ASSESSMENT REPORT

Geophysical and Geochemical Surveys

on the

Glover Group of Claims

NTS 82 E -1 W
Lat: 49°12'N Long: 118°27'W

GREENWOOD MINING DISTRICT

for

John Kemp, Grand Forks, B.C.

J.M.Thornton

September 1997

Table of Contents

Illustrations

Summary

Approximately 8.4 km of ground magnetometer data and 40 geochemical samples were gathered on the Glover #13 Mineral claim on closely spaced lines in an attempt to map the distribution of gold bearing altered meta-sediments accompanied by pyrite/pyrrhotite in massive to semi-massive quantities.

The survey revealed two distinct magnetic domains in apparent fault contact, a low susceptibility unit and another unit containing veins or zones of higher susceptibility. None of the observed anomalies were caused by large concentrations of magnetic minerals but more probably thin discontinuous veinlets with strike lengths of 40 to 80 meters.

Soil geochemical response is very low especially in Arsenic, molybdenum, gold and silver. Variations in the base metals are probably reflecting the underlying rocks; a north-east trend parallels an observed magnetic fault contact.

One geochemical sample (720S/20W) is consistently anomalous in all but gold and silver and is also the site of a small magnetic high. The results are consistent with a small skarn development.

Introduction

The author was asked to process and interpret some 8.1 km of ground magnetometer data and 40 geochemical soil samples on the Glover #13 M.C. gathered by John Kemp of Grand Forks, B.C. during the latter part of May, 1997

Location control for the survey was provided by a base line extending from the identification post "2N" on the west boundary claim line of Glover #13. The base line extended 900 meters at an azimuth of 140° true. Cross lines (50° azimuth) were established at 40 meter intervals starting 200 meters from the claim ID post and extended NE 1000 meters from the baseline. For the 1997 program, the cross lines were extended 500 to 800 meters to the west of the baseline for a total of 8.4 kilometers.

The data was gathered at 20 meter intervals on lines 40 meters apart from lines 560S to 1000S.

The southern part of the survey area overlaps part of the area covered by a 1987 geology / geochem Noranda report by Graham Gill on the Hek MC; filed for assessment in 1988.

Property

The Glover claim group consists of 29 units as follows:

Name	Tenure No.	Units	Expiry Date
Glover	300170	4	June 13, 1997
Glover #11	307457	16	Feb. 6, 1998
Glover #13	314726	9	Nov. 18, 1997

Location and Access

The claims are located 20 km. north of Grand Forks, B.C. adjacent and west of the Granby River. Access is provided by the "North Fork" Highway which parallels the Granby River on the west and passes through the property. The major showing (Simpson Mine) can be accessed from the Pass Creek Forestry Road and Glover Creek Forestry Road which also passes through the property. The survey area is some 900 meters west of the Simpson Mine showings.

Regional Geology

The general geology of the Glover Claim group consists primarily of Paleozoic-Triassic aged siliceous volcanics and hornfelsed sediments belonging to the Knobhill group. This assemblage of rocks has been intruded by granodiorite, quartz diorite and diorite of the Jurassic aged Nelson intrusives. The latter has in turn been intruded by Tertiary Coryell syenites and monzonites. A dyke swarm consisting of latite, trachyte, feldspar porphry, andesite and diorite components constitutes the last intrusive event in the area. The claims are located near the edge of the Republic graben which is the structure within which Echo Bay Resources has had considerable success south of the border.

Mineralization consists of disseminated to massive pyrrhotite, pyrite and minor chalcopyrite in coarse silica rich skarns within Anarchist volcanics. Gold in sub- to economic concentrations are present.

History

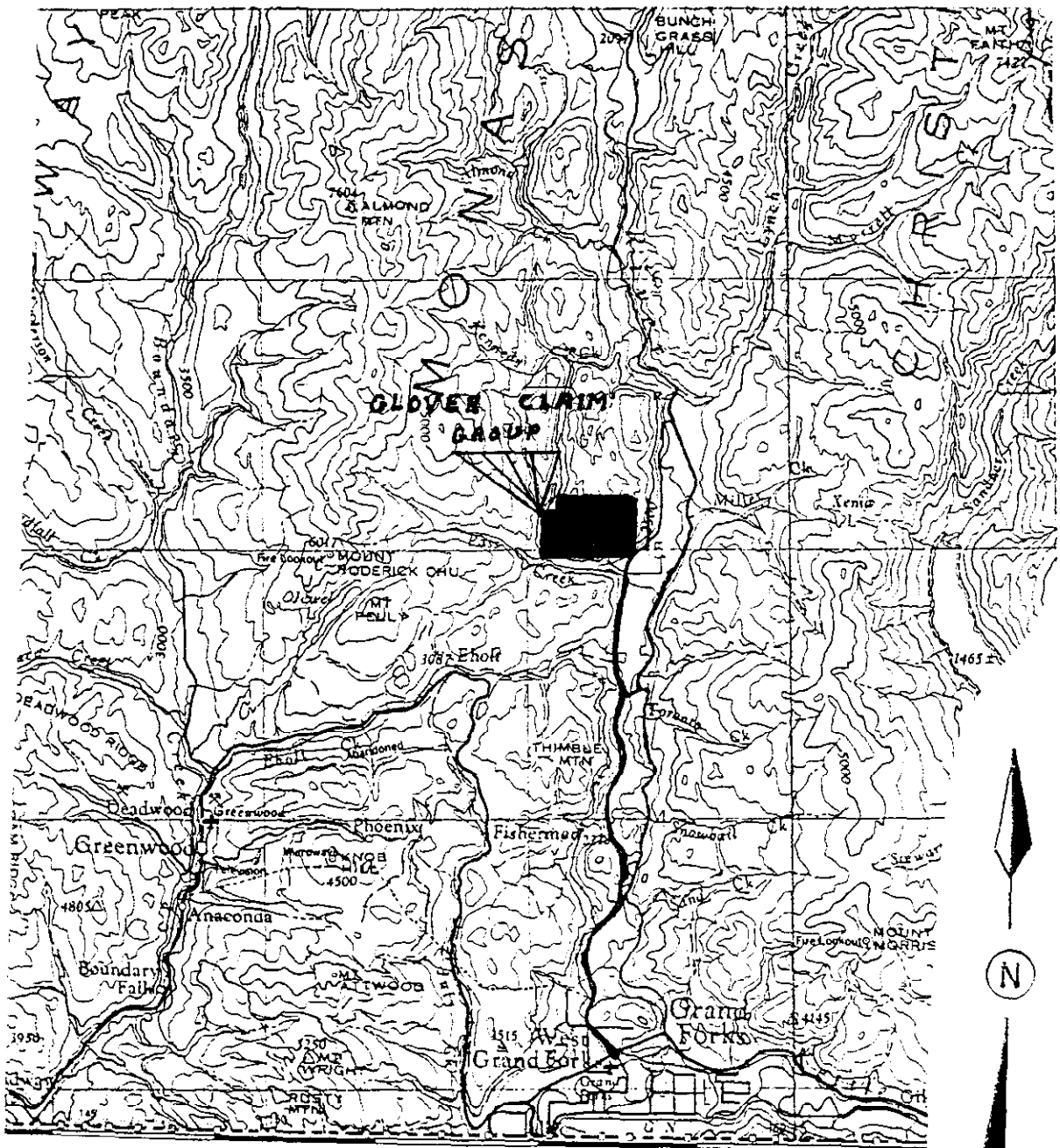
Exploration on the claims dates back to 1901 with the discovery of the Simpson Mine, a gold bearing quarttz filled shear within the skarn. In 1939, 364 tons of ore were shipped from this zone with an average grade of 0.71 oz/ton Au and 0.25 oz/ton Ag. This zone was sheared off, but there are indications that it continues.

Since then, exploration has continued with geological mapping, IP, trenching and diamond drilling. Significant drill results include:

18 feet	0.3 oz/t Au, 3.75 oz/t Ag, 0.54% Cu (1969)
34 feet	0.25 oz/t Au (1975-1976)
23 feet	0.16 oz/t Au (1795-1976)

All exploration has been focussed on the two known mineralized areas on the property.

