3275

GROUND MAGNETOMETER SURVEY

on the

PLUG 9-12, PLUG 19-24, BAT 10-14, BAT 15 Fr., BAT 16 Fr.

MINERAL CLAIMS

SALAL CREEK MOLYBDENUM PROPERTY, SALAL CREEK, B.C.

LILLOOET MINING DIVISION, BRITISH COLUMBIA

N.T.S. 92 J 14

LATITUDE 50° 45' N LONGITUDE 123° 30' W

BY

CERRO MINING COMPANY OF CANADA LIMITED, ON BEHALF OF
SALAL MOLYBDENUM MINES LTD.

AUGUST 28TH TO SEPTEMBER 2ND, 1971

VANCOUVER OFFICE
September 30th, 1971

D.K. Mustard, P.Eng.
C.B. Campbell

CERRO MINING COMPANY of CANADA
TORONTO CANADA

INDEX MAP

NTS ref.
92 E.F.G.J.K.L.M.N.O.
93 B.C.D.

BRITISH COLUMBIA & ALBERTA

Scale 1:2000000 1" = 32 m | JUNE 1970

Drawn

FIG 1

C O N T E N T S

I L L U S T R A T I O N S

INTRODUCTION

From 28th August to 2nd September, 1971, a ground magnetic survey was conducted on the Plug 9-12, Plug 19-24, Bat 10-14, Bat 15 Fr. and Bat 16 Fr. Mineral Claims situated on the Salal Creek Molybdenum Property, approximately 42 miles N.W. of Pemberton, B.C.

The survey was carried out with the following aims:

1. to define contacts, obscured by talus, between various phases of the intrusive
2. to determine if the volcanics in the area are flows, or at least in part, plugs
3. to discover major structures which may exist beneath talus and glacial debris.

LOCATION & ACCESS (See Fig. 1)

The Salal Creek Molybdenum property is situated at the headwaters of Salal Creek, a tributary of the Lillooet River, 42 miles N.W. of Pemberton, B.C.

The property is located in typically rugged Coast Range terrain. Elevations range from 4,500' to a maximum of 8,100'.

The Plug and Bat Mineral Claims lie in the extreme N.W. portion of the property, between Mud Lake and the headwaters of Lost Creek.

Access to the property is by helicopter from Pemberton.

GEOLOGY (See Fig. 2)

The property is underlain by a differentiated acid stock intruding the strongly foliated Coast Range Complex. In general a coarse grained quartz monzonite border phase surrounds a fine grained granitic core. A medium grained phase gradational between the other phases locally occurs. Numerous acid and basic dikes intrude the stock. Patches of Tertiary to Recent Volcanics in the form of flows and plugs outcrop on the property.

Molybdenite occurs extensively on the property in veins, as joint coatings and, rarely, disseminated. It is found in all phases of the stock. Recent mapping, however, indicates that the best occurrences are to be found in the coarse grained phase.

The emplacement of the molybdenite is strongly controlled by structural features such as shears and fractures.

Within the area surveyed, coarse, medium, and fine grained phases of the stock are represented. The coarse grained phase is an equigranular, locally porphyritic, grey to pinkish-grey granite. The average grain size is 2.5 to 3.5 mm. Based on a limited number of thin sections studied in 1970 the rock is classified as a quartz monzonite with the following modal composition:

Quartz	35%
Orthoclase	40%
Plagioclase	20%
Biotite	5%

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The medium grained phase is similar to the coarse grained phase in all ways except grain size. The average grain size is 1.5 to 2.5 mm. It is classified as quartz monzonite.

The fine grained phase is equigranular, locally porphyritic, grey to pinkish-grey. The average grain size is 0.5 mm to 1.00 mm. It is classified as a biotite granite and has the following modal composition.

Quartz	40%
Orthoclase	45%
Plagioclase	10%
Biotite	3-5%

As can be seen from the above, the fine grained phase is slightly less mafic than the medium and coarse grained phases. The 1971 mapping program indicates that whereas magnetite is present in all three phases of the stock it occurs in lesser quantities in the medium and fine grained phases.

Volcanics outcrop in two distinct localitites. Molybdenite occurs in shears in outcrop in the Mud Lake area and along joints in float.

Much of the ground is obscured by talus and glacial debris and contacts have been defined only approximately by geological mapping.

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SURVEY PROCEDURES

The instrument used was a Scintrex Model MF-2 fluxgate magnetometer which measures the vertical component of the earth's magnetic field.

