the Big Creek Fault, and intrudes Paleozoic Yukon Group schists and gneisses, plus pre-Cretaceous intrusive rocks.

Units occurring on the property are described below from oldest to youngest and their distribution is shown on Figure 1 in the pocket. Most information on the map is based on rock fragments taken from soil sample pits, plus data from widely scattered outcrops and drill holes.

Pre-Cretaceous Country Rocks

Yukon Metamorphic Complex (Psn) - consists of Paleozoic quartz muscovite schist with minor marble and hornblende feldspar gneiss bands.

Big Creek Syenite (Jy) - exhibits coarse-grained hornblende and potash feldspar phenocrysts in a medium-grained feldspar matrix.

Cretaceous Igneous Rocks

Casino Granodiorite (Kgd) - is a medium- to coarse-grained, leucocratic rocks containing 1 to 5% biotite.

Feldspar Porphyry (Kfp) - is a leucocratic rock comprised of fine- to medium-grained potash feldspar, quartz and biotite phenocrysts in a microcrystalline groundmass. These rocks show characteristic hydrothermal alteration and occur in dykes and small plugs.

Mt. Nansen Group (Kmn) - consists of black to dark green, blocky weathering tuffs and volcanic breccias of andesitic composition.

Gabbro (Kgb) - occurs as coarse-grained hornblende diorite to gabbro plugs that were probably feeders to eroded Carmacks Group (Kcm) basaltic flows.

Rocks underlying much of the property exhibit pervasive phyllic to argillic alteration. The alteration is most intense within the feldspar porphyry dykes but is also extensively developed in the granodiorites and metamorphic rocks. Skarn zones are locally present within the metamorphic rocks and range from pale calc-silicate horizons to a 15 m in diameter massive magnetite body.

GEOCHEMISTRY AND GEOPHYSICS

Figure 2 in the pocket illustrates gold and silver values obtained from the 1974 Klotassion Joint Venture silt sampling and soil and rock geochemical grid surveys. The backgrounds are low for both metals and most samples returned values below the detection limits of 30 ppb Au and 0.3 ppm Ag. Weak, moderate and strong anomalous thresholds are considered to be 30, 50 and 100 ppb Au, and 0.5, 1.0 and 2.0 ppm Ag. The highest values were 260 ppb Au and 3.3 ppm Ag. Gold and silver values are closely correlated. Anomalous values form three clusters within a 2000 by 500 m, northeast-trending band that coincides with the zone of phyllic to argillic alteration. The highest gold values from silt samples (up to 190 ppb) were obtained from Styan Creek, which drains the west end of the soil anomaly.

Figure 2 also shows contours from a 1975 chargeability survey that was done over the deposit. The main anomaly is an area 700 by 600 m of greater than 30 millisecond response, which coincides with the west end of the soil gold anomaly.

TRENCHING

General

Two bulldozer trenches (84C1 and 84C2) were cut on the east bank of Styan Creek to test the west end of the soil gold geochemical anomaly. The trench locations are shown on Figures 1 and 2, while bedrock geology and gold values returned by chip samples taken from the trenches are illustrated on Figures 3 and 4 following this page. Trench 84C1 was cut near the collar of 1975 diamond drill hole W11 which averaged 0.15% Cu and 0.01% Mo across a total length of 64 m. Trench 84C2 lies 320 m due south of Trench 84C1 in an area that was not tested by diamond drilling.

Both trenches cut 1 to 2 m of frozen overburden consisting of a soliflucted mixture of rock fragments, indigenous soil, and contorted lenses of volcanic ash. Trench 84C1 was dug 0.5 m into bedrock for most of its length while Trench 84C2 was floored by broken rock fragments that appear to lie directly above the bedrock surface. A series of chip samples were taken along the floor of each trench at intervals ranging from 3 to 7 m. Each sample weighed about 10 kg. The samples were sent to Chemex Labs Ltd. in North Vancouver, B.C. where they were geochemically analyzed for gold and 14 other elements. Analytical techniques are described in Appendix II.

Results

Trench 84C1 exposed syenite that is cut by a series of porphyry dykes up to 7 m wide.

