

LOG NO: 1209	RD.
ACTION:	
FILE NO: 87-862-16601	

ASSESSMENT REPORT

PROSPECTING, GEOLOGY, AND GEOCHEMISTRY

PINENUT PROPERTY

RAVEN 1-6, SILVERTON 1-2 CLAIMS  
Record Nos. 7880-7885, 8254, 8255

OMINECA MINING DIVISION  
BRITISH COLUMBIA

NTS 93 M/ 5E, 6W

Latitude 55 deg. 25' N 32"  
Longitude 127 deg. 31' W 08"

Work Performed:  
AUGUST 1987

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

16,601

Owner(s): NORANDA EXPLORATION COMPANY, LIMITED, Paul Hue |  
(NO PERSONAL LIABILITY)  
3A-1750 Quinn Street  
Prince George, B.C.  
V2N 1X3

FILMED

Report by:  
Del Myers  
Project Geologist

December 1987

Operator: Noranda Exploration Company, Limited

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## SUMMARY

Quartz-arsenopyrite veins sampled by P. Huel in 1986 gave gold values up to 0.94 opt from the Raven 1-6 claims. Follow-up prospecting, geology, and geochemistry was undertaken in August 1987 on the Raven and Silverton claims.

Twenty man-days were spent on the claims. Ninety-six rock, fifteen stream sediment, and sixty-nine soil samples were taken over and next to a granite stock with associated quartz-arsenopyrite veins. Values of up to 0.88 opt Au, 28.9% As, 3.0 opt Ag, and 8.36% Zn were obtained from different rock grab or chip samples up to 0.27m wide. Soil results indicate a significant As-Zn-Mo anomaly.

Further work is recommended in areas not covered by August work, mainly below treeline to look for additional areas of Au-bearing mineralization, perhaps as disseminated or stockwork zones or as wider quartz-arsenopyrite veins.

## INTRODUCTION

### PURPOSE

Sampling by Paul Huel in 1986 gave high gold values from quartz veins found on the Raven 1-6 claims. The purpose of this work was to investigate this mineralization and locate additional mineralization on the property.

### LOCATION AND ACCESS

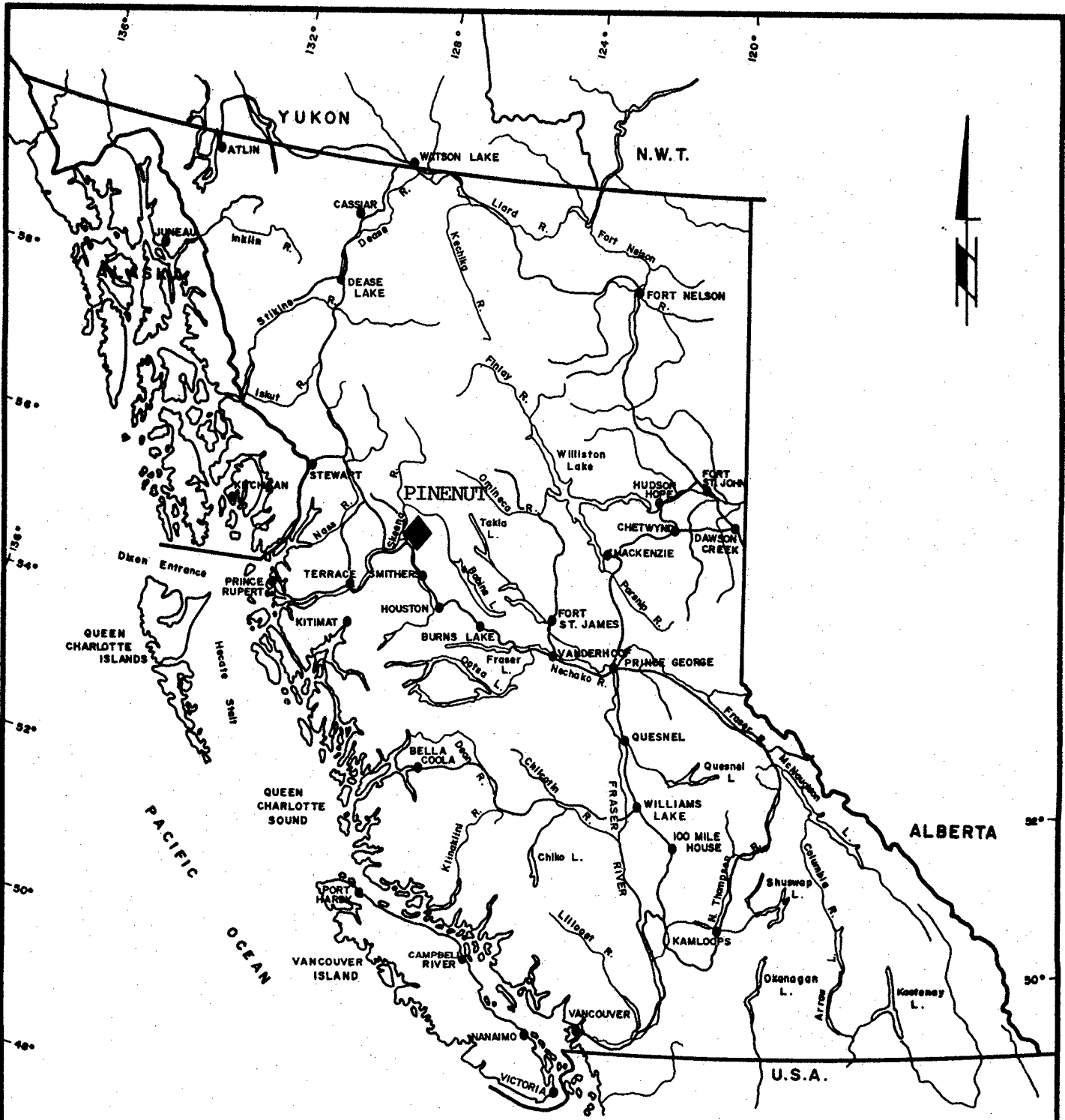
The Pinenut property is located is located 22 km NNE of Hazelton, B.C. (Figure 1). The property lies on the south slope of Sidina Mountain north of Pinenut Creek, a tributary of the Skeena River.

The property covers ground ranging from 1035 m (3400 feet) to 1828 m (6000 feet) in elevation. The claims are covered by balsam-rich forest below treeline and by alpine meadows above treeline, which is about 1524 m (5000 feet) a.s.l.

Access to the property was via logging roads to an elevation of about 760 m (2500 feet) south of Pinenut Creek. From here a helicopter was used to shuttle men, equipment, and supplies onto the property. An old pack trail is supposed to lead to the property along the north side of Pinenut Creek, but it was not used for this work.

