

GIBRALTAR MINES PROPERTY - McLEESE LAKE  
 SUMMARY REPORT OF EXPLORATION (1967)  
 MTS 93 B 8/9



TABLE OF CONTENTS

	<u>Page</u>
SUMMARY AND RECOMMENDATIONS.....	1
INTRODUCTION.....	1,2
GEOLOGY	
(a) General Geology.....	2,3
(b) Structure.....	3
(c) Alteration.....	3
MINERALIZATION AND ORE CONTROLS.....	3
EXPLORATION RESULTS PRIOR TO 1967.....	3,4
EXPLORATION RESULTS - 1967.....	4
(a) Drilling.....	4
(b) Line Cutting.....	4
(c) I.P. Magnetometer and Geochemical Surveys.....	5
(d) Drilling - Second Stage	
(1) Zone A.....	5
(2) Zone B.....	5
(3) Zones C-1 and C-2.....	5,6
(4) Zone D.....	6
(5) Zone E.....	6
(e) Claim Surveys.....	7
ORE RESERVES.....	7
CONCLUSIONS.....	8
REFERENCES.....	8
ATTACHMENTS.....	8

GIBRALTAR MINES PROPERTY--McLEESE LAKE  
SUMMARY REPORT OF EXPLORATION (1967)  
NTS 93 B 8/9

SUMMARY AND RECOMMENDATIONS

Cominco optioned the Gibraltar copper property on May 16, 1966. From May 16 to September 20, 1966, Cominco conducted geological mapping, geochemical surveying, I.P. surveying, drilling and a small amount of trenching. Results from this, and previous work, indicated a reserve of 14 million tons grading 0.52% Cu. Open pit mining of this reserve would involve a stripping ratio of approximately 4:1.

On April 1, 1967, Cominco, via an agreement with Mitsubishi Mining, again undertook field work on the Gibraltar property. Work began with an initial diamond drill program consisting of 2,412 feet in six holes. This was followed by a detailed search of claim locations, an extensive I.P. survey, plus minor geochemical soil sampling and magnetometer surveying. Follow-up drill testing of the I.P. anomalies consisted of 2,283 feet in eight holes, which completed the 1967 program. Field work finished on November 10, 1967.

Although several promising I.P. anomalies were found, some of which were supported by geochemical and magnetometer surveys, subsequent drilling failed to reveal mineralization of economic importance. A few untested possibilities remain, but information collected during the past two years indicates that no further work by Cominco is justified under present conditions.

INTRODUCTION

The history of the Gibraltar property is given in detail in a report dated March 13, 1967 by Cominco Senior Geologist, D. W. Heddle and is summarized below:-

Situated about 35 miles north of Williams Lake, and about 5 miles east of the Cariboo highway, the Gibraltar property consists of 220 located claims.

The main showing on the property was discovered about 1927, and was reported in the B.C. Minister of Mines 1928 report as the Hill property. The first significant exploration was carried out in the late 1950's. The property was brought to Cominco's attention in 1960, but was turned down following a field examination.

The only significant known copper showing on the property was exposed in Granite (Copper) Creek. A 110' drift was driven on the showing in the late 1950's and about 4,000' of drilling was done during that period. Cominco's examination and sampling in 1960 attributed the high grade adit material (1.3% Cu) to anomalous secondary chalcocite. Drilling at that time indicated the existence of a large volume of low grade (0.3% Cu) mineralization, but no evidence was observed to indicate that significant amounts of higher grade material could be located within the then drilled area or on adjoining ground.

Various organizations carried on sporadic programs between 1960 and 1965. The work included mapping, geophysics, trenching, and drilling which was mainly concentrated on a relatively small area near the original adit zone. Keevil Mining carried out the most comprehensive program in 1962 and located geochemically anomalous zones to the east of the adit zone. In 1963 Huntco Surveys performed an I.P. survey covering a relatively small area around the adit which indicated a narrow anomaly that broadened and was open for extension to the northwest. Late in 1965 Gibraltar Mines commenced a major drilling program to test this anomaly.

Several previous holes had encountered attractive copper values, but these intersections were generally restricted by low grade material cut by adjacent holes. The prospect of outlining a body of minable grade ore in the adit area did not look promising.

Late in 1965 and early in 1966 Gibraltar Mines drilled several additional holes in the immediate adit area, but as these intersected no significant copper mineralization, the program was expanded to include the geochemically anomalous zone to the east of the adit and also the broad I.P. anomaly area extending northwesterly from the adit. Results from northwest of the adit yielded the encouragement which resulted in Cominco optioning the property in May, 1966, after Gibraltar Mines had completed 11,000 feet of their 1965 drill program. Between May 16 and September 30, Cominco carried out a program of mapping, geochemical surveying, I.P. surveying, drilling and a small amount of trenching. A total of 10,200' of drilling was completed in 19 holes. Results of this and previous work indicated reserves totalling approximately 14 million tons grading 0.5% Cu having an open pit strip ratio of approximately 4:1.

In 1967 an agreement involving Gibraltar, Cominco and Mitsubishi Mining was concluded whereby exploration would be continued on the property. The 1967 program was financed by Mitsubishi Mining and managed by Cominco personnel.

*Gibraltar's copy attached as above. G.R.*

The 1967 program consisted mainly of drilling and I.P. surveying. Geochemical and magnetometer surveys were also conducted in local areas as a supplement to the I.P. work and as a follow-up to 1966 coverage. A total of 4,695 feet of BQ wire line drilling was completed in 14 holes.

A substantial part of the 1967 work involved line cutting, claim location checks, and fill in staking. Drilling and field work was completed November 10, 1967.

## GEOLOGY

### (a) General Geology

Jurassic quartz diorite intrudes Permian and Triassic sedimentary and volcanic rocks in the general area of the Gibraltar Mines property. Tertiary sediments and volcanics cover extensive areas of the older rocks. The major portion of the Gibraltar claim group is underlain almost entirely by quartz diorite. An inferred extension of the Fraser River fault system runs through the west side of the intrusive body in the vicinity of Cuisson Lake. Outcrop is sparse with many large areas having none at all.

On the basis of subtle statistical differences in colour, texture, percentage of mineral constituents and degree and type of alteration, four varieties of quartz diorite have been mapped.

- (1) Typical quartz diorite - pale creamy, yellowish green, medium to coarse grained; composed of epidotized plagioclase, irregular to prismatic chlorite pseudomorphs after amphibole, and contains 10-20% granular quartz.
- (2) Mafic quartz diorite - light green, fine to medium grained; contains 10-20% chlorite and normally less than 10% interstitial quartz.
- (3) Feldspathic quartz diorite - intergradational between typical and mafic quartz diorite. Buff coloured, it generally has a lack of epidotized feldspar, and has interstitial type quartz.
- (4) Silicified quartz diorite - creamy-grey, 15-25% granular quartz, and numerous intersecting veins and veinlets of quartz.

Zones of sericite-chlorite schist represent highly sheared quartz diorite. In the southern part of the mapped area, granodiorite intrusions are found. They appear to represent later, but genetically related bodies.

The intruded rocks consist mainly of metamorphosed calcareous sediments. Conglomerate, limestone, laminated chlorite carbonate schists, and skarn were noted in several areas.

(b) Structure

The regional grain is northwest-southeast and considerable block faulting is suggested. The most consistent joint sets have attitudes of N 25° E by 70° NW and N 50° W by 70° SW. Locally sheared zones up to 30 feet wide with quartz veins and minor associated chalcopryrite and pyrite occurring parallel to the second joint set. Primary foliation is locally well developed. It strikes northwesterly and dips at shallow to moderate angles to the southwest.

(c) Alteration

The most widespread alteration is extreme chloritization of amphibole and extensive epidotization of plagioclase. Juhas believes the alteration to be deuteric and thus there is no reason to expect associated concentrations of sulphide minerals in the quartz diorite pluton. It is believed that sulphide mineralization represents one of the final phases in the history of the pluton. Therefore, residual quartz and sulphide minerals were injected into the sheared zones in the already consolidated and deuterically altered quartz diorite.