Adjacent to the dykes the syenite shows strong propylitic alteration with chloritization of hornblende and sausseritization of plagioclase. Fine, disseminated pyrite locally replaces chlorite and comprises up to 10% of the rock. Coarse pyrite occurs on most fractures and is partially weathered to limonite. Minor chalcopyrite, malachite and azurite, with traces of molybdenite and magnetite, occur as disseminations within the syenite.

LONGITUDINAL SECTION
SOUTH RIB



- Overburden: thin surface organic layer underlain by frozen, soliflucted volcanic ash and residual soil
- x Feldspar Porphyry: feldspar, quartz and biotite phenocrysts in micro-crystalline matrix
- + Syenite: coarse grained, foliated hornblende syenite often with coarse potassium feldspar phenocrysts

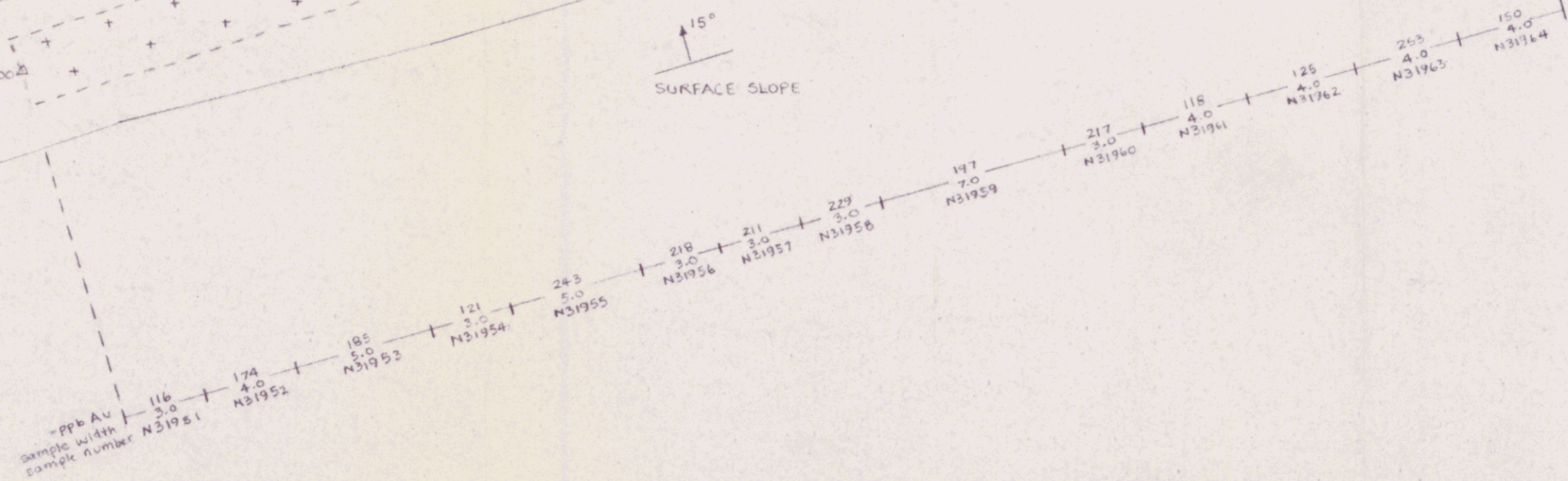
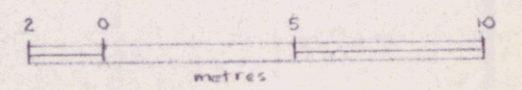
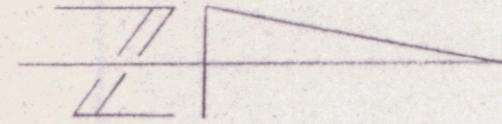




