



ASSESSMENT REPORT

for the

BUG 1-4 Claims

Whitehorse Mining District

N.T.S. 105 D/8

Latitude 60°22'N

Longitude 134°12'W



091860

This report has been examined and found to be in accordance with the provisions of the Yukon Act and is hereby approved as a valid assessment report for the purposes of the Act.

Regional Manager, Exploration and Geological Services Commission of Yukon Territory

Author: M.P. Webster

Date: June, 1986

DATE DUE



091860



008100

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 \$ 800.00.

DD Emond

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

008100

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CHAPTER ONE: INTRODUCTION

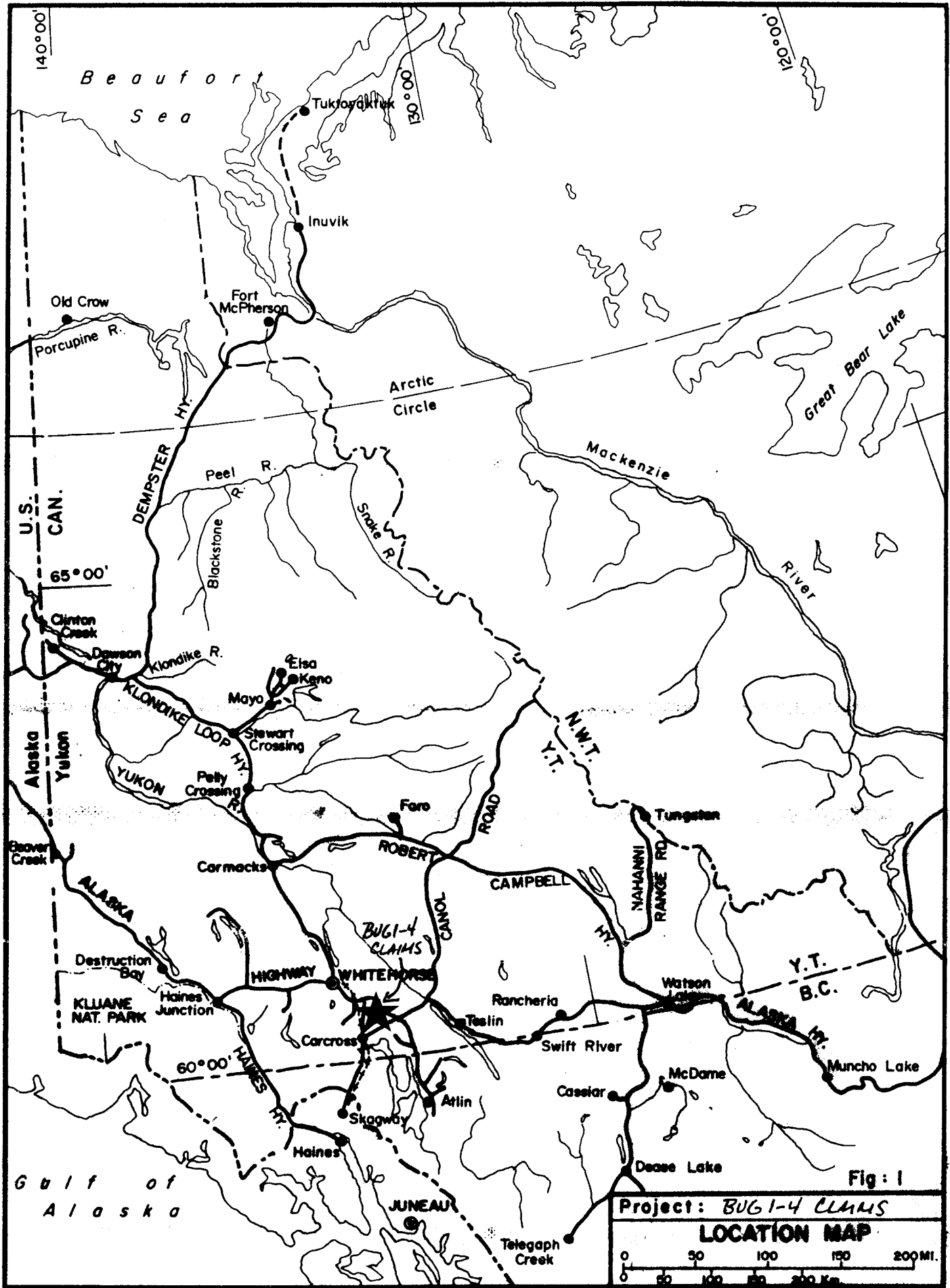
1-1: INTRODUCTORY STATEMENT

The BUG 1-4 claims were staked to cover quartz-carbonate stringer stockwork zones in a mariposite rich, carbonitized volcanic unit. Old workings on the property include two packsack drill holes (1972), numerous shallow pits and cleared trails as well as relict timbers near a small asbestos showing north of the property. Up to 2.0 g/t Au is reported to have been found in the drill core presently stored at the D.I.A.N.D. core library in Whitehorse. The extent (over 3 km) of the mariposite unit and its association with known gold deposits in the Northern Cordillera such as such as Muddy Lake, B.C. and the Erickson Gold Mine in Cassiar, B.C. prompted a small soil survey and prospecting examination of the property by Noranda Exploration Company, Limited (N.P.L.) in June, 1986.

1-2: LOCATION and ACCESS

The BUG 1-4 claims are located on N.T.S. mapsheet 105 D/8 at 60°22'N, 134°12'W approximately 5 kilometres west of the Judas Creek campground approximately 70 kilometres southwest of Whitehorse on the Alaska Highway (Figure 1).