1901	Small pits and rock cuts were excavated by prospectors. Property then known as the "Exchange"
1939	Hecla Mining shipped 364 tons of ore from the Simpson Mine to the Trail smelter after completing a program of crosscutting and drifting.
1966-69	Byrell Minerals ands Fento Mines conducted a survey of IP, diamond drilling (6 holes) and stripping on the Glover zone.



5 km 0 5 10 15 20

KILOMETERS

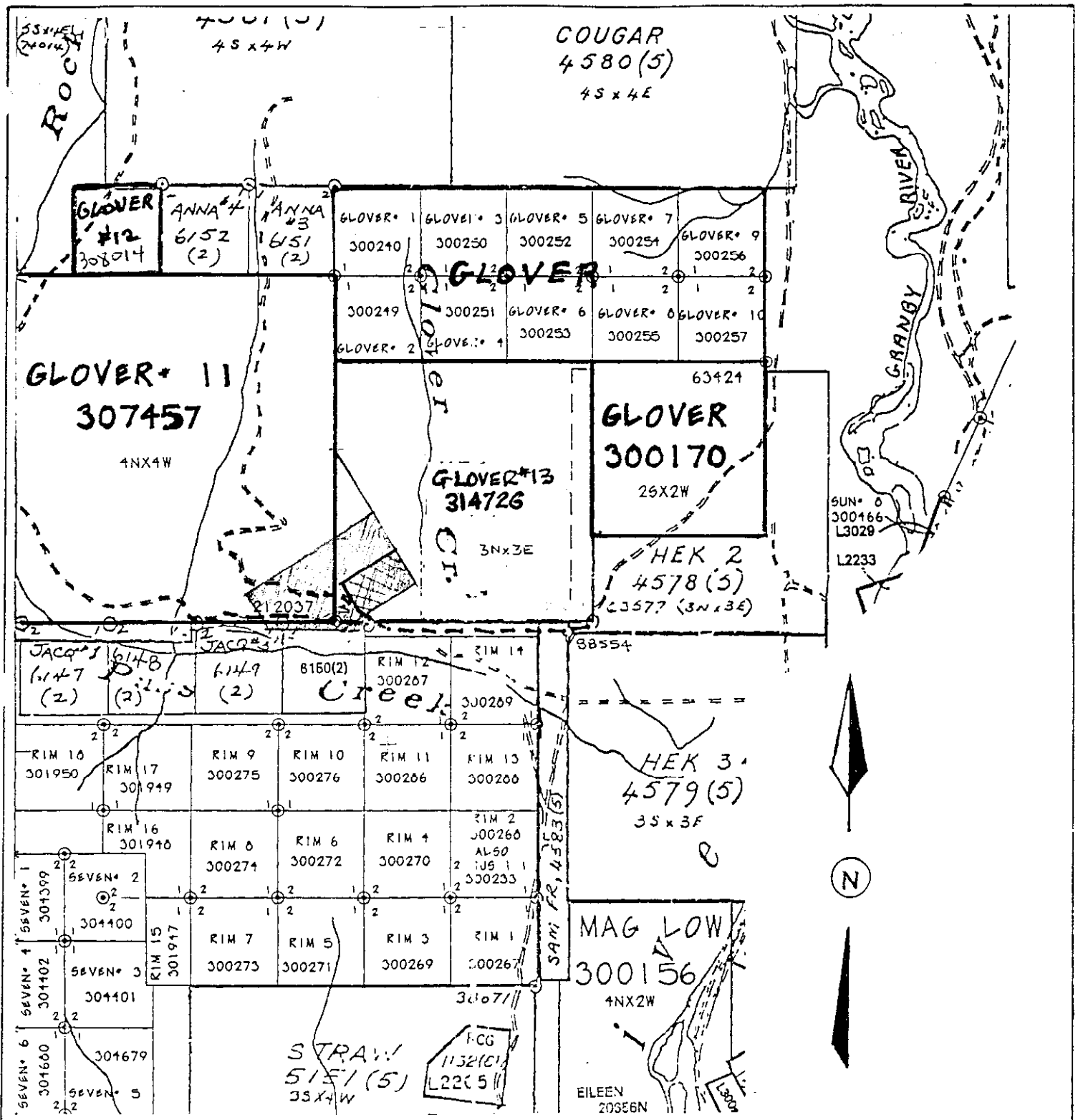
GLOVER CLAIM GROUP

GREENWOOD MINING DIV.

NTS 82E/1W

Lat: 49°12'N Long: 118°27'W

Scale	Date	Figure
1:250000	Sept 1997	1



500 m 0 500 1000 1500 2000

METERS

GLOVER CLAIM GROUP

GREENWOOD MINING DIV.

NTS 82E/1W

Lat: 49°12'N Long: 118°27'W

Scale	Date	Figure
1:31600	Sept 1997	2

1975-76	Geological mapping, magnetometer surveys and 1973 feet of diamond drilling (CB75-1 to 11) was completed by Boundary Exploration. Ltd.
1983	Grand Forks Mines completed a program of geological mapping, soil geochemical and magnetometer surveys and trenching.
1984	Consolidated Boundary Exploration Ltd. (CBEL) completed 427 feet of diamond drilling (CBG841 & 2) on the Main and Eastern zones of the Hek property.
1986	CBEL undertook a program of 9 ddh (2569 feet) on and around the Glover Creek Zone.
1987-88	Noranda Exploration Ltd. - 9? Hole drill program with geophysics and geochemical surveys.
1993-1997	Prospecting and geophysics(mag/vlf) - John Kemp

Geophysics

The current magnetometer survey was performed with a Scintrex Envi-mag recording proton precession magnetometer with the magnetic sensor at shoulder height in a back-pack. The operator faced consistently due north. Diurnal corrections were not attempted for this survey, nor was it deemed necessary as the magnetic relief is in excess of 300 nano-teslas.

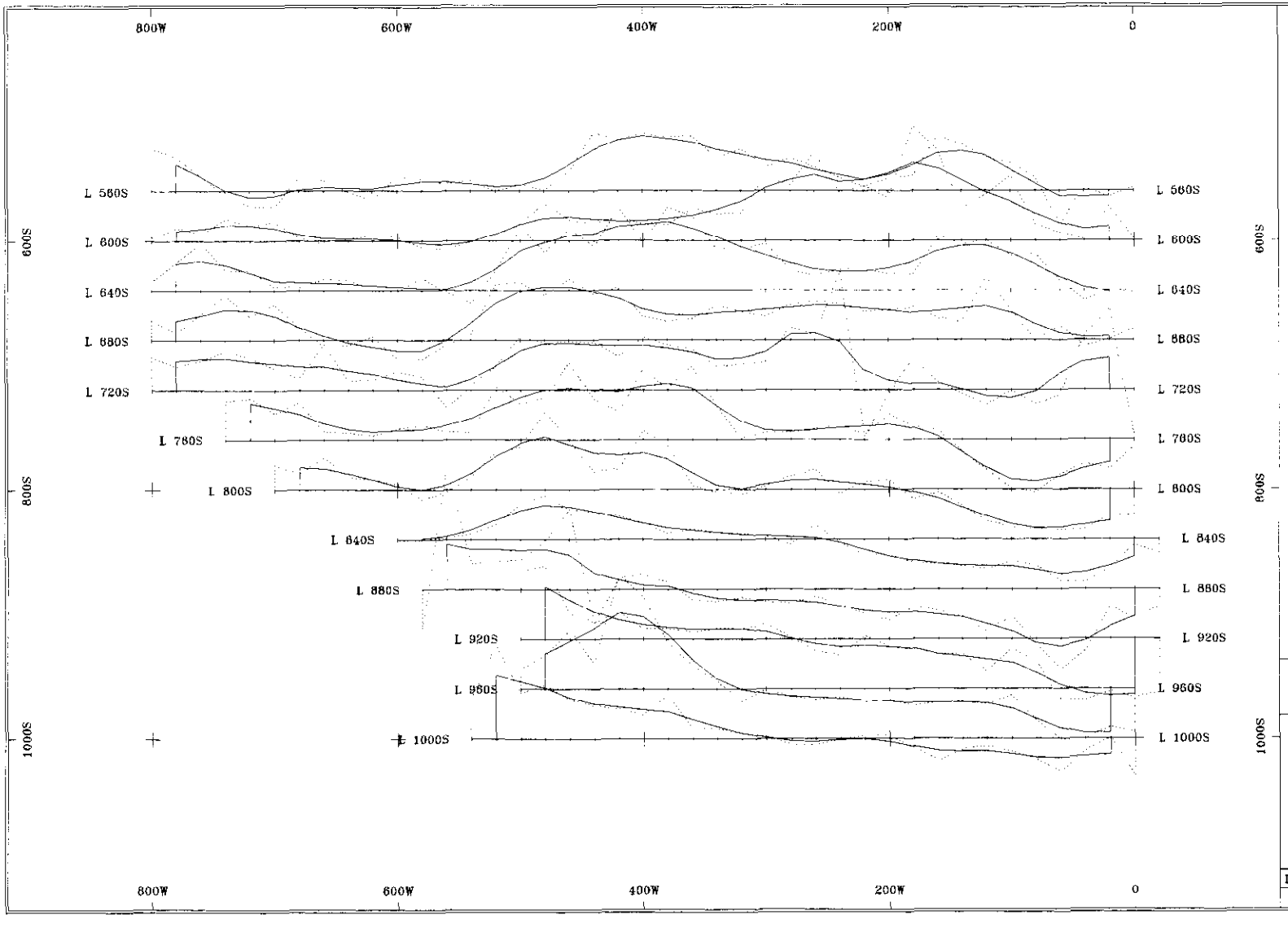
Data was dumped daily to a computer for storage and later analysis. The raw files were shipped to the author who editted the data where necessary and produced stacked profiles, data postings and coloured contour maps at a scale of 1:2500 and also at 1:5000 scale for inclusion into the report.

