85-1109-14406
11/86

A&M exploration ltd. GEOLOGY • GEOPHYSICS MINING ENGINEERING

Suite 614-850 WEST HASTINGS STREET, VANCOUVER, B.C.
TELEPHONE (604) 681-0191 V6C 1E1

GEOCHEMICAL AND GEOPHYSICAL REPORT

FILMED

on the

SUMMIT PROPERTY - YMIR B.C.

Nelson Mining Division - British Columbia

Lat. 49° [redacted] N (20.5') Long. 117° [redacted] W (10')

N.T.S. 82F/6E

for

Owner/Operator: Nugget Mines Ltd.

Donald G. Allen, P. Eng. (B.C.)
and
S. A. Endersby, P. Eng. (B.C.)

January 27, 1986

Vancouver, B.C.

TABLE OF CONTENTS

ILLUSTRATIONS

TABLE

APPENDICES

SUMMARY

The Summit Group consists of 54 claim units held by Nugget Mines Ltd. They are situated in the Ymir gold-silver camp, eight kilometres northeast of Ymir and eighteen kiometres southeast of Nelson and are accessible by logging road.

Ore deposits in the Ymir camp are localized in quartz veins where they intersect granitic wallrocks.

The Summit group has two known veins. The most prominent of these is the Summit vein which is a quartz vein three to four metres wide and exposed intermittently over a distance of at least 700 metres. It contains minor gold, silver, lead and zinc values. The second vein is known as the Elise vein. It is about one metre wide where exposed by a shaft and tunnel on the Elise claim side of Huckleberry Creek. Host rocks for these veins are argillite and phyllite of the Ymir group. Granite (favourable host for many of the Ymir ore deposits) occurs locally in float.

A small program of prospecting, soil geochemical sampling and VLF-electromagnetic surveys was undertaken in October, 1985 by D. G. Allen, G. M. Allen and S. A. Endersby. Two survey lines were run across the southwest projection of the Summit vein. Results of the soil sampling indicated weakly to moderate anomalous zinc, lead, silver and gold values associated with the vein extensions.

CONCLUSION

The Summit vein is exposed intermittently over a distance of at least 700 metres and is still open and strong at both ends. A bench, which appears to be a topographic expression of the vein, extends on strike for a considerable distance further to the northeast. This vein is probably part of a major vein system which includes the Pathfinder and Old Timer veins. The observed host rock is argillite of the Ymir group. Government reports indicate that tongues of granite outcrop along strike to the northeast. These outcrops have not yet been observed although granite float is evident in some locations. Because overburden

is extensive the vein has not been exposed or tested in these favourable host rocks.

The Elise vein where exposed is not as strong as the Summit vein but is better mineralized. It has only been exposed over a short distance.

The results of the geochemical sampling and assaying indicate that the veins are favourable for mineralization and could carry ore shoots in more favourable ground, particularly where they contact or cut areas of granite which seem to be indicated by the presence of granitic float in several areas. Detailed geological mapping and geochemical sampling is warranted, particularly along the strike of the Summit vein to the northeast.

RECOMMENDATION

A flagged grid should be established in favourable areas of the property, and soil sampling and VLF-EM surveys coupled with geological mapping should be done.

INTRODUCTION

A total of 54 claim units are held by Nugget Mines Ltd. in what is referred to as the Summit group of claims. These claims are situated in the Ymir gold-silver camp.

Two veins are known on the property at the present time. The Summit vein has been developed by about 100 metres of underground workings in two adits, a shaft and several open cuts. The Elise vein has been developed by about 150 metres of underground workings in one adit, a shaft and open cuts. Both veins contain low grade gold and silver values.

This report summarizes results of soil geochemical sampling, VLF-electromagnetic surveys and prospecting on two lines which were run over the southwest projection of the Summit. Work was carried out on October 1985, by D. G. Allen, G. M. Allen and S. A. Endersby.

