#00019

GEOLOGICAL MAPPING

AND

GEOCHEMICAL ORIENTATION SURVEY

OF THE

L-1 and 2, L-7 to L-16, Lola-1 and 2 Claims

[60° 02' N, 130° 30' W]

[Claim Sheets 105 - 8 - 1, 2]

FOR

J. FOSTER IRWIN ENGINEERING AND SERVICES MANAGEMENT

BY

D. ARSCOTT, P. ENG.

25th to 31st AUGUST, 1971

VANCOUVER 10th SEPTEMBER, 1971

CONTENTS

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INTRODUCTION

On behalf of J. Foster Irwin Engineering and Management Services Ltd., the writer undertook the geological mapping of a group of L and Lola Claims situated close to the B.C. - Yukon Border, 71 miles West of Watson Lake, Yukon.

In addition, a soil sampling orientation survey was carried out in order to indicate the best sample interval and best indicator metal for further work.

ACCESS

A 4 mile road extends South from Mile 706 on the Alaska Highway to the main showings on Claim L-7 (See Figure 1). In dry weather a high clearance two wheel drive vehicle can reach to within 1 mile of the property.

As an alternative to crossing the Rancheria River Bridge at Mile 706, there is a crossing at Mile 701 that can be forded at times of low water.

A new "cat" road is under construction from the Alaska Highway, to the "sandy" claims just South of Claim L-15, and may facilitate travel to the Western end of the property.

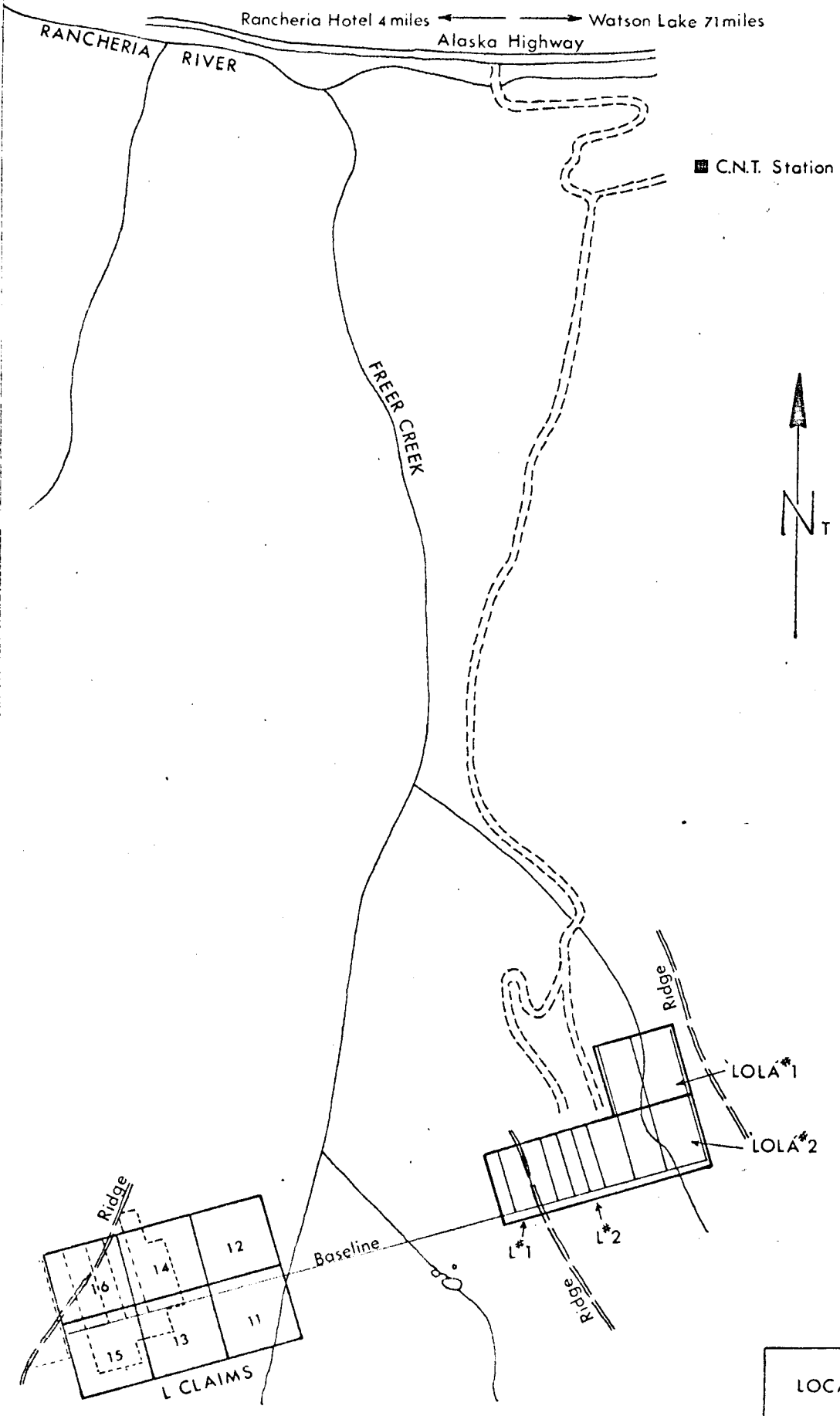
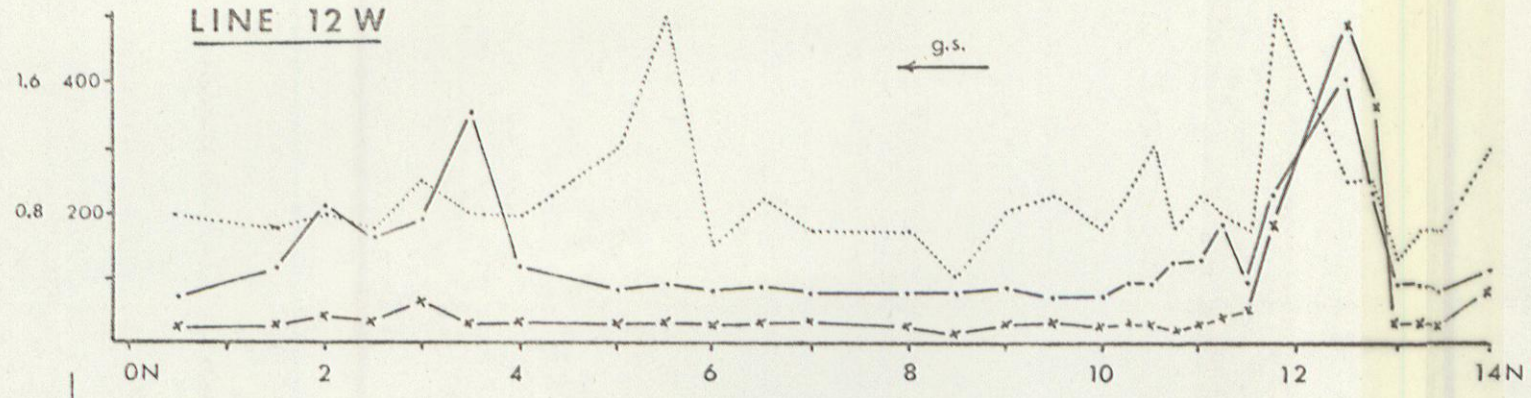


FIG 1

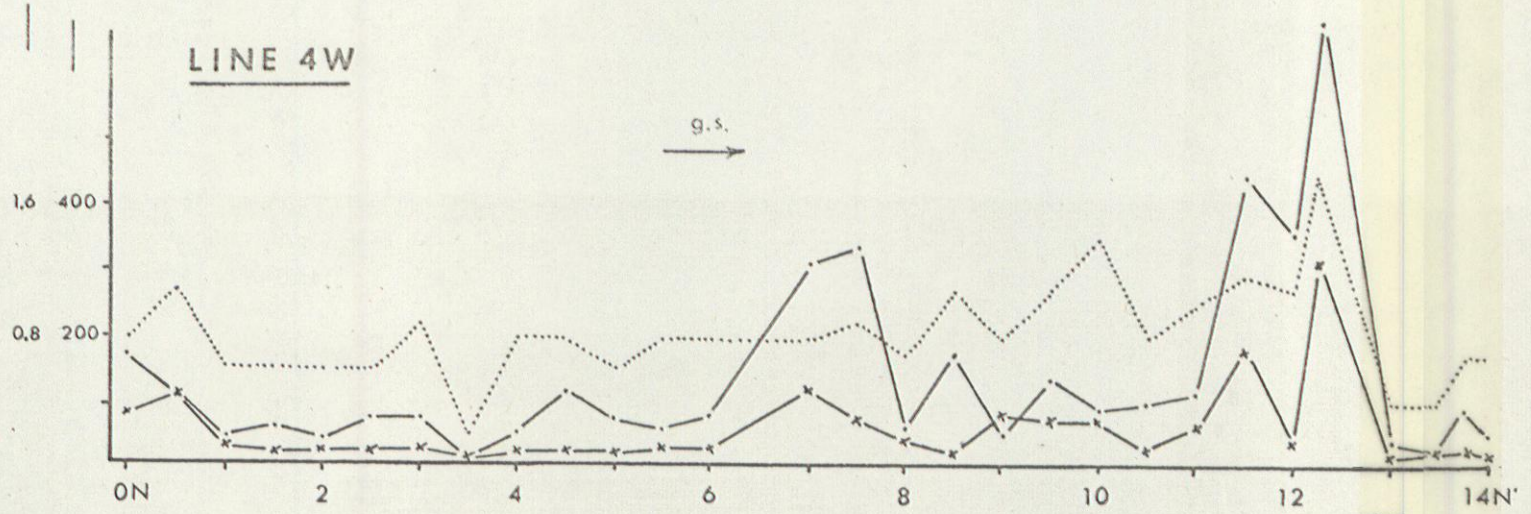
LOCATION OF CLAIMS
AND GRIDS
"L" and "Lola" claims
1in.= 3000 ft
Aug.1971

LINE 12 W

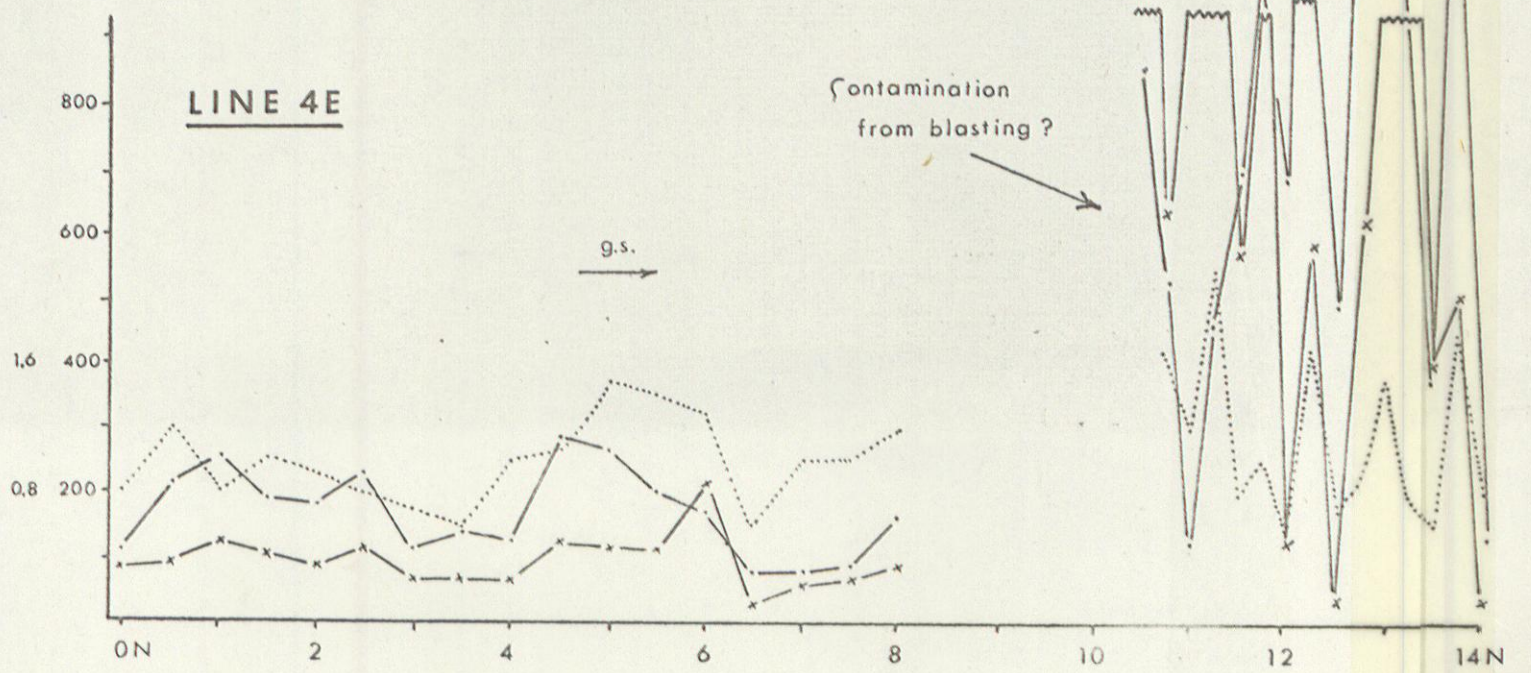


— Ag, ppm —
— Pb & Zn, ppm —

LINE 4W



LINE 4E



Contamination from blasting ?

g.s. = ground slope (down)

FIG 2

SOIL SAMPLING PROFILES

'L' CLAIMS

SEPT. 1971 D.A.

