

3112

GEOLOGICAL AND GEOCHEMICAL SURVEY
OVER PART OF THE PRINCE AND BILL
CLAIMS, CLEARWATER AREA, KAMLOOPS
MINING DIVISION OF B. C.

92 P / 9E

PREFACE

The attached report was commissioned by Junex Mines Ltd. N.P.L., 1710A, One Bentall Centre, Vancouver, B. C., who are the owners of the claims mentioned.

The field work and its evaluation covers the key claims only, the remainder of the claim group being held mainly for access and protective purposes.

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. <u>3112</u> MAP
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GEOLOGICAL AND GEOCHEMICAL SURVEY OVER PART OF THE PRINCE AND
BILL CLAIMS, CLEARWATER AREA, KAMLOOPS MINING DIVISION, B. C.

SUMMARY

During the period June 13th - 16th, a detailed geological examination and mapping program was carried out on part of the Bill and Prince claim groups which overlie the Ironclad and Lone Prospector Crown Grants in the Clearwater area of the Kamloops Mining Division of B. C. The area studied included the workings of the old Queen Bess Mine and the surrounding ground covered by the E.M. survey conducted by Klyceptor International Air Surveys Ltd. in 1969.

The geological studies show that the area is underlain by the Fennell formation of andesites and andesite porphyries which have been subjected to considerable deformation and faulting. Numerous shear zones cut the formation, with narrow quartz veins carrying galena and sphalerite occurring within the shear. An alteration zone of bleached volcanics carrying abundant disseminated pyrite envelops the shear zones over widths of 1 to 15 feet on both sides.

The strong E.M. anomaly to the southeast of the Queen Bess mine was tested by soil sampling. This work failed to show anomalous values which might indicate the presence of a heavy concentration of lead-zinc mineralization suggesting a vein structure of economic importance, and the anomaly has been attributed to the pyrite halo which follows the shear zone.

An examination of the veins comprising the Queen Bess mine workings showed that the potential widths and quantities of mineral that might be developed would be uneconomic to mine, and as these veins are by far the strongest found or indicated, the property is considered to have no commercial value.

INTRODUCTION

This report covers the detailed geological examination of part of the Prince and Bill claim groups which overlie two Crown Granted Claims, the Ironclad and Lone Prospector, and are located on Queen Bess Ridge to the south of Clearwater, B. C., in the Kamloops Mining Division.

Field work covered the period June 13th - 16th inclusive, with the field party consisting of the writer, together with Mr. Wolfgang Weise, MSc. geologist, and Mr. J. Kucherhan, prospector. While a large part of the whole claim area was covered in a preliminary reconnaissance manner, the detailed work covered an area about 2,000 feet by 1,500 feet, which included most of the rock outcroppings and all of the known mineral showings.

In December, 1969, this area was covered by a detailed E.M. survey conducted by Klyceptor International Air Surveys Ltd. The report and maps prepared by D. F. Hings, P. Eng., Consulting Geophysicist, indicated a strong anomalous area well removed from the old mine workings, and which was recommended for further exploration. (Dwg. J-3). The objective of the work covered by this report was to assess as far as possible the importance of the anomalous zone, and determine if further exploration work was justified.

LOCATION AND ACCESS

The claims cover and surround the ground held by the Ironclad and Lone Prospector Crown Grants located on Queen Bess Ridge, to the east of the North Thompson River about 3 miles south of Blackpool station on the C.N.R. The approximate geographical center of the claims would be Lat. 51° 30' N., Long. 120° 00' W.

Access to the property from Kamloops is via Highway #5 North to Clearwater, then across the Thompson River and south by the Hallamore Lake road for 11 miles, at which point a rough bulldozer road has been constructed across the claims to the west to a point just beyond Drift #2 as shown on the map. (Dwg. J-2).

TOPOGRAPHY, TIMBER, ETC.

Queen Bess Ridge runs north and south with a maximum altitude of about 2,600 feet. The west flank slopes steeply down to the flats of the Thompson River valley, and has some rocky bluffs and escarpments. The eastern flank slopes gently to the Hallamore Lake road.

Except for the bluffs and a few outcrops, the whole area is covered with overburden of varying thickness, with some swampy areas to the east. Fairly dense second growth timber covers the whole claim.

PROPERTIES

The claim group under discussion consists of 23 located claims and two Crown Grants, all in the Kamloops Mining Division of B. C. Names and record numbers are as follows:-

<u>Name</u>	<u>Record No.</u>
Bill #1 to #6 incl.	82155 to 82160 incl.
Bill #37 to #42 incl.	82191 to 82196 incl.
Bill #52	82206
Bill #54	82208
Bill #56	82210
Prince #2 & #3	82225 & 82226

<u>Name</u>	<u>Record No.</u>
Prince #5	82227
Prince #7	82228
Bear #1	89549
Bear #4	89550
Bear #6	89551
Bear #8	89552
Ironclad C.G.	L.289
Lone Prospector C.G.	L.288

The Bill claims form a block 3 claims x 5 claims overlying the two Crown Grants. The Prince claims overlie the Bill claims to cover fractions in staking. The Bear claims partly overlie the Bill claims to the east of the block.