Access is provided by a single lane, two wheel drive road directly to the property to the west of Judas Mountain.



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1-3: PHYSIOGRAPHY and VEGETATION

The vegetation cover on the property is largely comprised of moderately dense conifer and poplar trees, alpine moss and shrubs on outcrop and marsh grasses in the swamp west of the claims.

The property lies at approximately 2,400' (731 m) elevation with a ridge on the east side of the claims trending northwest approximately parallel to the 2,500' (762 m) contour on Figure 2.

1-4: HISTORY of the PROPERTY

The property was probably staked as Copper Bell claim (258) in May, 1898 by J.A. Collins. Restaked as GNM claim (90774) in September, 1964 by P.R. Gosselin; Dymax claim (Y4958) in April, 1966 by Dymax EL; and Mineral Claim claim (Y9854) in August 1966 by P. Gosselin. Dymax EL conducted minor trenching in 1967. The GNM and Mineral Claim were explored 1964-71 with hand trenching, a 5 foot adit and a 15 foot packsack drill hole and 2 holes (685 feet) in 1972 and were transferred in 1978 to M. Larocque. Restaked as FM and MF claim (YA74218) in November, 1981 by G. McLeod and optioned to Shakwak ECL, which performed mapping and a mag survey in 1982 and added Bon claim (YA78229) to the northwest in August, 1983. The 1981 staking was prompted by reanalysis of the old core, which returned assays of 1.6 and 2.0 g/t Au from fractured and altered volcanic rocks. W. Harris restaked the FM and MF claims as Bog claim (YA81122) in December, 1983. G. McLeod restaked