### PROPERTY

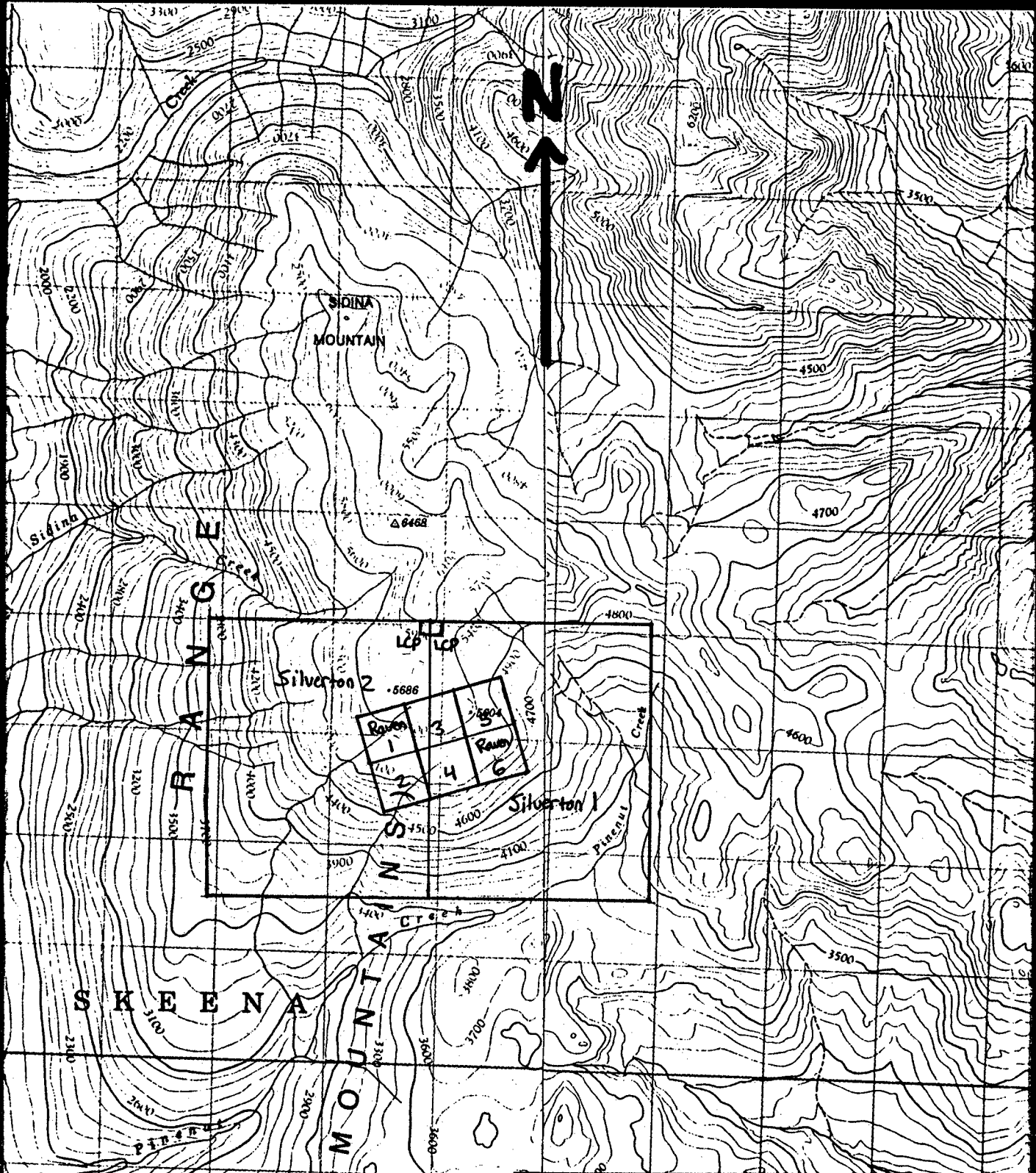
The property consists of eight claims as listed in Table 1. Noranda Exploration holds an option to purchase the claims from the owner, Paul Huel of Kispiox. The claims are shown on Figure 2.



0 100 200 KILOMETRES  
SCALE: 1:8,000,000

REVISED	PINENUT PROPERTY	
	LOCATION MAP	
PROJ.No. <u>287</u>	SURVEY BY: <u>cm</u>	DATE: <u>Dec/87</u>
N.T.S.	DRAWN BY: <u>S.K.B.</u>	SCALE: <u>1:8,000,000</u>
DWG.No.	<b>NORANDA EXPLORATION</b>	
Fig. 1	OFFICE: <u>PRINCE GEORGE, B.C.</u>	

VANCAL 11827



REVISED	PINENUT PROPERTY
	CLAIM MAP
PROJ. No. 287	SURVEY BY: DEM Jr DATE: Dec/87
N.T.S.	DRAWN BY: SCALE: 1:50,000
DWG. No. Fig. 2	<b>NORANDA EXPLORATION</b> OFFICE: Prince George, B.C.

Table 1. List of Claims

Claim	Rec.No.	Type	Units	Owner	Record Date
Raven 1	7880	2P	1	P. Huel	8 Sep. 86
Raven 2	7881	2P	1	"	"
Raven 3	7882	2P	1	"	"
Raven 4	7883	2P	1	"	"
Raven 5	7884	2P	1	"	"
Raven 6	7885	2P	1	"	"
Silverton 1	<del>7886</del> 8254	MG	20	"	27 Mar. 87
Silverton 2	<del>7887</del> 8255	MG	20	"	"
			--		

total 46 units



## REGIONAL GEOLOGY

The Pinenut property is underlain by Upper Jurassic fluvial and deltaic sediments of the Bowser Lake Group (Tipper and Richards, 1976). The clastic sediments are variably hornfelsed by late Cretaceous, felsic, Bulkley intrusives. The property lies along the northern edge of a broad structural high known as the Skeena Arch within the Intermontaine Belt of the Canadian Cordillera.

Three directions of faults are mapped in the area around Sidina Mt. These have azimuths of about 10, 70, and 160 degrees (GSC Open File 720 (1980)).

## PREVIOUS WORK

No assessment reports are available for any previous work over the area covered by the claim. Old claim posts exist on the claims and many of the veins have been hand trenched some years ago. Showing 93M-38 of the B.C. Mineral Inventory undoubtedly refers to showings examined this August. MMAR 1912 (p.K98) describes the Silverton group after which two of the present claims were named.

## WORK UNDERTAKEN

Four men spent one day (8 August 1987) prospecting and sampling the property. Twenty rock samples and thirteen stream sediment samples were collected.

A lightweight camp (Camp 1 - Figure 3) was established on the property and four men spent four days (14-17 August 1987) working from this camp. Seventy-six rock samples, two stream sediment samples, and two lines of B-horizon soil samples (sixty-nine samples) were taken. Prospecting was confined to areas above treeline on the claims.

A small grid was established using hipchains and compasses. The baseline runs parallel to but about 7 m north of the Raven 1-6 location line. Stations were marked with wooden lathes or Tyvex tags at 50 m intervals. A baseline 1350 m long and six short sidelines totaling 1350 m were marked.

The two soil lines approximating contour lines around part of Sidina Mountain were run. Samples were taken at either 20 or 50 m intervals along the lines depending on the sampling density desired. Soil samples were taken using soil augers at variable depths of from 10 to 90 cm depending on the thickness of the A-horizon. Samples were placed in kraft bags for drying, dried, and shipped to the Noranda Geochemical Laboratory in Vancouver for processing.

All samples were then analysed by Acme Analytical Laboratories by either ICP or AA methods depending on the element and the type of sample (see Appendix 3).

## RESULTS

### GEOLOGY AND PROSPECTING

Four mappable units were defined on the property:

Unit 1. (Hf) is variably hornfelsed clastic sediments, gray to black, consisting of contact metamorphosed claystones (S1), siltstones (S2), and sandstones (S3). This unit is folded into a syncline with a N-S axis passing about 300 m east of the Silverton 1 LCP. These are Bowser Lake Group sediments.

Unit 2. (P4) is granite to granodiorite, medium grained, massive, one and two feldspars, quartz, and chlorite after biotite, some sericitic alteration noted, minor pyrite and rare molybdenite mineralization noted (disseminated and fracture coating). This is a Bulkley intrusive.

Unit 3. (H4) is rhyolite and rhyolitic quartz porphyry, white to cream colored, very fine grained except for medium grain quartz phenocrysts in places. Unit 3 cuts units 1 and 2. This is a late stage of a Bulkley intrusive?

Unit 4. (H2) is andesitic dike, fine to very fine grained, dark greenish gray, which cuts units 1 and 2. Age relation to unit 3 is unknown.

Three types of mineralization were noted on the property:

1. Quartz-arsenopyrite-pyrite-sphalerite-galena-tetrahedrite veins up to about 30 cm wide with some mineralization found as narrow halos in the wall rock. These veins are best exposed and most common in unit 2 granites but are also common in nearby hornfels.

