

19-# 117-# 7359

GEOLOGICAL REPORT
ON THE
MO 1-6 CLAIMS
MUNCHO LAKE AREA
LIARD MINING DIVISION

N.T.S. 94N/4E 59°06'N 125°41'W

for **7359**

SISCOE METALS OF ONTARIO LIMITED (Owners)

by

I. M. WATSON & P. PETO

June 1979

I. M. WATSON & ASSOCIATES LTD.
714 - 510 West Hastings Street
Vancouver, B. C.

TABLE OF CONTENTS cont'd

SECTIONS MO GROUP	1:5000 horiz.& vert.	Following Text
Line 1+00 N.W.	"	" "
Line 0+50 N.W.	"	" "
Line 0+00 N.W.	"	" "
Line 1+00 S.E.	"	" "
Line 2+00 S.E.	"	" "
Line 3+00 S.E.	"	" "

IN POCKET

PLAN 1 - GEOLOGICAL PLAN MO GROUP	1:5000
PLAN 2 - " " " " WITH PRELIMINARY POTENTIAL RESERVES ESTIMATE	1:5000
PLAN 3 - ALTIMETER SURVEY	1:5000
GEOLOGICAL SECTION MO & MUN GROUPS LINE AB	1:5000 horiz. & vert.
DIAGRAMMATIC LONGITUDINAL SECTION - MO ZONE	1:5000 horiz. & vert.

INTRODUCTION

The MO property was staked by I. M. Watson on behalf of Siscoe Metals of Ontario Ltd. on June 2nd, 1978.

The claims were staked to protect a bedded barite deposit discovered during reconnaissance exploration of the Muncho Lake area of North-Eastern B. C.

Barite occurs as beds ranging from a few centimetres to over 2 metres in thickness, interbedded with barren grey dolomite. Maximum thickness of the zone is just over 15 metres. The beds are exposed over a strike length of 650 metres. Preliminary sampling indicates overall grades ranging from 40%+ to 57%+ BaSO_4 and averaging approximately 50% BaSO_4 .

The bedded zone is overlain by a chaotic, irregular dolomite-barite-calcite breccia zone, up to 75 metres thick.

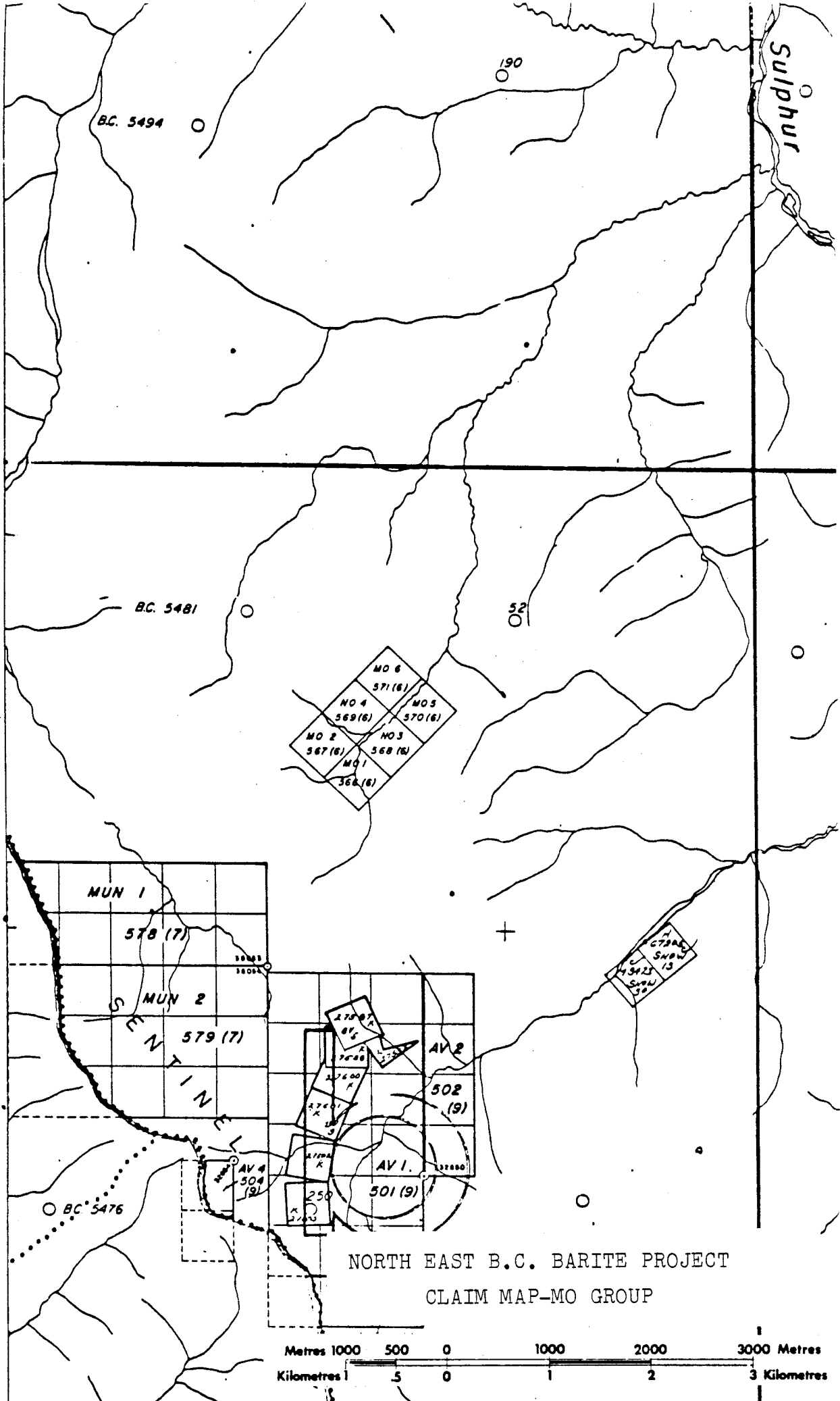
This report summarises the results of geological investigation of the MO barite deposit by I. M. Watson and Associates Ltd. during the periods June 2 to June 11, 1978 and September 13 to September 19, 1978.

LOCATION, PHYSIOGRAPHY & ACCESS

The MO 1-6 claims straddle a northeasterly trending steep sided valley on the eastern flank of the Sentinel Range, approximately five kilometres north-east of Muncho Lake and Mile 464 on the Alaska Highway. The location line of the six two-post claims lies along the valley drainage, an upper tributary of Sulphur Creek.

94N4E

TO WEST SEE MAP 94-N-4-W



NORTH EAST B.C. BARITE PROJECT
CLAIM MAP-MO GROUP

Metres 1000 500 0 1000 2000 3000 Metres
Kilometres 1 0.5 0 1 2 3 Kilometres

The centre of the six-claim group is situated at 59°06'North and 125° 41'West, (N.T.S. map reference 94N/4E).

The eastern boundary of the Muncho Lake Provincial Park, along the spine of the Sentinel Range, lies just over three kilometres west of the claim group.

Elevations within the property range from 1300 metres in the valley bottom to 1600 metres along the upper valley walls. The claims are entirely above tree-line. The area is virtually desert - vegetation consists of rare stunted buckbrush along the stream course and small patches of alpine grass and heather on the gentler slopes. The upper and steeper valley walls are talus covered or formed by outcrop.

Access for exploration was by helicopter from the Alaska Highway at Muncho Lake. If the barite deposit merits exploitation access would have to be from Mile 428.5 on the Alaska Highway, north along Nonda Creek via an existing 18.5 km. road which provides access to a CN telecommunications tower. From the CN tower north new road would have to be built over a distance of approximately 30 kms. along the east flank of the Sentinel Range. There are no major rivers along the route and grades are not excessive.

REGIONAL GEOLOGY

The Sentinel Range forms the eastern flank of the northernmost extent of the Rocky Mountain Orogen. The rocks of the area are predominantly carbonates, ranging in age from Lower to Upper Devonian. The regional

trend is north-northwest. Broad folds are cut by major shears and faults. Faulting intensifies towards the eastern flank of the range, producing local tight drag induced folds and resulting in an overlapping series of thrust wedges. This structural complexity, combined with a monotony of lithology, creates problems of correlation and interpretation in the area of the MO claims. The carbonate rocks are in faulted contact with the recessive black shale Besa Formation, which forms the gently sculptured wooded foothills along the eastern side of the Sentinel range.

The stratigraphic succession in the area of interest surrounding the MO claims has been established by G.S.C. geologists (Taylor and Mackenzie, 1970) as follows:

<u>Age</u>	<u>Formation</u>	
Middle-Upper Devonian	Besa River	Black shales
Middle Devonian (upper)	Dunedin	Dark grey limestones
	Disconformity ?	
Middle Devonian (lower)	Stone	Pale grey dolomites and dolomite breccias
	Disconformity ?	
Lower Devonian	Wokkpash	Yellow-brown dolomitic sandstones, grey dolomites
	Muncho-McConnell	Dark grey dolomites

SUMMARY OF WORK DONE

The MO barite deposit was discovered during the course of helicopter reconnaissance exploration of the Muncho Lake Area. The MO 1-6 claims were staked on the 2nd June, 1978.