FIGURE 3
ARCHER, CATHRO & ASSOCIATES (1981) LTD.
TRENCH RESULTS
TRENCH 84C1
CASH PROPERTY
SCALE 1:200

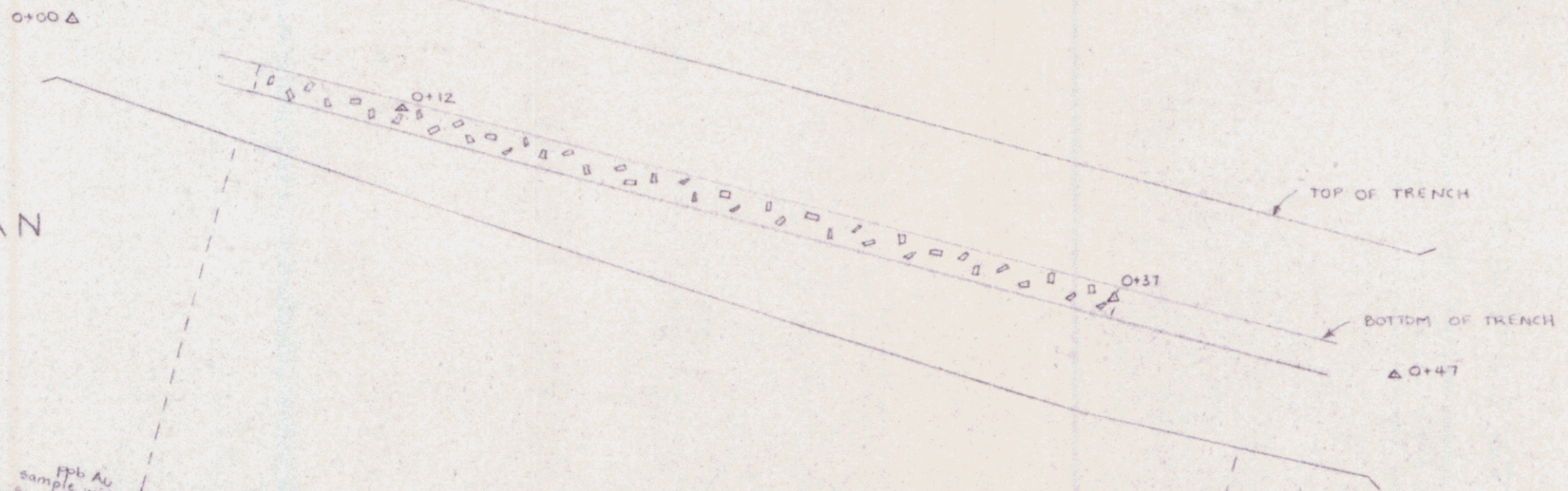


LONGITUDINAL SECTION
EAST RIB



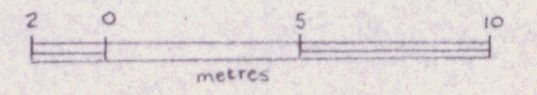
-  Overburden: thin surface organic layer underlain by frozen, soliflucted volcanic ash and residual soil
-  Feldspar Porphyry: feldspar, quartz and biotite phenocrysts in micro-crystalline matrix

PLAN



ppb Au	sample width	sample number
92	5.0	N31965
79	6.0	N31966
80	7.0	N31967
130	7.0	N31968
85	5.0	N31969
88	5.0	N31970

FIGURE 4
ARCHER, CATHRO & ASSOCIATES (1981) LTD.
TRENCH RESULTS
TRENCH B4C1
CASH PROPERTY
SCALE 1:200



The porphyry dykes exhibit a northerly trend and contain up to 10% fine-grained phenocrysts (quartz, potash and plagioclase feldspar and biotite) in a microcrystalline matrix. In some rocks, supergene alteration has altered the plagioclase to a soft, pale green clay. Disseminated pyrite locally comprises up to 5% of the rock but averages less than 1%. Disseminated chalcopyrite is present in trace amounts. Up to 1% molybdenite is found in rare surgical quartz veinlets and on dry fractures. Supergene alteration is weak and is limited to limonite on fractures.