LOCATION, ACCESS, PHYSIOGRAPHY

The Summit claims are situated eight kilometres northeast of Ymir and 18 kilometres southeast of Nelson (Figure 1). Access from the Nelson-Salmo highway is by logging road up Clearwater Creek to the northeast corner of the claims or by Wildhorse Creek and Huckleberry Creek to the south part of the claims. The Summit workings can easily be reached by foot.

The claims lie between elevations 4,000 and 5,500 feet on the divide between Huckleberry Creek and the south branch of Clearwater Creek. Slopes are gentle to moderate and covered with cedar, fir and larch with a thick undergrowth of alder, huckleberry and false azalea.

CLAIM DATA

The property has been grouped as the Summit group and consists of the following claims (Figure 2).

Claim Name	Lot No.	Record No.	Type	Anniversary Date
Editor	5861	719	Rev. C.G.	August 8, 1987*
Summit	4229	720	Rev. C.G.	August 8, 1987*
Eagle #1		1273	Two-post	October 1, 1986
Eagle #2		1274	Two-post	October 1, 1986
Eagle #3		1275	Two-post	October 1, 1986*
Moss #1		1859	Two-post	August 12, 1987*
Moss #2		1860	Two-post	August 12, 1986*
Tim #1		3166	Two-post	June 6, 1987*
Tim #2		3167	Two-post	June 6, 1987*
Lytton	2194	3203	Rev. C.G.	June 6, 1987*
Ema	2913	3204	Rev. C.G.	June 6, 1987*
Elise	1310	3205	Rev. C.G.	June 6, 1987
Moss #6		3509	Two-post	September 9, 1986
Moss #7		3510	Two-post	September 9, 1986
Birch (20 units)		3564	Mod. grid	November 4, 1986*
Salmon Star	3942	3695	Rev. C.G.	March 30, 1988*
Goldhill (16 units)		3870	Mod. grid	September 12, 1987
Raven #1		3871	Two-post	September 12, 1986
Raven #2		3872	Two-post	September 12, 1986
Raven #3		3873	Two-post	September 12, 1986

Total - 54 claim units

*Assuming that work represented by this report is accepted.

GEOLOGY

The Summit claims are underlain by argillite, slate and phyllite of the Ymir group (Permian? to Lower Jurassic?). Bedding attitudes observed on the western claims are north-south and dips are steep to the west. A few geological observations (bedding, veins and faults are plotted on Figures 3 and 4).

Porphyritic granite of the Nelson Plutonic suite outcrops to the west and is reported by Drysdale (1917) and McAllister (1951) to occur throughout the Ymir area as tongues of dikes ranging in width from a

NUGGET MINES LTD.

