4410

LONDON PRIDE SILVER MINES LTD. (N.P.L.)

Geological, Geophysical Report on Sher, Fir and JO claims, located east of Stump Lake, Nicola Mining Division.

92I/8W

Longitude 120°22'W
Latitude 50°21'N

by Sher, SR, Fir,
R. Dunsmore, B.Sc, A Fr. B Fr.

Fieldwork done June 12 - August 15, 1972
Date of Report: August 23, 1972

4410

REPORT ON 1972 SURVEYS ON THE FIR, SHER AND JO CLAIMS

STUMP LAKE

NICOLA M. D.

Longitude 120°22'W

Latitude 50°21'N

92 I/8W

ALRAE ENGINEERING LTD.

R. J. DUNSMORE

August 23, 1972

Fieldwork carried out from

June 12th - August 15th, 1972

8 46 W. Hawthorn

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INTRODUCTION

The London Pride property was staked by A. Wall and F. Guardia during the spring of 1972 to cover geologically significant ground in the general vicinity of Kamloops. During the summer, claim extensions and fractions were staked by R. Dunsmore.

The property lies at Longitude 120° 22'W and Latitude 50° 21' N, and consists of 52 full-size claims (including two witness claims) and two fractional claims. The claims partially overlap a number of crown-granted claims lying east of the formerly producing Mineral Hill camp. The claims straddle the old Kamloops-Merritt Highway, and lie about 2.5 miles east of the paved Highway 5.

The claims for the most part cover gently rolling grassland, with fairly steep, rugged terrain occuring only on the SE part of the claim group. Tree cover is thick only on the easternmost part of the claim block. Good gravel and dirt roads provide easy access to most parts of the claim block.

PROPERTY

The Stump Lake claims of London Pride are comprised of the following:

Claim Name	Record Numbers	Record Date
FIR 53 & 54	336913 - 336914	April 21, 1972
SHER 17	51848	April 21, 1972
SHER 19	51850	April 21, 1972
SHER 21	51852	April 21, 1972
SHER 23	51854	April 21, 1972
SHER 25	51856	April 21, 1972

Claim Name	Record Numbers	Record Date
SHER 27	51858	April 21, 1972
SHER 29 - 46	51734 - 51751	April 19, 1972
SHER 55 - 70	51752 - 51767	April 19, 1972
"A" Fraction	Not yet recorded	
"B" Fraction	Not yet recorded	
JO 1 - 8	Not yet recorded	
SR 1	56316	July 10, 1972
SR 3	56318	July 10, 1972

The claims should be grouped as follows:-

Group 1 - FIR 53, 54, SHER 17, 19, 21, 23, 25, 27, 29 - 46, 55 - 56, "A" and "B" Fractions, SR 1, 3.

Group 2 - The remaining SHER claims and JO 1 - 8.

GENERAL GEOLOGY

The general geology of the area is described in G.S.C. Memoir 294 (Ref. 1) by W.E. Cockfield. One major shortcoming of the memoir is the lack of detail on alteration found at Mineral Hill.

The oldest rocks in the area are Cache Creek Group sediments of Paleozoic age. They have undergone folding and regional alteration. Rocks of this group on the property are greenschist facies mica schists and argillites; the argillites predominating on the western part of the property. A mixed sequence of andesites and argillites overlie the Cache Creek Group toward the west. A rather arbitrary Cache Creek-Nicola (mixed sequence) contact has been drawn on the Geology map. This contact, while arbitrary, also marks the regional alteration - weak propylitic alteration contact, and as such, may be geologically meaningful.

Mapping at 1" = 200' would probably serve to elucidate major folding within the Cache Creek and perhaps within the overlying Nicola Group Rocks.

Two Jurassic intrusives occur in the area - one four miles west of Mineral Hill, and the other (The Wild Horse Batholith) about six miles northeast of Mineral Hill. Rhyolite, dacite and andesite dykes, presumably related to these intrusions, cut the propylitic alteration zone on London Pride's ground. A number of basalt dykes also cut the Nicola Group rocks on the property, but these are thought to be of Tertiary age.

Propylitic alteration is widespread on the property. The carbonate sub-facies appears to be very widespread in the area, occuring over an area some eight miles long (NE) by about four miles wide (NW). Admittedly, this alteration is not continuous, but serves to point out a quite large "plumbing" system in the area. A more intense phase of propylitic alteration almost enshrouds Mineral Hill. This is the epidote sub-facies, which also appears to be very highly developed about mineralized veins. A few small areas contain another propylitic sub-facies indicated by the presence of magnetite-hematite mineralization imposed on epidote alteration. Much more restricted but probably still sub-facies of the propylitic type, are sericite and chrome-mica alterations.

A large area of probable thermal alteration (biotite hornfels) occurs in the area of main exploration interest. In places, this alteration looks to be superimposed on epidote alteration and may, therefore, represent a late-stage contact metamorphism. The only problem remaining with this interpretation is: contact with what?

Structurally the Stump Lake valley appears to be a graben resulting from N, NNE and NE faulting. Mineralization and quartz veins on Mineral Hill tend to follow these major trends, but some veins and dykes strike NW and NNW.

Mineralization within the quartz veins on Mineral Hill tends to occur as "pods" within veins or shear zones. Vein continuity is marked at Mineral Hill where one vein was apparently followed for 1800' along strike, and 1000' downdip. (Ref. 1) Average grades were somewhat low judging from Memoir 249; being about 1.5% Pb, 3+oz/ton Ag and 0.1 oz/ton Au. Minor zinc and copper were also produced. The major ore minerals are galena, sphalerite, tetrahedrite, chalcopyrite, bornite and scheelite. Pyrite is a major component of veins and wall rock.

Appendix A is a petrographic report of two float specimens found N and W of the X grid. The report strongly suggests the presence somewhere on the property of very strongly altered and (?) mineralized rock. The presence of a rare chromium-bearing mineral is somewhat perplexing, perhaps suggesting a quite deep-seated source for the hydrothermal liquids and gasses.

GEOPHYSICS

MAGNETICS

Some difficulty was experienced with magnetic storms during the mag. survey. However, the survey proved very helpful in elucidating alteration features and late (?) dyke activity.