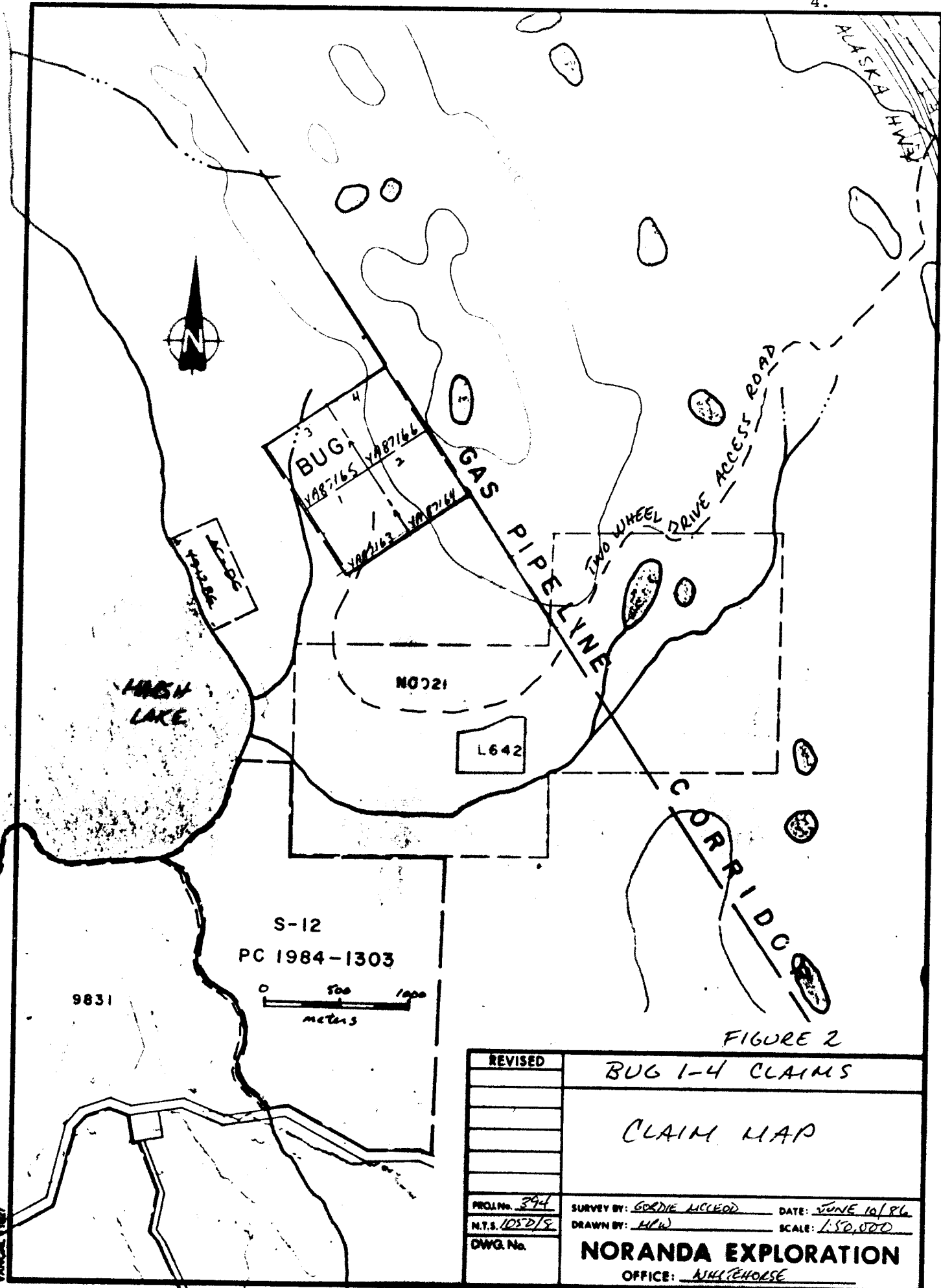


FIGURE 2

REVISED	BUG 1-4 CLAIMS	
	CLAIM MAP	
PROJ. No. 374	SURVEY BY: GORDIE MCCLEOD	DATE: JUNE 10/86
N.T.S. 1:50,000	DRAWN BY: HW	SCALE: 1:50,000
DWG. No.	NORANDA EXPLORATION	
	OFFICE: <u>NILKTEHORSE</u>	

VANCOUVER

the FM and MF claims as Bug 1-4 (YA87163) on June 10, 1985. Prospecting, soil sampling and rock sampling was done June 5, 10 and 11, 1986 by Noranda Exploration Company, Limited (N.P.L.).

CHAPTER TWO: GEOLOGY2-1: REGIONAL GEOLOGY

The formations of the Whitehorse map area range in age from Precambrian to Quaternary and recent. The oldest unit of the mapsheet is the late Paleozoic and/or Precambrian Yukon Group metasediments most commonly within Cretaceous Coast Plutonic Complex granitic rocks. Volcanic rocks of uncertain age, mapped by J.O. Wheeler (1961) as a northwest trending belt west of Marsh Lake, are now reported by Dr. Bruce Ballentyne (GSC, pers. comm.) to be "much older" than previously thought and probably Precambrian in age.

The east margin of the Coast Plutonic Complex forms the west boundary of the Mesozoic Whitehorse trough which extends southeast from south central Yukon into northern British Columbia. The trough is a synclinorium with basal Upper Triassic Lewes River Group and Taku Group strata exposed along the margins with Lower to Middle Jurassic clastic strata of the Laberge Group (including the Takwahoani and Inklin Formations) at its centre. The tectonic history of the trough includes numerous Triassic volcanic events which initiated deposition in the trough, a period of deformation with uplift in the late Jurassic, compressive deformation in the early Cretaceous and events of intrusion and volcanism in late Cretaceous and early Tertiary times (Bultman, T.R., 1979). The Mid-Cretaceous Hutshi Group comprised of

