GEOLOGY AND GEOCHEMISTRY REPORT, 1985

on the

SCAR 17-34 CLAIMS
+(1-16)

091805

Whitehorse Mining District

N.T.S. 104 D/3E

Latitude 60°09'N

Longitude 135°24'W

Owner: Noranda Exploration Company, Limited
(No Personal Liability)

Author: M.P. Webster

Date: April, 1986

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 $ ~~3,600~~ 6,000. 16 June 1986

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

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CHAPTER ONE: INTRODUCTION

1-1: INTRODUCTORY STATEMENT

The SCAR 17-34 claims were staked by Noranda Exploration Company, Limited (No Personal Liability) December 7, 1984 immediately adjacent to the SCAR 1-16 claims also held by Noranda to cover geology favourable to Au-Ag-Sb vein deposits in the Wheaton River area. Preliminary field work was conducted July 27, 28 and 30, 1985. Previous work done on SCAR 1-16 claims in 1984 outlined quartz float samples highly anomalous in Cu-Pb-Zn-Ag-Au and additional staking of the projected extent of the Tertiary rhyolite plug was done to the north and west of the original claim block.

The claims are underlain by Cretaceous granodioritic Coast Intrusion intruded by a Tertiary rhyolite plug. In the Wheaton River area, epithermal vein deposits are thought to be associated with high level Tertiary rhyolite intrusions distributed along fracture systems generated by the doming and subsidence of the Mt. Skukum caldera complex. Recent oxygen isotope studies conducted by Dr. Bruce Nesbitt at the University of Alberta indicate mesothermal and epithermal systems to be present in the Wheaton Valley. In broad terms, mesothermal type systems are found from Mt. Anderson southeast to the Venus Mine on Bennett Lake whereas epithermal type deposits occur from Mt. Anderson northwest to Mt. Skukum. Typically, epithermal type

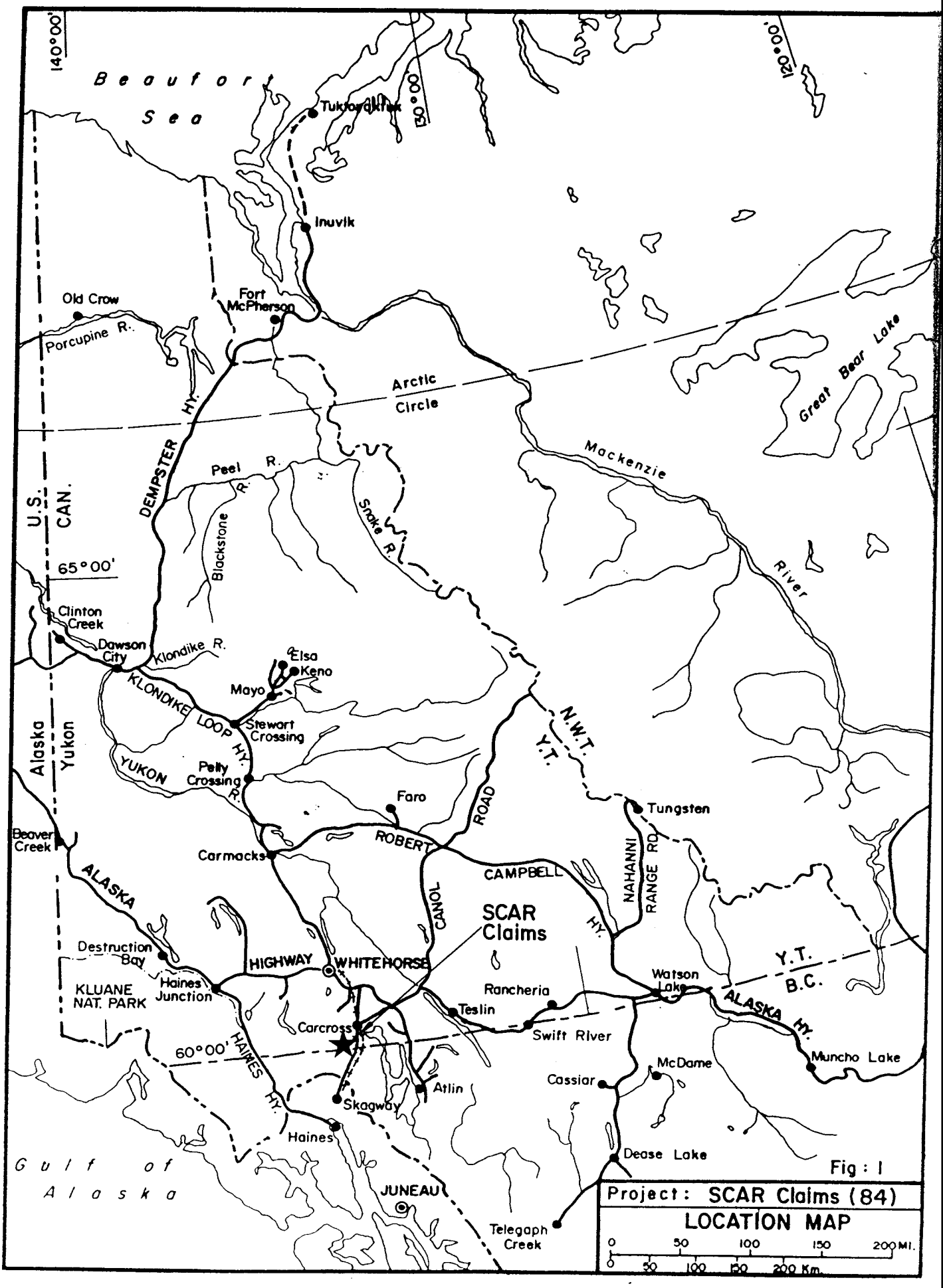
deposits contain very few base metal and have quartz-calcite-gangue minerals in the upper levels of the deposit. Mesothermal deposits commonly host disseminated to massive base metals within white "bull" quartz gangue materials.

The SCAR 17-34 claims cover zones of silicification bearing disseminated sulphides in rhyolitic and granodioritic host rocks. Rock geochemical results range up to 520 ppm Cu, 28000 ppm Zn, 2000 ppm Pb, 390 ppm Ag and 400 ppb Au in these zones. The Mt. Skukum epithermal gold deposit lies less than 2 kilometres northwest of the claims and Omni Resources Ltd. reports "significant" base and precious metal values in soil samples taken on the bordering claims immediately north of Berney Creek.

The mineralogy of the silicified zones is comparable to the relatively copper poor, Pb-Zn-Ag-Au anomalies found in the 1984 quartz float boulders approximately 1 km to the southeast along the rhyolite plug contact. Delineation of the rock and soil anomalies detected on the SCAR 17-34 claims to a presumed source of the quartz boulders along the Tertiary rhyolite contact is strongly recommended.