The magnetics in the X grid area are of particular interest in relation to the

multiple anomalies found on the grid. A 1,000'+ wide mag. high on the west end of the lines is apparently arcuate shaped. The western extent of this anomaly isn't known, as it continues in the lake. A parallel wide mag. low occurs inside the mag. high, and continues as an oval shaped "donut". The mag. low is apparently a manifestation of the biotite hornfels alteration. The mag. high, on the other hand, could be the manifestation of a number of things, (e.g. a magnetite-hematite alteration zone, much like that occuring about a mile to the south; a relatively magnetic intrusive; or a very large andesitic dyke much like those of dacite composition occuring near the SW extremity of the mag. high. Whatever the cause, this feature will likely remain an important one in terms of exploration potential.

The mag. low has been described, in the writer's weekly reports, as a mag. "donut". The shape is very suggestive of some type of intrusive alteration phenomena. The fact that the more important multiple anomalies occur around this feature, suggest that it too will be of primary exploration interest. It is thought by the writer that very strong mag. lows within the 100 γ contour may be the manifestation of the type of alteration described in the petrographic reports of Appendix A.

EM 17

Only limited areas were covered with this instrument due mainly to the time factor involved. Only one anomaly of any significance was discovered. Dips up to about 60° were found on line 110S (on 400' separation). The conductor responsible for these anomalies is likely less than 100' wide.

No response was obtained over the rest of the grid covered (using either 200' or 400' separations). Two known mineralized areas were covered (L178S and L194S) but no response was obtained.

CONCLUSIONS

1. A fairly large area on the NW part of the property is thought by the writer to be worthy of further work. While the size of the two main coincident anomalies is small, the probable extension of the favourable environment to the N and to the SW into Stump Lake indicates a potentially large area of interest. It is thought probable by the present writer that the anomalies are due to vein systems on shear zones similar to those found on Mineral Hill.

2. The size of the two anomalies on the X grid would seem to indicate a limited tonnage situation. Maximum dimensions of each anomaly are probably in the order of 500' x 100'. Comparison of these two anomalies with results over known mineralized vein structures on the east side of Mineral Hill would seem to indicate the possibility of more conductive mineralization in the present area of interest.

3. Faulting and shearing are likely the two controls most closely governing the distribution of mineralization on and near Mineral Hill.

4. It is the present writer's opinion that some sort of intrusive activity occured on or near the NW part of the property.

LONDON PRIDE SILVER MINES LTD. (N.P.L.)

X GRID MAGNETICS

1" = 200'

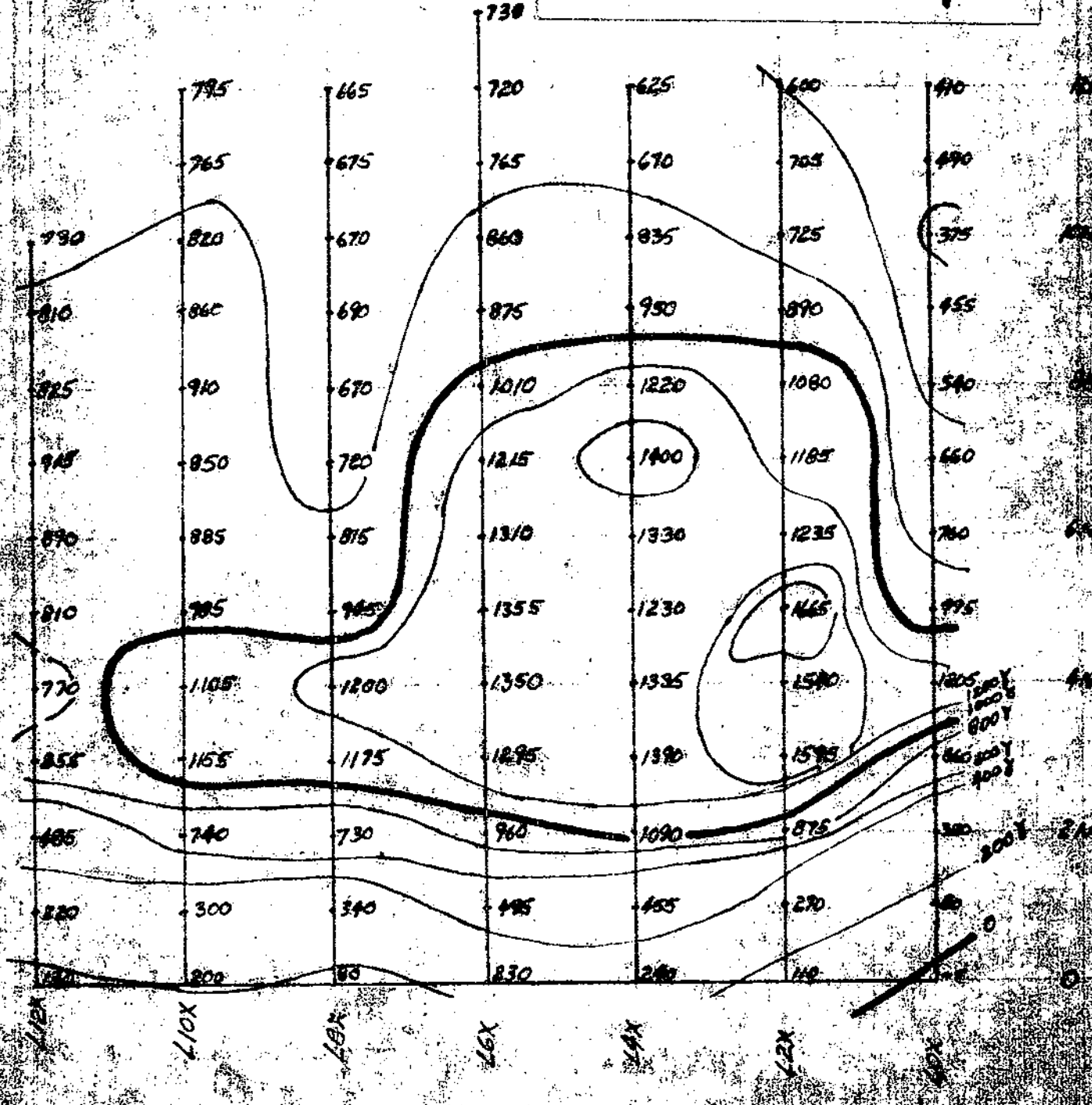
CONTOUR INTERVAL : 200 γ

N

Department of Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 4410 MAP #4



EM17

Horizontal-Loop Electromagnetic Unit

Automatic Readout

The EM17 incorporates the latest electronic techniques in an automatic-readout, simple-operation equipment designed for practical field work.

FEATURES

Automatic meter readout

Lightweight coils

Excellent noise suppression in difficult conditions: Survey can be carried out in the vicinity of power lines

100, 200, 300 and 400-foot coil separation

Thin, lightweight, unshielded reference cable between coils

Provision for use in coaxial-loop mode as well as in horizontal-loop mode

Powered by easily obtainable flashlight batteries

Specifications

Coil Orientation: Co-planar or co-axial.

Quantities Measured: Real component (in-phase)
Imaginary component (quadrature)

Range of Scales: Real: ± 20%, ± 100%
Imag.: ± 10%, ± 50%

Coil Separation: 100, 200, 300 and 400 ft.

Frequency of Operation: 1600 Hz ($\omega = 10^4$)

Method of Reading: Self-indicating meters for each component. No manual compensation after initial nulling at start of survey.

Readability: 0.25% Imag., 0.5% Real on narrower scales.

Repeatability: ± 1%

Bandwidth of the Receiver System: 0.1 Hz

Transmitter Output: 0.5 W, 24 At-m^2

Power — Receiver: 8 cells, type C
Life 60 hrs. continuous duty.

Transmitter: 8 cells, type D
Life 20 hrs. continuous duty.

Type of Reference Cable: Lightweight, 2-wire cable, no shield.

Dimensions — Receiver Console: 7.7 x 5.3 x 10.2 inches (19.5 x 13.5 x 26. cm).

Receiver Coil: 25 inches (63 cm) diameter.

Transmitter Console: 5.85 x 3.15 x 10.2 inches (15 x 8 x 26 cm).

Transmitter Coil: 25 inches (63 cm) diameter.

Weights — Receiver Console: 6.83 lbs. (3.1 kg).

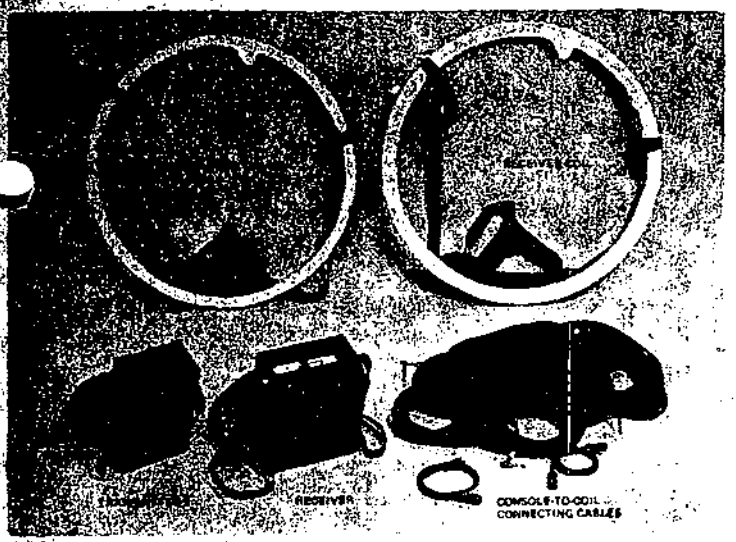
Receiver Coil: 6.4 lbs. (2.9 kg).

Transmitter Console: 6.62 lbs. (3.0 kg).

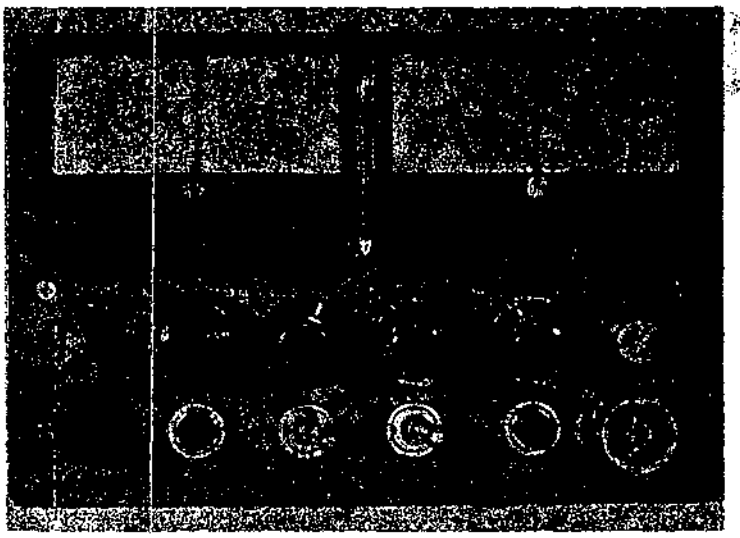
Transmitter Coil: 7.92 lbs. (3.6 kg).

Shipping Weight: 68 lbs. (31 kg).

Instrument Supplied with: Consoles in leather cases (tropicalized); receiver and transmitter coils with carrying harnesses; 100', 200', and 400' reference cables; two console-to-coil connecting cables and one spare; manual of operation; set of interpretation curves; one set of batteries installed and one spare set; field shipping case.



Complete EM17 Unit



Receiver Console Details

SIMPLE AUTOMATIC-READOUT OPERATION

The horizontal-loop electromagnetic method is, of course, a well-known and standard method of geophysical mineral exploration. By combining the very extensive previous design experience of Geonic's staff in this method with the company's proven original and advanced approach to geophysical instrumentation, the EM17 horizontal-loop unit offers unique technical features, which greatly simplify field operations. It is a sophisticated, reliable, sensitive and accurate instrument which can easily be handled by the normal type of field crew following the proper operating procedures as set out in the instruction manual.

Because of the excellent noise suppression the EM17 can be operated effectively in difficult areas such as the immediate vicinity of power lines where other horizontal-loop models have been unable to produce useful data. The added feature of being able to use the instrument in a coaxial-loop mode, as well as the standard horizontal-loop mode, is quite valuable. For instance in the coaxial-loop mode, vertical dykes at the greater depths will tend to produce more discernible anomalies.

The following condensed set-up and operating procedures indicate the comparative simplicity of using the EM17. Check the above photographs of the instrument as an aid in understanding these:

(1) Decide the coil separation you are going to work at and connect the appropriate reference cable to the receiver and transmitter console terminals. There are no connectors involved, the color-coded bare cable ends are just inserted in the correct terminal posts and the caps tightened. A simple snap arrangement allows the cable to be fastened to the coils to bear the strain. The thin, lightweight, unshielded, two-wire reference cable is easily handled by the operators while on line even at the 400-foot coil separation.

(2) Connect the transmitter and receiver consoles to their respective coils with the short connecting cables provided. The console-to-coil connecting cables are similar for both the transmitter and receiver ends so that identification and spare parts problems are eased.

(3) Turn the "VERT/HOR" switch, on the transmitter console to the operating mode desired. "VERT" is the coaxial-loop mode and "HOR" is the horizontal-loop mode.

(4) The next step is the electronic nulling of the receiver console. Turn ON the transmitter. On the receiver console switch to the correct coil separation position, switch to the "NULL" position and turn the receiver "ON". Release the locks under the "NULL" knobs and adjust both indicator meters to zero, then lock these knobs securely.

(5) Switch to the "OP" position on the receiver console. On neutral ground and with the coils at the correct coil separation, unlock the "COMP" knobs and adjust the "REAL" indicator meter to zero, if needed, then lock this knob securely.

Although not usual, there may be a reading showing on the "IMAGINARY" indicator meter at this stage. This will probably be due to the general area ground conductivity particularly at the longer coil separations. The "IMAGINARY" indicator meter can be zeroed by a control adjusted by a screwdriver if you know the ground is not conductive.

(6) You can now switch to the "OP"(erate) position, and the "REAL"(in-phase) and "IMAGINARY" (quadrature) component meters will automatically indicate the correct readings at your station positions. There is a ±20% push-button under the "REAL" component meter and a ±10% push-button under the "IMAGINARY" meter.

(7) The above are the basic procedures. The instruction manual naturally fills out the details including battery and other checks to be carried out during the operating day to ensure proper functioning of the unit, but these do not interfere with the field working program.

RECOMMENDATIONS

1. A minimum 1000' diamond-drill program (BQ wireline) should be carried out on the NW part of the property before more work is done over the winter. A line of three or four holes across the mag. EM 17, anomalies on the X grid would provide enough information to either continue or cease work on the property as a whole.

2. Should the drilling prove satisfactory, the following program should be carried out:-

   (a) 200' lines should be established on the present N-S, E-W grid in the main area of interest (i.e. L102S - L118S 90W to 114W).

   (b) Fill-in lines should be covered by:

   rock geochem (with petrographic examination of selected specimens).

   EM 16

   EM 17

   Magnetics

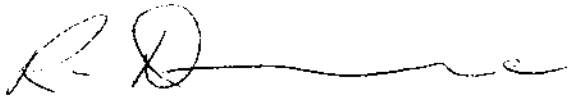
   (c) An attempt should be made to option the crown-grants on the SW part of the property.

   (d) "Recce-type" surveys should be carried out over the JO 1 - 8 claims.

3. Providing Steps 1 and 2 prove successful, a more extensive drill program

should be planned for the late winter or early summer, depending on where the areas of interest lie.

Respectfully submitted,



Ron J. Dunsmore

REFERENCES

1. G.S.C. Memoir 249 - Geology and Mineral Deposits of Nicola Map Area, British Columbia, by W.E. Cockfield.

TO	DATE	INITIAL
G.G.C.	✓	
C.C.		
D.C.G.C.		
D.C.C.		
ACCTS.		
D.M.D.		
C.I.		
C.A.		
R. T.		
C.P.E.		
FILING		

Aitken Engineering Ltd.,
1175 W. 15th St.,
N. Vancouver, B.C.

MAY 9 '73 AM

5990

DEPT. OF MINES
AND PETROLEUM RESOURCES

Also, Re. Fair.

Dear Mr. Bowles,

Thank you for your letter of April 25, 1973. Please find enclosed:

(1) 2 copies of magnetics plan - X grid.
(2) 2 copies of EM 17 specifications.
(3) Two copies of coloured Geology map.

The "donut-shaped" magnetic anomaly is admittedly an interpreted feature based mainly on correlation of magnetics and rock alteration. The feature occurs mainly west of the 90W baseline from L1105 to L1545 and consists of a perimeter of negative to plus 100γ readings surrounding a core of plus 100 to 200+γ readings. The broad, highly positive, SW-trending magnetic anomaly on the X grid has been projected over the lake to the SW and appears to curve to the south and SSE in the L130, L134 area. This mag. high, then, appears to have the same general trend as has my "mag donut". Work done by myself over the winter on rock types suggests that the linear, highly

negative magnetic readings within the "donut" may correlate with shear features characterized by quartz - fuchsite alteration. A generalized interpretational sketch is attached.

I trust the above information will meet your requirements.

Yours very truly,

Ron Dunsmore

Geologist, Alras Engineering

APPENDIX "A"

Costs incurred in the 1972 exploration program were as follows:

(A) Personnel & Job	Dates	Total Days	Gross Salary + /diem	Total
(1) R.G. Jury, P.Eng. Supervision	May		$ 100.00	
	June		100.00	
	July		400.00	
	Aug.		150.00	$ 750.00
(2) F.Guardia, P.Eng. Supervision	Aug. 8 & 9	2	82.55	165.10
(3) R.Dunsmore, B.Sc. Geologist	June 16/19 25-30	10	47.42	
	July 1-31	31		
	Aug.2/15	14 = 55		2608.10
(4) J.Randa Geophysicist	June 23/30	8	45.73	
	July 1/21	21 = 29		1326.17
(5) L.Phillips, B.A.Sc. Geophysicist	June23-30	8	44.68	
	July 1/6, 10/21	21 = 29		1831.73
(6) D.Boulton Line Cutting	June 15/30	= 16	37.20	595.20
(7) B.Guest Line Cutting	June 17/30	= 14	27.95	391.30
(8) J.Parker Line Cutting	June 26/30	= 5	31.63	158.15
(9) H.Carey Cook	June 15/30	16	46.24	
	July 1/15	15 = 31		1433.44
		Totals: 193 mandays		$9259.19
(B) Supplies and Rentals (Instruments, trucks, gas, repairs etc.)				3732.38
(C) Disbursements (Travel expenses, freight, expediting etc.)				521.38
			TOTAL COST	$13,512.95

Declared before me at the City of Vancouver, in the Province of British Columbia, this 2nd day of April, 1973, A.D.

R. D. [illegible]

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia,

SUB - MINING RECORDER
VANCOUVER, B.C.