After staking the claims the three man crew (I. Watson, P. Peto and D. Colley) spent three and a half days mapping and prospecting the area using 1"= $\frac{1}{2}$ mile air photos for control. Continuous chip samples were taken across a section of the barite beds exposed in the creek (sample section M01A) but detailed sampling and mapping of the barite beds was not possible because of local snow cover, and further work was deferred until later in the year when conditions were more favorable.

Before field work resumed in September, McElhanney Engineering Ltd. of Vancouver was contracted to provide orthophoto mapping of the area of interest. The resulting base maps and photo plates (1:5000 scale) were contoured at 20 m. intervals.

The follow-up programme started on September 13, 1978. The four man crew, consisting of three geologists (I. Watson, P. Peto and B. Gillies) and a prospector, (D. Colley) based at Muncho Lake. Access to the property was by Transwest Helicopters Ltd. Hughes 500. The following work was done during the period September 13 to 19 inclusive.

1. Altimeter survey
2. Detail sampling of barite zone
3. Geological mapping.

1. Altimeter Survey

The object of the survey was to provide more detailed topographic information over the zone of barite mineralization than was available from the orthophoto contour plan. This data was then used to provide closer estimates of potential 'ore' tonnages and 'ore' waste ratios.

The survey was run over five chain and compass lines, 110 metres apart, with stations every 30 metres, or less where necessary. Traverses were closed to base stations and compensation made for atmospheric pressure drift. A total of 2.96 line kms. were surveyed (approximately 115 stations) using a high sensitivity Thommen aneroid altimeter. Details of the survey are shown on the accompanying Plan 3.

2. Sampling

A 350 metre strike length of the barite zone was sampled. Three continuous chip samples were taken over the barite beds and two over the overlying barite breccia zone. The locations and frequency of the sample sections were limited by the available exposure and accessibility. Sample sites are shown on Plans 1 and 2.

A total of 58 samples was taken from the M0 zone.

3. Geological Mapping

The main objective of the mapping programme was to determine, as far as possible, the dimensions and disposition of the M0 barite zone. Particular attention was paid to the possibility of displacement of the zone by faulting and/or thrusting. A search was made of the property for further barite occurrences and/or repetitions of the M0 zone. Results of the mapping programme are discussed below and are illustrated by Plan 1.

GEOLOGY OF THE MO CLAIM GROUP

Lithology. The MO claims are underlain by pale grey, bedded, fine to medium grained, crystalline, cliff-forming dolomites. No fossils were seen. No detailed geological maps of the Muncho Lake area have yet been published, but geographical location, lithology and stratigraphic position all suggest that the rocks belong to the lower Middle Devonian Stone Formation (Taylor and Mackenzie 1970). The bedded barite deposit and the overlying barite breccia zone are hosted by the carbonates. This situation is almost duplicated in the valley immediately south of the MO property where carbonates identified as Stone Formation have at their base a bedded barite deposit overlain by a barite-dolomite breccia zone (Mountain Minerals "AV" deposit); here, however, the Stone Formation is underlain by the distinctive orange and brown weathering dolomitic sandstones and sandstones of the Wokkash Formation. (Morrow 1975 and Morrow et al 1976). The Wokkash Formation has not been found on the MO property. There are three possibilities:

1. The Wokkash has been eroded and the Stone Formation is resting unconformably on the lithologically similar Muncho-McConnel Formation.
2. The barite beds/breccia zone on the MO property are not stratigraphically continuous with the 'AV' deposits, and lie higher in the Stone Formation.
3. The Wokkash Formation has been 'faulted out'.

At present there is insufficient data to form a definite conclusion, but faulting/thrusting at the base of the MO barite zones does lend to strength to the third possibility.

Structure. The carbonates in the area of the MO property are cut by a series of north-northwesterly striking faults and thrusts. The resultant fault blocks and thrust sheets measure up to several hundreds of metres thick and several thousands long. The MO deposit appears to lie at the footwall of one of these fault blocks. The eastern edge of the block is marked by a major north-northwesterly striking, westerly dipping 'thrust' which is readily traceable as it angles up the northern slope of the MO valley. The trace of the fault is lost under overburden in the valley bottom, and the possible continuation on the south wall of the valley may be concealed by talus at the base of the barite zone. Dolomites below and east of the thrust strike northwest and dip steeply west; above the fault the carbonates and the barite zone strike more northerly and dip moderately west. The attitude of the thrust is slightly steeper and across that of the overlying beds; as a result the bedded barite zone and possibly part of the overlying breccia zone are 'wedged out' along the north side of the MO valley. The western edge of the 'barite zone' fault block is marked by another major steep dipping fault, 1000 metres to the west, and 500 m. beyond the claim boundary.

Mineralization. The MO barite zone is a bedded deposit hosted by dolomites believed to be part of the lower Middle Devonian Stone Formation. The barite occurs in beds ranging from several centimetres to over two metres in thickness, interbedded with barren beds of grey dolomite. Maximum thickness of the zone is just over 15 metres. The barite beds are exposed over a distance of approximately 650 metres, extending from the north side of the MO creek, to a point high on the south valley slope. Strikes vary from north to just west of north, and dips are westerly at

angles ranging from 30° to 60° and averaging 35°.

The main zone of interest lies between the creek, at 1340 metres elevation, and the 1500 m. elevation on the south wall of the valley, a strike length of 350 metres. Faults mark the north and south limits of this zone, cutting the barite beds off at the north end and imposing a wedging effect to the south. The barite beds outcrop along the base of a northeasterly facing scarp which forms a prominent spur down the southern side of the valley. The scarp's existence is due to the weather resistant nature of the barite beds and immediately overlying barite breccia.

Thin sections were made from six samples taken from the creek bed section of the MO barite zone. Samples were from a massive barite bed, dolomite interbeds, and barite-carbonate breccia. The bedded barite is white, finely crystalline and has a finely bedded aspect. Seen in thin section it consists of bands of relatively coarse radiating barite blades with interstitial secondary calcite, and thin intercalations of very fine grained greenish calcareous 'mudstone'. The dolomite interbeds are often finely veined by calcite and barite; in thin section they consist of crystalline dolomite with interstitial calcite and minor barite, cut by coarsely crystalline calcite-barite veinlets. Some specimens display finely laminated carbonate with secondary calcite and barite veinlets and segregations.

The barite breccia zone is much thicker (up to 75 metres) and more extensive than the bedded barite, and has been noted at several locations

throughout the eastern part of the Sentinel Range. The breccia is chaotic, irregular in form, and consists of angular fragments and blocks of dolomite ranging in size from a few centimetres to over two metres. The matrix is formed of barite and calcite. The breccia tends to be coarser and less chaotic towards the base of the unit, where it has the appearance of a mosaic breccia. A thin section of a breccia sample shows dolomite and fine calcite clasts in a matrix of barite and calcite.

SAMPLING RESULTS

Sampling results of the MO deposit are shown on the accompanying plans (1 & 2) and on the geological sections. Choice of sample sections was limited by accessibility and available exposure - talus obscures the lower part of the barite beds along much of the outcrop. Continuous chip samples were cut at four locations along the strike of the barite beds, but only two sections of the hanging wall breccia could be sampled because of the steepness of the higher outcrops.

Barite content and specific gravity of samples were determined. Selected samples were sent for semi-quantitative analysis to determine whether any contaminating elements were present. Initially three laboratories were used to provide cross-checks of analytical results. Details of the assay results are shown on the diagrammatic longitudinal section. Within the bedded barite zone grades of individual beds range from 3% to 87% BaSO_4 . The breccia zone was sampled over broader intervals based on eyeball estimates of barite content; values for individual sections range from approximately 4% to 54% BaSO_4 , reflect-

ing the more erratic nature of the mineralization.

The accompanying cross sections of the M0 zone were constructed from the orthophoto contour plan and from "closed-loop" high sensitivity altimeter traverses made over the mineralized beds and breccia. The sections show that the thickness of hanging wall breccia is too great to consider mining of the barite beds only, and the viability of the deposit depends in large part, on being able to mine both the beds and the breccia.

First estimates of grade and tonnage potential and stripping ratios have been made from the limited data so far available, as summarized on Plan 2. In making these calculations it was assumed that:

1. The back slope of the open pit would be 45° . (indicated on section).
2. That the deposit would be continuous to 150 metres (500') down dip.

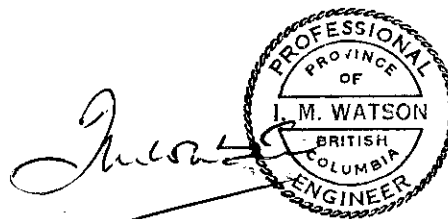
The potential reserves of barite in the barite beds only, to a down dip depth of 150 metres, is estimated at 2.85×10^6 tonnes grading 50.72% BaSO_4 .

Open pit mining of this material, as noted above, would involve an impossible stripping ratio (approximately 10:1).

The northern half of the deposit has the lowest apparent stripping ratio; it is also the most accessible portion of the deposit and is the only area for which there is any barite breccia sample data. Combining barite beds and breccia for this area, and reducing the down dip depth to 75 metres produces figures of 3.4×10^6 tonnes grading 34.7% BaSO_4 and a stripping ratio of about 0.9:1.