MINERALIZATION AND ORE CONTROLS

Pyrite and chalcopryrite are the predominant sulphides. Secondary chalcocite occurs locally and occasional molybdenite has been seen. Assays for molybdenite in the best mineralized sections averaged less than 0.01% MoS<sub>2</sub>.

Surface mapping shows copper mineralization in widely separated localities, but it is nowhere abundant. It is usually observed as occasional malachite films on joint or shear planes, and as blebs of chalcocite in quartz veins. The main showings in the area (i.e. Adit zone, Polyanna showing, and southwest of Granite Lake) generally represent sheared zones which have been invaded by quartz veins and associated sulphides. In the adit zone massive concordant pyrite bands up to 2 feet in width occur in schistose rocks.

Sulphide mineralization is apparently controlled by foliation, and drill results have indicated that better concentrations of sulphides are localized within sharp warps in the foliation such as that occurring in the immediate vicinity of the adit. This concept was supported by drilling results in 1966.

EXPLORATION RESULTS PRIOR TO 1967

Prior to 1966 exploration was restricted to a relatively small area adjacent to the adit. In 1962 Kcevil Mining conducted a program of mapping, soil sampling, and I.P. which covered an area from 12 W to 44 E and from 44 N to 16 S on the present grid. The only significant results were two large geochemical anomalies lying 2,000' and 4,500' east of the adit.

In 1963 Huntco Ltd. carried out another I.P. survey, this time restricted from 8 W to 12 E and from 10 N to 10 S. They discovered a narrow anomalous zone that broadened to the west. It was on this anomaly that Gibraltar Mines commenced their 1966 drilling program. Cominco optioned Gibraltar's property during the drilling of holes B-19 and B-20 and the 1966 Gibraltar-Cominco drilling program indicated a mineralized zone of approximately 14 million tons grading 0.5% Cu.

Also in 1966 Cominco conducted geological mapping and geochemical surveying which covered approximately 75% of the Gibraltar property, as well as I.P. surveying in the adit area (45 N to 20 S and 40 W to 64 E). Mapping turned up no areas of apparent promise, but the I.P. survey indicated several anomalous zones in the adit area. Holes C-30, C-31, C-34 and C-35 were drilled to test I.P. anomalies but failed to encounter significant copper mineralization. The geochemical sampling located scattered anomalies reflecting the sparse copper mineralization observed in outcrops over a wide area. Holes C-36 and C-37, drilled to test two of these anomalies, encountered only trace amounts of chalcopyrite.

#### EXPLORATION RESULTS - 1967

Mitsubishi Metal Mines entered the Cominco-Gibraltar agreement in March of 1967. <sup>participated in</sup> Through terms of this agreement, Mitsubishi provided an initial \$97,000 for the second stage field program. In return, a new company to be formed at a later stage would issue 60% of its authorized common shares to Cominco-Mitsubishi (Cominco 36%, Mitsubishi 24%) and 40% to Gibraltar. *Gibraltar's copy attached as above. AMR*

Several phases were involved in the 1967 program, the first of which consisted of drilling in the immediate adit area with the objective of expanding known reserves. As results from this work were essentially negative, drilling was suspended in favour of undertaking a search for new centres of mineralization which might occur elsewhere on the property.

The existing grid system was expanded with the cutting of an additional 63 miles of line. This grid was used for an extensive I.P. survey with local supplementary magnetometer and geochemical coverage. It was also used as a survey control for subsequent claim location checks and fill in staking.

The I.P. survey, contracted by McPhar Geophysics, covered the remaining areas of the property not surveyed in 1966. Magnetometer and geochemical surveys were carried out mainly on a spot check basis in areas of significant I.P. response. Geochemical sampling was done partly to fill in and substantiate sampling done in 1966.

A second stage of drilling was then initiated on the basis of geophysical and geochemical results with consideration being given to known geology.

The various phases of work are described below in more detail:-

#### (a) Drilling - First Stage

An attempt to extend the adit zone involved the drilling of holes MM-1 to MM-6, inclusive, which were collared in a rough semi-circle to the north and east of the adit. A total of 2,412 feet was completed but no intersections of sufficient length or grade were obtained to expand the known reserves. The best intersection was 60 feet of 0.30% copper in MM-1, although a 10 foot section of 0.43% copper was encountered in MM-1, and a 10 foot section of 0.43% Cu in MM-2.

#### (b) Line cutting

Line cutting in 1967 was an extension of the grid existing in the vicinity of the adit. Base lines were run N 45° W, and cross lines perpendicular to them. Base lines and important connecting cross lines were guided by transit and picket, a combination that gave maximum speed and reasonable accuracy. Cross lines were turned off with the transit and run by picket. A compass was used where picket lines intersected a tree of merchantable size. This combination of techniques gave reasonable accuracy and good control on subsequent mapping and surveying. A total of 63 line-miles was added to the grid in 1967.

(c) I.P., Magnetometer and Geochemical Surveys

The 1967 I.P. survey was carried out using a McPhar frequency type system. Lines were run NE-SW at 1,000 foot spacings, and measurements taken at 300 foot electrode intervals with three receiver readings from each transmitter location. (i.e. n-1, 2 and 3). In addition several intermediate lines were surveyed to detail the stronger anomalies and the more interesting features were checked with 200 foot electrode intervals.

Anomalous effects were measured on every traverse. They ranged from very broad weak zones to narrow strong features. Although there are several isolated anomalies, the major responses could be correlated into six main zones.

Magnetometer surveying was carried out on a spot check basis as I.P. results were obtained and several profiles were run over the adit area for purposes of comparison. Magnetometer stations were spaced at 100 foot intervals and in all, 18 line miles were covered.

Geochemical sampling was also conducted over areas of interesting I.P. response, to fill in and substantiate sampling carried out in 1966. Samples were taken at 100 foot intervals on the grid system. Several anomalies were defined in the nine line miles that were sampled.

On the basis of the combined I.P., magnetometer, and geochemical results, plus a study of the available geological data, a second stage of drilling was initiated.

(d) Drilling - Second Stage

(1) I.P. Zone A (10E to 40E, 30S to 55S)

McPhar recommended a drill test on line 35E, with an inclined hole to pass under 51S at a vertical depth of about 200 feet. They suggested that the weak anomaly could have been caused by three alternatives:-

- (i) minor metallic mineralization
- (ii) rock type change (granite to skarn)
- (iii) altered mineralized granite similar to the known copper zone

Three holes were collared to test Zone A. MM-11 encountered pyrite of sufficient quantity to explain the anomaly in that area (40E, 31S) but holes MM-12 and MM-13 failed to reach bedrock after encountering up to 160' of overburden.

(2) I.P. Zone B (50E to 100E, 30N to 45N).

Located near Granite Lake, this zone was suggested to be the extension of a silicified zone indicated by the Cominco I.P. survey of 1966. Drill hole MM-9 tested this zone at 90E, 33N. The best intersection was 20 feet of 0.27% Cu. Silicification was very predominant throughout the length of the hole.

(3) I.P. Zones C-1 and C-2 (80E to 150E, 85S to 95S; and 115E to 170E, 65S to 75S)

These are parallel and 1,000 to 1,500 feet apart. On the basis of I.P. and magnetometer information and a limited amount of geological information, McPhar concluded that both features were in the skarn series at or near the contact with the granite rocks to the northeast. Three holes were recommended. In the spring of 1967, Earlcree had drilled a hole on a two-claim group in the area of "C-2". They encountered chlorite schist with heavily disseminated pyrite but only negligible amounts of chalcopyrite. Hole MM-8 was drilled to test the more promising C-1 zone. It encountered graphite and graphitic black shale followed by fault gouge and diorite.