A base station was set up at Windy Pass, a central location. Lines were run along the accessible parts of the survey area. As such they are confined to the ridges above Windy Glacier and to the area between Windy and Plug Glaciers (See Fig. 2).

The instrument was operated in accordance with the manufactures recommendations.

Initially the instrument was adjusted for latitude. Since all possible sensitivity was desired the range switch was set at 1,000 gamma, and the latitude switch was set to the position + 20 to give a reading closest to 0 gamma on the scale. At the beginning of each day the fine control was then adjusted to give a reading of 0 gamma at the base station. At each station the meter reading and time were recorded. A number of closed traverses were made such that additional readings could be taken at the base station approximately every two hours. The difference between the readings at the base station, divided by the number of minutes elapsed between the readings gave the diurnal change in gammas per minute. The reading at intervening stations was corrected using this figure.

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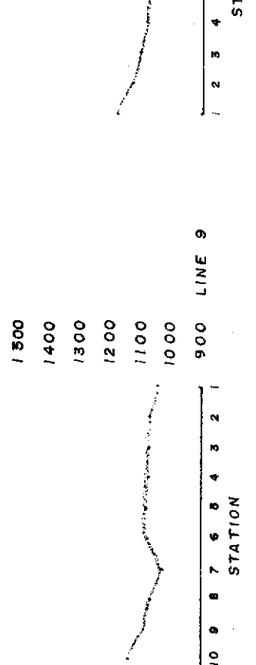
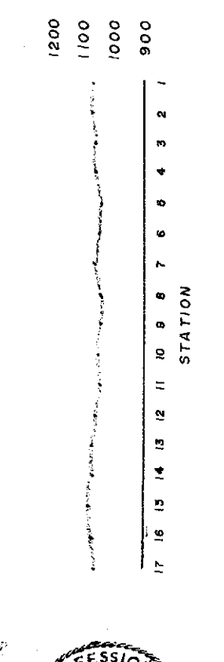
MAGNETIC VALUES - IN GAMMAS





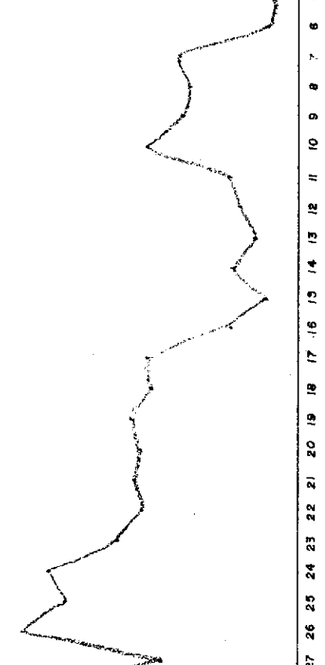
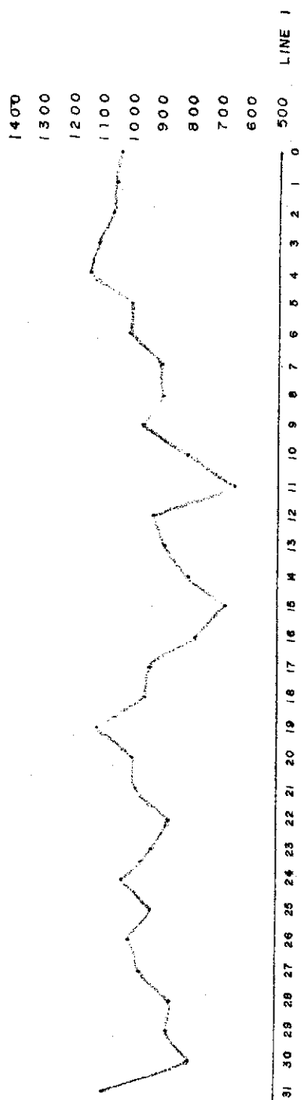
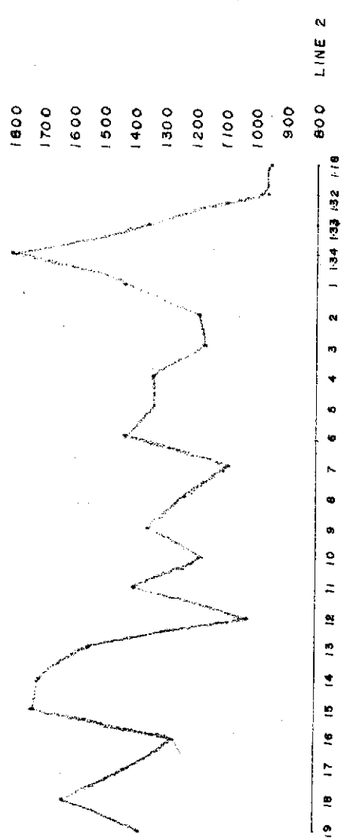