2. Rusty hornfels and hornfels with pyrite-pyrrhotite pods or blebs, no particular association to quartz-arsenopyrite veins noted.

3. Molybdenite and molybdenite-pyrite-pink feldspar fracture coatings in granite (unit 2).

Figure 3 shows a small granitic stock which is cut by rhyolitic dikes and surrounded by hornfels (not mapped). Several quartz-arsenopyrite veins are mapped over lengths of 50 to 100 m and have strikes of 90 and 160 degrees. Other strikes noted from smaller veins are about 20, 45, 70, and 110 degrees. Dips range from about 40 to 70 degrees although one vein striking 110 degrees had a dip of 18 degrees.

Quartz-arsenopyrite mineralization is centered about 1200 m south of the Silverton 1 LCP, coincident with a granite stock.

The iron sulfide in hornfels mineralization is peripheral to this. The distribution of molybdenite mineralization is not known with confidence.

Ninety-six rock samples were analysed at Acme Analytical Labs for 16 elements by their ICP assay procedure. The results are given in Appendix 3 and on Figure 3. Statistics on some elements analysed are as follow:

Element	Low Value	Sign. Value*	High Value	% > Sign. Value
Mo	.001%	.1 %	.012%	0 %
Cu	.01	.2	.62	2
Pb	.01	1.0	2.16	2
Zn	.01	1.0	8.36	10
Ag	.01 opt	1.0 opt	3.09 opt	19
Au	.001opt	0.02opt	.882opt	51
As	.01 %	1.0 %	28.9 %	58
Sb	.01	.5	.84	1

\*significant value - economically or environmentally significant

Inspection of the values above shows that the main economic interest on the property is for Au-As mineralization with some values for Ag-Zn also.

Examination of Figure 3 shows a wide distribution for significant Au and As values in rock samples and possibly a more restricted distribution of significant Ag and Zn values more or less coincident with the baseline.

#### SOILS AND STREAM SEDIMENTS

Sample locations are shown on Figure 4. Analytical reports are given in Appendix 3. Samples taken in October 1987 are also shown of Figure 4, although results are not discussed here.

Of the fifteen silt samples analysed by Acme for 30 elements by ICP and for Au by AA the following values were obtained:

	Low	Threshold	High	# > Threshold
Mo	1 ppm	10 ppm	31 ppm	2
Cu	25	100	92	0
Pb	14	25	122	5
Zn	100	250	756	4
Ag	.1	1.4	1.7	1
Au	.001	.020	.101	2
As	9	100	1477	6
Sb	2	10	24	3

Threshold values are selected on the basis of past experience. Au silt anomalies are somewhat less frequent than the rock geochemistry results would indicate, while lead and antimony silt anomalies are more frequent.

All the silt anomalies are located downstream from known mineralization except for an arsenic anomaly in sample 99144 (Figure 4).

The sixty-nine B-Horizon soil samples were analysed by Acme for 30 elements by ICP plus Au by AA with the following important results:

Element	Low	Threshold	High	# > Threshold
Mo	1 ppm	10 ppm	33 ppm	19
Cu	18	100	158	3
Pb	4	50	161	4
Zn	66	250	1099	23
Ag	.1	1.4	7.1	2
Au	.001	.020	.053	2
As	19	100	1061	38
Sb	2	10	10	2

The threshold values again were chosen from past experience and are almost identical to those chosen for silt samples. Mo, Zn, and As soil anomalies are common in the area sampled. Molybdenum anomalies are more frequent than would be predicted of the basis of rock analyses, while Au and Ag anomalies are less frequent than would be predicted. Possible reasons for this include:

1. Molybdenum mineralization is more widespread and Au and Ag mineralization is less widespread than predicted by rock sampling due to rock sampling bias.
2. High background levels or large sources for Mo in the area and low background levels or small sources for Au and Ag.
3. Low Au and Ag mobility, high Mo mobility resulting in erroneous soil results.

Figure 4 shows that As soil anomalies are most widespread with Zn and then Mo anomalies being more restricted. The anomalous zones are open to the west.

## CONCLUSIONS

A large number of quartz-arsenopyrite-sphalerite veins are found in and around a granitic Bulkley intrusive and surrounding hornfels. High grades for Au-As-Ag-Zn occur but over narrow widths (<0.3 m). Minor mineralization occurs in narrow selvages. These veins are too narrow and too far apart to be of economic interest in themselves.

Silt sampling to date indicates As-Pb-Zn anomalies in the area of the Raven 1-6 claims and above.

Soil sampling indicates a significant As-Zn-Mo anomaly on the Raven 1-6 claims. This anomaly is open to the west.

## RECOMMENDATIONS

1. Further work should be directed to locating additional Au mineralization as lower grade, large tonnage disseminated or stockwork zones or as higher grade veins of greater width than found so far on the Raven 1-6 claims.

#### REFERENCES

- , 1913. "Silverton Group" in Minister of Mines Annual Report 1912. Victoria, B.C., pp. K98-99.
- Richards, T.A., 1980(?). Geologic map, Hazelton, B.C., NTS 93M, GSC Open File 720, Ottawa, Ont., 1 sheet.
- Tipper, H.W. and Richards, T.A., 1976. Jurassic Stratigraphy and History of North-Central British Columbia. GSC Bulletin 270, Ottawa, Ont., 73 pp.

## APPENDIX 1. STATEMENT OF QUALIFICATIONS

### Relevant Training

B.Sc. (1970) Pennsylvania State University  
University Park, Pa., USA  
Geological Sciences

M.Sc. (1973) University of Toronto  
Toronto, Ontario, Canada  
Geochemistry

### Relevant Experience

1973 - 1980 Exploration and Mine Geologist  
Cominco Ltd.  
Vancouver and Yellowknife

1980 - 1982 Exploration Geologist  
Noranda Exploration Co., Ltd.  
Yellowknife, N.W.T.

1982 - 1983 Exploration Geologist  
Noranda Exploration Co., Ltd.  
Smithers, B.C.

1983 - Exploration Geologist  
Noranda Exploration Co., Ltd.  
Prince George, B.C.

### Professional Affiliations

Fellow, Geological Association of Canada

Member, Association of Professional Engineers,  
Geologists, and Geophysicists of the Northwest  
Territories

Member, Canadian Institute of Mining and Metallurgy

Delbert E. Myers, Jr.  
Project Geologist  
2 December 1987



## Statement of Qualifications

I, Robin C. Day, of 441 Parkland Village, Spruce Grove, Alberta, do certify that:

1. I am a graduate of the University of Alberta, where I obtained a B.Sc. (Concentration in Geology) in 1976.
2. I have practiced my profession as a geologist, mostly in British Columbia, Yukon, and Northwest Territories, for the last eleven years.

  
Robin C. Day

Spruce Grove, Alberta  
Dated this 30 day  
of November, 1987

APPENDIX 2. STATEMENT OF COSTS

Labor	20 man-days at \$ 175	= \$ 3,500
Food and accommodations	20 man-days at \$ 30	600
Supplies		-
Helicopter	6.1 machine hours at \$460	2,806
Truck Rentals, fuel		300
Analyses		
Acme Analytical Labs.		
96 rocks for 16 elements by ICP	96 x \$23	2,208
15 silts for 30 elements by ICP	15 x \$6.75	101
15 silts for Au by AA	15 x \$4.25	63
69 soils for 30 elements by ICP	69 x \$6.75	465
69 soils for Au by AA	69 x \$4.25	293
Freight on samples		32
Expediting services		128
Report Preparation		
Author and typing	2 man-days at \$ 230	460
Drafting	1 man-day at \$170	170
		-----
	Total cost	\$ 11,126

*Del Z...*

3 December 1987

**APPENDIX 3. ANALYTICAL RESULTS**

Pinecut Cr (RD)

8708-112

ACME ANALYTICAL LABORATORIES

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

PHONE 253-3158

DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B W AND LIMITED FOR NA AND K. AU DETECTION LIMIT BY ICP IS 3 PPM.