82 F/6

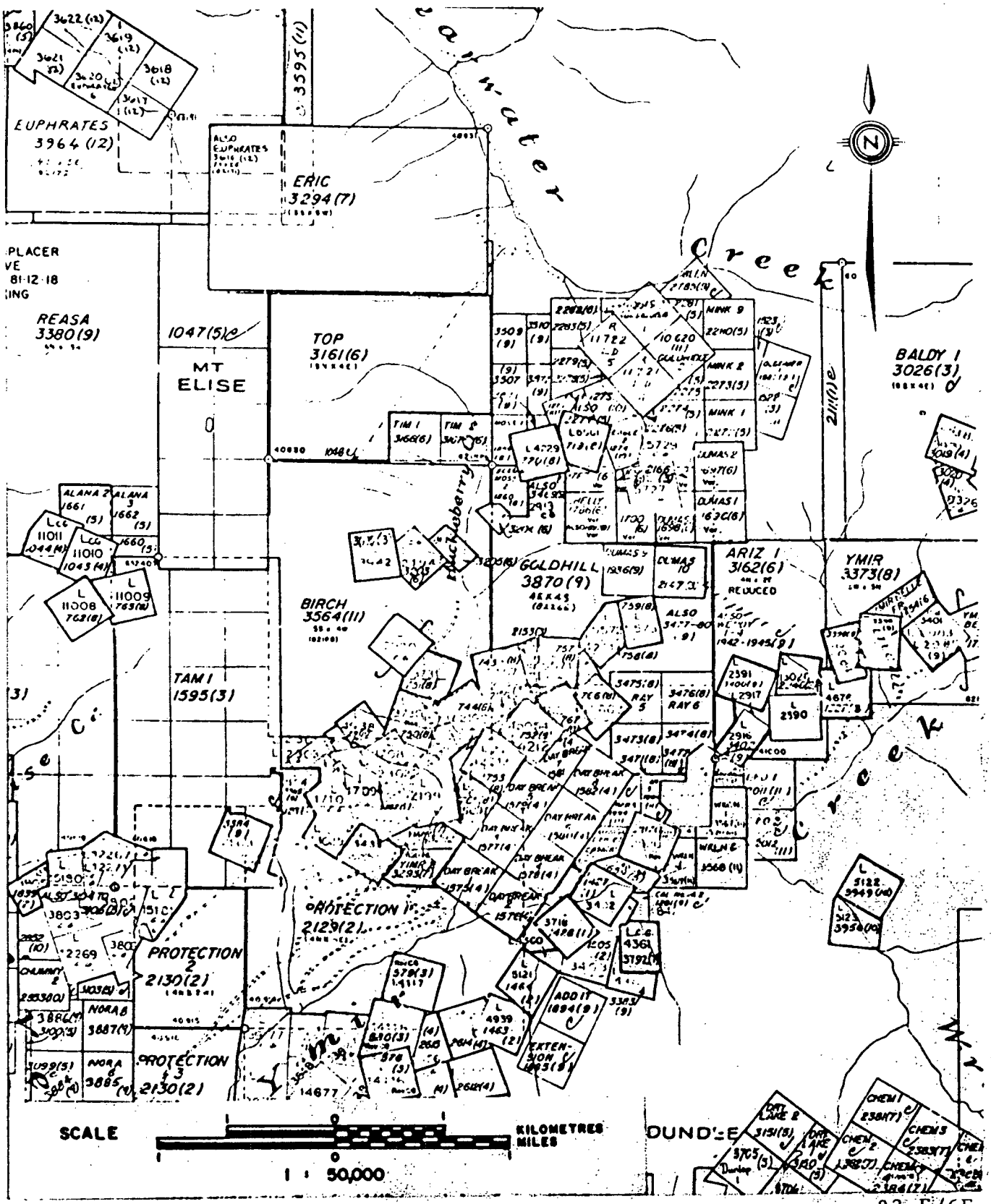
LOCATION MAP

SUMMIT PROPERTY

Nelson Mining Division - British Columbia

A&M exploration ltd.

Figure 1



NUGGET MINES LTD.

CLAIM MAP

SUMMIT PROPERTY

Nelson Mining Division - British Columbia

Donald G. Allen

A·M exploration ltd.

Figure 2

metre to many kilometres.

MINERALIZATION

Ymir Camp

According to Drysdale (1917), the ore deposits of the Ymir gold-silver camp occur mainly in fissure-type quartz veins. The veins trend east-northeast and dip steeply to the northwest. Ore shoots owe their localization to changes in host rock types or to the intersection of the vein with dikes or other faults. Drysdale reports examples of well-defined fissure veins containing only barren quartz except where they intersect with granite tongues. Best ore material is obtained where wallrock of such veins is granitic rather than sedimentary.

Summit Vein

A prominent quartz vein up to four metres wide is exposed discontinuously on the Summit claim. This showing was briefly described by Drysdale (1917) and O'Grady (1928) who reported negligible gold and silver values. The vein trends 050° to 067° and dips 70° to the northwest and has been traced for a distance of at least 700 metres. Overburden covers the extension in both directions. A flat bench on the hillside, possibly a topographic expression of the vein, suggests that the vein extends for a distance of up to 1500 metres across both the Summit and Editor claims (Figure 3). The vein has a similar trend with that of the Pathfinder and Old Timer veins to the east of the Summit group and is in line with both, indicating that all may be part of the same vein system.