This intersection indicates that the I.P. response arose from the highly sheared graphitic sedimentary rocks at or near the contact with the diorite mass. The parallel alignment of the I.P. anomaly with the inferred extension of the Fraser River Fault system passing through Cuisson Lake adds support to this interpretation.

(4) Zone D (120E to 150E, 135S to 147S)

This area is underlain by Tertiary basalt, and the I.P. response was interpreted to originate below this capping. Drill hole MM-10 entered a clay bed at least 100' in thickness after passing through 176 feet of the overlying basalt. Due to drilling difficulties caused by the clay, the hole was abandoned prior to reaching the underlying bedrock surface. It now appears more probable that the I.P. response was caused by the clay bed rather than by mineralization at a lower depth.

(5) Zone E (170E-190E, 95S-110S)

Apparently this zone is controlled by the assumed fault structure responsible for the topographic low through Cuisson Lake. For this reason, and as a large part of the anomaly is located outside the Gibraltar claim boundary, Zone E was not drill tested.

In addition to the holes drilled on the basis of 1967 I.P. information, one final hole (MM-14) was drilled back in the vicinity of the adit zone to test a Cominco 1966 I.P. anomaly. This hole, like MM-1 to MM-6, was an attempt to expand the known reserves but only scattered copper mineralization was encountered with no section grading over 0.2% Cu.

In the second stage drilling a total of 2,283 feet was completed in 8 holes.

GIBRALTAR PROPERTY  
1967 DRILL HOLE SUMMARY

Hole No.	Location	Elev.	Bearing	Dip	Depth	Intersections		Length	% Cu
						From	To		
MM-1	4+00W 0+00N	2787	-	-90°	401'	76.5	- 96.5	20'	0.27
						130	- 150	20'	0.39
						110	- 170	60'	0.30
						180	- 190	10'	0.43
MM-2	4+00W 4+00N	2877	-	-90°	392'	300	- 310	10'	0.43
MM-3	0+00W 4+00N	2853	-	-90°	403'	307	- 311	4'	0.41
MM-4	4+00E 4+00N	2858	-	-90°	407'	310	- 330	20'	0.28
MM-5	7+65E 4+00N	2913	-	-90°	399'	274	- 287	13'	0.27
						373	- 375	2'	0.29
MM-6	8+15E 0+00N	2871	-	-90°	410'	270	- 290	20'	0.23
						312	- 318	6'	0.32
						330	- 350	20'	0.27
MM-7	120+00E 91+50S	2569	N45°E	-45°	104'	Did not reach bedrock.			
MM-8	120+00E 90+20S	2559	N45°E	-60°	400'	No sampling warranted.			
MM-9	90+00E 33+00N	--	N45°E	-45°	402'	234	- 254	20'	0.27
						304.5	- 306.5	2'	0.24
						389	- 400	11'	0.23

continued....

Hole No.	Location	Elev.	Bearing	Dip	Depth	Intersections		Length	% Cu
						From	To		
MM-10	140+00E 146+25S	--	N 45° E	-45°	319.5	No sampling warranted.			
MM-11	40+00E 31+00S	--	N 45° E	-45°	351'	341	- 351	10'	0.21
MM-12	35+00E 54+00S	--	N 45° E	-45°	143'	Did not reach bedrock.			
MM-13	35+00E 51+00S	--	--	-90°	160'	Did not reach bedrock.			
MM-14	0+00E 3+50S	2768	N 45° E	-45°	404'	170	- 180	10'	0.20
						265	- 275	10'	0.20
						360	- 370	10'	0.20

(e) Claim Surveys

The confusion caused by the large number of overlapping claims and intervening open fractions on the Gibraltar property necessitated a thorough ground survey and document search to adequately determine the actual claim boundaries. This involved locating the posts in the field and tying their position into the nearest picket on the grid system by either pace and compass or chain and compass. These locations were then plotted and the claim boundaries established by referring to the actual record forms issued for the claims involved. The work revealed that several claims were all or in part invalid due to prior staking, and also several internal fractions were discovered. Although most of these fractions were subsequently staked by Cominco personnel, others are still known to exist.

The Gibraltar property currently comprises a total of 220 claims of which 193 are held by Estey Agencies Ltd. and/or Gibraltar (P.T. Bowes). The remaining 27 claims were staked by Cominco in 1967 and presently are recorded in Cominco's name.

However, due to prior claim locations by outside interests and/or Gibraltar there are in fact 27 claims in the above 193 group which are apparently invalid and which probably will be allowed to lapse after further consultation with Gibraltar Mines.

ORE RESERVES

Work carried out in 1967 did not increase the known reserves, all of which occur in the general adit area. The main sulphide body is a tabular lens of elliptical outline measuring approximately 1,900 ft. X 700' X 120'. There are also several smaller overlapping zones of mineralization which underlie the main zone. These zones strike northwesterly and dip about 25° to the southwest. In addition there is a small deposit in the immediate area of the adit which measures approx. 400' X 150' X 100'.

Total reserves of the main zone plus the small deposit at the adit are approximately 14 million tons, grading 0.52% Cu, with an open pit strip ratio of roughly 4:1. Of this 14 million ton reserve, a total of 1.2 million tons grading 0.65% Cu would be available at a strip ratio of 1:1 and a total of 3.7 million tons grading 0.61% Cu at a ratio of 2:1. (A reserve of 0.5 million tons grading 0.60% Cu is available in the immediate adit area at a stripping ratio of less than 1:1).

No properties in B. C. are currently operating with the grade mentioned above, with stripping ratios approaching even 1:1. Granisle, with a comparable grade, is operating on a stripping ratio of 0.15:1.

The total reserve reported above could be increased by including the mineralization underlying the main zone, but to do so would increase the already high strip ratio, and also decrease the average grades. These underlying zones are open for extension to the northwest but their projection in this direction would almost immediately take them beyond the limits of the Gibraltar claims.

*This paragraph deleted on Gibraltar copy. G.H.*

*Figures to be used but not required in this report.*



CONCLUSIONS

The only area of significant copper mineralization discovered to date on the Gibraltar property is the general adit zone and its projected extension to the northwest.

The entire property has now been covered by geological mapping, geochemical soil sampling, and induced polarization surveying. Areas of possible interest have been further covered by magnetometer and the most promising targets drill tested without success. Although several small I.P. anomalies have not been tested, the negative results obtained from the larger anomalies discourages any further work of this nature.

It is concluded that no further work by Cominco on the Gibraltar property is justified at this time.

ATTACHMENTS

- (1) Location Map of Gibraltar Mines 1" = 4 mi.
- (2) Tenure file - as of December 11, 1967
- (3) Compilation Sections of Holes MM 8 - MM 13 1" = 200'
- (4) Gibraltar Mines - Claim Location Map 1" = 1000'
- (5) Gibraltar Mines - Geological Map by A.P. Juhas 1" = 1000'
- (6) Gibraltar Mines - Geochemical Map 1" = 1000'
- (7) Gibraltar Mines - Magnetometer Survey 1" = 1000'
- (8) Gibraltar Mines - Induced Polarization Survey 1" = 1000'
- (9) Drill Hole Logs (MM 1- MM 14) with sections 1" = 1000'

REFERENCES

- (1) Geology of the Gibraltar Mines Property, McLeese Lake, B. C. by A. P. Juhas, 1966.
- (2) Geophysical Report, Induced Polarisation and Resistivity Surveys, Gibraltar Mines Property, by G. D. Tildeman, 1966.
- (3) Report on Induced Polarisation and Resistivity Survey of the Gibraltar Mines Property, McLeese Lake Area, B. C. by McPhar Geophysics Ltd., 1967.
- (4) Geological Report, 1966 Exploration - Gibraltar Mines Property by D. W. Huddle, March 13, 1967.