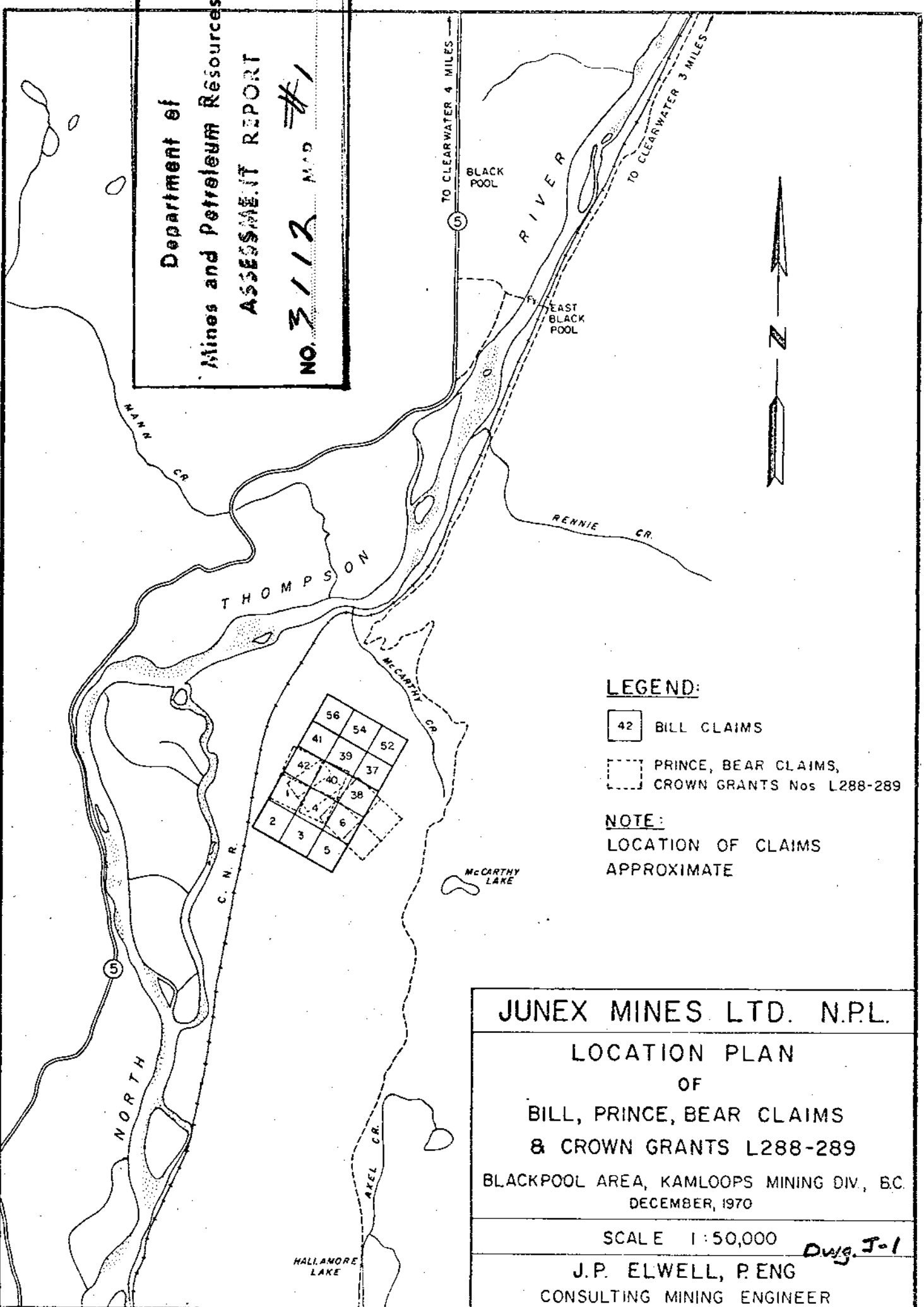
A location map, drawn from the staking plan accompanies this report. (Dwg. J-1).

EARLY HISTORY

The two Crown Granted claims cover the workings of the old Queen Bess mine which operated intermittently between 1917 and 1927. Descriptions of the mine and the operations are given in several Minister of Mines reports from 1918 onward and are summarized in M.M. report for 1951 by J. W. McCammon. Descriptions of the mine are also given by Uglow and Walker in the G.S.C. Summary Reports for 1921 and 1930.

According to these reports, the workings consisted of two adits, the lower or main adit being a cross cut 820 feet long which has cut 3 mineralized fissure veins striking northeasterly and dipping to the northwest.

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 3112 M.D. #1



LEGEND:

- 42 BILL CLAIMS
- PRINCE, BEAR CLAIMS,
CROWN GRANTS Nos L288-289

NOTE:
 LOCATION OF CLAIMS
 APPROXIMATE

JUNEX MINES LTD. N.P.L.
LOCATION PLAN OF BILL, PRINCE, BEAR CLAIMS & CROWN GRANTS L288-289
BLACKPOOL AREA, KAMLOOPS MINING DIV., B.C. DECEMBER, 1970
SCALE 1:50,000 <i>Dwg. J-1</i>
J.P. ELWELL, P.ENG CONSULTING MINING ENGINEER

These veins have been drifted on for a total of 780 feet in both directions from the cross cut adit. The veins pinch and swell from a few inches to over 6 feet in width. Mineralization consists of galena and sphalerite carrying values in silver.

A mill was constructed at the foot of the ridge and connected with the main adit by a tramway. Production records are incomplete but in 1921 Uglow reported a mill run of 720 tons which produced 27 tons of lead concentrate assaying 40 - 50% Pb, 12% Zn and 48 oz. Ag; and 78 tons of zinc concentrate assaying 48% Zn, 8% Pb and 14 oz. Ag. Mill recovery is not known.

In the opinion of the government reporters, the failure of the operation was largely due to the premature erection of a mill, before adequate exploration and development had been done to establish sufficient reserves of ore.

RECENT EXPLORATION

In December 1969 the company contracted to have an E.M. survey conducted over the original Crown Grants and part of the surrounding claims. This work was carried out by Klyceptor Surveys Ltd. with a Ronka Type instrument. The interpretation of the results was made by D. F. Hings, P. Eng. Geophysicist.

The survey indicated two anomalous areas which are designated on the map EM-69-10060, a copy of which accompanies this report, as A1 and A2. In his interpretation, Hings considers the A-1 anomaly to be of exceptional strength, and representing an east west structure which extends to depth.

It occurs in the south corner of the Ironclad Crown Grant, and includes an old prospect tunnel which has been started over a showing of lead-zinc sulphide mineralization. In view of its strength, and the fact that it lies well to the south of the structures developed by the old workings, Hings recommended this anomaly for further investigation. (See Appendix B).

GEOLOGY

1. Geological Setting

The property is underlain by volcanic rocks of the Fennell formation (Triassic), characterized by lavas of dominantly andesitic composition. A granitic intrusive (Cretaceous?) is found five miles to the south-east, with probable influence upon deformation and mineralization of the Fennell formation.

2. General Geology

Since the area under consideration is entirely underlain by relatively uniform Fennell volcanics, geological mapping had to be done on the basis of variations in textural appearance and colour. Restriction of bedrock exposures to small, scattered outcrops and few man-made cuts and drifts further complicated the detailed mapping on the large scale of 1" = 100'. (Dwg. J-2).

The Fennell formation here is dominated by dark- to medium-grey andesites and andesite porphyries, both of which commonly appear to be part of a single volcanic flow as the result of differential cooling, and boundaries between them are often difficult to establish. In general, however,

the porphyritic rocks seem to be most common in the central part of the map area, whereas dense andesites predominate towards the north-east. The porphyries usually consist of densely-packed, small (1-2 mm) feldspar phenocrysts in a fine-grained, dark-grey matrix, with the phenocrysts commonly indistinct and altered almost to oblivion. Only in one outcrop, small relatively fresh hornblende phenocrysts were also observed. Sulphide mineralization is sparse in these rocks, consisting only of occasional specks of pyrite and, in rare instances, chalcopyrite. Light-grey, dense volcanics are found in the southern part of the area. They often carry finely disseminated pyrite, which is particularly abundant within the strong E-M-anomaly shown on the accompanying map. Phenocrysts are rare and occur only in darker-colored zones.

Extensive jointing is found throughout the area, and three and more joint sets may be observed in most outcrops, indicating a considerable deformation (folding) of the Fennell formation. The most prominent joint set strikes approximately east-west and has nearly vertical dips, but the majority of joints appear to strike in north-easterly direction and dip towards the north-west; few joint sets have north-westerly strikes and north-easterly dips.

3. Mineralization

Sulphide minerals, predominantly galena and a light-greenish, translucent variety of sphalerite, occur along wide shear zones, which appear to be the result of fault movement along some of the fractures. The shears vary in width from about 2 inches to 5 feet over relatively

short distances, with the ore minerals restricted to the outer zones of the wider lenses. The maximum width of actual ore observed was about 1 1/2 ft. (in drift 1). Whereas the gangue of the ore consists of a dull-white quartz, most of the vein material in the wide shear lenses is strongly fractured, altered volcanic rock.

Enveloping the shear zone over widths from 1 to about 15 ft. on both sides, the country rock is strongly bleached through argillization and kaolinization. Pyrite is very abundant in these alteration zones, resulting in strong rust stains throughout the rock.

Three principal mineral showings are found on the property, apart from the presently inaccessible main tunnel (No. 3-level) of the old Queen Bess Mine. They are exposed in two short adits (drift 1 and 2) and on the No. 2 - level of the old mine. (See Dwg. J-4).

(a) Drift 1:

This short drift, with a total length of about 30 ft., is located near station 35 W / 8 N of the E-M-survey lines. It follows a mineralized shear zone (approximately N 36°E / 56° NW) for about 24 ft., where the shear is cut off by a cross fault (S 60° E / 75° NE). The drift terminates a few feet beyond that fault. Approximately 18 ft. from the portal, a steeply sloping raise extends to the surface 12 ft. above the adit floor, following the shear zone.

The shear appears as a 2 1/2 ft. - wide lense at the portal and widens to 5 1/2 ft. at the 18 ft. mark. Sulphides, consisting of light-greenish sphalerite associated with abundant galena in a quartz gangue, widens from 4 inches to a maximum of 1 1/2 ft. over the same distance.

(b) Drift 2:

This drift, only 18 feet long, with an additional 12-ft. cut above the adit and along strike, is located near station 33 W / 1 + 50 N. The shear zone followed by the adit has an approximate strike of N 60° E with a dip of 47° NW, and undulates in width from just over 1 inch at the portal to a maximum of about 2 ft. at a distance of 10 ft. from the entrance. The mineralization is restricted to 4-inch zones on both sides of the lense, the central part of which contains fractured, altered volcanic rock. Galena is the prominent ore mineral here, but is associated with abundant sphalerite.

(c) No. 2-level:

For most of its length, the tunnel follows the widest section of a lense within a shear zone striking N 50° E, and dipping 80° NW. The mineral, sphalerite and galena in a quartz gangue, which occasionally is stained by minor azurite and malachite, has been largely mined out from slopes above and below the tunnel. Two minor veins of about 3-inch width are found in a northerly cross-cut 50 ft. from the portal.

4. Soil Sampling

The area of the A-1 anomaly indicated by the EM survey was checked by soil sampling on account of the almost complete overburden cover. Line spacing was 100' in a north south direction with sample intervals at 50' and 100'. The samples were analysed by Chemex Labs. Ltd. for total lead and zinc in p.p.m, and the results are plotted on the accompanying map (Dwg. J-2), with Zn. values contoured at intervals of 200 p.p.m.

A strong zinc anomaly is found on the slope just below Drift #2, but this is attributed to the leaching of the dump outside the adit. Another, considerably weaker anomaly appears towards the southern limit of the mapped area, probably caused by a minor mineralized vein below the overburden.

The geochemical response in no way indicates a heavy concentration of lead-zinc sulphides as suggested by the E.M. anomaly, and the anomaly therefore must be attributed to the presence of disseminated pyrite in the volcanics which appears to be particularly prevalent in this particular area.

The results of the soil samples taken to the north of Drift #1 indicate a strong anomaly, obviously due to a continuation of the mineralized shear zone cut off by a cross fault in the drift. The northern block has been uplifted in relation to the rocks south of that fault, but the actual amounts of dip-slip and strike-slip movements could not be determined.

5. Geological History

Lava flows of the Fennell formation were subjected to deformation, mainly large-scale folding, during the emplacement of a granitic stock to the south-east, which resulted in distinct and extensive jointing. Further deformation was accompanied by fault movements along some of the more prominent fractures and the development of wide shear zones, with concurrent introduction along these shears of hydrothermal fluids carrying quartz, zinc, lead, and minor copper. Alteration zones paralleling the shears to varying widths were formed at this time, characterized by bleaching of the country rock through argillization and kaolinization, and more or less distinct haloes of disseminated pyrite.

A later, relatively minor period of faulting (block-) caused the cut-off of previously formed structures throughout the area, with displacements mostly in the order of a few tens of feet.

CONCLUSIONS

The field examination and study of the written reports on the Queen Bess mine show that the mineral occurrences consist of fracture controlled vein deposits containing small, but high grade sections of lead and zinc sulphides along with some silver values. Except for a few wide pods which were reported to have been mined out in the past, vein widths generally vary from 1" to 18" and the veins are frequently offset by cross faults. Economic mining of this deposit would not be possible today, even assuming the mineralized shear zones continued to depth and along strike.

The strong EM anomaly to the southeast of the old mine workings is believed to be due to the abundance of disseminated pyrite in an alteration zone of the volcanics. Detailed geological examination and soil sampling of the anomalous area indicated the presence of only minor veinlets carrying lead-zinc mineralization, much inferior to those of the Queen Bess mine.

From the results of the work done to date, it would appear that the chances of finding an economic orebody on the property are remote, and therefore no further exploration is recommended on this claim group.



J. P. Egan P. Eng.
Consulting Mining Eng.

July 6th, 1971

References

M.M. Reports, 1918-27, 1951

Geological Report on the Prince Claims in the Kamloops Area, B. C.
Wm. Dollery-Pardy, B.A., Geologist

Report E-M-69-1006 Lone Prospector and Ironclad C.G.,
Dec. 1969 - Klyceptor Surveys Ltd.

Preliminary Report on the Bill, Prince, Bear, Ironclad and Lone Prospector
Claims, Blackpool area, Kamloops M.D., B. C.
Dec. 29th, 1970 - J. P. Elwell, P. Eng.



Appendix A

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 985-0648

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 14394

TO: Mr. James Elwell,
1029 - 510 W. Hastings,
Vancouver, B.C.

INVOICE NO. 5171

DATE RECEIVED June 17/71

DATE ANALYSED June 22/71

ATTN:

SAMPLE NO.:	PPM	PPM
	Zinc	Lead
00N 31W	400	1620
32	2180	887
33	920	350
34	231	72
35	142	40
00N 36	224	35
00N 37W	123	31
00N 38W	100	33
0+50N34W	440	81
35	113	35
36	154	24
37	110	33
0+50N38W	123	31
1+50N32W	920	375
33A	1480	1935
33B	800	200
34	273	30
35	110	33
36	138	31
1+50N37W	83	33
1+50N38E	182	39
1N 31W	218	94
32	840	172
33	2240	660
34	210	37
35	218	44
36	172	33
37	110	50
1N 38W	100	31
2N 32W	760	250
33	146	63
34	264	63
35	177	40
36	130	35
37	177	35
2N 38W	162	42
2+50N33W	192	63
3N 32W	187	24
33	142	26
34	177	31
3N 37W	127	37
Std.	197	81



MEMBER
CANADIAN TESTING
ASSOCIATION

Certified by



Appendix A

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 985-0648

CHEMEX LABS LTD.

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Mr. James Elwell,
1029 - 510 W. Hastings,
Vancouver, B.C.

CERTIFICATE NO. 14395
INVOICE NO. 5171
DATE RECEIVED June 17/71
DATE ANALYSED June 22/71

ATTN:

SAMPLE NO.:		PPM Zinc	PPM Lead
3N	38W	138	30
9N	36W	560	172
	36+10	480	130
	36+20	480	93
	36+30	360	103
	36+40	440	82
	36+50	400	82
	36+60	640	533
9N	36+70W	440	150
10N	35+50W	2240	482
	35+60	2960	387
	35+70	2960	433
	35+80	1040	180
10N	35+90W	1280	218
	0+50S 33W	480	115
	35	172	56
	36	210	42
	37	107	37
	0+50S 38W	104	35
	1+50S 37W	192	39
1S	31W	123	52
	32	218	72
	35	239	58
	36	273	67
1S	37W	130	31
2S	35W	327	48
	36	520	110
2S	37W	224	50
3S	35W	760	161
	36	560	139
3S	37W	172	48
	Std. #23	107	81



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CANADIAN TESTING
ASSOCIATION

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E I C

geophysics ltd.

250 NORTH CROSVENOR, VANCOUVER, CANADA TELEPHONE: (604) 293-9619

December 1, 1970

Manager:
 Kolver Mines Ltd. (N.P.L.)
 1710A One Bentall
 VANCOUVER 1, B.C.

Dear Sir:

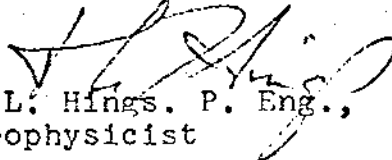
In accordance with your instructions the following is a detailed program of recommendations in accordance with the findings reported in our geophysical report No. EM-70-1001 for Junex Mines Ltd.

The anomalous zone A1 extending east and west, south of the old Adit No. 1 as referred to in early reports, appears to be valid and as reported should have a southerly dip. If the sulphides from the No. 1 Adit economically warrant development then there is indeed good reason to develop the A1 anomaly.

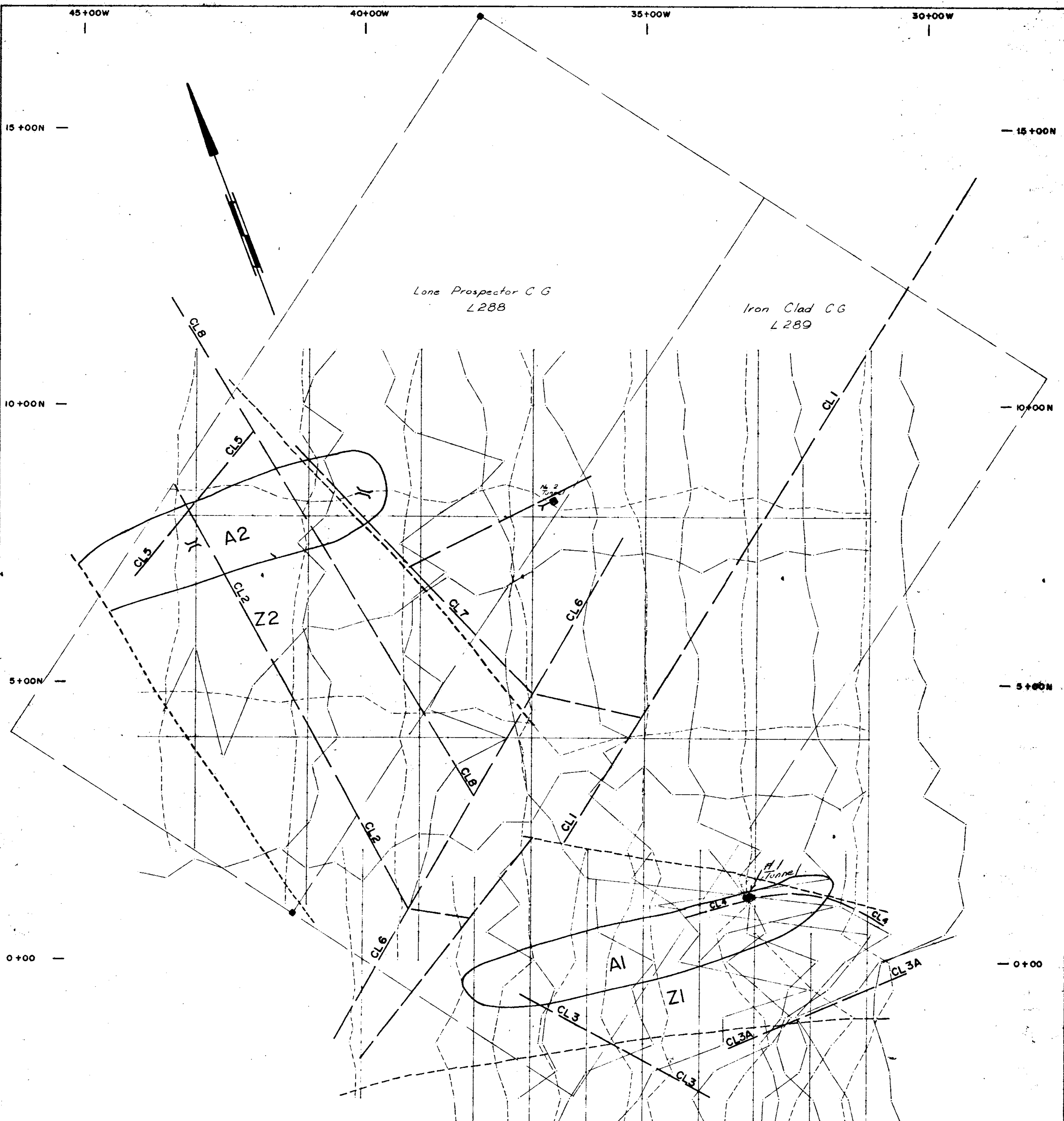
The interesting probability from a geophysical standpoint is that the earlier working in Adits 2 and 3 were all north of this area, and that A1 zone might be more significant than where previous work has been done.

Under these circumstances I would recommend direct geological investigation under the direction of an experienced engineer and possibly drill in accordance with his recommendations. The extent of the drilling program should be determined by the engineer's recommendations, and the degree of success in determining the source of these anomalies and their economic significance. I trust this is the information you require and I will be available to discuss location details with the engineer in charge of drilling.

