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DRILLING REPORT - 1985
NGM PROPERTY
CUMMINS CREEK AREA, B.C.

GOLDEN MINING DIVISION

NTS 83 D/1W, 83D/1E
LAT: 52°03'30"
LONG: 118°15'30"

FILMED

MINING GEOLOGICAL BRANCH
ASSESSMENT REPORT

Prepared by
JOHN JENKS
December 1985

15,251

For:
Owner and Operator
ESSO MINERALS CANADA
A Division of Esso Resources Canada Limited
1600-409 Granville St. Vancouver, B.C. V6C 1T2

TABLE OF CONTENTS:

	<u>Page</u>
Summary	1
Introduction	4
Location, access	4
Physiography	4
Property definition and history	4
Work performed	5
General geology	6
Drilling results	7
Conclusions and recommendations	8
References	10
Statement of qualifications	11

ILLUSTRATIONS AND FIGURES:

MGM property location map - Fig.1	2
MGM claim location map - Fig. 2	

APPENDICES:

Appendix I - Field personnel	
II - Summary of drilling performed by mineral claim	
III - Drill log - Hole number MGM-1	
IV - Drill log - Hole number MGM-2	
V - Assay report	

MAPS:

Map A - Surface plan illustrating borehole locations	pocket
B - Section 5N	-do-
C - Section 00	-do-

I. SUMMARY:

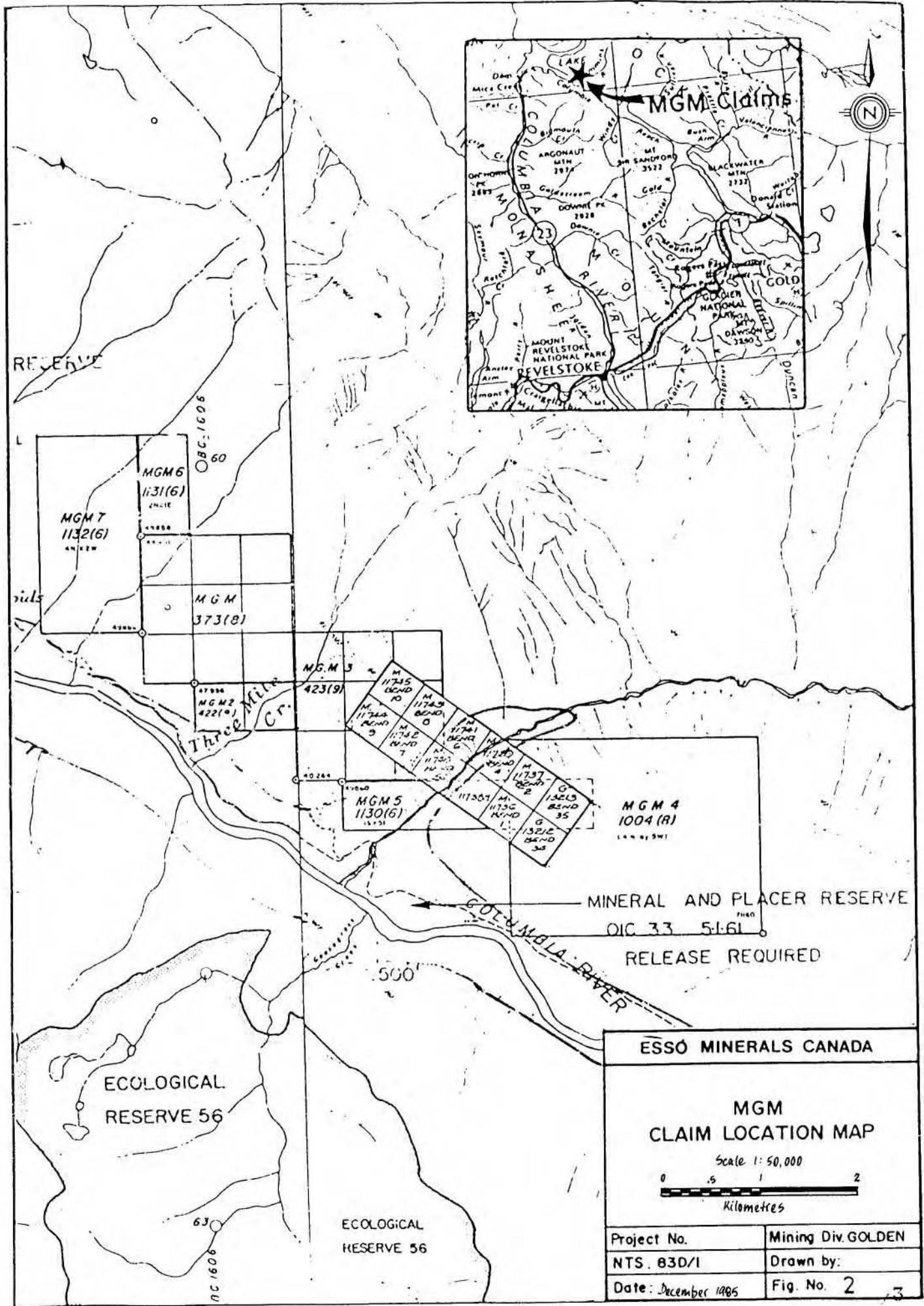
From October 8 through November 5, 1985 a drilling program evaluated the along-strike potential of a conformable massive sulphide (pyrite/sphalerite/galena) horizon occurring north of the Cummins canyon area of Kinbasket Lake within Cambrian sedimentary clastic and carbonate rocks.

Previous work in the Canyon zone indicated grades of 3% combined lead/zinc, 0.25 oz/t silver and a tonnage potential in the order of 5,000,000 tons. The 1985 drilling programme undertaken by Esso Minerals Canada investigated the North Road zone, some three kilometres along strike to the northwest of the Canyon zone.

The programme was directed by a geologist and employed two contract drillers, two helpers and a Longyear Super 38 machine. Two holes were drilled for a total ~~metrage~~ of 211.85 metres. Hard, broken quartzite and the onset of winter weather conditions precluded successful completion of the project. Though neither hole attained their target depth, trace amounts of galena in the core provided some positive indicators. Rock types included carbonate-rich quartzites/psammities, mica/garnet pelites and minor dolomites. Significant fracturing and faulting was seen in the core. In all, a picture of a greater geological complexity was encountered than originally anticipated.

In view of the substantial cost required to further evaluate the prospect no further work was recommended.





II. INTRODUCTION:

A) Location, access

The MGM prospect is situated adjacent to the northeastern shore of the Columbia Reach section of Kinbasket Lake immediately north of the Cummins River canyon. Access is via 162 kilometres of paved highway from Revelstoke, B.C. to the Mica Dam and an additional 18 kilometres of gravel road to Redrock Harbour. From this latter point a 24 kilometre boat ride is required to reach the property.

B) Physiography

Located immediately east of the Rocky Mountain Trench the property lies within a sub-range of the Rocky Mountains (Cummins or Park Range) on a relatively steep southwesterly-facing slope. Local relief is in the order of 1,800 metres while the prospect extends from 760 to 1,520 metres in elevation.

