

Geophysical Assessment Report

on a portion  
of the

Jenny Long Group

Situated Immediately  
South  
of  
Stump Lake

NICOLA MINING DIVISION  
British Columbia

on behalf of

Mr. C. F. Graham  
of  
Merritt B. C.

Report by

D. R. Cochrane, P. Eng.  
August 2, 1978,  
Delta, B. C.



**Cochrane Consultants Limited**  
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Geotechnical Consulting / Exploration Services

geology  
geophysics  
geochemistry

6856

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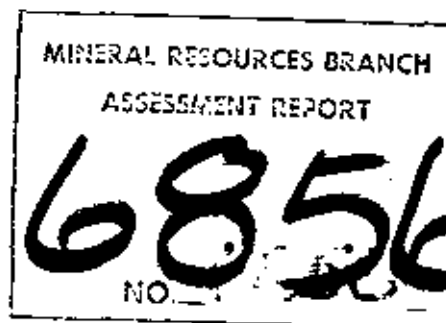
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## BACKGROUND

The author was engaged by Mr. C. F. Graham to conduct geophysical orientation tests over portions of the Jenny Long group of claims, a former gold, silver, lead and zinc producer situated at Stump Lake, in the Nicola Mining Division. Previous production was in 1935, prior to the development of modern geophysical exploration techniques, and a review of the property is warranted in light of increased metal prices.

In the fall of 1959, Hunting Exploration Services conducted a horizontal loop electromagnetic survey over the area with a small amount of ground magnetometer followup work.

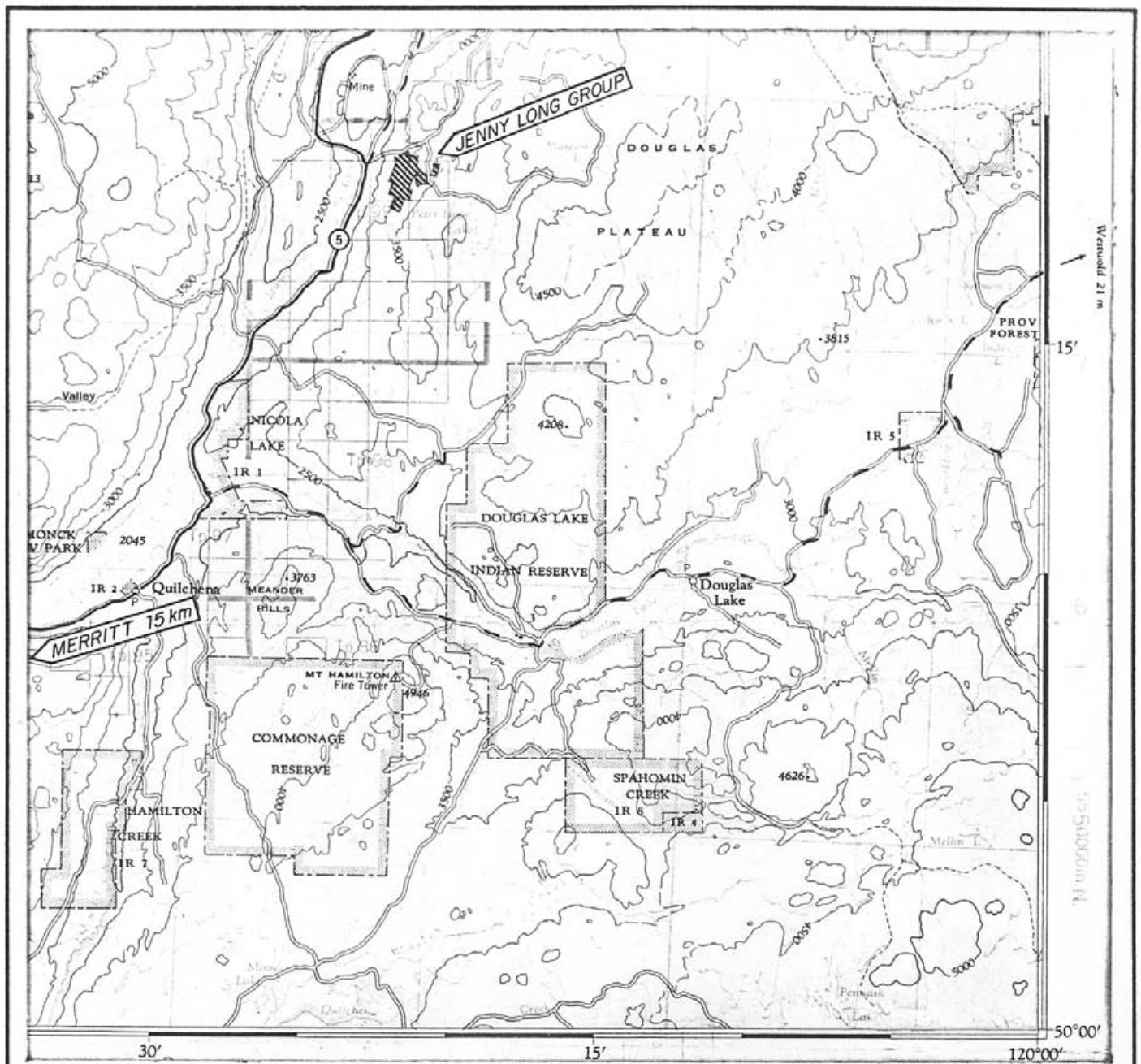
In July, 1978, Mr. P. Willson of Cochrane Consultants Ltd. mobilized to the property with the purpose of conducting induced polarization (IP) and/or self potential (SP) tests. Unfortunately the weather in the interior has been extremely dry this summer, and the property is located in the "dry belt" of British Columbia. Therefore difficulties were encountered in maintaining electrical contacts with the ground, consequently IP and SP testing was temporarily suspended.



