MAGNETOMETER GEOPHYSICAL SURVEYS

LIVINGSTONE CREEK PROJECT

JACKIE DISCOVERY CLAIM P 26333

JACKIE CLAIMS P 26334 – P 26341

N.T.S. 105 E 8: LAT. 62° 19' N. LONG. 134° 16' W

PREPARED BY:

R.L.McINTYRE

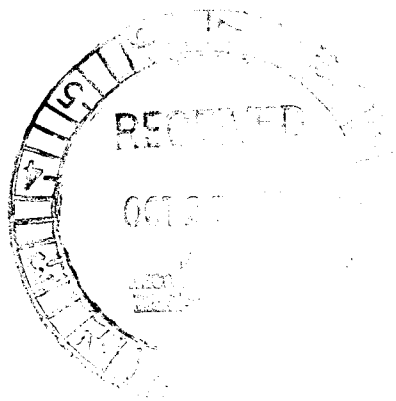
YUKON ENGINEERING SERVICES

PREPARED FOR:

MR. CARL ZIEHE

WHITEHORSE, YUKON

SEPTEMBER 17 & 18, 1988



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Engineering
Services

This report has been examined by the Geological Evaluation Unit under Section 41 Yukon Placer Mining Act and is recommended as allowable representation work in the amount of $ 1800.00 .

W.P. LeBarge

for Chief Geologist, Exploration and Geological Services Division, Northern Affairs Program for Commissioner of Yukon Territory.

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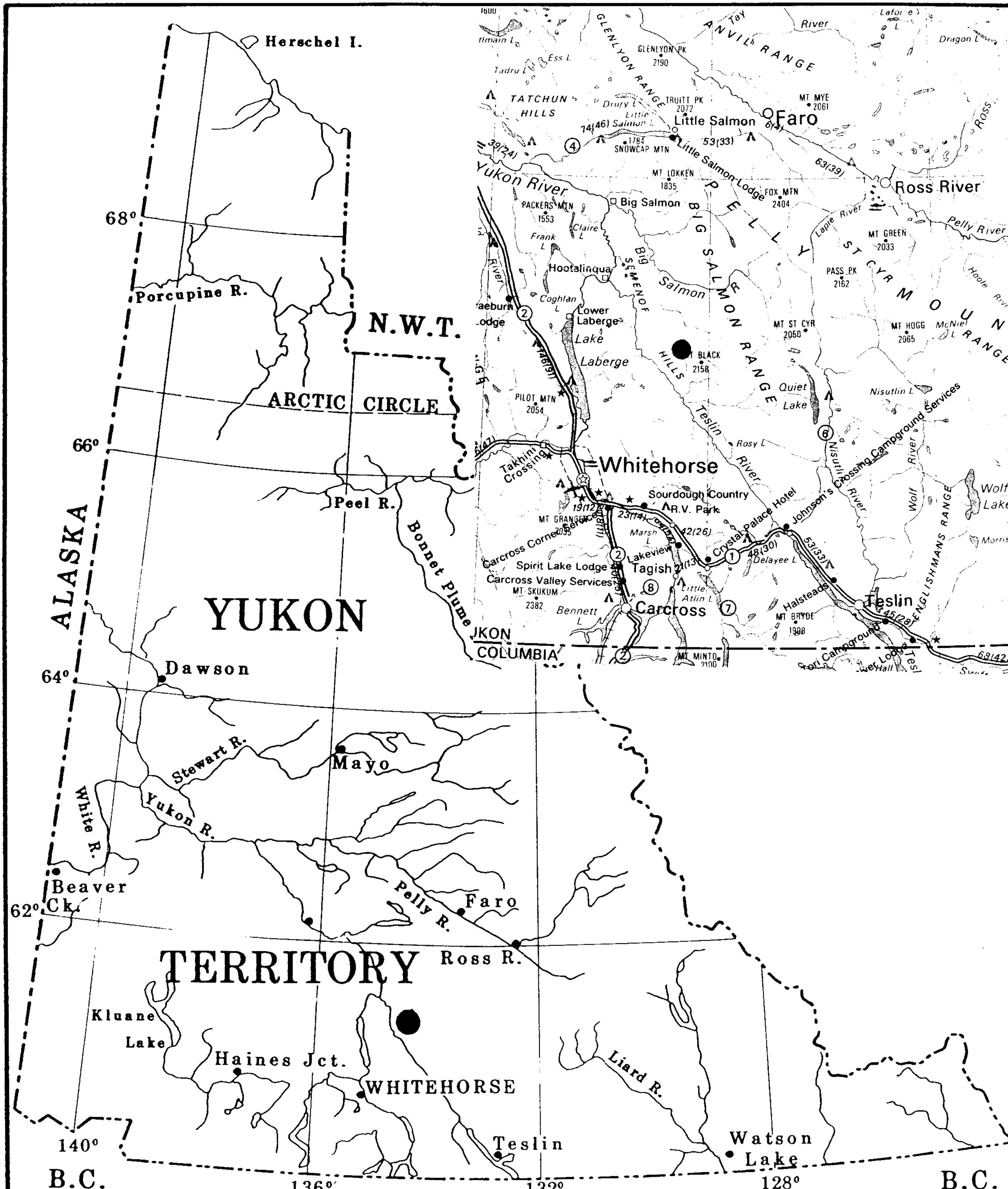
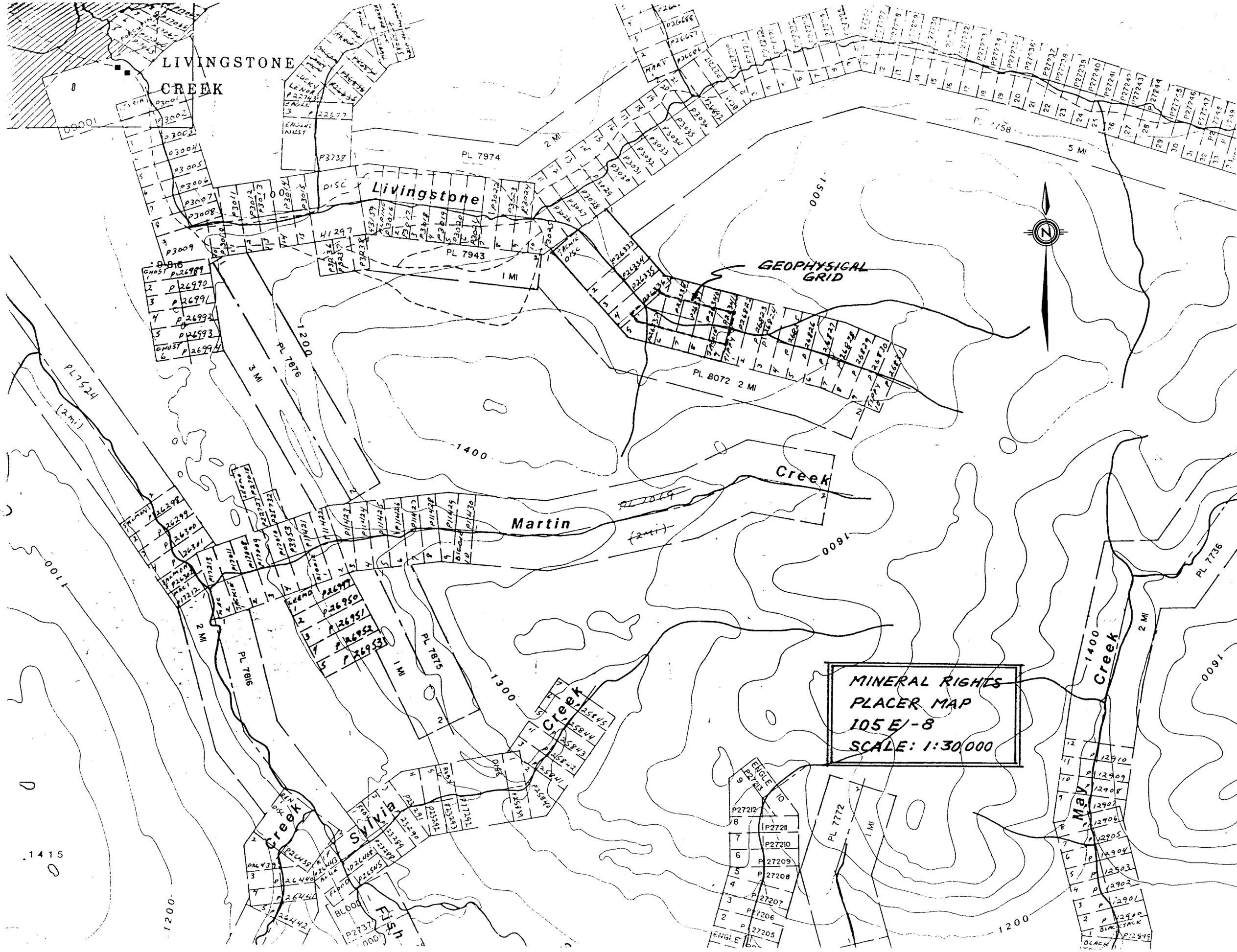


Herschel I.
68°
Porcupine R.
N.W.T.
ARCTIC CIRCLE
66°
Peel R.
Bonnet Plume
ALASKA
YUKON
64°
Dawson
Stewart R.
Mayo
White R.
Yukon R.
Beaver Ck.
62°
Pelly R.
Faro
Ross R.
TERRITORY
Kluane Lake
Haines Jct.
WHITEHORSE
Liard R.
Teslin
Watson Lake
140°
136°
132°
128°
B.C.
B.C.
ANVIL RANGE
GLENLYON RANGE
GLENLYON PK 2190
TATCHUN HILLS
TRUITT PK 2072
MT MYE 2061
Little Salmon
Faro
SNOWCAP MTN
Little Salmon Lodge
Yukon River
MT LOKKEN 1835
FOX MTN 2404
Ross River
PACKERS MTN 1553
Big Salmon
PELLY
Pelly River
MT GREEN 2033
ST CYR MOUNTAINS
BIG SALMON RANGE
Hootalinqua
SEMENOF HILLS
PASS PK 2162
Lower Laberge
Lake Laberge
MT ST CYR 2050
MT HOGG 2065
MT BLACK 2158
PILOT MTN 2054
Quiet Lake
Nisutlin L
Teslin River
Takhini Crossing
Whitehorse
Johnson's Crossing Campground Services
Sourdough Country R.V. Park
Crystal Palace Hotel
Nisutlin River
Wolf River
Wolf Lake
MT GRANGER 2055
Marsh L
Carcross Corner Service
Lakeview
Spirit Lake Lodge
Tagish
Carcross Valley Services
MT SKUKUM 2382
Bennett L
Carcross
Little Atlin L
Halsteads
Teslin
ENGLISHMANS RANGE
MT BRYDE 1908
YUKON
BRITISH COLUMBIA
MT MINTO 2100


LIVINGSTONE CREEK
Livingstone
PL 7974
2 MI
PL 7758
5 MI
PL 7943
1 MI
PL 8072 2 MI
GEOPHYSICAL GRID
PL 7524
(2 mi)
3 MI
PL 7876
PL 7816
2 MI
1 MI
PL 7875
Martin
Creek
Creek
Creek
Sylvia
Creek
May
Creek
PL 7772
1 MI
PL 7736
2 MI
1500
1400
1600
1300
1200
1100
1000
1415
MINERAL RIGHTS
PLACER MAP
105 E/-8
SCALE: 1:30,000

MAGNETOMETER GEOPHYSICAL SURVEY:

LIVINGSTONE CREEK, YUKON TERRITORY
105 E 8

1. Summary:

This report presents the methodology, results, and interpretation of a magnetometer geophysical survey conducted by Yukon Engineering Services on Mr. Carl Ziehe's Livingstone Creek placer claims.

The purpose of the survey was to locate alluvial paleo-channels in the modern stream valley sediments by interpretation of the magnetic response of their associated magnetic heavy minerals concentrations.

The major result of magnetometer surveys when applied to alluvial placer gold exploration is the indication of most promising testing locations. The method gives qualitative information for magnetite in stream gravels, that may or may not bear a direct relationship to gold content.

This survey did in fact indicate some classic magnetometer responses that can be interpreted as stream deposits containing magnetic minerals, and follow-up testing in those locations is recommended in order to:

1. confirm presence of old stream channels indicated by the magnetometer surveys;
2. establish the correlation between varying magnetite concentrations and that of gold;

The surveys were conducted by R.L. McIntyre, Geological Technician, with assistance in the form of geophysical grid establishment by R.A Slade and J.H. Groenewegen.

The geophysical program was conducted during the period September 17 and 18 , 1988.

2. Property Location and Access

The Livingstone Creek property of Mr. Ziehe and associates is located on the south fork of Livingstone Creek, approximately fifty air miles northeast of Whitehorse, at 62° 19'N 134° 16'W on NTS map sheet 105 E 8 . See Location Map, (i).

Access is by rotary aircraft , or by winter road from Whitehorse. A dry weather airstrip is located some four kilometers from the property.
The survey was carried out on nine Placer Claims (one discovery claim and eight creek claims):

- Jackie Discovery P26333
- Jackie 2 - 9 P26334 - P26341

3. Equipment and Survey Procedures

The program was conducted using an EDA Instruments OMNI IV proton precession magnetometer, sensitive to 0.1 nano-Teslas (1 nT = 1 gamma), operated in the "Tie-Line" mode. In this method of operation, a reference tie line consisting of observation points at 100 metre intervals along the base-line is surveyed at the beginning of the day.
Measurements are made and taken back to the start point to close the loop. The tie-line algorithms are based on a linear diurnal variation between adjacent tie points and any erratic behaviour of the diurnal variation during that same period. This reference data is stored in solid state memory of the unit, and then total field readings are taken on the grid within the area of the tie-line.

The grid parameters and direction of travel are programmed into the unit and updated at each position increment. The statistical error is calculated for each measurement by internal software, enabling repeat readings to be taken if quality is deemed to be poor. Several readings are taken at the beginning of each survey day to monitor diurnal micropulsations and to check for evidence of solar magnetic storms. The base reference point for the tie line is selected based on these tests.

Data stored in the 48 k memory of the unit was dumped at the end of the survey day to a Zenith Z-185 laptop computer, into the EMXS Surface Compiler engineering software. During the data dumping proceedure, the Omni IV performs the tie-line correction computations. All information fields from the raw data, including Northing, Easting, mag reading in gammas and other pertinent data is downloaded and saved in permanent storage. This file is translated to an exchange file, and read by the digital terrain modeller.

The calculation and plotting of the value strings, or magnetic isoanomaly maps,is performed by an audited software algorithm and plotted by the sp600 plotter (Appendix A).

Geophysical Grid Parameters

The grid was established on the upper, wide portion of the valley using the claim cut line as the baseline.

Baseline : 700 metres;
Crosslines : at fifty metre intervals;
Stations : at five metre intervals;
Tie Line : from 00+00 E to 07+00 E at 100 m stations;
Line length: 100 m N and 50 m S;
Total grid : 3,000 line metres;
Total stations (readings taken, including Tie line and preliminary): 452
Station 07+00 E is at claim post #2, Jackie 9

5. Regional Geology:

The left fork of Livingstone creek is underlain by Carboniferous and Permian age fine grained amphibolite and greenstone, all within the Anvil Allocthonous Assemblage (Templeman-Kluit, 1984). There are no major rock type changes in the survey area, allowing for clean magnetic response of the Quaternary deposits. The 1:50,000 air-borne magnetometer survey (GSC Pap. 1371, 1961) shows very flat magnetic terrain, indicating homogenous bedrock of low average magnetic susceptibility.

6. Results and Data Interpretation:

Appendix 1, Magnetic Contour Map, presents the data as contours of the values in gammas. The first digit of the total field, 5, has been ommitted from the values. This presentation is useful to locate spot highs which may indicate local concentrations of magnetic sand-sized grains.

The reader should then inspect the individual line cross sections (Appendix B) to determine exact locations along the line of the anomalous values. Note that line (Section) 3+50 N was not surveyed, but the section was extracted from the digital terrain model for reference. This is an interpolated representation, and was used to complete the contour map.

The blue line on the contour map is the present day Livingstone creek water course, plotted by hand from field notes. It is evident that the present stream follows closely the geophysically indicated meanders, but is offset at the following locations:

- Line 3+00 E - approx. 30 m to North
- Line 1+50 E - approx. 45 m to South
- Line 0+50 E - approx. 25 m to South

These three anomalous areas represent the most significant locations for possible alluvial gold concentrations, and warrant follow-up testing. Again, the geophysical response is from magnetic sources, which should correlate to areas in which magnetite has been deposited by stream sedimentation processes, the same processes which would deposit other heavy minerals such as gold. Testing at one of these locations will give important insights into interpretation of the remaining anomalies.

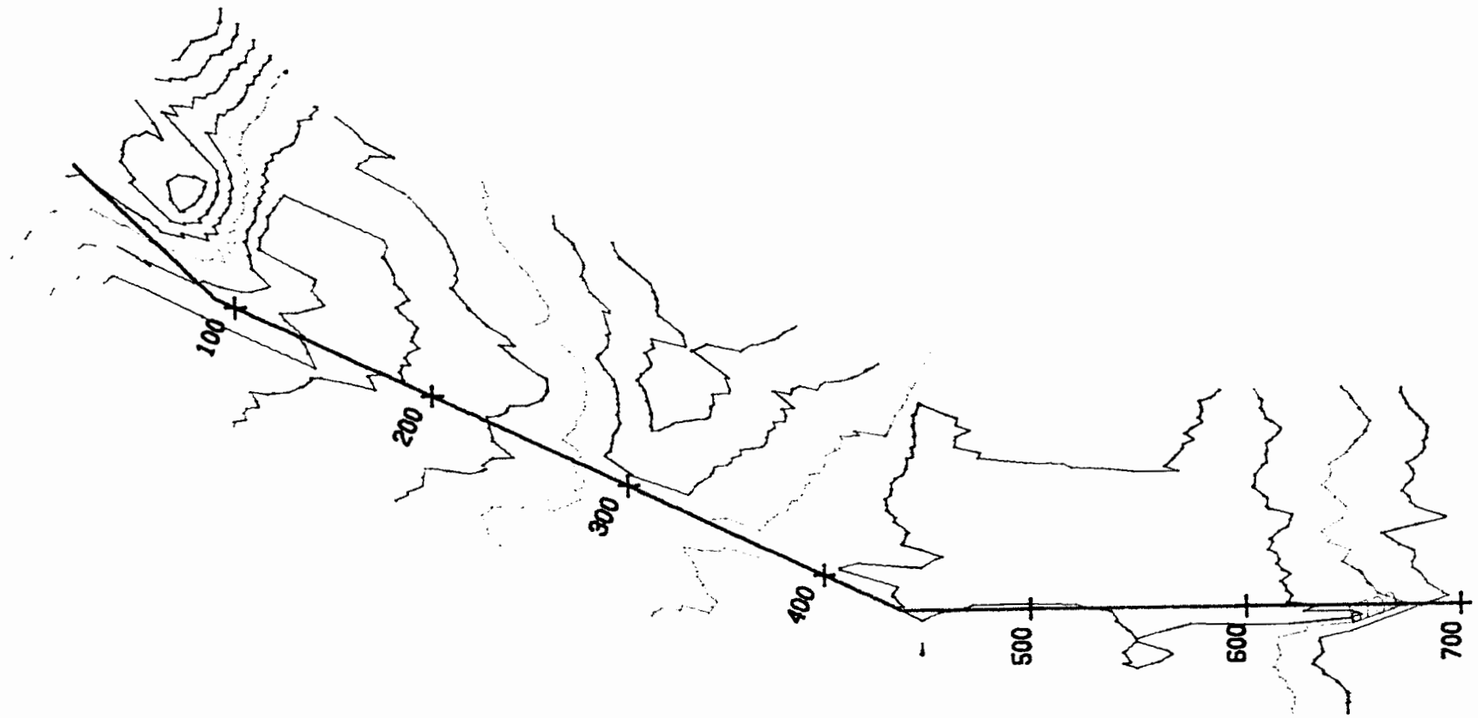
Robert L. McIntyre
Manager, Exploration Division
Yukon Engineering Services

References:

1. Geological Survey of Canada, Geophysics Paper 1371 Livingstone Creek: Aeromagnetic Series 1967; 1:50,000 scale map.

2. Templeman-Kluit, D.J., 1984 : Geology, Laberge (105 E), and Carmacks (105 C), Open File 1101.

3. Breiner, S., 1973 Applications Manual for Portable Magnetometers, GeoMetrics, Sunnyvale California.



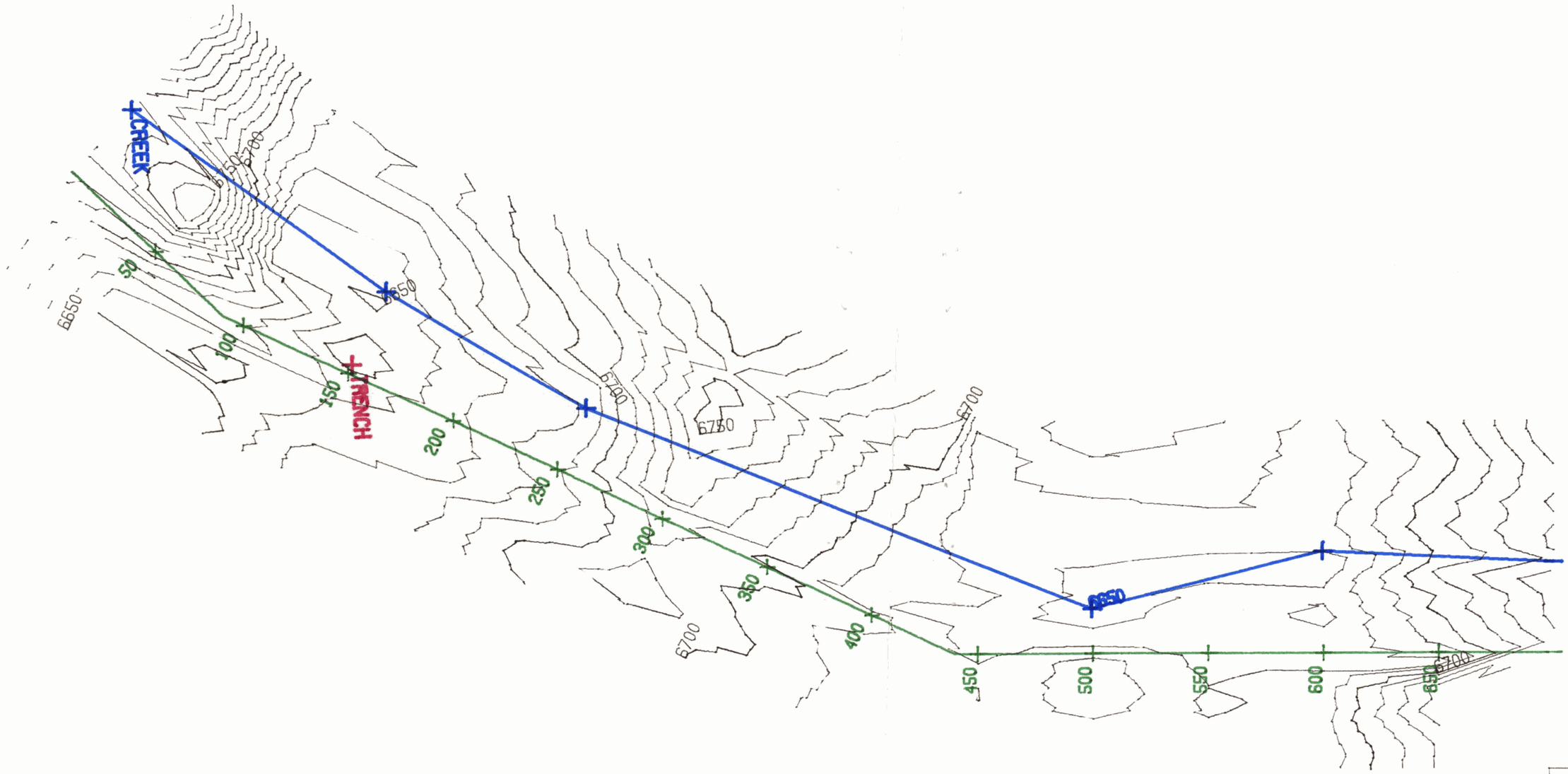
Livingstone Creek

Magnetometer Survey

Total Field Mag Contours

DATE	SCALE	DRAWN by
10-14-1986	1: 5000	

Yukon Engineering Services



Livingstone Creek

Magnetometer Survey

Corrected Total Field

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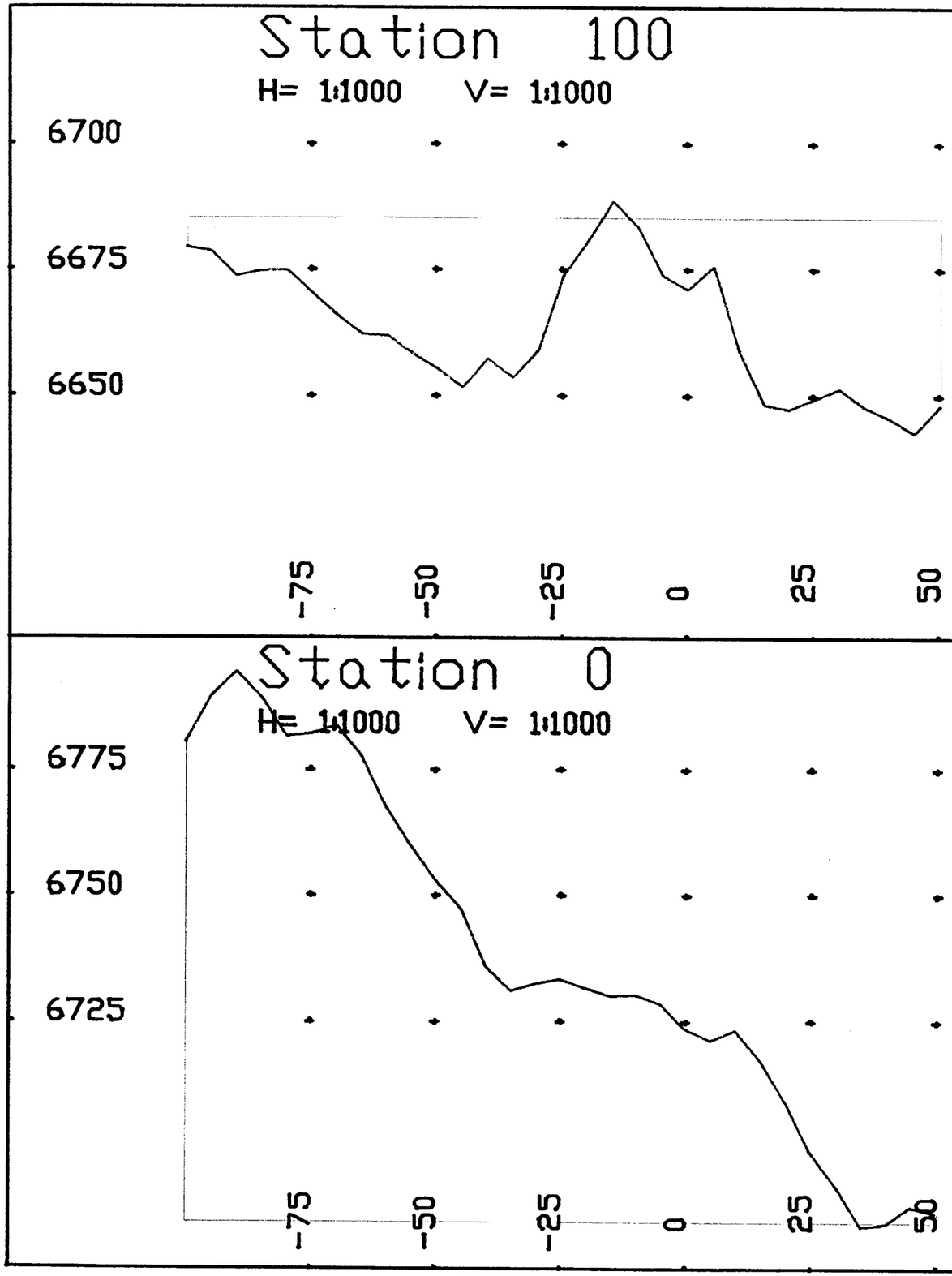
Yukon Engineering Services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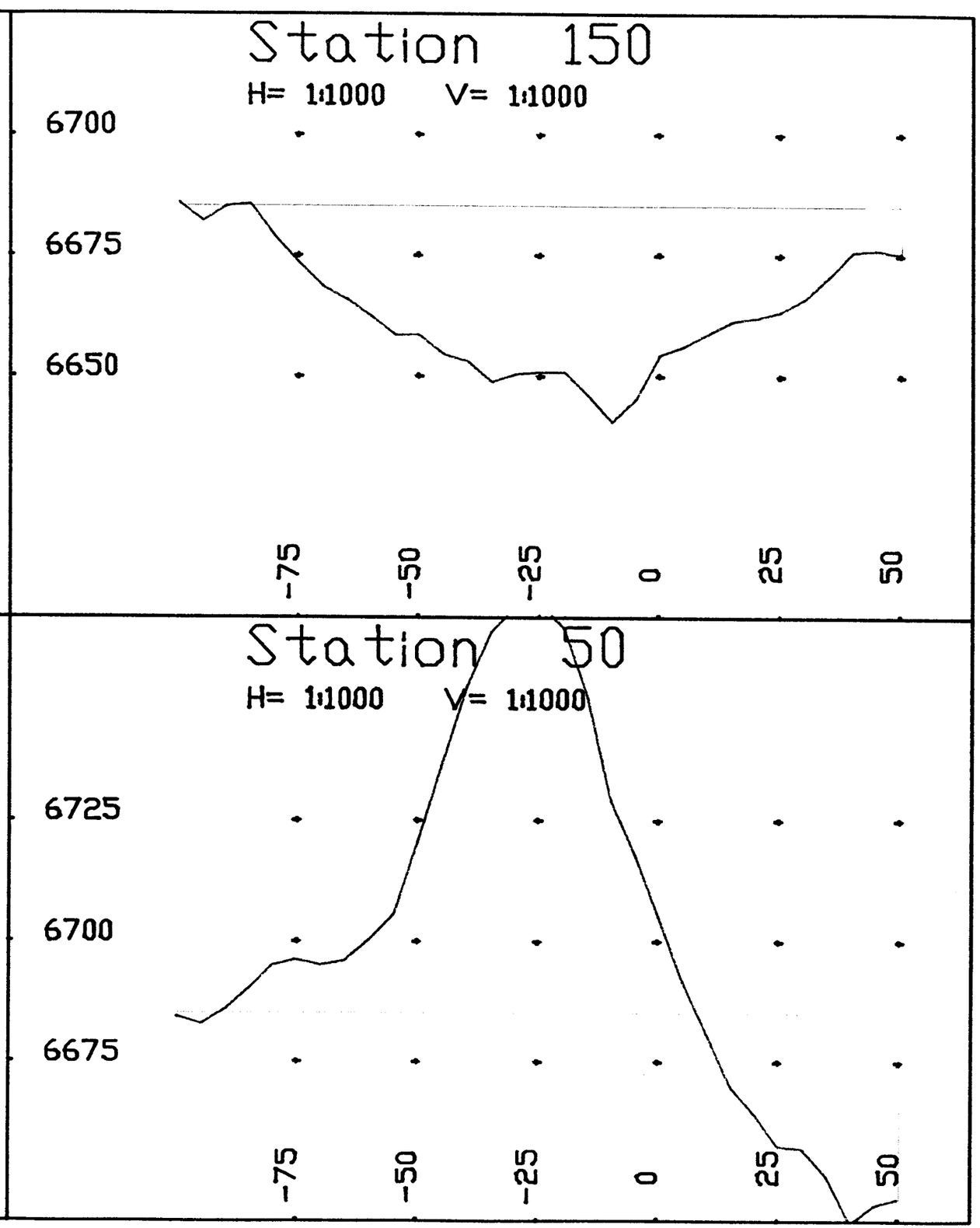
6675
6650
-75
-50
-25
0
25
50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H= 1:1000 V= 1:1000
6700
6675
6650
-75
-50
-25
0
25
50

Station 0
H= 1:1000 V= 1:1000
6775
6750
6725
-75
-50
-25
0
25
50

Station 50
H= 1:1000 V= 1:1000
6725
6700
6675
-75
-50
-25
0
25
50

Station 300

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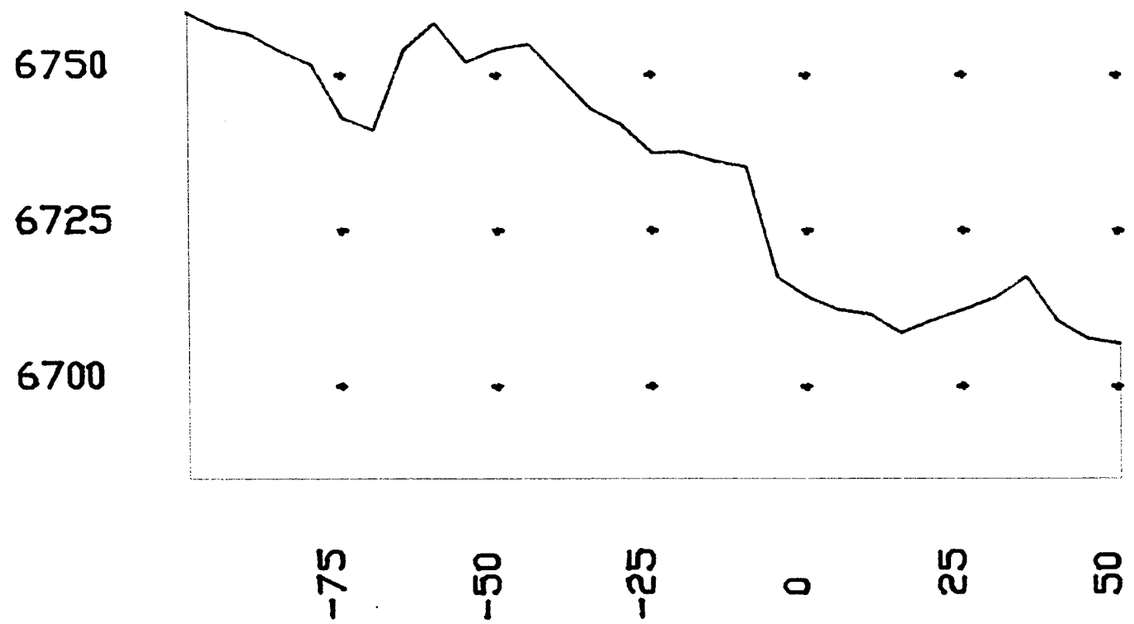

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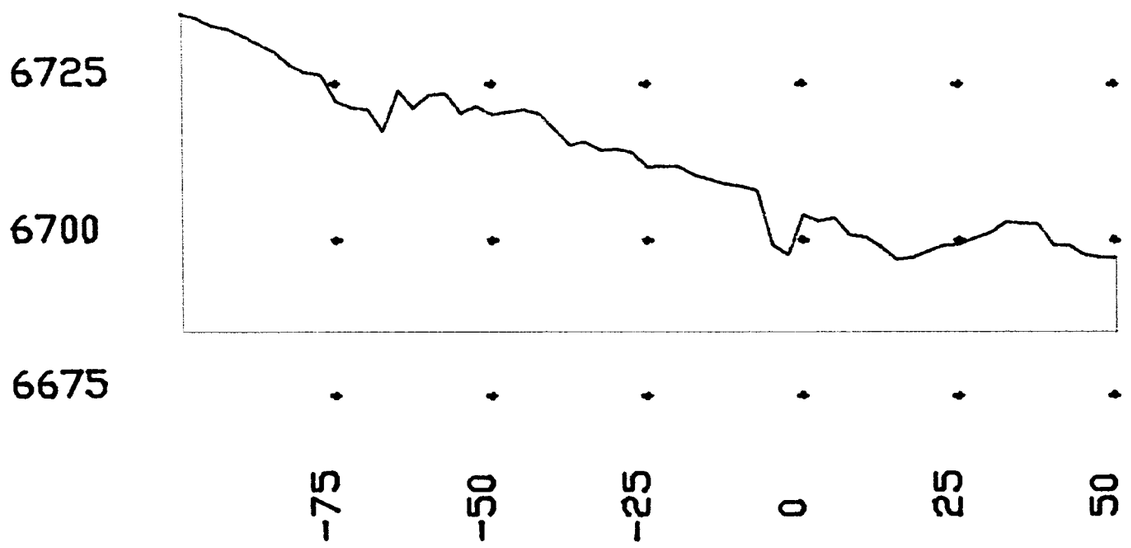
(Section extracted from model)



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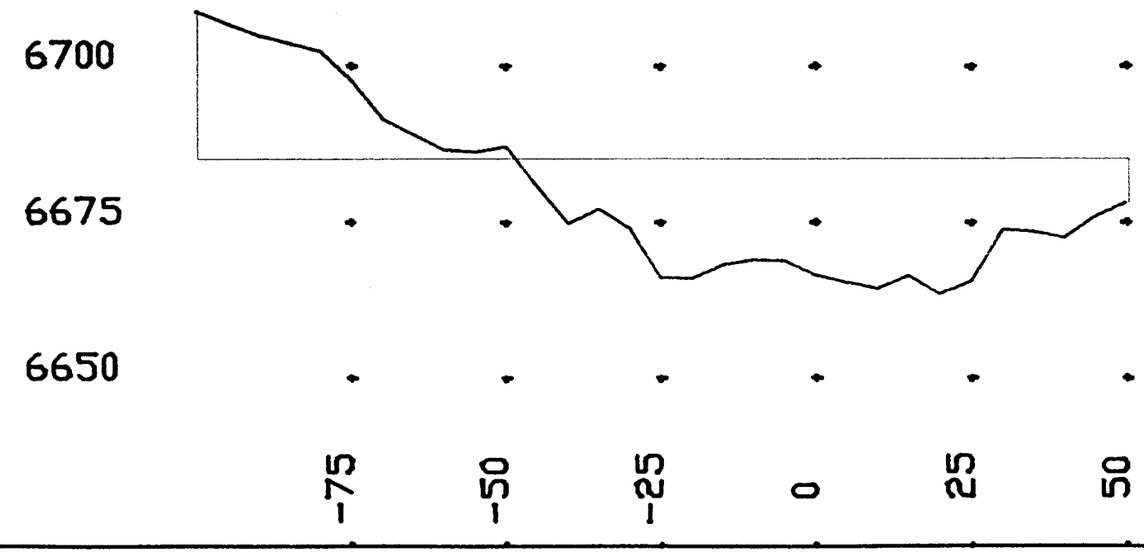

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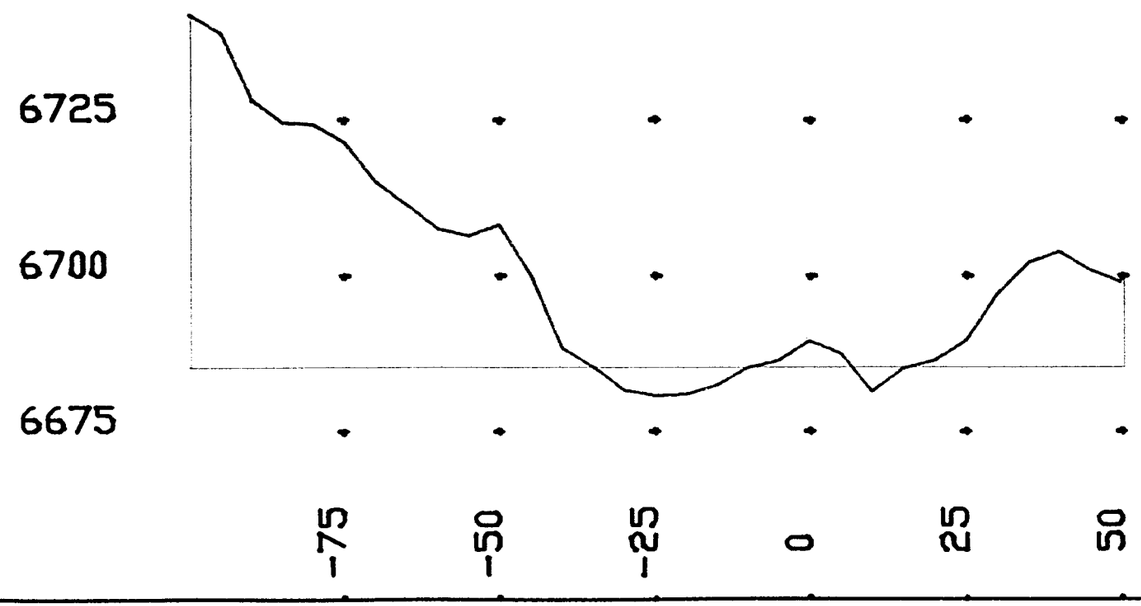

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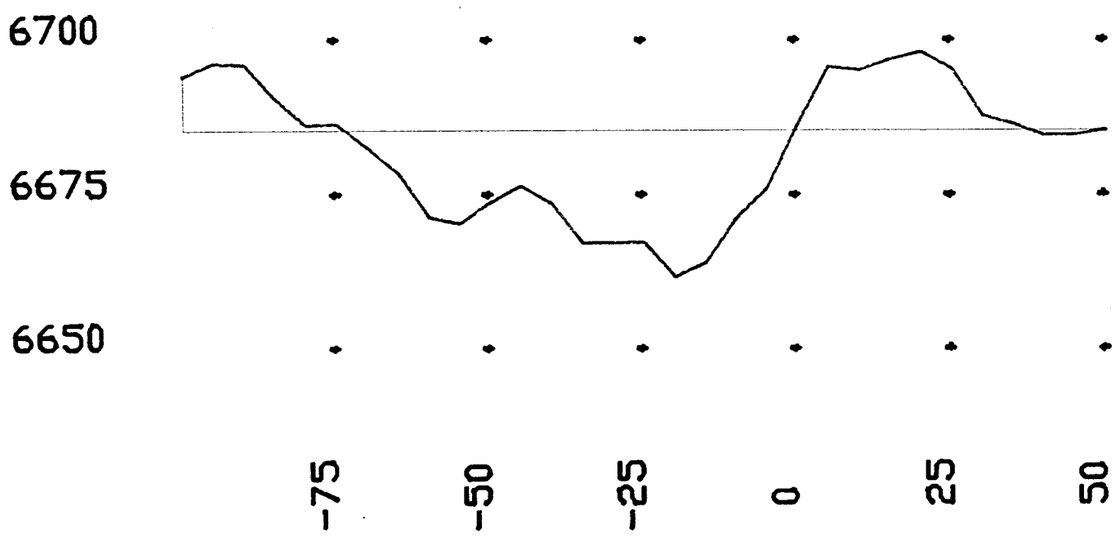

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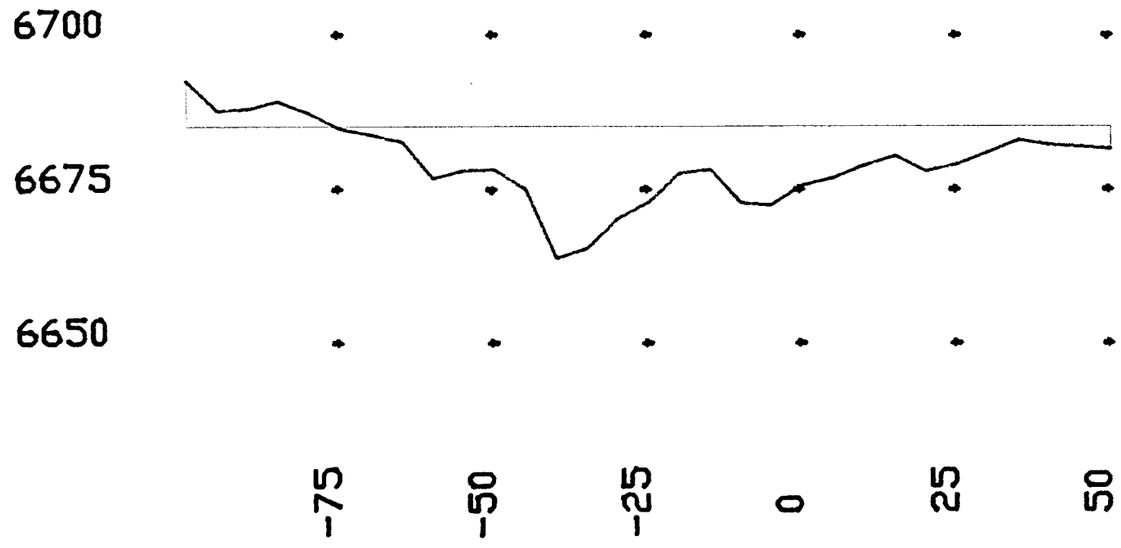

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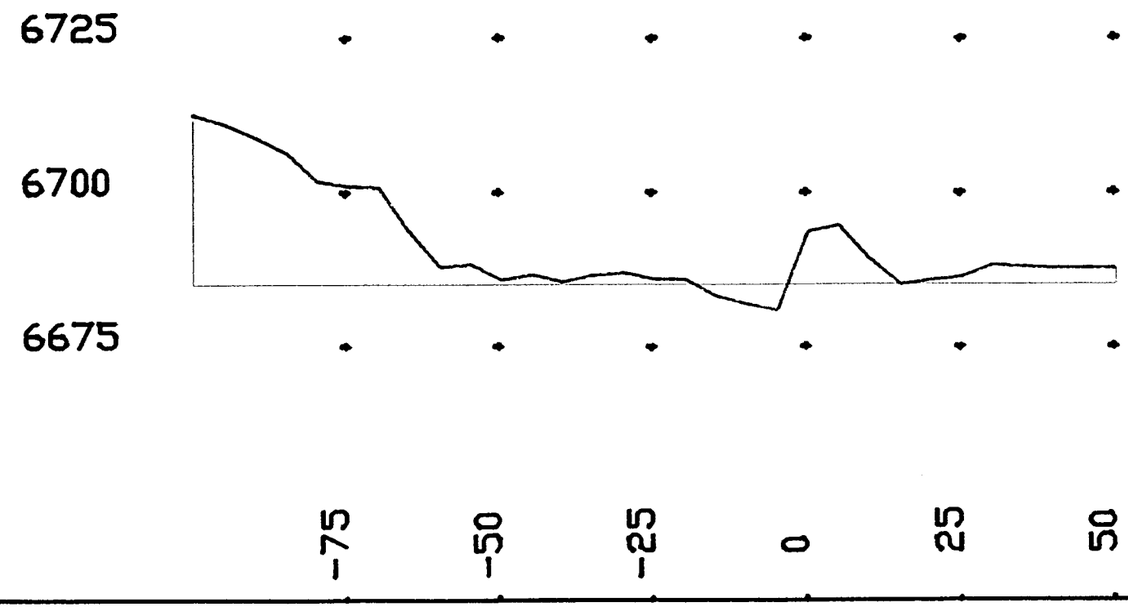

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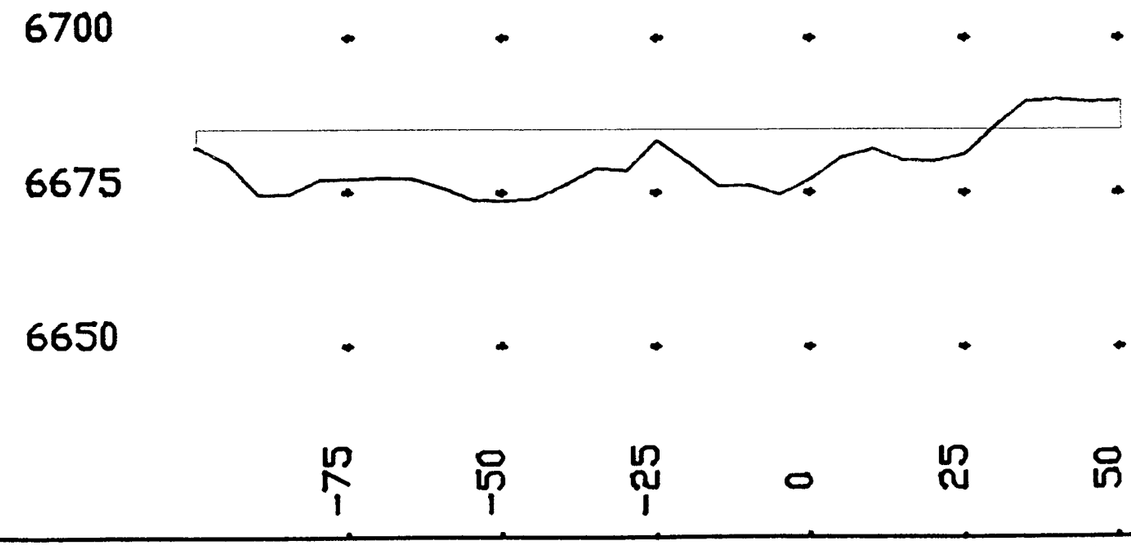

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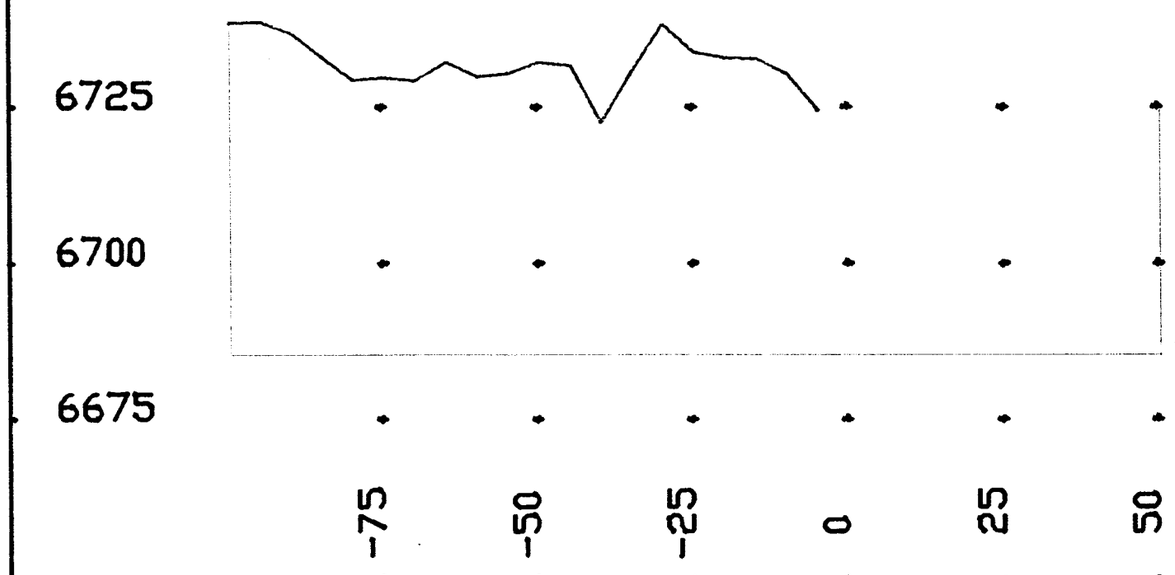

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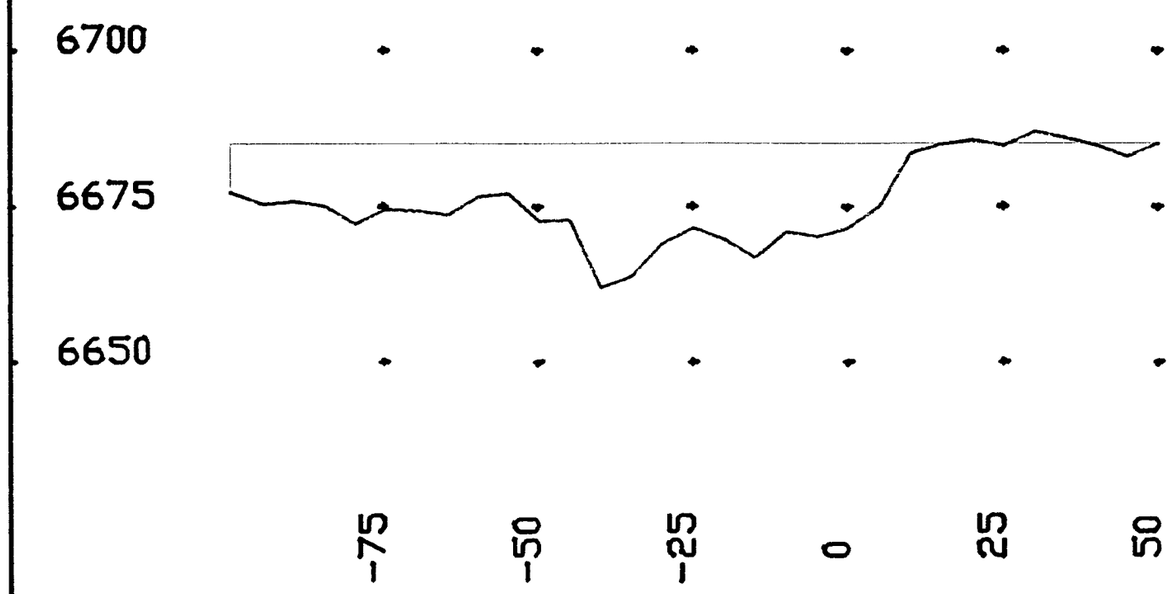