1-2: LOCATION and ACCESS

The SCAR 17-34 claim group is located 67 kilometres SW of Whitehorse at latitude 60°09'N and longitude 135°24'W on N.T.S. 1:50,000 map sheet 105 D/3E (Figure 1). The claims lie at the mouth of Berney Creek and the Wheaton River.



VANCAL 11926

Access to the property is provided by the Annie Lake road which comes to within 1 kilometre of the north tip of the claim block. Helicopter support was provided by Frontier Helicopters based on the Annie Lake Road at Butte Creek.

1-3: PHYSIOGRAPHY and VEGETATION

The Wheaton River area lies along the western flank of the Yukon plateau and immediately east of the Coast Ranges. The terrain varies from rolling hills to elevated plains incised by wide, deep u-shaped valleys with hanging valleys remaining from the Pleistocene glaciation.

The vegetation of the SCAR group is typical of the regional pattern. The Berney Creek valley is densely wooded with conifer, birch and willow. The treeline contours stream channels to an elevation of approximately 1,370 metres. Above this elevation, small stands of trees may be found in narrow stream valleys but the dominant vegetation cover is alpine grass, moss and lichen.

1-4: HISTORY of the PROPERTY

The SCAR 17-34 group was staked and recorded in Whitehorse December 7, 1984 (Figure 2). The claims were staked to cover one of the few remaining areas of favourable Tertiary Mt. Skukum rhyolite. Preliminary field work was conducted July 27, 28 and 30, 1985. This included soil, talus fines,

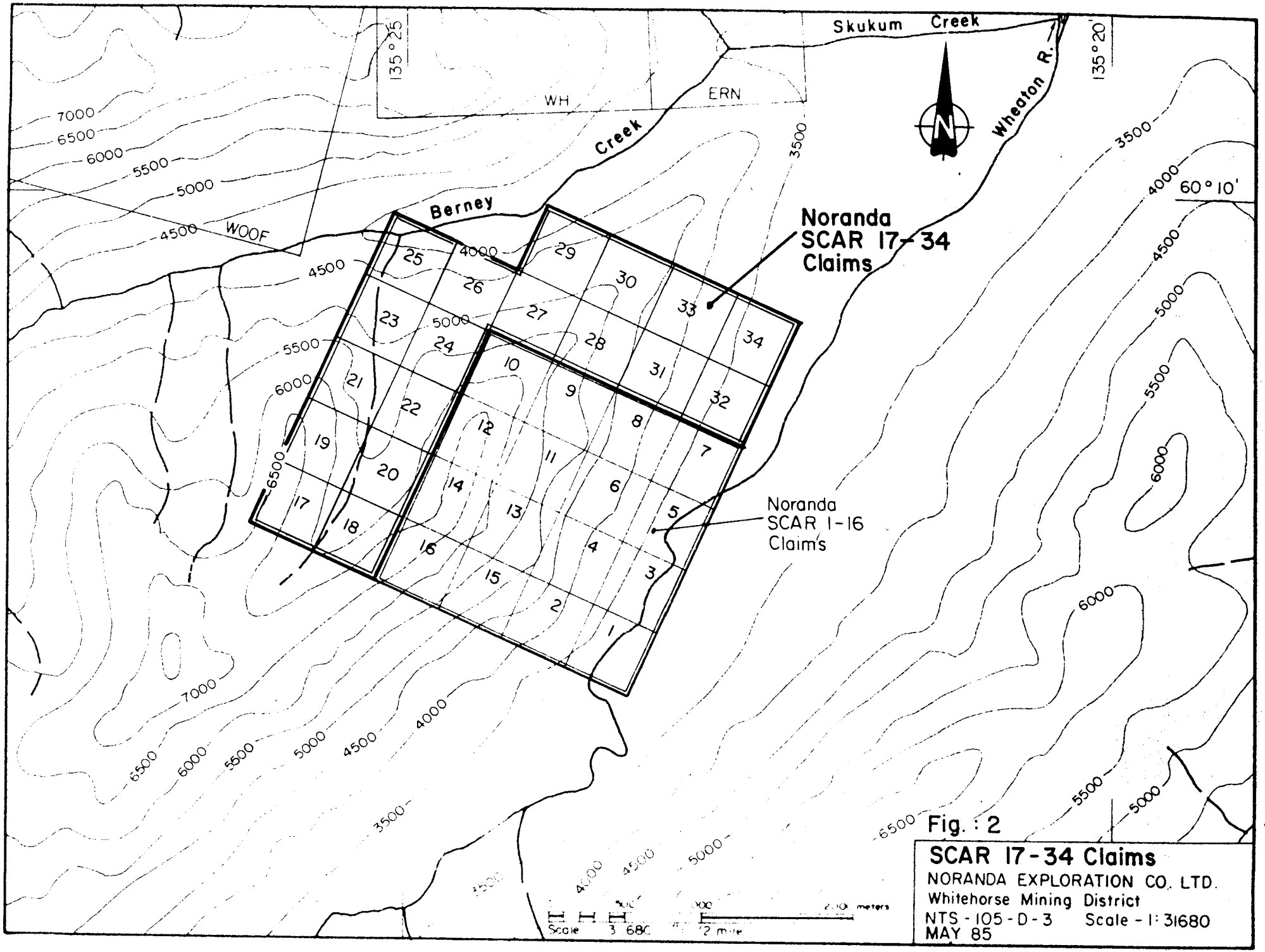


Fig. : 2

SCAR 17-34 Claims
NORANDA EXPLORATION CO. LTD.
Whitehorse Mining District
NTS - 105 - D - 3 Scale - 1: 31680
MAY 85

rock and stream geochemistry and geological mapping.

Claims and Ownership

Claim Name	Grant (Tag) No.	Date Claim Recorded	Expiry Date
SCAR 17-34 SCAR 1-16	YA86261-YA86278	December 7, 1985	December 7, 1987

Noranda Exploration Company, Limited (No Personal Liability) has 100% interest in each mining claim named above. Upon acceptance of this assessment report, the claims will be in good standing until December 7, 1987.

1-5: Work Program

Preliminary field work was conducted on the SCAR 17-34 claims July 27, 28 and 30, 1985. The work program included geological mapping, detailed rock, pan concentrate, soil and silt sample geochemistry. Geological mapping was done at 1:5,000 scale from airphoto and N.T.S. map 105 D/3E enlargements.

The exploration crew was camped at Mt. Anderson 4 kilometres south of the Wheaton River on a short trail leading southwest from Partridge Creek. Frontier Helicopters Ltd., based on the Wheaton River airstrip, provided helicopter support to work the southern part of the property and cliff areas.

A total of 30 rock, 65 soil and 4 silt samples were analyzed for Cu,

Pb, Zn, Ag, Mo and Au by perchloric nitric acid decomposition and Atomic Absorption methods by the Noranda laboratory in Vancouver. Two pan concentrate samples taken during this program were analyzed for Cu, Pb, Zn, Ag and Au. Expert climbing assistance is recommended for complete prospecting of the steep cliff face.