Finally, a vertical force ground fluxgate magnetometer orientation survey was conducted over the shaft and underground workings area on the Jenny Long, and also in the area to the south.

This report describes the field procedure and results of this work and is designed for assessment work submission. The personnel, dates worked, and cost breakdown are summarized in the appendices at the end of this report.

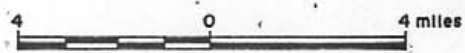




C.F. Graham - Merritt, B.C.

**Jenny Long Group**  
Nicola M.D., South of Stump L. B.C. 92 I/8 W.  
Figure 1  
Location Map

Scale: 1 to 250 000 or 1 inch equals approx. 4 miles



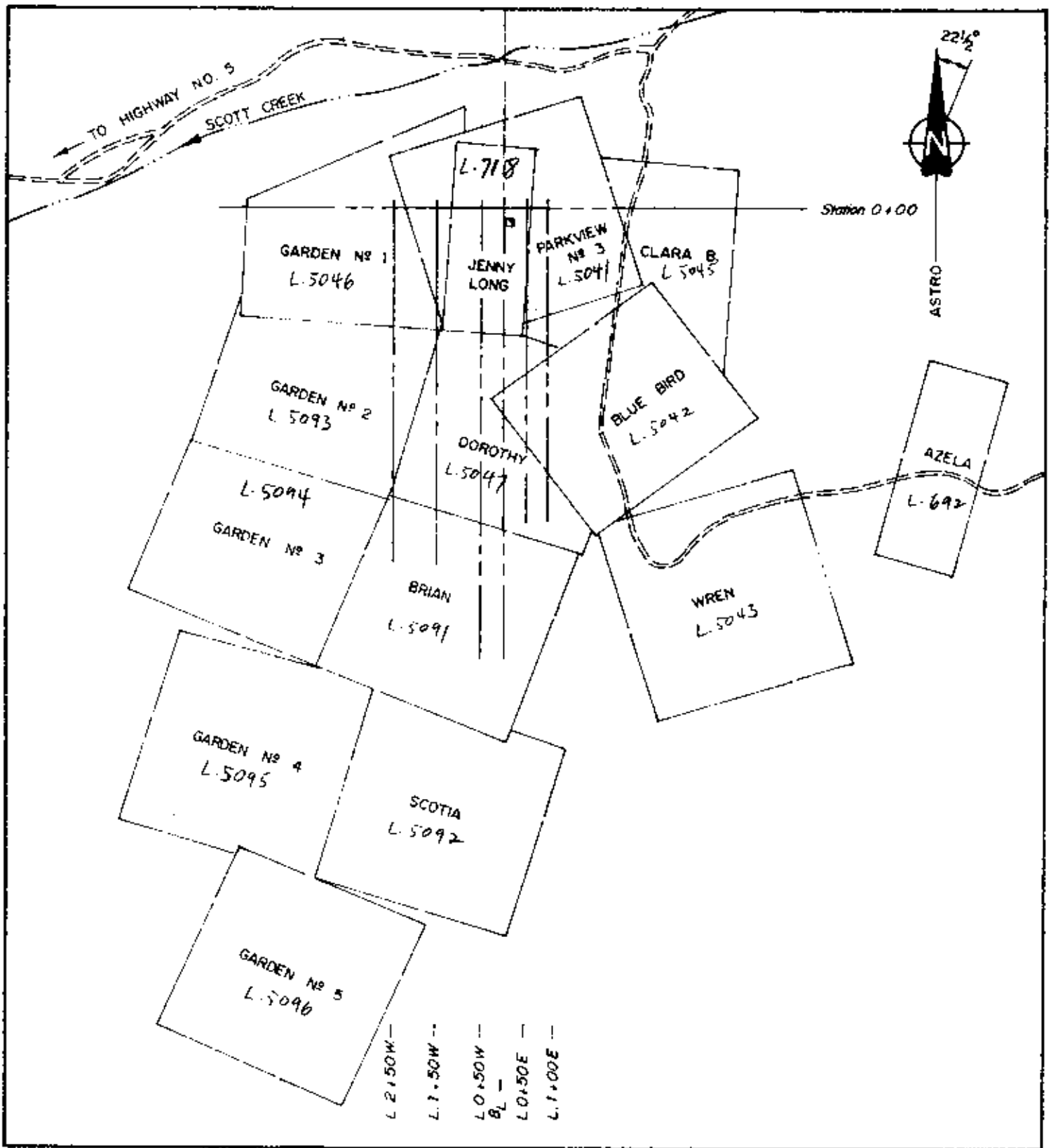
Aug. '78, b.a.c.

LOCATION AND ACCESS

The Jenny Long group of 14 claims is located immediately south of Stump Lake, and some 40 odd road kilometers north east of the town of Merritt. It is close to being midway between Merritt and Kamloops. There is facile road access to the claims area via highway #5 (Kamloops-Merritt road) and the claims lie immediately east of the highway and are accessible by a series of dirt ranch roads.

The N.T.S. code for the area is 92I/8 (w $\frac{1}{2}$ ); the latitude is 50<sup>o</sup>20' north, and longitude 120<sup>o</sup>20' west.





C. F. Graham - Merritt B. C.

## Jenny Long Group

Nicola M. D., South of Stump Lake, B. C. 921/BW

CLAIMS & GRID

Figure 2

Scale 1" = 1000' or 1:12000

0 500 1000 2000 FEET

0 100 200 300 400 500 METERS

Traced from Company Plan.  
P.K.C. August 1978.

  
Copinger Consultants Limited  
1000 P.O. Box 21, Delta, B.C. V9B 2Y9, 604-921

PROPERTY INFORMATION

The property consists of a total of 14 reverted crown granted claims that are now owned by Mr. C. F. Graham of Merritt B. C. They are shown on B. C. Dept. of Mines claim map 921/8(w $\frac{1}{2}$ ) Nicola Mining Division and the following table lists pertinent claims information

<u>CLAIM NAME</u>	<u>RECORD NO.</u>	MONTH OF EXPIRY
Azela	59340	August
Wren	59344	August
Brian	59346	August
The Garden No. 2	59347	August
Dorothy	59348	August
Bluebird	59349	August
The Garden No. 1	59350	August
Clara B	59351	August
Parkview No. 3	59352	August
Jenny Long	59353	August
Garden No. 3	59345	August
Scotia	59342	August
The Garden No. 4	59343	August
The Garden No. 5	59341	August





#### GENERAL SETTING

The Stump Lake area lies in the Thompson Plateau region of the Central Interior of British Columbia. It is a moderately gently rolling upland surface bounded on the east by the Douglas Plateau and on the west by the Nicola Plateau. The property lies at an elevation close to 760 meters above sea level in arid, open sage and scrub brush type country.

The region is underlain by Upper Triassic Nicola group rocks which consist mainly of greenstone, andesite, basalt and related tuffs. (Cockfield, 1961).

This wedge of Nicola Rocks is banded on the east by the Wildhorse Mountain and Douglas Lake batholiths and on the west by the Central Nicola batholith, all of which are believed to be Jurassic and (?) later rocks. (Cockfield, 1961). The region was occupied by Pleistocene ice and an extensive mantle of drift and glacio-lacustrine deposits cover much of the bedrock surface.



The Stump Lake area is host to several vein and shear zone deposits; the former are generally restricted to north trending fissures and the shear zone type consists of knots and stringers of quartz and carbonate veinlets sometimes with accompanying sulphides. (Various Reports of the Minister of Mines, B. C.). Ore minerals consist of pyrite, galena, sphalerite, tetrahedrite, chalcopyrite, bornite, scheelite and small amounts of arsenopyrite, pyrrhotite, and native gold. The veins are cut and offset by many small faults. (Cockfield, 1961 pg. 46 and 47).



## PROCEDURES

A small grid was layed out and ties into the old Jenny Long working and an east-west directed ranch fence. As previously mentioned, the initial idea was to test with IP and SP and the first test was with a Terra Physics Self Potential Unit. It demonstrated that, due to the dryness of the overburden, electrical contact was not reliable, even with the use of copious amounts of salt water. The same problem has been previously experienced in the Kamloops (Afton) area during the dry months, and therefore the idea of testing with IP was postponed. Consequently a Scintrex MF-2 fluxgate magnetometer was deployed by Mr. Willson, with readings spaced at 25 and 50 meters on north-south recon lines spaced 50 to 100 meters apart. The instrument was "zeroed" at 200 gammas on the main base station and all readings are relative to this arbitrary +200 gamma datum. Magnetometer values were recorded on pre-printed Mag Note Forms, describing line, station, reading, time, diurnal correction and final reading. Since all check in values to the main base station were within 10 gammas, no diurnal correction was applied.



## DISCUSSION

The results of the magnetometer orientation survey are shown on accompanying maps # 3 and 4.

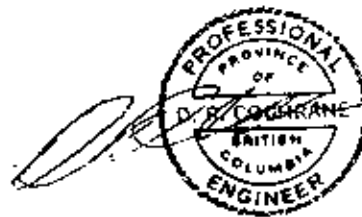
Values ranged from a low of 120 gammas on line 0 at 75S, to a high of 260 gammas on line 0 at 5+50S. Thus magnetic variation within the test survey area is extremely small. Since the specifications of the MF-2 define the accuracy as +0.5% of the range, (in this case 5 gammas in the 1000 scale) the results were contoured at 25 gamma intervals in the hope the results would provide interpretable patterns. The contoured isomagnetic plan accompanies this report as figure 4. It shows the presence of two trends, a northwest directed trend and a northerly one. Clearly, however, due to the remarkable homogeneous response, the most important feature is the extremely low magnetic fluxuation, suggesting a uniform subsurface susceptibility indicative of a uniform, one lithologic unit condition. The one reading "low" near the old workings is possibly due to the presence of underground workings, and the north trending slightly low zone may be indicative of slightly altered rocks, in which the magnetite content has been decreased somewhat.



This rather limited orientation work suggests that fluxgate magnetometer surveying is not particularly useful in the Jenny Long area, however, perhaps a more precise magnetometer unit (+ 1 gamma) would be appropriate, but more probably an entirely different approach is justified.

An IP test is suggested, and should take place when the sub surface moisture content is much higher than it is at present.

Respectfully submitted



D. R. Cochrane, P. Eng.



APPENDIX 1

Assessment Work Details

PROJECT: Jenny Long N.T.S. 92I/8(w½)  
LOCATION: Stump Lake, Nicola M. D.  
Latitude 50°20'N; Longitude 120°20'W  
SPONSOR: C. F. Graham, Merritt B. C.  
FIELD WORK DATES:  
July 28, 29, 30  
July 31, 1978 demobilization  
OFFICE WORK DATES  
August 1,2, 1978  
PERSONNEL:  
Mr. P. Willson - Magnetometer operator  
Mr. K. Graham - grid work  
B. A. Cochrane - drafting  
D. R. Cochrane, P. Eng -report preparation  
G. Packer - typing  
COST:  
By agreement with Mr. C. F. Graham,  
geophysical orientation testing Jenny  
Long group including report -- \$800.00



D. R. Cochrane, P. Eng.



APPENDIX II

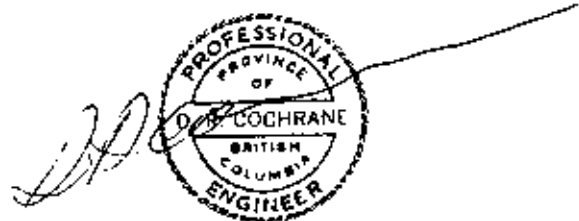
Certificate:

I, Donald Robert Cochrane, of the Municipality of Delta, British Columbia, do hereby certify that:

1. I am a consulting geological engineer with an office at 4882 Delta Street, Delta, B. C.
2. I am a graduate of the University of Toronto (1962) with a degree in Applied Geology (B.A. Sc.) and a graduate of Queen's University (1964) with a degree in Economic Geology (M. Sc., Eng.)
3. I have practiced my profession continuously since graduation while being employed by such companies as Noranda Exploration Co. Ltd., Quebec Cartier Mines, and Meridian Explorations Syndicate. I have been in private independent practice since 1969.
4. I am a member in good standing of the Association of Professional Engineers (A.P.E.) of the Province of British Columbia, and also a member of the A.P.E. in the Province of Ontario, Saskatchewan, and the Yukon Territories.

August, 1978  
Delta, B. C.

(signed) D. R. Cochrane, P. Eng.



Specifications of Fluxgate Magnetometer Model MF-2

	RANGES	SENSITIVITY
Standard:	Plus or minus	
	1,000 gammas f.sc.	20 gammas/div.
	3,000 gammas f.sc.	50 gammas/div.
	10,000 gammas f.sc.	200 gammas/div.
	30,000 gammas f.sc.	500 gammas/div.
	100,000 gammas f.sc.	2000 gammas/div.
Optional:	100 gammas f.sc.	2 gammas/div.
	300 gammas f.sc.	5 gammas/div.
Meter:	Taut-band suspension	
	100 gamma scale 2.1" long - 50 div.	
	300 gamma scale 1.9" long - 60 div.	
Accuracy:	1000 to 10,000 gamma ranges $\pm$ 0.5% of full scale.	
Operating Temperature:	-40°C to +40°C -40°F to +100°F	
Temperature Coefficient:	Less than 1 gamma per °C (1/2 gamma/°F)	
Noise Level:	Less than 1 gamma P-P	
Bucking Adjustments: (Latitude)	-20,000 to +80,000 gammas 9 steps of 10,000 gammas plus fine control of 0 - 10,000 gammas by ten turn potentiometer Reversible for southern hemisphere.	
Recording Output:	Optional.	
Electrical Response:	D.C. to 0.3 cps (3db down) on 100 gamma range with meter in circuit. D.C. to 20 cps with meter network shorted for recording purposes.	
Connector:	Cannon K02-16-10SN for plug Cannon K03-16-10-FN and cover K06-16-3/8.	
Batteries:	Internal 3 x 6V-1 amp/hr. Sealed Lead Acid rechargeable Centralab GC 6101; recharge time 8 hrs.	
Consumption:	60 milliamperes - GC6101 batteries are rated for 16 hours continuous use.	





Dimensions: 6 1/4" x 2 3/4" x 10" Instrument.  
161 mm x 71 mm x 254 mm

Weights: 5 lb. 8 oz. - 2.5 kg.

Battery Chargers: 6" x 2 1/2" x 2 1/2"  
155 mm x 64 mm x 64mm  
110V - 220V 50/60 Hz supply or 28 - 42V D.C.  
supply Automatic charge rate and cutoff  
preset for Centralab GC6101 batteries.



APPENDIX IV

BIBLIOGRAPHY

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- 1961: G. S. C. Memoir 249, Geology and Mining  
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- 1956: Report on the Stump Lake Area, Assessment  
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Nicholls et. al,

- 1960: Report on the ground EM and mag survey Stump  
Lake, Assessment Report 313 (B.C. Dept. of Mines)





L. 2+50 W.

L. 1+50 W.

L. 0+50 W.

BL

L. 0+50 E.

L. 1+00 E.

APPROX CLAIMS BOUNDARIES

TO HIGHWAY N° 5

GARDEN N° 1

GARDEN N° 2

GARDEN N° 3

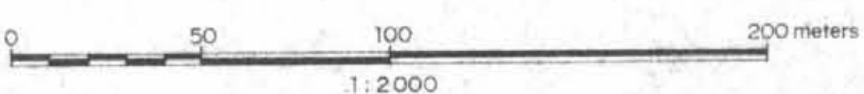
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**6856**  
NO. 6856

C. F. GRAHAM · Merritt, B. C.

### Jenny Long Group (Central Portion)

Nicola Mining Division  
South of Stump Lake,

N.T.S. 92 1/8 W.  
British Columbia



1:2000

Base Map prepared from field notes & Company Claims Map. August '78 B.A.C.  
To accompany a report by D.R. COCHRANE, P.Eng., on the Jenny Long Group dated August 2 '78.  
Revised.

### MAGNETOMETER VALUES (gammas) Fig.3



PARKVIEW N° 3

JENNY LONG

WASTE

220 SHAFT

OLD MILL SITE

RANCH FENCE

0+00

240

200

210

220

195

190

210

210

150

190

1+00 S.

220

230

210

210

200

190

240

190

190

210

180

210

200

190

210

2+00 S.

210

200

190

190

200

CLARA B

3+00 S.

200

210

190

190

230

190

190

230

220

210

4+00 S.

220

170

200

220

210

BLUE BIRD

5+00 S.

250

190

200

190

220

200

200

170

210

210

DOROTHY

220

200

210

260

230

230

200

200

190

230

6+00 S.

210

240

220

200

190

200

200

200

180

200

7+00 S.

190

210

200

190

190

WREN

8+00 S.

190

200

190

190

210

260

200

200

190

190

9+00 S.

210

200

210

200

180

210

200

210

200

180

200

180

200

180

180

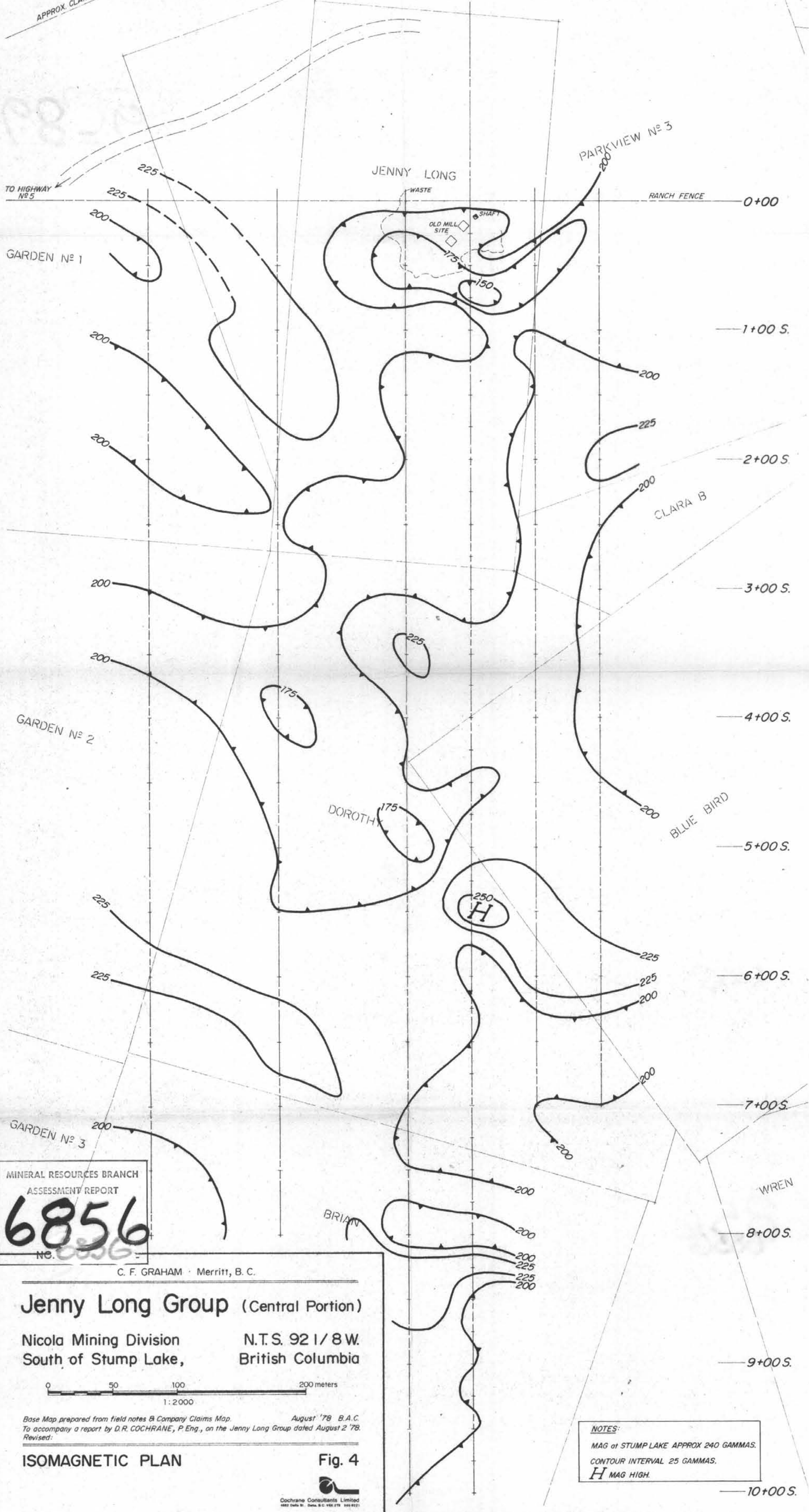
10+00 S.

NOTES:  
INSTRUMENT - MF-2  
- ZEROED at 200 gammas  
OPERATOR - P.W.



APPROX. CLAIMS BOUNDARIES

L. 2+50W. L. 1+50W. L. 0+50W. BL L. 0+50E. L. 1+00E.

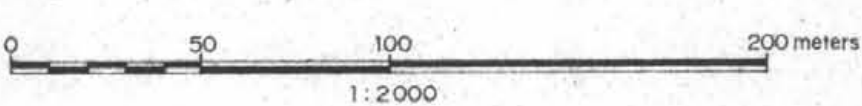


MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**6856**  
No. 0036

C. F. GRAHAM · Merritt, B. C.

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South of Stump Lake, British Columbia



Base Map prepared from field notes & Company Claims Map. August '78 B.A.C.  
To accompany a report by D.R. COCHRANE, P. Eng., on the Jenny Long Group dated August 2 '78.  
Revised:

### ISOMAGNETIC PLAN

Fig. 4



NOTES:  
MAG at STUMP LAKE APPROX 240 GAMMAS.  
CONTOUR INTERVAL 25 GAMMAS.  
H MAG HIGH.

10+00 S.