CONCLUSIONS

1. First estimates indicate that the M0 bedded barite deposit contains approximately 3.4×10^6 tonnes grading 34.7% BaSO_4 , which might be exploited by open pit mining.
2. Further work on the M0 property will depend on the outcome of a preliminary study of the economics of the deposit - capital, production and transportation costs together with an evaluation of market potential.
3. If the results of this preliminary feasibility study are favourable a programme of detailed drilling and bulk sampling will be necessary to firmly establish the tonnage, grade and 'mineability' of the deposit.

A circular seal for a Professional Engineer in the Province of British Columbia. The seal contains the text "PROFESSIONAL OF I. M. WATSON BRITISH COLUMBIA ENGINEER". A handwritten signature, "I. M. Watson", is written over the seal.

I. M. WATSON, P.Eng.

P. PETO,

REFERENCES

Morrow, D. W. (1975):

The Florida Aquifer: A Possible Model for a Devonian
Palaeoaquifer in Northeastern B. C. G.S.C. Paper 75-1 B.

Morrow, D.W., Taylor, G.C., Dawson, K. R., Krouse, R.W., and Ghent, E.C.,
(1976):

Sulphur Isotope Composition and Strontium Content of Barite from
Devonian Rocks in Northeastern B. C. G.S.C. Paper 76-1 C.

Taylor, G. C. and Mackenzie, W.S. (1970):

Devonian Stratigraphy of Northeastern British Columbia.
G.S.C. Bulletin 186.

STATEMENT OF QUALIFICATIONS

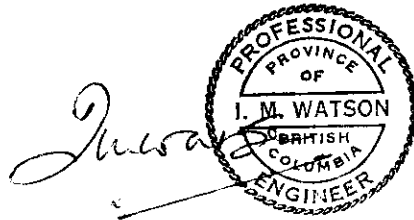
I, Ivor Moir Watson, certify that:

1. I am a consulting geologist, resident at 584 E. Braemar Road, North Vancouver, British Columbia.
2. I am a graduate of the University of St. Andrews, Scotland, (B.Sc. geology, 1957).
3. I am a Professional Engineer registered with the Association of Professional Engineers of British Columbia.
4. I have practised my profession continuously since graduation.
5. Work on the MO claim group was carried out by myself and by the following people working under my supervision.

Peter Peto, geologist (B.Sc. 1968 M.Sc. 1970 University of Alberta; Ph.D. 1975 University of Manchester).

B. Gillies, geologist (B.Sc. 1977 Toronto)

David Colley, prospector



I. M. WATSON, P.Eng.

June, 1979.

APPENDIX I

To: Vangeochem Lab Ltd.

REPORT No A28 - 248

PAGE No. 1

BONDAR-CLEGG & COMPANY LTD.

DATE: June 19, '8

1521 Pemberton Avenue
North Vancouver, B.C.
V7P 2S3

Samples submitted: June 12, 1978
Results completed: June 19, 1978

CERTIFICATE OF ASSAY

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

MARKED	GOLD		SILVER	.Ba	Specific Gravity						TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent		
HW. 63260				44.02	3.72						
63261				24.59	2.94						
63262				9.58	2.92						
63263				42.02	3.77						
63264				28.84	3.41						
MO 1A- 63265				26.76	3.31						
63266				8.60	2.96						
63267				45.26	3.86						
63268				3.01	2.87						
63269				47.92	3.93						
63270				33.00	3.50						
63271				42.47	3.77						
63272				26.13	3.30						
FW 63273				42.48	3.77						

Registered Assayer, Province of British Columbia



BONDAR-CLEGG & COMPANY LTD.

geochemists • assayers • analytical chemists

1500 PEMBERTON AVENUE, NORTH VANCOUVER, B.C.
PHONE: 988-5315 TELEX: 04-54554

CERTIFICATE OF ASSAY

TO Sinco Metals of Ontario Ltd.

A28 - 826

Suite 3001, South Tower

September 28, 1978

PO Box 45, Royal Bank Plaza, Toronto, Ontario M5J 2J1

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

MARKED	BaSO ₄ Percent*	MARKED	BaSO ₄ Percent*	MARKED	BaSO ₄ Percent*	
Mo1	FW 14601	Mo3	14625	Mo5	FW 14654	
	14602		14626			14655
	14603		14627			14656
	14604		14628			Mo2, 0-192 M(14621)
	14605		14629			
	14606		14630			
	14607		14631			
	14608		14632			
	14609		FW 14633			
	14610		FW 14634			
	14611		14635			
	HW 14612		14636			
	HW 14613		Mo4			14637
	14614		14638			14639
	14615		14639			HW 14640
14616						
14617						
14618						
14619						
FW 14620						
HW 14622						
Mo3	14623					
	14624					

* Total Ba as BaSO₄ Calculated cc I.M. Watson

NOTE: Rejects retained two weeks
Pulps retained three months
unless otherwise specified

ACME ANALYTICAL LABORATORIES LTD.

To I. M. Watson & Associates Ltd., Assaying & Trace Analysis
 714 - 510 W. Hastings St., 6455 Laurel Street • Burnaby, B.C. V5B 3B4
 Vancouver, B. C.

Telephone: 299-5242

File No. 8900

Type of Samples Pulps

Disposition _____

ASSAY CERTIFICATE

CHECK ANALYSES

No.	Sample	BaSO ₄ %	Sample Section						No.
1	14603	55.40	Mo1						1
2	14606	72.10	"						2
3	14618	61.80	Mo2						3
4	14619	77.20	"						4
5	14622	70.50	Mo3						5
6	14623	30.60	"						6
7	14624	74.80	"						7
8	14626	78.20	"						8
9	14628	83.80	"						9
10	14630	69.50	"						10
11	14631	77.20	"						11
12	14632	86.20	"						12
13	14633	51.40	"						13
14									14
15									15
16									16
17									17
18									18
19									19
20									20

All reports are the confidential property of clients.

DATE SAMPLES RECEIVED Oct. 10, 1978

DATE REPORTS MAILED Oct. 19, 1978

ASSAYER

Dean Toye

DEAN TOYE, B.Sc.
 CHIEF CHEMIST
 CERTIFIED B.C. ASSAYER

Sample Identification	Specific Gravity	Barium Sulfate "BaSO ₄ "	Soluble Barium as BaCO ₃
M05 - 14655 "	3.14	-	-
M01A 63262 "	2.93	-	-
63263 "	3.81	-	-
63264 "	3.39	-	-
63266 "	2.97	-	-
63267 "	3.89	-	-
63270 "	3.51	-	-
63271 "	3.78	-	-
63272 "	3.28	-	-
63273 "	-	-	-
M01 14602 Pulp	3.09	21.83 %	1.70 %
14603 "	3.46	51.91 %	1.18 %
14606 "	3.74	69.65 %	1.38 %
14607 "	2.86	1.30 %	2.56 %
14608 "	3.83	74.75 %	1.11 %
14610 "	3.39	47.46 %	1.03 %
14612 "	3.05	16.37 %	1.58 %
M02 14614 "	3.28	38.55 %	1.61 %
14616 "	2.91	6.79 %	1.62 %
14618 "	3.52	57.72 %	1.09 %
14619 "	3.98	81.16 %	1.07 %
14620 "	3.17	29.17 %	1.43 %
M03 14628 "	3.95	78.18 %	1.61 %
14631 "	3.91	77.60 %	0.76 %
14632 "	4.14	86.06 %	1.22 %
M05 14654 "	3.08	24.16 %	1.33 %
14656 "	3.03	20.00 %	1.72 %

CAN TEST LTD.

*F. C. Burgess*F. C. Burgess,
Chief Assayer.



can test ltd.

To: Siscoe Metals of Ontario Ltd.,
Suite 3001,
South Tower, P.O. Box 45,
Royal Bank Plaza,
Toronton, Ontario

5MJ 2J1

1650 PANDORA STREET, VANCOUVER, B.C. V5L 1L6 • TELEPHONE 254-7278

SEMI QUANTITATIVE SPECTROGRAPHIC
 ANALYSIS CERTIFICATE

Telex 04-54210

File No. 9397 C-1

cc: Mr. I. M. Watson, P. Eng.,
 714 - 510 West Hastings St.,
 Vancouver, B.C.

Date Feb. 28/79

We hereby Certify that the following are the results of semi quantitative spectrographic analysis made on Ore samples submitted.

		1	2	3	4	5	Sample Identification
Aluminum	Al	1.	1.	2.		0.5	Sample 1: 14608 M01
Antimony	Sb	ND	ND	ND		ND	Sample 2: 14632 M03
Arsenic	As	ND	ND	ND		ND	Sample 3: 14636 M04
Barium	Ba	MATRIX	MATRIX	MAJOR		MAJOR	Sample 4:
Beryllium	Be	ND	ND	ND		ND	Sample 5: 14655 M05
Bismuth	Bi	ND	ND	ND		ND	
Boron	B	TRACE	TRACE	TRACE		TRACE	
Cadmium	Cd	ND	ND	ND		ND	
Calcium	Ca	5.+	3.	MAJOR		MAJOR	
Chromium	Cr	ND	ND	ND		ND	
Cobalt	Co	ND	ND	ND		ND	
Copper	Cu	0.005	0.001	0.005		0.003	
Gallium	Ga	ND	ND	ND		ND	
Gold	Au	TRACE	TRACE	TRACE		TRACE	
Iron	Fe	0.1	0.1	0.2		0.1	
Lead	Pb	ND	ND	ND		ND	
Magnesium	Mg	2.	1.	3.+		3.++	
Manganese	Mn	0.003	0.001	0.005		0.007	
Molybdenum	Mo	ND	ND	ND		ND	
Niobium	Nb	ND	ND	ND		ND	
Nickel	Ni	ND	ND	ND		ND	
Potassium	K	ND	ND	ND		ND	
Silicon	Si	2.	2.	3.		1.	
Silver	Ag	TRACE	TRACE	TRACE		TRACE	
Sodium	Na	ND	ND	ND		ND	
Strontium	Sr	*	*	*		*	
Tantalum	Ta	ND	ND	ND		ND	
Thorium	Th	ND	ND	ND		ND	
Tin	Sn	ND	ND	ND		ND	
Titanium	Ti	0.1	0.1	0.1		0.1	
Tungsten	W	ND	ND	ND		ND	
Uranium	U	ND	ND	ND		ND	
Vanadium	V	0.001	0.001	0.001		ND	
Zinc	Zn	ND	ND	ND		ND	

Percentages of the various elements expressed in these analyses may be considered accurate to within plus or minus 35 to 50% of the amount present.

Semi-quantitative spectrographic analytical results for gold and silver are normally not of a sufficient degree of precision to enable calculation of the true value of ores. Therefore, should exact values be required, it is recommended that these elements be assayed by the conventional Fire Assay Method. Quantitative and Fire Assays may be carried out on the retained pulp samples.

Silicon, aluminum, magnesium, calcium and iron are normal components of complex silicates.

- MATRIX - Major constituent
- MAJOR - Above normal spectrographic range
- TRACE - Detected but minor amounts
- N.D. - Not detected
- - Suggest assay (above 0.3%)

All results expressed as PERCENT

Note: Pulps retained one week.

ALL REPORTS ARE THE CONFIDENTIAL PROPERTY OF CLIENTS. PUBLICATION OF STATEMENTS, CONCLUSION OR EXTRACTS FROM OR REGARDING OUR REPORTS IS NOT PERMITTED WITHOUT OUR WRITTEN APPROVAL. ANY LIABILITY ATTACHED THERETO IS LIMITED TO THE FEE CHARGED.

CAN TEST LTD.

J. A. Burgess
 Spectroscopist

Spectroscopist

APPENDIX II

COST STATEMENT

MO GROUP

WAGES/FEES

a) Field Work

I. M. Watson (geologist)	- 7 days @ \$200/day (field work) (3½ days between 2nd & 11th { June, '78 (3½ days between 13th & 19th { Sept. '78	\$ 1,400.00	
P. Peto (geologist)	- 5½ days @ \$125/day (3½ days between 2nd & 11th { June '78 (2 days between 13th & 19th { Sept. '78	687.50	
B. Gillies (geologist)	- 5 days @ \$66.67/day (between 13th & 19th Sept. '78)	333.35	
D. Colley (prospector)	- 7½ days @ \$85/day (3½ days between 2nd & 11th { June, '78. (4 days between 13th & 19th { Sept. '78	637.50	

b) Report Preparation

I. M. Watson	- 3 days @ \$200/day	600.00	
P. Peto	- 2 days @ \$125/day	<u>250.00</u>	\$ 3,908.35

*FOOD & ACCOMODATION

Lower Liard Lodge) 16 man days @ \$30/day		
Sekyer Price Holdings	(between 2nd & 11th June '78)	\$ 480.00	
Highland Glen Cabins) 19 man days @ \$40/day	760.00	
	(between 13th & 19th Sept. '78)	<u> </u>	<u>1,240.00</u>
			c/fwd..\$ 5,148.35

COST STATEMENT continued

b/fwd \$ 5,148.35

*TRANSPORTATION & FUEL

Helicopter

Highland Helicopter Ltd. (206B) 3.4 hrs. @ \$240/hr. (June 2nd-11th, '78)	\$ 816.00	
Transwest Helicopters Ltd. (Hughes 500) 9.9+hrs. @ \$225/hr. (Sept. 13th-19th, '78)	2,540.05	
<u>Fuel</u> - JP4 - 4 drums @ \$79.50 each	318.00	
Truck (2½ days @ \$48.90/day (June)-Budget (4x4 crew-cab) (3½ " @ \$53.39/day (Sept.)- "	171.15 186.88	
Gasoline	<u>50.04</u>	4,082.12

ASSAYING

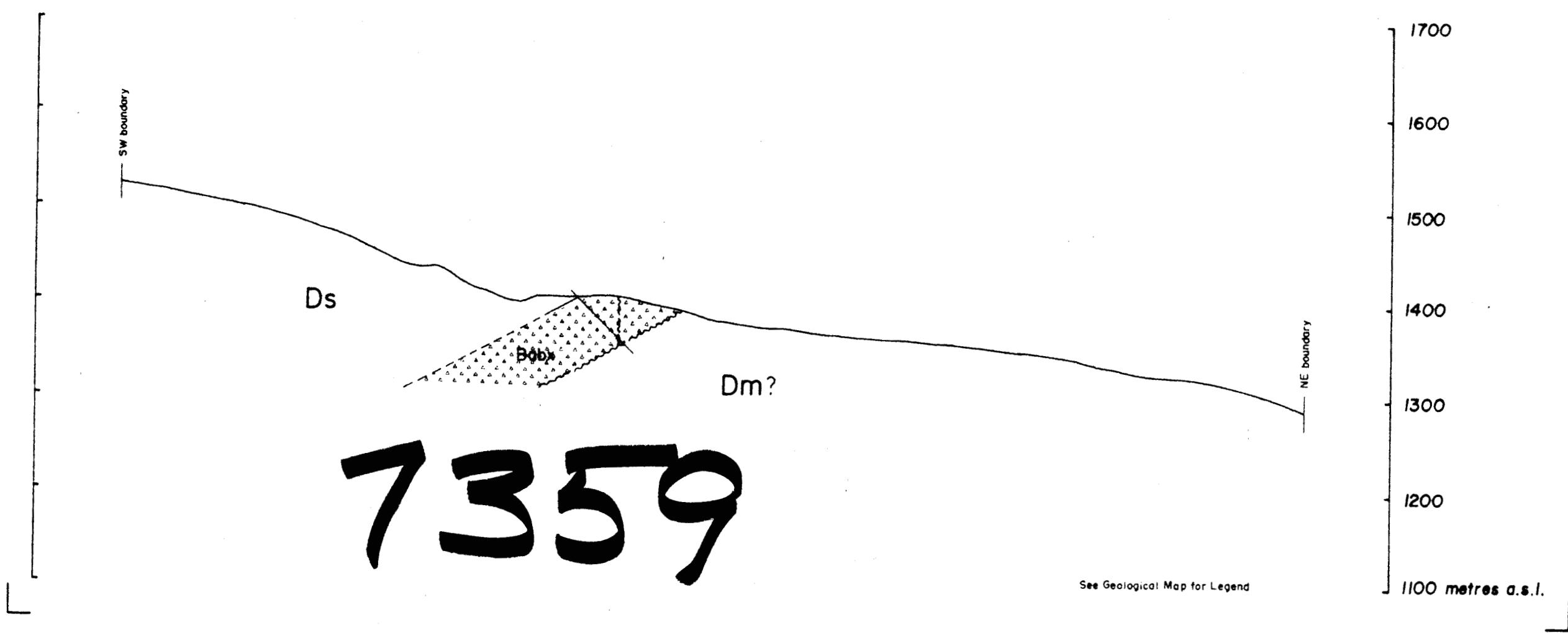
Bondar Clegg - 58 samples @ \$13.15 ea. (Ba & Sa)	\$ 762.30	
Acme Analytical Labs. - 14 samples @ \$6.00/ea	90.00	
Cantest Ltd. - 58 samples @ \$7.94 ea.) (BaSo ₄ , BaCo ₃ , SG))		
- 4 samples @ \$25/ea. (Spec))	<u>560.30</u>	1,412.60
*McElhanney Surveying & Engineering Ltd. - Orthophoto contour plan of MO area. (Cost split 50/50 between MO property and adjacent MUN property)		2,752.50
*Vancouver Petrographics - Thin sections/staining		94.00
Telephone - B. C. Tel		12.00
*C.P. Air Freight		344.80
*Copying, Printing		50.30
Drafting - 20.3 hrs. @ \$12.00/hour		244.00
* <u>Air Fares</u> - (Vancouver-Fort Nelson-return June (3)) { " " " Sept. (4) } (D. Colley - Hornby Island-Vancouver return))		<u>1,180.28</u>
	TOTAL	<u><u>\$15,320.95</u></u>

*Costs shared and prorated with MUN property programme.

NORTH-EAST B.C.
BARITE-MO GROUP
GEOLOGICAL SECTION
LINE 1+00 NW

Scale 1:5000 horizontal
" " vertical

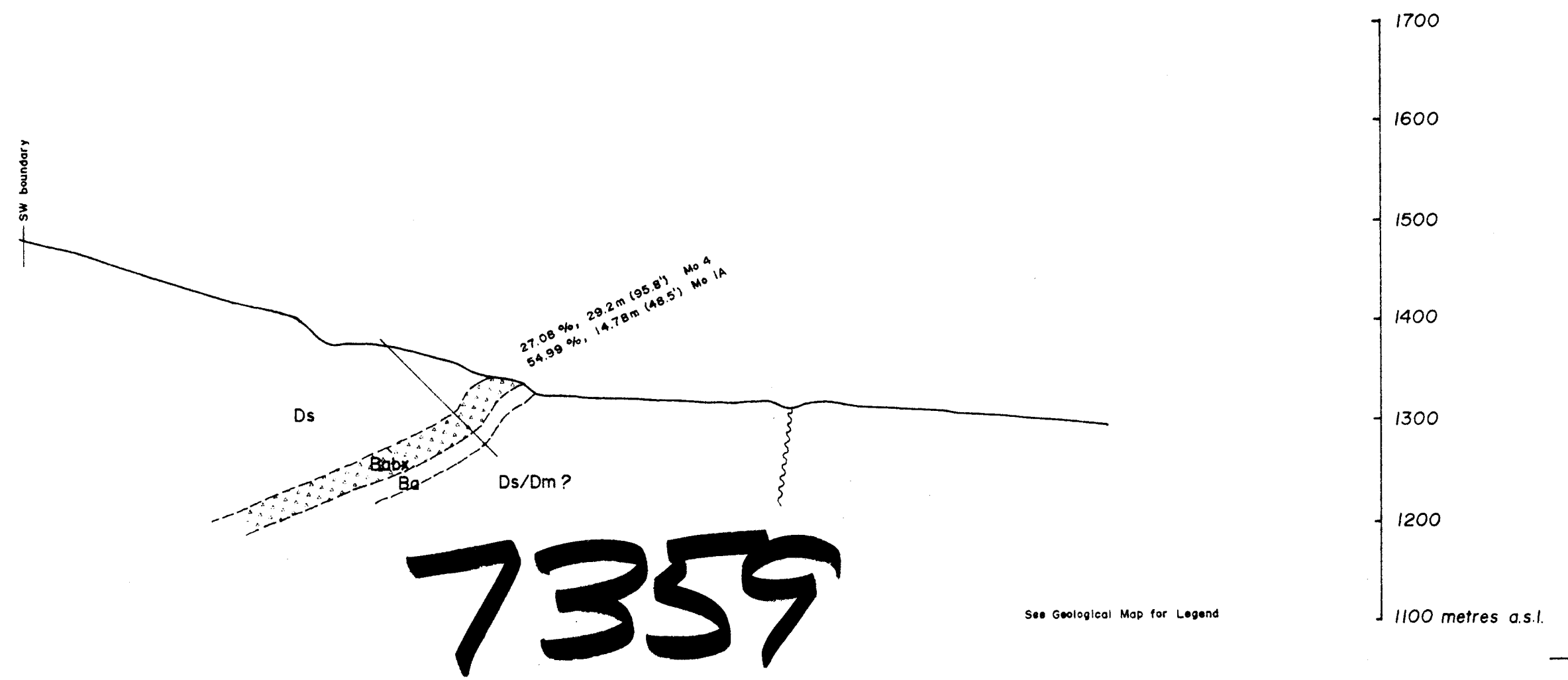
Oct. 78



NORTH-EAST B.C.
BARITE-MO GROUP
GEOLOGICAL SECTION
LINE 0+50 NW

Scale 1:5000 horizontal
" " vertical

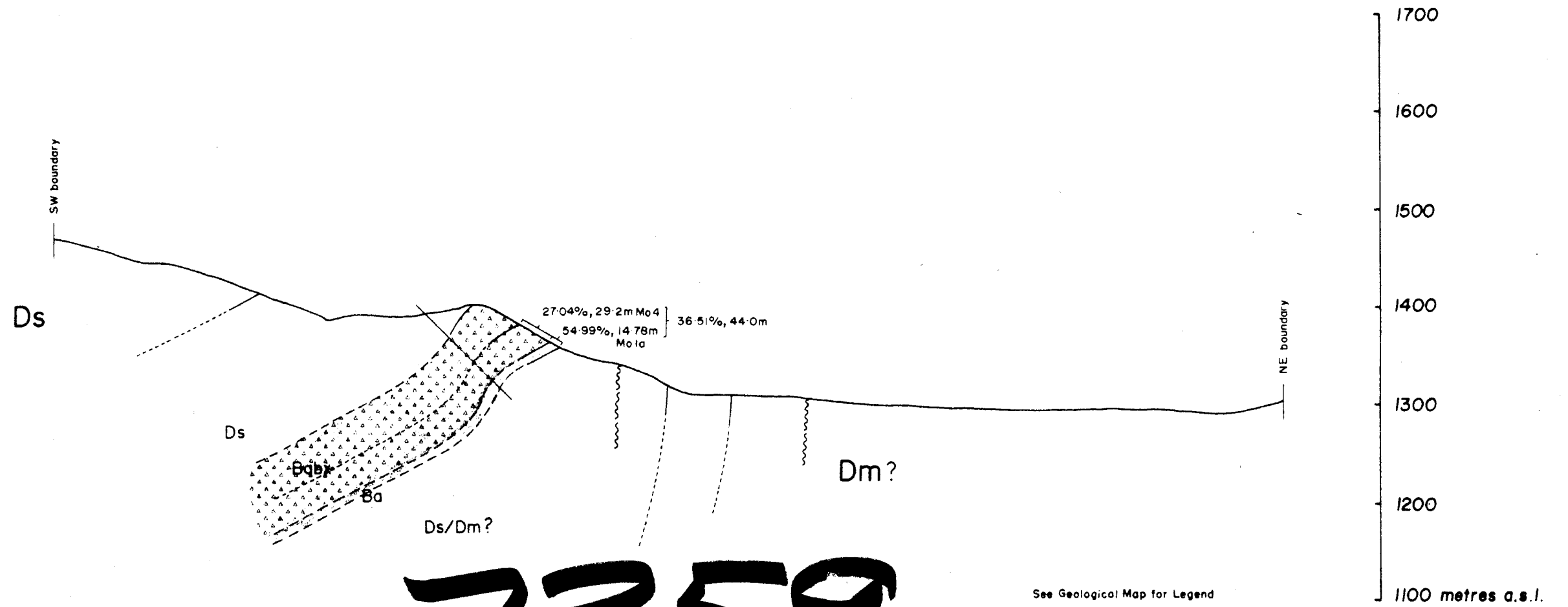
Oct. 78



See Geological Map for Legend

NORTH-EAST B.C.
 BARITE-MO GROUP
 GEOLOGICAL SECTION
 LINE 0+00 NW
 Scale 1:5000 horizontal
 " " vertical

Oct. 78



7359

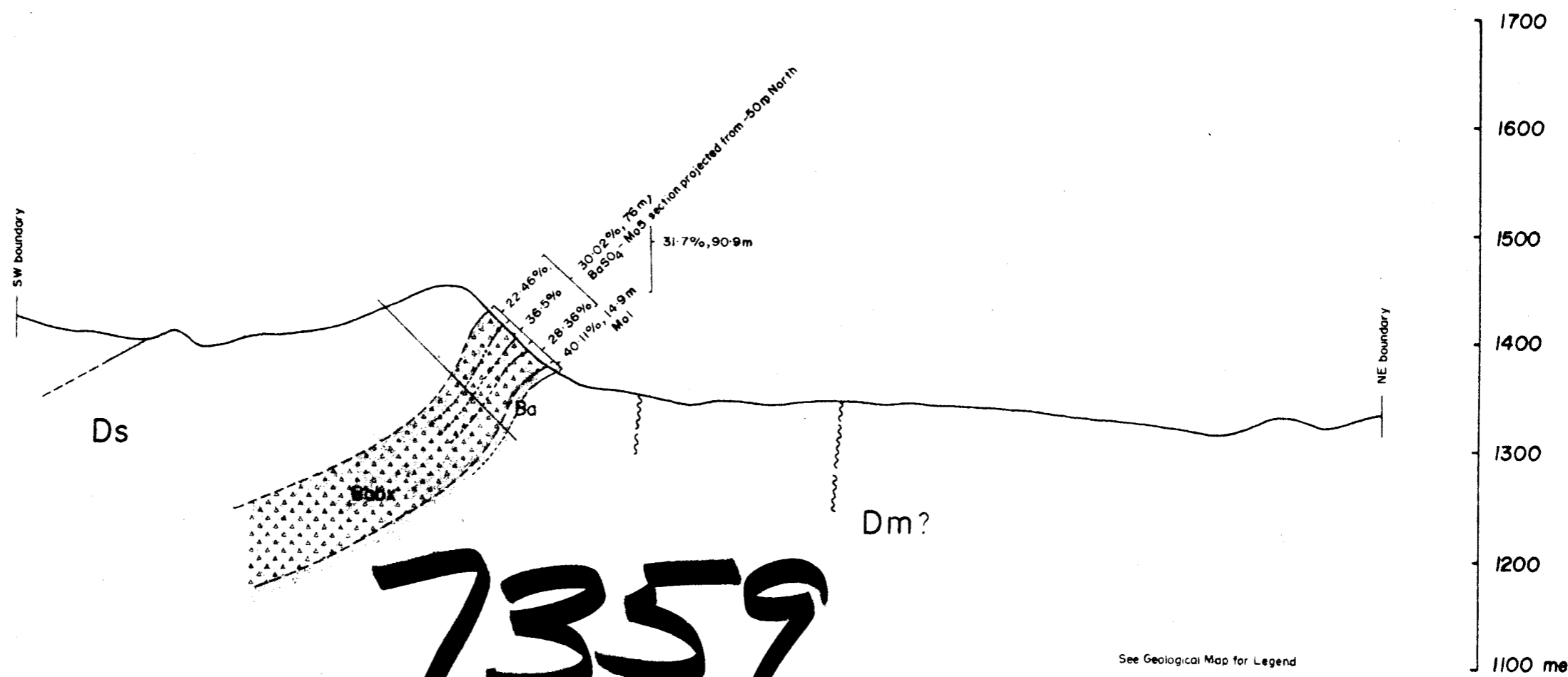
See Geological Map for Legend

1100 metres a.s.l.