The personnel involved in the 1985 field program are listed below:

Mary Webster	Party Chief
Shirley Abercrombie	Senior Assistant
Stuart MacKenzie	Senior Assistant
Arthur Fekete	Junior Assistant

CHAPTER TWO: GEOLOGY

2-1: REGIONAL GEOLOGY

The geology and mineral potential of the area has been documented by D.D. Cairnes (1912, 1916), J.O. Wheeler (1961), and more recently by M.J. Smith (1979), M.B. Lambert (1974) and the Northern Cordillera Mineral Inventory (Archer, Cathro & Associates Ltd., 1981).

The oldest rocks in the region are the Precambrian metasediments of the Yukon Group (Table 1). The Yukon Group quartz-mica schists, feldspathic gneisses and crystalline limestone occur as a northwest trending belt intruded by granitic rocks of the Cretaceous Coast Intrusions. The Triassic Lewes River Group metavolcanic rocks and Jurassic Laberge Group metasediments unconformably overlie the Yukon Group and occupy the northeastern part of the Wheaton River area. The Lower Tertiary Skukum Group[1] is comprised of intermediate to felsic volcanic rocks which occur in the centre of the Wheaton River area and as part of the Bennett Lake complex 20 km to the south at the Yukon-B.C. border.

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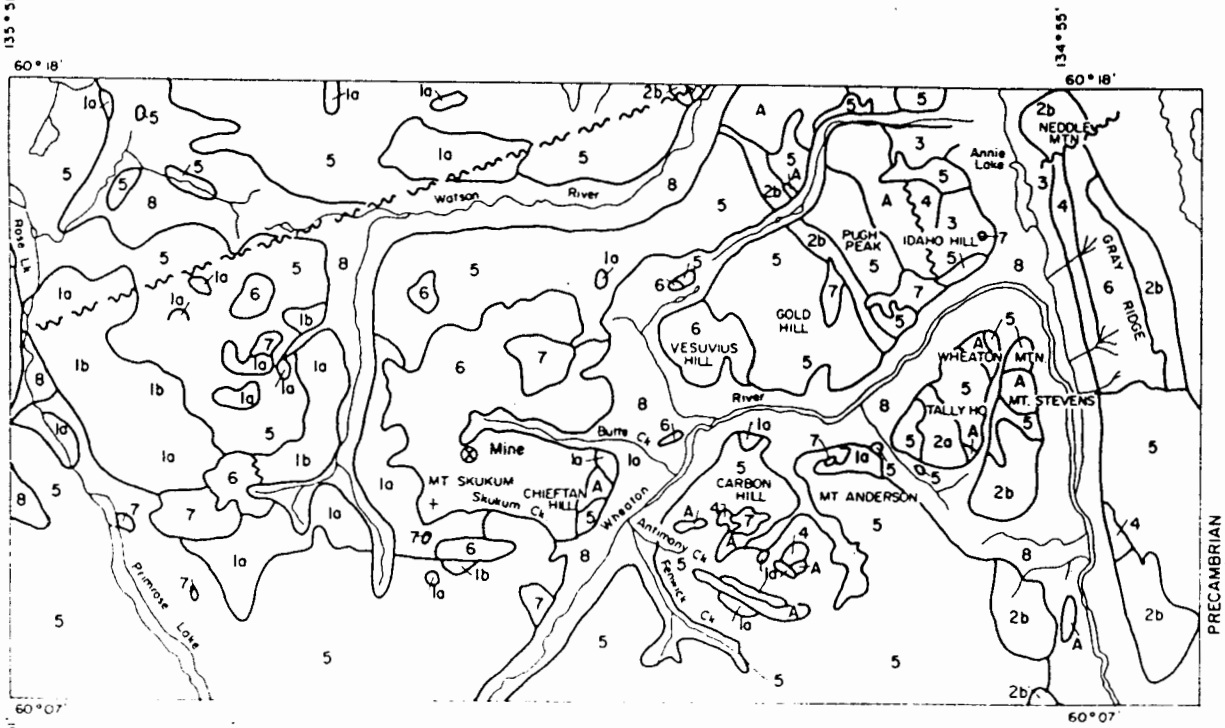
1. The Skukum Group volcanics have been described as the "Carmacks basalts" and "Wheaton River Volcanics" (Cairnes, 1912, p. 64 and 68), the "New Volcanics" and "Acid Volcanics" (Cockfield and Bell, 1926, p. 34), and recently as two groups subdivided into seven members of defined composition and texture (Pride, 1983, p. 94-104).

TABLE 1: TABLE OF FORMATIONS

ERA	PERIOD or EPOCH	FORMATION	LITHOLOGY
Cenozoic	Recent and Pleistoce		Glacial debris, loess, volcanic ash Basalt; minor pyroclastic rocks
		----------UNCONFORMITY----------	
	Tertiary		Granite Porphyry, Rhyolite
		----------INTRUSIVE INTO LOWER SKUKUM GP.-----	
		Skukum Group	Andesite, basalt, rhyolite, trachyte breccia, tuffs, flows. Granitic breccia, minor greywacke, sandstone and siltstone.
Mesozoic	Cretaceous	Coast Intrusions	Hbld-bio-oligoclase granodiorite diorite, granite, pegmatitic syenite
		----------INTRUSIVE CONTACT ----------	
		Hutshi Group	Basalt, andesite, porphyritic andesite, qtz latite & rhyolite flows, breccias and tuffs; minor greywacke, argillite; conglomerate locally at base
	Upper Jurassic	Tantalus Fm	Arkose, siltstone, congl. argillite, coal
	Lower Jurassic	Laberge Group	Conglomerate, greywacke, arkose quartzite, siltstone, argillite, hornfels
		----------UNCONFORMITY----------	
	Upper Triassic	Lewes River Group	Volcanic greywacke, siltstone, argillite, limestone breccia, conglomerate; volcanic breccia, agglomerate, tuff; andesite porphyritic andesite & basalt
Paleozoic	Pennsylvanian(?) & Permian	Taku Group	Limestone, breccia, chert; greenstone and (?) pyroclastic rocks
Precambrian		Yukon Group	Quartz-mica, qtz-chlorite and mica schists; quartzite, feldspathic hbld gneiss, amphibolite, epidote-amphibolite crystalline limestone; felds-pathic gneiss, lit-par-lit gneiss; gneissic porphyritic granodiorite & quartz diorite



SCALE

0 5 10 15 km

km

N

Legend

CENOZOIC

Quaternary

8 — Alluvium, glacial deposits, volcanic ash, loess.

Tertiary or Earlier

7 — Rhyolite

6 — SKUKUM GROUP
Andesite, basalt, rhyolite and trachyte breccia tuffs & flows, granitic conglomerate, minor greywacke.

MESOZOIC

Cretaceous

5 — COAST INTRUSIONS
Granodiorite, quartz diorite.

Jurassic (?) and Cretaceous

4 — TANTALUS FORMATION
Arkose, siltstone, conglomerate, argillite, coal.