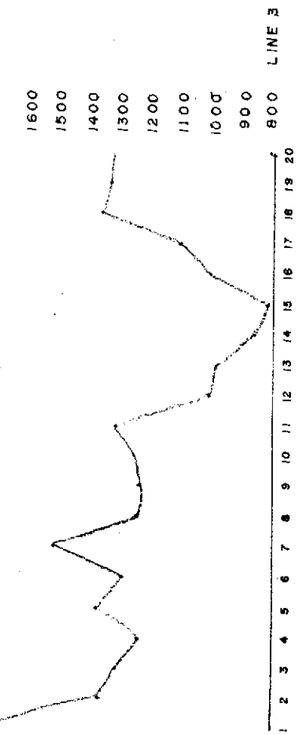
FIG 4

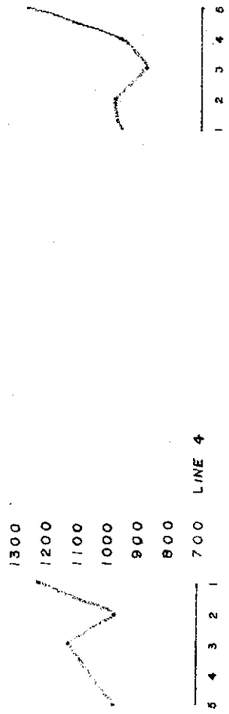
CERRO MINING COMPANY OF CANADA LIMITED		
DIVISION: WESTERN		PROVINCE: B. C.
SALAL CREEK MOLYBDENUM PROPERTY		
MAGNETIC PROFILES		
SCALE: 1" = 500'		N.T.S: 92 J 14
DRAWN: JSP	CHECKED:	PROJ. NO: 40009
REVISED:	DATE: SEPT 25 71	DWG. NO:

MAGNETIC VALUES - IN GAMMAS









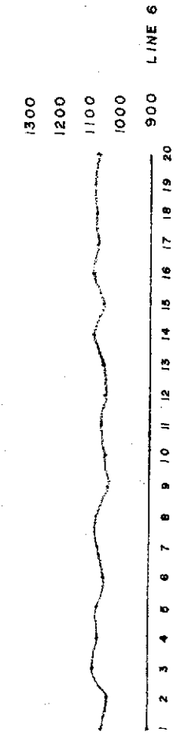
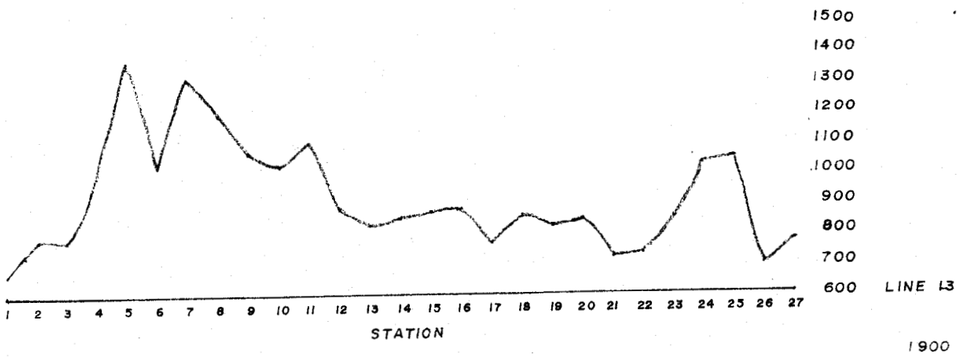
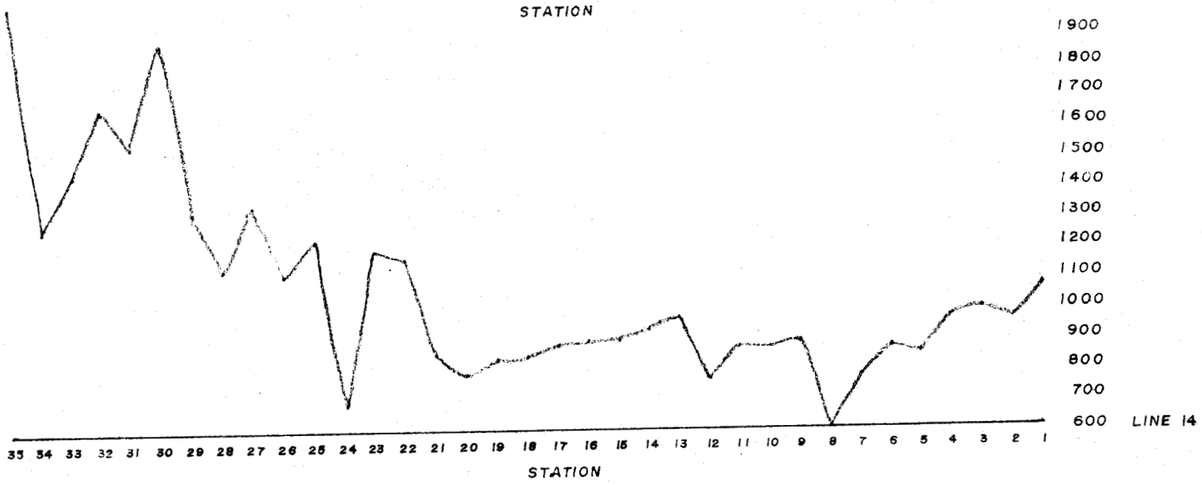
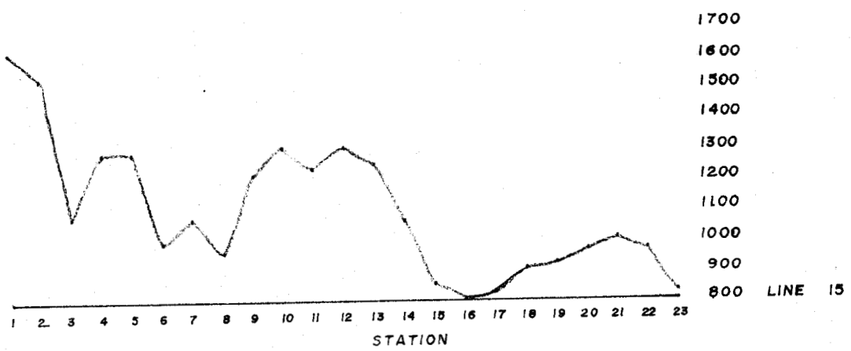


FIG 3

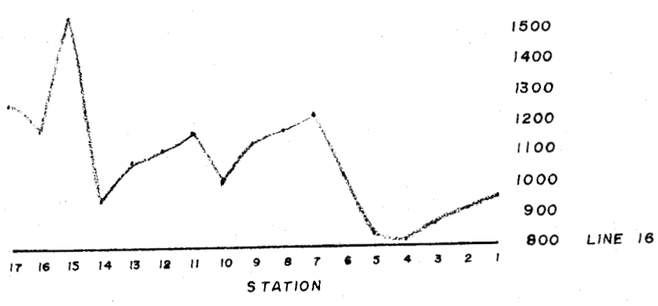
CERRO MINING COMPANY OF CANADA LIMITED		
DIVISION: WESTERN		PROVINCE: B.C.
SALAL CREEK MOLYBDENUM PROPERTY MAGNETIC PROFILES		
SCALE: 1" = 500'		N.T.S: 92 J 14
DRAWN: JSP	CHECKED:	PROJ. NO: 40009
REVISED:	DATE: SEPT 25 71	DWG. NO:

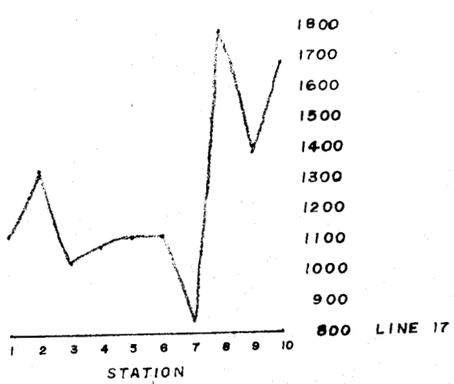


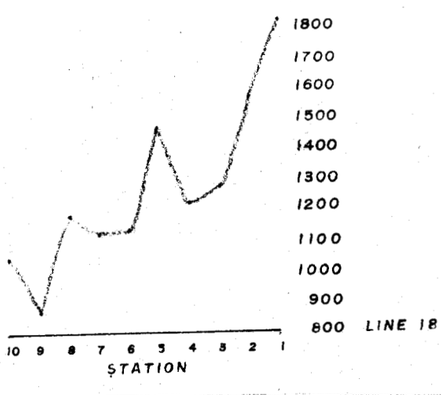


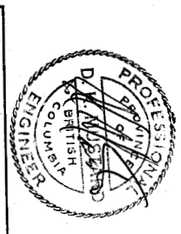


MAGNETIC VALUES IN GAMMAS









CERRO MINING COMPANY OF CANADA LIMITED
DIVISION: WESTERN PROVINCE: B.C.
SALAL CREEK MOLYBDENUM PROPERTY
MAGNETIC PROFILES

