

N.T.S. 105 B
104 0

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.

CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
SUMMARY & CONCLUSIONS	1
PROPERTY DESCRIPTION	1
OBSERVATIONS	3
CONCLUSIONS & RECOMMENDATIONS	7
CERTIFICATION - J. F. IRWIN	11
CERTIFICATION - W.A. FOWERS	12

ILLUSTRATIONS

FIGURE 1	LOCATION MAP	2
FIGURE 2	CLAIM MAP	4
FIGURE 3	GEOLOGY MAP - DEM CLAIMS	6

TABLES

TABLE 1	SUMMARY OF IDA-ORE SMELTER RETURNS	4a
---------	------------------------------------	----

APPENDICES

APPENDIX A	IDA-ORE SMELTER RETURNS	13
APPENDIX B	SPARTAN EXPLORATION- GEOLOGY AND ASSAY MAP.	Pocket.

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 occasions 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.

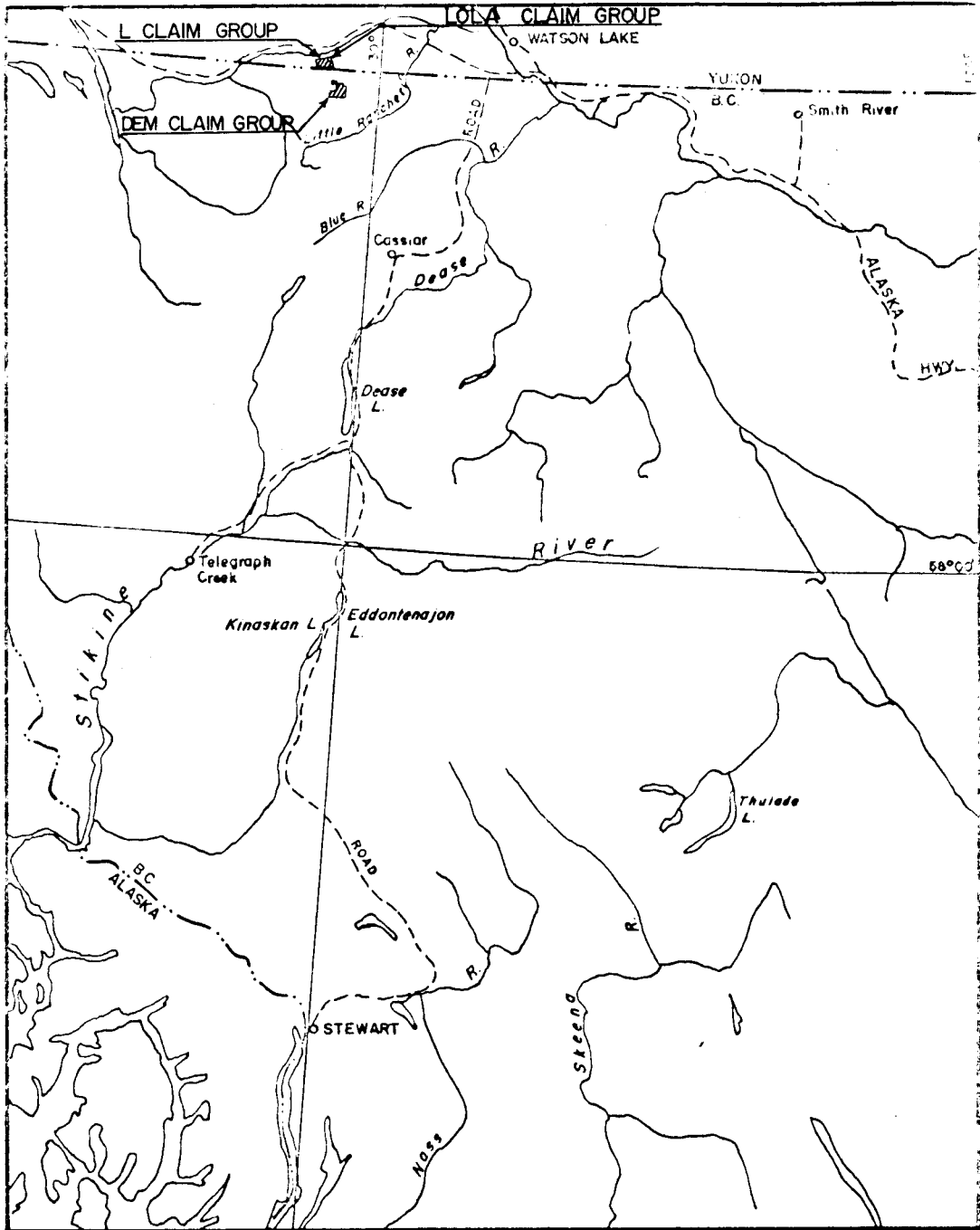
SUMMARY & CONCLUSIONS

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 encouraging 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

MINERAL AND PETROLEUM DIVISION
1000, ALASKA

MARCH, 1971

FIG. 1

- 3 -

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 is 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.