Jurassic

3 — LABERGE GROUP
Greywacke, arkose, quartzite, conglomerate, siltstone, argillite, hornfels

Triassic

2 — LEWES RIVER GROUP
A) Limestone, limestone breccia.
B) Metamorphosed rocks

PRECAMBRIAN and LATER

1 — YUKON GROUP
A) Quartz-mica, quartz chlorite and mica schists, micaceous quartzite, gneiss, amphibolite
B) Crystalline limestone

A — Volcanic rocks of uncertain age

Fig. : 3

REVISED	WHEATON RIVER Property
	REGIONAL GEOLOGY (Modified from SMITH, 1981)
Petrol. No. II	SURVEY BY ____ DATE: MAY 85
N.T.S. 105 D	DRAWN BY AI SCALE ____
DWG No	NORANDA EXPLORATION
	OFFICE: Whitehorse

The Bennett Lake complex consists of a rhyolite to dacite ash flow, breccia and tuff volcanic package in part circumscribed by a high level rhyolite ring dyke with related intrusions. Lambert describes this complex as "two nested calderas, an eroded structural dome and a thick succession of pyroclastic and epiclastic rocks related to eruption, subsidence and filling of the cauldrons" (Lambert, 1974, p. 9).

Lambert suggested that the Skukum region may represent a second caldera complex with grossly similar geology and structural characteristics.

The Skukum complex occupies approximately 140 km^2 and is elliptical in plan. It is partially fault bounded and in places intruded by felsic dykes and stocks. A major north trending fault divides the Skukum ellipse into two parts which are made up of probably genetically related interlayered sedimentary-volcanic units. On the west side, andesitic flows, pyroclastic flows and sedimentary units up to 500 metres thick are found. The eastern block consists of altered pyroclastic, brecciated, flow banded and spherulitic felsic lava flows up to 800 metres thick. Cogenetic high level rhyolite to dacite intrusions punctuate the perimeter of the complex. These rhyolites are thought to represent late ring fracture intrusions associated with a caldera event (Pride, nee Smith, 1981).

Vein occurrences are spatially related to the ring structure in both the Bennett Lake and Skukum volcanic complexes. This mineralization is thought to be linked to hydrothermal and structural events of late stage caldera development.

2-2: DETAILED GEOLOGY

Geological mapping at the 1:5,000 scale of the SCAR 17-34 group indicates that the oldest rocks in the area are granodiorite to quartz monzonites of the Coast Intrusions. The Cretaceous Coast Intrusions are cut by numerous porphyritic basalt dykes at azimuths which range from 090° to 160° and dip from 24°N to 60°S. The dyke contacts are in general well defined and unaltered. Granodiorite is the dominant host rock which contains dioritic phases up to 150 metres wide. Rhyolite dykes occur frequently adjacent to the major rhyolite plug and are accompanied by basalt dykes and diorite phases of the Coast Intrusions. Rhyolite dykes (1-2 metres wide) intrude granodiorite to diorite host rocks on the south and west sides of the property, however these dykes become less frequent and decrease in width distal to the major rhyolite "plug" intrusion.

The Tertiary rhyolite plug up to 1000 metres in width and over 650 metres in height intrudes the granitic Coast Intrusion and is exposed on the southeast cliff face of the adjacent SCAR 1-16 claim group and on SCAR 22, 24, 26 and 27 claims. Contacts of the plug are sharp with little evidence of brecciation. Small zones of silicification, commonly containing >10% disseminated pyrite with varying amounts of sphalerite, galena and chalcopyrite found within the rhyolite plug, are in general accompanied by basalt dykes. Two major zones of silicification, accompanied by subparallel basalt dykes, are mapped in the central and north part of the property at the north to northwest contact of the rhyolite plug. Silicic alteration,

mineralization and gossanous zones are found within 10 metres of the rhyolite-granodiorite contact. Silicified Cretaceous granodiorite crops out north of the rhyolite contact and contains sulphides with minor malachite stain and Fe oxides.

Quartz veins (a few millimetres to 0.5 metres in width) or weak quartz stockwork occurs in close proximity to the rhyolite-granodiorite contact which is locally stained with manganese and limonite, and displays carbonate and/or "clay-like" alteration.

Rock Descriptions

Coast Intrusions:

Medium to coarse grained, grey to pinkish, equigranular granodiorite. Biotite (up to 10%) generally dominates over hornblende. Euhedral to subhedral quartz grains; K-feldspar and mafic minerals are subhedral. Intense alteration of K-feldspar to grey clay masses and leaching of mafics near rhyolite-granodiorite contact. Disseminated, trace to 5%, pyrite blebs or euhedral grains <3 mm in diameter are common.

Rhyolite:

Aphanitic to saccharoidal pale brown, beige to white rhyolite porphyry. Up to 15% clear to grey subhedral phenocrysts, 2-3 mm diameter. There are less than 5% mafic minerals, chiefly biotite which is commonly chloritized near contacts. Minor clay alteration of anhedral feldspar grains. Local calcareous, manganese and/or limonite alteration. Magnetite (up to 25%), specular hematite (up to 10%) and pyrite are noted near rhyolite-granodiorite contact. Small rhyolite stocks and dykes occur locally.

Late Intrusions

Aplite Dykes:

White to buff coloured dykes 0.15 to 25 metres wide of fine-grained to saccharoidal equigranular quartz and alkali feldspar. 1-5% pyrite (cubes up to 2 mm diameter). Contacts sharp, some muscovite along contacts.

Porphyritic Dykes:

Felsic: Rhyolitic to granitic textures. Very fine grained to saccharoidal, quartz and feldspar phenocrysts <0.5 cm diam., occasional pyrite, local calcareous and/or limonite alteration. Contacts sharp, minor muscovite along fractures and contacts.

Mafic: Dark green to black, very fine grained basalt. Siliceous and calcareous alteration, minor pyrite. 1-5 mm diam. subhedral quartz phenocrysts.

Quartz Veins:

Range in width from a few millimetres to 0.5 m in width. Occur near rhyolite-granodiorite contact. Clear grey to white, massive to vuggy texture. Hematite, chlorite, carbonate, sericite alteration intensity is variable. Local specular hematite, sphalerite, pyrite usually <10% and disseminated. Minor leaching at vein contacts.

CHAPTER THREE: GEOCHEMISTRY

A reconnaissance prospecting, geological mapping, soil, pan concentrate and rock sampling program was carried out on the SCAR 17-34 claims. Sampling of the Tertiary rhyolite intrusion, associated rhyolite, basalt and aplite dykes, quartz veins, shear zones and contacts was emphasized. Geochemical results and rock sample descriptions are listed at the back of this report in Appendices 1 and 2 respectively. Sample locations are plotted on Figure 5.