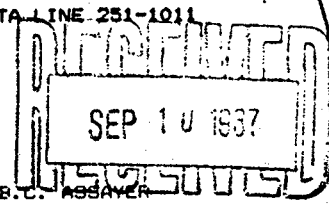
- SAMPLE TYPE: SOIL AU: ANALYSIS BY AA FROM 10 GRAM SAMPLE.

P3-5117

DATE RECEIVED: AUG 24 1987

DATE REPORT MAILED: Sept 2/87

ASSAYER: D. J. DEAN TOYE, CERTIFIED B.C. ASSAYER



NORANDA EXPLORATION (VAN) PROJECT-8708-112 289 File # 87-3555 Page 1

Soils

Table with columns for sample number and various elements (Cu, Pb, Zn, Ag, Ni, Cd, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Au) and their concentrations in PPM.

Del.

cc: Prob Day Sept 21

1-36

311

NORANDA EXPLORATION (VAN) PROJECT-8708-112 240 FILE # 87-3555

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	M	AU#
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM	
SOIL 37	25	52	16	326	.1	11	12	1489	5.19	193	5	ND	2	60	4	8	2	52	.52	.240	8	15	.46	141	.01	2	2.65	.02	.10	1	1
SOIL 38	24	35	17	302	.1	11	10	646	4.58	193	5	ND	1	42	1	6	2	47	.40	.050	10	13	.64	90	.01	2	2.34	.01	.07	1	1
SOIL 39	24	40	21	235	.2	11	12	651	4.37	122	5	ND	1	10	1	6	2	41	.04	.075	8	12	.49	90	.01	2	2.75	.02	.07	1	1
SOIL 40	29	50	29	512	.5	12	12	1286	4.72	981	5	ND	1	59	2	8	2	40	.54	.182	12	14	.52	89	.01	3	2.25	.02	.12	1	1
SOIL 41	10	63	22	422	.2	13	11	733	4.46	387	5	ND	2	56	1	8	4	42	.48	.082	11	11	.53	97	.01	2	2.13	.02	.07	1	1
SOIL 42	5	25	12	93	.4	4	4	422	3.07	61	5	ND	1	9	1	5	2	42	.03	.107	7	9	.22	50	.01	2	1.56	.01	.05	1	1
SOIL 43	18	59	41	461	1.0	8	9	1467	3.82	370	5	ND	1	79	3	7	5	40	.70	.199	20	10	.46	133	.01	2	2.65	.02	.10	1	1
SOIL 44	15	42	25	397	.3	7	8	465	4.22	648	5	ND	2	63	2	5	2	38	.60	.183	13	10	.47	132	.01	2	2.24	.02	.08	2	1
SOIL 45	17	25	20	147	.7	7	5	303	3.08	236	5	ND	1	12	1	4	2	35	.07	.140	8	10	.31	67	.01	4	2.06	.02	.08	2	1
SOIL 46	33	47	11	353	.2	13	10	686	4.57	666	5	ND	1	33	2	7	2	42	.26	.043	10	15	.64	76	.01	2	2.32	.01	.07	1	1
SOIL 47	23	61	27	664	.8	14	9	873	4.72	761	10	ND	2	77	2	4	2	37	.73	.227	20	15	.52	93	.01	5	2.73	.02	.07	1	4
SOIL 48	13	48	17	136	.1	11	11	525	4.99	48	5	ND	1	7	1	4	2	39	.02	.044	8	10	.49	68	.01	5	2.32	.01	.05	1	1
SOIL 49	11	44	26	999	.3	13	12	931	5.09	117	5	ND	1	58	4	4	2	43	.37	.086	10	12	.48	104	.01	2	2.29	.02	.07	2	1
SOIL 50	13	38	22	135	.2	9	10	562	5.12	75	5	ND	1	22	1	4	2	47	.12	.062	8	13	.50	100	.01	2	2.45	.01	.07	1	1
SOIL 51	27	26	19	145	.1	13	11	1065	4.40	91	5	ND	1	64	1	4	2	52	.48	.191	6	15	.48	138	.01	2	2.31	.01	.07	1	1
SOIL 52	15	41	27	187	.4	11	9	685	4.96	461	5	ND	1	12	1	7	3	64	.04	.120	8	17	.39	77	.02	2	2.64	.01	.09	1	2
SOIL 53	5	32	17	995	.7	14	7	333	4.42	798	5	ND	1	30	1	2	2	38	.37	.096	10	13	.55	66	.01	2	2.48	.01	.05	5	1
SOIL 54	9	73	28	1099	.1	14	12	839	5.06	797	5	ND	2	44	3	6	2	43	.39	.104	11	14	.57	99	.01	2	2.44	.02	.07	2	2
STD C/AU-S	21	61	42	127	2.1	71	29	1123	4.11	38	18	8	41	53	20	18	21	61	.51	.092	41	58	.90	171	.08	39	1.82	.07	.14	13	53
SOIL 55	4	51	29	482	.2	14	12	622	5.58	608	5	ND	1	13	1	10	2	42	.12	.051	7	13	.57	56	.01	2	2.64	.01	.05	1	16
SOIL 56	3	42	32	369	.6	10	10	661	5.62	891	5	ND	1	9	1	6	2	43	.04	.101	7	12	.44	62	.01	2	2.43	.01	.05	1	1
SOIL 57	3	63	21	210	.2	14	12	767	5.32	703	5	ND	2	13	1	7	2	48	.04	.126	9	14	.50	107	.01	2	3.09	.02	.07	1	1
SOIL 58	2	95	39	403	.3	18	16	1183	4.96	596	5	ND	2	46	1	6	3	39	.61	.146	11	13	.56	107	.01	2	2.45	.02	.06	1	1
SOIL 59	3	70	161	563	.6	14	21	2147	6.04	837	5	ND	2	81	2	3	2	30	1.18	.272	7	12	.42	93	.01	2	2.04	.01	.06	6	1
SOIL 60	1	45	18	111	.1	16	14	815	5.16	46	5	ND	1	34	1	3	2	49	.31	.070	9	13	.59	147	.01	2	2.77	.02	.06	1	1
SOIL 61	2	34	11	91	.3	6	6	360	3.71	52	5	ND	1	9	1	2	2	49	.02	.127	7	10	.28	76	.01	2	2.37	.01	.06	1	1
SOIL 62	1	51	30	133	.1	13	14	899	4.55	45	5	ND	1	6	1	2	2	41	.01	.062	8	11	.52	89	.01	2	2.80	.01	.04	1	1
SOIL 63	1	39	24	115	.1	9	9	584	5.03	31	5	ND	1	5	1	2	2	41	.01	.063	7	9	.48	47	.01	2	2.19	.01	.03	1	1
SOIL 64	1	23	17	79	.6	7	6	352	3.15	58	5	ND	1	9	1	4	2	41	.02	.101	8	9	.31	59	.01	2	2.39	.01	.03	1	1
SOIL 65	2	30	37	172	.1	11	16	2372	5.89	62	5	ND	1	9	1	2	2	40	.02	.207	8	14	.38	69	.01	2	2.58	.01	.05	1	2
SOIL 66	1	24	13	81	.3	6	5	518	2.60	19	5	ND	1	12	1	2	2	41	.05	.100	7	8	.24	81	.01	2	1.71	.01	.04	1	1
SOIL 67	1	36	18	102	.1	10	8	404	4.98	30	5	ND	1	5	1	3	2	41	.01	.086	9	13	.47	51	.01	2	2.99	.01	.03	1	1
SOIL 68	1	40	25	128	.2	12	12	1286	4.98	56	5	ND	2	6	1	4	3	49	.01	.092	8	12	.47	72	.01	2	2.74	.01	.06	1	1
SOIL 69	1	30	16	119	.1	9	10	737	4.52	50	5	ND	1	6	1	4	2	45	.01	.132	9	12	.37	55	.01	2	2.40	.01	.05	1	1