NORTH-EAST B.C.
BARITE-MO GROUP
GEOLOGICAL SECTION
LINE 1+00 SE

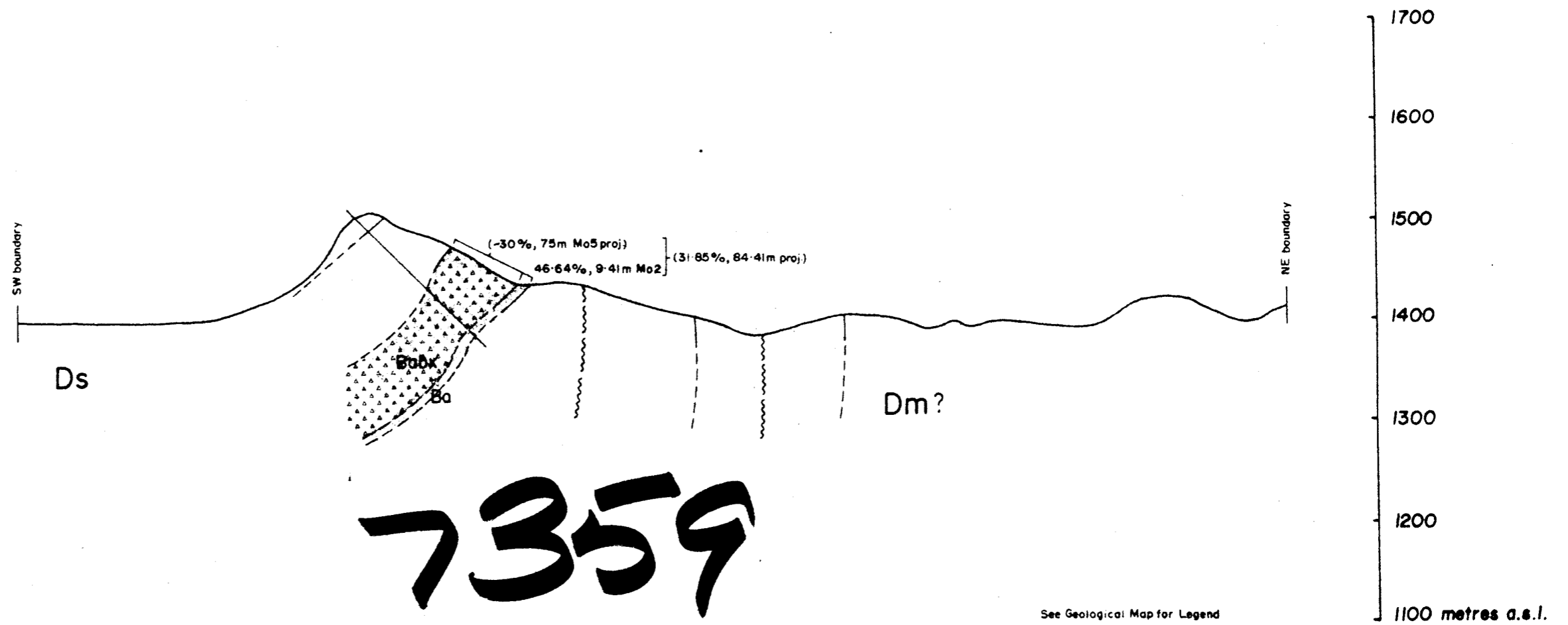
Scale 1:5000 horizontal
" " vertical

Oct. 78



NORTH-EAST B.C.
 BARITE-MO GROUP
 GEOLOGICAL SECTION
 LINE 2+00 SE
 Scale 1:5000 horizontal
 " " vertical

Oct. 78



7359

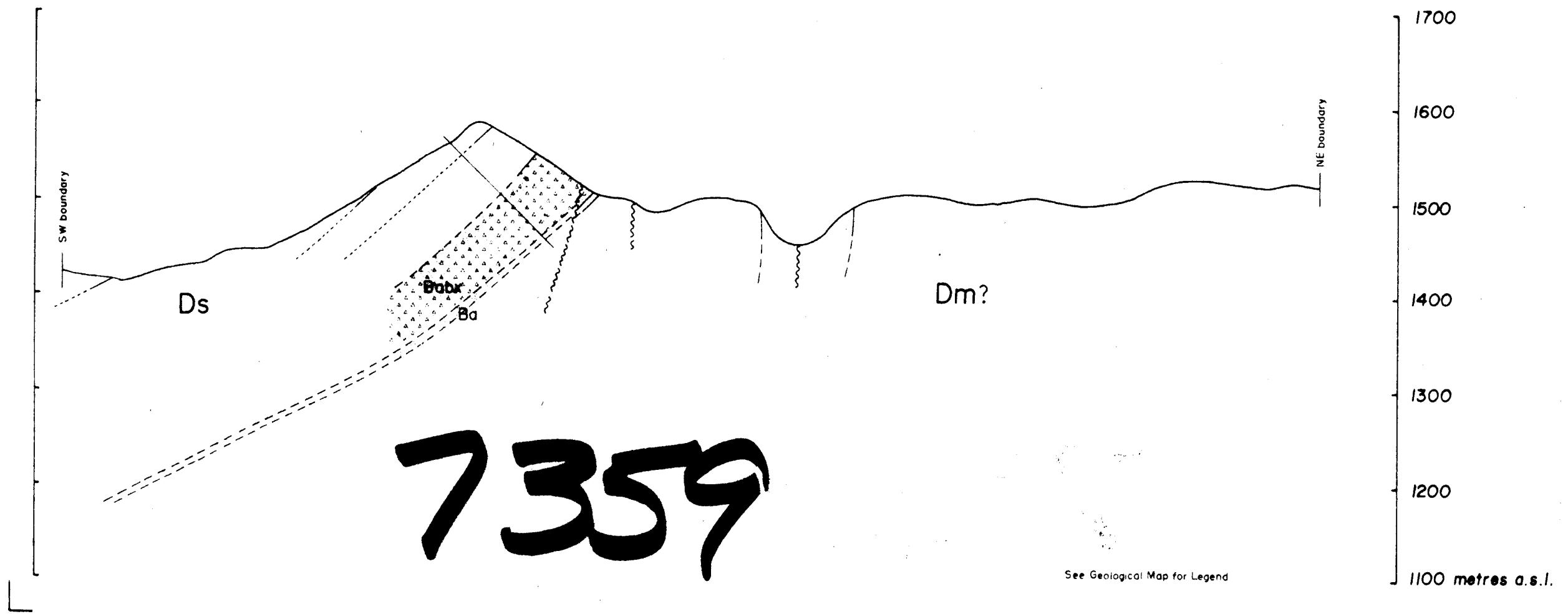
See Geological Map for Legend

1100 metres a.s.l.