3-1: STREAM SAMPLING PROGRAM

A total of 3 silt and 2 pan concentrate samples were taken from the north draining stream on the west side of the property. Anomalous zinc values range from 94 to 360 ppm Zn in silt (S69651, 54, 55, 70270) and 150 to 290 ppm Zn in pan concentrate samples (H69652-53). Coincident silver anomalies range from 0.4 to 3.0 ppm Ag in silt and 0.4 to 0.8 ppm Ag in the pan concentrate samples. Silt sample (S69655), taken below the small lake at the north end of the property, ran 80 ppb Au. Pan concentrate sample (H69653), taken below the rhyolite plug approximately 1 kilometre upstream from the lake, ran 60 ppb Au. The fourth silt sample (S70270), taken in a small west draining tributary, ran 360 ppm Zn, 320 ppm Pb, 3.0 ppm Ag and 16

ppm Mo. This sample was taken immediately west of the south rhyolite-granodiorite contact which was anomalous in Pb and Ag in soil samples taken along the ridge top.

3-2: SOIL GEOCHEMISTRY

A total of 65 soil samples were taken along 3 soil lines at 25 and 50 metre intervals.

Soil lines 1 and 2 (north) were sampled at approximate 25 metre intervals on the north part of the claims and outline significant Pb-Zn-Ag-Au anomalies. Line 1 (north) has coincident anomalous values from 0+00W to 8+75W which range from 210 to 610 ppm Zn, 100 to 820 ppm Pb, 0.4 to 3.0 ppm Ag, up to 110 ppm Mo and 190 ppb Au. Stations 6+75W to 7+50W have coincident anomalies which range from 400 to 470 ppm Zn, 770 to 820 ppm Pb, 1.6 to 3.0 ppm Ag and 40 to 110 ppm Mo. Two gold anomalies occur at stations 6+75W and 7+25W which ran 100 ppb Au and 190 ppb Au respectively. Gold anomalies of 50 ppb Au, 20 ppb Au and 30 ppb Au are found at stations 1+50W, 1+75W and 2+75W with coincident anomalous values ranging up to 370 ppm Zn, 150 ppm Pb and 2.2 ppm Ag.

		Zn	Pb	Ag	Au
Line 1	6+00	660	620	1.4	10
	+25	430	290	1.0	10
	+50	610	480	1.0	10
	+75	470	770	1.8	100
	7+00	450	820	1.6	10
	+25	400	780	2.6	190
	+50	450	800	3.0	10
	8+75	330	300	2.4	10

Line 2 (north), 0+00 to 5+75N, is located approximately 200 metres north and downslope from line 1 (north). Significant coincident Zn-Ag (Au, Pb) anomalies are found at stations 3+25-4+50W and at 5+25W on line 2. These values are listed below.

		Zn ppm	Pb ppm	Ag ppm	Au ppb
Line 2	3+25W	180	88	0.6	10
	3+75W	240	140	1.8	10
	4+00W	160	62	0.6	30
	4+25W	130	56	0.6	10
	4+50W	150	76	1.2	50
	5+25W	380	170	2.4	10

Intermittent Zn-Pb-Ag-Au anomalies occur on line 2 (west) on the south part of the claims. This line trends northeast along the central ridge of the claims and crosses the south contact of the rhyolite plug at station 9+00N (approximately). Station 9+50N and 9+00N have anomalous Pb-Zn-Ag (Au) values which run 340, 760 Zn; 360, 1400 ppm Pb; 5.0, 35.0 ppm Ag and 20, 10 ppb Au respectively. Anomalous Pb-Zn-Ag (Au) values occur in close vicinity to a rhyolite dyke contact at stations 6+00-6+50N which range up to 200 ppm Zn, 200 ppm Pb, 1.6 ppm Ag and 20 ppb Au. Station 2+50N has values of 390 ppm Zn, 140 ppm Pb and 2.2 ppm Ag taken near a brecciated rhyolite dyke bearing minor pyrite. The highest gold value of 180 ppb Au accompanied by 150 ppm Zn and minor Pb-Ag values is found in soils overlying Yukon Group metasediments at station 1+00N at the south border of the claims. Two independent soil samples (P70267-68) taken near station 6+25N ran up to 100 ppm Zn and 1.2 ppm Ag.

3-3: ROCK GEOCHEMISTRY

A total of 30 rock samples were analyzed for Cu, Pb, Zn, Ag, Mo and Au during this preliminary work program on the SCAR 17-34 claims. All arsenic values reported in 1984 were less than 2 ppm As therefore this analysis was not done in 1985.

Four anomalous areas have been identified as follows:

1. south rhyolite plug contact,
2. north rhyolite plug contact,
3. mineralized, silicified granodiorite along line 2 (north) at station 5+25W,
4. silicified rhyolite 200 metres southwest of line 1 (north), 8+75W.

In area 1, a weak silver anomaly ranging up to 2.6 ppm Ag was found in samples R70269, 69692, 93 with the coincident Pb-Zn-Ag soil anomaly which ran 760 ppm Zn, 1400 ppm Pb and 35.0 ppm Ag on line 1 (west) at 9+00N. An intensely weathered red-yellow gossan occurs at the contact between the Tertiary rhyolite plug containing disseminated pyrite within quartz veinlets and the Cretaceous granodiorite to the south.

Area 2 at the north rhyolite contact was resampled and proved anomalous in silver and weakly anomalous in zinc and gold (also noted in 1984). Bleached rhyolite containing up to 5% disseminated pyrite crosscut by numerous quartz stringers has geochemical results as follows:

	Zn	Ag	Au
R70095	90	1.4	10
R70096	140	19.0	80
R35405 (1984)	240	2.4	30

Quartz float boulders found in 1984 downslope to the east of this contact ran as high as 9600 ppm Cu, 76000 ppm Zn, 19000 ppm Pb, 530.0 ppm Ag and 400 ppm Au.

Area 3 occurs on line 2 (north) at an approximate elevation of 5,000 feet at station 5+25W. Pervasive silicification, narrow quartz stringers and numerous mafic dykes penetrate fine to medium grained granodiorite. Sample R70452 is reported to carry 5% pyrite, 2-3% sphalerite and less than 2% galena disseminated throughout the granodiorite. The three samples taken from the most intensely silicified portion of the outcrop ran as follows:

	Cu	Zn	Pb	Ag	Au
R70451	24	290	120	4.8	300
R70452	520	28000	2000	390.0	400
R70453	28	290	180	11.0	180

Coincident Au, Ag, Pb, Zn soil anomalies occur on line 2 (north) up to 125 metres east of the silicified granodiorite showing.

Area 4 is described as intensely silicified rhyolite cut by numerous quartz stringers and mafic dykes. Precious metal enhancement ranges from 4.2 to 6.0 ppm Ag and 40 to 50 ppb Au in samples R70273 and R70272 respectively. Up to 5% disseminated pyrite occurs throughout the fractured rhyolite and minor Fe oxides coat the weathered surface in this zone. Gold anomalies found in soil samples taken along line 1 (north) at stations 6+75W and 7+25N are approximately equidistant between anomalous areas 3 and 4.