Geochemistry

Forty soil samples were taken from a depth of approximately 25 centimeters (10 inches) and submitted to Eco-Tech Labs in Kamloops for analysis for Au, Ag, As, Cu, Mo, Pb, Sb and Zn. Gold analysis was by fire assay and the others by ICP. Insufficient sample remained for ICP analysis for one sample.

Results for gold, silver, molybdenum and arsenic were not plotted as there was little variation in the results. Gold and silver values were all below 5 ppb and 0.2ppm respectively. Arsenic levels were below 10 ppm and thus in the noise level for ICP. Only 3 samples were above the detection limit for molybdenum. Trace amounts of antimony were noted in 20 of the samples, the highest value was 0.4 ppm.

Copper, lead and zinc results show some variation and were plotted at 1:5000 scale as symbol plots. None of the results are remarkable; in fact, they are anomalously low for the environment, especially zinc.



MAG		MF
57400	–	57400
nT	-	nT
56400	–	56400

0 50 100 150 200
METERS

GLOVER CLAIMS

GLOVER CREEK AREA

Lat: 49°12'N Long: 118°27'W
NTS 82E/1W GREENWOOD M.D.
GROUND MAGNETOMETER SURVEY
Stacked Profiles

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		

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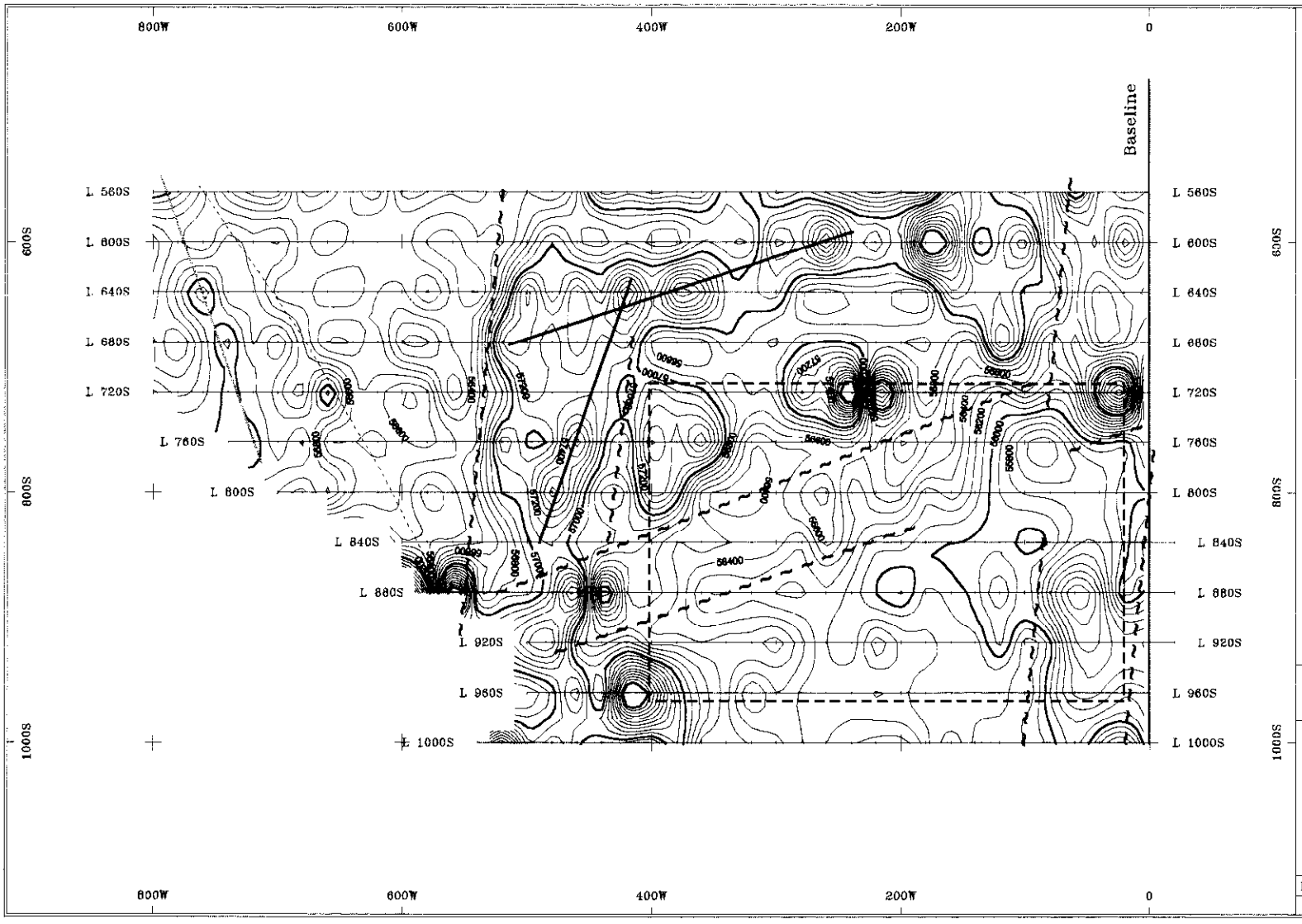
J. M. THORNTON
BRITISH COLUMBIA
GEOSCIENTIST