Chip sample assays from this trench ranged from 116 to 253 ppb Au and produced a weighted averaged of 175 ppb Au. The values are relatively uniform over the length of the trench and do not show preferential concentration in either the porphyry dykes or the syenite wallrocks. ICP analyses returned less than 10 ppm As for all samples, 40 to 131 ppm Mo, 32 to 71 ppm Zn, 6 to 28 ppm Pb, less than 2 ppm Bi, 640 to 2300 ppm Cu and 1.2 to 2.2 ppm Ag.

Trench 84C2 exposed two phases of feldspar porphyry. The contact between the two is sharp with the rocks at the south end of the trench exhibiting a light colour and those at the north end a light to medium colour caused by increased limonite on fractures and a higher fracture density. The darker porphyry is locally brecciated. Both phases are composed of fine- to medium-grained phenocrysts (plagioclase with lesser quartz and minor potash feldspar and biotite) in a microcrystalline matrix. The rocks exhibit phyllic facies hypogene alteration with the plagioclase recrystallized to pervasive, white to pale green quartz-sericite and the biotite to dark green chlorite.

Supergene alteration is weak and is restricted to narrow envelopes around fractures. Disseminated pyrite (up to 5%) and chalcopyrite (up to 3%) occur with chlorite and are usually altered to limonite which averages 1% in the light porphyry and 3% in the darker porphyry. Manganese oxides and traces of azurite are limited to the darker porphyry, while trace of molybdenite in hairline to 5 cm wide quartz veins is restricted to the light porphyry.

Chip samples taken along the floor of the trench returned values ranging from 79 to 130 ppb Au and produced a weighted average of 93 ppb Au. ICP analyses were less than 10 ppm As for all samples, 21 to 31 ppm Mo, 22 to 130 ppm Zn, 36 to 64 ppm Pb, less than 2 ppm Bi for all samples, 110 to 805 ppm Cu and 0.8 to 2.2 ppm Ag.

DISCUSSION AND RECOMMENDATIONS

Soil geochemistry has outlined a 2000 by 500 m area of intermittent, moderate to strongly anomalous, gold response that coincides with a zone of phyllic to argillic alteration within Cretaceous granodiorite and porphyry dykes and plugs and adjacent pre-Cretaceous syenite and schist wallrocks. Chip samples from two bulldozer trenches, cut to bedrock near the west end of the geochemical anomaly, returned relatively consistent, strongly anomalous gold values in the range of 79 to 253 ppb (0.002 to 0.007 oz/ton). Copper and molybdenum values from the samples are also strongly anomalous ranging from 110 to 2300 ppm and 21 to 131 ppm, respectively. All other metals returned background to weakly anomalous values. The rocks exposed in the trenches exhibit hypogene alteration ranging from propylitic to phyllic facies and are relatively unoxidized.

Although values obtained from the trenches are subeconomic, only a small percentage of the area of interest was tested. The general geological setting is similar to that at most potential bulk tonnage gold targets in the Dawson Range, except that there is no leached cap. Further work is warranted and should be concentrated south of the 1984 trenching area as the geochemical anomaly is open in that direction and the depth of oxidation is likely to increase farther uphill.

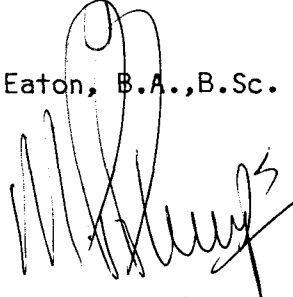
The exploration target is a deposit containing five to ten million tons grading 0.03 to 0.04 oz/ton Au. Such a deposit would have to be mineable by open pit techniques and suitable for extraction by heap leach methods. Thus, the deposit should be oxidized or must exhibit unusual mineralogy which makes the gold accessible to the cyanide solution without seriously affecting reagent consumption. The next phase of exploration should expand the grid geochemical coverage to the south. Subsequent follow-up would consist of additional bulldozer and excavator trenching.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