CHAPTER FOUR: MINERALIZATION

4-1: REGIONAL SUMMARY

Three mineralized vein types have been described in the Wheaton River area by Cairnes (1912), Cockfield and Bell (1944) and Wheeler (1961). These are gold-silver, antimony-silver and silver-lead deposits.

Gold-silver veins are found as fissure type veins in the Cretaceous granitic Coast Range intrusions on Wheaton Mountain and Mt. Anderson. Mt. Stevens and Gold Hill host gold-silver vein deposits in the greenschist facies rocks of the Lewes River Group associated with granitic intrusions. Both vein occurrences are compositionally uniform and structurally persistent. The dominant sulphides are pyrite and galena. Minor native gold and gold-silver tellurides may be present in the quartz or calcite gangue components.

Antimony-silver veins are typically hosted by Coast Range intrusions and old volcanic rocks of uncertain age cut by porphyritic granitic rhyolitic dykes. Quartz is the dominant gangue mineral with significant calcite and barite. Argentiferous stibnite is the chief metallic mineral yet galena, sphalerite, jamesonite, tetrahedrite, arsenopyrite and other Ag-Pb-Sb sulphides may be present.

The silver-lead veins parallel the bedding planes of the Laberge Group greywackes on Idaho Hill. These tabular or podlike replacement deposits host argentiferous arsenopyrite and galena with minor pyrite, sphalerite and

chalcopyrite. Quartz and/or calcite are the dominant gangue minerals.

Recent oxygen isotope studies conducted by Dr. Bruce Nesbitt (pers. comm.) at the University of Alberta describes two modes of mineralization in the Wheaton River area. Mesothermal type vein deposits are identified on Mt. Anderson, Tally Ho Mountain, Mt. Stevens, Idaho Hill and south to the Venus Mine on Bennett Lake. A change and possible overprinting of isotope signatures occurs somewhere in the vicinity of Mt. Anderson. Epithermal type deposits occur on Mt. Anderson, Carbon Hill, Vesuvius Hill and Mt. Skukum. In general quartz-calcite-barite gangue mineral assemblages with very few sulphides are associated with the epithermal systems whereas white "bull" quartz veins, pervasive silicification and massive base metals typify mesothermal systems.

4-2: LOCAL MINERALIZATION

Base and precious metal enhancement appears to be linked to zones of pervasive silicification in both rhyolitic and granodiorite host rocks. Commonly quartz stringers and presumed younger basalt dykes appear associated with the silicification. Sulphides, usually subhedral in form, occur disseminated throughout the zone of silicification and do not appear to be confined to vein or fracture systems. Pyrite, sphalerite, galena and minor chalcopyrite have been observed as massive blebs and disseminations throughout hand specimens. Quartz float boulders, located in 1984 east of the north rhyolite plug contact, are commonly heavily stained with manganese

and iron oxides. Less brilliant, reddish to orange oxides are observed on the weathered surfaces of the silicified zones located on the SCAR 17-34 claims. Base and precious metal values observed on soil lines 1, 2 (north) and to the southeast (R70272, 73) indicate copper poor, lead-zinc-silver-gold anomalies to occur over a possible strike length of 800 metres along the north edge of the property. Mapping and sampling of the west ridge of the property recovered no significant mineralization or anomalies.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

Preliminary field work done on the SCAR 17-34 claims indicates significant Pb-Zn-Ag-Au anomalies located in rock and soil samples taken from pervasive zones of silicification in rhyolitic and granodioritic host rocks. The claims are underlain by Cretaceous granodiorite intruded by a high level Tertiary rhyolite porphyry plug. In close vicinity to the rhyolite plug contact, numerous rhyolite dykes may be accompanied by quartz veins, basalt dykes and minor intrusive breccia.

Mineralization is found in zones of intense silicification which do not appear to be confined to definite vein or fracture systems. Pyrite, galena, sphalerite and minor chalcopyrite are observed in hand specimens with rock geochemical results ranging up to 520 ppm Cu, 28000 ppm Zn, 2000 ppm Pb, 390.0 ppm Ag and 400 ppb Au (R70452). Multi-element anomalies occur in rock and soil anomalies on the north edge of the property over a possible strike length of 800 metres. Highly anomalous quartz float boulders, found in 1984 southeast of the property, range up to 9600 ppm Cu, 76000 ppm Zn, 19000 ppm Pb, 530.0 ppm Ag and 400 ppb Au.

Detailed follow-up mapping, prospecting and sampling is strongly recommended. Systematic soil, talus fines and rock sampling should be carried out on the north edge of the property. An attempt to link mineralized zones of silicification to a possible source of the 1984 mineralized quartz float boulders and delineation of the rhyolite-

granodiorite contact to the north should be undertaken in 1986.

The Mt. Skukum gold deposit lies less than 2 kilometres northeast of this property. Omni Resources Ltd. has completed a major drilling program on the Mt. Reid Au showing/WH claims and discovered a new vein. Two high grade shoots, partially delineated to date, average 0.4 opt Au across 5 feet. Reserves are approximately 25,000 tons already in these shoots, both of which are open at depth and one of which is open along strke. This new vein has been tested for only a fraction of its strike length whereas the two original high grade Au-Ag-Pb-Zn veins have barely been drill tested as yet.

Respectfully submitted,

Mary P. Webster

Mary P. Webster
Field Geologist

Berney Creek

Noranda SCAR 17-34 Claims

Noranda SCAR 1-16 Claims

Wheaton River

Tree Cover

Py, Sph, Ga ± Cpy

Granodiorite Talus

Rhyolite Talus

Granodiorite Talus Diorite Talus

60° 09'

135° 24'

0 100 200 400 metres

Legend

QUATERNARY

4 Alluvium, loess, volcanic ash, minor glacial debris.

UNCERTAIN AGE (Younger than Tertiary)

3 Intrusives : (3a) Aplite dyke. (3b) Pegmatite dyke. (3c) Basalt dyke.

TERTIARY

2 Rhyolite, granite porphyry. (2a) Rhyolite dyke.

CRETACEOUS

1 Coast Intrusions
Hbld – bio – oligoclase granodiorite. (1a) Diorite.

Symbols

- Outcrop
- Geological contact (real, assumed, gradational)
- Bedding
- Joint fracture
- Schistosity
- Gossan, clay alteration
- Silicification
- Qv Quartz vein
- Bx Brecciation

091805

Fig. : 4

REVISED	SCAR Claims
	(SCAR 17-34 Claims)
	Geology
PROJ. No. 84	SURVEY BY: DATE: MAR 86
N.T.S. 105 D 3W	DRAWN BY: AI SCALE: 1 5000
DWG. No.	NORANDA EXPLORATION
	OFFICE: Whitehorse

Berney Creek

Noranda SCAR 17-34 Claims

Line 2 (N)

Line 1 (N)

Line 1 (W)

Noranda SCAR 1-16 Claims

Wheaton River

S69655

S69654
H69653

S69651
H69652

S70270

R72501

R72502

R72503

R7045I-56

R70271

R70273

R70272

R70095

R70096

R69603

R69602

R69601

R69600

R69599

R69598

R69693

R70269

R69292

R69691

P70267

P70268
R69690

R69689

R69688

R69687

R69686

R69685

4500

5000

5500

6000

6500

4000

3500

60° 09'

135° 24'

0 100 200 400 metres

x Rock (R)

● Silt (S) and/or Pan conc. (H)

▲ Soil (P)

Soil line

091805

Fig.: 5

REVISED	SCAR Claims
	Sample Location Map
PROJ. No. 84	SURVEY BY: DATE:
N.T.S. 105 D 3 W	DRAWN BY: AI SCALE: 1:5000
DWG. No.	NORANDA EXPLORATION
	OFFICE: Whitehorse

REFERENCES

Buchanan, L.J., 1981. Precious metal deposits associated with volcanic environments in the southwest.