LEGEND

Fault / Contact

Magnetic Dyke

Contour Interval: 100, 500 nT

Geochem Survey Limits

0 50 100 150 200

METERS

GLOVER CLAIMS

GLOVER CREEK AREA

Lat: 49°12'N Long: 118°27'W

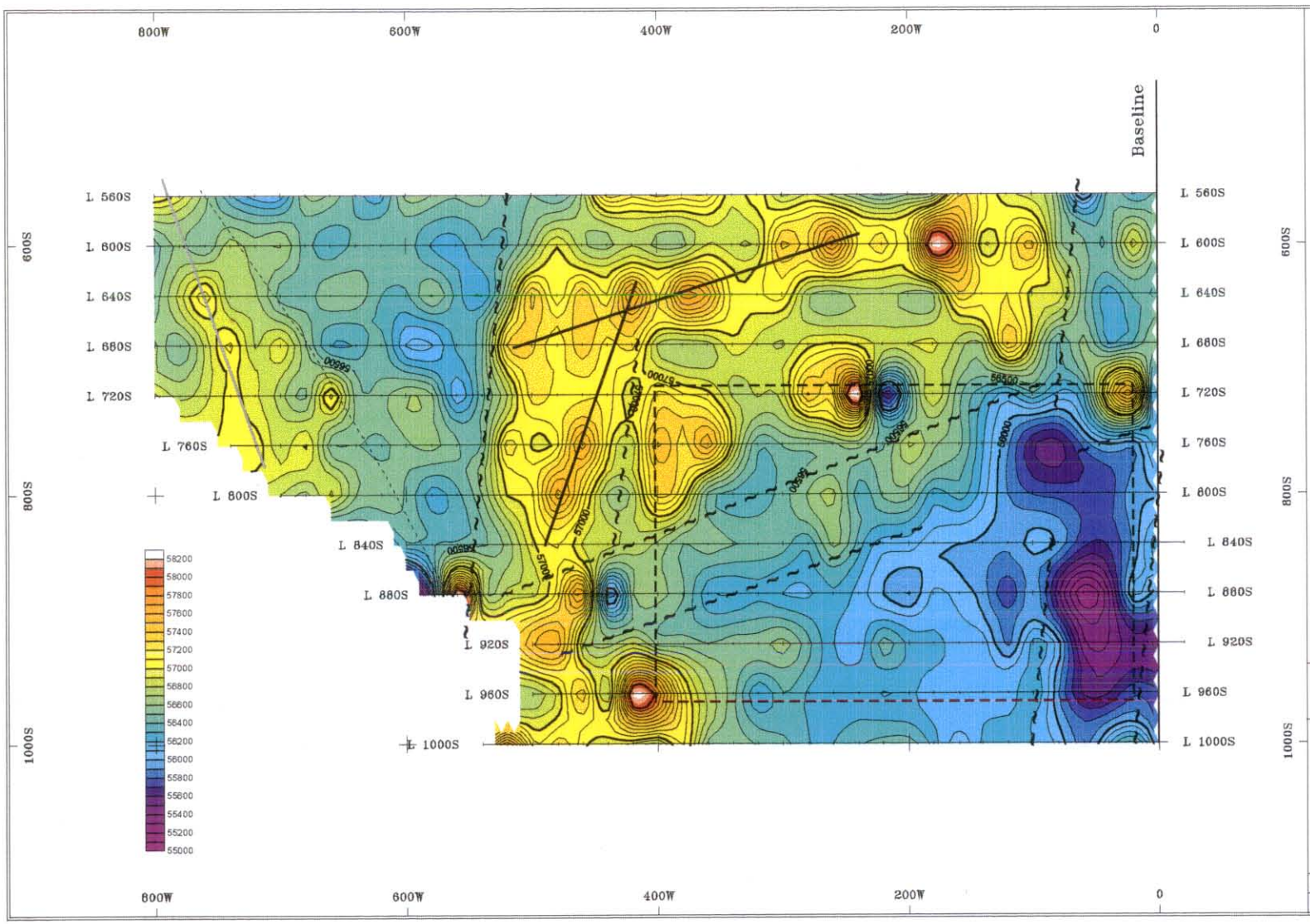
NTS 82E/1W GREENWOOD M.D.

GROUND MAGNETOMETER SURVEY

Magnetic Contours

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		

PROFESSIONAL PROVINCE OF J. M. THORNTON BRITISH COLUMBIA GEOSCIENTIST



LEGEND

Fault / Contact

Magnetic Dyke

Contour Interval: 100, 500 nT

Geochem Survey Limits

0 50 100 150 200

METERS

GLOVER CLAIMS

GLOVER CREEK AREA

Lat: 49°12'N Long: 118°27'W

NTS 82E/1W GREENWOOD M.D.

GROUND MAGNETOMETER SURVEY

Magnetic Contours

Drawn by: jmt	Date: 97.09.04	Figure: 5
jmt & associates		

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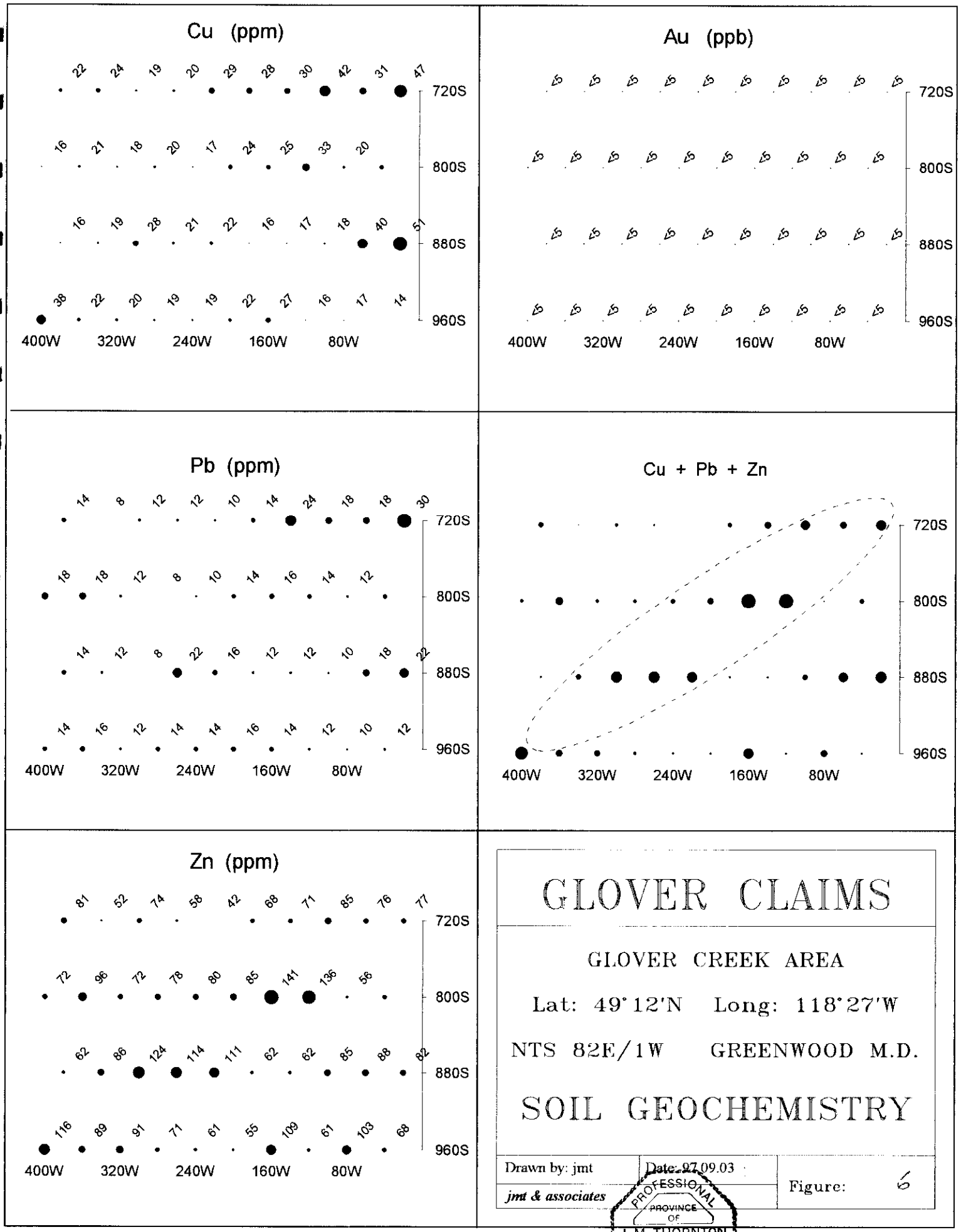
BRITISH COLUMBIA
GEOSCIENTIST


Cu (ppm)
22 24 19 20 29 28 30 42 31 47
16 21 18 20 17 24 25 33 20
16 19 28 21 22 16 17 18 40 51
38 22 20 19 19 22 27 16 17 14
720S
800S
880S
960S
400W 320W 240W 160W 80W
Au (ppb)
720S
800S
880S
960S
400W 320W 240W 160W 80W
Pb (ppm)
14 8 12 12 10 14 24 18 18 30
18 18 12 8 10 14 16 14 12
14 12 8 22 16 12 12 10 18 22
14 16 12 14 14 16 14 12 10 12
720S
800S
880S
960S
400W 320W 240W 160W 80W
Cu + Pb + Zn
720S
800S
880S
960S
400W 320W 240W 160W 80W
Zn (ppm)
81 52 74 58 42 68 71 85 76 77
72 96 72 78 80 85 141 136 56
62 86 124 114 111 62 62 85 88 82
116 89 91 71 61 55 109 61 103 68
720S
800S
880S
960S
400W 320W 240W 160W 80W
GLOVER CLAIMS
GLOVER CREEK AREA
Lat: 49°12'N Long: 118°27'W
NTS 82E/1W GREENWOOD M.D.
SOIL GEOCHEMISTRY
Drawn by: jmt
Date: 97.09.03
jmt & associates
Figure: 6
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J. M. THORNTON
BRITISH COLUMBIA
GEOSCIENTIST

A combined Cu+Pb+Zn plot was also prepared which shows a distinct ENE trend across the survey area.

Results

The magnetic profile map shows a distinct magnetic low in the north-west corner of the survey area. It is bounded on the east by a fault contact with presumably volcanics of low susceptibility. Across the south-central part of the survey area, flat magnetic response suggests the presence of sediments. Spiky responses attributed to very small near surface magnetite concentrations are noted at the following locations:

Line	Station	Comments
720S	230W	isolated magnetic high or narrow dyke possibly trending toward similar feature on line 680S at 120W
720S	20W	(c)
880S	560W	(b)
880S	450W	(a)
920S	430W	(a)
980S	410W	(a)
1000S	380W	(a)
1000S	520W	(b)

Anomalies marked (a) and (b) above are possibly caused by 2 thin parallel dykes but are not well represented in the data.

The colour map (Figure 6) shows the location of inferred structure and the location of several magnetic zones. It also shows the location of the geochemical soil survey.

None of the observed magnetic anomalies are caused by significant concentrations of pyrrhotite.

All anomalies exhibit less than 40 meter strike length and are considered to arise from thin discontinuous veinlets/fracture fillings of pyrite/pyrrhotite mineralization.

Based on the earlier work by Noranda and John Kemp on the eastern part of this grid, the more magnetic rocks are tentatively identified as metasediments/volcanics and the less magnetic rocks to be sediments.
Better gold mineralization is reported to lie on metasediment/syenite contacts in the area. The ENE trend appears to arise from at least one contact as a continuation of a contact noted in the magnetometer survey immediately to the east. It matches a similar trend noted in the geochem base metal plot (zinc in particular).

Conclusions

Anomalies on the ENE trend may be significant particularly near 20W on Line 720S where the geochem plot.

The N/S contact at 550W between the non-magnetic and magnetic rocks may be significant particularly if the more magnetic rocks in the center of the grid are syenites rather than volcanics.

Magnetic activity appears to be increasing in the south-west corner of the grid and may be indicative of a more encouraging exploration target especailly where the inferred contact is thought to pass..

J.M. Thornton, P.Geo.

References

B.C. Minister of Mines, Annual Reports, 1901-present

Sookochoff, L. (1986) Assessment Report, Consolidated Boundary Exploration Ltd.

Gill, Graham, (1988) Assessment Report, Noranda Exploration Ltd.

Statement of Qualifications

I, J.M. Thornton, residence at 3393 Fairmont Road, North Vancouver B.C, declare:

1) I have been practicing as a geophysicist continuously since 1971 and as a consulting geophysicist since 1987.

2) I am a registered geoscientist in good standing with the Association of Professional Engineers and Geoscientists of BC.

3) I have not visited the property mentioned in the report.

4) I have no interest in nor expect to receive any interest in the property mentioned in this report.

J.M. Thornton, P.Geo.

Dated at North Vancouver, B.C. on September 3, 1997

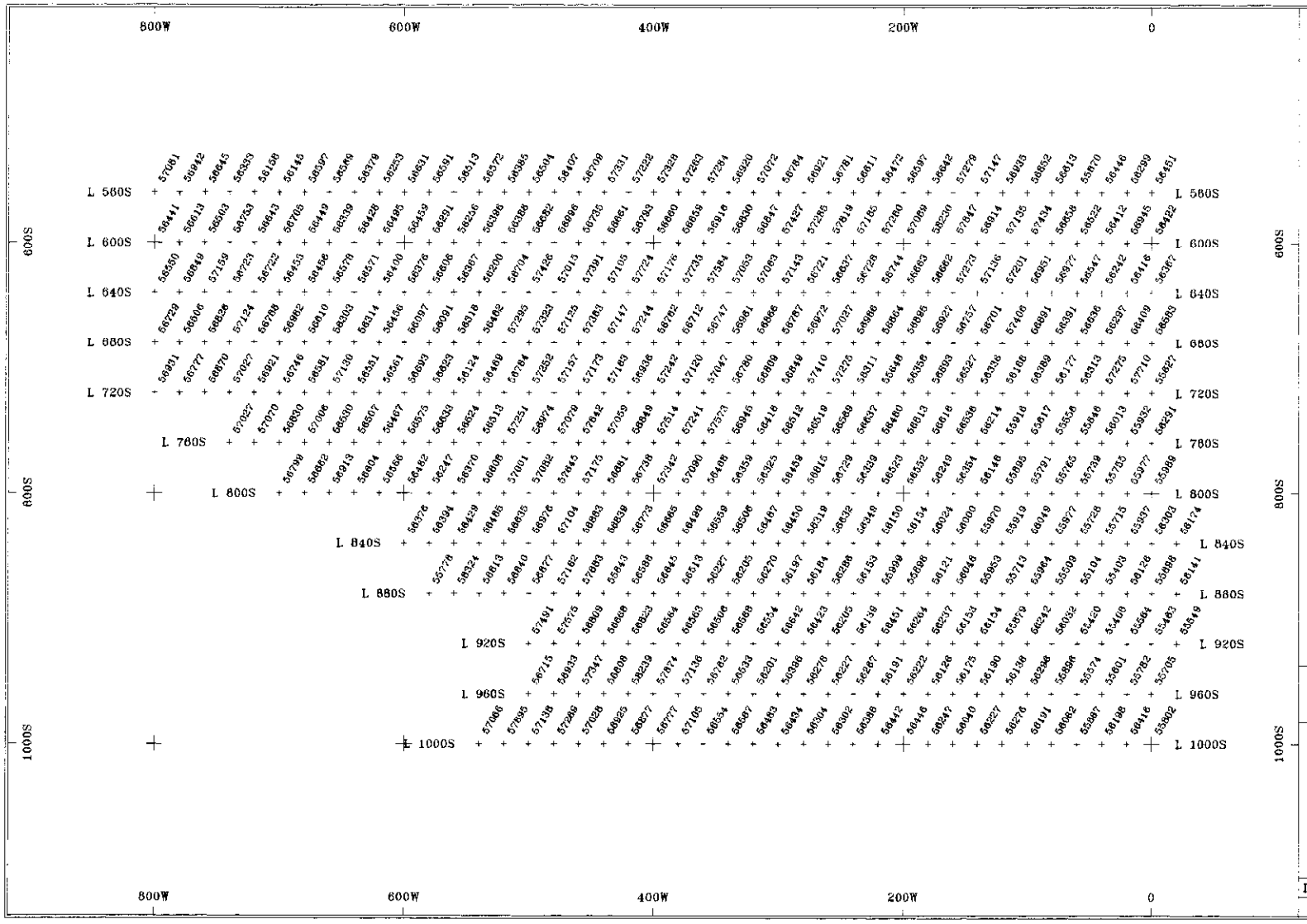
Appendix A - Data Listings

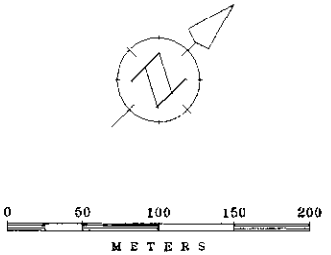
Geophysics

Magnetometer Data Posting 1:5000

J.M.Thornton

September 1997





GLOVER CLAIMS

GLOVER CREEK AREA

Lat: 49°12'N Long: 118°27'W

NTS 82E/1W GREENWOOD M.D.

GROUND MAGNETOMETER SURVEY

Data Posting

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		

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BRITISH COLUMBIA
GEOSCIENTIST

Appendix A - Data Listings

Geochemical Survey

Certificate of Analysis

J.M.Thornton

September 1997

Eco-Tech
LABORATORIES LTD.