SCALE: 1" = 500'	N.T.S. 92 J 14
DRAWN: JSP	CHECKED:
REVISED:	PROJ. NO: 40009
DATE: SEPT 25 71	DWG. NO:

FIG 5

RESULTS

The results are plotted as profiles (Figs. 3,4, and 5) along each traverse line and as a contoured plan (Fig. 6). For convenience in contouring an arbitrary value of 1,000 gamma was added to the readings thus eliminating negative values.

In the northern part of the survey a contour interval of 50 gamma was used because of the weak magnetic relief. In the southern part where magnetic relief is stronger a contour interval of 100 gamma was used.

Lines 6 to 11 were run in the area between Windy and Plug Glaciers. Outcrop is mostly obscured by talus and glacial debris. The magnetic relief over most of the survey area is weak. Two features are, however, important:

1. The 50 gamma contour, running in a northeasterly direction is possibly an indicator of the contact between the coarse grained and fine grained phases. This moves the present contact, based on mapping of the few outcrops available, south by approximately 500 feet.
2. Strong magnetic relief in the extreme north of the area lies over known volcanic outcrop. As contacts are obscured, considerable doubt exists as to whether this is a volcanic plug or the remnant of a flow. The strong magnetic relief exhibited over this feature suggests that it is indeed a plug.

In the area to the south a more involved magnetic pattern exists. The picture is fairly typical of that found over Tertiary volcanics. "Highs" and "Lows" occur closely together in a complex pattern. The broad "Low" areas to the east and northwest probably reflect the talus and ice in these localities.

The isolated "High" to the north, as defined by lines 2,3, 4 and 5 may be indicative of a "Feeder" plug to the flows.

From September 3rd to 5th the survey was extended to the south to cover the remainder of the volcanics. This part of the survey was completed quickly as the area is easily accessible and the flat topped volcanic outcrop afforded fast and easy movement between stations. A major structural feature appears to run through Station 5 on Line 13 in an east-south-east direction. This feature is not seen on surface and may be one affecting the intrusive itself.

CONCLUSIONS

Ground magnetic surveys on the Salal Creek Molybdenum Property can be utilized to indicate obscured contacts between different phases of the intrusive and to distinguish volcanic plugs from flows. The limited work to date suggests that obscured structural features may also be detectable by this method.

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RECOMMENDATIONS

Ground magnetic surveys should be carried out over selected areas of the stock especially where contacts are hidden and where the presence of volcanic plugs may be of significance, e.g., in locating drill holes.

Any structural features suggested by the survey should be carefully investigated on the ground as these are likely to be of great importance in regard to ore localization.

D.K. Mustard, P. Eng.

C.B. Campbell

APPENDIX I

Cost Distribution

Salaries:

C.B. Campbell, B. Sc., Project Geologist	
August 28, 1971 - 1 day @ $75.00/day	$ 75.00
J.S. Pomeroy,Dip.Geol.Tech.-Supervising Geologist	
August 28,29,30,31,Sept.1,2, 1971	
6 days @$40.00/day	240.00
K. Kierans, Field Assistant	
August 28,29,30,31,Sept.1,2, 1971	
6 days @$25.00/day	150.00
M. Shamrock, Field Assistant	
August 28, 29,30,31,Sept.1,2,1971	
6 days @$25.00/day	150.00

Field Camp Maintenance	
C.B. Campbell, J.S. Pomeroy, K. Kierans,	
M. Shamrock- 19 man days @ $10.00/man day	190.00
Transport	
2 Wheel drive vehicle - 240 miles @ 12¢/mi	28.80
Helicopter (Okanagan Helicopters)	
2 hours, 40 minutes @ $250.00/hr	666.67
Equipment Rental	
Scintrex Ltd. -- MF-2 Magnetometer	213.50
Drafting & Map Compilation	35.06
Report Preparation	75.00
TOTAL	$ 1,824.03

barren rock and fracture samples should yield information as to direction and relative distance to a blind ore body.