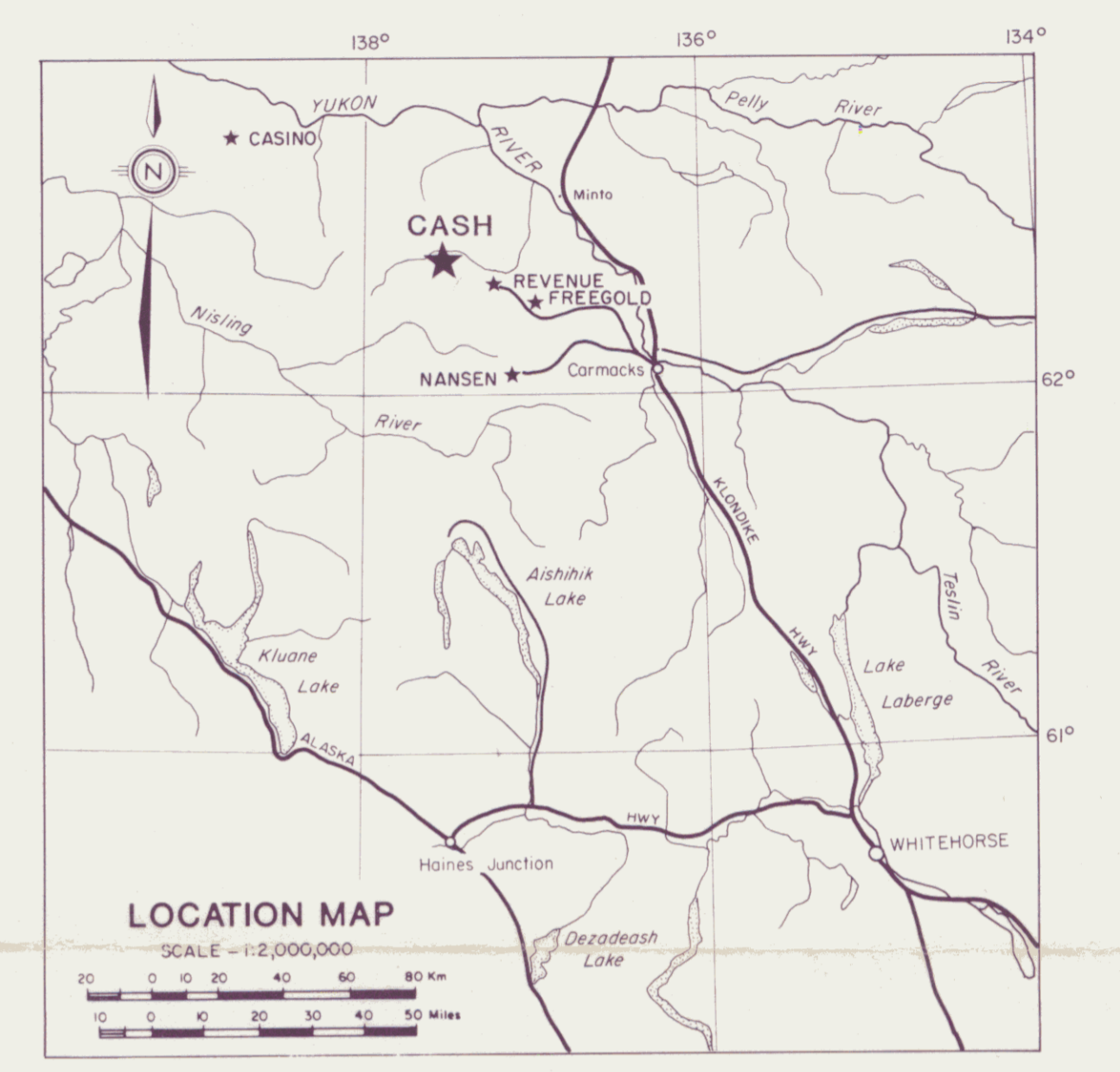