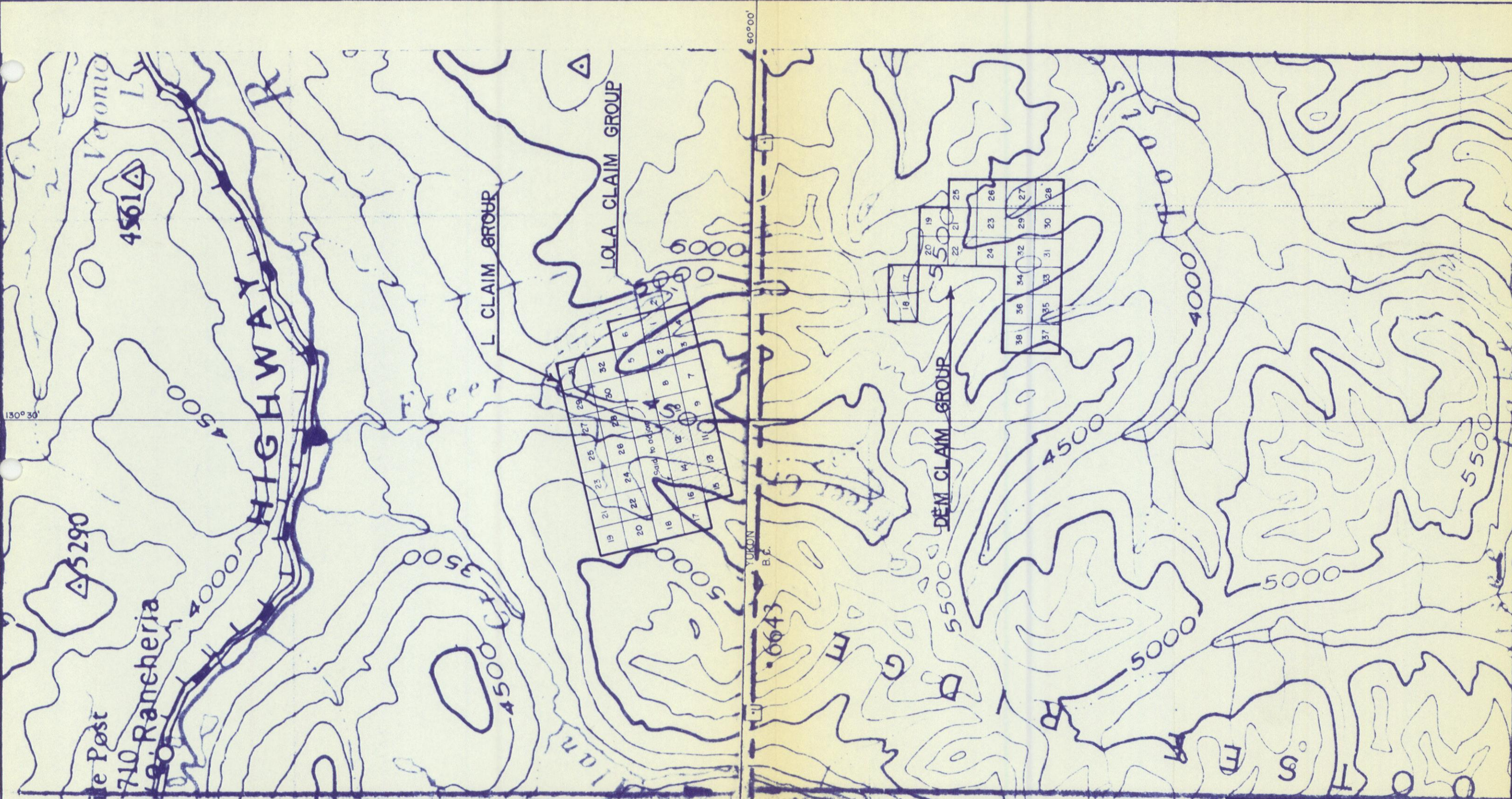
The "DEM" claims (DEM 17 to DEM 38, tag numbers 981167 to 981188 inclusive) are located on the east branch of Freer Creek, immediately south of the B.C.-Yukon border in the Liard Mining division of British Columbia (figure 1 and 2). The group is centred at approximately 59°-58' north latitude and 130°-28'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

- 4a -

TABLE 1SUMMARY 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.