NORTH-EAST B.C.
BARITE-MO GROUP
GEOLOGICAL SECTION
LINE 3+00 SE

Scale 1:5000 horizontal
" " vertical

Oct. 78





7359

LEGEND

LOWER CARBONIFEROUS AND DEVONIAN

Db BESA RIVER FORMATION
DARK SHALES

DEVONIAN

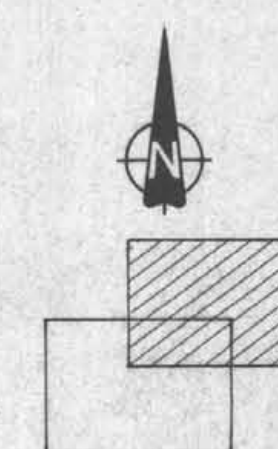
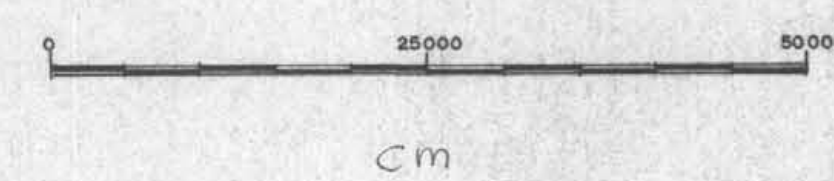
Dsd UNDIFFERENTIATED DUNEDIN AND STONE FORMATIONS:
DOMINANTLY DOLOMITES OF STONE FORMATION: INCLUDES
BEDDED BARITE AND BARITE BRECCIA

Ds WOKKPASH FORMATION
ORANGE WEATHERING DOLOMITES AND SANDSTONES

Dm MUNCHO - MCCONNELL FORMATION
DOLOMITE

GEOLOGICAL CONTACT (DEFINED, ASSUMED)

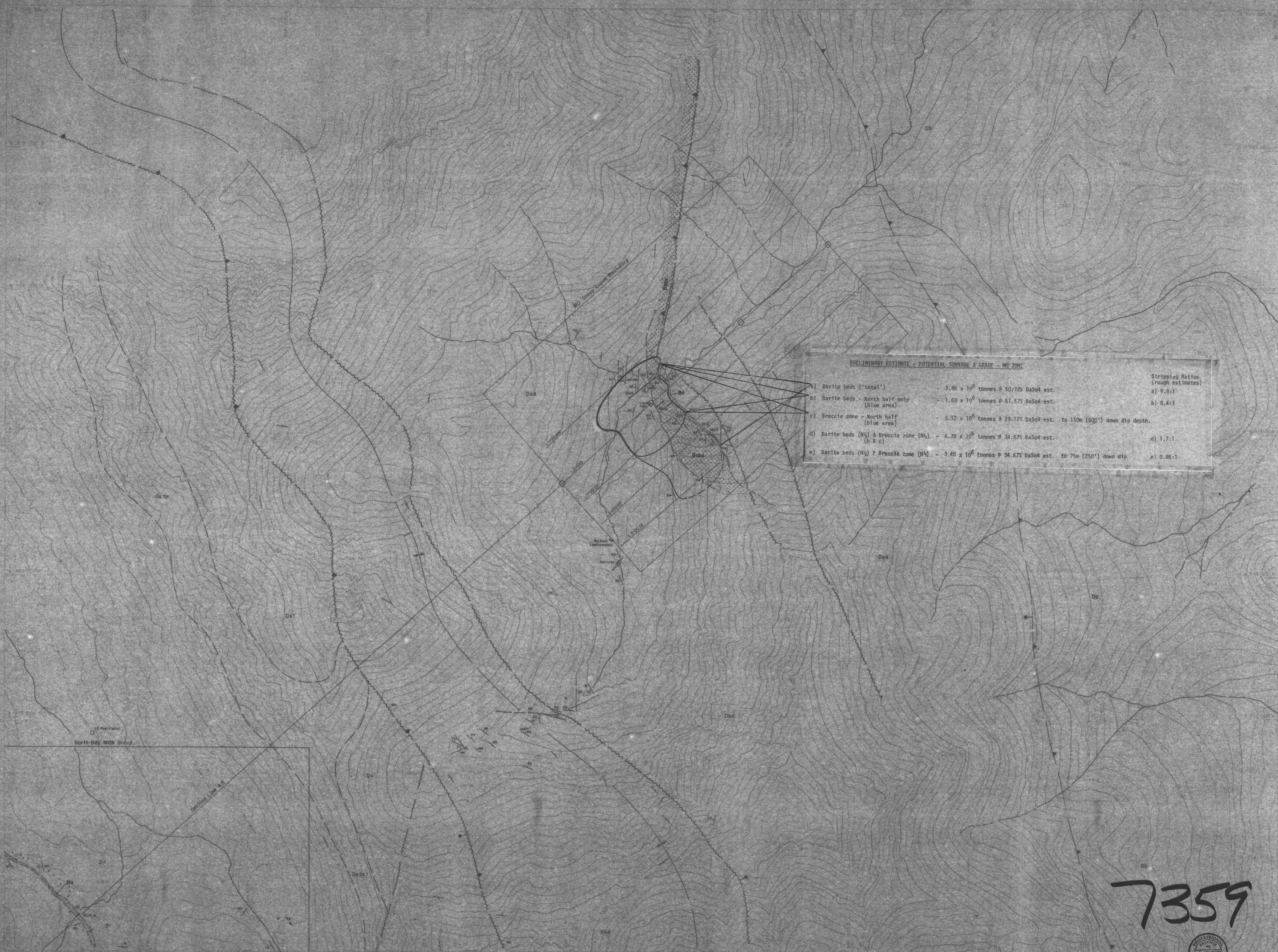
BEDS
JOINTS, FRACTURES
FOLD AXES (SYNCLINAL, ANTICLINAL)
THRUST (DEFINED, ASSUMED) - TEETH INDICATE DIP
FAULT (DEFINED, ASSUMED - SOLID CIRCLE SHOWS DOWNTROW SIDE)
BARITE MINERALISATION (FLOAT) x
SAMPLE SECTION
SINK HOLE
CLAIM POST



PRELIMINARY GEOLOGY
NORTH EASTERN B.C. BARITE PROJECT
MO GROUP
MUNCHO LAKE AREA B.C. 94N/4
WATSON & ASSOCIATES

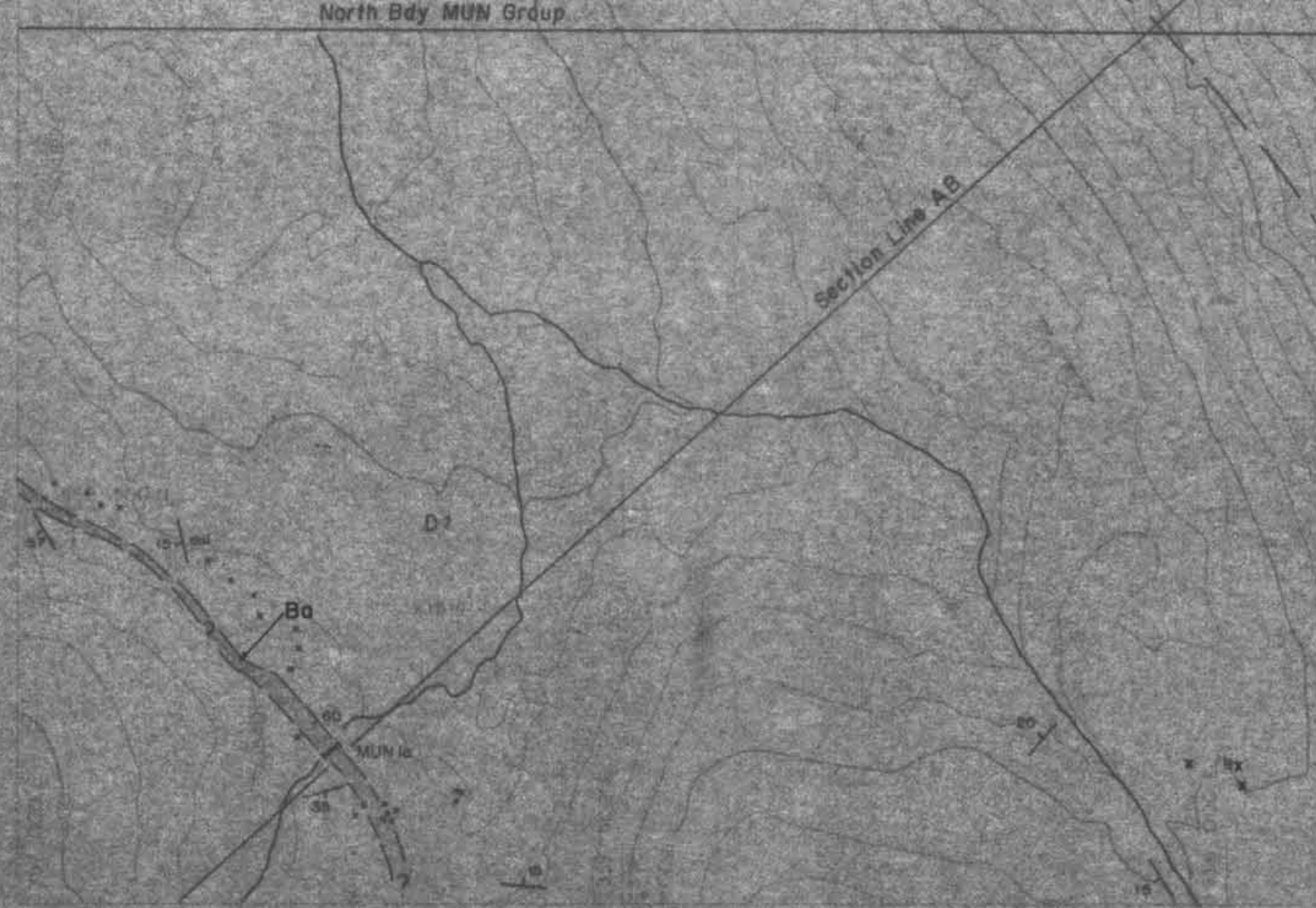
SCALE - 1:5000
DATE - OCTOBER 1978

C. I. - 20 METERS
M.E.S.L. Ref No. - 0817-1
PLAN 1



PRELIMINARY ESTIMATE - POTENTIAL TONNAGE & GRADE - MO ZONE

		Stripping Ratios (rough estimates)
a) Barite beds ('total')	- 2.86 x 10 ⁶ tonnes @ 50.72% BaSO ₄ est.	a) 9.8:1
b) Barite beds - North half only (blue area)	- 1.68 x 10 ⁶ tonnes @ 51.57% BaSO ₄ est.	b) 8.4:1
c) Breccia zone - North half (blue area)	- 5.12 x 10 ⁶ tonnes @ 29.12% BaSO ₄ est. to 150m (500') down dip depth.	
d) Barite beds (N _{1/2}) & Breccia zone (N _{1/2}) (b, c)	- 6.79 x 10 ⁶ tonnes @ 34.67% BaSO ₄ est.	d) 1.7:1
e) Barite beds (N _{1/2}) & Breccia zone (N _{1/2})	- 3.40 x 10 ⁶ tonnes @ 34.67% BaSO ₄ est. to 75m (250') down dip.	e) 0.86:1