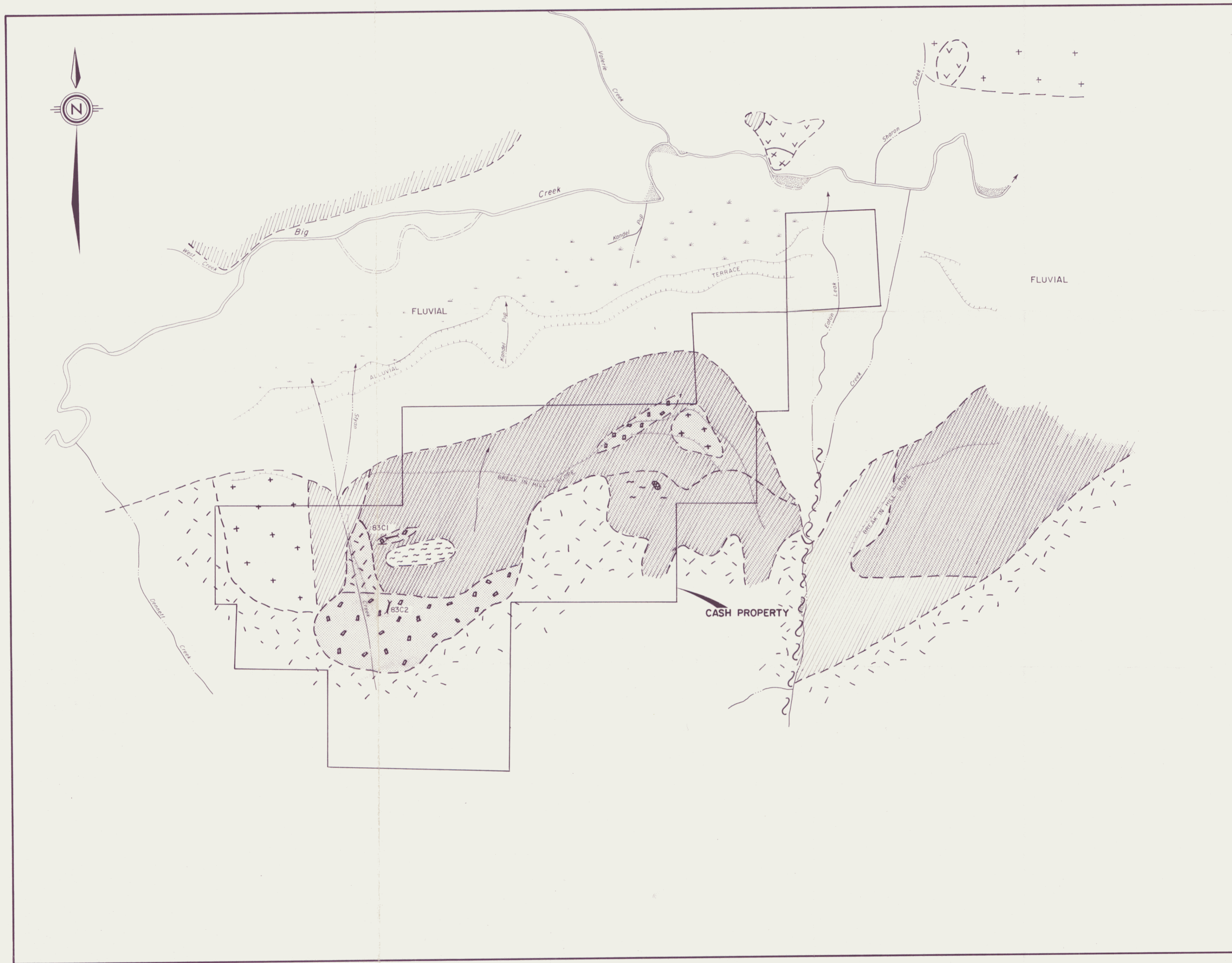