TOPOGRAPHY

The claims are in the Cassiar Mountains between the elevations of 4000 and 5500 feet (ASL), lying across two northerly trending ridges, on either side of the main branch of Freer Creek. West facing slopes are largely cliff and talus covered; east facing slopes are generally more gentle.

Timber, in the form of an old burn, low buck brush, and scrub spruce consitute the main vegation and are present below an elevation of 4500 feet.

Available water is present only in the main creeks, as represented in Figure 1.

GEOLOGY

The claims are within the Cassiar Batholith, some 4 miles from its eastern edge.

The nearest applicalbe regional reference is GSC Paper 68 - 55, Jennings River Map Area.

Lithology

Nine tenths of the outcrops seen within the property consist of quartz diorite ("D"). Typically this contains 60 to 80% plagioclase, 5 to 20% quartz, 10 to 15% biotite, and occasional small amounts of pink feldspar. It's texture is usually porphyritic to poikilitic, the phenocrysts being usually plagioclase, and occasionally quartz.

Present in sharp contact with the diorite are irregular shaped bodies of fine to medium grained diorite ("F") to aplite ("A"), with a white to light grey or light brown colour, and a 5% matics content. The sharp contacts suggest that these bodies are intrusive into and therefore younger than the quartz diorite.

Dark brown, fine grained diabase dykes ("d"), of a few feet to 10 feet in width are intruded along wome of the more definite structural breaks in the quartz diorite. In an interesting case at the eastern end of the property, two such dykes, of identical apparent composition, but differing age ("freshness") are intruded side by side.

Very minor quantities of pegmatites, featuring K-feldspar and quartz, are present as small veinlets at scattered locations.

Similarly quartz veins are rare, scattered, and small, although a greater incidence of quartzitic float occurs near the major structural breaks.

Structure

There are two major directions of shearing, more or less pervasive throughout the claims, and roughly parallel to two of the jointing orientations. These are (a) North-South striking with steep to vertical dips, and (b) North 70° East striking, with moderate to steep dips to the North.

Numerous gullys, (and associated rubble with traces of alteration), and all the diabase dykes seen, are parallel to this second direction. Moreover, all mineralization seen to date lies within faults, or fault rubble, with this direction.

Fractures have been plotted as shearing whereever their density exceeds 1 fracture per foot. This appears to be the best criterion as jointing and shear surfaces are difficult to distinguish.

One fault displacement was observed directly near station 4 W, 6 N, involving a right hand strike movement of a few feet.

There is indirect evidence of a larger fault movement

along the main Fraser Creek tributary. A strong diabase dyke, the only one of any size and complexity of structure, on the eastern side of the creek (32 E, 25N), parallels precisely one of the dykes at the main showings (10 W, 12 N), on the assumption that these dykes occupy the same structural break, a left hand strike displacement of a thousand feet must have occurred along the valley between them.

The structure at the main showings is more complex than anywhere else. Two diabase dykes, or dyke segments, are present at the western end of the trenches with parallel strikes but opposite, (50^{o}) dips.

Strongly mineralized rubble (Samples L-7, L-1), is especially concentrated in the main trench bottom, (2 W, 12 N), close to a very strong fault exhibited in the south wall of the trench. Slickensides on the opposite wall of the trench suggest a nearly horizontal movement along this fault.

Alteration

Alteration, in the form of a green mineral, believed to be epidote, and less commonly in the form of chloritization mafic minerals, occurrs close to many shear planes. However, its width is usually limited to a few inches.

In the case of the main showings, alteration is widespread over a 1000 feet by 200 feet and is strong to intense.

Mineralization

The trenches are largely sloughed in and it was only possible to observe mineralization in place as traces in the heavily fractured trench walls.

However abundant mineralized debris is available. It consists mainly of narrow massive stringers of galena, and sphalerite, with heavy oxidation and manganese coated surfaces. the assay values attest to a fair amount of associated silver. A spectrographic analysis of sample L-1 suggests the presence of barite.

The gangue minerals are mainly quartz, with some epidote.

SOIL SAMPLING

Approximately 90 soil samples were analysed for silver, lead, and zinc. The results are plotted in profile in Figure 2.

An attempt was made to analyse these statistically, with mediocre results, presumably because a large number of samples are anomalously high in metal content, leaving barely enough background values for efficient statistical treatment. One reason for the high relative number of anomalous samples is the close sample spacing used in the vicinity of the known mineralization. Another seems to be a wide dispersion of metal in the soil, greater than would be expected from narrow high grade veins. However, there is no consistent obvious movement of the metals relative to one another down slope.

Some highly tentative, but interesting conclusions are possible. Either the dispersion is due to mainly physical factors (movement of soil and mineralized particles as a whole - thereby not separating the different metals) or the actual mineralization is wider than expected.

Tentative thresholds are chosen as follows:-

Silver	-	1.4 ppm (parts per million)
Lead	-	100 ppm
Zinc	-	200 ppm

Any value [illegible] anomalous and may well represent underlying mineralized bedrock.

A quick comparison shows that dark brown soils ("A" horizon) and grey clay soils have a higher metal content on average than the medium and light brown ("B" horizon) soils. However, there is a preponderance of the darker soils collected at the lower elevations near the trenches, and no definite conclusion can yet be drawn as to their relative value.

Correlation of metal values is fairly good between silver and zinc, suggesting that only one of these two need be used in future.

The best choice for further work would seem to be, either:

(a) Analysis for lead and zinc on a 100 foot sample spacing.

or (b) Analysis for zinc only, on a 50 foot spacing.

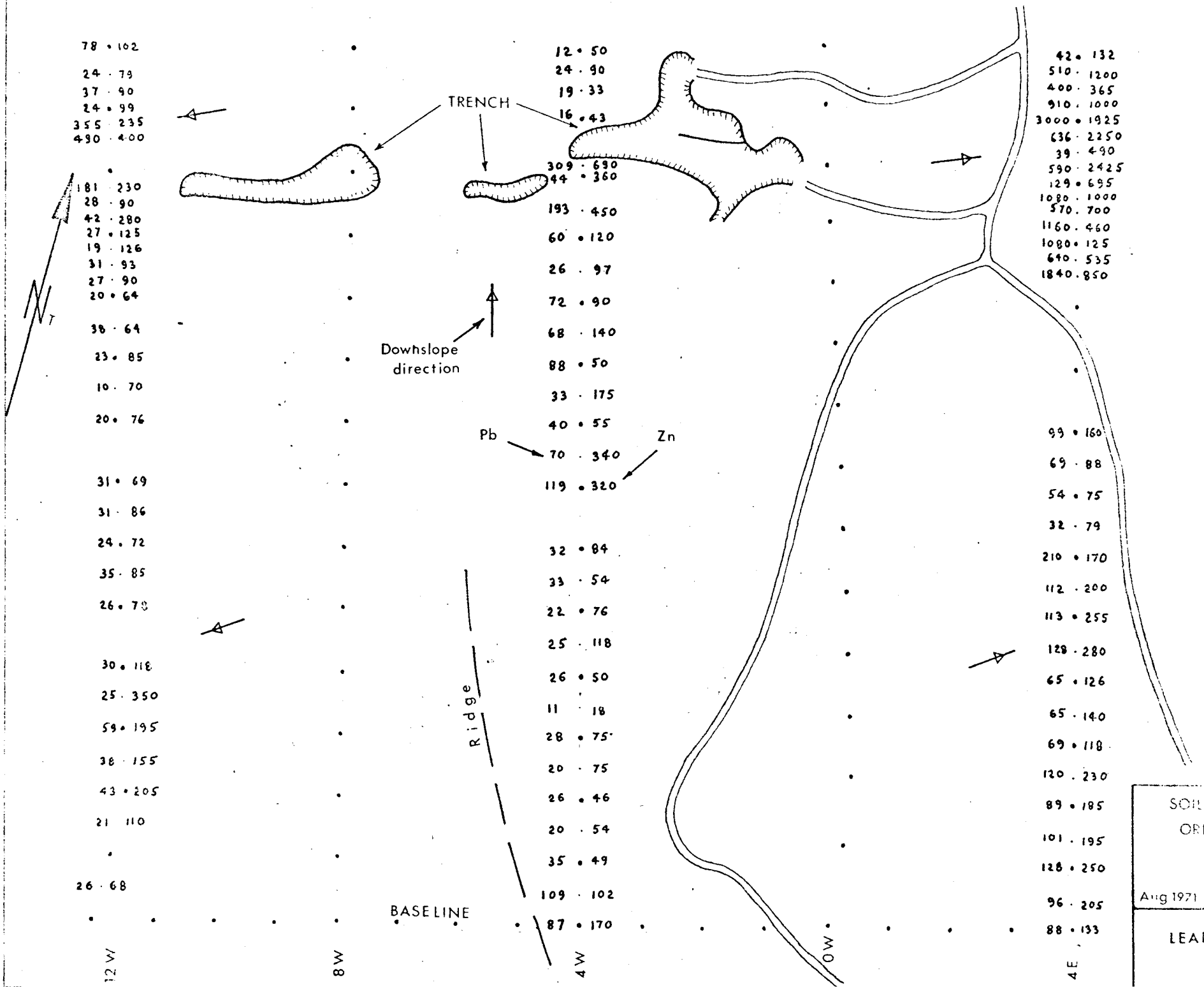


FIG 5a

SOIL SAMPLING ORIENTATION SURVEY

1in=200ft

Aug 1971 D.A.L.J

LEAD & ZINC ppm

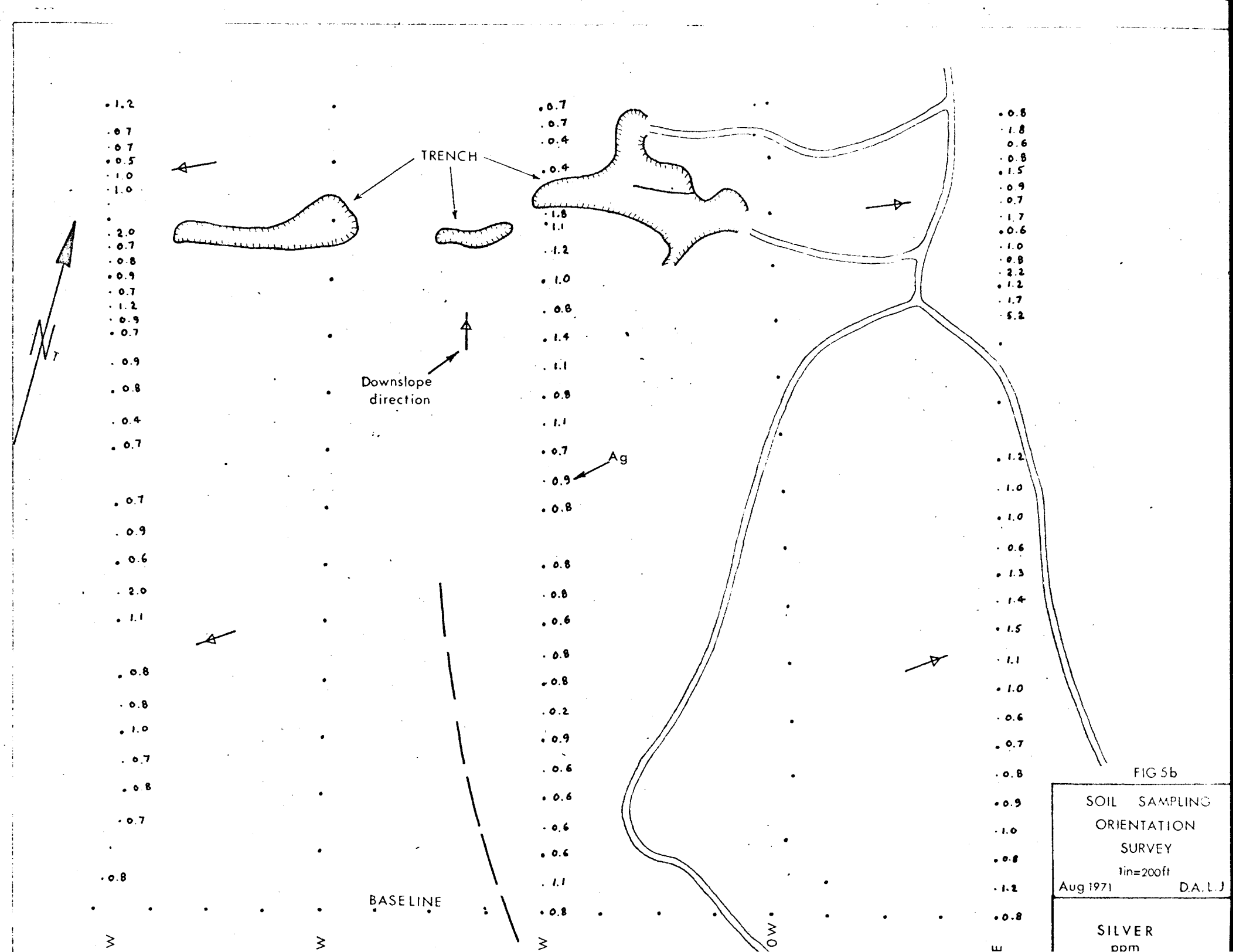


FIG 5b

SOIL SAMPLING ORIENTATION SURVEY

1in=200ft

Aug 1971 D.A.L.J

SILVER ppm

SUMMARY AND CONCLUSIONS

Evidence of scattered pockets of mineralization has been located over a total area of 3 miles by 1 mile, well inside the batholithic boundary, and in a host rock remarkable for its uniformity.