The Summit vein consists of milky white quartz with scattered narrow vugs lined with quartz crystals. Minor amounts of pyrrhotite occur in thin seams with manganese oxides parallel to vein walls and as disseminated cubes in wallrock and wallrock inclusions in the vein. Analysis of a sample of the more pyritic vein material indicate minor zinc (3140 ppm), lead (482 ppm) silver (9.6 ppm) and gold (0.13 oz/ton) values.

Elise Vein

A quartz vein about one metre in width is exposed over a short distance on the west side of Huckleberry Creek on the Elise claim. It is very briefly described in the B.C. Ministry of Mines Annual Reports for 1896 and 1933. A crosscut tunnel was driven about 300 feet to intersect the vein, which was then drifted on for about 140 feet. Although the tunnels is not yet accessible, the vein is reported to be about 3.5 to 4.0 feet wide, strikes at N 54° E and dips steeply to the northwest. The vein is composed of stringers and lenses of quartz in the sheared country rock.

Other

Two vein-shears were encountered to the east of the EMA claim. The easternmost vein is up to one metre wide and trends north-northeasterly with a steep dip to the west. The veins consist of drusy quartz with no visible sulfides.

GEOCHEMICAL SURVEYS

Geochemical sampling was carried out over the southwest projection of the Summit vein. To facilitate sampling, two flagged lines approximately 750 metres long and 200 metres apart, were established at an azimuth of 135°. 52 soil samples and three rock samples were taken at 25 metre intervals along these lines. Soil material sampled on the northwestern end of the lines was mainly glacial till and on the southeastern end, mainly talus fines. In both cases, samples were taken at depth of 10 to 20 centimetres, well below the "A" horizon. Samples were placed in Kraft paper bags and shipped to Rossbacher Laboratory Ltd. where they were analyzed for six elements (Mo, Cu, Ag, Zn, Pb, Au) by standard atomic absorption technique.

Survey lines are plotted on Figures 3 and 4 and soil sample sites and selected analytical results plotted on Figure 4.

Weakly to moderately anomalous zinc (greater than 150 ppm) lead (greater than 22 ppm), silver (greater than 0.5 ppm) and molybdenum (greater than 4 ppm) occur throughout the lines samples. One sample of pyritic siltstone (T 65) was found to carry anomalous molybdenum, silver

and zinc values indicating that certain sedimentary beds may be metal-rich. Any geochemical expression of a particular vein might therefore be masked by overburden or by a high background in host rocks. More extensive surveys are required before an interpretation can be made.