n=33

NORANDA EXPLORATION (VAN) PROJECT-8708-112 240 FILE # 87-3555

20

20

Silts

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	N	AU#
	PPH	PPH	PPH	PPH	PPH	PPH	PPH	PPH	%	PPH	PPH	PPH	PPH	PPH	PPH	PPH	PPH	PPH	%	%	PPH	PPH	%	PPH	%	PPH	%	%	%	PPH	PPB
19666	5	82	81	756	.6	15	19	1450	5.71	803	5	ND	2	37	7	2	2	41	.42	.093	10	13	.61	68	.01	2	2.37	.01	.07	81	29
19670	4	51	35	634	.6	14	14	1216	4.76	421	5	ND	1	48	7	2	2	40	.41	.085	8	12	.45	68	.01	2	2.10	.01	.05	1	16
99144	2	36	19	100	.1	14	14	861	4.28	112	5	ND	1	33	1	2	2	36	.38	.069	9	10	.57	59	.01	2	1.56	.01	.05	1	2

## ASSAY CERTIFICATE

- SAMPLE TYPE: Rock Chips

DATE RECEIVED: AUG 24 1987

DATE REPORT MAILED: *Sept 4/87*ASSAYER: *D. Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

NORANDA EXPLORATION (VAN) PROJECT-B708-112 240 File # B7-3555A Page 1

SAMPLE#	201	202	210	210	220	NI	CO	MN	FE	2100	U	TH	CD	SB	BI	AU
	MD	CU	PB	ZN	AG					AS						
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	OZ/T
<i>Rocks</i> 19612	.001	.01	.01	.40	.06	.01	.01	.10	2.90	.41	.002	.01	.01	.01	.01	.003
19613	.001	.01	.01	.03	.02	.01	.01	.04	.98	.04	.002	.01	.01	.01	.01	.001
19614	.003	.20	.08	<del>8.36</del>	.81	.01	.01	.01	29.20	14.27	.002	.01	.11	.01	.01	167
19615	.001	.01	.01	.06	.03	.01	.01	.04	1.19	.08	.002	.01	.01	.01	.01	.001
19616	.001	.01	.01	.10	.03	.01	.01	.11	3.65	.22	.002	.01	.01	.01	.01	.004
19617	.001	.01	.01	.04	.01	.01	.01	.06	2.24	.03	.002	.01	.01	.01	.01	.001
19618	.001	.03	.01	.01	.02	.01	.01	.04	9.12	.01	.002	.01	.01	.01	.01	.002
19619	.001	.05	.06	.29	.68	.01	.01	.01	25.09	19.29	.002	.01	.01	.02	.02	112
19620	.001	.05	.02	.01	.42	.01	.01	.01	25.93	28.90	.002	.01	.01	.03	.02	264
19621	.001	.13	.02	.02	1.22	.01	.01	.01	29.00	6.82	.002	.01	.01	.01	.01	173
19622	.001	.12	.09	.22	1.25	.01	.01	.15	34.17	9.72	.002	.01	.01	.05	.04	.171
19623	.001	.01	.01	.26	.05	.01	.01	.17	9.42	.38	.002	.01	.01	.01	.01	.010
19624	.001	.03	.02	.07	.66	.01	.01	.02	19.15	15.40	.002	.01	.01	.03	.03	.312
19625	.001	.02	.03	.05	.14	.01	.01	.05	9.40	.25	.002	.01	.01	.02	.01	.004
19651	.001	.18	1.23	.89	1.01	.01	.01	.01	2.24	1.05	.004	.01	.01	.45	.01	.011
19652	.002	.04	.01	.01	.04	.01	.01	.18	11.72	.02	.002	.01	.01	.01	.01	.001
19653	.001	.01	.01	.01	.09	.01	.01	.07	3.47	.29	.002	.01	.01	.01	.01	.001
19654	.001	.01	.02	.98	.04	.01	.01	.32	4.14	.89	.002	.01	.01	.01	.01	.006
19655	.002	.07	.01	.01	.02	.01	.01	.15	11.99	.01	.002	.01	.01	.01	.01	.001
19656	.001	.01	.01	.09	.08	.01	.01	.04	3.08	1.93	.002	.01	.01	.01	.01	.010
19657	.002	.05	.14	1.04	.88	.01	.01	.03	23.29	16.65	.002	.01	.01	.07	.01	364
19658	.001	.02	.05	2.39	.18	.01	.01	.17	18.43	16.92	.002	.01	.03	.05	.01	242
19659	.001	.01	.05	.05	.49	.01	.01	.01	22.36	21.21	.002	.01	.01	.07	.01	533
19660	.004	.01	.06	.22	.10	.01	.01	.13	5.18	2.78	.002	.01	.01	.01	.01	.017
19661	.001	.03	.01	.01	.04	.01	.01	.02	11.74	.17	.002	.01	.01	.01	.01	.004
19662	.001	.04	.01	.01	.02	.01	.01	.03	11.89	.03	.003	.01	.01	.01	.01	.003
19663	.002	.01	.01	.01	.03	.01	.01	.01	2.92	.02	.002	.01	.01	.01	.01	.001
19664	.001	.09	.51	.65	1.94	.01	.01	.06	9.95	2.36	.002	.01	.01	.23	.01	.023
19665	.001	.02	.21	.06	1.69	.01	.01	.01	6.89	1.72	.002	.01	.01	.11	.01	.025
19667	.001	.03	.01	.01	.11	.01	.01	.02	19.80	.06	.002	.01	.01	.01	.01	.012
19668	.001	.03	.10	<del>1.91</del>	2.70	.01	.01	.07	4.84	2.02	.003	.01	.02	.01	.01	.018
19669	.001	.06	.01	.01	.05	.01	.01	.03	11.23	.19	.002	.01	.01	.01	.01	.001
19671	.001	.05	.01	.02	.03	.01	.01	.03	11.92	.27	.002	.01	.01	.01	.01	.001
19672	.001	.01	.04	.05	.29	.01	.01	.02	3.56	1.11	.002	.01	.01	.01	.01	195
19673	.001	.12	.02	.05	.51	.01	.01	.10	25.24	6.63	.002	.01	.01	.01	.01	151
19674	.001	.14	.03	.01	.46	.01	.01	.04	31.33	<del>12.22</del>	.002	.01	.01	.02	.01	179
STD R-1/OZ	.093	.89	1.37	2.39	2.96	.03	.03	.09	6.91	.94	.007	.01	.04	.15	.03	-