All mineralization yet seen lies within, or associated with, N 70° E trending faults, with minor amounts of accompanying alteration.

The original showing remains the best present, anomalous in metal values, in structure, and in alteration. With this in mind the next exploration step should be the re-opening and deepening of the main trenches on it, in order to verify earlier reported reported widths of mineralization there, and to elucidate more fully the attendant structure.

The property remains very promising. Exploration should be continued.

Cordially submitted,

David Arscott

David Arscott

BONDAR-CLEGG & COMPANY LTD.

geochemists • assayers • analytical chemists

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PHONE: 988-5315 TELEX: 04-54554

CERTIFICATE OF ASSAY

TO P. Prescott
341 - 540 Burrard St.
Vancouver 1, B.C.

Report No: A71-603
Samples Rec'd: Sept. 2, 1971
Results Completed: Sept. 10, 1971

I hereby certify that the following are the results of assays made by us upon the herein described Ore samples.

MARKED	GOLD		SILVER	Pb	Zn						TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Ore											
L - 2	---		0.06	0.15	0.20						
3	---		0.03	0.01	0.07						
4	---		Trace	0.04	0.22						
5	---		28.7	55.80	0.40						
6	0.005		1.8	---	---						
7	---		2.9	3.90	0.95						
8	---		20.0	14.2	8.65						

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

Gold & Silver values reported on these sheets have not been adjusted to compensate loses and gains inherent in fire assay methods.

Gold calculated at $.....per ounce

Registered Assayer, Province of British Columbia

BONDAR-CLEGG & COMPANY LTD.

geochemists • assayers • analytical chemists

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CERTIFICATE OF ASSAY

TO D. Arscott
311 - 540 Burrard St.
Vancouver, B.C.

Report No: A71-513
Samples Rec'd: Aug. 16, 1971
Results Completed: Aug. 23, 1971

I hereby certify that the following are the results of assays made by us upon the herein described Ore samples.

MARKED	GOLD		SILVER	Cu	Pb	Zn					TOTAL VALUE PER TON (2000 LBS.)
Ore	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
L-1	0.04		1.4	0.14	1.98	12.47					
LU-1	0.02		5.9	0.02	13.01	0.14					
LU-2	Trace		0.02	L0.01	0.25	0.43					
NA-1	0.005		0.25	L0.01	1.03	3.60					
DEH-1	Trace		0.03	L0.01	---	----					

L means less than

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

Gold & Silver values reported on these sheets have not been adjusted to compensate loses and gains inherent in fire assay methods.

Gold calculated at $.....per ounce

Registered Assayer, Province of British Columbia

BRANCH OFFICES
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BOX 4[illegible]7, CAMPBELLTON, N.B.

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768A BELFAST ROAD (M.R. 1), OTTAWA, ONTARIO K1G 0Z5
PHONE 237-3110 TELEX: [illegible]-3548

SEMI-QUANTITATIVE ANALYSIS

No: A-21-544

Sample No. L 1

From: Bonco - Vancouver

Method: XRF

Date: September 1, 1971

No. of Elements: 32

Analyst: XRF - Dr. Roger J. Goodman

MAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO_2									X	
Al_2O_3							X			
Total Fe (Fe_2O_3)									X	
MgO						X				
CaO							X			
Na_2O							X			
K_2O					X					
TiO_2				X						
TRACE ELEMENTS (%)										
V	X									
Cr	X									
Mn									X	
Co	X									
Ni	X									
Cu					X					
Zn								X		
As	X									
Sr	X									
Y	X									
Zr		X								
Nb	X									
Mo	X									
Ag		X								
Sn			X							
Sb	X									
Ba				X						
La	X									
Ce	X									
W	X									
Pb							X			
Bi	X									
Th	X									
U	X									

'L' CLAIMS
ROCK SAMPLES

SAMPLE	TYPE	LOCATION	DESCRIPTION
L-1	GRAB	MAIN TRENCH	COMPOSITE TYPICAL LEAD ZINC MINERALIZATION FROM ...
L-2	GRAB	90W 3N	DIORITE, INTENSELY ALTERED AND QUARTZ VEIN MATERIAL IN RUBBLE.
L-3	GRAB	ON WESTERN RIDGE IMMEDIATELY N. OF CLAIM POST SAND2 #25 INITIAL	DIORITE, INTENSLY ALTERED. NEAR ZONE RUBBLE TRACES OF SPHALERITE.
L-4	GRAB	86W 9N	DIORITE, MODERATELY ALTERED AND QUARTZ VEIN MATERIAL IN RUBBLE
L-5	GRAB	78W 14N	DIORITE, INTENSELY ALTERED. HIGH GRADE GALENA.
L-6	GRAB	32E ON	PYRITE (5-10%) IN QUARTZ VEIN MATERIAL WITHIN DIORITE
L-7	GRAB	MAIN SHOWING	DIORITE, INTENSELY ALTERED. ... STAINED MINERALIZED RUBBLE OVER ...
L-8	GRAB	EAST RIDGE, ABOUT 32E 16N	DIORITE, INTENSELY ALTERED. ...

BONDAR-CLEGG & COMPANY LTD.

geologists o geochemists o analysts

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PHONE 988-5315

[illegible] Sept. 2, 1971

GEOCHEMICAL LAB REPORT

No. [illegible]

Extraction: Hot Aq Regia

Method: [illegible]

Fraction Used: -80 Mesh

From: [illegible]

Date: [illegible] 1971

Analyst: [illegible]

SAMPLE NO.	Pb ppm	Zn ppm	Ag ppm					REMARKS
4E 0N L.B.	88	133	0.8					
4E 0+50N	96	205	1.2					
4E 1N	128	250	0.8					
4E 1+50N	107	755	1.0					
4E 2N	69	165	0.9					
4E 2+50N	120	200	0.8					
4E 3N	69	170	0.7					
4E 3+50N	65	140	0.6					
4E 4N	65	[illegible]	1.0					
4E 4+50N	128	200	1.3					
4E 5N	112	255	1.5					
4E 5+50N	112	200	1.4					
4E 6N	270	175	1.0					
4E 6+50N	32	79	0.6					
4E 7N	56	75	1.0					
4E 7+50N	69	85	1.0					
4E 8N	89	160	1.2					
4E 10+[illegible]	1040	850	5.2					
4E 10+75N	640	535	1.7					
4E 11N	1000	125	1.2					
4E 11+25N	1100	400	2.2					
4E 11+50N	575	700	0.8					
4E 11+75N	1000	1000	1.0					
4E 12N	125	685	0.6					
4E 12+25N	596	2425	1.7					
4E 12+50N	39	450	0.7					
4E 12+75N	630	[illegible]	[illegible]					
4E 13N	[illegible]	1000	[illegible]					
4E 13+25N	510	1000	[illegible]					
4E 13+50N	400	365	[illegible]					
4E 13+75N	510	1200	1.8					

Report No. [illegible] BONDAR-CLEGG & COMPANY LTD. Page No. 2

GEOCHEMICAL LAB REPORT

SAMPLE NO.	ppm	ppm	[illegible]					REMARKS
[illegible] L.?	62	[illegible]	[illegible]					
4N 9N	?7	130	?.0					
[illegible]	130	202	1.1					
4N 7?	35	46	[illegible]					
4N 1+50N	20	54	0.4					
4N 2N	20	46	0.6					
[illegible] 2+50N	22	75	[illegible]					
[illegible] 3N	23	70	?.0					
[illegible] 3+50N	11	50	[illegible]					
[illegible] 4N	25	50	0.?					
4N 4+50N	25	110	0.?					
4N 5N	22	76	?.6					
4N 5+50N	38	54	0.8					
4N 6N	32	84	0.?					
4N 7N	119	320	0.8					
4N 7+50N	70	340	0.9					
4N 8N	40	55	0.7					
4N 8+50N	33	175	1.1					
4N 9N	30	50	0.8					
4N 9+50N	68	140	1.?					
4N 10N	72	90	1.4					
4N 10+50N	26	97	0.9					
4N 11N	60	120	1.0					
4N 11+50N	193	450	1.2					
4N 12N	44	360	1.1					
4N 12+50N	309	690	1.3					
4N 13N	16	43	0.4					
4N 13+50N	19	30	0.4					
4N 13+75N	24	90	0.7					
4N 14N	12	50	0.7					
12N 0+50N	26	68	0.8					
12N [illegible]	[illegible]	[illegible]	[illegible]					
[illegible]	30	150	?.7					
[illegible]	[illegible]	[illegible]	1.?					
[illegible]	25	330	0.8					
12N [illegible]	30	110	0.8					

Report No. [illegible] BOND[illegible] & COMPANY LTD. Page No. [illegible]

GEOCHEMICAL LAB REPORT

SAMPLE NO.	Pb ppm	Zn ppm	[illegible]					REMARKS
12N [illegible] [illegible]	22	27	1.1					
[illegible]	[illegible]	[illegible]	[illegible]					
[illegible]	[illegible]	[illegible]	0.6					
12N [illegible]	[illegible]	65	[illegible]					
12N [illegible]	31	69	0.7					
12N [illegible]	29	76	0.7					
12 N [illegible]	10	70	0.4					
12N [illegible]	23	66	0.6					
12N 9+50N	32	84	0.9					
12N 10N	20	64	0.7					
12N 10+25N	27	90	0.9					
12N 10+50N	31	88	1.2					
12N 10+75N	19	120	0.7					
12N 11N	27	125	0.9					
12N 11+[illegible]N	42	200	3.8					
12N 11+50N	28	90	0.7					
12N 11+75N	107	230	2.5					
12N 12+[illegible]	420	400	1.6					
12N 12+75N	355	225	1.0					
12N 13N	24	90	0.5					
12N 13+25N	32	90	[illegible].7					
12N 13+50N	24	72	0.7					
12N 14N	78	102	1.2					
[illegible] IN SEQUENCE:								
Page 2 12N1+[illegible]	27	110	0.7					

GEOCHEMICAL SAMPLING DATA SHEET

SHEET NO. 1

SAMPLER: ____ PROJECT: L CLAIMS AREA: [illegible] DATE: [illegible]

SAMPLE NO. and/or LOCATION	COLOUR	COMPOSITION	HORIZON	DEPTH	UPSLOPE AZ.	GRAD.	REMARKS
LINE 2							
14+00N	BRN	LOAM		4"			[illegible]
13+75N	"	"		4"			
13+50N	"	"		4"			
13+25N	LIGHT BRN	"		5"			
13+00N	MEDIUM BRN	"		5"			
12+75N	" "	"		5"			
12+50N	"	"		6"			
12+25N	" "	"		5"			
12+00N	" "	"		8"			
11+75N	" "	"		8"			
11+50N	LIGHT BRN	"		8"			
11+25N	MEDIUM "	"		8"			
11+00N	" "	"		6"			
10+75N	" "	"		8"			
10+50N	" "	"		8"			
10+25N	LIGHT BRN	"		8"			
10+00N	" "	"		8"			
9+50N	GREY	CLAY		15"			
9+00N	MEDIUM BRN	LOAM		8"			
8+50N	" "	"		8"			
8+00N	LIGHT BRN	"		8"			

GEOCHEMICAL SAMPLING DATA SHEET

SAMPLER: _____ PROJECT : 1 CLAIMS AREA : [illegible] DATE : [illegible]

SAMPLE NO. and/or LOCATION	COLOUR.	COMPOSITION	HORIZON	DEPTH	UPPER [illegible]	GRAD.	REMARKS
LINE = 12N							
7+00N	MEDIUM BRN	LOAM		8"			STEEP EAST
6+50N	" "	"		6"			"
6+00N	" "	"		8"			" "
5+50N	DARK BRN	"		12"			
5+00N	" "	"		12"			" "
[illegible]	" "	"		12"			
4+50N	MEDIUM BRN	"		5"			" "
4+00N	DARK BRN	"		12"			" "
3+50N	LIGHT BRN	"		8"			
3+00N	" "	"		5"			
2+50N	" "	"		8"			" "
2+00N	" "	SAND		10"			" "
1+50N	MEDIUM BRN	LOAM		5"			
1+00N	LIGHT BRN	"		6"			
LINE = [illegible]							
[illegible]	DARK BRN	CLAY & LOAM		12"			
[illegible]	MEDIUM BRN	LOAM		12"			
1+00N	" "	CLAY & LOAM		7"			
1+50N	" "	" "		5"			
2+00N	LIGHT BRN	LOAM		6"			
2+50N	MEDIUM BRN	"		8"			

GEOCHEMICAL SAMPLING DATA SHEET

SHEET NO:

SAMPLER: _____ PROJECT : L CLAIMS AREA : DATE :

SAMPLE NO. and/or LOCATION	COLOUR	COMPOSITION	HORIZON	DEPTH	UPSLOPE ASPECT	GRAD.	REMARKS
LINE [illegible]							
[illegible]+50N	LIGHT BRN	GRAVEL + LOAM		6"			
[illegible]+00N	MEDIUM BRN	LOAM		8"			
[illegible]+50N	" "	"		7"			
[illegible]+00N	" "	"		12"			
[illegible]+50N	LIGHT BRN	"		8"			
[illegible]+00E	" "	"		10"			
[illegible]+50E	" "	"		3"			
[illegible]+00E	MEDIUM BRN	"		10"			
[illegible]+50N	LIGHT BRN	"		4"			
[illegible]+00N	MEDIUM BRN	"		5"			
[illegible]+50N	LIGHT BRN	"		2"			
[illegible]+00N	MEDIUM BRN	"		5"			
[illegible]+50N	LIGHT BRN	"		3"			
[illegible]+00N	MEDIUM BRN	"		5"			GENTLE SLOPE
[illegible]+50N	" "	CLAY + LOAM		3"			" "
[illegible]+00N	" "	LOAM		6"			
[illegible]+50N	LIGHT BRN	"		14"			
[illegible]+00N	" "	"		3"			
LINE [illegible]							
[illegible]+50N	LIGHT BRN	LOAM		5"			GENTLE SLOPE WEST
[illegible]+75N	MEDIUM BRN	SILTY LOAM		5"			" " "