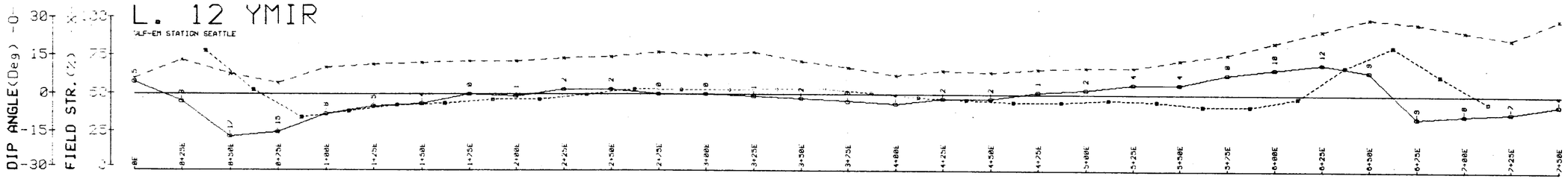
VLF-ELECTROMAGNETIC SURVEY

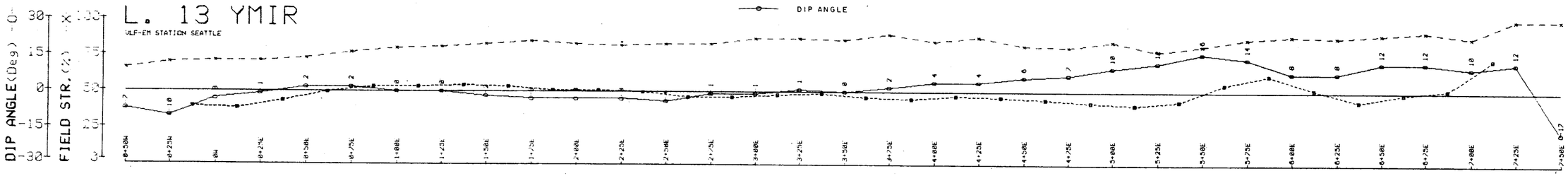
Two test lines totalling 1.42 line/km. of very low frequency electromagnetic surveys were completed on the property using a VLF-EM receiver manufactured by Sabre Electronic Instruments of Burnaby, B.C. The model 27 receiver was tuned to Seattle, Washington. Measurements of relative field strength and dip angle were recorded at 25 metre intervals along the lines. The data is presented in profile form along with standard Fraser filtered values on Figure 5, after this page.

Several VLF electromagnetic conductors were detected by the survey. With the Sabre instrument, conductive zones are located where the dip angle values cross over from positive to negative with co-incident local field strength and fraser filter highs. The anomaly located at 6+60E on L12 and at 7+40E on L13 meet this criteria. Peak to peak dip angles of 21 and 29 degrees respectively were recorded. Local field strength highs of 15% were also noted. Anomalous Zn, Ag, and Cu geochemical values occur immediately downhill from the conductor on L13, which strongly suggests that this conductor is related to metallic sulfide mineralization. Given the strong similarity between the two geophysical responses on L12 and on L13, it is likely that these two are related to the same shear vein structure. Further fill in lines of VLF surveying between L12 and L13 and detailed prospecting of the anomalous areas is warranted.

One other conductor is interpreted at station 0+25E on L12. Peak to peak dip angle readings exceed 22 degrees co-incident with a local field strength high of approximately 10%. Further surveying is required to determine the importance of this anomaly.

No anomalous responses were noted on L 13 in the vicinity of the vein outcrop located south of L13, station 0+25E nor on the projection





LINE 12 YMIR

STN#	DIP(deg)	FS%	F.FILTER
0E	5	60	0
0+25E	-3	72	34
0+50E	-17	63	3
0+75E	-15	57	-19
1+00E	-8	67	-14
1+25E	-5	68	-9
1+50E	-4	70	-8
1+75E	0	71	-5
2+00E	-1	71	-5
2+25E	2	73	-1
2+50E	2	74	4
2+75E	0	77	3
3+00E	0	75	3
3+25E	-1	77	4
3+50E	-2	71	4
3+75E	-3	67	1
4+00E	-4	62	-3
4+25E	-2	65	-5
4+50E	-2	64	-7
4+75E	1	66	-7
5+00E	2	67	-5
5+25E	4	67	-6
5+50E	4	72	-10
5+75E	0	76	-18
6+00E	-10	84	-3
6+25E	-2	92	22
6+50E	3	100	38
6+75E	-9	97	15
7+00E	-8	92	-6
7+25E	-7	87	0
7+50E	-4	100	0

LINE 13 YMIR

STN#	DIP(deg)	FS%	F.FILTER
0+50W	-7	66	0
0+25W	-10	70	-13
0W	-3	71	-14
0+25E	-1	71	-8
0+50E	2	73	-1
0+75E	2	77	4
1+00E	0	80	4
1+25E	0	81	5
1+50E	-2	83	4
1+75E	-3	85	1
2+00E	-3	83	1
2+25E	-3	82	-1
2+50E	-4	83	-5
2+75E	-1	83	-5
3+00E	-1	87	-3
3+25E	1	87	-2
3+50E	0	86	-5
3+75E	2	90	-6
4+00E	4	85	-4
4+25E	4	88	-5
4+50E	6	82	-7
4+75E	7	81	-9
5+00E	10	85	-11
5+25E	12	78	-8
5+50E	16	82	6
5+75E	14	87	14
6+00E	8	89	2
6+25E	8	88	-8
6+50E	12	98	-2
6+75E	12	92	2
7+00E	10	88	27
7+25E	12	100	0
7+50E	-12	100	0

Instrument : Sabre Model 27 VLF-EM Receiver.