LEGEND

LOWER CARBONIFEROUS AND DEVONIAN

D_r BESA RIVER FORMATION
DARK SHALES

DEVONIAN

D_{ad} UNDIFFERENTIATED DUNEDIN AND STONE FORMATIONS:
DOMINANTLY DOLOMITES OF STONE FORMATION: INCLUDES
BEDDED BARITE **D_{db}** AND BARITE BRECCIA **D_{dbx}**

D_w WOKKPASH FORMATION
ORANGE WEATHERING DOLOMITES AND SANDSTONES

D_m MUNCHO - MCCONNELL FORMATION
DOLOMITE

GEOLOGICAL CONTACT (DEFINED, ASSUMED)

- BEDS
- JOINTS, FRACTURES
- FOLD AXES (SYNCLINAL, ANTICLINAL)
- THRUST (DEFINED, ASSUMED) - TEETH INDICATE DIP
- FAULT (DEFINED, ASSUMED - SOLID CIRCLE SHOWS DOWNTROW SIDE)
- BARITE MINERALISATION (FLOAT)
- SAMPLE SECTION
- SINK HOLE
- CLAIM POST

7359

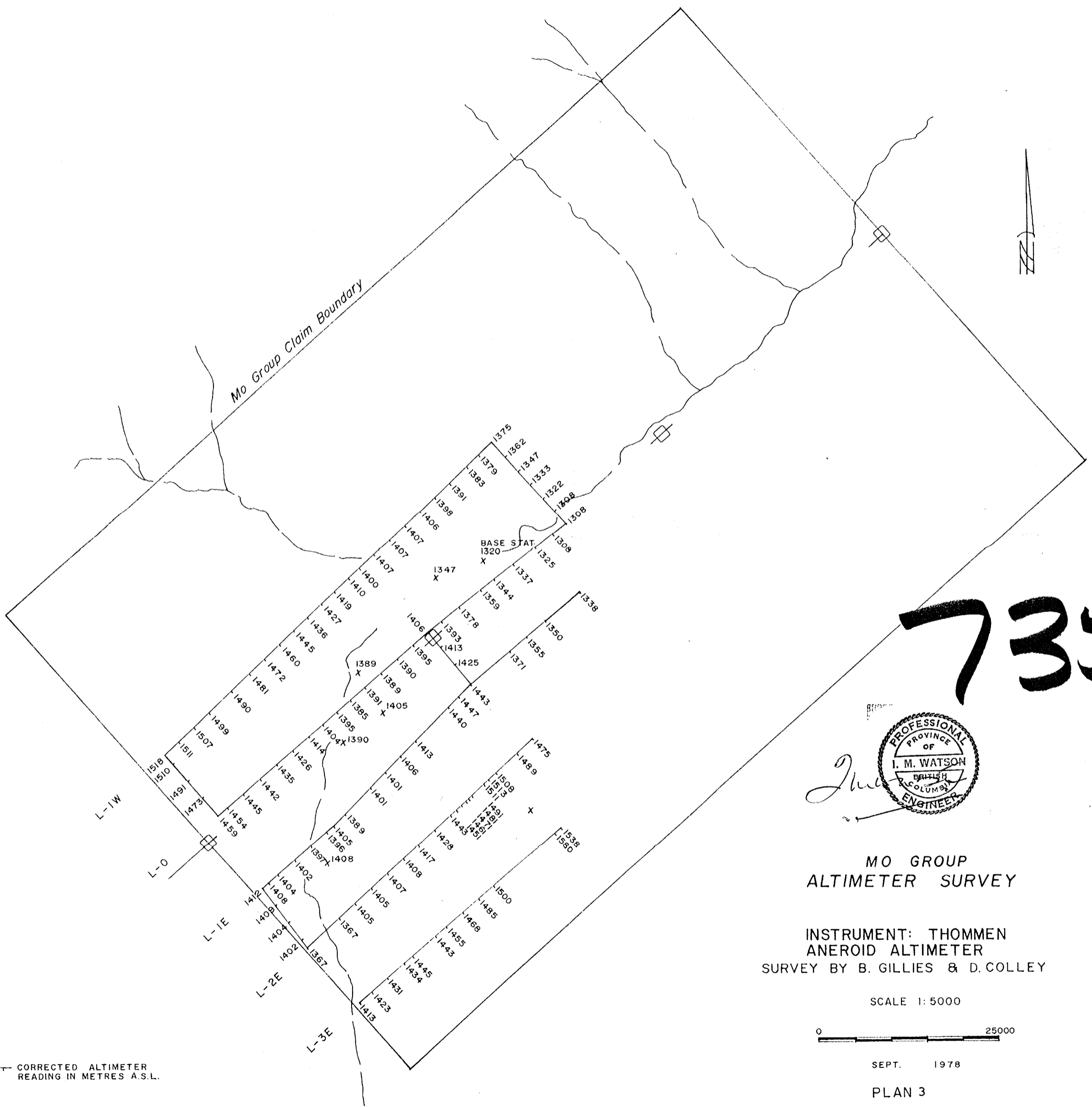
POTENTIAL RESERVES ESTIMATE
PRELIMINARY GEOLOGY

NORTH EASTERN B.C. BARITE PROJECT
MO GROUP

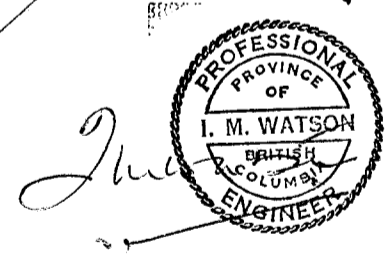
MUNCHO LAKE AREA B.C. 94N/4
WATSON & ASSOCIATES

SCALE - 1:5000
DATE - OCTOBER 1979

D. J. 20 METERS
M.E.S.L. Ref No: 06517-1
PLAN 2



7357



MO GROUP
ALTIMETER SURVEY

INSTRUMENT: THOMMEN
ANEROID ALTIMETER
SURVEY BY B. GILLIES & D. COLLEY

SCALE 1:5000

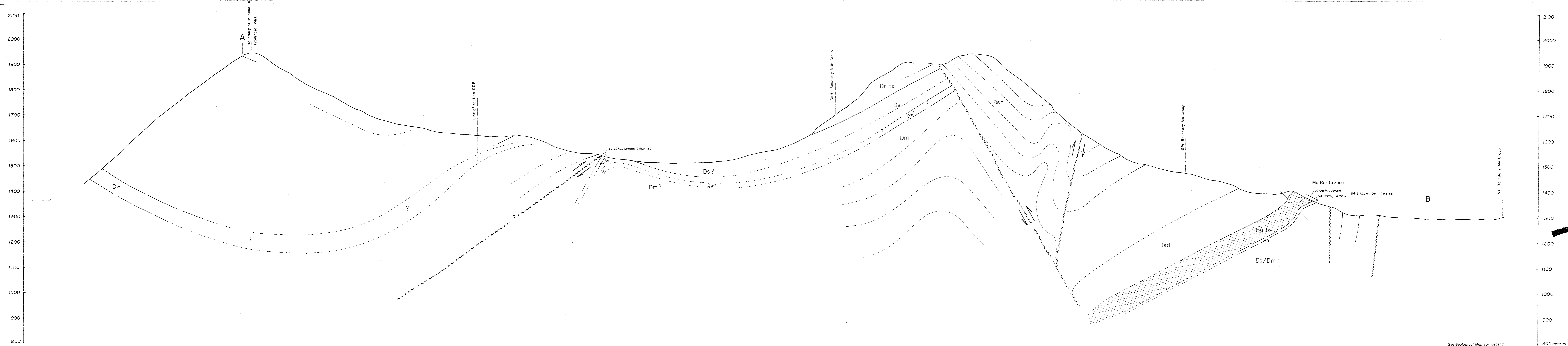
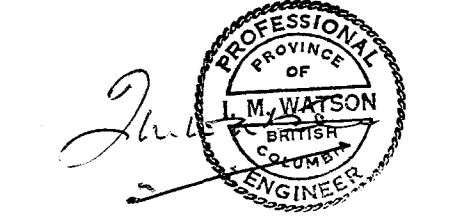


SEPT. 1978

PLAN 3

--- CORRECTED ALTIMETER
READING IN METRES A.S.L.

NORTH - EAST B.C. BARITE PROJECT
 MO & MUN GROUPS
 GEOLOGICAL SECTION
 LINE AB
 Scale 1:5000 horizontal
 " " vertical



See Geological Map for Legend

7359