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----- Granite Porphyry, Rhyolite
	Tertiary	Skukum Group	-----INTRUSIVE INTO LOWER SKUKUM GP.----- 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
	Upper Triassic	Lewes River Group	-----UNCONFORMITY----- 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; feldspathic gneiss, lit-par-lit gneiss; gneissic porphyritic granodiorite & quartz diorite

flat lying volcanic and sedimentary rocks and the younger (possibly contemporaneous) Skukum Group volcanics¹ unconformably overlie the Mesozoic rocks. The lower Tertiary Skukum Group is comprised of intermediate to felsic volcanic rocks which occur at Tertiary volcanic centres on the west flank of the Whitehorse Trough. These centres are commonly referred to as the Mt. Skukum caldera complex and the Bennett Lake complex. A similar volcanic sequence of slightly older, Upper Cretaceous Mt. Nansen Group rocks occurs at a third centre on Montana Mountain. The Cretaceous Coast Intrusions of granitic rocks underlie most of the west part of the mapsheet but also cut folded Mesozoic and Hutshi Group rocks. The younger rocks in the area include small rhyolite stocks, dykes and quartz veins associated with Tertiary volcanic centres. Pleistocene columnar basalts intercalated with Yukon River sediments occur at Miles Canyon.

2-2: PROPERTY GEOLOGY

The BUG 1-4 claims are underlain by Paleozoic to Precambrian metamorphosed volcanic rocks presumed to belong to the Taku Group. This unit is medium to dark green with a brecciated and sheared groundmass containing angular chert fragments, pyroxene, minor pyrite and magnetite.

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).

Concordant to the greenstone schistosity, serpentized peridotite occurs possibly as a sill or elongated ovate body adjacent to the Taku Group volcanics. The peridotite is structurally contorted with highly variable schistosity azimuth, intense folding and locally abundant slickensides. Narrow (<1 cm wide) seams of brittle cross fibre asbestos occur north of the BUG 1-4 claims. Talc, magnetite and chromite are minor accessory minerals.

A northwest trending depression obscures the east margin of the peridotite unit. This depression may be interpreted as a fault, however a less resistant rock type such as limestone (which was recovered in the 1972 drill core) may occur in the valley. The east side of the valley is marked by a prominent ridge of intensely silicified and carbonatized mariposite rich (possibly containing some fuchsite), sulphide poor weathering resistant rock. The ridge extends at least 3 kilometres north of the claims and contains several quartz carbonate stockwork zones up to 30 metres wide. These zones are made up of a network of narrow, usually <2 cm wide, white, agate-like quartz carbonate stringers which appear to have intruded the host with little evidence of structural control. Sulphides are rare in these zones and the stringers may occupy up to 80% of the rock. This resistant mariposite rich ridge is offset, up to tens of metres, by several steep angle, north trending faults.

The volcanic package is overlain 30 metres west of the ridge by Laberge Group sediments comprised largely of medium to dark grey greywacke, quartzite and chert which dip gently to the west. Local structural deformation and alteration is noted at the contact to the mariposite unit,

however 30 to 50 metres east of the contact, the Laberge Group clastic rocks are unaltered. Minor pyrite may be found in the sediments.