Vegetation reflects the relatively high level of precipitation and consists of a thick, mixed cover of jackpine, white pine, western red cedar, balsam fir, Engelman spruce, aspen, poplar and birch. Because of prior logging operations, much of the growth is secondary.

C) Property definition and history

Discovery of the original mineralization was made during construction of the Big Bend highway. During the late 1960's, Cominco dug a series of trenches and drilled thirteen X-ray drillholes totalling 786 feet on the Canyon and North Road showings. Drilling proved inconclusive on the latter section because of the hard and broken nature of the ground.

A drill programme conducted on the Canyon showing during 1970 comprised four holes totalling 1,600 feet. (Laura Mines)

These drill programmes indicated thicknesses in the order of 6.5 to 8.6 metres averaging 3% combined zinc/lead and 0.25 oz/t silver for the sulphide zone. Assuming a strike

dimension of 600 metres and a dip length of 300 metres a deposit in the order of 5,000,000 metric tons would be suggested.

During the 1970's and early 80's Cominco gradually reduced their holdings until they were left with a core of twelve two-post claims. Prospector John Leask staked contiguous ground (MGM 1-7 claims; 52 units) which he optioned to Esso Minerals Canada in 1985. Esso subsequently conducted a programme of soil and silt geochemistry, detailed mapping and diamond drilling, the latter of which is the subject of this report.

D) Work performed

A total of two drillholes were completed as follows(in metres):

<u>Hole No.</u>	<u>Coordinates</u>	<u>Elevation</u>	<u>Az.</u>	<u>Incl.</u>	<u>Tot.Depth</u>
MGM-1	4+56N - 3+27W	1,097.3	045°	-60°	38.11
-2	0+1.6S - 0+4.9W	1,128.0	045°	-80°	173.74
				Total	<u>211.85</u>

Of the above 116.54 was drilled in BQ diameter and 95.31 metres in NQ.

The drilling programme extended from October 9 through November 5, 1985. The contractor, Iron Mountain Drilling Ltd. of Merritt, B.C. used a Longyear Super 38 on the project, drilling two ten-hour shifts per day. Movement of machinery and supplies to the project area was effected by logging barge to and from Redrock Harbour.

Total metrage fell short of the 600 metre objective for a number of reasons:

- 1) The principal rock type encountered (quartzite) proved to be highly fractured and extremely hard. Bit life was frequently less than ten metres due to the grinding effect of fist-sized pieces of broken quartzite. This was exacerbated by total

loss of fluid circulation whenever this rock formation was encountered.

- 2) Inclement weather. Heavy mid-October snowfalls proved difficult to contend with in what was essentially a summer-type camp set-up. The debilitating effect upon the drillsite access road of heavy snowfall combined with relatively mild temperatures also became a limiting factor.
- 3) Equipment breakdown (hoist cable, pump) wasted valuable days at an ill-affordable time.

In retrospect, successful completion of a drilling programme on the North Road zone would require the following combination: Execution during a preferably dry summer season, full use of a telescoping technique utilizing HQ, NQ, and BQ rods, a professional mud programme and highly competent 'bad-ground' drillers.

The resulting drillcore is currently in storage at the MGM campsite.

III. GENERAL GEOLOGY:

The prospect is located immediately east of a major north-westerly-trending fault separating the Hadrynian Windermere Group to the west and a series of Cambrian sediments to the east. The Cambrian sediments have been tentatively subdivided into (top to bottom) the Kinbasket Formation, the Tsar Creek, the Mural and the McNaughton Formations.

Within the Cummins canyon a 4.8 metre-thick massive sulphide layer occurs within the Tsar Creek Formation. It is bounded on the hanging-wall side by a chocolate-brown, manganiferous dolomite layer (3.6 metres), a pyritiferous quartzite (4.2 metres) and a thick, carbonate-dominated unit with interbedded pelites. The footwall portion consists essentially of quartzitic clastic sediments with minor pelites and carbonates. Immediately adjacent to the massive sulphide layer abundant sericite and/or quartz

stockworking could suggest hydrothermal activity.

Striking northwest/southeasterly and dipping -65° to -70° to the southwest, the massive sulphide (pyrite, sphalerite, galena) is felt to extend some three kilometres northwest along strike to the North Road zone and 100 metres to the southeast across Cummins canyon. Of this strike interval only some 600 metres have been tested by drilling.

IV. DRILLING RESULTS:

Drill results neither confirmed nor denied the presence of the massive sulphide extension to the North Road area. Hole number MGM-1 was terminated at 38.11 metres, well short of the 125 to 150 metre objective. The hole was virtually barren of sulphide save for traces of galena in fracture fillings within thin, pure, white quartzite intervals at the 13.90 and 17.15 to 17.70 metre levels. The entire section was moderately to highly fractured and seems to have been located immediately northwest of a faulted zone as suggested by an air photo lineament. Predominant rock type was a somewhat impure quartzite with occasional white, high-silica intervals and secondary, interstitial carbonate. Infrequent, thin chocolate-brown, dolomitic horizons were present. Subcrop consisted of a six metre plus thick horizon of biotite/garnet pelite also with thin interbeds of dolomitic rock.

A grab sample of siliceous, dark-brown dolomitic rock taken at 35.08 metres and containing no obvious mineralization assayed 270 ppb gold (0.0079 oz/t), 2.0 ppm silver (0.06 oz/t), 158 ppm lead and 1,500 ppm Zn - all substantially higher than normal rock backgrounds.

Hole number MGM-2 was terminated at 173.74 metres, also somewhat short of its 200 metre objective. Predominant rock was a muscovite/garnet pelite increasing in coarseness and staurolite content with depth. A second main rock type consisted of micaceous quartzite (or psammite) with a muscovite/sericite, frequently carbonate-rich matrix. Again, traces of galena were seen - as fracture-filling in a pure, white quartzite layer and within the matrix of dolomitic breccia.

Noteworthy within borehole MGM-2 is a strong fault zone extending from 57.20 through 92.30 metres. The zone does not appear to be fault contact-related between pelite and psammites. It could possibly indicate that the sulphide horizon has been displaced at this particular location.

V. CONCLUSIONS AND RECOMMENDATIONS:

Diamond drilling indicated the following:

- 1) The definitive presence or absence of the massive sulphide horizon in the North Road area was not established.
- 2) The presence of galena in trace quantities in both holes is a positive sign.
- 3) The concept that a planar massive sulphide unit trends in an uninterrupted fashion northwesterly to the North Road area is precluded by the presence of northeasterly-trending faulting and a geological picture more complex than originally postulated.
- 4) Hard, highly-fractured quartzites make drilling in this area much more difficult and costly than originally anticipated. A thoroughly professional drilling approach would be required for successful hole completion in this area at any future date.
- 5) Correlation of stratigraphic units along strike in a northwesterly direction from Cummins canyon to the North Road zone is extremely difficult.

Further pursuit of the prospect would likely involve step-

out drilling at close intervals in a northwesterly direction starting from Cominco's boundary. This would be coupled with additional geological study emphasizing stratigraphy and fault evaluation in an effort to placing drill sections in the proper geological context. Cold extraction silt and soil geochemistry could prove useful in defining the sulphide subcrop location.

The above would imply a programme of greater scope and certainly greater cost than originally anticipated. Whether in light of the tenor and extent of mineralization seen to date such costs are justified within the context of corporate exploration priorities remains a moot point.