ASSAYING
GEOCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 6T4 Phone (250) 573-5700
Fax (250) 573-4557

CERTIFICATE OF ANALYSIS AK 97-356

RAINBOWS & SUNSHINE
BOX 866
GRAND FORKS, BC
V0H 1H0

20-May-97

ATTENTION: JOHN KEMP

No. of samples received: 40
Sample type: SOIL
PROJECT #: GLOVER
SHIPMENT #: 01
Samples submitted by: JOHN KEMP

ET #.	Tag #	Au (ppb)
1	L07+20S 00+20W	<5
2	L07+20S 00+60W	<5
3	L07+20S 01+00W	<5
4	L07+20S 01+40W	<5
5	L07+20S 01+80W	<5
6	L07+20S 02+20W	<5
7	L07+20S 02+60W	<5
8	L07+20S 03+00W	<5
9	L07+20S 03+40W	<5
10	L07+20S 03+80W	<5
11	L08+00SE 00+80W	<5
12	L08+00SE 01+20W	<5
13	L08+00SE 01+60W	<5
14	L08+00SE 02+00W	<5
15	L08+00SE 02+40W	<5
16	L08+00SE 02+80W	<5
17	L08+00SE 03+20W	<5
18	L08+00SE 03+60W	<5
19	L08+00SE 04+00W	<5
20	L08+00SE 00+40W NSC	<5
21	L08+80S 00+20W	<5
22	L08+80S 00+60W	<5
23	L08+80S 01+00W	<5
24	L08+80S 01+40W	<5
25	L08+80S 01+80W	<5

RAINBOWS & SUNSHINE AK 97-356 20-May-97

ET #.	Tag #	Au (ppb)
26	L08+80S 02+20W	<5
27	L08+80S 02+60W	<5
28	L08+80S 03+30W	<5
29	L08+80S 03+40W	<5
30	L08+80S 03+80W	<5
31	L09+60S 00+40W	<5
32	L09+60S 00+80W	<5
33	L09+60S 01+20W	<5
34	L09+60S 01+80W	<5
35	L09+60S 02+00W	<5
36	L09+60S 02+40W	<5
37	L09+60S 02+80W	<5
38	L09+60S 03+20W	<5
39	L09+60S 03+60W	<5
40	L09+60S 04+00W	<5

QC DATA:

Repeat:

1	L07+20S 00+20W	<5
10	L07+20S 03+80W	<5
19	L08+00SE 04+00W	<5
28	L08+80S 03+30W	<5
36	L09+60S 02+40W	<5

Standard:

GEO'97	145
GEO'97	140

ECO-TECH LABORATORIES LT
per Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

XLS/97
fax: 250-442-3401

Eco-Tech LABORATORIES LTD.

CERTIFICATE OF ANALYSIS AK 97-356

RAINBOWS & SUNSHINE
BOX 866
GRAND FORKS, BC
V0H 1H0

28-May-97

ATTENTION: JOHN KEMP

"PATHFINDER 7"

No. of samples received: 39
Sample type: SOIL
PROJECT #: GLOVER
SHIPMENT #: 01
Samples submitted by: JOHN KEMP

ET #.	Tag #	Ag (ppm)	As (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Sb (ppm)	Zn (ppm)
1	L07+20S 00+20W	<0.2	10	47	<1	30	0.4	77
2	L07+20S 00+60W	<0.2	4	31	<1	18	<.2	76
3	L07+20S 01+00W	<0.2	7	42	<1	18	<.2	85
4	L07+20S 01+40W	<0.2	3	30	<1	24	<.2	71
5	L07+20S 01+80W	<0.2	4	28	<1	14	<.2	68
6	L07+20S 02+20W	<0.2	3	29	<1	10	<.2	42
7	L07+20S 02+60W	<0.2	3	20	<1	12	<.2	58
8	L07+20S 03+00W	<0.2	3	19	<1	12	<.2	74
9	L07+20S 03+40W	<0.2	3	24	<1	8	<.2	52
10	L07+20S 03+80W	<0.2	3	22	<1	14	0.2	81
11	L08+00SE 00+80W	<0.2	4	20	<1	12	0.2	56
12	L08+00SE 01+20W	<0.2	6	33	<1	14	0.4	136
13	L08+00SE 01+60W	<0.2	8	25	<1	16	0.4	141
14	L08+00SE 02+00W	<0.2	4	24	<1	14	0.4	85
15	L08+00SE 02+40W	<0.2	4	17	<1	10	0.2	80
16	L08+00SE 02+80W	<0.2	5	20	<1	8	0.2	78
17	L08+00SE 03+20W	<0.2	4	16	3	12	0.2	72
18	L08+00SE 03+60W	<0.2	4	21	<1	18	0.4	96
19	L08+00SE 04+00W	<0.2	4	16	<1	18	0.2	72
20	L08+00SE 00+40W NSC	NO SAMPLE						
21	L08+80S 00+20W	<0.2	2	51	<1	22	0.2	82
22	L08+80S 00+60W	<0.2	3	40	<1	18	0.2	88
23	L08+80S 01+00W	<0.2	2	18	<1	10	0.2	85
24	L08+80S 01+40W	<0.2	3	17	<1	12	<.2	62

RAINBOWS & SUNSHINE AK 97-356 "PATHFINDER 7" 28-May-97

ET #.	Tag #	Ag (ppm)	As (ppm)	Cu (ppm)	Mo (ppm)	Pb (ppm)	Sb (ppm)	Zn (ppm)
25	L08+80S 01+80W	<0.2	2	18	<1	12	0.2	62
26	L08+80S 02+20W	<0.2	5	22	4	16	0.2	111
27	L08+80S 02+60W	<0.2	4	21	2	22	0.2	114
28	L08+80S 03+30W	<0.2	5	28	<1	8	0.2	124
29	L08+80S 03+40W	<0.2	4	19	<1	12	0.2	86
30	L08+80S 03+80W	<0.2	3	16	<1	14	0.2	62
31	L09+60S 00+40W	<0.2	3	14	<1	12	<.2	68
32	L09+60S 00+80W	<0.2	2	17	<1	10	<.2	103
33	L09+60S 01+20W	<0.2	2	16	<1	12	<.2	61
34	L09+60S 01+60W	<0.2	4	27	<1	14	<.2	109
35	L09+60S 02+00W	<0.2	3	22	<1	16	<.2	55
36	L09+60S 02+40W	<0.2	4	19	<1	14	0.2	61
37	L09+60S 02+80W	<0.2	3	19	<1	14	<.2	71
38	L09+60S 03+20W	<0.2	3	20	<1	12	0.2	91
39	L09+60S 03+60W	<0.2	3	22	<1	16	<.2	89
40	L09+60S 04+00W	<0.2	6	38	<1	14	0.2	116

QC DATA:

Repeat:

1	L07+20S 00+20W	<0.2	17	40	<1	30	0.2	75
10	L07+20S 03+80W	<0.2	3	20	<1	16	0.2	76
19	L08+00SE 04+00W	<0.2	4	15	<1	16	0.2	70
28	L08+80S 03+30W	<0.2	4	28	<1	12	0.6	125
36	L09+60S 02+40W	<0.2	3	19	<1	16	0.2	67

Standard:

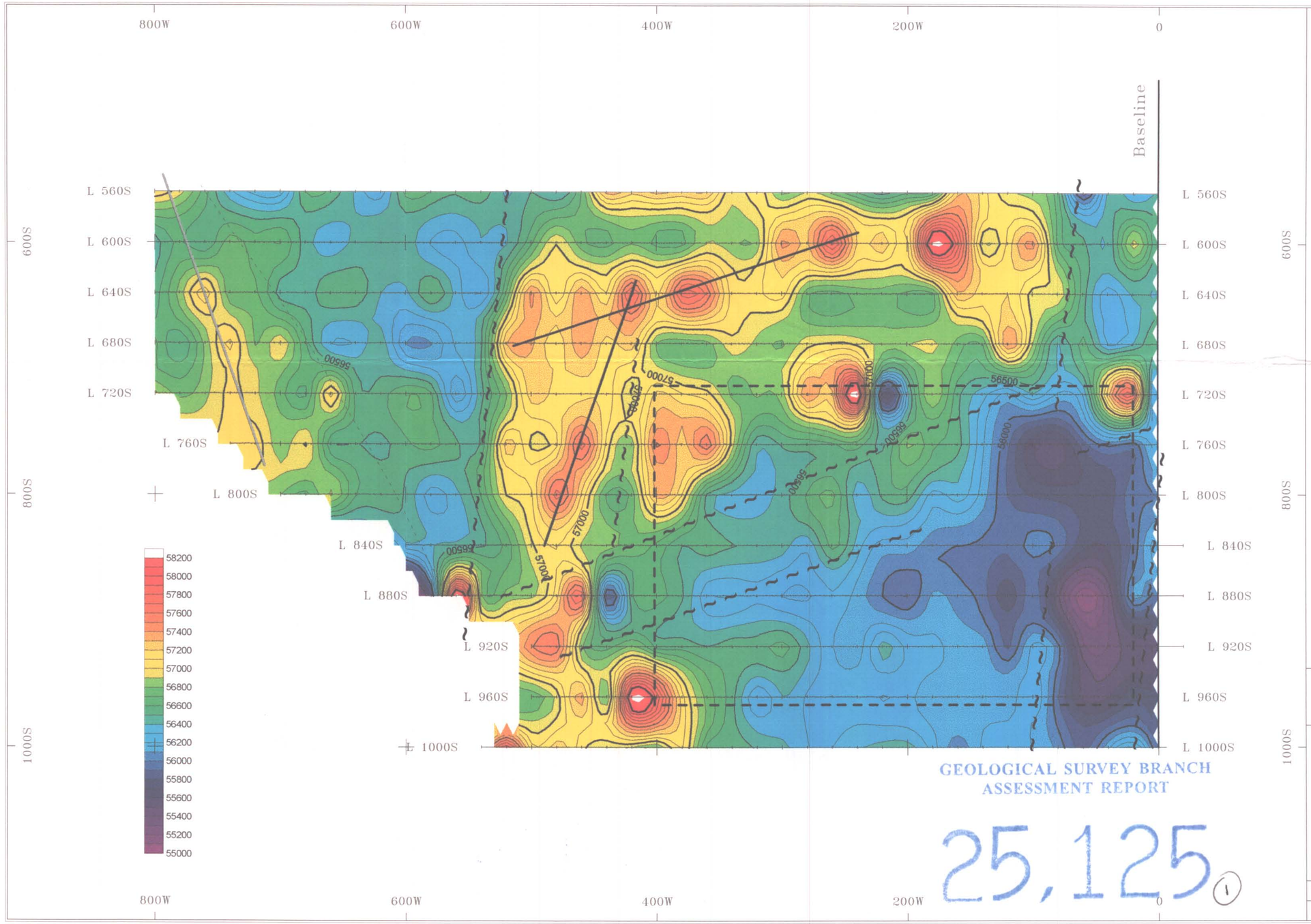
GEO'97		1.2	42	81	<1	18	2.0	70
GEO'97		1.2	43	87	<1	18	1.8	74

df/361
XLS/97
fax: 250-442-3401

ECO-TECH LABORATORIES LTD.
per Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

Cost Statement

Grid Placement	8.4km @ $125/km	1050
Soil Sampling	2 days @ $175	350
Magnatometer Survey	2 days @ $175	350
Assay costs	40 @ $22.88	915.03
Magnatometer rental		500
Transportation	4x4 @$40/day	1200
Report and Interpretation		520
Total		4885.03



LEGEND

Fault / Contact

Magnetic Dyke

Contour Interval: 100, 500 nT

Geochem Survey Limits

0 50 100 150 200

METERS

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,125

GLOVER CLAIMS

GLOVER CREEK AREA

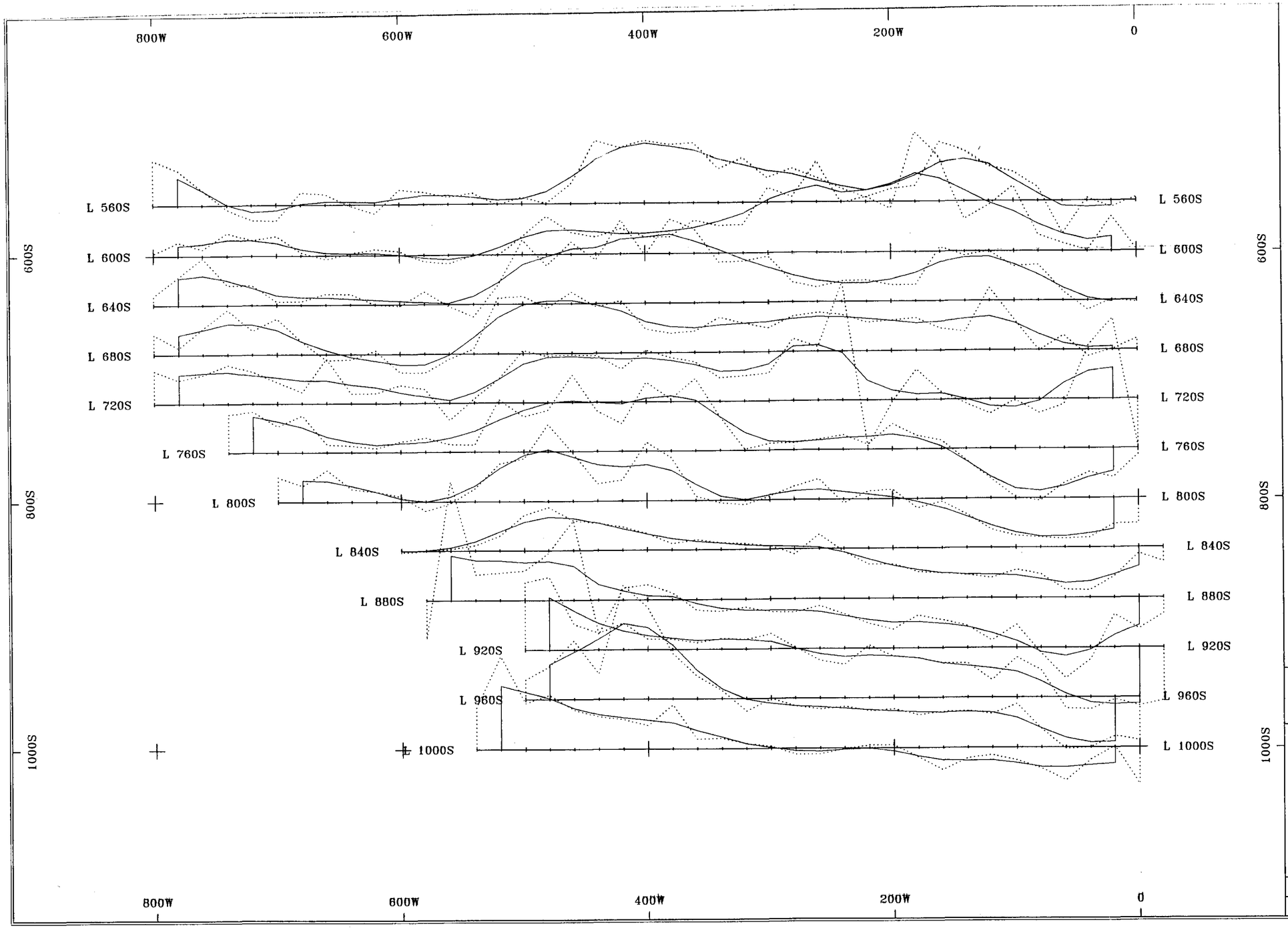
Lat: 49 12'N Long: 118 27'W

NTS 82E/1W GREENWOOD M.D.

GROUND MAGNETOMETER SURVEY

Magnetic Contours

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		



GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,125 (2)

MAG	MF
57400	57400
nT	nT
56400	56400

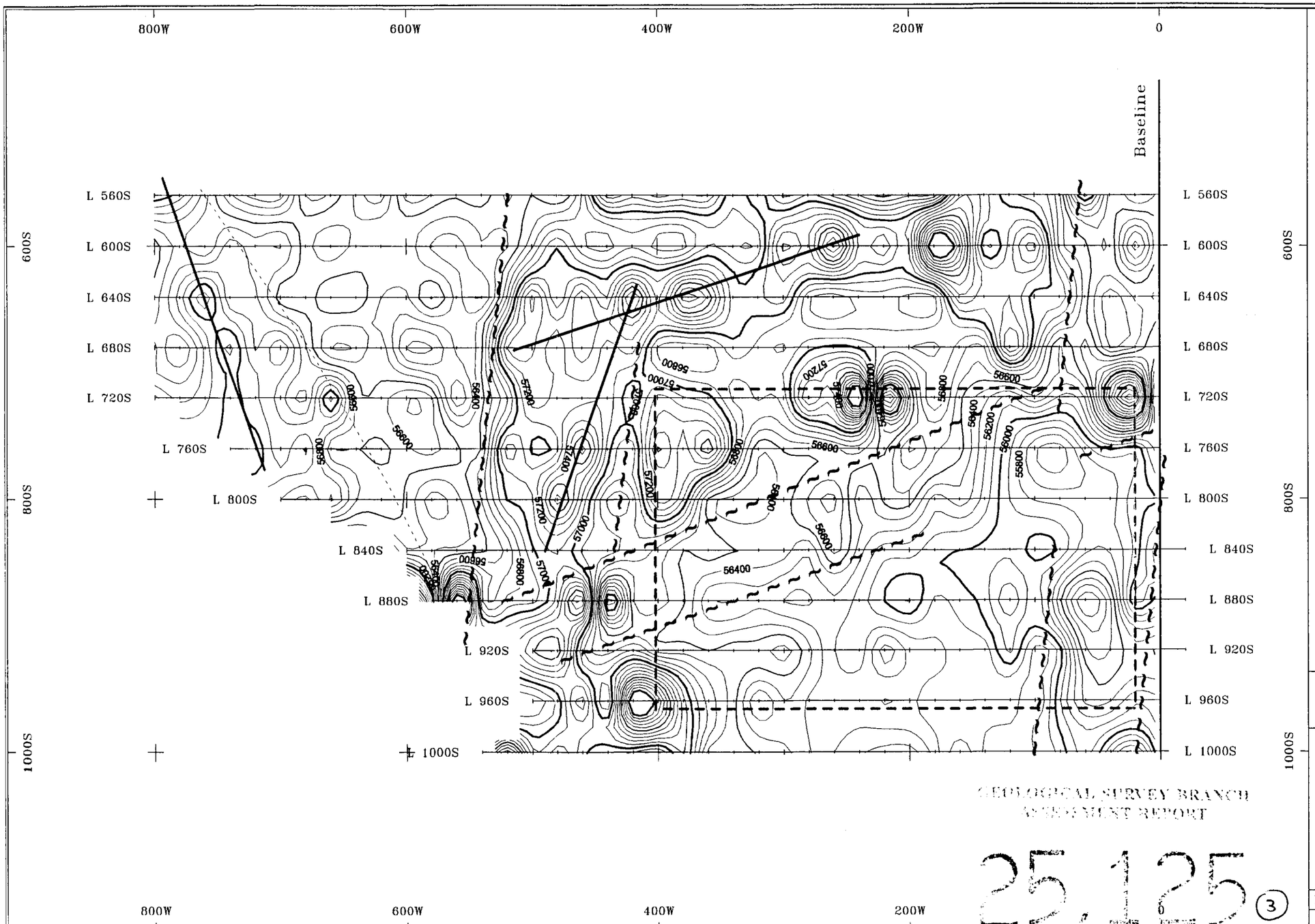
0 50 100 150 200
METERS

GLOVER CLAIMS

GLOVER CREEK AREA

Lat: 49 12'N Long: 118 27'W
NTS 82E/1W GREENWOOD M.D.
GROUND MAGNETOMETER SURVEY
Stacked Profiles

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		



LEGEND

Fault / Contact

Magnetic Dyke

Contour Interval: 100, 500 nT

Geochem Survey Limits

0 50 100 150 200

METERS

GLOVER CLAIMS

GLOVER CREEK AREA

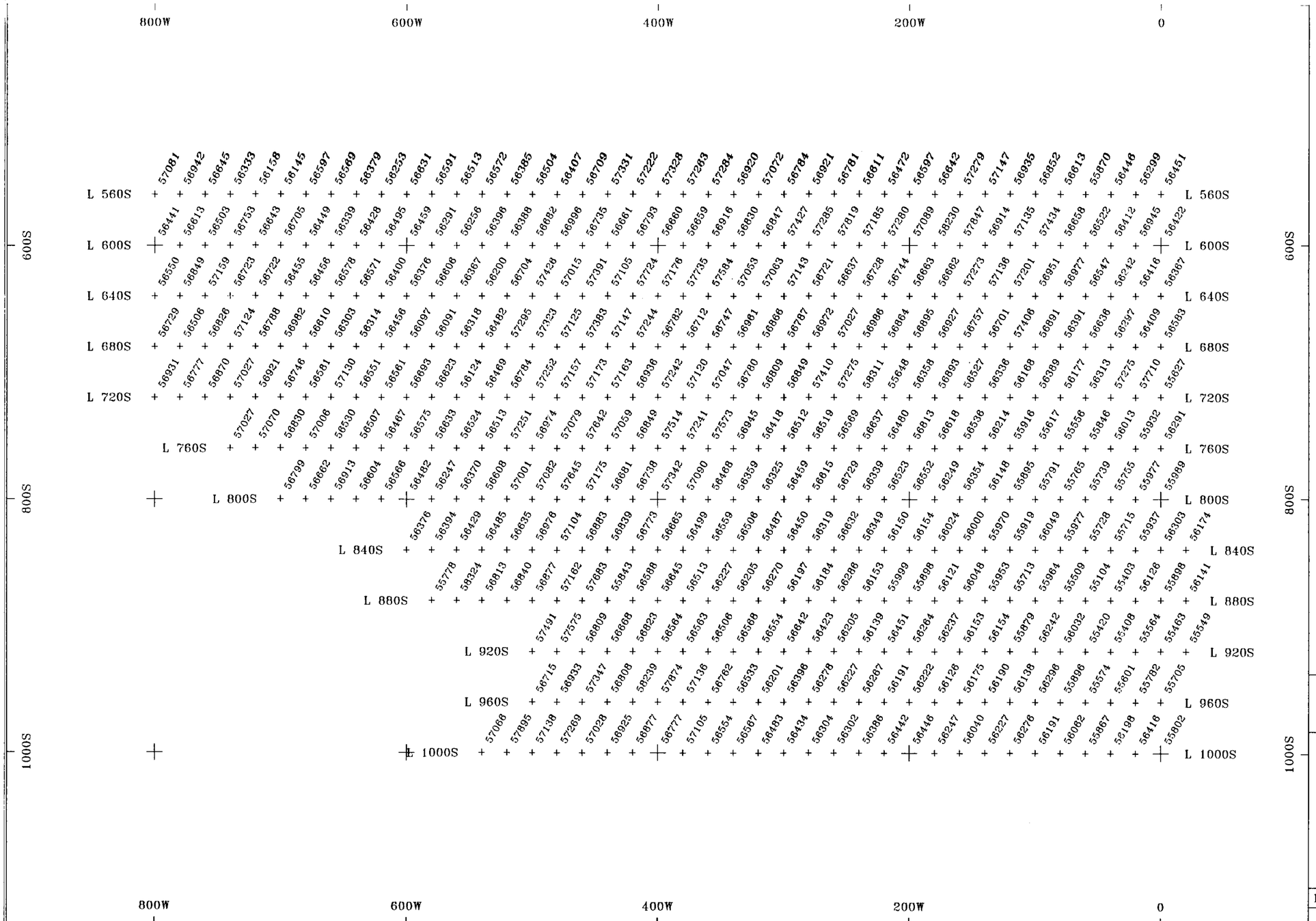
Lat: 49 12'N Long: 118 27'W

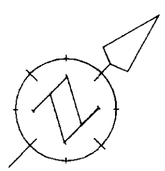
NTS 82E/1W GREENWOOD M.D.

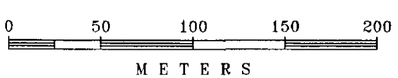
GROUND MAGNETOMETER SURVEY

Magnetic Contours

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		







GLOVER CLAIMS

GLOVER CREEK AREA

Lat: 49 12'N Long: 118 27'W

NTS 82E/1W GREENWOOD M.D.

GROUND MAGNETOMETER SURVEY

Data Posting

Drawn by: jmt	Date: 97.09.04	Figure:
jmt & associates		