GEOCHEMICAL SAMPLING DATA SHEET

SHEET NO: 4

SAMPLER: _____ PROJECT : 6 CLAIMS AREA : WATSON LAKE DATE : _____

SAMPLE NO. OR % LOCATION	COLOUR	COMPOSITION	HORIZON	DEPTH	UPSLOPE AZM.	GRAD.	REMARKS
LINE # 4E							
13+50N	LIGHT GREY	SILTY LOAM		12"			GENTLE SLOPE WEST
13+25N	MEDIUM GREY	LOAM		8"			" " "
13+00N	" "	"		8"			"
12+75N	" "	"		8"			" "
12+50N	MEDIUM BRN	LOAM		3"			" " "
12+25N	MEDIUM GREY	CLAY		6"			" " "
12+00N	MEDIUM BRN	GRAVEL + LOAM		5"			" " "
11+75N	" "	" "		5"			" " "
11+50N	" "	LOAM		5"			" " "
11+25N	DARK GREY	CLAY		8"			" " "
11+00N	" BRN	"		10"			" " "
10+75N	MEDIUM BRN	LOAM		4"			" " "
10+50N	DARK GREY	CLAY		4"			" " "
10+00N	NO SAMPLE						
9+00N	DARK BRN	LOAM		10"			" " "
9+50N	" "	"		8"			" " "
9+00N	MEDIUM BRN	"		6"			" "
8+50N	LIGHT BRN	"		3"			" " "
8+00N	" "	"		5"			" " "
7+50N	" "	"		3"			" " "
7+00N	" "	"		4"			" " "

GEOCHEMICAL SAMPLING DATA SHEET

SHEET NO: 5

SAMPLER: _____ PROJECT : L CLAIMS AREA : [illegible] LAKE DATE : _____

SAMPLE NO. and/or LOCATION	COLOUR	COMPOSITION	HORIZON	DEPTH	UPSLOPE AZM.	GRAD	REMARKS
LINE [illegible]							
4+50N	LIGHT BRN	LOAM		3'			GENTLE SLOPE W
4+00N	MEDIUM BRN	"		5"			" "
3+50N	LIGHT BRN	"		3"			" "
3+00N	MEDIUM BRN	"		4"			" "
2+50N	LIGHT BRN	"		5"			" "
2+00N	" "	"		5"			" "
1+50N	" "	"		5"			" "
1+00N	" "	"		7"			"
0+50N	" "	CLAY & LOAM		7'			"
0+00N	MEDIUM BRN	LOAM		5"			" "

An 11,800 foot base line provided the main survey control (See Figure 1). This was emplaced by chain and compass, with due corrections for slope. Stations were flagged and marked every 100 feet.

A picket grid provided control for soil sampling and mapping on Claims L-1, L-2, Lola-1 and Lola-2. On claims L-11 to L-16 control was by pace and compass, relative to the base line. The ends of the cross lines were clearly marked, so that the mapping may be correlated with any further grid work in that area.

The soil samples were collected by shovel, placed in paper bags, and shipped to Bondar - Clegg and Company in North Vancouver for analysis by atomic absorption methods. Their analyses, and the sample descriptions are enclosed.

COSTS BREAKDOWN

LABOUR COSTS:

Field work	552.50	
Travelling	170.00	
Expediting	97.50	
Report preparation	123.75	
Drafting	127.50	
Miscellaneous office work	68.75	
TOTAL	1140.00	

EXPENSES:

Food	100.55	
Lodging	112.00	
Airfares	308.00	
Field supplies	30.72	
Truck rental and gas	137.05	
Telephone, taxis, tips etc.	22.25	
Analyses and assays	260.00	(est.)
Reproductions, typing, etc.	54.78	(est.)
TOTAL	1025.35	

TOTAL JOB COST 2165.35

Invoice # 37.

7th September, 1971.

IN ACCOUNT WITH: D. ARSCOTT,
301-540 Burrard Street,
Vancouver, 1, B.C.

Mark V Mines Ltd.,
301 - 540 Burrard Street,
Vancouver, 1, B.C.

Re: Costs For Period 16-31 August, 1971

"L" Claims Mapping Project

Fees:	D.A. - 9 days @ 55.00	495.00
	E.J. - 8 days @ 30.00	240.00
Expenses:	D.A.	932.86
	Amount due:	$1,667.86

D. A.

David Arscott.

EXPENSE ACCOUNT

Name: D. Arscott Project: 'L' Claims Mapping

Client: Mark V Mines Ltd Period: 16-31 Aug 1971

DATE	ITEM	COST
24 Aug	Taxi → airport	4.65
"	Limousine → "	2.00
"	Airfares, Van → Watson Lake (2)	154.00
"	Hotel, Watson Lake (2)	14.00
25 Aug	First Aid supplies	1.86
"	Lunch supplies	19.00
25 Aug	Laths	19.46
25 Aug-1 Sep	Rancheria Hotel, 7 days @ 14.00	98.00
"	Breakfasts, suppers, 7 days	78.45
25 Aug	" , Watson Lake	3.10
25 Aug-1 Sep	Gasoline	14.20
29 Aug	1 bottle whisky in return for shovel rental and breakage	9.40
25 Aug-1 Sep	Tips, miscellaneous	5.00
25 Aug	Assessment fees, claims L-1, L-2	200.00
1 Sep	Hertz truck rental	122.85
"	Taxi to Kitsilano & N. Van.	9.50
"	Airfares → Vancouver	154.00
"	Semi-quantitative analysis	20.00
6 Aug	Telephone call	1.10
16 Aug	Reproductions	2.29
		1058.02

Signature: _____

In close # 43.

10th September, 1971.

IN ACCOUNT WITH: D. ARSCOTT,
301 - 540 Burrard Street,
Vancouver, 1, B.C.

Mark V Mines Ltd.,
301 - 540 Burrard Street,
Vancouver, 1, B.C.

Re: Costs in Period 1-15 September, 1971.

"L" Claims Mapping Project

Fees:	D.A. - 4½ days @ 55.00	247.50	
	L.J. - 1 day @ 30.00	30.00	
	T.D. - 4¼ days @ 30.00	127.50	405.00
Expenses:			292.49
	Total amount due:		$697.49

D. A.

David Arscott.

EXPENSE ACCOUNT

Name: D. Arscott Project: 'L' Claims Mapping

Client: Mark V Mines Ltd. Period: 1-15 Sept. 1971

DATE	ITEM	COST
10 Sep	Typing, report + invoices (estimate)	16.00
10 Sep	Photocopies (estimate)	
	24 pages x .15 x 6 copies	21.60
10 Sep	Report covers, 7 x .80	5.60
10 Sep	Rock assays (estimate)	40.00
10 Sep	Soil analyses (estimate)	200.00
10 Sep	Map reproductions	9.29
	The estimates will be corrected on future billings, on receipt of the appropiate invoices	
		$292.49

Signature: D. Arscott

DOMINION OF CANADA:	)	
YUKON TERRITORIES	)	IN THE MATTER of the Geological Mapping and
To Wit:	)	Geochemical Orientation Survey of the L - 1 and 2, Lola - 1 and 2, and L - 11 to 16 Claims

I, David Philip Arscott

of 301 - 540 Burrard Street, Vancouver 1,

in the Province of British Columbia, do solemnly declare that the following cost breakdown represents a true and accurate record of the expenditures involved in the above mentioned project.

Employee	Position	Address	Daily Rate	Days Worked	Fee
D. Arscott	Geologist	301-540 Burrard St. Vancouver 1, B.C.	55.00	13-1/2	742.50
L. Johnson	Assistant	677 E. Windsor Rd. N. Vancouver, B.C.	30.00	9	270.00
T. Drews	Draftsman	748 Bute St. Vancouver, B.C.	30.00	4-1/4	127.50
		TOTAL LABOUR COST			$1140.00

[illegible] in or registered in the province of British Columbia.

I have degrees in Mining Engineering (B. Sc., - [illegible]) and Mineral Exploration (M.Sc. - [illegible]), and have practised Mineral Exploration in Western Canada for 5 years.

I personally carried out the described geology mapping and geochemical orientation survey.

LEGEND

D – Diorite, grey to white, medium to coarse grained. 5–25% biotite, 10–25% quartz.
F – Diorite, light grey to brown, fine grained, 5% mafic.
d – Diabase, dark brown dyke material.
A – Aplite white 5% mafic
peg – Pegmatite

sp – Sphalerite
py – Pyrite
ga – Galena
c – Chlorite
g – Green (epidote?)
ep – Epidote

a – Alteration
f – Fractures
w – Weak
m – Medium
i – Intense
tr – Trace
Sam – Sample

Outcrop
Frost heave and scree
Boulders
Geologic contact
80 3 Prominent shearing with dip and number of fractures per foot
Fault
Gully
10 Jointing with dip
Trench

No outcrop

Cabin

FREER CREEK Main Tributary

Dump

ADIT

Sam L-1
Composite from trenches

Sam L-7

Quartz vein 1' wide

RIDGE

py q on f up to ½" wide

py, q on f ½ to 1' apart

Δ F, inclusion?

py contorted

Δ ma(cl) on f

go Sam L-8

some py on f

Overburden willow and buckbrush

Δ ma on f

D, 20–30% q in this area

a(ep) on f

ia(ep)

tpy on f
Sam L-6

No outcrop

No outcrop

BASELINE

28 N
24 N
20 N
16 N
12 N
8N
4N
0N

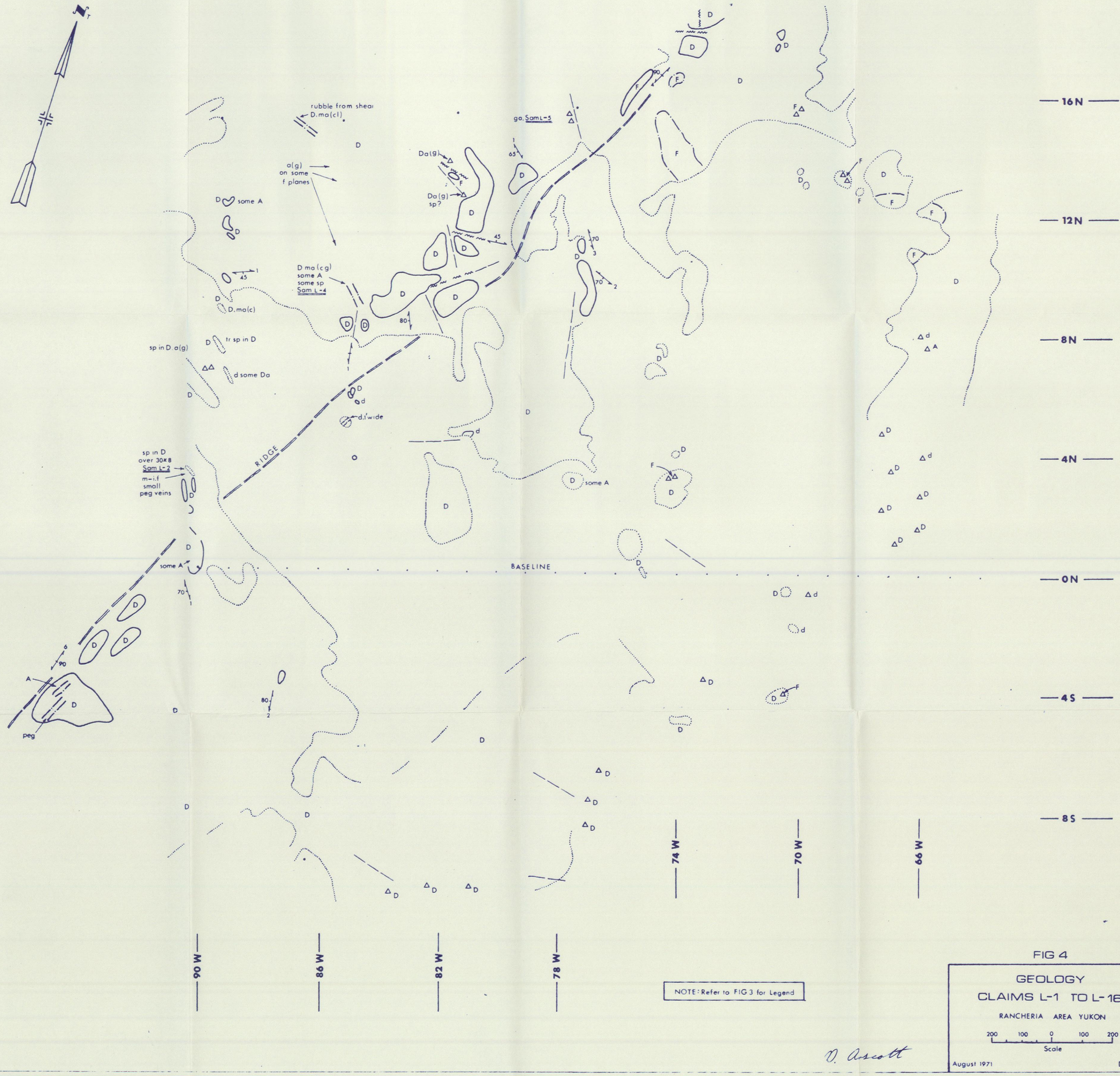
12 W | 8 W | 8 W | 4 W | 0 W | 4 E | 8 E | 12 E | 16 E | 20 E | 24 E | 28 E

GEOLOGY
CLAIMS L-1&2, LOLA 1&2

200 100 0 100 200 ft
SCALE

August 1971

D. Arscott



NOTE: Refer to FIG 3 for Legend

D. Arscott

FIG 4

GEOLOGY

CLAIMS L-1 TO L-16

RANCHERIA AREA YUKON

200 100 0 100 200 ft

Scale

August 1971

D. Arscott

#00019

N.T.S. 105 B
104 O

REPORT ON
MINERAL CLAIMS L1 & L2 & L11-16
MINERAL CLAIMS LOLA 1 & LOLA 2
MINERAL CLAIMS DEM 17-38
MILE 706, ALASKA HIGHWAY
FOR
MINERAL HILL MINES LTD.

MARCH 25, 1971.

W.A. FOWERS

REPORT ON
MINERAL CLAIMS L1 & L2 & L11-16
MINERAL CLAIMS LOLA 1 & LOLA 2
MINERAL CLAIMS DEM 17-38
MILE 706, ALASKA HIGHWAY
FOR
MINERAL HILL MINES LTD.

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REPORT ON
MINERAL CLAIMS L1 & L2 & L11-16
MINERAL CLAIMS LOLA 1 & LOLA 2
MINERAL CLAIMS DEM 17-38
MILE 706, ALASKA HIGHWAY
FOR
MINERAL HILL MINES LTD.

INTRODUCTION

The "L" group of claims, and specifically the showings on claim L-2, were visited on two separate occasion by senior members of the staff of J. Foster Irwin Engineering and Management Services Ltd.;by J. F. Burton on June 23, 1970 and by W. A. Fowers on August 19, 1970.

This report is primarily a summary of the observations and conclusions made as a result of these two inspections. The "DEM" claims have not been inspected, and observations made herein are based on available published data.

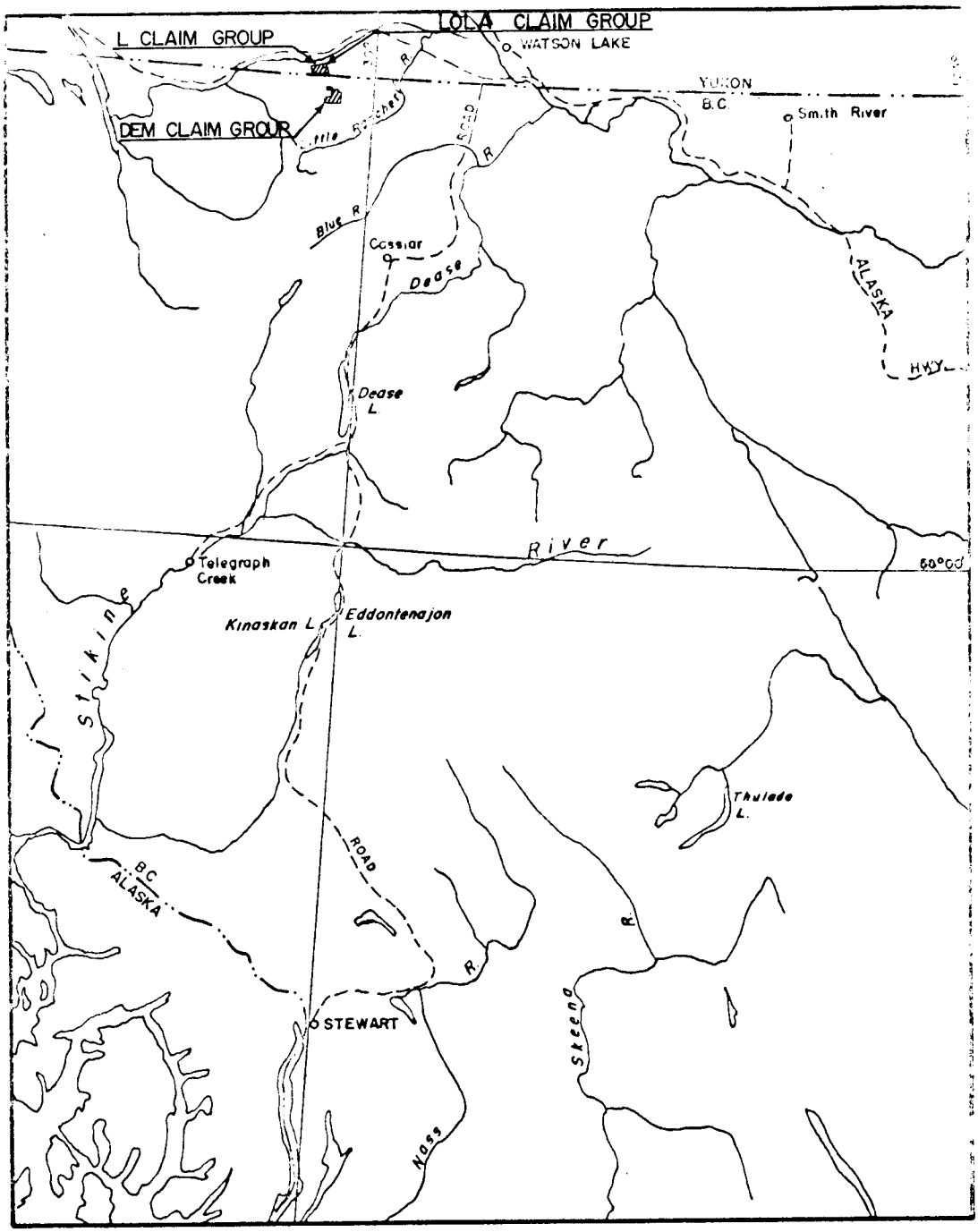
SUMMARY & CONCLUSIONS

Based on field observations, and largely in support of the fact that shipments of high-grade ore have been made from the showings on L-2, a two-phase program of investigation is recommended to evaluate these showings and to explore the remainder of these properties, the execution of phase II being dependent upon positive engouraging results in phase I.

Phase I of this program, including surveying, prospecting, geological mapping, geochemical sampling, diamond drilling, stripping and trenching is estimated to cost $45,000. Positive results would necessitate further expenditure in phase II of $55,000 for more detailed surface exploration of the "DEM" group, $10,000 for additional surface work on the "L" group, and $100,000 for underground development of the "L" group. Total estimated cost of this recommended program is $210,000.

PROPERTY DESCRIPTION

Mineral claims L1 & L2 and L11 to L16 inclusive (record numbers Y19983 and Y19984, and Y27954 to Y27959 inclusive), comprise a non-contiguous portion of the "L" group of 32 claims (figure 2) situated on Freer Creek, approximately six road miles south of the Rancheria River crossing at mile 706 on the Alaska Highway. The "L" group of claims is centred at approximately 60°-01' North latitude and 130°-30' West longitude (figure 1).



LOCATION MAP

L, LOLA, & DEM CLAIM GROUPS

MARCH, 1971

FIG. 1

Claims Lola 1 & Lola 2 (tag numbers Y42383 & Y42384) adjoin the "L" claims, and are believed to be located as shown of figure 2.

Access to the showings may be made with pick-up truck to elevation 4200 feet, and with four-wheel drive vehicles the remainder of the distance, approximately one and one-half miles with an additional 1000 feet of elevation.

The nearest source of water to the showings in a small lake about three-quarters of a mile southwest at an elevation of approximately 4700 feet. There is no significant timber on the property, although small timber (to ten inch butts) is available in the area at lower altitudes.

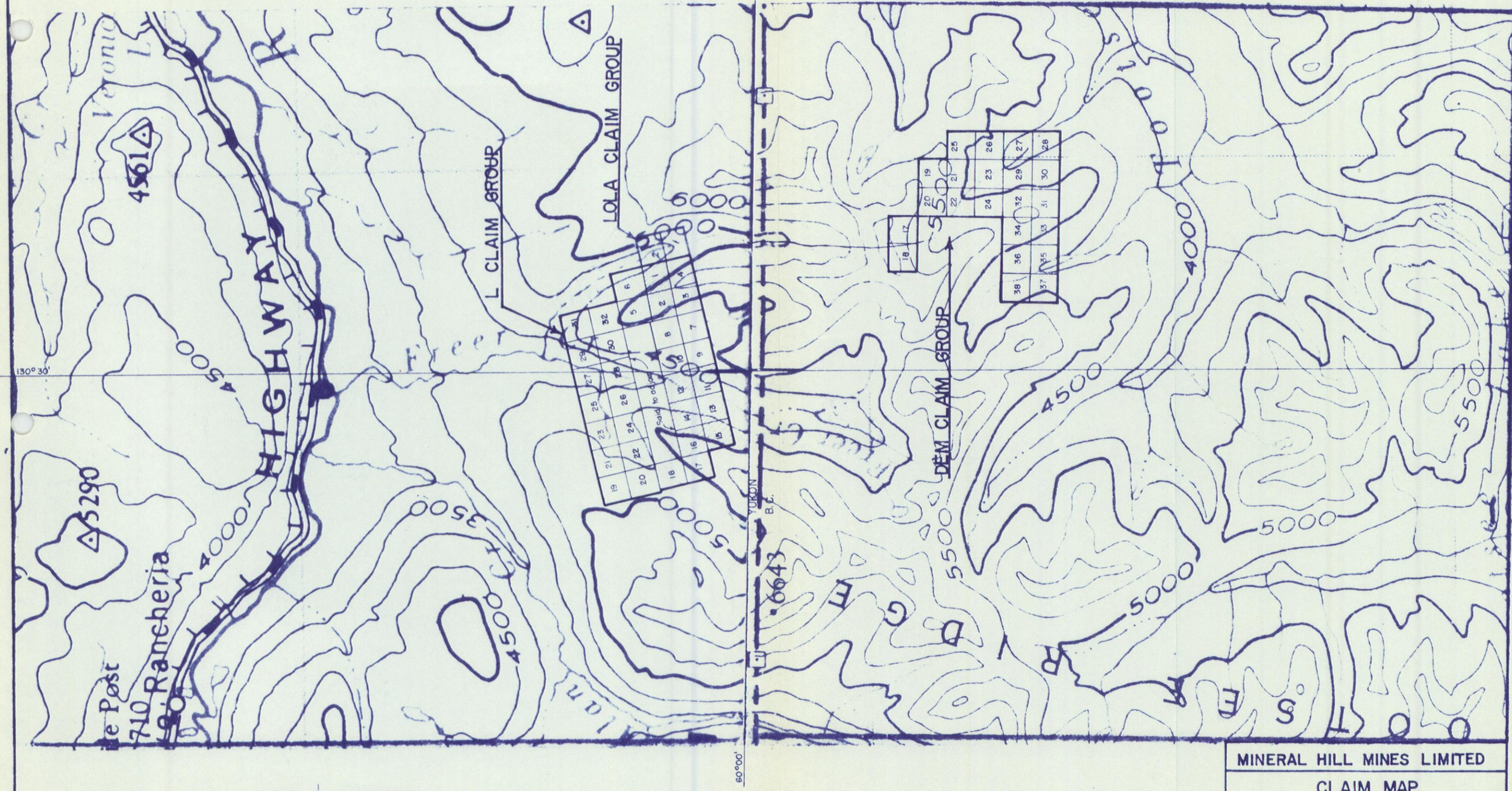
The "DEM" claims (DEM 17 to DEM 38, tag numbers 981167 to 981188 inclusive) are located on the east branch of Freer Creek, immediately south of the B.C.-Yukon border in the Liard Mining division of British Columbia (figure 1 and 2). The group is centred at approximately 59°-58' north latitude and 130°-28' west longitude.

OBSERVATIONS

The showings are located on mineral claim L-2 situated on the crest of a rounded ridge trending north-northwest, and terminating on the north about four miles south of the Alaska Highway. The southward extension of the ridge continued to rise and become more rugged, with the expected increase in bedrock exposures. From about 1500 feet south of the showings and to the northern extent of the ridge, little outcrop is visible. Visible outcrop exists along and adjacent to the crest down to an elevation of 4500 feet.

The major structural feature appears to be an east-west trending fault, running across the ridge from Freer Creek on the west. A series of narrow, short, lenticular, vein deposits containing high-grade lead as galena and attendant silver values is in place in this presumed fault zone through granodiorite, the fault zone having been cemented with a diabase intrusion. Quartz carbonate vein filling has also taken place in the granodiorite host adjacent to the diabase. Within those veins are high grade deposits of lead with silver.

An adit, collared on the adjoining Lola Claims, approximately 600 feet vertically below the surface exposures, has been driven roughly 590 feet nearly-parallel to the strike of the presumed fault zone. The location of this adit in granite throughout, the absence of any cross-cuts, and the apparent lack of drilling from the adit, would indicate a completely misguided effort. Although its exact relationship to the sur-



MINERAL HILL MINES LIMITED

CLAIM MAP

L, LOLA, & DEM CLAIM GROUPS

Scale 0 1/2 1 Miles

J. FOSTER IRWIN ENGINEERING & MANAGEMENT SERVICES LTD.

EDMONTON, ALBERTA MARCH, 1971

FIG. 2

TABLE 1

SUMMARY OF IDA-ORE SMELTER RETURNS

Shipment No.		1	2
Dry Tons		13.717	7.591
Assays - Au oz/ton		0.07	0.06
Ag oz/ton		68.4	51.6
Pb %		49.0	37.0
Cu %		0.25	0.30
Zn %		10.7	15.6
Gross Smelter Settlement -	$	3,102.27	1,273.46
	$/ton	226.	168.
Total Smelter Deductions -	$	403.21	231.77
	$/ton	29.	31.
Net Smelter Settlement -	$	2,699.06	1,041.69
	$/ton	197.	137.
Freight -	$	1,286.05	515.03
	$/ton	94	68
Net Return -	$	1,413.01	526.66
	$/ton	103.	69.