SCALE 1 : 2,000

100 0 100 METRES

200 0 200 FEET

NUGGET MINES LTD.

SUMMIT PROPERTY

NELSON MINING DIVISION - BRITISH COLUMBIA

VLF-EM PROFILES

Donald G. Allen

A·M exploration ltd

Jan. 31, 1986

Figure 5

14,406

of the vein located on L11 at old station 80E, onto L12. This data suggests that the sulfide mineralization in the vein in this area is not continuous over large distances.

Donald G. Allen

TABLE I

Rock Sample Descriptions

Sample No.	Description
299 GT 45	Slate
65	Slaty siltstone with abundant finely disseminated pyrite.
69	40 to 100 centimetre vein of drusy quartz - sample contains 15% wallrock and fault gouge.

REFERENCES

Allen, D. G. and Endersby, S. A. (1985). Preliminary Geochemical Report on the Summit Property. Assessment Report dated August 28, 1985.

Drysdale, C. W (1917). Ymir Mining Camp, B.C., Geol. Surv. Canada, Memoir 94.

McAllister, A.L. (1951). Ymir Map Area, Geol. Surv. Canada, Paper 51-54.

O'Grady, B. T. (1928). Summit Group, in B.C. Min. Mines Ann. Rept., 1928, p. C334.

Little, H. W. (1960). Nelson Map Area, West Half, Geol. Surv. Canada, Memoir 308.

Allen, D. G. (1982). Preliminary Geochemical Report on the Summit, Editor, Moss and Eagle Claims. 1982 Associated Report.

Annual Report, B.C. Minister of Mines, 1896, p. 75.

Annual Report, B.C. Minister of Mines, 1933, p. A227.

CERTIFICATE

I, Donald G. Allen, certify that:

1. I am a Consulting Geological Engineer for A & M Exploration Ltd. with offices at 614 - 850 West Hastings Street, Vancouver, British Columbia.

2. I am a graduate of the University of British Columbia with degrees in Geological Engineering (B.A.Sc., 1964; M.A.Sc. 1966).

3. I have been practising my profession since 1964.

4. I am a member in good standing of the Association of Professional Engineers of British Columbia.

5. This report is based on fieldwork carried out personally and by S. A. Endersby, and by G.M. Allen.

6. I hold no interest in, nor do I expect to receive any, in the Summit group of claims.

Donald G. Allen

Vancouver, B.C.
January 27, 1985

Donald G. Allen
P. Eng. (B.C.)

APPENDIX I

GEOCHEMICAL RESULTS

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : NUGGET MINES LTD.
1124 LEE STREET
WHITE ROCK

PROJECT: 299
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 86001
INVOICE#: 6193
DATE ENTERED: DEC.28,1985
FILE NAME: NUG86001
PAGE # : 1

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au
S	299 GS 40	4	48	1.0	190	36	10
S	41	3	28	0.8	106	20	10
S	42	3	30	1.2	122	16	10
S	43	2	28	0.6	90	22	10
S	S 44	2	28	0.6	86	22	10
T	T 45	2	44	0.4	88	6	10
S	S 46	2	36	1.0	118	20	30
S	47	2	38	0.8	148	22	10
S	48	2	56	1.4	150	24	10
S	299 GS 49	3	36	1.0	156	34	10
S	50	2	34	1.0	88	30	10
S	51	3	44	0.8	172	58	10
S	52	2	42	2.0	126	36	10
S	53	2	46	1.8	174	22	10
S	54	3	40	0.8	210	18	10
	55	2	30	0.6	136	18	10
S	56	2	30	0.4	114	26	10
S	57	3	32	0.2	106	22	10
S	58	2	28	0.4	138	22	10
S	299 GS 59	2	24	0.6	164	32	10
S	60	3	30	0.6	90	24	10
S	61	2	38	0.4	122	18	10
S	62	2	24	0.2	148	20	10
S	63	12	38	0.6	180	18	10
S	S 64	6	40	0.6	320	16	10
T	T 65	22	62	1.2	322	10	10
S	S 66	14	84	1.0	960	18	10
S	67	6	68	1.4	770	20	10
S	S 68	4	56	0.8	290	30	10
T	299 GT 69	2	8	0.6	2	10	100
S	S 70	3	42	0.8	320	18	10
S	71	5	82	3.2	348	24	10
S	72	6	46	1.4	312	28	10
S	73	3	20	1.2	86	14	10
S	74	3	24	0.8	108	16	10
S	75	2	20	0.8	70	14	10
S	76	3	34	0.8	180	14	10
S	77	14	46	1.0	380	16	10
S	78	6	30	0.6	210	20	10
S	299 GS 79	4	34	0.8	190	28	10

CERTIFIED BY : _____

ROSSBACHER LABORATORY LTD.

2225 S. SPRINGER AVENUE
BURNABY, B.C. V5B 3N1
TEL : (604) 299 - 6910

CERTIFICATE OF ANALYSIS

TO : NUGGET MINES LTD.
1124 LEE STREET
WHITE ROCK

PROJECT: 299
TYPE OF ANALYSIS: GEOCHEMICAL

CERTIFICATE#: 86001
INVOICE#: 6193
DATE ENTERED: DEC.28,1985
FILE NAME: NUG86001
PAGE # : 2

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au
S	299 GS 80	2	44	0.2	172	22	10
S	81	4	58	0.2	230	42	10
S	82	2	38	0.8	160	72	10
S	83	2	28	0.6	94	34	10
S	84	2	28	0.6	138	22	10
S	85	2	36	1.2	168	18	10
S	86	1	26	1.0	188	52	10
S	87	2	32	1.0	208	26	10
S	88	3	32	0.4	170	30	10
S	299 GS 89	2	38	0.6	250	26	10
S	90	2	30	0.6	188	32	10
S	91	2	32	0.8	210	48	10
S	92	2	32	0.4	180	26	10
S	93	2	48	0.6	178	26	10
S	299 GS 94	2	38	0.6	150	28	10

CERTIFIED BY : F. Rossbach

APPENDIX II

AFFIDAVIT OF EXPENSES

AFFIDAVIT OF EXPENSES

This will cetify that prospecting, geology, VLF surveying and geochemical sampling were carried out between October 15, 1985 and October 25, 1985 on the Summit group of claims in the Ymir area of the Nelson Mining Division, British Columbia, to the value of the following:

Mobilization and Fieldwork

Salaries		
D. G. Allen	2 days @ $350	$ 700.00
G. M. Allen	2 days @ $250	500.00
S. A. Endersby	2 days @ $250	500.00
Vehicle and travel expenses		380.00
Room and board		140.00
Geochemical analysis and assay		480.55
Instrument rental		50.00

Report

D. G. Allen	1 day @ $300/day	300.00
D. MacQuarrie	½ day @ $300/day	150.00
Map preparation, drafting and compilation	30 hrs. @ $15	450.00
Map reproduction and photocopying		65.00
	TOTAL	**$3,715.55**

Donald G. Allen

Vancouver, B.C.
January 27, 1986

Donald G. Allen
P. Eng. (B.C.)

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,406

SCALE 1 : 5,000

NUGGET MINES LTD.

SUMMIT PROPERTY

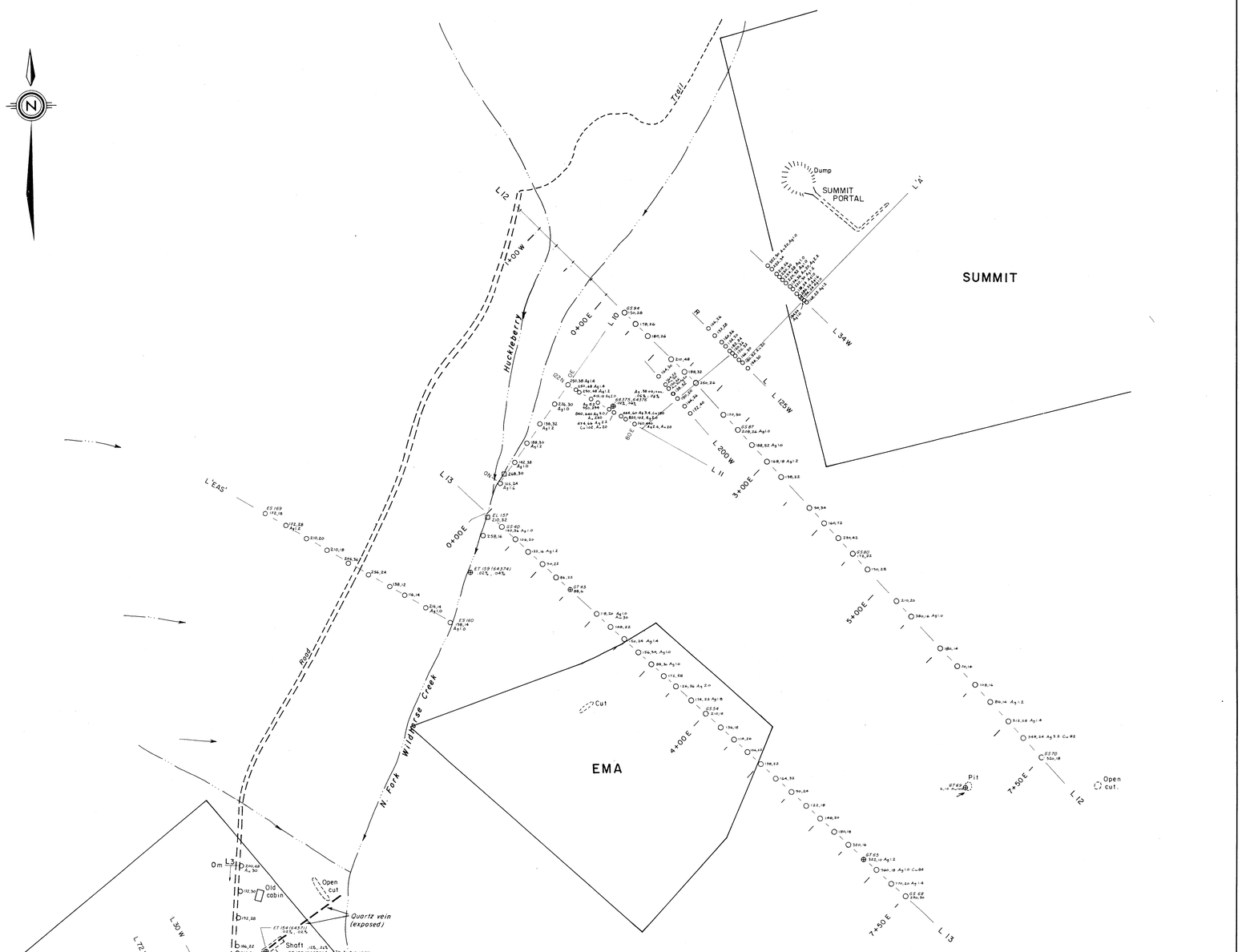
NELSON MINING DIVISION - BRITISH COLUMBIA

PROPERTY PLAN MAP

A·M exploration ltd.

Aug 31, 1985

Figure 3



LEGEND

- **Soil sample site, sample number;** ppm Zn, ppm Pb.
- **Silt sample site, sample number;** ppm Zn, ppm Pb.
- **Rock sample site, sample number;** % Zn, % Pb.
- Sample line with line number, station number.

Note : Other geochemical values plotted where ; ppm Ag ≥ 1.0, ppm Cu ≥ 100, ppb Au ≥ 20.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,406

SCALE 1 : 2,000

NUGGET MINES LTD.

SUMMIT PROPERTY

NELSON MINING DIVISION - BRITISH COLUMBIA

GEOCHEMICAL MAP

Donald F. Allen

A·M exploration ltd.

Aug 31, 1985

Figure 4

85-289-2