Cairnes, D.D., 1912. Wheaton District, Yukon Territory. G.S.C., Mem. 31.

Cockfield, W.E. and Bell, A.H., 1944. Whitehorse District, Yukon. G.S.C., Paper 44-14.

Northern Cordillera Mineral Inventory, 1981. Archer, Cathro and Associates.

Pride, M.J. (nee Smith), 1983. Interlayered sedimentary-volcanic sequence Mt. Skukum volcanic complex; Yukon Exploration and Geology 1983, pp. 94-104.

Smith, M.J., 1981. The Skukum volcanic complex, 105DSW: Geology and comparison to the Bennett Lake Cauldron complex; Yukon Exploration and Geology 1982, pp. 68-72.

Wheeler, J.O., 1961. Whitehorse map-area, Yukon Territory. G.S.C., Mem. 312.

STATEMENT OF QUALIFICATIONS

I, Mary P. Webster, of the City of Whitehorse, Yukon Territory do hereby certify that:

1. I have been employed as a Geologist by Noranda Exploration Company, Limited (No Personal Liability) since May 1984.

2. I am a graduate of McMaster University, Hamilton, Ontario with a B.Sc. in Geology.

3. I am a member of the Prospector's and Developers Association and the B.C. and Yukon Chamber of Mines.

4. I supervised and carried out part of the work described in this report.

Mary P. Webster

Mary P. Webster
Field Geologist
Noranda Exploration Co. Ltd.
(No Personal Liability)

STATEMENT OF COSTS

PROJECT: SCAR 17-34 Claims

Labour:		
12 mandays at 126.50 per day		1,518.00
Food and Accommodation:		
12 mandays at 45.00 per day		540.00
Transportation:		
Vehicle Rental/gas		234.33
Helicopter - 3.7 hrs		1,806.75
Geochemistry:		
Analysis		1,150.40
Shipment		187.70
Report Preparation:		
5 mandays at 126.50 per day		632.50
	TOTAL	$6,069.68

DETAILS OF ANALYSIS COSTS

Element	No. of Determinations	Cost per Determination	Total
Cu	119	1.60	190.40
Zn	119	.60	71.40
Pb	119	.60	71.40
Ag	119	.60	71.40
Au	119	4.00	476.00
Mo	119	.60	71.40
Sample Preparation:			
Silt and Soil	69	.50	34.50
Rock	30	1.00	30.00
Pan Concentrate	2	1.50	3.00
Data Entry	119	1.10	130.90
		TOTAL	$1,150.40

APPENDIX 1

SAMPLE DESCRIPTIONS

SAMPLE DESCRIPTIONS

SCAR 17-34 CLAIMS

SAMPLE	LOCATION AND DESCRIPTION	TYPE
R69598	Rhyolite Dyke - white weathered surface, grey fresh surface, fine-grained, pyrite blebs (up to 8 mm in diameter, avg. 5 mm), 2% of rock, blocky and fractured, irregular contact	Grab
R69599	Rhyolite Dyke (164/64E) - rusty weathered surface, fresh surface pale grey, pyrite - fine-grained, dissem. up to 2 mm, 2% of rock	Grab
R69600	Felsic Dyke - fine-grained, grey rock, trace fine-grained disseminated pyrite, minor quartz veins, 1 mm wide oriented parallel to dyke	Grab
R69601	Rhyolite - fresh surface patchy, light grey and dark grey, fine-grained, pyrite in 2 mm blebs and in 1 mm veinlets, overall 2-3% pyrite, trace chalcopyrite, 1 mm bleached haloes around some pyrite grains	Float
R69602	Rhyolite - rusty weathered surface, pale grey fresh surface, trace pyrite fine-grained, disseminated, outcrop broken and fractured, quartz eyes 2 mm diameter, 5% of rock	Grab
R69603	Granodiorite with Quartz Veins - grey weathered surface, locally rusty, 3 quartz veins (1.5, 3.0 and 1.0 cm wide), blue grey colour, rusty section of vein in contact with granodiorite, pyrite - fine-grained, disseminated in qtz veins, trace, granodiorite fine-grained, slightly altered, kaolinized feldspar quartz 20% of rock, mafics altered to chlorite	Float
R69685	Rhyolite dyke - moderate rusty stain on weathered surface, buff coloured, fine-grained massive surface	Chip 10 m
R69686	Granodiorite, limonite stain, medium-grained equigranular, slight chlorite and clay alteration	Grab
R69687	Rhyolite Dyke - as per 69685	Chip 5 m

R69688	"Igneous breccia" - greenish granodiorite matrix with clasts of basalt and granodiorite, subangular to sub-rounded to 3 cm in size, clasts matrix supported 20% of rocks, strong chlorite alteration throughout	Grab
R69689	Rhyolite Dyke as per 69685 and 69687	Chip 3 m
R69690	Quartz Float - white-grey, glassy coarse qtz in yellowish soil probably limonitic rhyolite as wall rocks, no visible sulphides	Grab talus 5 cm
R69691	Quartz fragments in talus near rhyolite/granodiorite contact, white-light grey, massive qtz, weak limonite stain on weathered surface	Grab talus 10 cm
R69692	Rhyolite, possibly aplite dyke, equigranular qtz and feldspar 1-2 mm in size, no visible sulphides	Grab
R69693	Rhyolite; gossanous, deep red-yellow stain of weathered surface, fine-grained, buff coloured fresh surface	Grab
R70095	Rhyolite, bleached, minor Fe staining on surface, 5% dissem. py in subhedral form (1 mm across), clear qtz eyes (1-2 mm across), located near contact with granodiorite	Subcrop
R70096	Rhyolite, silicified, cut by numerous subparallel narrow qtz veins over 1 m width. Quartz veins consist of grey to clear crystalline qtz ranging 2 mm to 2 cm in width, veins may contain fragments of rhyolite. 165°/75°W (fracture). 2% dissem. py in rhyolite and in qtz veins, located near contact with granodiorite near 35405 from 1984 survey	Outcrop Grab
R70269	Rhyolite, white to light grey with micro veinlets of dark grey quartz (1 every 2 cm), minor 1% dissem. pyrite throughout	Float
R70271	Quartz float; glassy grey-white coarse grained quartz, 4 cm thick, no visible mineralization, probably from pegmatite (K-spar/qtz)	Talus float 4x10x15
R70272	Rhyolite with dark grey quartz stringers throughout, most less than 1 mm in width; up to 5 mm in width, density approx. 2-3/cm, no visible sulphides	Grab talus