Notes:

1. No payment for zinc content in these returns.
2. Net return to be charged with operating and capital costs.

face exposures is unknown, this adit should provide an ideal situation for diamond drilling and possible underground development.

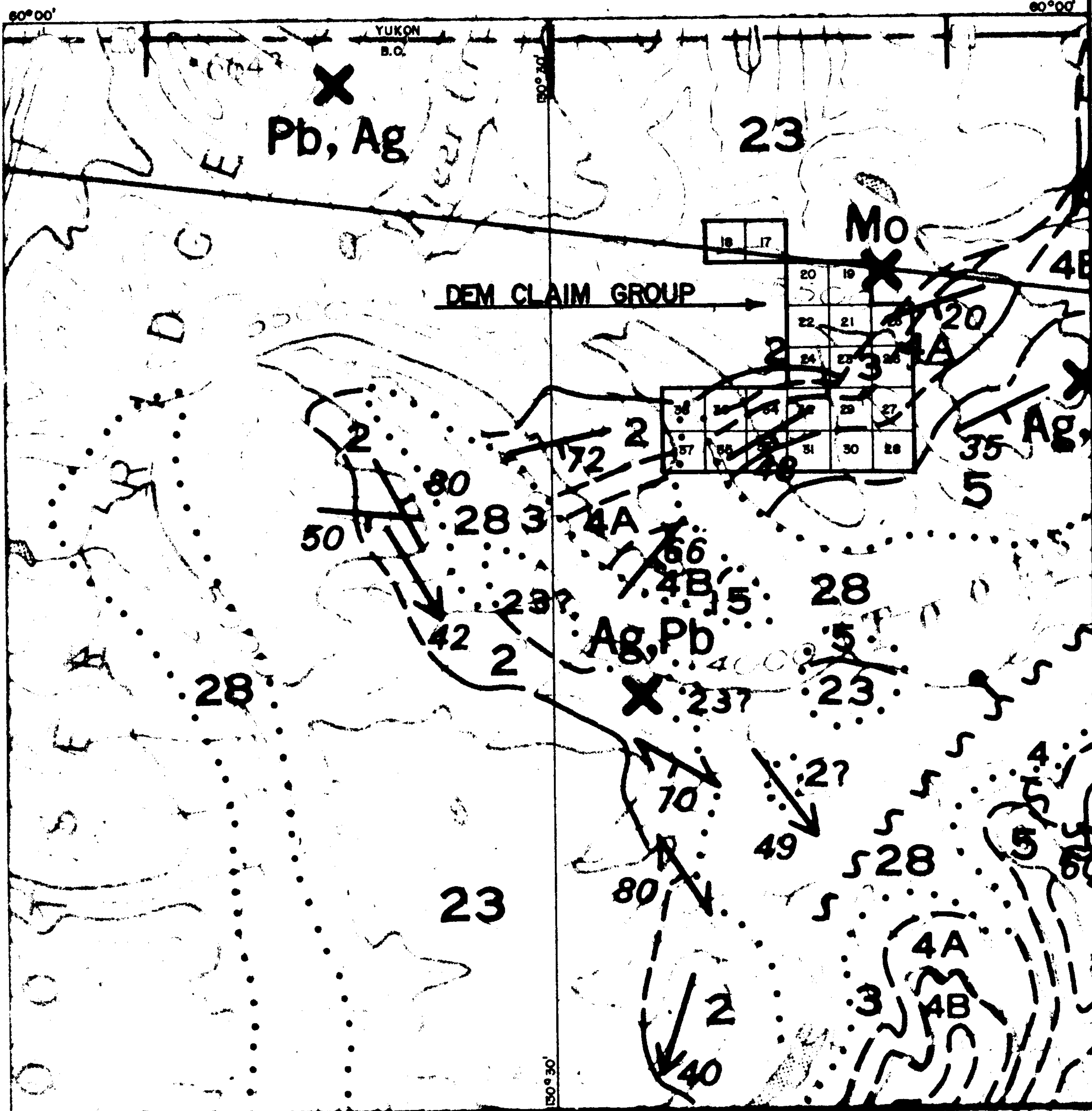
Previous operators have done a limited amount of surface stripping, from which shipments of high-grade ore have been made. The first shipment was made by R. W. Kirkman in the Fall of 1968 to the East Helena plant of American Smelting & Refining Co. This consisted of approximately 8.769 tons of hand-picked material, and returned $2,319.46 to the operators. Operating and transportation costs would be additional charges against this return.

Ida-Ore Mines made two shipments to East Helena in 1970. These shipments are summarized in table 1, and copies of the smelter settlements are included in appendix A.

Although current ore reserves on the property are nil, mention should be made of the possibility of upgrading of ore and shipping a concentrate product to the smelter. Venus Mines Ltd., currently operating a 300 t.p.d. concentrator at approximately 180 t.p.d., has indicated an interest in considering custom milling as early as mid-1971. Arctic Gold & Silver Mines has suspended operations, leaving the possibility of leasing their 300 t.p.d. concentrator. Both of these mills are in the Carcross area, approximately 200 miles from mile 706. Assuming shipments averaging 20 tons per load, a quote rate of $0.60 per running mile would result in a freight charge to the mill of $12.per ton. Also assuming a concentrate yield of 15 per cent and a freight rate of $100 per ton to the smelter, an additional freight charge of $15 per ton of ore is obtained, resulting in a total freight cost of $27 per ton of ore. This analysis is entirely theoretical at present, but should be borne in mind in further considerations of the economics of possible operations in the "706" area.

Showings of high-grade silver-lead have been reported on DEM 24 and DEM 36. Initial exploration efforts should be concentrated on this southern portion (DEM23-38) of the group, in the region of granodiorite-phyllite-siltsone-limestone contacts (figure 3).

On other showings in this immediate area (as reported by Gabrielse, 1968), the host rocks, possibly of Cambrian age, comprise phyllite, argillite, quartzite and limestone locally altered to hornfelds, micaceous quartzite, schist, and crystalline limestone. Much of the mineralization occurs as a replacement of limestone along or near a contact with argillite.



LEGEND

2	KECHIKA GROUP: thin bedded hornfels, skarn, calcareous pyllite, phyllitic limestone.
3	Black, graptolitic shale, platy siltstone, locally hornfelsed; includes kechika group
4a	Lower division, sandy dolomite, dolomitic sandstone.
4b	Upper division, laminated, well bedded dolomite.
5	McDAME GROUP: fetid dolomite and limestone.
23	CASSIAR BATHOLITH: biotite quartz monzonite, granodiorite.
28	Unconsolidated glacial, fluvioglacial, and elluvial deposits.

geological contact, bedding, limit of drift

MINERAL HILL MINES LIMITED

GEOLOGY MAP

DEM CLAIM GROUP

Scale 0 1/2 1 Miles

J. FOSTER IRWIN ENGINEERING & MANAGEMENT SERVICES LTD.

EDMONTON, ALBERTA

MARCH, 1971

FIG. 3

CONCLUSIONS & RECOMMENDATIONS

The following program of investigation is recommended in order to provide a preliminary evaluation of the economic potential of the mineral occurrences on L 2, and to explore for possible additional occurrences on other parts of the property.

PHASE 1

A. "L" & "LOLA" CLAIMS

1. SURVEY

(a) Land survey, approved by the Surveyor General, of mineral claims L-1, L-2, L-11 to L-16 inclusive, Lola 1, and Lola 2.

Estimated Cost: $2,500.00

(b) Miscellaneous survey to relate the major surface structural & geological features and ore showings to the adit and claim boundaries, to layout diamond drill holes, and to provide control for geological mapping and geochemical sampling.

Estimated Cost: $2,000.00

2. PROSPECTING

Prospecting & geological reconnaissance on claims L-11 to L-16.

Estimated Cost: $1,500.00

3. GEOLOGICAL MAPPING

Detailed geology on claims L-1 & L-2 in the vicinity of known ore showings.

Estimated Cost: $1,000.00

4. GEOCHEMICAL SAMPLING

(a) Soil sampling on a 200 ft. by 500 ft. grid on claims L-11 to L-16, additional samples on L-1 & L-2, and stream samples along Freer Creek.

Estimated Cost: $2,000.00

(b) Assaying $1,000.00

5. DIAMOND DRILLING

A diamond drilling program should be conducted from the adit, consisting of a minimum of four holes designed to intersect the downward extension of the presumed fault zone at the adit elevation. The initial survey work (1 (a) & 1 (b) above) is essential to the layout of this program, and for the present, these holes are assumed to be in the order of 500 feet in length.

Estimated Cost: $20,000.00

6. STRIPPING AND TRENCHING

Stripping and trenching should be continued on the surface exposures, particularly towards the western extremity of the main fault zone.

Estimated Cost: $10,000.00

B. "DEM" CLAIMS

1. PROSPECTING

Prospecting and geological reconnaissance on claims DEM 17 to DEM 38.

Estimated Cost: $3,000.00

2. TRENCHING

Trenching and sampling of reported showings, and of any showings located in 1 above.

Estimated Cost: $2,000.00

TOTAL ESTIMATED COST- PHASE 1 $45,000.00

PHASE II

A. "L" AND "LOLA" CLAIMS

1. STRIPPING AND TRENCHING

Stripping,trenching, and sampling of mineralized areas and geochemical anomalous areas as determined on L-11 to L-16 in phase I.

Estimated Cost: $10,000.00

2. UNDERGROUND DEVELOPMENT

Positive results in phase I, particularly in the diamond drilling program, would necessitate further exploration of the "L" claims by means of underground development from the existing adit. The initial stage of this program is expected to require a minimum of 1,000 feet of horizontal and vertical development.

Estimated Cost: $100,000.00

B. "DEM" CLAIMS

1. Access road construction, stripping, trenching, sampling, and possible diamond drilling or mineralized areas located in phase I.

Estimated Cost: $55,000.00

TOTAL ESTIMATED COST- PHASE II	$165,000.00
TOTAL ESTIMATED COST- PHASE I & II	$210,000.00

Recommendations regarding the nature and amount of further expenditures are dependent on the results of this program.

W. A. FOWERS, P. ENG.,

CHIEF ENGINEER.

25 March 1971.

I, J. FOSTER IRWIN, OF 1902 - 10015 - 103 AVENUE, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I GRADUATED WITH A DEGREE IN ENGINEERING FROM THE UNIVERSITY OF ALBERTA IN 1949 AND AM A REGISTERED MEMBER OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA, THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF SASKATCHEWAN, THE PROFESSIONAL ENGINEERS' SOCIETY OF BRITISH COLUMBIA, AND THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF MANITOBA.

I HAVE NO INTEREST WHATSOEVER, DIRECT OR INDIRECT, IN MINERAL CLAIMS L-1 & L-2, L-11 TO L-16 INCLUSIVE, OR LOLA 1 & LOLA 2, OR DEM 17 TO DEM 38 INCLUSIVE, NOR DO I EXPECT TO OBTAIN ANY INTEREST IN THEM.

THIS REPORT IS BASED ON EXAMINATION OF THE PROPERTY JUNE 23, 1970 BY MR. J.F. BURTON, AUGUST 19, 1970 BY MR. W. A. FOWERS WHOSE CERTIFICATION IS ATTACHED, AS MEMBERS OF J. FOSTER IRWIN ENGINEERING & MANAGEMENT SERVICES LTD.

25 MARCH 1971.

J. Foster Irwin, B. Sc., P. Eng.

I, WILLIAM A. FOWERS, OF 1902 - 10015 - 103 AVENUE, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I GRADUATED WITH A DEGREE IN ENGINEERING FROM THE UNIVERSITY OF ALBERTA IN 1954 AND AM A REGISTERED MEMBER OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA.

I HAVE NO INTEREST DIRECTLY OR INDIRECTLY IN MINERAL CLAIMS L-1 & L-2, L-11 TO L-16 INCLUSIVE, OR LOLA 1 & LOLA 2, OR DEM 17 TO DEM 38 INCLUSIVE, NOR DO I EXPECT TO OBTAIN ANY INTEREST IN THEM.

THE WORK PERFORMED BY ME FOR THIS REPORT INCLUDED EXAMINATION OF THE PROPERTY AUGUST 19, 1970, AND SEARCH OF PUBLISHED DATA.