*Delete on  
Gibaltas  
copy.  
2/1/68*

Report by *H. R. Murrell*  
H. R. Murrell

Endorsed by *J. Richardson*  
J. Richardson

HRM:mk

December 15, 1967

Distribution:

- Gibraltar Mines (1)
- Mitsubishi Metal Mining (2)
- Montreal Expl'n. Files (1)
- Western District Expl'n. (1) ✓
- Cominco Sr. Geophysicist (GDT) (1)

G I B R A L T A R

CLAIM DATA AS OF DEC. 11, 1967

<u>CLAIM NAME</u>	<u>TAG NO.</u>	<u>RECORD NO.</u>	<u>DATE LOCATED</u>	<u>DATE RECORDED</u>	<u>DUE DATE</u>
Xaire 1	424257	26004	July 19, 1962	July 23, 1962	July 23, 1969
Xaire 2	424258	26005	July 19, 1962	July 23, 1962	July 23, 1969
Pan 1	310035	25791	April 30, 1962	May 4, 1962	May 4, 1969
Pan 2	310036	26792	"	"	"
Pan 3	310037	26793	"	"	"
Pan 4	310038	26794	"	"	"
Pan 5	310039	25795	"	"	"
Pan 7	643008	35738	Jan. 20, 1966	Feb. 1, 1966	Feb. 1, 1968
Pan 8	643009	35739	"	"	"
Pan 9	643010	35740	"	"	"
Pan 10	643011	35741	"	"	"
Pan 11	643012	35742	"	"	"
Pan 12	643013	35743	"	"	"
Pan 1 Fr.	674177	35744	Apr. 28, 1966	May 11, 1966	May 11, 1969
Zephyr 1	277681	25574	Jan. 1, 1962	Jan. 9, 1962	Jan. 9, 1968
Zephyr 2	277682	25575	"	"	"
Zephyr 3	277683	25576	"	"	"
Zephyr 4	277684	25577	"	"	"
Zephyr 5	277685	25578	"	"	"
Zephyr 6	277686	25579	"	"	"
Zephyr 7	277687	25580	"	"	"
Zephyr 8	277688	25581	"	"	"
Zephyr 9	277689	25582	"	"	"
Zephyr 10	277690	25583	"	"	"
Zephyr 11	277691	25584	"	"	"
Zephyr 12	277692	25585	"	"	"
Zephyr 13	277693	25586	"	"	"
Zephyr 14	277694	25587	"	"	"
Zephyr 15	277695	25588	"	"	"
Zephyr 16	277696	25589	"	"	"
Zephyr 3 Fr.	521670	34972	Feb. 22, 1966	Mar. 3, 1966	Mar. 3, 1968
Zephyr 4 Fr.	488782	34973	Feb. 22, 1966	Mar. 3, 1966	Mar. 3, 1968
Zephyr 5 Fr.	596949	34974	Feb. 22, 1966	Mar. 3, 1966	Mar. 3, 1968
Z 1 Fr.	642795	31861	Jan. 12, 1966	Jan. 26, 1966	Jan. 26, 1968
Z 2 Fr.	598475	34969	Feb. 26, 1966	Mar. 3, 1966	Mar. 3, 1968
Al 1	518351	28447	June 16, 1964	July 2, 1964	July 2, 1969
Al 2	518352	28448	June 16, 1964	"	"
Al 3	518353	28449	"	"	"
Al 4	518354	28450	"	"	"
Al 5	518355	28451	June 17, 1964	July 2, 1964	July 2, 1968
Al 6	518356	28452	June 17, 1964	July 2, 1964	July 2, 1969
Al 7	518357	28453	June 17, 1964	July 2, 1964	July 2, 1969
Al 8	518358	28454	June 17, 1964	July 2, 1964	July 2, 1968
Al 9	518359	28455	June 17, 1964	July 2, 1964	July 2, 1969
Al 10	518360	28456	June 17, 1964	July 2, 1964	July 2, 1969
Al 11	518361	28457	June 17, 1964	July 2, 1964	July 2, 1969
Al 12	518362	28458	June 17, 1964	July 2, 1964	July 2, 1969
Al 13	518363	28459	June 17, 1964	July 2, 1964	July 2, 1969
Al 14	518364	28460	June 17, 1964	July 2, 1964	July 2, 1969
Al 15	518365	28461	June 17, 1964	July 2, 1964	July 2, 1969
Al 16	518366	28462	June 17, 1964	July 2, 1964	July 2, 1969
Al 17	518367	28463	June 17, 1964	July 2, 1964	July 2, 1969
Al 18	518368	28464	June 17, 1964	July 2, 1964	July 2, 1969

CLAIM DATA AS OF DECEMBER 11, 1967

Al 19	518369	28465	June 17, 1964	July 2, 1964	July 2, 1969
Al 20	518370	28466	June 17, 1964	July 2, 1964	July 2, 1969
Al 21 Fr.	526829	28467	June 17, 1964	July 2, 1964	July 2, 1969
Al 22 Fr.	526830	28468	June 17, 1964	July 2, 1964	July 2, 1969
Al 23 Fr.	565349	34970	Feb. 23, 1966	Mar. 3, 1966	Mar. 3, 1968
Al 24 Fr.	565350	34971	Feb. 23, 1966	Mar. 3, 1966	Mar. 3, 1968
IT 1	643037	32619	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 2	643036	32620	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 3	643039	32621	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 4	643038	32622	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 5	643041	32623	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 6	643040	32624	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 7	643043	32625	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 8	643042	32526	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 9	598480	32627	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 10	643044	32628	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 11	598479	32629	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 12	598478	32630	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
IT 13	598471	32631	Feb. 7, 1966	Feb. 14, 1966	Feb. 14, 1968
EV 1	618530	31054	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 2	618531	31055	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 3	618532	31056	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 4	618533	31057	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 5	618534	31058	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 6	618535	31059	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 7	618536	31060	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 8	618537	31061	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 9	618538	31062	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 10	618539	31063	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 11	618540	31064	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 12	618541	31065	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 13	618542	31066	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 14	618543	31067	Oct. 1, 1965	Oct. 19, 1965	Oct. 19, 1968
EV 15	642796	31739	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
EV 16	642797	31740	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
EV 17	642798	31741	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
EV 18	642799	31742	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
EV 19	642800	31743	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
EV 20	643001	31744	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
EV 21	674178	36364	June 5, 1966	June 14, 1966	June 14, 1969
EV 22	674179	36365	June 5, 1966	June 14, 1966	June 14, 1969
Bud 1	643002	32100	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
Bud 2	643003	32101	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
Bud 3	643004	32102	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
Bud 4	643005	32103	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
Bud 5	643006	32104	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
Bud 6	643007	32105	Jan. 12, 1966	Jan. 17, 1966	Jan. 17, 1968
Bud 7	674181	36362	June 5, 1966	June 14, 1966	June 14, 1969
Bud 8	674180	36363	June 5, 1966	June 14, 1966	June 14, 1969
Dot 1 Fr.	656225	34975	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968
Dot 2 Fr.	656226	34976	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968
Dot 1	656227	34977	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968
Dot 2	656228	34978	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968
Dot 3	656229	34979	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968
Dot 4	656230	34980	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968
Dot 5	656231	34981	Mar. 1, 1966	Mar. 3, 1966	Mar. 3, 1968