R70273	Rhyolite with moderate silicification and weak sericite alteration on fracture surfaces, weak rusty stain on weathered surface	
R70451	Very, very silicified granodiorite, approx. 5% dissem. py (anhedral), one patch of massive sphalerite (2 cm across), Fe stained surface, no mafics left	Float 40x20x20 cm
R70452	Similar to 70451, silicified granodiorite with a 1 cm wide qtz vein, 150/15°SW, adjacent mafic dykes, 5% dissem py, 2% sphalerite in massive blebs on margin of vein, <2% dissem galena within vein (1 mm blebs)	Outcrop Grab 2 m
R70453	Very silicified granodiorite with ~8% dissem. py and trace cpy.	Float 30x10x10
R70454	Basalt Dyke - green weathered surface, dark grey green fresh surface, trace dissem. py	Outcrop 6-55 cm
R70455	Granodiorite; silicified, adjacent to R70452, medium-grain, equigranular, 2% magnetite, minor Mn stain	Outcrop Grab
R70456	Quartz Float - granodiorite host, vuggy, anhedral to euhedral SiO_2 crystals, clay alteration, trace py, galena, manganese stain, open cavities	Float 15x10x5 cm
R72501	Quartz Vein Float - white amorphous qtz, minor sericite, no visible sulphides. Line 2 - 4+25W	Float 10x10x15
R72502	Quartz Vein Float - grey +/- white, banding with trace of dissem. py. Line 2 - 4+50W	Float 10x10x5
R72503	Quartz Vein Float - similar to R70456. Line 2 - 5+25W	Float 5x5x10

APPENDIX 2

GEOCHEMICAL RESULTS

NORANDA EXPLORATION COMPANY, LIMITED
SCAR 17-34 - GEOCHEMICAL RESULTS

SAMPLE NO.	Cu ppm	Zn ppm	Pb ppm	Ag ppm	Mo ppm	Au ppb
SOILS:						
Line 1 (north)						
0.00	38	210	140	.4	6	10
.25	58	240	120	1.2	6	10
.50	64	310	110	1.8	6	10
.75	64	240	100	.8	8	10
1.00	98	250	120	1.2	10	10
1.25	86	260	110	1.6	10	10
1.50	120	330	140	1.2	12	50
1.75	100	370	150	2.2	10	20
2.00	70	290	170	1.0	10	10
2.50	68	250	130	.8	8	10
2.75	88	310	160	2.0	6	30
3.75	40	530	330	1.4	8	10
4.50	44	430	280	1.4	12	10
4.75	42	530	440	1.6	12	10
5.00	44	400	340	.8	16	10
5.25	38	300	270	.4	16	10
5.75	42	290	250	.8	16	10
6.00	58	660	620	1.4	2	10
6.25	42	430	290	1.0	10	10
6.50	50	610	480	1.0	14	10
6.75	62	470	770	1.8	110	100
7.00	72	450	820	1.6	56	10
7.25	78	400	780	2.6	40	190
7.50	140	450	800	3.0	48	10
8.50	38	430	330	.8	40	10
8.75	48	330	300	2.4	50	10
Line 2 (west)						
0.00	28	160	120	.4	1	10
.50	42	82	44	.4	1	10
1.00	48	150	68	.4	1	180
1.50	30	140	46	.4	1	10
2.00	28	130	92	.6	1	10
2.50	48	390	140	2.2	1	10
3.00	26	140	26	.4	1	10
3.50	24	94	20	.2	1	10
4.00	34	220	110	.2	1	10
4.50	16	30	16	.2	1	10
5.00	16	56	18	.2	1	10
5.50	24	72	38	.4	1	10
6.00	26	200	200	1.0	1	10
6.50	18	160	120	1.6	6	20
7.00	14	50	32	.2	1	10
7.50	38	100	200	1.0	1	10
8.00	26	62	90	.4	1	10
8.50	32	98	72	.6	12	10
9.00	16	760	1400	35.0	2	10
9.50	54	340	360	5.0	10	20

SAMPLE NO.	Cu ppm	Zn ppm	Pb ppm	Ag ppm	Mo ppm	Au ppb
Line 2 (north)						
0.00	18	110	48	.4	2	10
.50	20	80	36	.4	1	10
1.00	34	190	68	.4	2	10
1.50	24	140	140	.4	1	10
2.00	22	100	50	.4	2	10
2.50	28	170	76	.4	4	10
2.75	28	150	58	.4	4	10
3.25	34	180	88	.6	4	10
3.75	40	240	140	1.8	6	10
4.00	34	160	62	.6	8	30
4.25	26	130	56	.6	6	10
4.50	44	150	76	1.2	4	50
4.75	56	150	80	1.2	6	10
5.00	34	160	84	1.4	2	10
5.25	62	380	170	2.4	6	10
5.50	42	270	80	.6	4	10
5.75	40	300	230	1.0	6	10
P70267	28	100	88	1.2	4	10
P70268	32	92	58	2.6	4	10
ROCKS:						
69598	6	40	12	.4	1	10
69599	20	60	16	.6	1	10
69600	4	30	10	.2	1	10
69601	230	220	8	1.2	10	10
69602	14	40	16	.2	1	10
69603	46	1100	460	11.0	12	20
69685	16	40	62	1.0	1	10
69686	34	100	44	.6	1	10
69687	6	30	26	.2	1	10
69688	12	180	48	.6	1	10
69689	8	90	26	.4	1	10
69690	6	20	22	.4	1	10
69691	4	10	10	.2	1	10
69692	8	20	16	.2	1	10
69693	8	30	28	.6	2	10
70095	16	90	66	1.4	1	10
70096	92	140	50	19.0	1	80
70269	4	40	30	2.6	1	10
70271	4	20	10	.4	1	10
70272	18	130	56	6.0	2	50
70273	12	40	32	4.2	12	40
70451	24	290	120	4.8	6	300
70452	520	28000	2000	390.0	1	400
70453	28	290	180	11.0	1	180
70454	10	180	32	1.6	1	10
70455	22	200	32	1.2	1	10
70456	30	470	280	9.0	4	40
72501	6	30	28	.8	1	10
72502	12	50	1600	25.0	1	40
72503	16	190	180	2.2	1	10

SAMPLE NO.	Cu ppm	Zn ppm	Pb ppm	Ag ppm	Mo ppm	Au ppb	
SILTS:							
69651	34	120	64	.8	1	10	
69654	34	94	20	.4	1	10	
69655	22	140	42	.6	2	80	
70270	72	360	320	3.0	16	10	
PAN CONCENTRATES:							wt./g
69652	14	290	40	.4		10	13.3
69653	12	150	26	.8		60	40.4