25 MARCH 1971.

W. A. Fowers, B. Sc., P. Eng.

Form No. 1

Shipper: IDA ORE MINES, INC.
Mine: MILE 706 PROPERTY
Class: CRUDE Shipping Point: MILE 706, CANADA
Smelter Lot. No. 911 Mine Lot No: 1
TRUCK 0/6 27600

Assays	Gold Oz. Per Ton	Silver Oz. Per Ton	Wet Lead %	Copper %	Zinc %	Arsenic %	Antimony %	Bismuth %
A. S. & R. Co.	0.050	68.4	49.0	0.30	10.7	0.20	0.24	
Shipper	0.120	69.4	49.7	0.30				
Umpire Wright	0.070	68.31	49.0					
Settlement	0.070	68.4	49.0	0.25	10.7	0.20	0.24	

H_2O	Wet Weight	Dry Weight	Dry Tons	Wet Tons
6.00	27,600	27,434	13,717	13,800
	27,600	27,434	13,717	13,800

Assay Deduction	Percent Pay	METAL	Pay Quotation	Quotation Deduction
	92.5	Gold	35.654	
	95	Silver	1.843	.01
1.5	90	Lead	.15	.0275
		Copper		

Date of Arrival: AUGUST 21, 1970

Settlement Assay		Total Content	Assay Ded.		Percent Pay		Pay Content	Pay Quotation	Quot. Ded.	Net to Shipper
7.00	Gold	.96			92.50		.89	35,654.00		31.73
6840.00	Silver	938.26			95.00		891.34	1,843.00	10.00	1,633.63
4,900.00	Lead	13,442.86	150.00		90.00		11,728.21	150.00	27.50	1,436.71
25.00	Copper	68.59					.00			

Base Charge $15.50
Drums 2.50
$18:00

Dry Tons X Total Contracts Deductions $18.00	ST 6		13,717.20S	18.00	3,102.27S
~~Sampling~~ Dutiable Lead @ $.0075			12,894.00	7.50	246.91
Lbs. of Pb (Pay Content)		11,728.00			96.71
Lbs. of Cu. (Pay Content)					
Tons of Pb & Cu X Bullion Frt. Act. 32.46	PR		5,864.00	32.46	190.35
Tons of Pb & Cu X Bullion Frt. Cont. 30.91			5,864.00	30.91	181.26
Sub-Total					2,749.56S
Frt. Rate $1286.05	ST 5				1286.05
Sub-Total					1463.51
Advances $2000.00					[illegible]
Hauling	ST 5				
Umpires $24.00					24.00
Dockalls $26.50					26.50

50133

Shipper: IDA ORE MINES
Mine: MILE 706 PROPERTY
Class: CRUDE Shipping Point: MILE 706, CANADA
Smelter Lot. No. 985 Mine Lot No: 2
TRUCK 0.5. 15260

Assays	Gold Oz. Per Ton	Silver Oz. Per Ton	Wet Lead %	Copper %	Zinc %	Arsenic %	Antimony %	Bismuth %
A. S. & R. Co.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Shipper	0.100	[illegible]	[illegible]	[illegible]				
Umpire	0.035		36.65					
Settlement	0.060	51.55	37.0	0.30	15.6			

Assay Deduction	Percent Pay
	92.5
	95
1.5	90

METAL	Pay Quotation	Quotation Deduction
Gold	36.19	
Silver	1.8485	.10
Lead	.14597	.0275
~~Copper~~		

H_2O	Wet Weight	Dry Weight	Dry Tons	Wet Tons
5.00	15,260	15,183	7,591	7,630
	15,260	15,183	7,591	7,630

Date of Arrival: SEPTEMBER 1, 1970

Settlement Assay		Total Content	Assay Ded.		Percent Pay		Pay Content	Pay Quotation	Quot. Ded.	Net to Shipper
6.00	Gold	.46			92.50		.42	36,190.00		15.20
5,155.00	Silver	391.36			95.00		371.79	1,848.50	10.00	683.54
3,700.00	Lead	5,617.97	150.00		90.00		4,851.19	145.97	27.50	574.72
30.00	Copper	4,555					.00			

Base Charge #15.50
Drums 2.50
#18.00

Sampling #5.00

	.00				5.00
Dry Tons X Total Contracts Deductions #18.00		ST 6	7,591.85 S	18.00	136.65
Sampling Dutiable Lead @ #.0075			5,314.00	7.50	39.86
Lbs. of Pb (Pay Content)	4,851.00				
Lbs. of Cu. (Pay Content)					
Tons of Pb & Cu X Bullion Frt. Act. 32.46		PR	2,425.50	32.46	78.73
Tons of Pb & Cu X Bullion Frt. Cont. 30.91			2,425.50	30.91	74.97
Sub-Total					1,088.19 S
Wet tons X Frt. Rate		ST 5			
Sub-Total					
Advances					
Hauling #555.03 Haul Actgrm		ST 5	APPLIED TO	HAULING	554.70
Umpires #20.00					20.00
Ex Paltes #26.50					26.50

Sample #	Assay #	Ag oz/T	Pb %	
1	4751	64.8	46.68	1.5′
2	4752	2.4	1.54	
3	4753	0.98	0.61	
4	4754	0.30	0.29	
5	4755	0.80	0.07	
6	4756	0.80	0.54	
7	4757	0.18	0.32	
8	4758	1.42	0.39	
9	4759	0.21	0.29	
10	4760	0.55	0.27	
11	4761	0.10	0.17	
12	4762	58.10	55.02	0.5
13	4763	2.33	2.05	
14	4764	0.69	0.66	
15	4765	0.66	5.33	1.0′
16	4766	0.60	5.76	3.5′
17	4767	0.40	0.42	
18	4768	0.25	0.12	
19	4769	1.22	4.28	
20	4770	0.40	0.46	
21	4771	20.50	58.50	1.0′
22	4772	1.47	4.65	1.0′
23	4773	3.07	1.83	
24	4774	0.25	0.42	
25	4775	0.40	0.10	
26	4776	0.09	0.09	
27	4777	0.16	0.08	
28	4778	0.08	0.07	

Assayer :- COAST ELDBRIDGE VANCOUVER B.C.

LEGEND

- Galena-bearing vein.
- Creamy-coloured, altered and sheared granodiorite.
- Mildly altered and sheared granodiorite.
- Green-coloured gouge.
- Rusty coloured, altered blocky granodiorite.
- Fresh granodiorite.
- Diabase
- Continuous chip sample location number refers sample number
- Contact.
- Trench outline.

All structure steeply dipping.

SPARTAN EXPLORATIONS LTD.

VANCOUVER B.C.

"L" CLAIMS KIRKMAN SILVER PROPERTY

RANCHERIA AREA, YUKON

Sketch Geology and Assay Map in Bulldozer Trenches

GEOLOGY: C.L.SMITH.

SAMPLERS: A.CARLOS, C.L.SMITH.

DRAWN BY: N.H.SIMMONS.

DATE: NOVEMBER 8, 1968.

Scale in feet.

REPORT ON
MINERAL CLAIMS L1 & 2 & L11-16
MILE 706, ALASKA HIGHWAY
YUKON TERRITORY
N.T.S. 105B

RECEIVED 2 DEC 1971 MINING RECORDERS OFFICE WHITEHORSE, Y.T.

RECEIVED OCT 21 1971 MINING INSPECTOR'S OFFICE WHITEHORSE

RECEIVED 1971 MINING RECORDERS OFFICE WHITEHORSE, Y.T.

This report does not appear to represent work done on the property.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ ______

See Geol. & Geochem Report

______

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

______

Commissioner of Yukon Territory

RECEIVED OCT 21 1971 MINING RECORDERS OFFICE WHITEHORSE, Y.T.

DECEMBER 14, 1970

W. A. FOWERS

REPORT ON
MINERAL CLAIMS L1 & 2 & L11-16
MILE 706, ALASKA HIGHWAY
YUKON TERRITORY
N.T.S. 105B

CONTENTS

ILLUSTRATIONS

TABLES

APPENDICES

REPORT ON
MINERAL CLAIMS L1 & 2 & L11-16
MILE 706, ALASKA HIGHWAY
YUKON TERRITORY
N.T.S. 105B

INTRODUCTION

The "L" group of claims, and specifically the showings on claim L-2, were visited on two separate occasions by senior members of the staff of J. Foster Irwin Engineering & Management Services Ltd.; by J. F. Burton on June 23, 1970, and by W. A. Fowers on August 19, 1970.

This report is primarily a summary of the observations and conclusions made as a result of these two inspections.

SUMMARY AND CONCLUSIONS

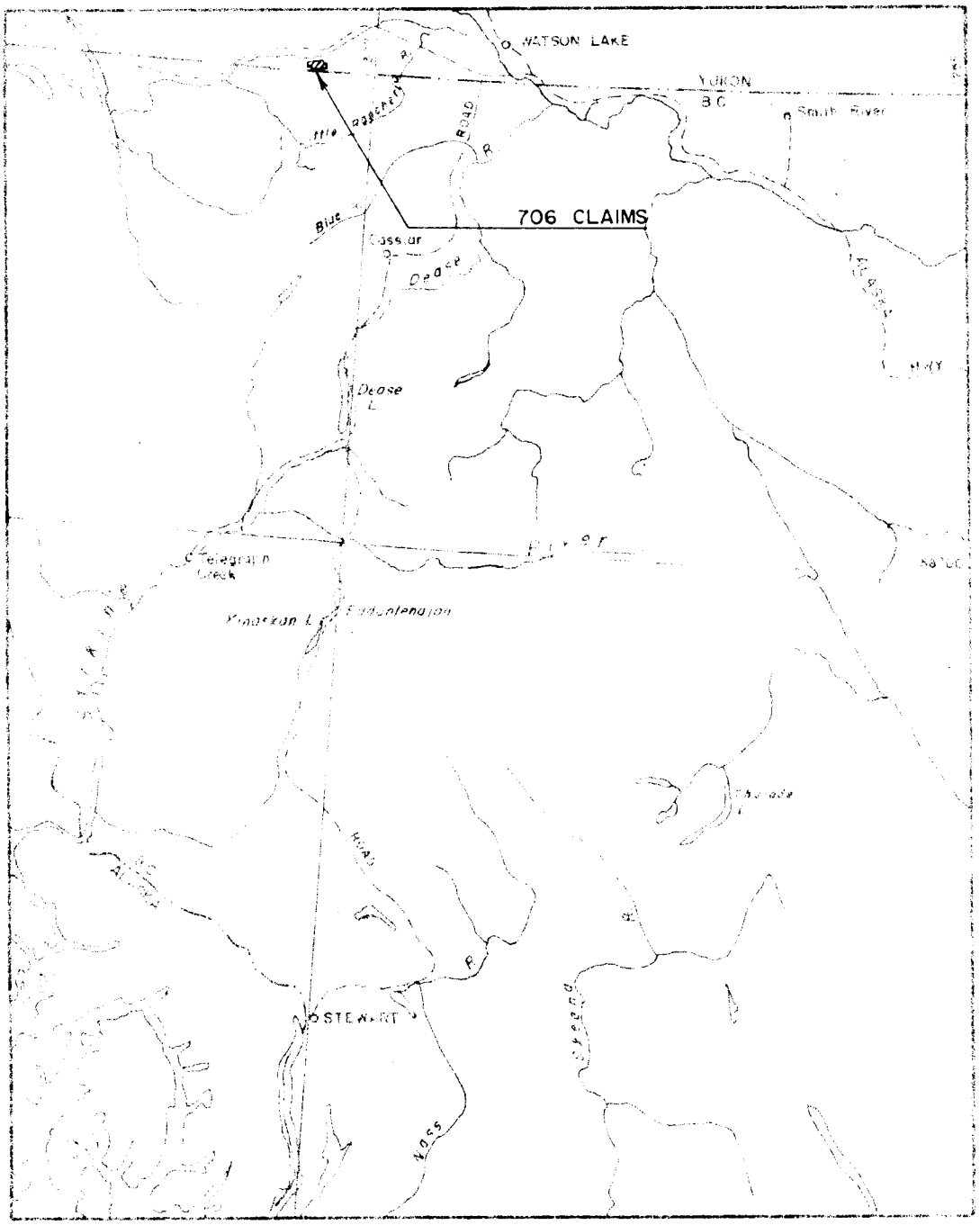
Based on field observations, and largely in support of the fact that shipments of high-grade ore have been made from this property, a limited program of investigation is recommended. This program, including surveying, geochemical sampling, underground diamond drilling, and surface trenching and stripping, is estimated to cost $25,000. Positive results would necessitate further expenditure in underground development.

PROPERTY DESCRIPTION

The property under consideration consists of mineral claims L-1 and L-2, and L-11 to L-16 inclusive (record numbers Y19983 and &19984, and Y27954 to Y27959 inclusive), comprising a non-contiguous portion of the "L" group of 32 claims (Figure 2). The subject claims are held jointly by C. C. Curlett and Paul Poggenberg, with assessment work recorded until August and September of 1971.

The property is situated on Freer Creek, approximately six road miles south of the Rancheria River crossing at Mile 706 on the Alaska Highway. The "L" group of claims is centred at approximately 60°01' North Latitude and 130°30' West Longitude (Figure 1).

Access to the showings may be made with pick-up truck to elevation 4200 feet, and with four-wheel drive vehicles the remainder of the distance--approximately one and one-half miles with an additional 1000 feet of elevation.