- 5 -

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

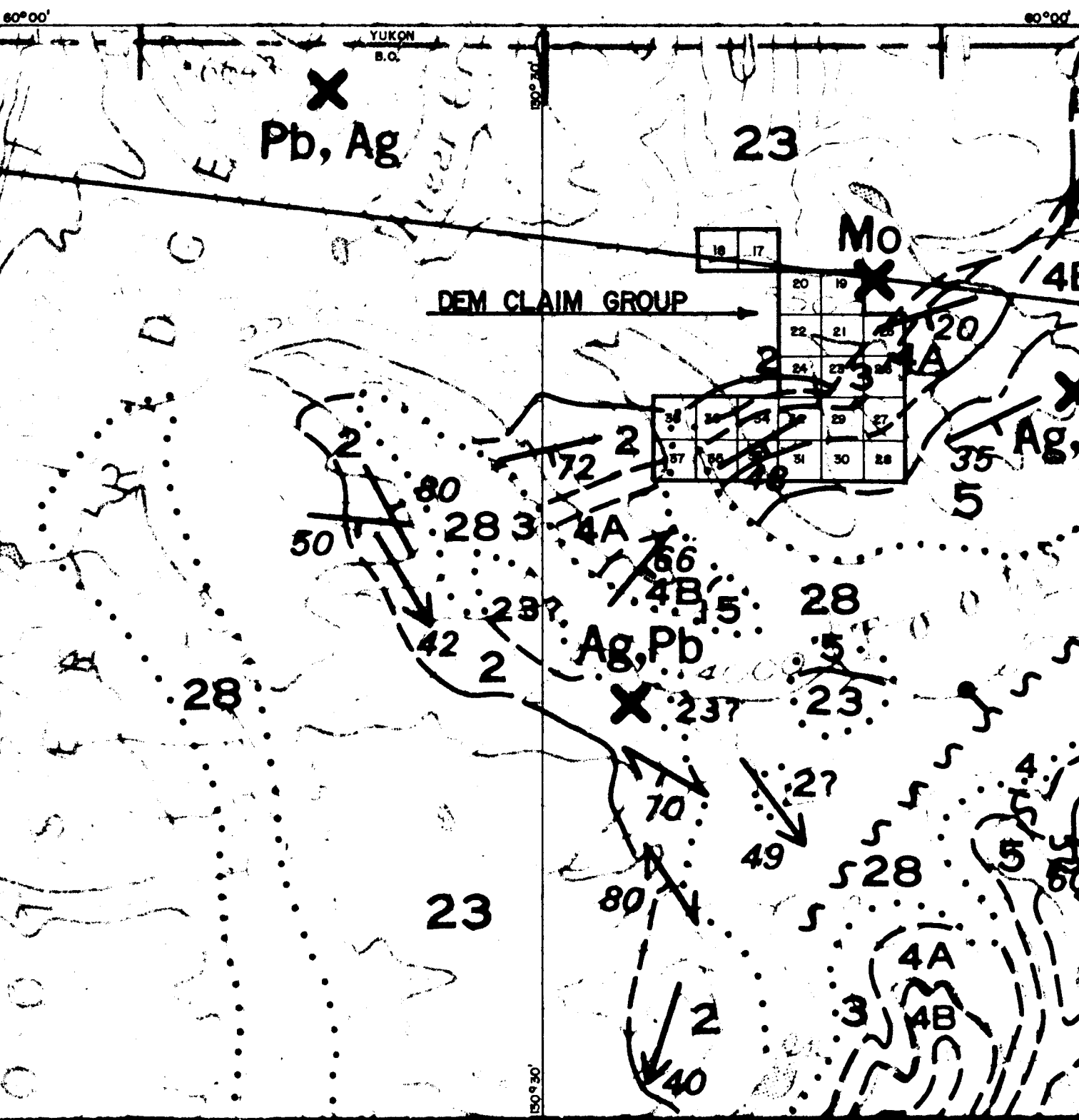
Previous operators have done a limited amount of surface stripping, from which shipments of high-grade ore have been made. The first shipment was made by R. W. Kirkman in the Fall of 1968 to the East Helena plant of American Smelting & Refining Co. This consisted of approximately 8.769 tons of hand-picked 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-siltstone-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.