W.D. Eaton, B.A., B.Sc.



M.P. Phillips, B.Sc.

/mc



LEGEND

	Gabbro
	Mt Nansen Volcanics
	Feldspar Porphyry
	Granodiorite
	Syenite
	Yukon Metamorphic Complex
	Phyllic and/or Argillic Alteration
	Skarnification
	Massive Magnetite
	1984 Bulldozer Trench
	Property Boundary
	Fault
	Muskeg
	Gravel Bar

Figure 1
 ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

GEOLOGY

CASH PROPERTY



091619 *W. J. Cathro*

To accompany report dated February, 1985

APPENDIX I
STATEMENTS OF QUALIFICATIONS

CURRICULUM VITAE

M.P. (MIKE) PHILLIPS

Education

B.Sc. (University of Alberta), geology

Work History

Geologist, Union Corp., South Africa	1959-1965
Chief Geologist, United Keno Hill Mines Limited	1965-1968
Geologist and Whitehorse manager, Archer, Cathro & Associates (1981) Limited	1968 to present

Publications

Phillips, M.P. and Godwin, C.I.
1970: Geology and rotary drilling at Casino, Western Miner,
November, 1970

Other Activities

President, Yukon Chamber of Mines, 1973

CURRICULUM VITAE

W.D. (DOUG) EATON

Education

B.A., 1971 (University of Alberta), political science and economics
B.Sc., 1980 (University of British Columbia), geology
M.Sc., student (University of British Columbia), geology

Work History

Field Assistant, Archer, Cathro & Associates Limited,
uranium, copper, lead, zinc and tungsten exploration - 1970 to 1976
Project Supervisor, Archer, Cathro & Associates Limited,
uranium, lead, zinc and gold exploration - 1977 to 1981
Partner, Archer, Cathro & Associates (1981) Limited - 1981

Publications

Eaton, W.D.
(in prep.): Uranium mineralization in the Tombstone Batholith,
Yukon Territory; M.Sc. Thesis, University of
British Columbia
Eaton, W.D. and Archer, A.R.
(in prep.): Uranium mineralization in middle Proterozoic
Wernecke Supergroup, Yukon Territory; in, Gableman,
John W. (ed.), Unusual Uranium Deposits, American
Assoc. of Petroleum Geologists.

APPENDIX II
ANALYTICAL TECHNIQUES

GEOCHEMICAL PREPARATION AND ANALYTICAL PROCEDURES ICP-AES

Geochemical samples (soils, silts) are dried at 80° C. for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh. A 0.50 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% perchloric acid and concentrated nitric acid. Digestion time is 2 hours. Sample volume is adjusted to 25 mls. using demineralized water. Sample solutions are homogenized and allowed to settle before being analyzed by atomic absorption procedures. Detection limits using Yvon-Jobin 48P Inductively Coupled Plasma Atomic Emission Spectrometer.

<u>Element</u>	<u>Detection</u>	<u>Element</u>	<u>Detection</u>
Arsenic	10 µg/g	Molybdenum	1 µg/g
Bismuth	2 µg/g	Nickel	1 µg/g
Cadmium	0.5 µg/g	Phosphorus	10 µg/g
Cobalt	1 µg/g	Silver	1 µg/g
Copper	1 µg/g	Tungsten	10 µg/g
Iron	0.001%	Uranium	10 µg/g
Lead	1 µg/g	Vanadium	1 µg/g
Manganese	1 µg/g	Zinc	1 µg/g

Elements which exceed the upper limit for geochemical analyses should be assayed quantitatively.

GEOCHEMICAL PREPARATION
AND
ANALYTICAL PROCEDURES

1. Geochemical samples (soils, silts) are dried at 80°C for a period of 12 to 24 hours. The dried sample is sieved to -80 mesh fraction through a nylon and stainless steel sieve. Rock geochemical materials are crushed, dried and pulverized to -100 mesh.
2. A 1.00 gram portion of the sample is weighed into a calibrated test tube. The sample is digested using hot 70% HClO₄ and concentrated HNO₃. Digestion time = 2 hours.
3. Sample volume is adjusted to 25 mls. using demineralized water. Sample solutions are homogenized and allowed to settle before being analyzed by atomic absorption procedures.

GOLD NAA - NEUTRON ACTIVATION ANALYSES**

A 10 gm sample is fused in litharge, carbonate and silicious flux. The resulting lead button containing any gold in the sample is cupelled in a muffle furnace to produce a precious metals bead.

Sample beads, plus standard and blank beads are irradiated in a thermal neutron flux. The gamma emissions of the irradiated beads are counted utilizing a Ge (Li) detector and quantified for gold.

The detection limit for a 10 gm sample is 1 µg/kg (ppb).