VI. REFERENCES:

- Fyles, J.T. (1959) Geological Reconnaissance of the Columbia River between Bluewater Creek and Mica Creek. B.C. Min. of Mines Ann. Report 1959 pp. 90 - 105.
- Marr, J.M. (1985) MGM Drill Proposal, 83D/1, August 16, 1985. Esso Minerals Canada - Internal report.
- Oliver, J. (1985) Cummins River Section, scale 1:1,000. Esso Minerals Canada - Internal report.

STATEMENT OF QUALIFICATIONS

I, John Jenks, Consulting Geologist of the City of Salmon Arm, British Columbia declare that:

- 1) I am a graduate of McGill University, Montreal, Quebec with a B.Sc.(Geology) 1968.
- 2) I have had over seventeen years experience in mineral exploration in British Columbia, Southern Africa and various other parts of Canada and the U.S.A.
- 3) I am a Registered Professional Geologist with the Province of Alberta.
- 4) I am a member of the Canadian Institute of Mining and Metallurgy.
- 5) I have no interest in Esso Minerals Canada, its affiliates or its properties, nor do I expect to receive any.



John Jenks - P.Geol.(Alberta)

Salmon Arm, B.C.
January 1986

Appendix I.

FIELD PERSONNEL.

Appendix I

FIELD PERSONNAL

<u>Name</u>	<u>Position</u>	<u>Address</u>	<u>Period in Field</u>
<u>Esso Minerals Canada</u>			
		1600 - 409 Granville St. Vancouver, B.C. V6C - 1T2	
Jack Marr	Regional Geologist	c/o company	October 9 - 10, November 4, 1985
Jim Oliver	Senior Geologist	c/o company	October 9 - 10, October 18-20 November 4
Otto Janout	Prospector	c/o company	October 9 - 20
<u>J. D. Jenks Consulting</u>			
John Jenks	Project Geologist	Box 2951, Salmon Arm, B.C. VOE - 2T0	October 9 - November 8
<u>Iron Mountain Drilling Ltd.</u>			
		Box 184, Merritt, B.C. VOK - 2B0	
Bill Hayworth	Foreman/Driller	c/o company	October 9 - November 8
Vonne Bergstrand	Driller	c/o company	-do-
Henry Krause	Helper	c/o company	-do-
Keith Bentley	Helper	c/o company	-do-
Brian Jack	Cook	c/o company	-do-

Appendix II:

SUMMARY OF DRILLING PERFORMED
BY MINERAL CLAIM

Summary of Drilling Performed
by Mineral Claim
MGM Project, Golden Mining Division
1985

Mineral Claim

Metres Drilled

NGM-1

211.85

Appendix III:

DRILL LOG - HOLE NUMBER MGM-1

**ESSO MINERALS CANADA
DRILL LOG**

HOLE NO. MGM-1
PAGE _____ OF _____
PROJECT MGM
LOGGED BY: John Jenks

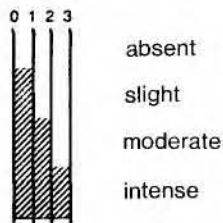
COLLAR COORDINATES 4+56 N; 3+27 W 3,600' = 1,097.3 M
(map elevation)
COLLAR ELEVATION 3,340' = 1,018.3M
(altimeter)
AZIMUTH 045° DIP -60° TOTAL LENGTH 38.11 M
HORIZONTAL PROJECTION 88.39' = 26.95M VERTICAL PROJECTION 88.39' = 29.65M

CONTRACTOR Iron Mountain Drilling Ltd. CORE SIZE NQ
DATE STARTED Oct. 11/85 DATE COMPLETED Oct. 14/85
AVERAGE CORE RECOVERY 85 %

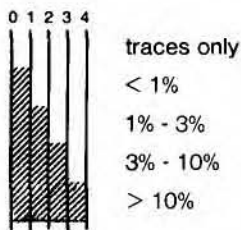
PURPOSE To intercept massive sulphide zone at 125 to 150 metres.

COMMENTS: Hard, broken ground. Hole not completed to req'd depth.

ALTERATION SCALE



TOTAL SULPHIDE SCALE



SUMMARY LOG

Metres

0 - 5.49 OVERBURDEN
5.49 - 11.25 BIOTITE/GARNET PELITE
11.25 - 14.25 QUARTZITE
14.25 - 19.20 DOLOMITIC QUARTZITE
19.20 - 20.30 DOLOMITE
20.30 - 35.38 DOLOMITIC QUARTZITE
35.38 - 36.40 QUARTZOSE DOLOMITE
36.40 - 38.11 DOLOMITIC QUARTZITE
38.11 End of Hole

DIP TESTS

DEPTH	DIP	AZIMUTH	DEPTH	DIP	AZIMUTH
NONE TAKEN					

13.90: Trace of galena in white quartzite horizon.
17.15-17.70: Less than 1% galena in fractures with pyrite in white quartzite horizon.

LEGEND

PAGE		OF		PROJECT: MGM Borehole MGM-1		
DEPTH (m)	R Q D	% CORE REC	GRAPHIC LOG	GEOLOGICAL DESCRIPTION		
				FROM	TO	
				0	5.49	<u>OVERBURDEN</u>
5.0				5.49	11.25	<u>BIOTITE/GARNET PELITE</u> : Light to dark bluish-grey. Fine-grained, thin lamellar banding. Contains thin interbeds of chocolate-brown dolomite (15% of rock volume) 5mm to 3cm thick, and occas'l intrbd/lenses of milky-white to buff quartzite (5% of rock volume) 1-3mm thick. Secondary minerals include anhedral pinkish-maroon garnet (5% of rock volume; to 1 cm); scattered sub-parallel aligned lens-shaped masses (0° app.dip) of black biotite (to 15% of rock volume; 2 X 3mm) and minor staurolite. Groundmass generally contains a very fine-grained mixture of quartz/sericite. Muscovite partings. Apparent dip: -25°
10.0						5.49-16.00: Highly-fractured.
15.0				11.25	14.25	<u>QUARTZITE</u> : Milky to greyish-white with thin rusty-weathered limonitic streaks (after pyrite). Massive save for occasional pelite interbed. Very fine-grained with individual quartz grains barely discernible. Muscovite partings.
20.0						11.65: Minor pyrite, trace of <u>galena</u> in fracture-fillings.
25.0						13.90: Trace of <u>galena</u> in hairline fracture-fllg.
						12.24 - 13.27: <u>Dolomitic Quartzite</u> : Rusty-brown to grey, fine-grained with interstitial dolomite.
30.0						12.25: Pyrite layering.
				14.25	38.11	<u>DOLOMITIC QUARTZITE</u> : Light grey to chocolate brown, very fine-grained. Essentially bedded quartzite with 2-12cm interbeds of light to chocolate-brown rock ranging in composition from dolomitic quartzite (dolomite interstitial) through pure dolomite. Textures also mottled in places. Muscovite common. Occasional patch or wisp of pyrite though mainly limonitic. Occasional pelitic layer.
35.0						16.00-34.00 Moderately to highly fractured.
40.0						19.20 - 20.30: <u>Dolomite</u> : Dark-brown, fine-grained, layered with a somewhat phyllitic fabric.
						Occasional thin layer of black biotite-rich material. Much of the interstitial carbonate is CaCO ₃ (fizzes readily) which appears secondary.
						26.60: Apparent dips flattening to near horizontal (ie: 0°)