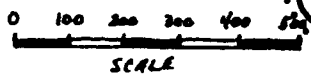
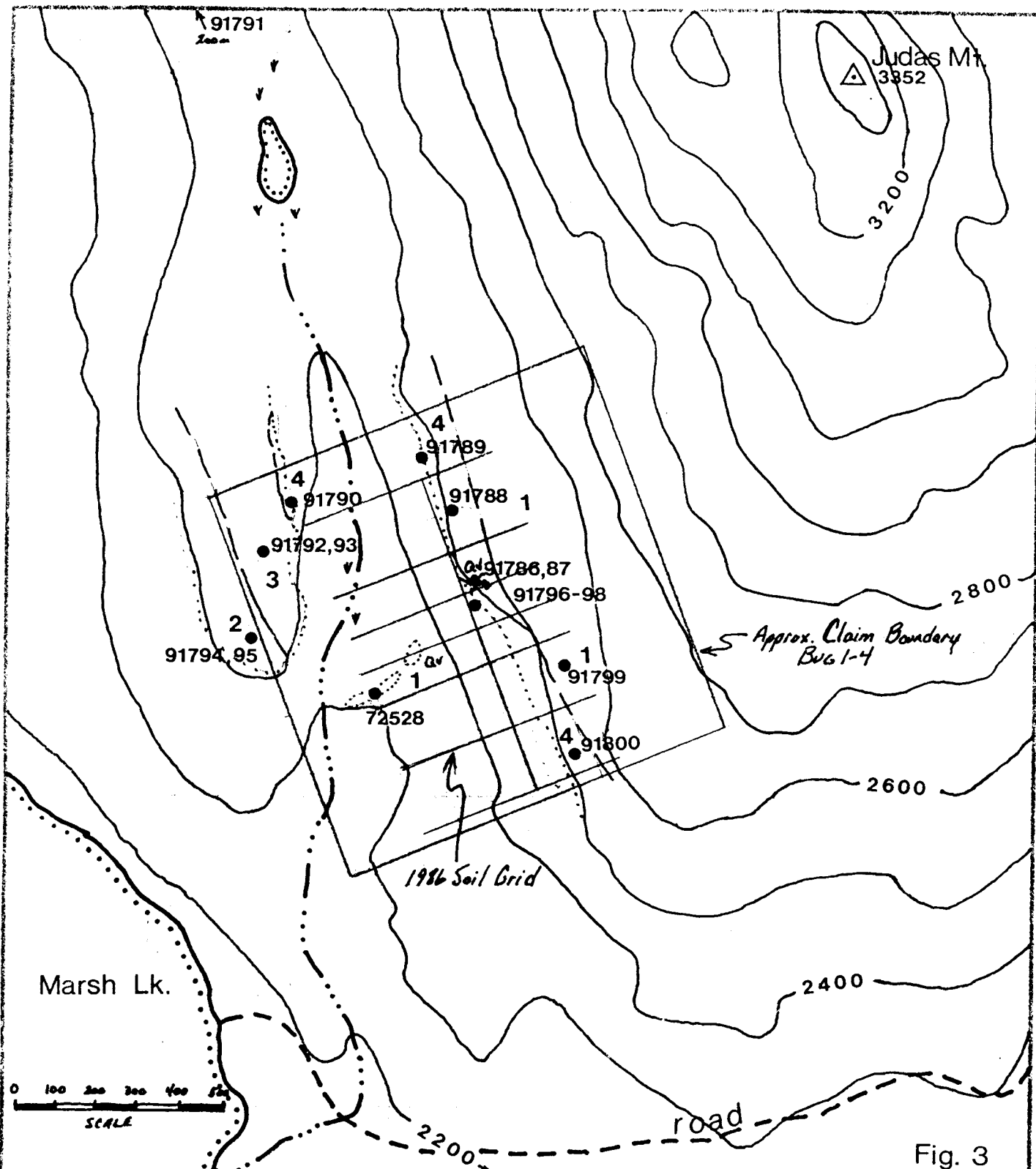


Fig. 3

LEGEND

- 4 MAMMOPOSITE; QTZ-CARBONATE
- 3 VOLCANIC, SERPENTINITE
- 2 PERIDOTITE
- 1 QTZ/MICA SCHIST
- OUTCROP
- CONTACT; REAL, ASSUMED
- QV QTZ VEIN, SILICIFICATION
- ROCK SAMPLE

REVISED	BUG 1-4	
	PROPERTY GEOLOGY & SAMPLE LOCATION MAP	
PROJ. No. 334	SURVEY BY: EN, MPW	DATE: JULY 1985
N.T.S. 1:50,000	DRAWN BY: MPW	SCALE:
DWG. No.	NORANDA EXPLORATION	
	OFFICE: <i>Whitehorse</i>	

MANCAL 11827

CHAPTER THREE: GEOCHEMISTRY

3-1: SOIL SAMPLING PROGRAM

A 4.45 kilometre grid soil survey was conducted on the BUG 1-4 claims in which a total of 108 soil samples were taken at 25 and 50 metre intervals at line spacings of 100 and 200 metres. The samples were analyzed for Co, Sb, As, Ag and Au and are plotted on Figures 4 and 5 at the back of this report. Complete sample results are listed in Appendix I.

One sample (L-1+00N, 1+75W) ran 750 ppb Au and 540 ppm As with a low arsenic enhancement ranging from 20 to 90 ppm As within 75 metres of this station. No other gold anomalies were detected in this survey, however arsenic anomalies of 330 ppm As and 490 ppm As occur at baseline 0+00W, 0+75N and L-1+00N, 0+50E respectively. Silver values do not exceed 0.2 ppm Ag. Antimony values average 2 ppm Sb with isolated highs of 10 ppm Sb and 12 ppm Sb at stations L-2+00N, 1+25E and L-5+00N, 1+00E. Cobalt values are unevenly distributed with anomalies of 100, 190 and 230 ppm Co on the baseline at 2+25N, 0+75N and 1+75N respectively.