4. All data should be digitized and rolling mean analysis performed by computer program. Rolling mean contour and residual maps should be made for each element in order to point out trends which may not be immediately obvious. All fracture sample locations, attitudes and mercury content should be digitized in such a manner that the data can be retrieved by fracture orientation. The use of computer aided geology is essential with this type of multi-element geochemistry.

Submitted by;

B. W. Smee

Geochemist,

BARRINGER RESEARCH LIMITED.

Endorsed by;

D. K. Mustard,

Cerro Mining of Canada Ltd.

TABLE I

ROCK TYPE	SAMPLE NOS.	Mo	Ag	Hg (ppb)	Fe%	Mn	Cu	Pb	Zn	W	Sn
COARSE	40009-28	16	.20	162	5.2	519	30	11	57	<4	<1.25
MEDIUM	40009-21-27	34	.18	82	4.1	415	14	8	128	5.1	<1.25
FINE	40009-29-33	47	.28	103	3.1	332	41	27	43	4.8	<1.25

TABLE II

Quartz & MoS2 Vein Composites

	SAMPLES NOS.	Mo	Ag	Hg	Fe	Mn	Cu	Pb	Zn	W	Sn
	40009-34	800	.3	162	2.5	500	70	129	49	12	<1.25
	40009-35	1100	.3	144	2.8	690	50	31	61	<4	<1.25
	40009-36	2400	.3	259	2.5	538	60	42	53	<4	<1.25
AVERAGE		1433	.3	188	2.6	576	60	67	54	6.7	<1.25

LEGEND

CONTOUR 7000

CREEK

GLACIER BOUNDARY

CLAIM BOUNDARY

CLAIM NAME PLUG 23

GEOLOGY

OUTCROP 0

VOLCANIC 1

GRANITIC STOCK
FINE GRAIN 2

MEDIUM GRAIN 3

COARSE GRAIN 4

CONTACT
APPROXIMATE

TO ACCOMPANY GEOPHYSICAL REPORT by D.K. Mustard, P.Eng. & C.B. Campbell, B.Sc., on PLUG 9-12, 19-24, BAT 10-14, BAT 15 Fr., BAT 16 Fr., Mineral Claims, Salal Creek Molybdenum Property, Lillooet M.D., dated Sept.30th, 1971

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D.K. MUSTARD

FIG 2

CERRO MINING COMPANY OF CANADA LIMITED
DIVISION: WESTERN PROVINCE: B.C.

SALAL CREEK MOLYBDENUM PROPERTY
GROUND MAGNETIC SURVEY

SCALE: 1" = 500'		N.T.S: 92 J 14
DRAWN: JSP	CHECKED:	PROJ. NO: 40009
REVISED:	DATE: SEPT 25 1971	DWG. NO:

3275 M-2

LEGEND

CONTOUR 7000

CREEK

GLACIER BOUNDARY

CLAIM BOUNDARY

CLAIM NAME PLUG 23

GEOLOGY

OUTCROP

VOLCANIC

GRANITIC STOCK
FINE GRAIN

MEDIUM GRAIN

COARSE GRAIN

CONTACT
APPROXIMATE

MAGNETOMETER SURVEY

TRAVERSE LINE, NUMBER
STATION NUMBER
MAGNETIC INTENSITY

BASE STATION

100 GAMMA ISOMAGNETIC CONTOUR INTERVAL

50 GAMMA ISOMAGNETIC CONTOUR INTERVAL

MAGNETIC LOW

BASE INTENSITY ARBITRARY

TO ACCOMPANY GEOPHYSICAL REPORT by D.K. Mustard, P.Eng. & C.B. Campbell, B.Sc., on PLUG 9-12, 19-24, BAT 10-14, BAT 15 Fr., Bat 16 Fr., Mineral Claims, Salal Creek Molybdenum Property, Lillooet M.D., dated Sept.30th, 1971

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. K. MUSTARD

FIG 6

CERRO MINING COMPANY OF CANADA LIMITED
DIVISION WESTERN PROVINCE B.C.

SALAL CREEK MOLYBDENUM PROPERTY
GROUND MAGNETIC SURVEY

SCALE 1" = 500'		NTS 92 J 14
DRAWN JSP	CHECKED	PROJ NO 40009
REVISED	DATE SEPT. 25 1971	DWG NO