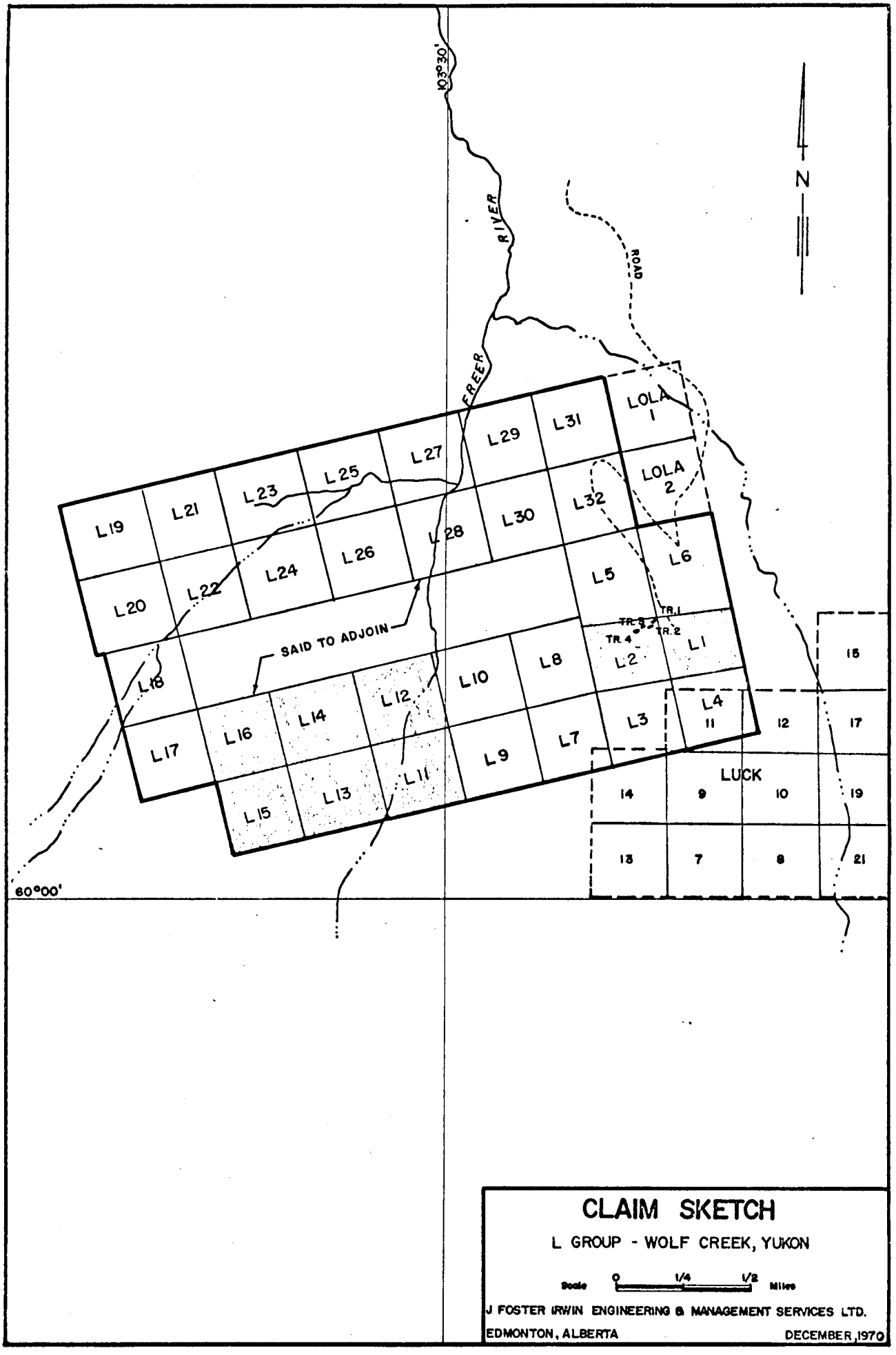
LOCATION MAP

"706"-L CLAIM GROUP

WOLF CREEK AREA

JULY, 1970

FIG 1



CLAIM SKETCH

L GROUP - WOLF CREEK, YUKON

Scale 0 1/4 1/2 Miles

J FOSTER IRWIN ENGINEERING & MANAGEMENT SERVICES LTD.

EDMONTON, ALBERTA DECEMBER, 1970

FIG. 2

TABLE I

SUMMARY OF IDA-ORE SMELTER RETURNS

Shipment No.		1	2
Dry Tons		13.717	7.591
Assays - Au	oz/ton	0.07	0.06
Ag	oz/ton	68.4	51.6
Pb	%	49.0	37.0
Cu	%	0.25	0.30
Zn	%	10.7	15.6
Gross Smelter Settlement -	$	3102.27	1273.46
	$/ton	226	168
Total Smelter Deductions -	$	403.21	231.77
	$/ton	29	31
Net Smelter Settlement -	$	2699.06	1041.69
	$/ton	197	137
Freight -	$	1286.05	515.03
	$/ton	94	68
Net Return -	$	1413.01	526.66
	$/ton	103	69

Notes:

1. No payment for zinc content in these returns.
2. Net return to be charged with operating and capital costs.

Ida-Ore Mines made two shipments to East Helena in 1969. These shipments are summarized in Table 1, and copies of the smelter settlements are included in Appendix A.

Although current ore reserves on the property are nil, mention should be made of the possibility of upgrading of ore and shipping a concentrate product to the smelter. Venus Mines Ltd., currently operating a 300 t.p.d. concentrator at approximately 180 t.p.d., has indicated an interest in considering custom milling as early as mid-1971. Arctic Gold & Silver Mines has suspended operations, leaving the possibility of leasing their 300 t.p.d. concentrator. Both of these mills are in the Carcross area, approximately 200 miles from Mile 706. Assuming shipments averaging 20 tons per load, a quoted rate of $0.60 per running mile would result in a freight charge to the mill of $12 per ton. Also assuming a concentrate yield of 15 per cent and a freight rate of $100 per ton to the smelter, an additional freight charge of $15 per ton of ore is obtained, resulting in a total freight cost of $27 per ton of ore. This analysis is entirely theoretical at present, but should be borne in mind in further considerations of the economics of possible operations on the 706 property.

CONCLUSIONS AND RECOMMENDATIONS

Based on field observations, supported by the fact that shipments of high-grade ore have been made from the property, the following program of investigation is recommended:

1. A survey should be carried out, designed to relate the major surface structural features and ore showings to the adit and claim boundaries. This is of top priority and is essential to the layout of any drilling program or underground work which may be considered. For the present, this survey should be confined to the immediate area of the adit and surface showings.

   Estimated cost $1,000

2. To test the possibility of additional occurrences, geochemical samples should be taken on the surrounding slopes.

   Estimated cost $1,500

3. A limited diamond drilling program should be conducted from the adit, consisting of a minimum of three holes drilled to the north. These holes should be designed to intersect the downward extension of the main fault

zone at the adit elevation, and, without the results of the survey, are assumed to be in the order of 400 feet in length.

Estimated cost $12,000

4. Stripping and trenching should be continued on the surface exposures, particularly towards the western extremity of the main fault zone.

Estimated cost $10,500

The total estimated cost of this preliminary program is $25,000. Positive results of the diamond drilling program in (3) above would necessitate the driving of a cross-cut, and subsequent drifts, from the existing adit.

W. A. Fowers, B.Sc., P.Eng.

14 December 1970.

WAF/mo

I, J. FOSTER IRWIN, OF 1902 - 10015 - 103 AVENUE, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I GRADUATED WITH A DEGREE IN ENGINEERING FROM THE UNIVERSITY OF ALBERTA IN 1949 AND AM A REGISTERED MEMBER OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA, THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF SASKATCHEWAN, THE PROFESSIONAL ENGINEERS' SOCIETY OF BRITISH COLUMBIA, AND THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF MANITOBA.

I HAVE NO INTEREST WHATSOEVER, DIRECT OR INDIRECT, IN MINERAL CLAIMS L-1 & L-2, OR L-11 TO L-16 INCLUSIVE, NOR DO I EXPECT TO OBTAIN ANY INTEREST IN THEM.

THE REPORT ON MINERAL CLAIMS L-1 & L-2, AND L-11 TO L-16 IS BASED ON EXAMINATION OF THE PROPERTY JUNE 23, 1970 BY MR. J. F. BURTON, AUGUST 19, 1970 BY MR. W. A. FOWERS WHOSE CERTIFICATION IS ATTACHED, AS MEMBERS OF J. FOSTER IRWIN ENGINEERING & MANAGEMENT SERVICES LTD.

J. FOSTER IRWIN, B.Sc., P.Eng.

14 December 1970

I, WILLIAM A. FOWERS, OF 1902 - 10015 - 103 AVENUE, EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I GRADUATED WITH A DEGREE IN ENGINEERING FROM THE UNIVERSITY OF ALBERTA IN 1954 AND AM A REGISTERED MEMBER OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA.

I HAVE NO INTEREST DIRECTLY OR INDIRECTLY IN MINERAL CLAIMS L-1 & L-2, OR L-11 TO L-16 INCLUSIVE, NOR DO I EXPECT TO OBTAIN ANY INTEREST IN THEM.

THE WORK PERFORMED BY ME FOR THIS REPORT INCLUDED EXAMINATION OF THE PROPERTY AUGUST 19, 1970, AND SEARCH OF PUBLISHED DATA.

W. A. FOWERS, B.Sc., P.Eng.

14 December 1970

50133   3 - 37   Form No. 1

Shipper: IDA ORE MINES, INC.
Mine: MILE 705 PROPERTY
Class: CRUDE   Shipping Point: MILE 706, CANADA
Smelter Lot No. 911   Mine Lot No: 1
TRUCK 0/5 27600

Assays	Gold Oz. Per Ton	Silver Oz. Per Ton	Wet Lead %	Copper %	Zinc %	Arsenic %	Antimony %	Bismuth %
A. S. & R. Co.	0.656	68.4	49.0	0.20	10.7	0.20	0.24	
Shipper	0.126	69.4	49.7	0.30				
Umpire	0.070	68.31	49.0					
Settlement	0.070	68.4	49.0	0.25	10.7	0.20	0.24	

Assay Deduction	Percent Pay	METAL	Pay Quotation	Quotation Deduction
	92.5	Gold	35.654	
	95	Silver	1.843	.01
1.5	90	Lead	.15	.0275
		Copper		

H_2O	Wet Weight	Dry Weight	Dry Tons	Wet Tons
6.00	27,600	27,434	13.717	13.800
	27,600	27,434	13.717	13.800

Date of Arrival: AUGUST 21, 1970

Settlement Assay		Total Content	Assay Ded.		Percent Pay		Pay Content	Pay Quotation	Quot. Ded.	Net to Shipper
7.00	Gold	.96			92.50		.89	35,654.00		31.73
6,840.00	Silver	938.26			95.00		891.34	1,843.00	10.00	1,633.83
4,900.00	Lead	13,442.86	150.00		90.00		11,728.21	150.00	27.50	1,436.71
25.00	Copper	68.59					.00			

Base Charge $15.50
Drums 2.50
$18.00

					3,102.27 S
Dry Tons X Total Contracts Deductions $18.00		ST 6	13,717.20 S	18.00	246.91
Sampling Dutiable Lead @ $.0075			12,894.00	7.50	96.71
Lbs. of Pb (Pay Content)	11,728.00				
Lbs. of Cu. (Pay Content)					
Tons of Pb & Cu X Bullion Frt. Act. 32.46		PR	5,864.00	32.46	190.35
Tons of Pb & Cu X Bullion Frt. Cont. 30.91			5,864.00	30.91	181.26
Sub-Total					2,749.56 S
Frt. Reb $1286.05		ST 5			1,286.05
Sub-Total					1463.51
Advances $2000.00					2,000.00
Hauling		ST 5			
Umpires $24.00					24.00
Pocatello $26.50					26.50

Shipper: IDA ORE/MINES
Mine: MILE 706 PROPERTY
Class: CRUDE Shipping Point: MILE 706, CANADA
Smelter Lot No. 985 Mine Lot No: 2
TRUCK 6.5 15260

Assays	Gold Oz. Per Ton	Silver Oz. Per Ton	Wet Lead %	Copper %	Zinc %	Arsenic %	Antimony %	Bismuth %
A. S. & R. Co.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
Shipper	6.100	[illegible]	[illegible]	[illegible]				
Umpire [illegible]	6.635		36.65					
Settlement	6.000	51.55	37.0	0.30	15.6			

Assay Deduction	Percent Pay
	92.5
	95
1.5	90

METAL	Pay Quotation	Quotation Deduction
Gold	36.19	
Silver	1.8485	.01
Lead	.14597	.0275
~~Copper~~		

H_2O	Wet Weight	Dry Weight	Dry Tons	Wet Tons
5.00	15,260	15,183	7,591	7,630
15,260		15,183	7,591	7,630

Date of Arrival: SEPTEMBER 4, 1970

Settlement Assay		Total Content	Assay Ded.		Percent Pay		Pay Content	Pay Quotation	Quot. Ded.	Net to Shipper
6.00	Gold	.46			92.50		.42	36,190.00		15.20
5,155.00	Silver	391.36			95.00		371.79	1,848.50	10.00	683.54
3,700.00	Lead	5,617.97	150.00		90.00		4,851.19	145.97	27.50	574.72
30.00	Copper	45.55					.00			

Base Charge $15.50
Drums 2.50
$18.00

Sampling $5.00

		.00			5.00
Dry Tons X Total Contracts Deductions $18.00	ST 6		7,591.85	18.00	136.65
Sampling Dutiable lead @ $.0075			5,314.00	7.50	39.86
Lbs. of Pb (Pay Content)		4,851.00			
Lbs. of Cu. (Pay Content)					
Tons of Pb & Cu X Bullion Frt. Act. 32.46	PR		2,425.50	32.46	78.72
Tons of Pb & Cu X Bullion Frt. Cont. 30.91			2,425.50	30.91	74.97
Sub-Total					1,088.19
Wet tons X Frt. Rate	ST 5				
Sub-Total					
Advances					
Hauling $55.03 Paul Actgren	ST 5		APPLIED TO HAULING		434.70
Umpires $20.00					20.00
Ex Filter $26.50					26.50