3-2: ROCK SAMPLING PROGRAM

A total of 16 rocks were analyzed for Cu, Zn, Pb, Ag, As, Sb and Au. Three samples were tested for Cr. Complete rock sample descriptions are

found in Appendix II.

One grab sample (R91786), taken from a pervasively silicified stringer zone in the mariposite unit, ran 20 ppb Au. No significant anomalies were detected in the Cu, Zn, Pb, Ag, As and Sb analyses. Sample R91790 taken from the serpentinized peridotite-asbestos showing north of the claims ran 1,800 Cr. The results of this program are as follows:

Sample No.	Values in ppm						Cr	ppb Au
	Cu	Zn	Pb	Ag	As	Sb		
91786	12	40	1	0.2	2	4		20
91787	10	26	1	0.2	2	2		10
91788	4	10	1	0.2	4	1		10
91789	2	4	1	0.2	2	1		10
91790	6	14	1	0.2	2	1		10
91791	8	34	1	0.2	2	1	1800	10
91792	2	16	1	0.2	2	4		10
91793	2	12	1	0.2	2	2		10
91794	2	12	1	0.2	2	1		10
91795	4	10	1	0.2	2	1		10
91796	4	10	1	0.2	2	1		10
91797	4	22	1	0.2	2	1		10
91798	6	30	1	0.2	8	2	1100	10
91799	2	20	1	0.2	4	2		10
91800	2	10	1	0.2	2	2		10
72528	6	42	1	0.2	2	1	750	10

CHAPTER FOUR: CONCLUSIONS and RECOMMENDATIONS

Detailed soil sampling is recommended in close vicinity to the 750 ppb Au anomaly at station 1+75W on L-1+00N. The slight gold enhancement of 20 ppb (R91786) is encouraging but inconclusive in determining the gold potential of the quartz stringer network zones in the mariposite unit.

An examination and analysis of the drill core, presently stored at the D.I.A.N.D. core library in Whitehorse, detailed soil sampling and detailed geological mapping are recommended in evaluation of this property.

Respectfully submitted,




Mary P. Webster
Field Geologist

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 am a member of the Yukon Professional Geoscientists Society.
5. I supervised and carried out part of the work described in this report.


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

STATEMENT OF COSTS

PROJECT: BUG 1-4 Claims

Labour:

3 mandays @ 120.00 per day 360.00

Transportation: 150.00

Sample Analysis:

124 samples x 15.00 1,860.00

Sample Shipment: 80.00

Report Writing: 240.00

TOTAL \$2,690.00

REFERENCES

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- Bultman, T.R., 1979. Geology and Tectonic History of the Whitehorse Trough West of Atlin, B.C. Ph.D. Thesis, Yale University.
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- 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.
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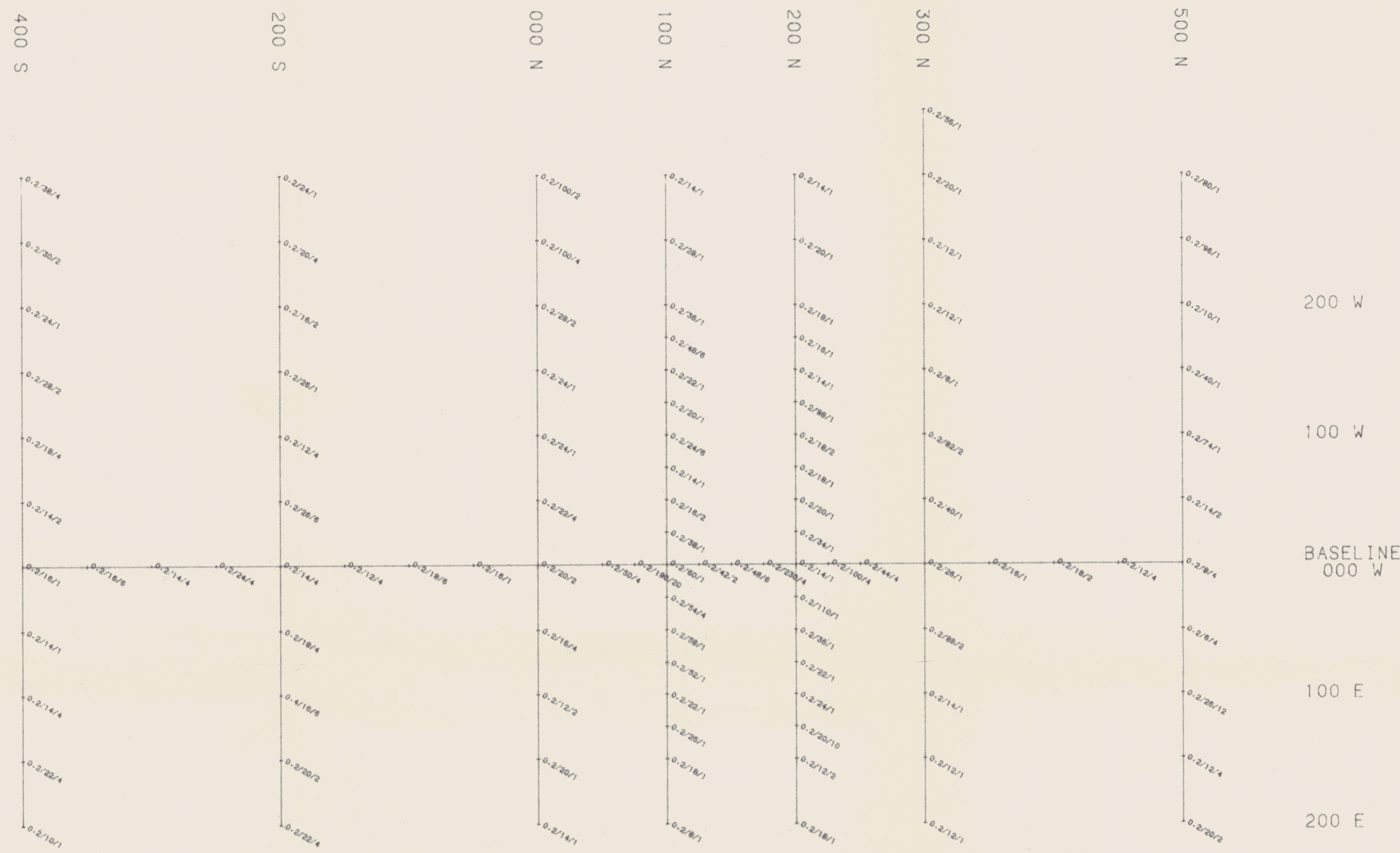


Fig : 4

REVISED	BUG CLAIM	
	SOIL GEOCHEMISTRY AG, CO, SB IN PPM.	
PROJ. No. 394	SURVEY BY: M.W.	DATE: JULY, 3, 1986.
N.T.S. 1:25000	DRAWN BY: EDP, YAN	SCALE: 1:2500
DWG. No.	NORANDA EXPLORATION OFFICE: WHITEHORSE	

APPENDIX I

SOIL SAMPLE RESULTS

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION: BUG CLAIM

CODE : 8606-039

105D/8 & GCI 53737

Object No. : 394
 Material : SOIL
 Remarks :

Sheet: 1 of 3
 Geol.: M.W.

Date rec'd: JUNE.16
 Date compl: JUNE.23

Values in PPM, except where noted.