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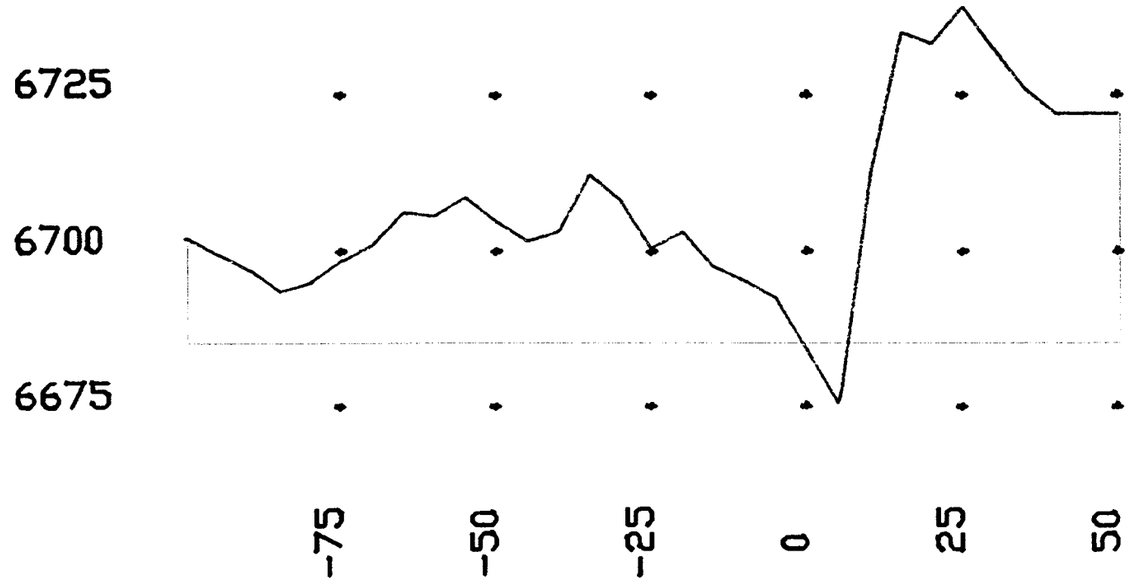

APPENDIX C

LIVINGSTONE CREEK MAGNETOMETER SURVEY

RAW DATA FROM OMNI 4 MAGNETOMETER

88.09.17

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700     45 W 56731.5 .04   1235.9 13:25:33 88
700     50 W 56732.0 .04   1236.3 13:25:57 88
700     55 W 56730.1 .05   1236.9 13:26:34 88
700     60 W 56729.6 .04   1237.3 13:26:59 88
700     65 W 56732.0 .04   1237.7 13:27:24 88
700     70 W 56729.0 .05   1238.0 13:27:45 88
700     75 W 56729.5 .05   1238.3 13:28:04 88
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700     85 W 56732.8 .05   1238.8 13:28:35 88
700     90 W 56736.7 .04   1239.1 13:28:50 88
700     95 W 56738.5 .04   1239.4 13:29:09 88
700     00 W 56738.4 .04   1239.6 13:29:27 88
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650     30 W 56708.1 .04   1247.8 13:37:56 88
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000    30 E 56687.4 .05   1259.3 14:14:27 88
000    25 E 56695.0 .05   1259.3 14:14:47 88
000    20 E 56697.7 .05   1259.3 14:15:09 88
000    15 E 56696.5 .04   1259.3 14:15:36 88
000    10 E 56694.8 .05   1259.3 14:15:51 88
000    05 E 56695.3 .04   1259.3 14:16:14 88
000    00 E 56685.9T.04   1259.2 14:16:27 88
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000     50 W 56673.5 .04   1261.7 14:21:59 88
000     55 W 56670.1 .04   1261.9 14:22:28 88
000     60 W 56671.1 .04   1262.2 14:22:57 88
000     65 W 56678.2 .05   1262.3 14:23:21 88
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000     75 W 56686.2 .05   1262.6 14:23:59 88
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000     85 W 56690.3 .04   1262.9 14:24:37 88
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000     95 W 56696.0 .05   1263.2 14:25:09 88
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000     75 W 56677.0 .05   1272.9 14:46:08 88
000     70 W 56677.2 .04   1272.9 14:46:13 88
000     65 W 56677.0 .04   1273.0 14:46:23 88
000     60 W 56675.5 .04   1273.1 14:46:39 88
000     55 W 56673.6 .04   1273.3 14:46:58 88
000     50 W 56673.5 .05   1273.4 14:47:09 88
000     45 W 56673.9 .04   1273.4 14:47:21 88
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000     05 W 56674.5 .04   1275.3 14:51:26 88
000     00 E 56676.9 .10   1275.5 14:51:41 88
000     05 E 56680.5 .05   1275.7 14:52:06 88
000     10 E 56681.8 .04   1275.9 14:52:33 88
000     15 E 56680.0 .04   1276.0 14:52:50 88
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000     25 E 56681.0 .04   1276.3 14:53:27 88
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000     30 E 56688.1 .04   1278.2 14:57:30 88
000     25 E 56686.1 .04   1278.3 14:57:50 88
000     20 E 56685.6 .04   1278.4 14:58:07 88
000     15 E 56684.9 .05   1278.7 14:58:43 88
000     10 E 56689.1 .04   1279.2 14:59:53 88
000     05 E 56694.6 .04   1279.4 15:00:18 88
000     00 E 56693.5T.04   1279.7 15:00:45 88
000     05 W 56680.7 .04   1279.9 15:01:07 88
000     10 W 56681.8 .04   1280.3 15:01:34 88
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000     35 W 56686.4 .04   1282.5 15:04:29 88
000     40 W 56685.4 .04   1282.7 15:04:43 88
000     45 W 56686.5 .05   1283.0 15:05:03 88
000     50 W 56685.7 .04   1283.2 15:05:20 88
000     55 W 56688.3 .04   1283.4 15:05:37 88
000     60 W 56687.8 .04   1283.7 15:05:59 88
000     65 W 56693.5 .05   1284.1 15:06:31 88
000     70 W 56700.6 .04   1284.5 15:06:58 88
000     75 W 56700.9 .05   1284.5 15:07:04 88
000     80 W 56701.7 .05   1284.7 15:07:18 88
000     85 W 56706.2 .05   1284.9 15:07:34 88
000     90 W 56708.7 .05   1285.1 15:07:45 88
000     95 W 56710.8 .05   1285.2 15:07:59 88
000     00 W 56712.3 .04   1285.5 15:08:17 88
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000     85 W 56753.7 .05   1288.2 15:11:48 88
000     80 W 56751.5 .05   1288.4 15:12:07 88
000     75 W 56742.9 .05   1288.7 15:12:24 88
000     70 W 56740.9 .05   1288.9 15:12:43 88
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000	20	E	56686.1	.05	1314.9	15:46:20	88
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000	20	W	56680.7	.04	1316.9	15:48:52	88
000	25	W	56680.5	.04	1317.1	15:49:12	88
000	30	W	56681.3	.04	1317.3	15:49:29	88
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000	55	W	56706.2	.05	1320.0	15:52:57	88

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000     60 W 56686.4 .04   1324.8 15:59:10 88
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000     50 W 56686.9 .05   1325.3 15:59:42 88
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000     15 E 56666.1 .04   1330.9 16:04:58 88
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000     30 E 56673.6 .05   1338.8 16:08:35 88
000     35 E 56673.3 .05   1339.4 16:08:53 88
000     40 E 56672.3 .05   1340.0 16:09:09 88
000     45 E 56675.7 .05   1340.9 16:09:33 88
000     50 E 56678.0 .05   1341.7 16:09:54 88
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000     95 W 56681.8 .05   1369.8 16:22:48 88
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000     60 W 56661.7 .05   1399.9 16:36:38 88
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000     35 W 56653.4 .05   1403.9 16:38:26 88
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000     85 W 56689.8 .05   1384.8 16:53:05 88
000     90 W 56685.5 .05   1384.3 16:53:19 88
000     95 W 56682.5 .06   1383.8 16:53:37 88
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000   -15 6729.9
000   -10 6730.2
000   -05 6728.4
000    00 6723.3
000    05 6721.0
000    10 6723.0
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