APPENDIX "B"

Petrographic Reports

Locations

6.3 - 1	-	About 400' N of LOX, 10NW
6/3 - 2	-	About 400' N of LOX, 10NW
14/7 - 5	-	L1285 130W
8/7 - 1	-	

334 FRANCIS ROAD
RICHMOND, B.C.

TEL. (604) 277-0341

D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

PETROGRAPHIC REPORT
ON TWO SAMPLES FROM
STUMP LAKE, B.C.

for

F. J. L. GUARDIA
1175 WEST 15TH STREET
NORTH VANCOUVER, B.C.

by

D. L. Cooke, Ph.D., P.Eng.
Consulting Geologist

July 11, 1972

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D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

PETROGRAPHIC REPORT

NUMBER: #6 / 3-1 LOCALITY: Stump Lake, B.C. DATE: July 11, 1972

NAME AND CLASSIFICATION: CARBONITIZED ANDESITE

MEGASCOPIC DESCRIPTION: This is a grey fine grained rock which contains 2 - 10 mm. green mineral and minor disseminated sulphides. Rusty quartz veins are also present. Rusty weathering.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Carbonate	70	The entire rock is pervasively replaced by fine grained ankeritic carbonate. Veins also contain some coarse carbonate growths.
2. Quartz	10	Anhedral quartz occurs in the body of the rock, and prisms occur together with carbonate in the veins.
3. Sericite	10	Fine grained sericite is scattered throughout.
4. Fuchsite	8	Equidimensional pseudomorphs consist of a green chrome mica.
5. Pyrite	2	Euhedral to subhedral pyrite crystals are moderately abundant. The rims are weathered to hematite.
6. Hematite	Tr.	Hematite occurs on the rims of pyrite crystals.
7. Leucoxene	Tr.	Leucoxene is present in granular, semi-opaque clusters, which are probably an alteration of iron oxide.

TEXTURE: An original porphyritic texture is suggested by the outlines of carbonate-rich pseudomorphs. Some of these resemble plagioclase laths; others are reminiscent of stubby pyroxene phenocrysts. Small equidimensional pseudomorphs consist entirely of fuchsite.

CONCLUSION:
The rock was probably an andesite originally. Pervasive carbonitization has completely transformed the primary composition, but the texture is partially preserved. Subsidiary amounts of quartz and white mica have also replaced some of the primary minerals.

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D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

PETROGRAPHIC REPORT

NUMBER: #6 / 3-2 LOCALITY: Stump Lake, B.C. DATE: July 11, 1972

NAME AND CLASSIFICATION: CARBONITIZED RHYOLITE OR DACITE

MEGASCOPIC DESCRIPTION: The specimen appears fine grained and cherty, but contains scattered quartz grains and sulphide disseminations. The weathered surface is dark brown.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Carbonate	50	Ferruginous carbonate permeates the entire section, but it is more abundant within pseudomorphs. Limonitic stains occur where this carbonate is weathered.
2. Quartz	30	Oval patches consist mainly of medium to coarse grained quartz. The groundmass and the 2 - 5 mm. carbonate pseudomorphs also contain a fine equigranular quartz.
3. Kaolin (?)	10	Fine grained kaolin occurs mainly in irregular areas within the groundmass.
4. Sericite	5	Sericite is a very fine grained variety, and it is associated with kaolin of the groundmass.
5. Leucoxene	3	Granular leucoxene is secondary after iron oxide, and it is widely distributed.
6. Pyrite	2	Elongate grains occur within some pseudomorphs, and equigranular grains in the groundmass.
7. Chalcopyrite	Tr.	A few irregular grains of chalcopyrite are found in association with pyrite disseminations.
8. Alkali Feldspar	Tr.	The occasional remnant patch of alkali feldspar remains in the groundmass.

TEXTURE: The texture of the original rock was porphyritic. The phenocrysts, 2 - 5 mm. in size, are now replaced by carbonate and quartz. Oval patches, containing quartz may have been quartz phenocrysts. The groundmass is reconstituted to carbonate, quartz, kaolin and sericite.

CONCLUSION:

The original rock appears to have been a volcanic flow of acid to intermediate composition. It is now an ankeritic quartzitic rock, which has gone through intense carbonitization and silicification. The presence of kaolin and sericite suggests that this alteration was in part due to hydrothermal agents. There are no oxides present, and the disseminated sulphides are mainly pyrite.

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D. L. COOKE & ASSOCIATES LTD.

D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

SUMMARY AND CONCLUSIONS

The two rock samples examined are generally similar to those described in a previous petrographic report dated July 11, 1972. Specimen number 14/7 - 5 is a carbonitized and sericitized fine grained sedimentary rock. The primary sedimentary texture is preserved, but the alteration to secondary minerals has destroyed the primary mineralogy. The presence of sericite flakes and tourmaline needles strongly suggests that the alteration agents were of a hydrothermal nature. Pyrite grains and streaks are also hydrothermal in origin.

Specimen number 8/7 - 1 shows no evidence of hydrothermal alteration. Moderate deuteric alteration is apparent. It is very likely a member of the younger volcanic sequence of the area.

INTRODUCTION

The two thin sections were prepared by Coots-Coddington Petrographic Service from surface samples. The petrographic examination was done at the request of Mr. F. J. L. Guardia. The constituent minerals and textures are identified optically, and for each a visual estimate is made of the volume percent. Microscopic descriptions and classifications are presented for each section on separate report sheets, which form an integral part of this report.

Reported by: _____

D. L. Cooke, Ph.D., P.Eng.

August 31, 1972.

3554 FRANCIS ROAD
RICHMOND, B.C.

TEL. (604) 277-0341

D. L. COOKE & ASSOCIATES LTD.
D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

PETROGRAPHIC REPORT

NUMBER: #14/7-5 LOCALITY: Stump Lake, B.C. (?) DATE: August 31, 1972

NAME AND CLASSIFICATION: CHERTY SEDIMENT

MEGASCOPIC DESCRIPTION: The section was prepared from a grey, fine grained specimen. It contains a fine dusting of pyrite as disseminations and smears on fractures.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Carbonate	60	The section is permeated by fine grained, ankeritic (iron-rich) carbonate. Weathering of this carbonate leaves a residue of cloudy iron-stained leucoxene.
2. Quartz	25	Anhedral quartz grains are uniformly distributed together with carbonate.
3. Sericite	10	Sericite is intermixed with carbonate and quartz throughout.
4. Leucoxene	4	Cloudy, iron-stained leucoxene is a prominent constituent.
5. Pyrite	1	Irregular grains of pyrite occur as streaks or as isolated blebs.
6. Tourmaline	Tr.	Small tourmaline prisms are scattered here and there.

TEXTURE: There is a suggestion of fine sedimentary layering because of the linear alignment of quartz grains. This layered texture is enhanced by the presence of bands richer in carbonate intercalated with others richer in sericite.

CONCLUSION:
The specimen is classified as a cherty sedimentary rock. It has been affected by hydrothermal alteration, which resulted in the development of secondary carbonate and sericite. Originally it may have been a cherty argillaceous unit.

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D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

PETROGRAPHIC REPORT

NUMBER: #8/7 -1 LOCALITY: Stump Lake, B.C. (?) DATE: August 31, 1972

NAME AND CLASSIFICATION: TRACHYTE

MEGASCOPIC DESCRIPTION: The specimen is a grey, medium grained rock which contains the occasional inclusion of different rock types.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	60	An_{5-10}. Anhedral to subhedral albite grains are the most abundant constituent. Alteration to sericite occurs in moderate amounts.
2. Chlorite	15	Irregular interstitial patches of chlorite appear to be secondary after a ferromagnesian mineral.
3. Quartz	8	The angular interstitial positions are filled by quartz.
4. Carbonate	7	Patches of carbonate are scattered throughout.
5. Sericite	6	Tiny sericite flakes are found uniformly distributed within plagioclase grains.
6. Sphene	2	Secondary sphene is granular in appearance, and it occurs in association with chlorite.
7. Apatite	1	There are numerous apatite needles in this specimen.
8. Magnetite	1	Euhedral crystals of magnetite occur as disseminations.
9. Pyrite	Tr.	Minor amounts of anhedral pyrite (with hematite rims) are also present.

TEXTURE: A matted texture is evident, and this is characterized by subhedral plagioclase crystals set in a groundmass of anhedral plagioclase, chlorite, carbonate, and minor amounts of quartz. Apatite and magnetite crystals are uniformly distributed accessory minerals.

CONCLUSION:
This specimen represents a volcanic flow. It is moderately altered, not by hydrothermal but rather by deuteric processes.

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CONSULTING GEOLOGIST

SUMMARY AND CONCLUSIONS

The two rock samples examined are generally similar to those described in a previous petrographic report dated July 11, 1972. Specimen number 14/7 - 5 is a carbonitized and sericitized fine grained sedimentary rock. The primary sedimentary texture is preserved, but the alteration to secondary minerals has destroyed the primary mineralogy. The presence of sericite flakes and tourmaline needles strongly suggests that the alteration agents were of a hydrothermal nature. Pyrite grains and streaks are also hydrothermal in origin.

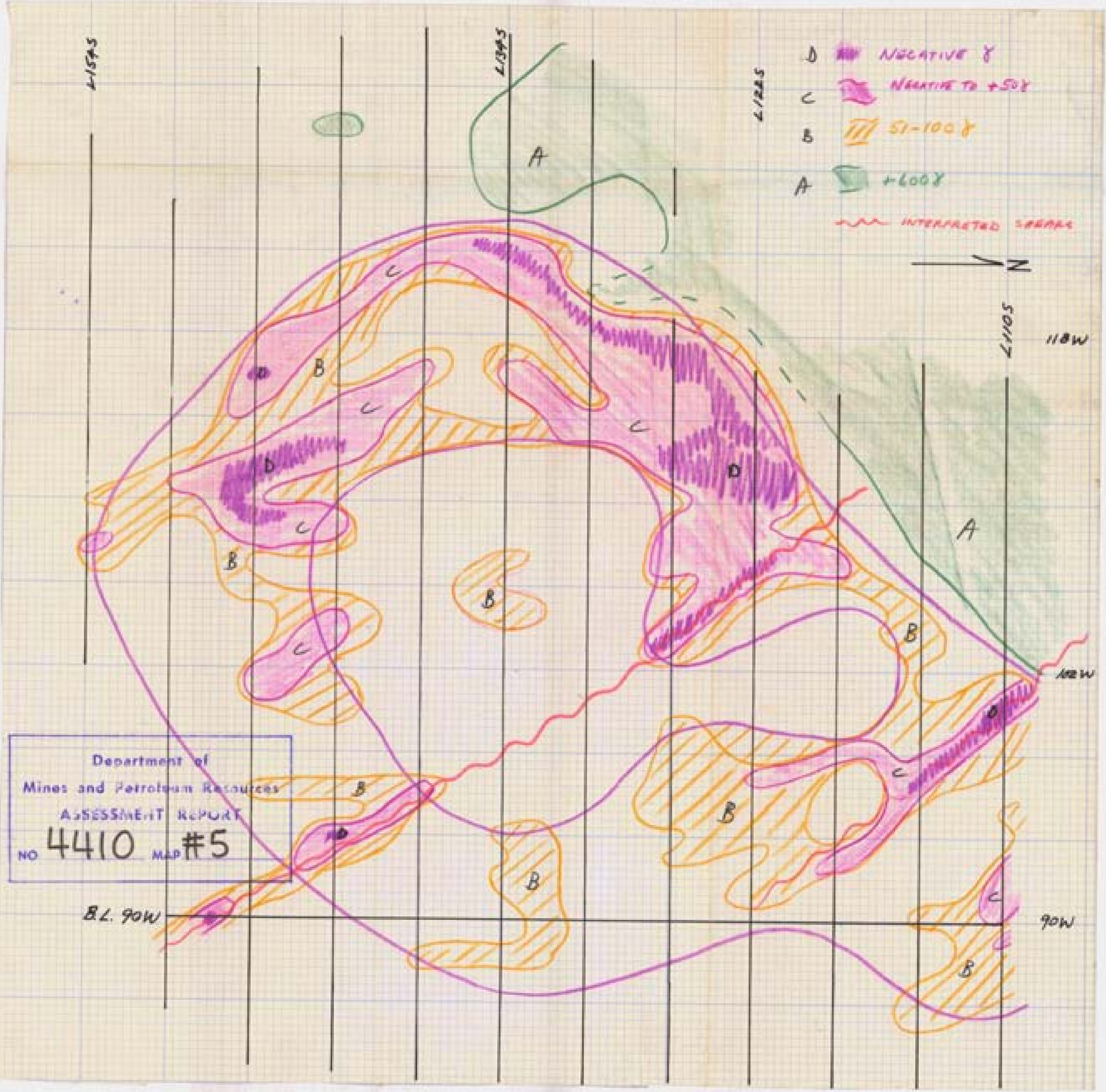
Specimen number 8/7 - 1 shows no evidence of hydrothermal alteration. Moderate deuteric alteration is apparent. It is very likely a member of the younger volcanic sequence of the area.

INTRODUCTION

The two thin sections were prepared by Coots-Coddington Petrographic Service from surface samples. The petrographic examination was done at the request of Mr. F. J. L. Guardia. The constituent minerals and textures are identified optically, and for each a visual estimate is made of the volume percent. Microscopic descriptions and classifications are presented for each section on separate report sheets, which form an integral part of this report.