NORANDA EXPLORATION (VAN) PROJECT-8708-112 240 FILE # 87-3555A

SAMPLE#	MO %	CU %	PB %	ZN %	AG OZ/T	NI %	CO %	MN %	FE %	AS %	U %	TH %	CD %	SB %	BI %	AU OZ/T
19675	.001	.03	.01	.01	.44	.01	.01	.54	23.95	4.08	.002	.01	.01	.01	.01	.050
19676	.001	.01	.06	.04	.04	.01	.01	.03	9.17	7.18	.002	.01	.01	.04	.01	.019
19677	.002	.05	.01	.01	.06	.01	.01	.03	15.03	.09	.002	.01	.01	.01	.01	.001
19678	.001	.01	.01	.03	.03	.01	.01	.03	3.45	2.68	.003	.01	.01	.01	.01	.007
19679	.001	.01	.01	.01	.01	.01	.01	.02	1.17	.02	.002	.01	.01	.01	.01	.001
19680	.001	.01	.06	.38	.18	.01	.01	.33	5.11	1.46	.002	.01	.01	.03	.01	.031
19681	.001	.08	.01	.01	.02	.01	.01	.02	12.47	.03	.002	.01	.01	.01	.01	.001
19682	.001	.09	.01	.01	.03	.01	.01	.03	16.50	.02	.002	.01	.01	.01	.01	.001
19683	.001	.04	.01	.21	.32	.01	.01	.12	11.42	3.33	.002	.01	.01	.01	.01	.077
19684	.001	.08	.01	.01	.01	.01	.01	.02	11.46	.01	.002	.01	.01	.01	.01	.001
19685	.001	.06	.01	.01	.01	.01	.01	.03	15.60	.03	.002	.01	.01	.01	.01	.001
19686	.001	.02	.01	.01	.01	.01	.01	.02	7.78	.01	.002	.01	.01	.01	.01	.001
19687	.001	.02	.04	.08	.85	.01	.01	.03	10.10	2.81	.002	.01	.01	.01	.02	.034
19688	.001	.02	.01	.01	.03	.01	.01	.01	10.96	.01	.002	.01	.01	.01	.01	.001
19689	.001	.03	.01	.01	.25	.01	.01	.01	15.32	8.75	.002	.01	.01	.02	.01	.258
19690	.001	.09	.03	.12	.39	.01	.01	.09	25.61	4.43	.002	.01	.01	.01	.01	.084
26751	.001	.02	.01	.32	.24	.01	.01	.01	6.60	4.48	.002	.01	.01	.01	.01	.085
26752	.003	.01	.01	.06	.05	.01	.01	.07	3.72	.44	.002	.01	.01	.01	.01	.005
26753	.001	.05	.05	1.03	.45	.01	.01	.06	14.20	7.69	.002	.01	.01	.02	.01	.248
26754	.001	.01	.01	.08	.07	.01	.01	.07	2.28	.34	.002	.01	.01	.01	.01	.007
26755	.001	.08	.30	.58	3.09	.01	.01	.17	19.95	2.63	.002	.01	.01	.13	.03	.820
26756	.001	.01	.04	.04	.31	.01	.01	.34	12.85	9.04	.002	.01	.01	.03	.01	.330
26757	.001	.01	.05	.03	.26	.01	.01	.01	17.06	17.12	.002	.01	.01	.03	.01	.135
26758	.001	.02	.25	.13	1.30	.01	.01	.02	9.01	3.54	.002	.01	.01	.10	.03	.359
26759	.003	.03	.08	.17	1.30	.01	.01	.02	16.55	3.40	.002	.01	.01	.04	.01	.146
26760	.003	.01	.04	.03	.24	.01	.01	.04	15.28	14.24	.002	.01	.01	.02	.01	.081
26761	.001	.02	.39	.37	.23	.01	.01	.19	2.03	.08	.002	.01	.01	.04	.01	.002
26762	.001	.05	.04	.15	.89	.01	.01	.03	14.96	6.77	.002	.01	.01	.02	.01	.153
26763	.001	.04	.04	1.44	.45	.01	.01	.01	11.82	5.71	.002	.01	.02	.02	.01	.308
26764	.001	.03	.07	2.53	.35	.01	.01	.02	14.00	12.85	.002	.01	.04	.04	.01	.337
26765	.001	.01	.02	.39	.18	.01	.01	.04	5.69	4.79	.002	.01	.01	.01	.01	.147
26766	.001	.08	.07	1.09	1.38	.01	.01	.03	24.78	5.06	.002	.01	.02	.01	.03	.550
26767	.001	.02	.01	3.04	.16	.02	.01	.15	7.01	1.32	.002	.01	.03	.01	.01	.033
26768	.002	.03	.04	.04	1.81	.01	.01	.08	13.49	2.96	.002	.01	.01	.03	.01	.042
26769	.004	.04	.04	.03	2.22	.01	.01	.03	5.17	2.84	.002	.01	.01	.03	.01	.055
26770	.003	.01	.01	.05	.11	.01	.01	.13	1.89	.08	.003	.01	.01	.01	.01	.003
STD R-1/OZ	.093	.89	1.37	2.40	2.96	.03	.03	.08	7.01	.95	.010	.01	.04	.14	.03	-



NORANDA EXPLORATION (VAN) PROJECT-8708-112 240 FILE # 87-3555A

SAMPLE#	MO %	CU %	PB %	ZN %	AG OZ/T	NI %	CO %	MN %	FE %	AS %	U %	TH %	CD %	SB %	BI %	AU OZ/T
26771	.012	.01	.01	.06	.05	.01	.01	.12	2.12	.05	.002	.01	.01	.01	.01	.002
26772	.001	.01	.02	.07	.18	.01	.01	.10	3.59	1.43	.002	.01	.01	.01	.01	.068
26773	.001	.03	.07	.02	1.05	.01	.01	.04	8.27	2.23	.002	.01	.01	.01	.01	.073
26801	.001	.12	.03	.01	2.28	.01	.02	.01	28.13	21.15	.002	.01	.01	.03	.02	.882



## ASSAY CERTIFICATE

- SAMPLE TYPE: ROCK

DATE RECEIVED: AUG 13 1987

DATE REPORT MAILED: *Aug 23/87*ASSAYER: *D. J. ...* DEAN TOYE, CERTIFIED B.C. ASSAYER

SAMPLE#	NORANDA EXPLORATION (VANCOUVER) PROJECT-8708-077 240 File # 87-3271A															
	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	TH	CD	SB	BI	AU
	%	%	%	%	OZ/T	%	%	%	%	%	%	%	%	%	%	OZ/T
<i>Pinenut</i> Rocks	76163	.001	.01	.28	1.53	.13	.01	.01	.12	1.05	.13	.002	.01	.02	.01	.003
	76164	.001	.01	.01	.01	.01	.01	.01	.08	1.32	.01	.002	.01	.01	.01	.001
	76166	.001	.01	.01	.05	.04	.01	.01	.05	3.85	.05	.002	.01	.01	.01	.001
	76167	.001	.03	.01	.01	.01	.01	.01	.02	24.31	.02	.002	.01	.01	.01	.001
	76168	.001	.09	.04	.01	.93	.01	.01	.05	40.48	4.67	.002	.01	.01	.02	.073
	76169	.001	.01	.07	.01	.47	.01	.01	.12	12.32	11.02	.002	.01	.01	.01	.110
	76170	.001	.01	.01	.01	.01	.01	.01	.06	1.36	.01	.002	.01	.01	.01	.001
	76171	.001	.14	.45	.59	1.12	.01	.01	.61	33.88	2.24	.002	.01	.01	.01	.050
	76172	.001	.02	.02	.24	.35	.01	.01	.01	29.78	27.65	.002	.01	.01	.03	.479
	76173	.001	.01	.19	.15	1.41	.01	.01	.24	7.57	2.24	.002	.01	.01	.01	.040
	76174	.001	.01	.02	.01	.09	.01	.01	.27	2.13	.94	.004	.01	.01	.01	.009
<i>Blant</i>	76175	.004	.03	.12	.10	.32	.01	.01	.06	9.58	1.66	.002	.01	.01	.01	.014
	86629	.004	.01	.02	.01	.01	.01	.01	.01	38.14	.12	.002	.01	.01	.01	.001
	099145	.001	.01	.01	.01	.01	.01	.01	.02	.72	.02	.003	.01	.01	.01	.001
	099146	.001	.01	.01	.01	.01	.01	.01	.01	2.21	.06	.002	.01	.01	.01	.002
	099147	.001	.01	.01	.94	.12	.01	.01	.07	8.06	6.08	.003	.01	.01	.01	.042
	099148	.001	.08	.01	.53	.38	.01	.01	.02	32.07	22.80	.003	.01	.01	.03	.315
	099149	.001	.62	2.16	.12	1.07	.01	.01	.10	3.05	.10	.002	.01	.01	.84	.001
	099150	.001	.04	.13	.01	.35	.01	.01	.06	17.28	13.71	.002	.01	.01	.10	.249
	099201	.001	.07	.13	.03	1.23	.01	.01	.18	19.29	3.51	.002	.01	.01	.07	.036
	099202	.002	.13	.02	.01	.11	.01	.01	.04	30.80	10.62	.002	.01	.01	.01	.112
	STD R-1/02	.093	.89	1.37	2.41	2.97	.03	.02	.08	7.00	.94	.013	.01	.04	.14	.03