Yours very truly,


 D.L. Hings, P. Eng.,
 Geophysicist

DLH/cb



3112 M-3

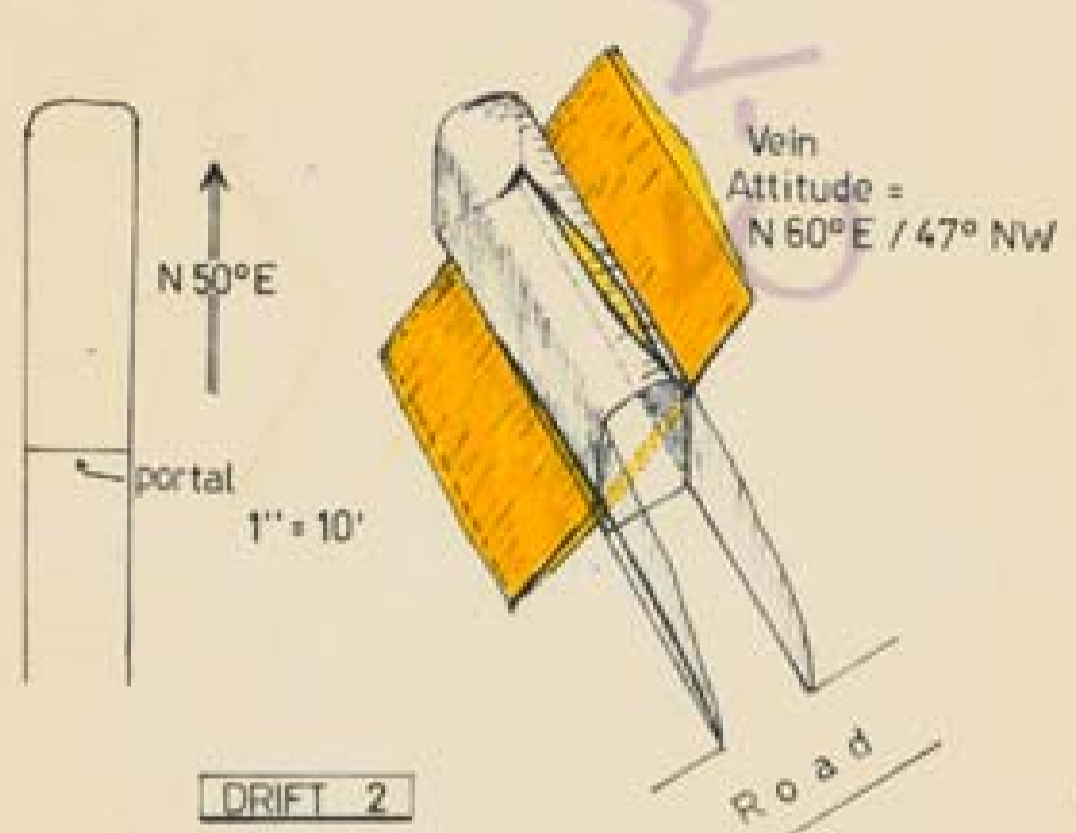
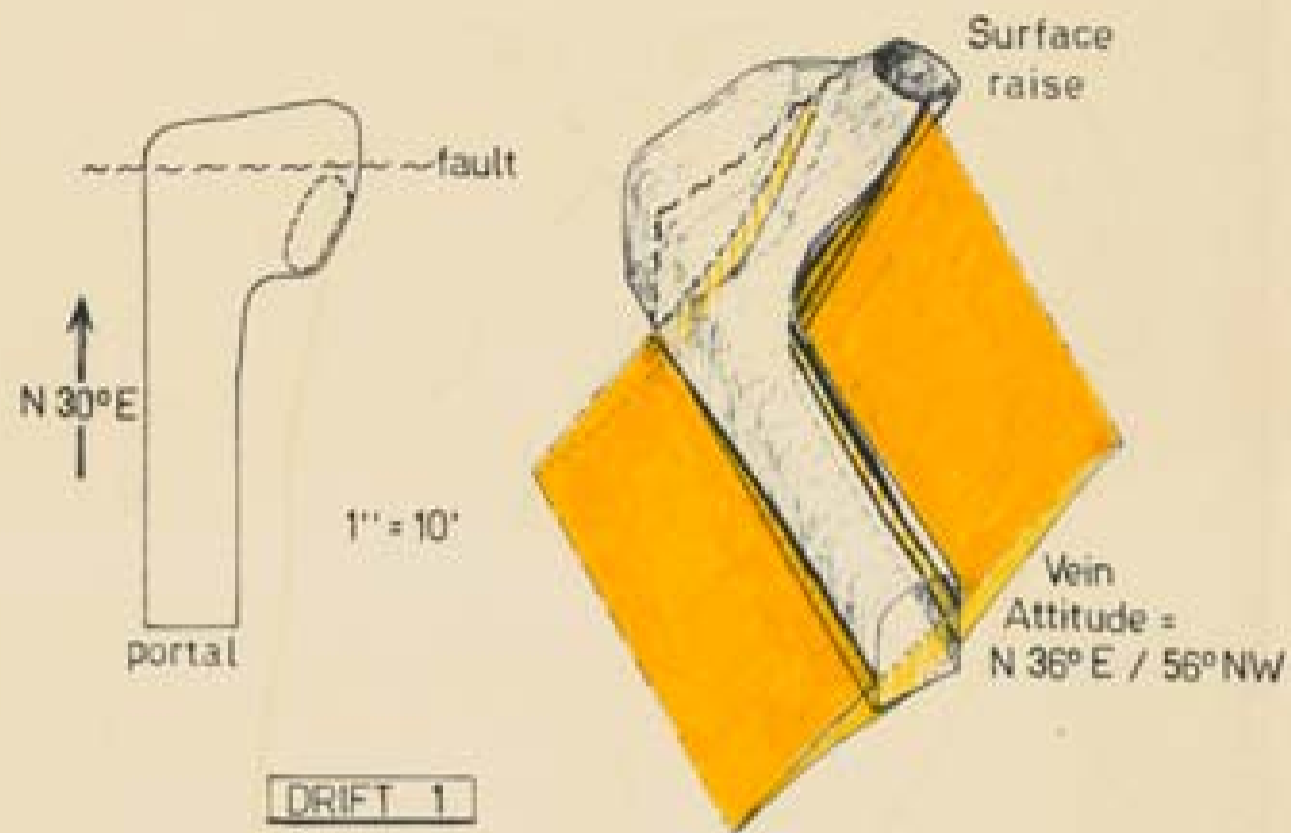
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3112 MAP #3

KLYCEPTOR GEOPHYSICAL SURVEY
PRINCE GROUP, IRONCLAD C.G. & LONE PROSPECTOR C.G. CLEARWATER, B.C.
JUNEX MINES LTD. (N.P.L.)
DEC. 1969 SCALE: 1" = 100' DWG. NO.: EM-69-1006-D
EM PROFILES
APPROVED: *[Signature]*