Reported by: _____
D. L. Cooke, Ph.D., P.Eng.

August 31, 1972.


D NEGATIVE γ
C NEGATIVE TO +50γ
B 51-100γ
A +600γ
INTERPRETED SHEARS
N
110W
102W
90W
B.L. 90W
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO 4410 MAP #5

SR 4 SR 4 SHER 28 SHER 26 SHER 24 SHER 22 SHER 20 SHER 18 FIR 52 FIR 51

STUMP LAKE

SR 3 SR 1 SHER 27 SHER 25 SHER 23 SHER 21 SHER 19 SHER 17 FIR 54 FIR 53

"A" FRACTION "B" FRACTION

SHER 46 SHER 44 SHER 42 SHER 40 SHER 38 SHER 36 SHER 34 SHER 32 SHER 3

SHER 45 SHER 43 SHER 41

L 589 (C.G.)

SHER 39 SHER 37 SHER 35 SHER 33 SHER 32 SHER 29

BASELINE 90°W

L 590 (C.G.)

SHER 64 SHER 63 SHER 56 SHER 55

SHER 65

L 5129 (C.G.)

SHER 66 SHER 58 SHER 57

L 5075 (C.G.)

SHER 68 SHER 60 SHER 59

L 5078 (C.G.)

L 5124 (C.G.)

L 5079 (C.G.)

SHER 70 SHER 69 SHER 62 SHER 61

JO 2 JO 1

BASELINE 114°W

LEGEND

GEOLOGY

	QUARTZ-CARBONATE (Usually Fault Breccia)	VEINS
	QUARTZ	
	CARBONATE	
MESOZOIC OR LATER	BASALT DYKE (May Be Tertiary)	
	DACITE DYKE	
	RHYOLITE DYKE	
	CHROMIC-MICA (FUCHSITE) SILICA, SERICITE, KAOLIN USUALLY RESTRICTED TO VICINITY OF QUARTZ VEINS & SHEAR ZONES	
	MAGNETITE - HEMATITE - EPIDOTE	NICOLA GROUP (?) MIXED SEDIMENTS (ARGILLITES, TUFFS) & VOLCANICS (ANDESITE, AGGLOMERATES)
MESOZOIC	EPIDOTE WITH MINOR SERICITE	
	BIOTITE HORNFELS (May Be Later)	
	REGIONALLY ALTERED ANDESITE & INTERCALATED SEDIMENTS	
PALAEOZOIC	CACHE CREEK GROUP, GREENSCHIST FACIES, PHYLLITES & ARGILLITES	

SYMBOLS

- BEDDING (INCLINED, VERTICAL, OVERTURNED)
- FRACTURING (INCLINED, VERTICAL)
- SHEARING (INCLINED, VERTICAL)
- OBSERVED FAULT WITH VERTICAL & HORIZONTAL MOVEMENT
- FAULT INFERRED
- VEIN OR DYKE (Scale Exaggerated) WITH DIP
- OUTCROP
- OUTCROP DOUBTFUL
- ROAD (Gravel or Dirt)
- INTERMITTENT STREAM OR SIGNIFICANT DRAINAGE
- SWAMP
- TRENCH OR PIT
- CLAIM POST
- CROWN GRANTED CLAIM
- APPROXIMATE ALTERATION BOUNDARY (Limestones Usually Graphitized)
- ARBITRARY POSITION OF GEOLOGIC CONTACT

Hm – HEMATITE
Mg – MAGNETITE
Gn – GALENA
Cp – CHALCOPYRITE
Py – PYRITE
Sl – SPHALERITE
W – SCHEELITE

4410 M-1

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4410 MAP #1

To accompany Geological and Geophysical Report by R. Dunsmore, B.Sc., on the Fir, Sher and Jo claims; east of Stump Lake, Nicola Mining Division, dated Aug. '72.

Signed: R. Dunsmore Endorsed: Ken McGroy

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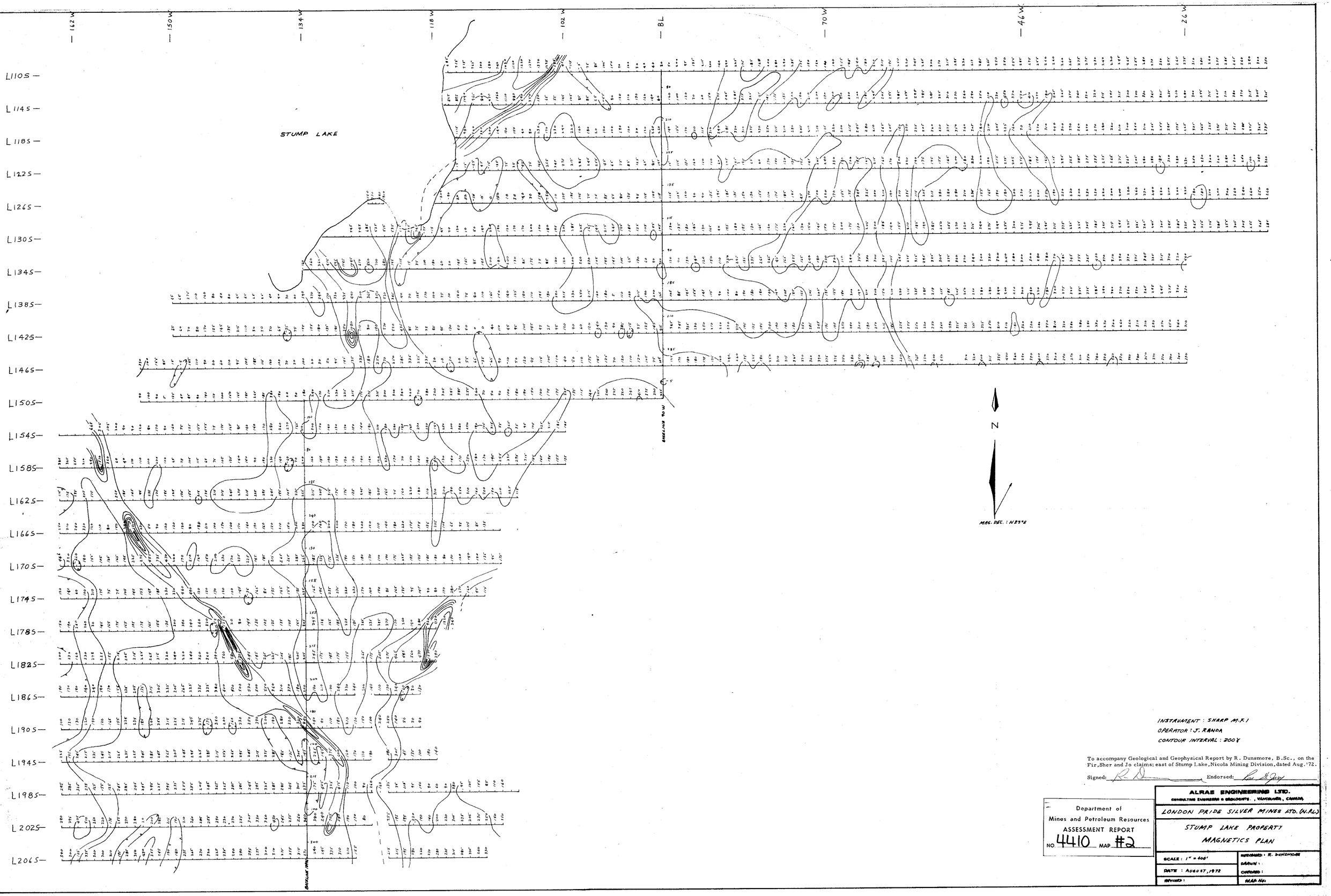
STUMP LAKE PROPERTY
GEOLOGY MAP