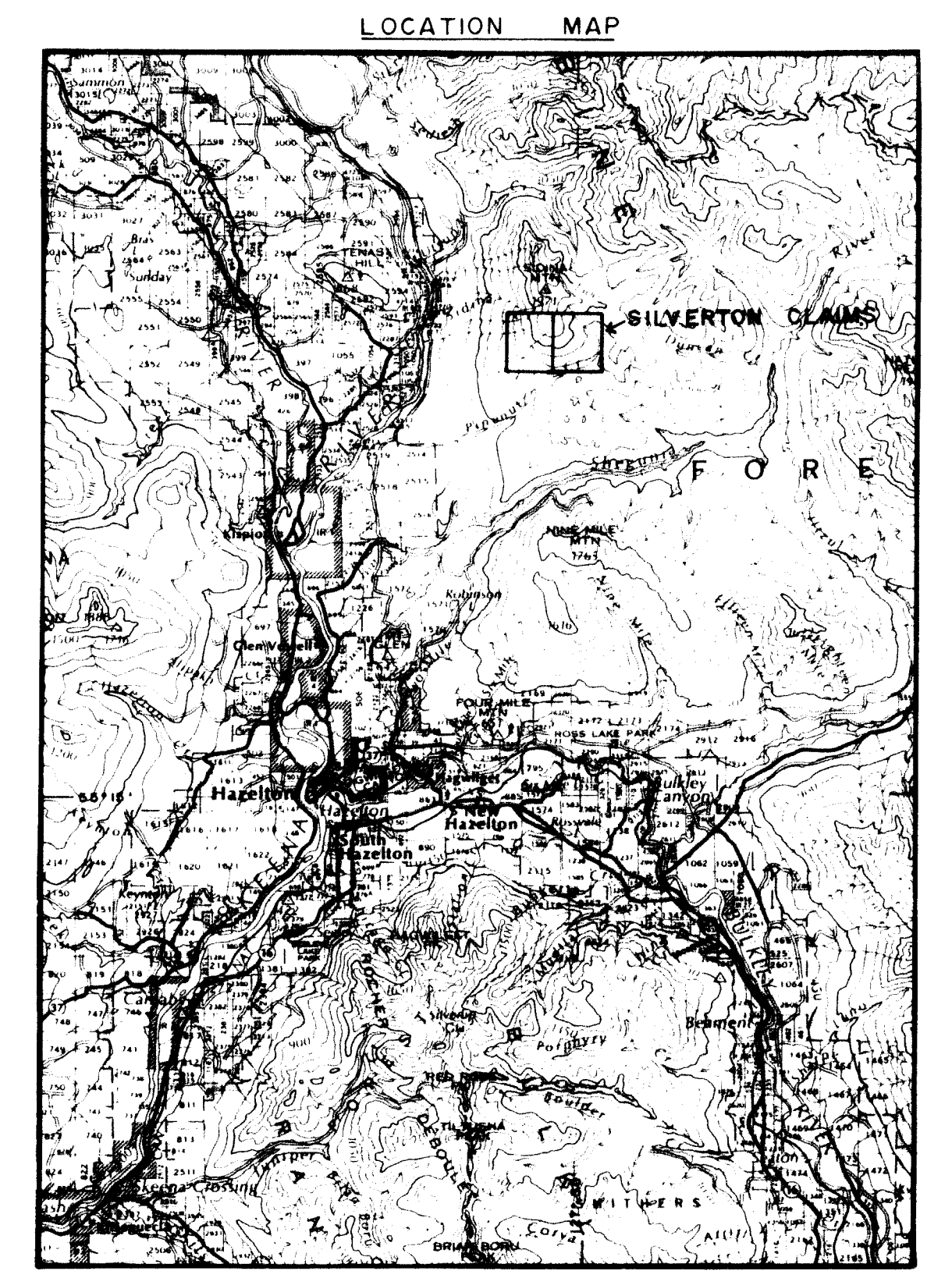
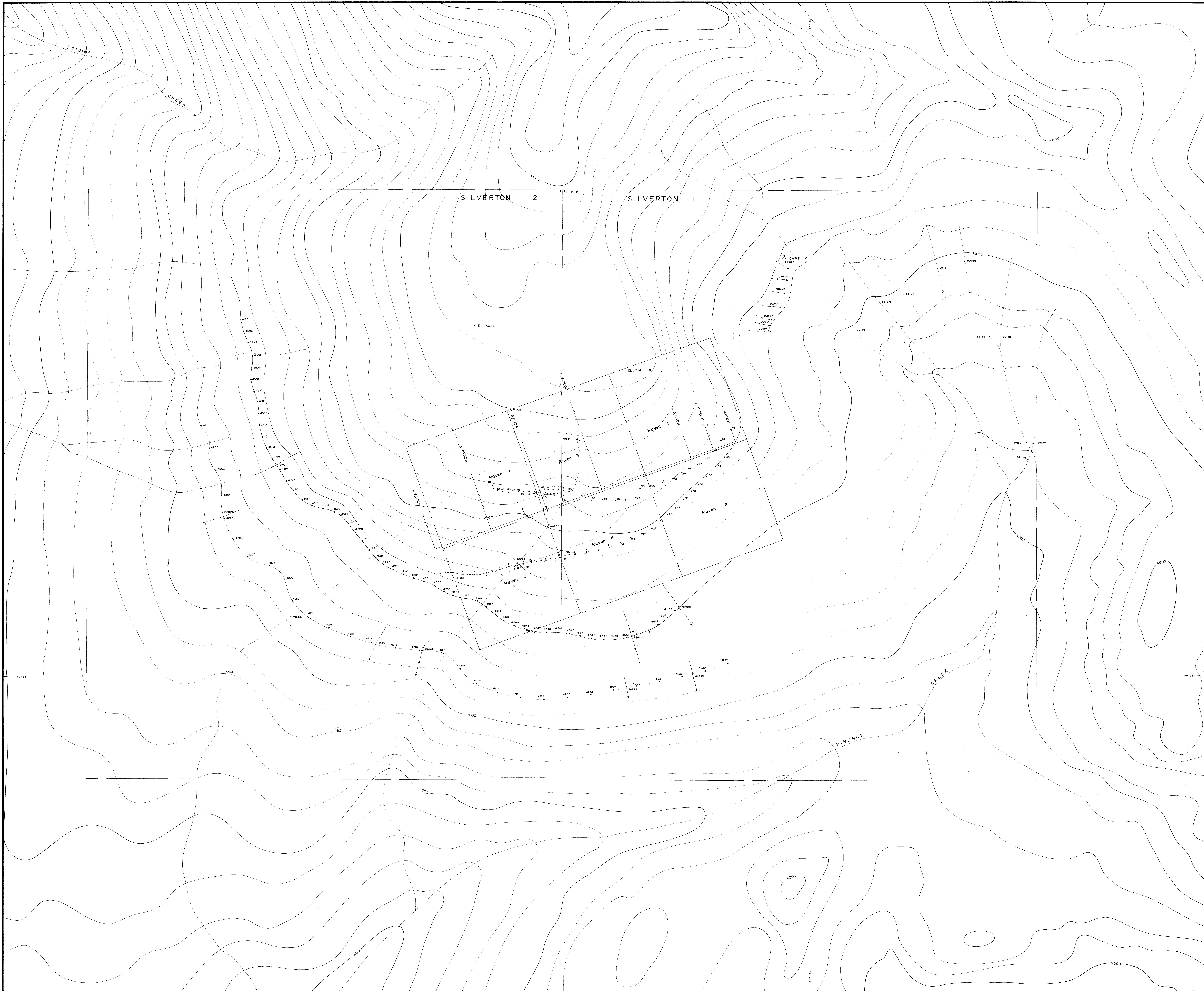
APPENDIX 4. LIST OF PERSONNEL