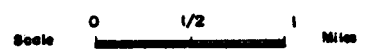
LEGEND

- 2 KECHIKA GROUP: thin bedded hornfels, stam, calcareous pyllite, phyllitic limestone.
 - 3 Block, grapholitic shale, platy siltstone, locally hornfelsed; includes techika 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, fluvio-glacial, and alluvial deposits.
- geological contact, — bedding, limit of drift

MINERAL HILL MINES LIMITED

GEOLOGY MAP

DEM CLAIM GROUP



J. FOSTER IRWIN ENGINEERING & MANAGEMENT SERVICES LTD.
EDMONTON, ALBERTA

MARCH, 1971

FIG. 3

- 7 -

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 1A. "L" & "LOLA" CLAIMS1. 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

- 8 -

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" CLAIMS1. PROSPECTING

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

Estimated Cost: \$3,000.00

- 9 -

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 IIA. "L" AND "LOLA" CLAIMS1. 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

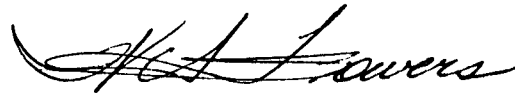
1. Access road construction, stripping, trenching, sampling, and possible diamond drilling or mineralized areas located in phase I.

Estimated Cost: \$55,000.00

- 10 -

<u>TOTAL ESTIMATED COST- PHASE II</u>	<u>\$165,000.00</u>
<u>TOTAL ESTIMATED COST- PHASE I & II</u>	<u>\$210,000.00</u>

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.

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.	6.656	68.4	49.0	0.20	10.7	0.20	0.24	
Shipper	0.120	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	

H ₂ O	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
0.840.00	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
Quinn 2.50

\$18.00

Dry Tons X Total Contracts Deductions	\$18.00	ST 6	13,717.20 S	18.00	3,102.27 S
Sampling Variable Cost @ 0.0075			12,894.00	7.50	244.91
Lbs. of Pb (Pay Content)	11,728.00				6.71
Lbs. of Cu (Pay Content)					
Tons of Pb & Cu X Bullion Frt. Act. 32.46		PR	5,864.00	32.46	1,003.50
Tons of Pb & Cu X Bullion Frt. Cont. 30.91			2,064.00	30.91	131.26
Sub-Total					2,749.56 S
Minimum Frt. Rate \$1286.05		ST 5			1,286.05
Sub-Total					1,463.51
Advances \$2000.00					2,000.00
Hauling		ST 5			25.00
Umpires \$24.00					
Locals \$26.50					

Shipper: IDA ORE MINES	Assays	Gold Oz. Per Ton	Silver Oz. Per Ton	Wet Lead %	Copper %	Zinc %	Arsenic %	Antimony %	Bismuth %
Mine: MILE 706 PROPERTY	A. S. & R. Co.	6.150	51.4	37.0	0.31	15.6			
Class: CRUDE Shipping Point: MILE 706, CANADA	Shipper	6.100	51.7	37.8	0.31				
Smelter Lot. No. 985 Mine Lot No. 2	Umpire	6.235		36.65					
TRUCK C.S. 15260	Settlement	6.660	57.55	37.0	0.31	15.6			

					Assay Deduction	Percent Pay	METAL	Pay Quotation	Quotation Deduction
						92.5	Gold	36,190	
						95	Silver	1,848.5	10.0
					1.5	90	Lead	145.97	27.5
							Copper		
H ₂ O	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 2, 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	663.54
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			

Case Charge \$15.50
Weights 2.50

\$18.00

Sampling \$5.00
 Dry Tons X Total Contracts Deductions *\$18.00*
Sampling Dutiable Lead @ \$0.0075
 Lbs. of Pb (Pay Content) *4,851.00*
 Lbs. of Cu. (Pay Content)
 Tons of Pb & Cu X Bullion Frt. Act. *33.46*
 Tons of Pb & Cu X Bullion Frt. Cent. *30.91*
 Sub-Total
 Wet tons X Frt. Rate
 Sub-Total
 Advances
 Hauling *\$5,503 Paul Actgen*
 Umpires *\$20.00*
500 lbs @ \$26.50

5.00	5.00	
7,591.85 S	18.00	136.65
5,314.00	7.50	39.36
2,425.50 PR	32.46	78.73
2,425.50	30.91	74.97
		1,088.19 S
ST 5		
ST 5	APPLIED TO HAULING	5,507.00
		20.00
		26.50