12/1

PAGE		OF		PROJECT:				
DEPTH (m)	R Q D/E	% CORE REC	GRAPHIC LOG	RUNS				GEOLOGICAL DESCRIPTION
				ft	M	ft	M	
				FROM		TO		
				0	0	18	5.49	
	26/1.22	30		18	5.49	22	6.71	
	1.25/1.57	83		22	6.71	27	8.23	
	1.52/1.52	100		27	8.23	32	9.75	
	1.15/1.52	75		32	9.75	37	11.28	
	1.52/1.52	100		37	11.28	40	12.49	
	1.61/1.91	67		40	12.49	43	13.11	
	1.52/1.91	86		43	13.11	46	14.02	
	1.83/1.83	100		46	14.02	52	15.85	
	1.52/1.52	100		52	15.85	57	17.37	
	1.23/1.22	100		57	17.37	61	18.59	
	1.78/1.98	96		61	18.59	67	20.42	
	1.98/1.98	100		67	20.42	72	21.95	
	1.13/1.15	87		72	21.95	72.5	22.10	
	1.02/1.46	100		72.5	22.10	74	22.56	
	1.80/1.91	97		74	22.56	77	23.47	
	1.67/1.97	85		77	23.47	80.5	24.41	
	1.61/1.85	88		80.5	24.41	84	25.60	
	1.48/1.61	79		84	25.60	86	26.21	
	1.20/1.61	83		86	26.21	88	26.82	
	1.65/1.22	83		88	26.82	92	28.04	
	1.05/1.55	69		92	28.04	97	29.57	
	1.61/1.61	100		97	29.57	99	30.18	
	30/30	100		99	30.18	100	30.48	
	1.52/1.42	88		100	30.48	105	32.00	
	1.35/1.53	88		105	32.00	110	33.53	
	1.63/1.91	69		110	33.53	113	34.44	
	1.50/1.61	82		113	34.44	115	35.05	
	1.38/1.48	83		115	35.05	116.5	35.51	
	1.52/1.61	90		116.5	35.51	118.5	36.12	
	1.75/1.67	70		118.5	36.12	122	37.19	
	1.23/1.30	77		122	37.19	123	37.49	
	1.39/1.30	100		123	37.49	124	37.79	
	1.32/1.32	100		124	37.79	125	38.11	

PAGE		OF		PROJECT: MGM Borehole MGM-1 (cont'd)		
DEPTH (m)	R Q D	% CORE REC	GRAPHIC LOG			GEOLOGICAL DESCRIPTION
				FROM	TO	
45.0						28.00: Apparent dips returning to -25°. 17.15-17.60: Whitish quartzite contains fracture-filling pyrite with a trace of <u>galena</u> .
50.0						35.38 - 36.40: <u>Quartzose Dolomite</u> ; Dark-grey to chocolate-brown. Fine-grained. Generally thin-layered from 1-3mm. Primarily dolomitic with light-grey to buff quartzite - interlayered or in a mottled fabric. Muscovite partings. Secondary carbonate.
						34.00-38.11: Highly fractured. 36.25-36.40: Quartz/pyrite layering.
						38.11: END OF HOLE.

Handwritten signature

Appendix IV:

DRILL LOG - HOLE NUMBER MGN-2

**ESSO MINERALS CANADA
DRILL LOG**

HOLE NO. NGM-2
PAGE _____ OF _____
PROJECT NGM
LOGGED BY: John Jenks

COLLAR COORDINATES 0+1.6S - 0+4.9W

AZIMUTH 045° DIP -80°
HORIZONTAL PROJECTION 30.17

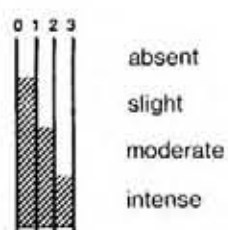
COLLAR ELEVATION 3,700' (1,128M)
by map contours.
TOTAL LENGTH 173.74 M
VERTICAL PROJECTION 171.10

CONTRACTOR Iron Mountain Drilling Ltd. CORE SIZE 0 - 57.20 (NQ)
57.20-173.74 (BQ)
DATE STARTED 15/10/85 DATE COMPLETED 2/11/85
AVERAGE CORE RECOVERY 74.9%

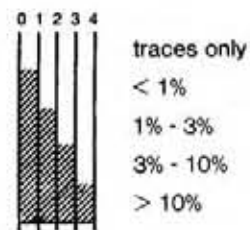
PURPOSE To intercept massive sulphide horizon @ approx. 200 M.

COMMENTS: Difficult drilling. Hole terminated prematurely @ 173.74.

ALTERATION SCALE



TOTAL SULPHIDE SCALE

Metres **SUMMARY LOG**

0- 14.63 OVERBURDEN
14.63 - 19.00 DOLOMITIC QUARTZITE
19.00 - 48.00 MICACEOUS QUARTZITE
48.00 - 57.20 BRECCIATED MICACEOUS
QUARTZITE
57.20 -173.74 MUSCOVITE/GARNET
PELITE
173.74 End of hole

32.55-33.08: Traces of
galena
57.20-92.30 Major fault

DIP TESTS

DEPTH	DIP	AZIMUTH	DEPTH	DIP	AZIMUTH
None taken					

LEGEND

PAGE		OF		PROJECT: MGM Borehole MGM-2		
DEPTH (m)	RQD	% CORE REC	GRAPHIC LOG	GEOLOGICAL DESCRIPTION		
				FROM	TO	
				0	14.63	<u>OVERBURDEN</u>
5.0				14.63	19.00	<u>DOLOMITIC QUARTZITE</u> : Fine to medium-grained, mottled medium to dark brown with thin greyish layers of quartzitic rock. Apparent dips vary somewhat though mainly in the -70° to -90° range.
						14.63 - 48.00 Highly fractured.
10.0				19.00	48.00	<u>MICACEOUS QUARTZITE (PSAMMITE)</u> : Fine-grained. Colour generally light to medium-grey with frequent light-brown patches & horizons. Composed essentially of fine-grained white to grey, subparallel clastic quartz (grains distinguishable with difficulty: 90% of rock volume) in a matrix of muscovite/sericite/frequently carbonate/limonitic material. Darker brown patches and/or horizons usually represent dolomitic material. Muscovite partings common.
15.0						Apparent dips: approx. -40° .
						Occasional dark-grey horizons represent biotite-rich layers indicative of original argillaceous deposition.
				32.55	33.08	Dolomitic Breccia: Dark brown fine