T. T. No.	SAMPLE No.	Ag	Co	As	Sb	PPB Au
2	100N-300W	0.2	14	8	1	10
3	250	0.2	28	16	1	10
4	200	0.2	36	30	1	10
5	175	0.2	48	540	6	750
6	150	0.2	22	90	1	10
7	125	0.2	20	20	1	10
8	100	0.2	24	60	6	10
9	75	0.2	14	1	1	10
10	50	0.2	16	1	2	10
11	100N-25W	0.2	38	30	1	10
12	100N-BL	0.2	60	24	1	10
13	100N-25E	0.2	54	490	4	10
14	50	0.2	58	10	1	10
15	75	0.2	52	1	1	10
16	100	0.2	22	1	1	10
17	125	0.2	26	10	1	10
18	150	0.2	18	1	1	10
19	100N-200E	0.2	8	1	1	10
20	200N-300W	0.2	14	1	1	10
21	250	0.2	20	8	1	10
22	200	0.2	18	1	1	10
23	175	0.2	16	6	1	10
24	150	0.2	14	10	1	10
25	125	0.2	98	1	1	10
26	100	0.2	18	24	2	10
27	75	0.2	18	8	1	10
28	50	0.2	20	4	1	10
29	200N-25W	0.2	34	2	1	10
30	200N-BL	0.2	14	1	1	10
31	200N-25E	0.2	110	32	1	10
32	50	0.2	36	20	1	10
33	75	0.2	22	10	1	10
34	100	0.2	24	14	1	10
35	125	0.2	20	32	10	10
36	150	0.2	12	16	2	10
37	200N-200E	0.2	18	10	1	10
38	300N-350W	0.2	56	1	1	10
39	300	0.2	20	4	1	10
40	250	0.2	12	8	1	10
41	200	0.2	12	8	1	10
42	150	0.2	6	2	1	10
43	100	0.2	82	14	2	10
44	300N-50W	0.2	40	6	1	10
45	300N-BL	0.2	26	8	1	10
46	300N-50E	0.2	88	6	2	10
47	100	0.2	14	6	1	10
48	150	0.2	12	14	1	10
49	300N-200E	0.2	12	6	1	10

T. T. No.	SAMPLE No.	Ag	Co	As	Sb	PPB Au	8606 039 Pg. 2 of 3
50	500N-300W	0.2	80	14	1	10	
1	250	0.2	96	20	1	10	
52	200	0.2	10	1	1	10	
53	150	0.2	40	1	1	10	
54	100	0.2	74	1	1	10	
55	500N-50W	0.2	14	4	2	10	
56	500N-BL	0.2	8	4	4	10	
57	500N-50E	0.2	6	1	4	10	
58	100	0.2	26	40	12	10	
59	150	0.2	12	6	4	10	
60	500N-200E	0.2	20	1	2	10	
61	ON-300W	0.2	100	1	2	10	
62	250	0.2	100	28	4	10	
63	200	0.2	28	16	2	10	
64	150	0.2	24	14	1	10	
65	100	0.2	24	10	1	10	
66	ON-50W	0.2	22	18	4	10	
67	ON-BL	0.2	20	1	2	10	
68	ON-50E	0.2	16	4	4	10	
69	100	0.2	12	1	2	10	
70	150	0.2	20	1	1	10	
71	ON-200E	0.2	14	6	1	10	
72	200S-300W	0.2	24	4	1	10	
73	250	0.2	20	8	4	10	
74	200	0.2	16	1	2	10	
75	150	0.2	26	2	1	10	
76	100	0.2	12	12	4	10	
77	200S-50W	0.2	26	16	6	10	
78	200S-BL	0.2	14	2	4	10	
79	200S-50E	0.2	18	24	4	10	
80	100	0.4	16	10	6	10	
81	150	0.2	20	1	2	10	
82	200S-200E	0.2	22	4	4	10	
83	400S-300W	0.2	38	10	4	10	
84	250	0.2	30	2	2	10	
85	200	0.2	24	12	1	10	
86	150	0.2	28	4	2	10	
87	100	0.2	18	8	4	10	
88	400S-50W	0.2	14	8	2	10	
89	400S-BL	0.2	16	14	1	10	
90	400S-50E	0.2	14	22	1	10	
91	100	0.2	14	12	4	10	
92	150	0.2	22	4	4	10	
93	400S-200E	0.2	10	14	1	10	
94	BL-450N	0.2	12	1	4	10	
95	400	0.2	18	4	2	10	
96	350	0.2	16	4	1	10	
97	250	0.2	44	10	4	10	
98	225	0.2	<u>100</u>	10	4	10	
99	175	0.2	<u>230</u>	16	4	10	
100	CHECK NL-5	1.2	14	60	10	10	
101	150	0.2	48	72	6	10	
102	125	0.2	42	36	2	10	
103	75	0.2	<u>190</u>	<u>330</u>	<u>20</u>	10	
104	BL-50N	0.2	50	80	4	10	
105	BL-50S	0.2	16	2	1	10	
106	BL-100S	0.2	18	6	6	10	

T. T. No.	SAMPLE No.	Ag	Co	As	Sb	PPB Au	8606 039 Pg. 3 of 3
107	BL-1505	0.2	12	2	4	10	
1	250	0.2	24	22	4	10	
109	300	0.2	14	2	4	10	
110	BL-3505	0.2	16	20	6	10	

APPENDIX II

ROCK SAMPLE DESCRIPTIONS