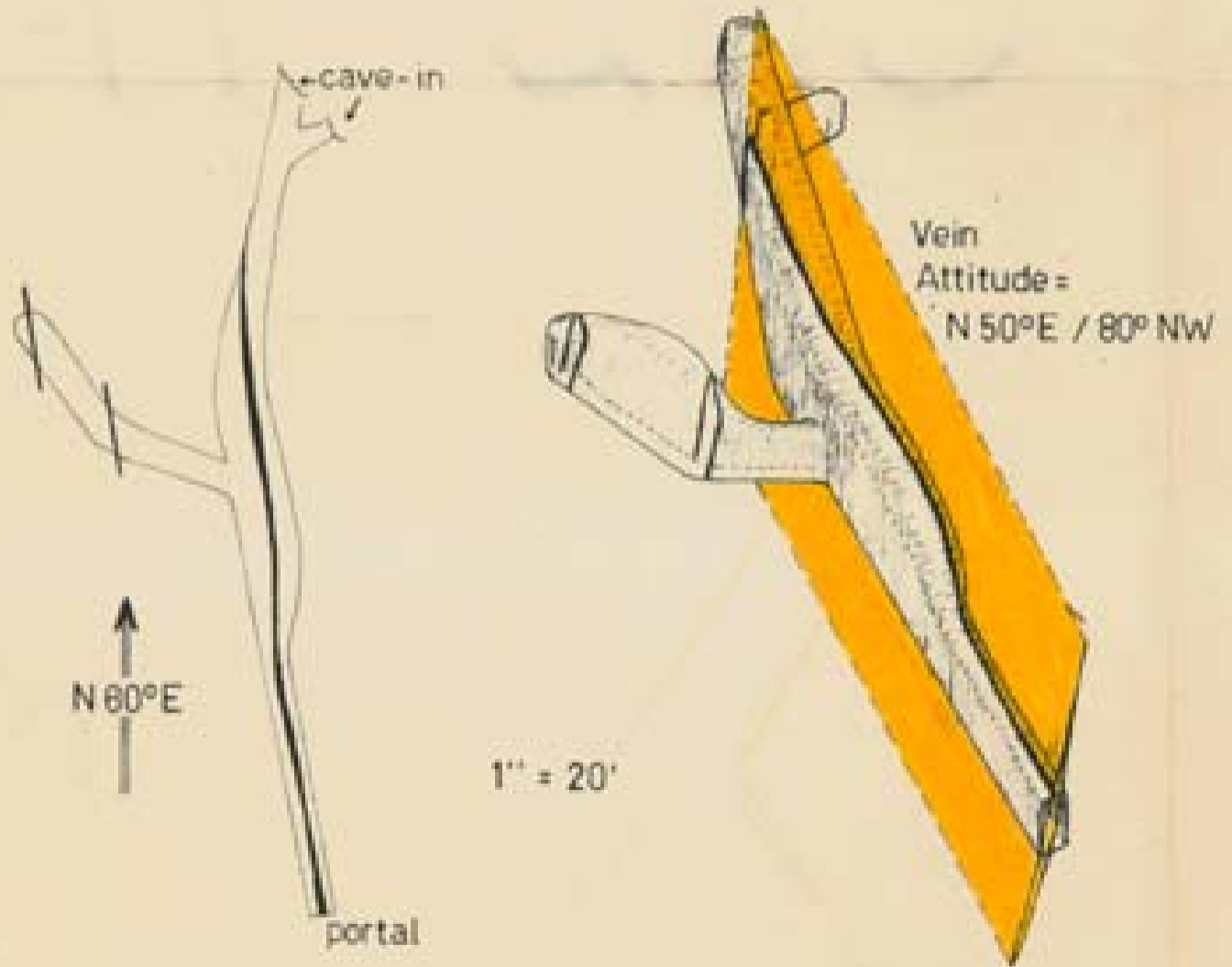
NOTE:-
 - SURVEY LINES & STATIONS
 - ZERO LINE
 - IN PHASE (1" = 40%)
 - QUADRATURE (1" = 40%)
 - CONDUCTIVE LINEAR ANOMALY
 - ANOMALOUS ZONES
 - MAX. ANOMALIES

5+00S

Dwg. J-3



3112 M-4



JUNEX MINES LTD N.P.L.

ORE SHOWINGS ON BILL & PRINCE CLAIM GROUPS,
Blackpool Area, Kamloops Mining Division, B. C.

(to accompany geological map)

Dwg. J-4

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

3112 MAP #4

Lone Prospector C.G. L. 288

43-00W

39-00W

35-00W

31-00W

Iron Clad C.G. L. 289

8-00N

4-00N

Main Tunnel (EL. 1850')

No. 2 Level (2100')

Drift 1

Drift 2

Road

Prince 5

Prince 7

LEGEND

- Medium to dark grey andesite porphyry
- Medium to dark grey andesite
- Very light to medium grey, dense volcanic
- Light buff, 'bleached', 'rusty' volcanic
- Survey lines
- E-M-anomaly
- Mine tunnel
- Surface cut or short drift
- Contours of Zn-content (ppm) in soil
- Soil sample site, with Zn&Pb - content (ppm)
- Fault

JUNEX MINES LTD N.P.L.

GEOLOGY OF PART OF BILL & PRINCE CLAIM GROUPS, Blackpool Area, Kamloops Mining Division, B.C.

Geology and Mapping by W. Wiese
 Approved by *[Signature]*
 June 28, 1971

Dwg. J-2

0 50 100 150 200
 1" = 100'

Department of
 Mines and Petroleum Resources
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 NO. 3112 MAP #2

3112 M-2

2110