Name, Address	Position	Dates worked on claims
-----	-----	-----
Rob Day 15630-118th Ave. Edmonton, Alberta	Geologist	6 <del>8</del> , 14-17 Aug.87
Paul Huel RR 1 Hazelton, B.C.	Prospector	6 <del>8</del> , 14-17 Aug.87
Tom Bell RR 1 Hazelton, B.C.	Prospector	6 <del>8</del> , 14-17 Aug.87
Peter Gosau 3A-1750 Quinn St. Prince George, B.C.	Assistant	14-17 Aug.87
Del Myers 3A-1750 Quinn St. Prince George, B.C.	Geologist	6 <del>8</del> Aug. 87

*dm*







**LEGEND**

- 43 Soil sample location
- 43+ Soil sample location
- △ Triangulation point
- ⊠ Flashed grid
- ⊙ Helicopter pad
- Quartz Vein
- Trench

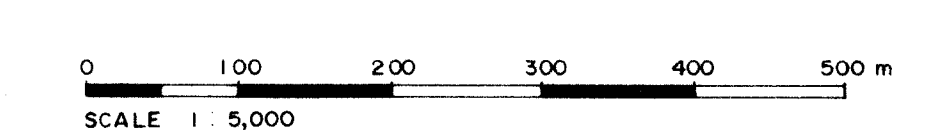
**TABLE OF SOIL ANALYSES**

SAMPLE	NO	CU	FE	ZN	AG	AS	SE	SR	SO
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
SOIL 1	7	73	76	332	3	805	9	30	
SOIL 2	7	47	25	587	8	212	2	4	
SOIL 3	5	188	87	5	105	6	1		
SOIL 4	24	118	42	817	1.1	882	19	1	
SOIL 5	7	62	20	427	5	378	8		
SOIL 6	5	158	25	418	4	445	4	4	
SOIL 7	5	29	22	183	4	241	5	12	
SOIL 8	2	26	18	132	1	47	3	2	
SOIL 9	2	26	20	126	1	28	2	1	
SOIL 10	2	31	189	7	34	1	1		
SOIL 11	2	35	4	97	1.0	48	5	1	
SOIL 12	4	61	111	4	45	4	1		
SOIL 13	4	48	25	179	3	184	2	1	
SOIL 14	8	66	49	173	1.4	1161	4	1	
SOIL 15	2	20	15	82	2	76	2	1	
SOIL 16	3	26	28	71	7	136	5	3	
SOIL 17	2	42	30	104	1	121	2	2	
SOIL 18	21	60	32	119	1	78	4	2	
SOIL 19	4	44	31	91	3	155	2	1	
SOIL 20	4	25	20	89	3	155	4	1	
SOIL 21	3	46	19	72	1	95	2	1	
SOIL 22	3	46	19	72	1	95	2	1	
SOIL 23	2	121	24	311	7	818	2	3	
SOIL 24	3	28	28	180	2	286	4	1	
SOIL 25	12	89	22	207	7	552	2	2	
SOIL 26	2	26	154	2	81	1	1		
SOIL 27	4	51	12	112	5	107	2	1	
SOIL 28	7	26	18	112	2	24	2	1	
SOIL 29	2	47	38	109	4	88	2	11	
SOIL 30	2	37	32	186	4	78	4	1	
SOIL 31	2	37	32	186	4	78	4	1	
SOIL 32	3	49	24	125	1	77	2	2	
SOIL 33	2	28	18	86	4	31	2	1	
SOIL 34	4	45	24	146	7	66	2	1	
SOIL 35	2	26	18	112	2	24	2	1	
SOIL 36	19	28	28	180	5	81	4	1	
SOIL 37	25	16	176	1	75	4	1		
SOIL 38	24	35	17	392	1	185	4	1	
SOIL 39	24	40	31	232	1	222	4	1	
SOIL 40	20	50	24	512	5	961	6	1	
SOIL 41	10	63	22	422	2	387	8	1	
SOIL 42	23	12	81	4	61	4	5	1	
SOIL 43	18	59	61	661	1.0	276	7	1	
SOIL 44	15	42	22	487	3	448	5	1	
SOIL 45	17	25	20	147	7	236	4	1	
SOIL 46	32	47	182	1	448	5	1		
SOIL 47	23	61	27	644	8	761	4	4	
SOIL 48	12	48	17	150	1	88	4	1	
SOIL 49	11	44	24	999	3	117	4	1	
SOIL 50	33	26	22	135	2	25	4	1	
SOIL 51	27	28	142	1	81	4	1		
SOIL 52	15	41	27	187	4	441	1	2	
SOIL 53	2	32	47	492	5	798	1	2	
SOIL 54	9	73	28	1499	1	741	1	1	
SOIL 55	4	61	19	482	2	411	16	14	
SOIL 56	1	42	12	168	1	891	1	1	
SOIL 57	2	65	16	219	2	703	7	1	
SOIL 58	2	65	16	219	2	703	7	1	
SOIL 59	2	70	141	563	8	807	3	1	
SOIL 60	1	45	18	112	1	46	1	1	
SOIL 61	2	24	11	91	3	52	2	1	
SOIL 62	1	25	14	112	1	46	1	1	
SOIL 63	1	29	24	115	1	31	2	1	
SOIL 64	1	23	17	79	1	58	2	1	
SOIL 65	2	30	17	172	1	62	4	1	
SOIL 66	1	23	17	79	1	58	2	1	
SOIL 67	1	24	18	102	1	19	2	1	
SOIL 68	1	40	25	128	7	56	4	1	
SOIL 69	1	30	18	119	1	58	4	1	

**TABLE OF SILT ANALYSES**

SAMPLE	NO	CU	FE	ZN	AG	AS	SE	SR	SO
PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
74162	17	48	48	275	1	107	11	18	
74163	31	12	122	440	1.1	107	11	18	
09115	1	27	18	121	1	22	2	2	
09116	1	34	17	121	1	16	2	2	
09117	1	37	18	115	1	1	2	1	
09118	1	35	14	111	1	1	2	1	
09119	1	25	15	121	1	1	2	1	
09120	2	25	19	122	2	17	2	1	
09121	1	34	18	114	1	21	2	2	
09122	2	28	18	120	1	26	2	1	
09123	1	41	19	117	1	38	2	1	
09205	4	60	80	428	3	776	24	1	
17668	5	82	81	754	6	883	2	14	
17670	4	51	31	624	4	471	2	29	
19344	2	26	19	100	1	112	2	2	

NOTE: Topography based on photology enlargement of N.T.S. 1:50,000 scale map 93M/5.6



REVISED  
Dec 87 am

**PINENUT CREEK OPTION**

**SOIL AND SILT GEOCHEM SURVEY**

PROJ. No. 287 SURVEY BY: R. DAY, J. DEMAR DATE: AUG. 1987  
N.T.S. 93M/5.6 DRAWN BY: S.K.B SCALE: 1:5,000  
DWG No. **NORANDA EXPLORATION**  
FIG. 4 OFFICE: PRINCE GEORGE, B.C.

GEOLOGICAL BRANCH  
 ASSOCIATED WITH  
**16,601**