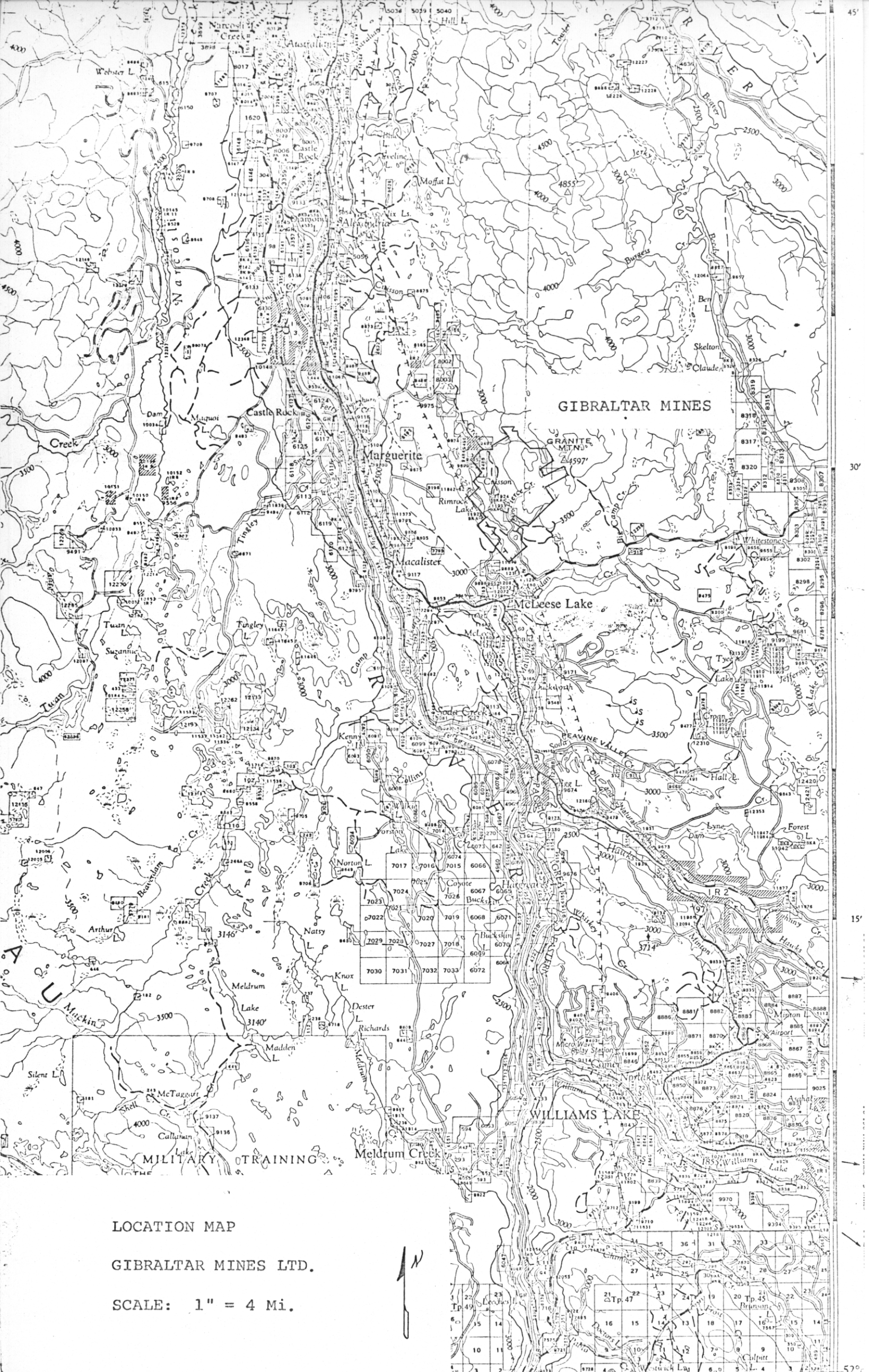
CLAIM DATA AS OF DECEMBER 11, 1967

VE 1	643015	34947	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 2	643014	34948	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 3	643017	34949	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 4	643018	34950	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 5	643019	34951	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 6	643018	34952	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 7	643021	34953	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 8	643020	34954	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 9	643023	34955	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 10	643022	34956	Feb. 5, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 11	643025	34957	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 12	643024	34958	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 13	643027	34959	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 14	643026	34960	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 15	643029	34961	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 16	643028	34962	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 17	643031	34963	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 18	643030	34964	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 19	643033	34965	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 20	643032	34966	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 21	643035	34967	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
VE 22	643034	34968	Feb. 6, 1966	Feb. 14, 1966	Feb. 14, 1968
Lynne 1 Fr.	680041	36697	June 30, 1966	July 13, 1966	July 13, 1968
Lynne 2 Fr.	680042	36698	June 30, 1966	July 13, 1966	July 13, 1968
Lynne 3	680043	36699	June 30, 1966	July 13, 1966	July 13, 1968
Lynne 4 Fr.	680044	36700	July 2, 1966	July 13, 1966	July 13, 1968
Lynne 5 Fr.	680045	36701	July 2, 1966	July 13, 1966	July 13, 1968
Lynne 6 Fr.	680046	36702	July 4, 1966	July 13, 1966	July 13, 1968
Val 1	656232	33849	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 2	656233	33850	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 3	656234	33851	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 4	656235	33852	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 5	656236	33853	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 6	656237	33854	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 7	656238	33855	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 8	656239	33856	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 9	656240	33857	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 10	656241	33858	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 11	656242	33859	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 12	656243	33860	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 13	656244	33861	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 14	656245	33862	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 15	656246	33863	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 16	656247	33864	Mar. 14, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 17	674143	33865	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 18	674144	33866	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 19	674145	33867	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 20	674146	33868	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 21	674147	33869	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 22	674148	33870	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 23	674149	33871	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 24	674150	33872	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 25	674151	33873	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1968
Val 26	674152	33874	Mar. 15, 1966	Mar. 18, 1966	Mar. 18, 1968
Val 27	674153	33875	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 28	674154	33876	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 29	674155	33877	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 30	674156	33878	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 31	674157	33879	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 32	674158	33880	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 33	674159	33881	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969

## CLAIM DATA AS OF DECEMBER 11, 1967

Val 34	674160	33882	Mar. 16, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 35	674161	33883	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 36	674162	33884	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 37	674165	33885	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 38	674164	33886	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 39	674165	33887	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 40	674166	33888	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 41	674167	33889	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 42	674168	33890	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 43	674169	33891	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 44	674170	33892	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 45	674171	33893	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 46	674172	33894	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 47	674173	33895	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 48	674174	33896	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 49	674175	33897	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Val 50	674176	33898	Mar. 17, 1966	Mar. 18, 1966	Mar. 18, 1969
Bay 1	766810	42310	Mar. 22, 1967	April 4, 1967	April 4, 1968
Bay 2	766811	42311	Mar. 22, 1967	April 4, 1967	April 4, 1968
Bay 3	766812	42312	Mar. 22, 1967	April 4, 1967	April 4, 1968
Bay 4	766813	42313	Mar. 22, 1967	April 4, 1967	April 4, 1968
Bay 5	766814	42314	Mar. 22, 1967	April 4, 1967	April 4, 1968
Bay 6	766815	42315	Mar. 22, 1967	April 4, 1967	April 4, 1968
Flo 1 Fr.	803776	43172	Aug. 3, 1967	Aug. 3, 1967	Aug. 3, 1968
Flo 2 Fr.	803775	43173	July 29, 1967	Aug. 3, 1967	Aug. 3, 1968
Flo 3 Fr.	803777	43289	Aug. 29, 1967	Aug. 29, 1967	Aug. 29, 1968
Flo 4 Fr.	803778	43290	Aug. 29, 1967	Aug. 29, 1967	Aug. 29, 1968
Flo 5 Fr.	840660	43487	Sept. 1, 1967	Sept. 1, 1967	Sept. 1, 1968
Pine Tree 1	803772	43029	July 3, 1967	July 4, 1967	July 4, 1968
Pine Tree 2	803773	43030	July 3, 1967	July 4, 1967	July 4, 1968
Pine Tree 3	803774	43088	Sept. 2, 1967	Sept. 6, 1967	Sept. 6, 1968
Pine Tree 4	804185	43489	Sept. 2, 1967	Sept. 6, 1967	Sept. 6, 1968
Pine Tree 5	804186	43490	Sept. 2, 1967	Sept. 6, 1967	Sept. 6, 1968
Pine Tree 6	804187	43491	Sept. 2, 1967	Sept. 6, 1967	Sept. 6, 1968
Tak 1	803779	43471	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 2	803780	43472	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 3	803781	43473	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 4	803782	43474	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 5	803783	43475	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 6	803784	43476	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 7	803785	43477	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 8	803786	43478	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 9	803787	43479	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 10	803788	43480	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 11	803789	43481	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 12	803790	43482	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 13	803791	43483	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 14	840657	43484	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 15	840658	43485	August 31, 1967	Sept. 1, 1967	Sept. 1, 1968
Tak 16	840659	43486	Aug. 31, 1967	Sept. 1, 1967	Sept. 1, 1968