PAGE		OF		PROJECT: MGM Borehole MGM-2 (cont'd)	
DEPTH (m)	R Q D	% CORE REC	GRAPHIC LOG	GEOLOGICAL DESCRIPTION	
				FROM	TO
					60.00: Apparent dip: -45°
45.0					48.00 - 92.30 <u>FAULT ZONE:</u> (Does not appear to be a fault contact relationship between the units).
					70.00: Apparent dips -20°
					74.00: -do- -10° ----- Break
50.0					80.00: -do- -60°
					66.10 - 70.87: <u>Garnetiferous Quartzite(Psammite):</u> Light-grey, fine to medium-grained. 70% quartz, 20% pink-maroon garnet porphoroblasts (to 6mm), 6% biotite, 4% muscovite. Represents a minor, more quartzitic interval within the pelite.
55.0					74.07 - 75.59: <u>Garnetiferous Quartzite(Psammite):</u> as above.
					92.30 - 173.12: Massive to very slightly fractured.
60.0					70.87 - 92.30: Zone contains 40% broken rock, 30% mud/gouge and 20% broken aggregates of crushed rock/large broken plates of muscovite.
					92.30 - 173.74: Pelite(as before). Assuming a <u>coarser texture</u> , almost a phylittic fabric. Increased % of biotite. Estimated mineral composition: quartz 35%, garnet 20%, muscovite 20%, biotite 20%, staurolite(medium brown) 5%. Biotite occurs in small black lenses similar to Biotite/Garnet Pelite in MGM-1.
65.0					Apparent dips: -60°
					107.30 - 108.20: Zone contains large (3 cm) knots of garnet.
					118.85 - 119.40: <u>Muscovite Quartzite(Psammite):</u> Light-grey, fine-medium-grained. Thin (1-5mm) light/dark-grey banding. Occasional bull-quartz layer 2-4cm thick.
75.0					Apparent dips: -40°.
					120.35 - 125.80: <u>Muscovite Quartzite(Psammite):</u> As above. Approximately 90% quartz-represents a more arenaceous horizon within the pelites.
80.0					123.00: Apparent dips: -25° to -30°.
					127.00: -do- -55° to -60°.

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PAGE		OF		PROJECT: MGM		Borehole MGM-2 (cont'd)	
DEPTH (m)	R Q D	% CORE REC	GRAPHIC LOG			GEOLOGICAL DESCRIPTION	
				FROM	TO		
85.0							133.20 - 133.80: Highly to very highly fractured. Minor gouge. Probable small fault. 135.00: Apparent dip -40°
90.0							133.80 - 173.74: <u>Staurolite</u> content increasing to 20% in large (to 6 X 14mm) brown pods sub-parallel to bedding and foliation. Garnet content 10 - 15%. 141.00: Apparent dip -50° to -60° 145.05 - 145.65: Highly fractured. 147.00: Apparent dip: -50° 165.35: Minor pyrite along fracture surface.
95.0							168.85 - 169.58: <u>Quartzite(Psammite)</u> : Medium to dark-grey, very fine-grained with occasional 5 - 6 mm thick horizons of milky-white, watery, almost cherty quartzite. Trace of pyrite. Apparent dip: -40°.
100.0							169.58 - 173.74: <u>Pelite</u> (as before): 5% of interval occupied by occasional 6mm thick band of light-coloured, watery, almost cherty quartzite. Apparent dip: -45°.
105.0							173.12 - 173.74: Very highly fractured. <u>Possible fault</u> .
							173.74 metres: END OF HOLE.

[Handwritten signature]

PAGE		OF		PROJECT:			
DEPTH (m)	R O D	% CORE REC	GRAPHIC LOG	FROM	TO	GEOLOGICAL DESCRIPTION	
				0	0	14.63	
		100		14.63	14.63	14.63	
		10		14.94	14.94	16.15	
		33		16.15	16.15	17.98	
		51		17.98	17.98	18.59	
		66		18.59	18.59	19.20	
		26		19.20	19.20	19.51	
		47		19.51	19.51	19.81	
		20		19.81	19.81	20.88	
		57		20.88	20.88	21.34	
		36		21.34	21.34	22.10	
		100		22.10	22.10	22.56	
		67		22.56	22.56	23.77	
		80		23.77	23.77	24.69	
		90		24.69	24.69	26.52	
		62		26.52	26.52	27.74	
		96		27.74	27.74	29.87	
		85		29.87	29.87	33.22	
		64		33.22	33.22	34.44	
		52		34.44	34.44	35.07	

PAGE		OF		PROJECT:		
DEPTH (m)	R O D	% CORE REC	GRAPHIC LOG	FROM	TO	GEOLOGICAL DESCRIPTION
.05/61	8			225 68.58	227 69.19	
.90/1.22	80			227 69.19	231 70.41	
.40/1.46	87			231 70.41	232.5 70.87	
.16/2.28	7			232.5 70.87	240. 73.15	
.13/61	21			240 73.15	242. 73.76	
.18/31	61			242 73.76	243 74.07	
.27/1.52	18			243 74.07	248 75.59	
.05/1.52	3			248 75.59	253 77.11	
.04/2.75	1			253 77.11	262 79.86	
.47/1.52	31			262 79.86	267 81.38	
.28/1.83	15			267 81.38	273 83.21	
.54/2.1	59			273 83.21	276 84.72	
.16/61	100			276 84.72	278 84.72	
.81/92	93			278 84.72	281 85.15	
1.01/1.01	100			281 85.65	285 86.87	
1.28/1.72	98			285 86.87	289 88.09	
.47/1.14	52			289 88.09	292 89.00	
1.14/1.37	83			292 89.00	296.5 90.37	
.69/92	60			296.5 90.37	299.5 91.29	
.01/1.68	80			299.5 91.29	302 92.05	
1.83/1.22	92			302 92.05	308 93.88	
1.22/3.05	93			308 93.88	312 95.10	
2.85/3.05	93			312 95.10	322 98.15	
3.04/3.04	100			322 98.15	322 101.19	
3.25/3.25	100			322 101.19	342 104.24	
1.17/1.22	96			342 104.24	346 105.46	
1.52/1.52	100			346 105.46	351 106.98	
.57/61	93			351 106.98	353 107.59	
1.22/1.22	100			353 107.59	357 108.81	
1.52/1.52	100			357 108.81	362 110.34	
1.52/1.52	100			362 110.34	367 111.86	
1.52/1.63	100			367 111.86	372 113.39	
1.52/1.52	100			372 113.39	377 114.91	
1.52/1.52	100			377 114.91	382 116.43	
1.52/1.52	100			382 116.43	387 117.96	
1.52/1.52	100			387 117.96	392 119.48	
1.52/1.52	100			392 119.48	397 121.01	
1.62/1.62	100			397 121.01	402 122.53	
1.52/1.52	100			402 122.53	407 124.05	
1.52/1.52	100			407 124.05	412 125.58	
1.52/1.52	100			412 125.58	417 127.10	
1.52/1.52	100			417 127.10	422 128.63	
1.62/1.62	100			422 128.63	427 130.15	
1.52/1.52	100			427 130.15	432 131.67	
1.52/1.52	100			432 131.67	437 133.20	

11

Appendix V:

ASSAY REPORT

GEOCHEMICAL REPORT

TO: Mr. John Jenks
 P.O. Box 2951
 Salmon Arm, B.C.
 VOE 2T0

FILE NO.: 85-208A

DATE: November 20, 1985

ATTENTION: John Jenks

PROJECT:

Sample Description	Au ppb	Ag ppm	Pb ppm	Zn ppm	
85J40 <i>4.0g / 5L + 1oz</i> <i>.0019 oz/t</i>	270	<i>06 oz/t</i> 2.0	158	1500	<i>MGM-1: 34.08 Meters, Quartzose Disturb - 1st Sec.</i> <i>Ag, Pb, Zn</i>

Au: fire assay, AA.
 Ag, Pb, Zn: aqua regia digestion, AA.

Duncan... Sanders...

ESSO MINERALS CANADA

E. M. BERTHELSEN
President

A Division of
Esso Resources Canada Limited
1600 - 409 GRANVILLE STREET
VANCOUVER, B.C. V6C 1T2
Telex: 04-55717
Telephone (604) 661-7100

April 30, 1986

The attached report by J.D. Jenks Consulting documents a drill program on the MGM claims, Cummins Creek area, B.C. This work was done for Esso Minerals Canada. All aspects of the job are discussed in that report.

The work was performed under my direct supervision.

Claims

Assessment credits from the diamond drilling are being applied to the following claims. Expiry date will apply on acceptance of this work.

<u>Claim</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>	<u>Expiry Date</u>
MGM	373	9	Aug 20, 1979	1990
MGM-2	422	2	Sept 19, 1979	1990
MGM-3	423	6	Sept 19, 1979	1990
MGM-4	1004	20	August 4, 1983	1990
MGM-5	1130	5	June 28, 1983	1990
MGM-6	1131	2	June 28, 1983	1990
MGM-7	1132	8	June 28, 1983	1990

Cost Statement

Drilling costs to Iron Mountain Drilling Ltd. are shown on the attached two invoices, dated November 25th and December 4th, 1985. These invoices itemize charges with respect to labour and materials.

November 25th, 1985	\$39,613.09
December 4th, 1985	<u>6,613.92</u>
TOTAL	\$46,227.01



J.M. Marr
District Geologist

JMM:pw
1543B



IRON MOUNTAIN DRILLING LTD.

Box 184, Merritt, B.C. - V0K 2B0

Bob Brosinsky
Phone 378-4843
Nov. 25/85

ESSO MINERALS CANADA
1600 - 409 Granville Street
VANCOUVER, B.C.
V6C 1T2

Dear Sirs;

Your invoice for diamond drilling on MGM project near Mica Dam

Mobilization and Demobilization.....		\$4,000.00	
DDH # 1 125' at \$16.00 per foot.....		\$2,000.00	-
DDH # 2 570' at \$16.00 per foot.....		\$9,120.00	
Operating Field Costs 56.5 hours at \$65.00 per hour.....		\$3,672.50	+
Non-operating Man Hours. 480 hours at \$20.00 per hour.....		\$9,600.00	9,800.
Crawler Hours. 34 hours at \$55.00 per hour.....		\$1,870.00	1,815.
Crawler Standby one month.		\$500.00	No
Room and Board 30 days at \$50.00.....		\$1,500.00	-
Extra Trucking of drill rods and supplies 1200 Miles at \$1.50.....		\$1,800.00	-
Total of Diamond costs, Bits, Shells, and Casing Shoes used		7359.00	
Provincial Sales Tax. 7.1%.....		515.13	-
75 % of total diamond costs of.	\$7,874.13	\$5,905.59	-

Total of Invoice..... ~~\$45,465.09~~

Totals of Hours and diamond products listed Total Payable 39,613.09

on next page

IRON MOUNTAIN DRILLING LIMITED

Bob Brosinsky
Bob Brosinsky, President

R3/bb

APPROVED FOR PAYMENT

BY *J. M. [Signature]*

CHARGE 02-1906-3225-17401

\$ 39,613.09





IRON MOUNTAIN DRILLING LTD.

Box 184, Merritt, B.C. - V0K 2B0

Bob Brosinsky
Phone 378-4843

Nov. 25/85

Non - operating Field Costs-Labour rate

Oct 9 - 10 hours - 5 men - 50 hours
 Oct 10 - 12 hours - 5 men - 60 hours
 Oct 11 - 12 hours - 4 men - 48 hours
 Oct 12 - 2 hours - 2 men - 4 hours
 Oct 14 - 11 hours - 2 men - 22 hours
 Oct 15 - 7 hours - 2 men - 14 hours
 Oct 17 - 8 hours - 2 men - 16 hours
 Oct 19 - 16 hours - 2 men - 32 hours
 Oct 20 - 4 hours - 2 men - 8 hours
 Oct 21 - 17 hours - 2 men - 34 hours
 Oct 22 - 16 hours - 2 men - 32 hours
 Oct 23 - 16 hours - 2 men - 32 hours
 Oct 24 - 8 hours - 2 men - 16 hours
 Oct 25 - 11 hours - 2 men - 22 hours
 Oct 27 - 2 hours - 2 men - 4 hours
 Nov 3 - 8 hours - 2 men - 16 hours
 Nov 4 - 10 hours - 4 men - 40 hours
 Nov 5 - 10 hours - 4 men - 40 hours

Total labour hours..... ~~480~~ hours
490

NQ Bits used @ \$475.00 each

Ser. No. 40459 BQ Bits used @ \$325.00 each
 40460 Ser. No. 40687 40153
 40461 40688 40154
 35568 40689
 37706 40690
 35556 BQ Shells used @ \$216.00 each
 37745 T22119 and 22852
 38281

NQ Reaming Shells used @ \$336.50 each

37684 & 37696

2 NW Casing shoes used @ \$252.00 each

Total Diamond product cost.....\$7,359.00

Operating field costs

Oct 13 - 6 hours - Night
 Oct 14 - 3 hours - Day
 Oct 17 - 6 hours - Night
 Oct 18 - 9 hours - Day
 Oct 18 - 4 hours - Night
 Oct 24 - 11 hours - Day
 Oct 25 - 6 hours - Day
 Oct 26 - 1 hour - Day
 Oct 26 - 2 hours - Night
 Oct 27 - 2 hours - Day
 Oct 28 - 2 hours - Day
 Oct 28 - 2 hours - Night
 Nov. 1 - 1 hour - Day
 Nov. 1 - 1.5 hours - Night
 Total hours...56.5 hours

Crawler Hours

Oct 9 3 hours
 Oct 11 - 7 hours
 Oct 15 - 4 hours
 Oct 14 - 2.5 hours
 Oct 19 - 4 hours
 Oct 20 - 2 hours
 Oct 21± - 3 hours
 Oct 27 - 1.5 hours
 Nov. 4 - 3 hours
 Nov. 5 - 3 hours
 Total hours - 33 hours

33 FORWARDED
 TO COMPTROLLERS
 DEC 06 1985
 CALGARY



IRON MOUNTAIN DRILLING LTD.

Box 184, Merritt, B.C. - V0K 2B0

Bob Brosinsky
Phone 378-4843
Dec. 4/85

ESSO MINERALS CANADA
1600 - 409 Granville Street
VANCOUVER, B.C.
V6C 1T2

Dear Sirs:

This is to conclude invoicing for diamond drilling project at Cummins Creek near Mica Dam.

Core Boxes used...35 at \$8.00 each.....	\$280.00	✓
Undrilled Footage on contract 1305 feet at \$4.00 per Foot	\$5,220.00	✓
60 Bags of Quik - Gel at 8.00 each	\$480.00	✓
5 Bags of Fundo Cement at \$32.45 each.....	\$162.25	✓
5 Bags of Quik - Seal at \$38.20 each.....	\$114.60	✓
1 Bag of Cello at \$34.20.....	\$34.20	✓
2 - 20 litre buckets of Alcomer At \$125.00 each.....	\$250.00	✓
7 % Provincial sales tax on above items of \$1,041.05	\$72.87	✓
Total of invoice.....	\$6,613.92	✓

agreed to verbally Jan.



RB/bb

IRON MOUNTAIN DRILLING LIMITED

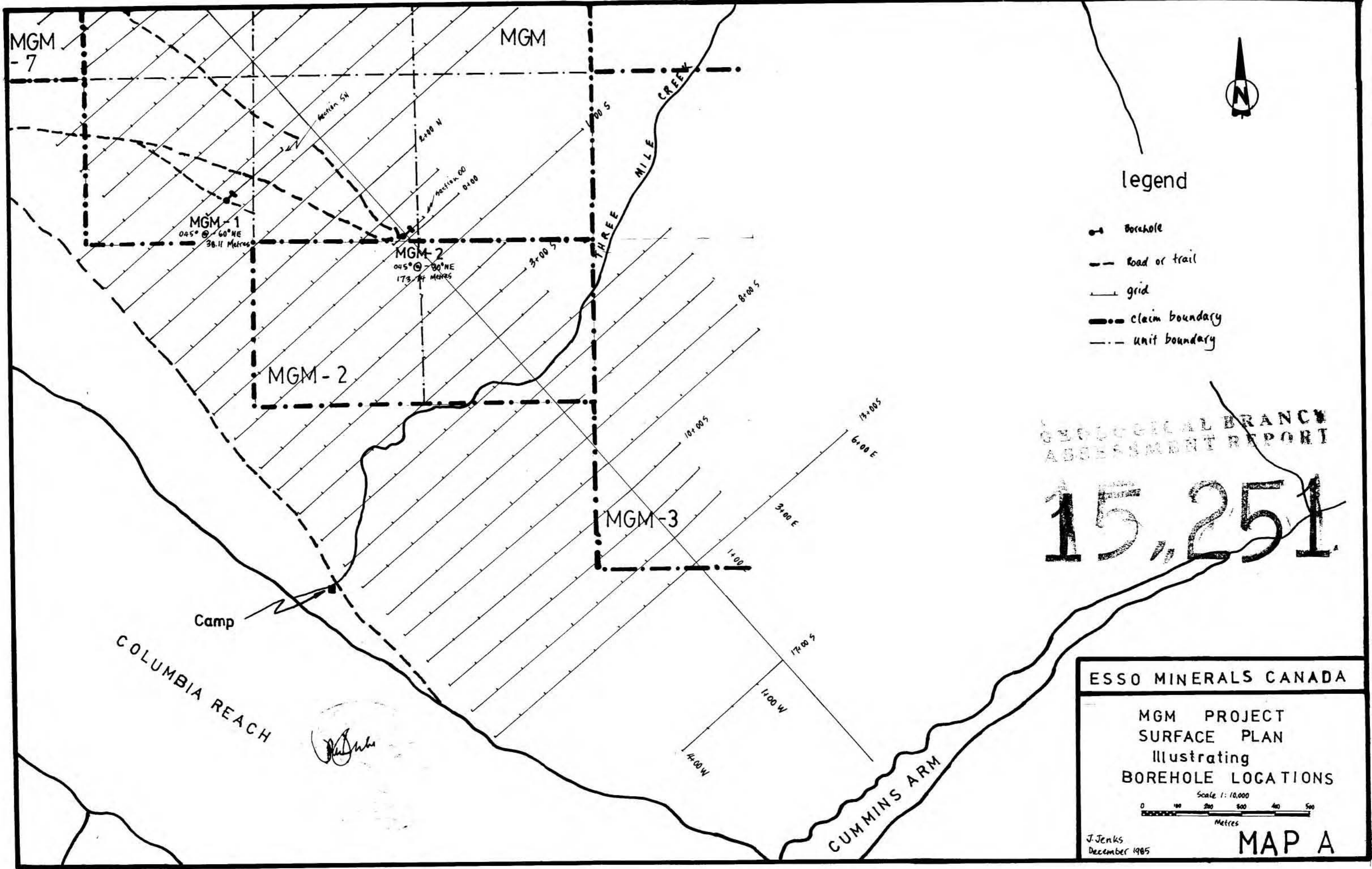
Bob Brosinsky
Bob Brosinsky, President

APPROVED FOR PAYMENT

BY *J. M. ...* MA01

CHARGE 02-0906-3225-MA01
DEPT. ACTIVITY PRIME MENT

FORWARDED
BY CLERK/RECEIVED
DEC 2 0 1985
CALGARY



MGM
- 7

MGM

MGM-1
045° @ 60° NE
38.11 Metres

MGM-2
045° @ 60° NE
173.14 Metres

MGM-2

MGM-3

Camp

COLUMBIA REACH

THREE MILE CREEK

CUMMINS ARM



Legend

- Borehole
- Road or trail
- grid
- claim boundary
- unit boundary

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,251

ESSO MINERALS CANADA

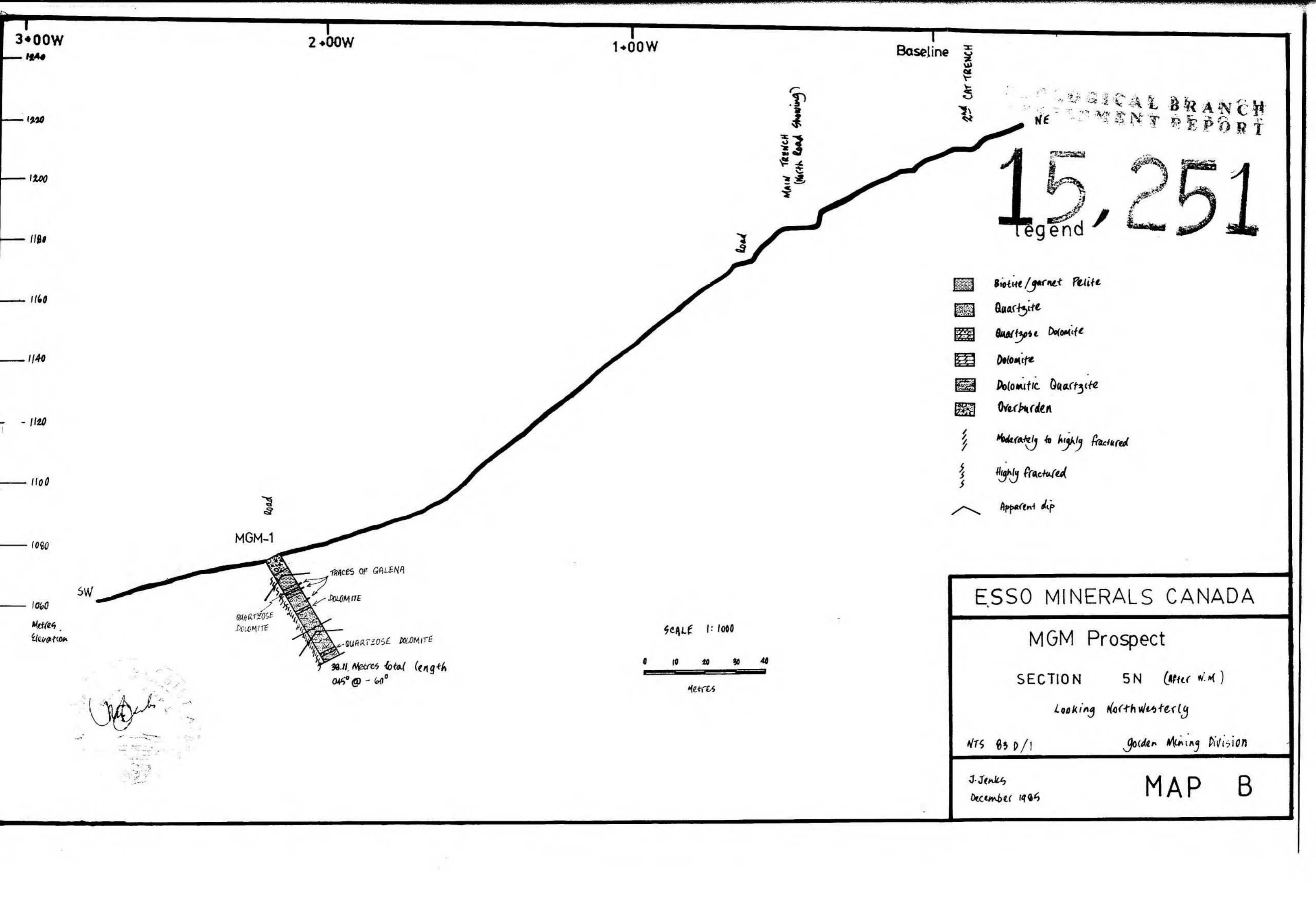
MGM PROJECT
SURFACE PLAN
Illustrating
BOREHOLE LOCATIONS

Scale 1:10,000

0 100 200 300 400 500
Metres

J. Jenks
December 1985

MAP A



GEOLOGICAL BRANCH
 DEPARTMENT REPORT
15,251
 Legend

- Biotite/garnet Pelite
- Quartzite
- Quartzose Dolomite
- Dolomite
- Dolomitic Quartzite
- Overburden
- Moderately to highly fractured
- Highly fractured
- Apparent dip

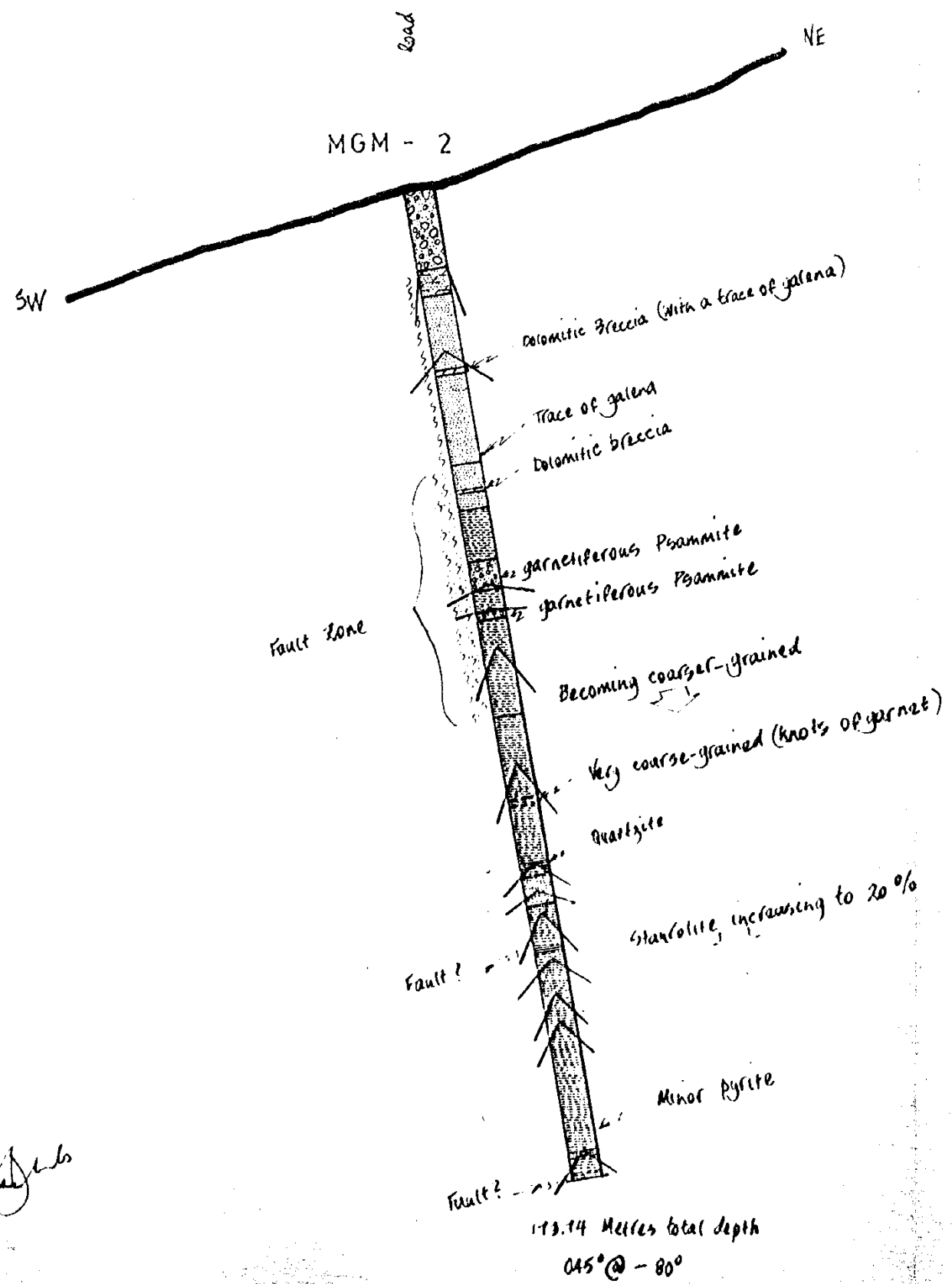
ESSO MINERALS CANADA
 MGM Prospect
 SECTION 5N (After W.M.)
 Looking Northwesterly
 NTS 83 D/1 Golden Mining Division
 J. Jenks
 December 1985
MAP B

Road
 MGM-1
 TRACES OF GALENA
 DOLOMITE
 QUARTZOSE DOLOMITE
 QUARTZOSE DOLOMITE
 30.11 Metres total length
 045° @ - 60°

SCALE 1:1000
 0 10 20 30 40
 METRES

SW
 Metres
 Elevation

J. Jenks
 1985



legend

- overburden
- Dolomitic Quartzite
- Micaceous Quartzite
- garnetiferous Psammite
- Dolomite Breccia
- Muscovite/garnet Pelite
- Apparent dip
- Highly fractured
- Very highly fractured

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,251

ESSO MINERALS CANADA

MGM PROSPECT

SECTION 00

looking Northwestly

NIS 830/1

Golden Mining Division

V. Jenks
December 1985

MAP C