SCALE 1" = 400'	DESIGNED R. DUNSMORE
DATE AUGUST, 1972	DRAWN
REVISED	CHECKED
	MAP No.



INSTRUMENT : SHARP M.F.I
OPERATOR : J. RANDA
CONTOUR INTERVAL : 200 γ

To accompany Geological and Geophysical Report by R. Dunsmore, B.Sc., on the Fir, Sher and Jo claims; east of Stump Lake, Nicola Mining Division, dated Aug. '72.

Signed: R. D. Endorsed:

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4410 MAP #2

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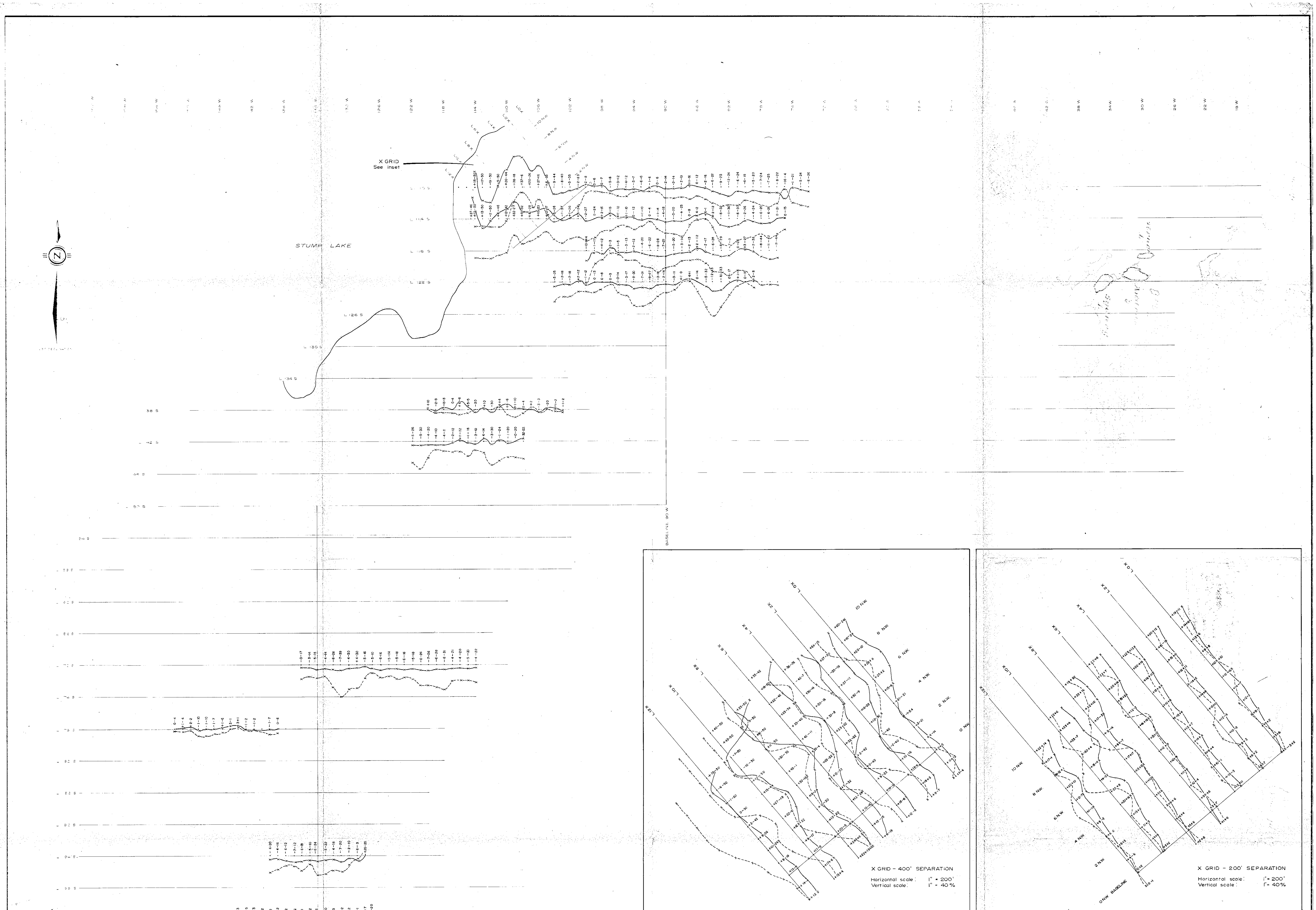
MAGNETICS PLAN

SCALE : 1" = 400'	SURVEYED : R. DUNSMORE
DATE : AUGUST, 1972	DRAWN :
REVISED :	CHECKED :
	MAP No.



To accompany Geological and Geophysical Report by R. Dunsmore, B.Sc., on the Fir, Sher and Jo claims; east of Stump Lake, Nicola Mining Division, dated Aug. '72.

Signed: ________ Endorsed: ________

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STUMP LAKE PROPERTY
ELECTROMAGNETIC PROFILES
EM 17

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
4410 MAP #3

SCALE: 1" = 400'	DESIGNED R. DUNSMORE
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	CHECKED
REVISED	MAP Nº