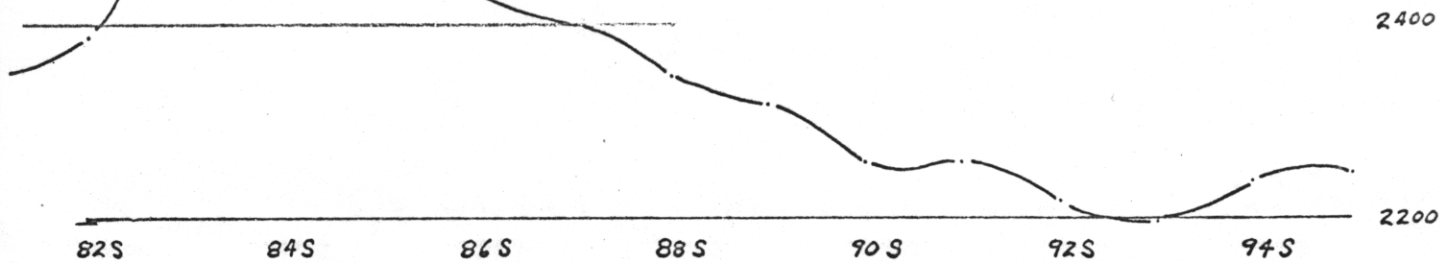
LOCATION MAP

GIBRALTAR MINES LTD.

SCALE: 1" = 4 Mi.

*Contour  
Magnetometer*

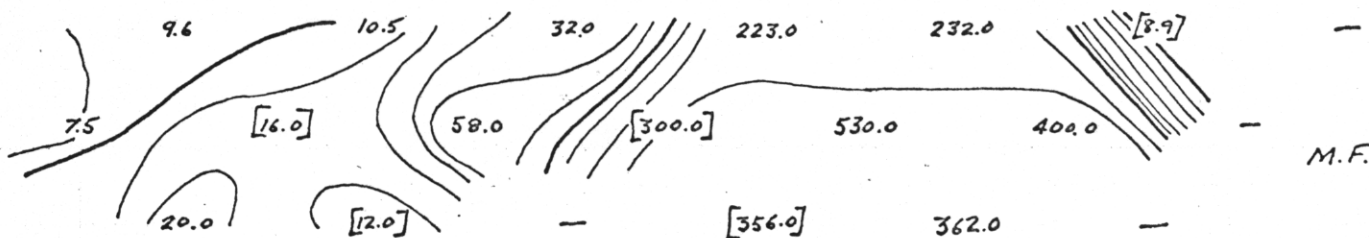
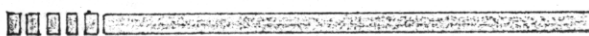
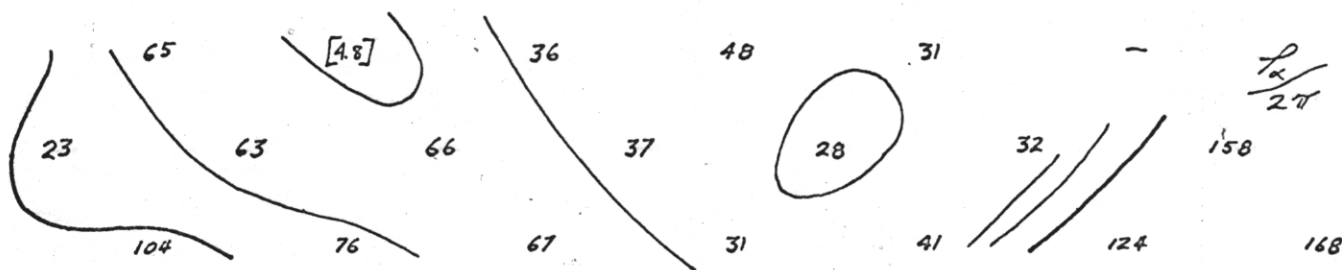
Magnetometer Survey



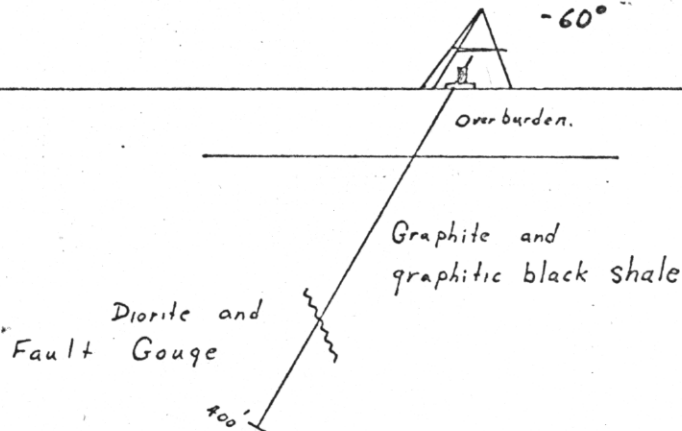
Geochemical Survey - p.p.m.

75    75    215    160    265    29    23    45    19    20    14    15    5    24

I.P. Survey



DDH. MM-8 (120+00E, 90+20S)  
-60°



The Consolidated Mining and Smelting Company of Canada Limited

GIBRALTAR

D.D.H. M.M.-8 - Technical Profiles.

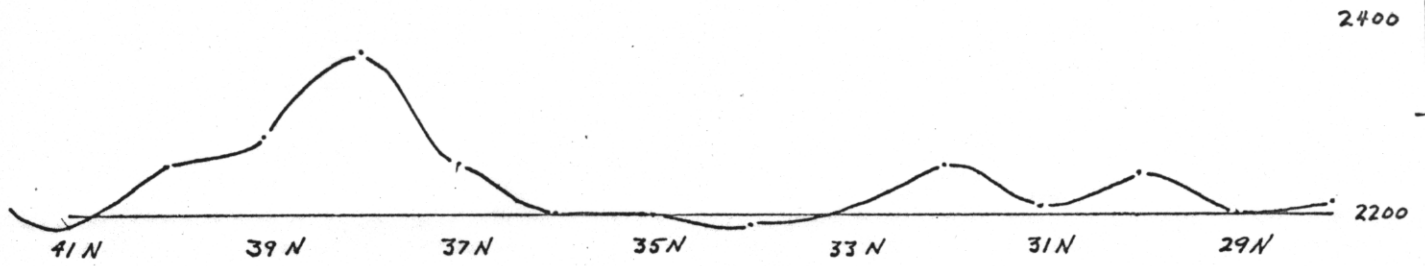
DRAWN BY: MRM		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

SCALE: 1" = 200'

DATE: Oct. 22, 1967

PLATE:

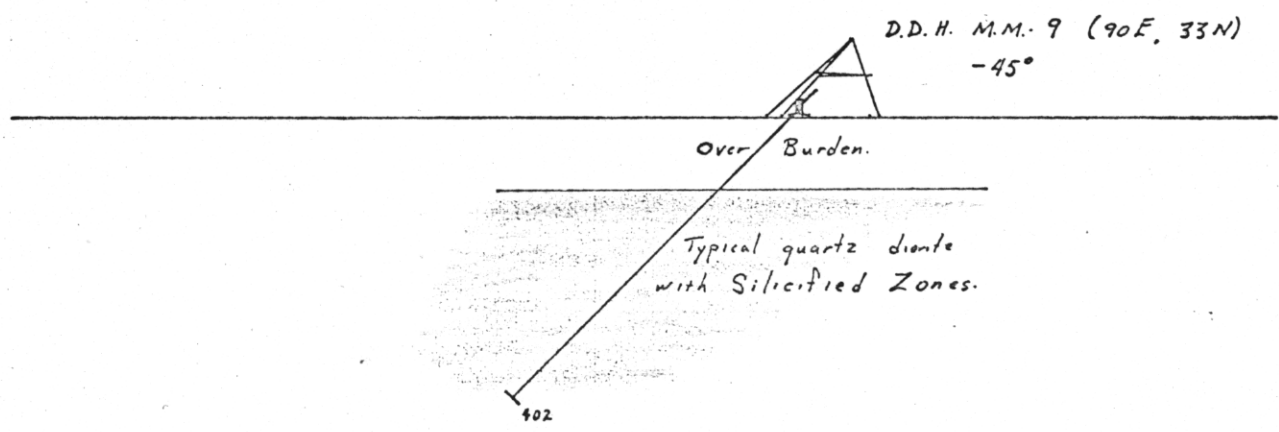
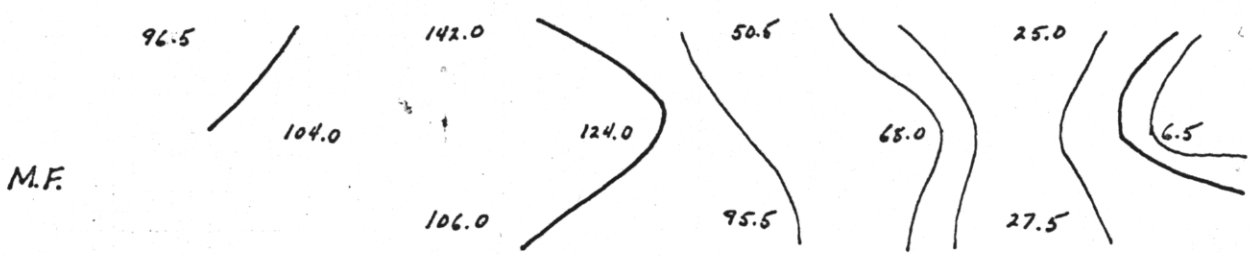
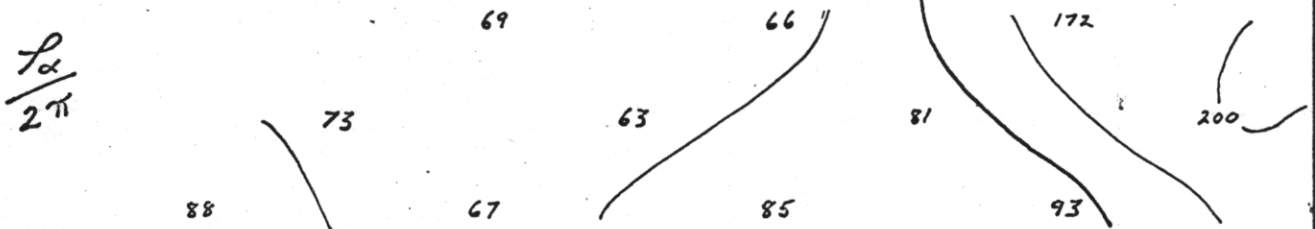
Magnetometer Survey.



1966 Geochemical Survey - p.p.m.



I.P. Survey



The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY: <i>M.R.M.</i>		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

**GIBRALTAR**  
D.D.H. MM-9 - Technical Profiles

SCALE: 1" = 200'      DATE: Oct. 24, 1967      PLATE:

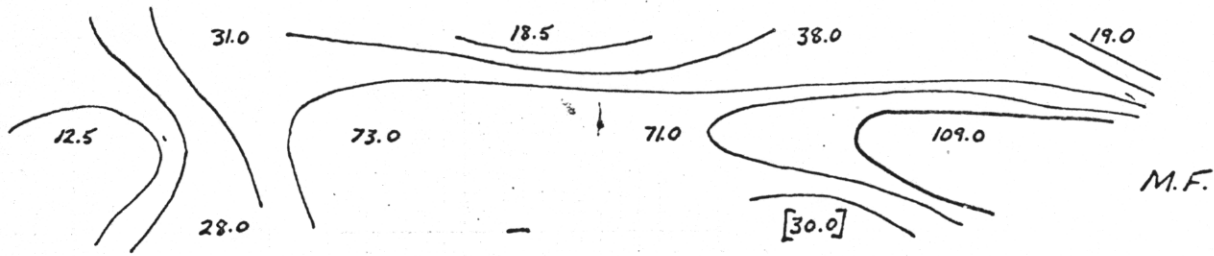
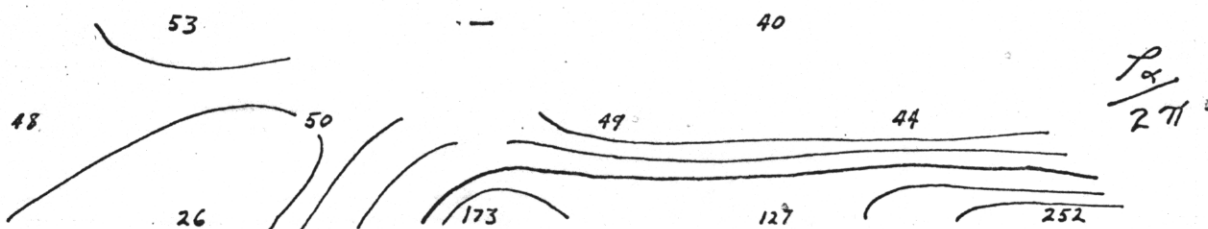


No Magnetometer Survey  
carried out over  
this area.

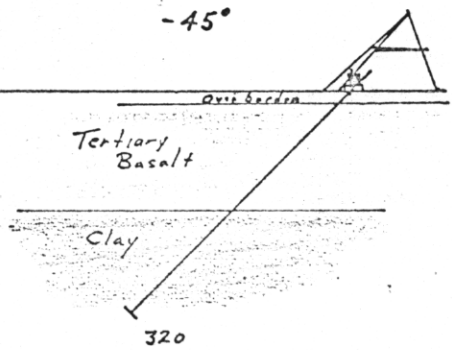
134S      136S      138S      140S      142S      144S      146S

No Geochemical Survey  
carried out.

I.P. Survey



D.D.H. MM-10 (140E, 14625S)  
-45°



The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY: MRM		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

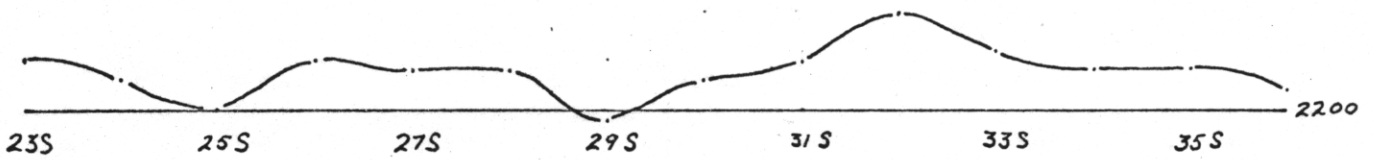
GIBRALTAR

D.D.H. MM-10 - Technical Profiles

SCALE: 1" = 200'      DATE: Oct. 24, 1967      PLATE:

Magnetometer Survey

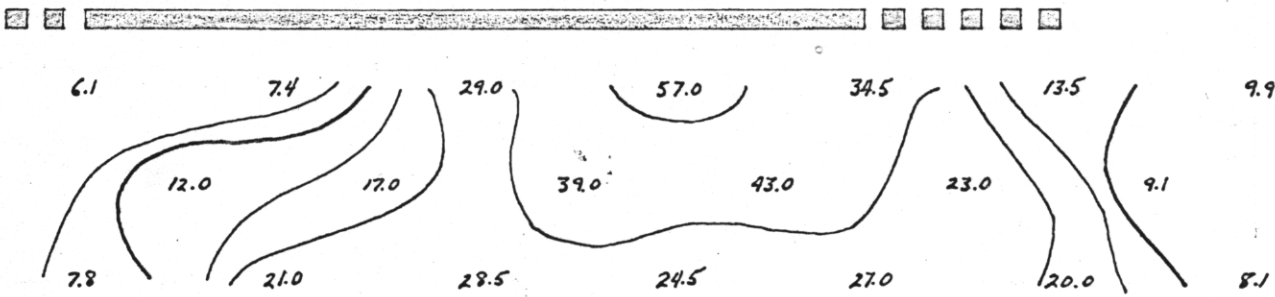
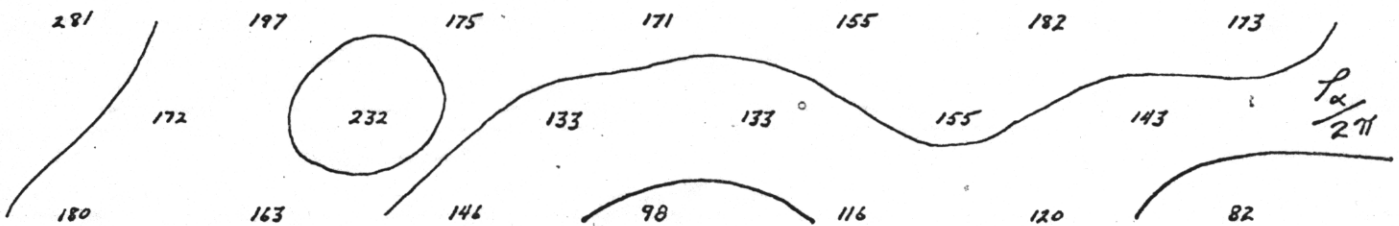
2400



Geochemical Survey - p.p.m.

15   11   30   210   124   170   9   64   55   54   150   28   27   35

I.P. Survey



DDH MM-11, (40 E, 31 S)  
-45°

Over Burden

Typical Quartz Diorite  
with thin silicified  
zones.

351

The Consolidated Mining and Smelting Company of Canada Limited

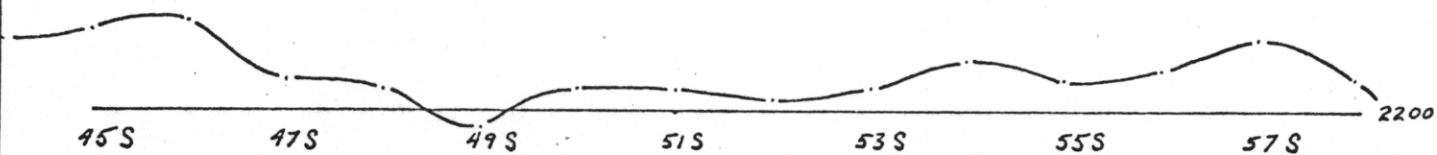
DRAWN BY: <i>MRM</i>		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

**GIBRALTAR**  
DDH MM-11 - Technical Profiles

SCALE: 1" = 200'      DATE: Oct. 25, 1967      PLATE:

Magnetometer Survey

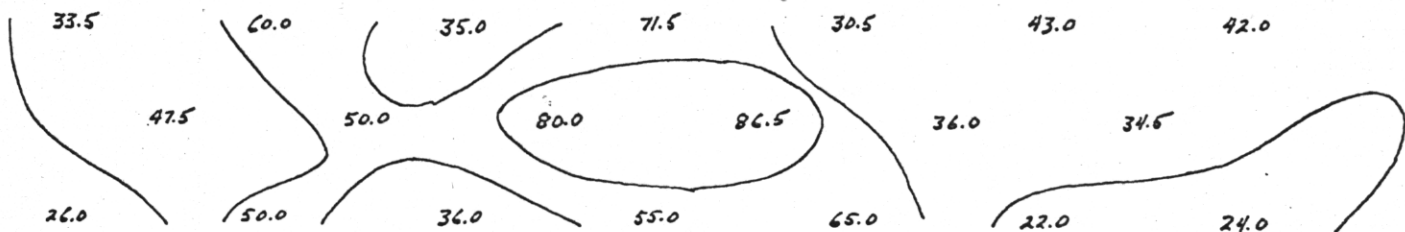
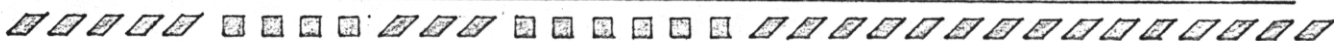
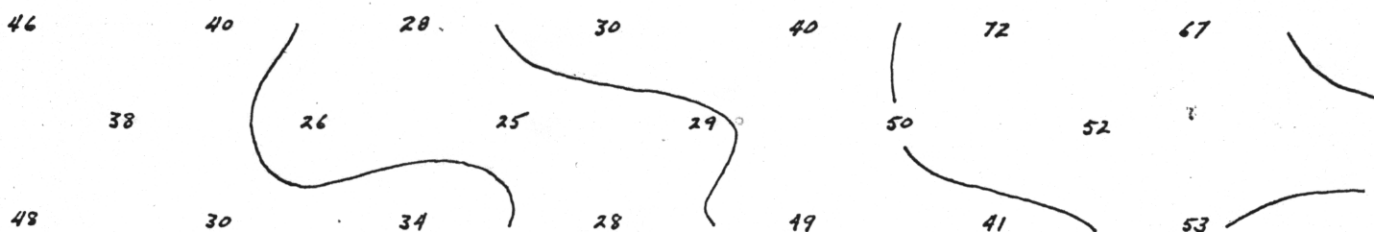
2400



Geochemical Survey - p.p.m.

9 7 26 11 14 10 13 11 11 7 8 8 11 10

I.P. Survey.

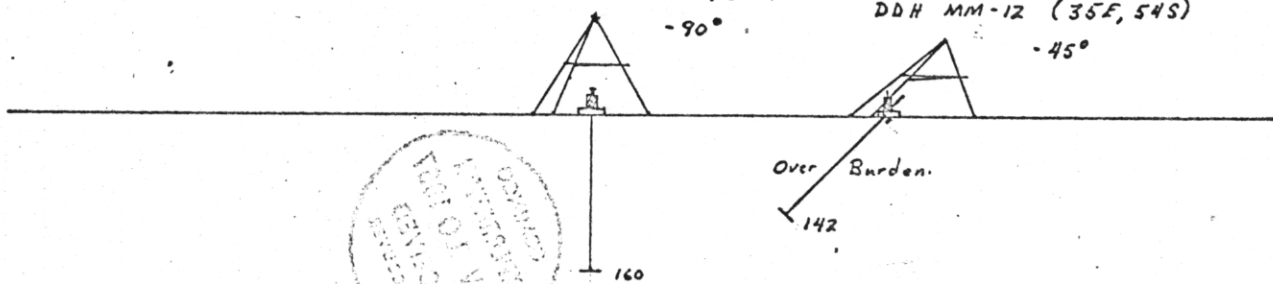


DDH MM-13 (35E, 51S)

DDH MM-12 (35E, 54S)

-90°

-45°



The Consolidated Mining and Smelting Company of Canada Limited

DRAWN BY: <i>MRM</i>		TRACED BY:	
REVISED BY	DATE	REVISED BY	DATE

GIBRALTAR

DDH MM-12 + 13 - Technical Profiles.

SCALE: 1" = 200'

DATE: Oct. 25, 1967

PLATE: