

# MAGNETOMETER GEOPHYSICAL SURVEY

FIFTY MILE CREEK PROJECT

PLACER LEASE PL 7563 (5 mile)

N.T.S. 115 J 16 : 63 50' N 140 28' W

Prepared By :  
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YUKON ENGINEERING SERVICES

Prepared For : 120115

L. Molot / E. Setrakov

JULY 8 1989



**Yukon  
Engineering  
Services**

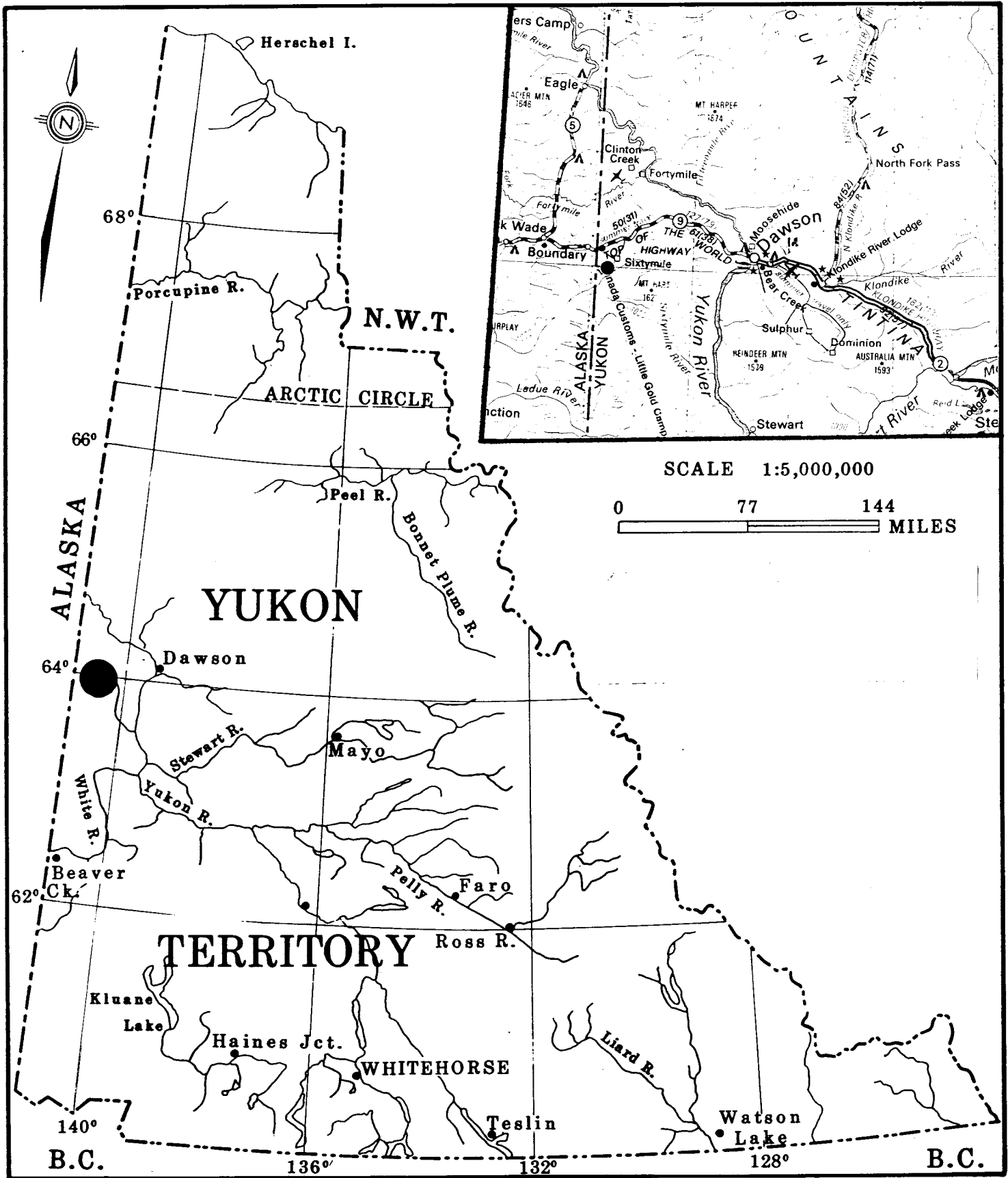
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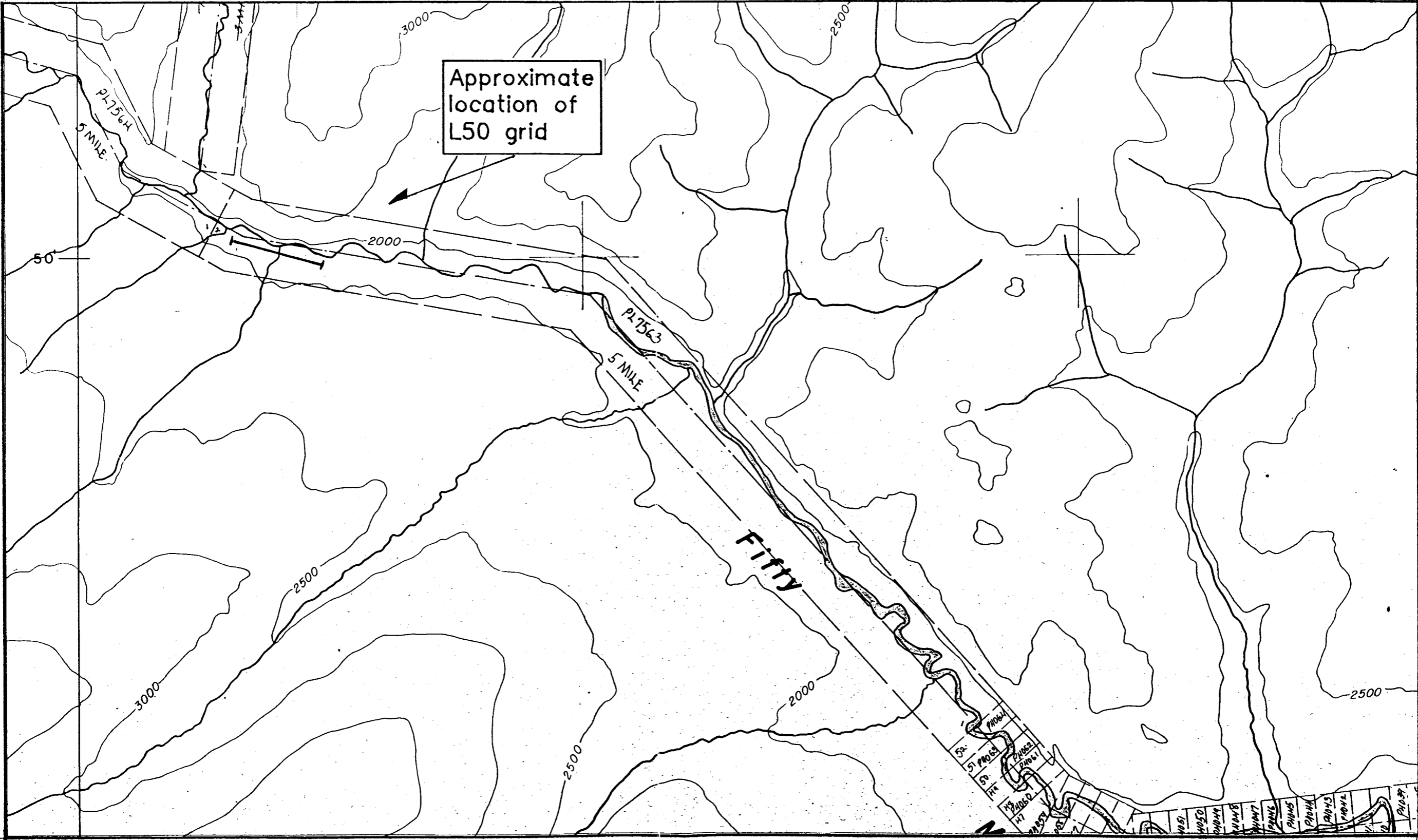
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Figure 1. Location Map





Approximate  
location of  
L50 grid

Fifty

3000

2500

2000

50

2500

3000

2000

2500

2500

P1756A

P1756B

P1756C

P1756D

P1756E

P1756F

P1756G

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P1756J

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P1756T

P1756U

P1756V

P1756W

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P1756Y

P1756Z

P1756AA

P1756AB

P1756AC

P1756AD

P1756AE

## MAGNETOMETER GEOPHYSICAL SURVEY:

50 MILE CREEK, YUKON TERRITORY 115 J 16

1. SUMMARY:

This report presents the methods, results, and exploration implications of a total field magnetometer ground geophysical survey conducted on the right limit of the middle reaches of 50 Mile Creek, Sixtymile area, Yukon Territory. The survey was conducted by R.L. McIntyre, C.E.T., and D. Holcombe, Geophysicist, of Yukon Engineering Services.

The survey was performed to extend information obtained from a previous gradiometer survey (M. Mollot, 1988), in order to determine first order priorities for follow up physical testing.

One large magnetic anomaly, with a definite expression across the entire grid area was detected in this survey. It is thought that this anomaly is indicative of bedrock lithology, rather than alluvial magnetite. Exploration implications are discussed on page 4 of this report.

Note that the entire premise of the program was based on the assumptions that;

1. - regionally and locally, (within the area influenced by this creek drainage) the host rocks for gold mineralization, and/or the associated rock types, also bear magnetic mineralization;
2. - the stream sedimentation processes that controlled alluvial gold deposition also controlled deposition of other heavy minerals to roughly the same degree;
3. - old stream channels, presently buried by alluvium, exist in the valley at varying displacements from the present stream channel.

The above assumptions have been made for this creek.

2. Property Location and Access

The L50 Grid is located on Placer Lease PL7563 (5 mile), situated at roughly the midpoint of 50 Mile Creek, approximately fifty miles west-southwest of Dawson City, Yukon. The property is at 63 50'N, 140 28'W, on NTS map sheet 115-N-16, and is approximately twenty miles east of the Alaska Border. Access is by helicopter aircraft from Dawson City.

### 3. Equipment and Survey Procedures

The survey was conducted using an EDA Instruments (now Scintrex) OMNI IV proton precession magnetometer, operated in the Total Field mode, with an EDA OMNI IV Base Station Magnetometer for correction of the diurnal drift. Due to the expected high occurrence of solar influenced "magnetic storms" in the summer of 1989, operation in the Tie Line mode was not considered an option.

The Base Station was programmed to take total field readings at twenty second intervals to ensure accurate corrections for the rapidly collected field survey data. The instrument is sensitive to 0.1 nano-Teslas (1 nT=1 gamma), necessitating diurnal drift and micropulsation correction to survey data to discern true anomalies.

The grid parameters and direction of travel are programmed into the OMNI IV by the operator and are automatically updated at each position increment. The position information, sensor decay rate and sensitivity, total magnetic field and statistical error are displayed to the operator, who then stores the information in the 48k memory of the magnetometer. This system enables the operator to assess measurement quality, and take repeat readings if necessary.

The daily survey information is manipulated with the following procedure:

- a) - field mag unit connected to base station; data transferred and corrected;
- b) - base station unit connected to laptop computer; corrected field data, as well as base station readings, dumped to gwbasic software;
- c) - both data files transferred to EMXS software for review and preliminary data manipulation.

The final review, interpretation and presentation of results is performed in the Whitehorse office of Yukon Engineering Services. This involves the computer generation of a three dimensional digital terrain model, and extraction of cross sections of each grid line. The corrected total field magnetic values are presented in this report as both cross sections and planimetric contour maps.

The data is interpreted and geophysical anomalies are discussed later in this report.

#### 4. Geophysical Grid Parameters

The grid was established on the right limit bench of Fiftymile Creek, approximately ten kilometres downstream from the M50 Grid. The initial Baseline point for the grid is located at Placer Lease post #2, PL7563, and the baseline continues for 100 meters to the East. This grid is relatively short along the baseline, but the crosslines were extended for two hundred metres, on 20 m spacing, to ensure that the anomaly (very evident to the operator during the course of the survey) was completely transected. This is done to ensure that its complete shape can be ascertained.

The grid was entirely cut out by hand methods, with the following dimensions:

Baseline	: 100 metres; Azimuth 120
Crosslines (stationing)	: at twenty metre intervals
Offsets	: at five metre intervals
Line length (max. offset)	: 150 m S, 60m S

#### 5. Regional Geophysics and Geology : Magnetic Implications

The 1:63,360 scale aeromagnetic map (GSC Map 4282G) in the immediate area of the grid shows a relatively low magnetic relief, with a local magnetic depression (40 gammas over 4 kilometres) centred near the L50 grid. The results of the survey show that this low was not strong enough to affect the local anomalous expression.

The L50 Grid area is entirely underlain by the Paleozoic age Pelly Gneiss unit, a foliated to gneissic granodiorite. The outcrop is exposed along the left limit of the creek in this area as ten to fifty metre cliffs. The right limit bench is virtually flat. The grid was established to cover this bench.

## 6. Results and Recommendations

As previously discussed in this report, the results are indicative of magnetic mineralization, rather than gold. The cross sections and contour plan map of the L50 Grid shows a dramatic magnetic response, repeated on every line. The absolute value is approximately 230 gammas, in a monopole type signature. This response is not likely from the alluvium, indicating rather a large (40 metres by at least 100 metres) rock unit of anomalously high magnetic susceptibility. There is no outcrop in the immediate area of the grid to identify, and establish strike and dip attitudes.

Unfortunately, the thrust of this program is placer evaluation, and alluvial response is difficult-to-impossible to establish when such magnetic relief is imparted by the bedrock. The only possibility that this anomaly indicates placer material, would be in the case of an unusually large, linear deposit of magnetite in the gravels. This is considered a remote possibility.

The area immediately upstream (on adjacent Placer Lease PL 7564) was covered by the 1988 magnetometer survey; the results of that survey should be inspected for concurrence. If the large anomaly detected on L50 continues, the bedrock implications should be investigated more thoroughly.



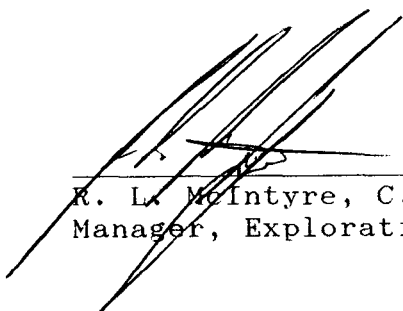
## 7. References

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2. Breiner, S. , 1973 "Applications manual for Portable  
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3. Hood, P.J., 1977 "Geophysics and Geochemistry in the  
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4. Molloy, M. 1988, Fiftymile Creek Gradiometer Survey,  
unpublished report submitted to D.I.A.N.D for  
assessment credit.

CERTIFICATE

I, Robert L. McIntyre, C.E.T., of Whitehorse, Yukon Territory, do hereby certify that;

1. I hold a Geological Technician Diploma from Sir Sandford Fleming College, Lindsay, Ontario, and I have been practising continuously since graduation in 1979;
2. I am a Certified Engineering Technician (Geology) for Alberta and Yukon, by the Alberta Society of Engineering Technologists.
3. The geophysical field work, and report preparation was performed by me personally, with the assistance of Mr. D. J. Holcombe, B.Eng. .
4. I have based conclusions and recommendations contained in this report on my knowledge of geophysics, my previous experience, and on the results of field work conducted on the property.
5. I hold no interest, directly or indirectly, in this property other than professional fees, nor do I expect any interest in the property, or any other of Mr. Mollots' holdings.



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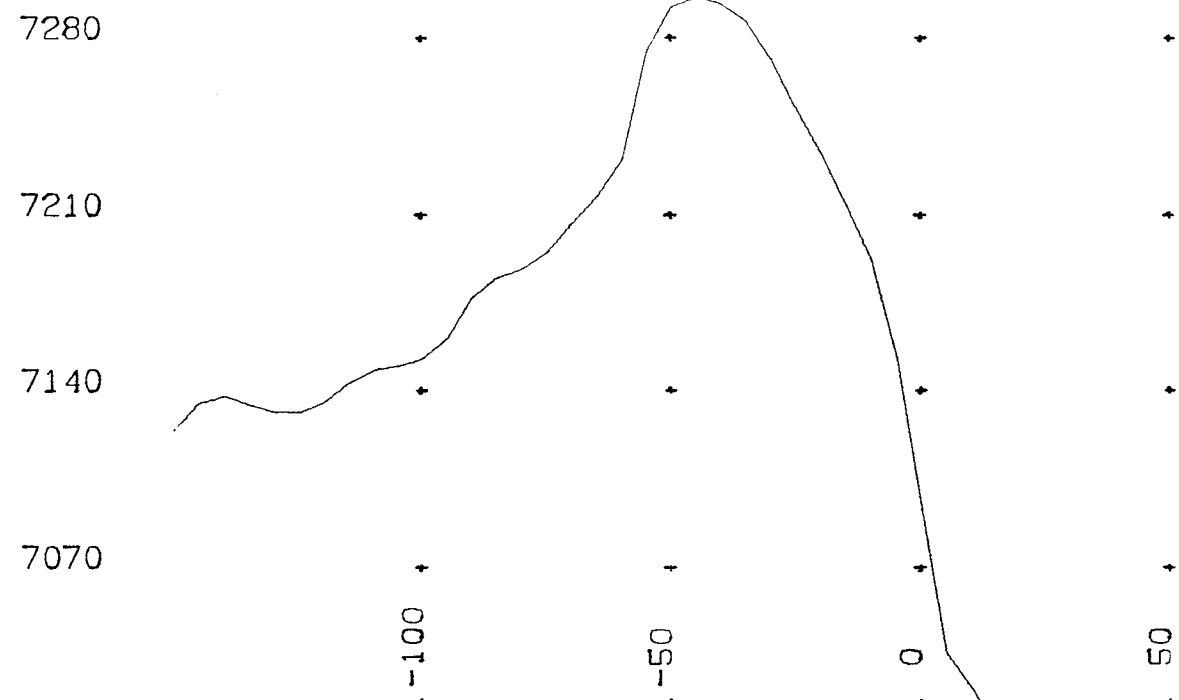
R. L. McIntyre, C.E.T.  
Manager, Exploration Division

Whitehorse, Yukon Territory  
July, 1989

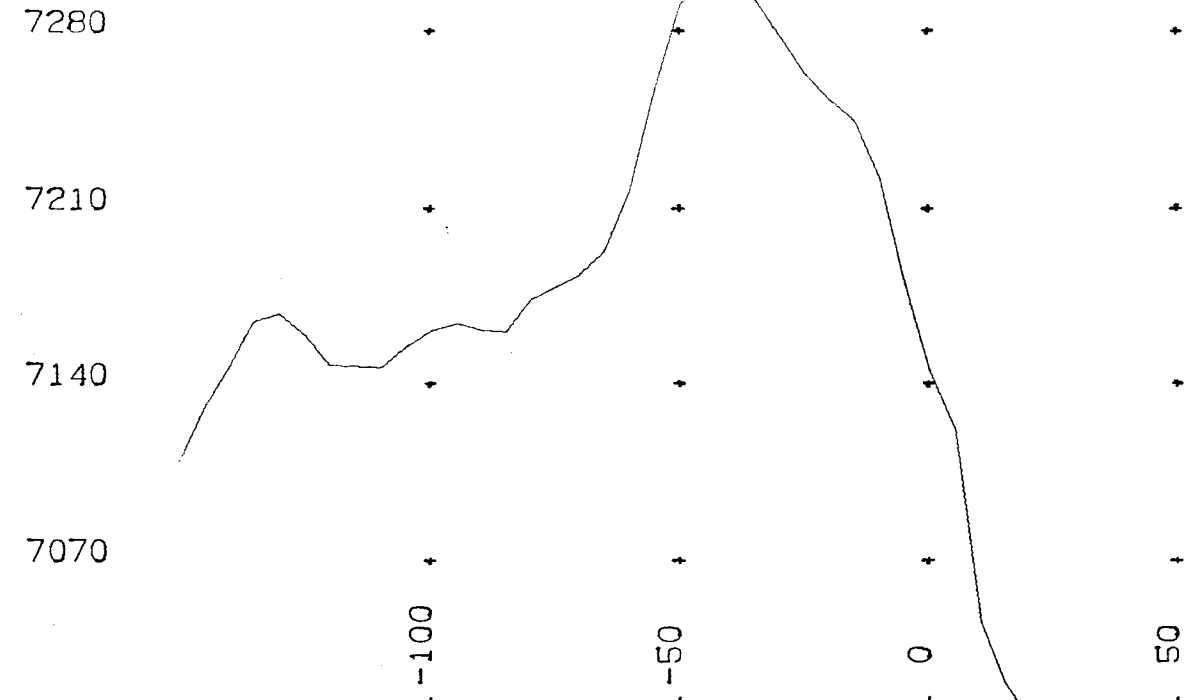
# APPENDICES

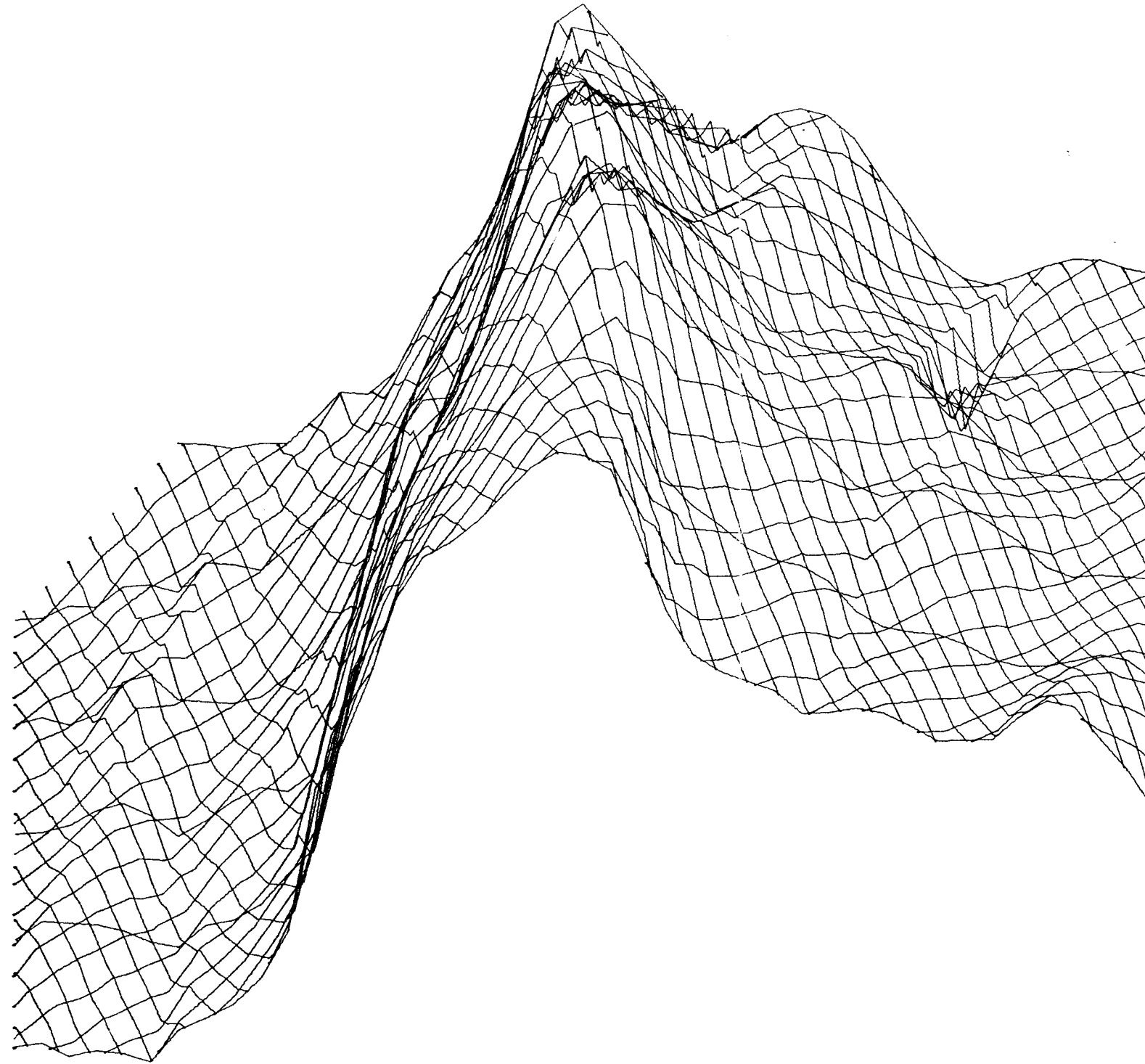


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Station 100  
H= 1:1500 V= 1:3000





1:50 MAG GRID

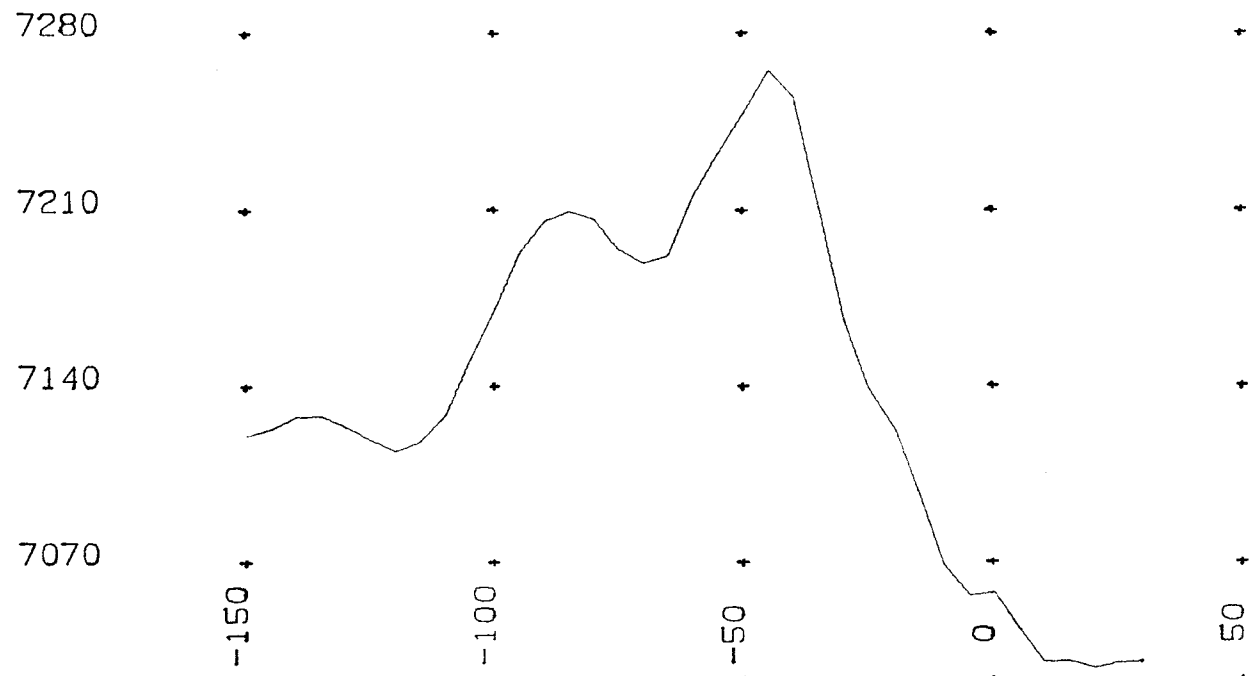
3 D PERSPECTIVE VIEW

70 DEGREES VIEWING ANGLE

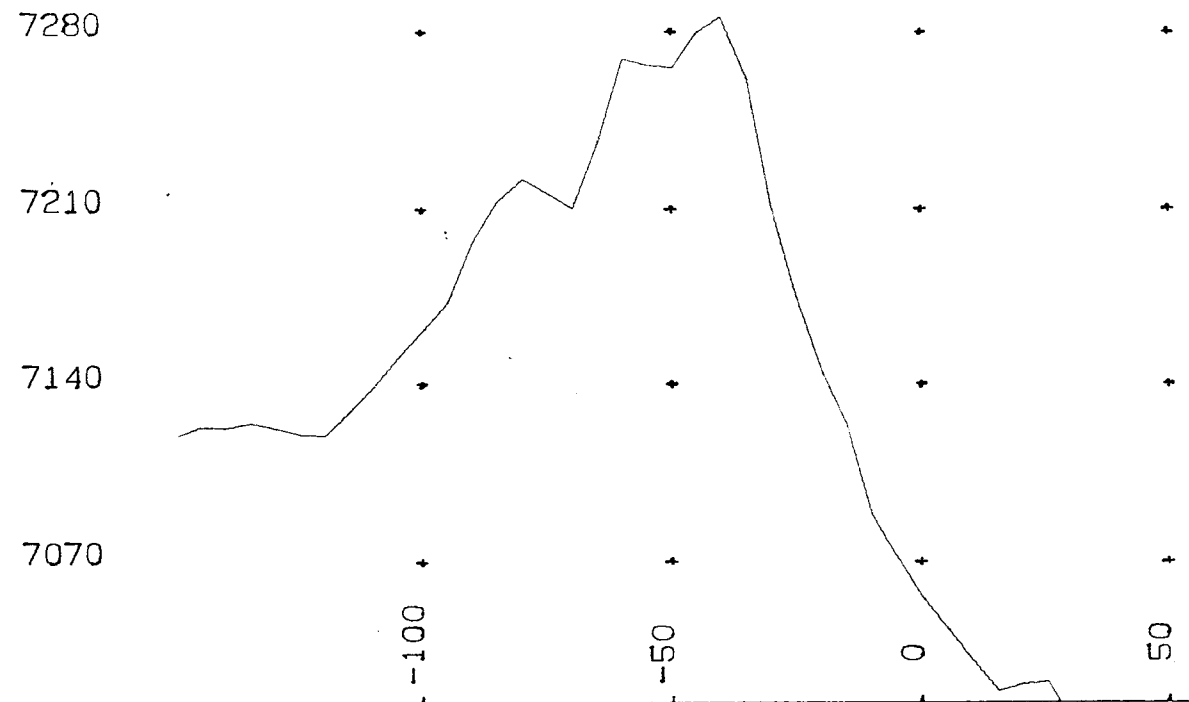
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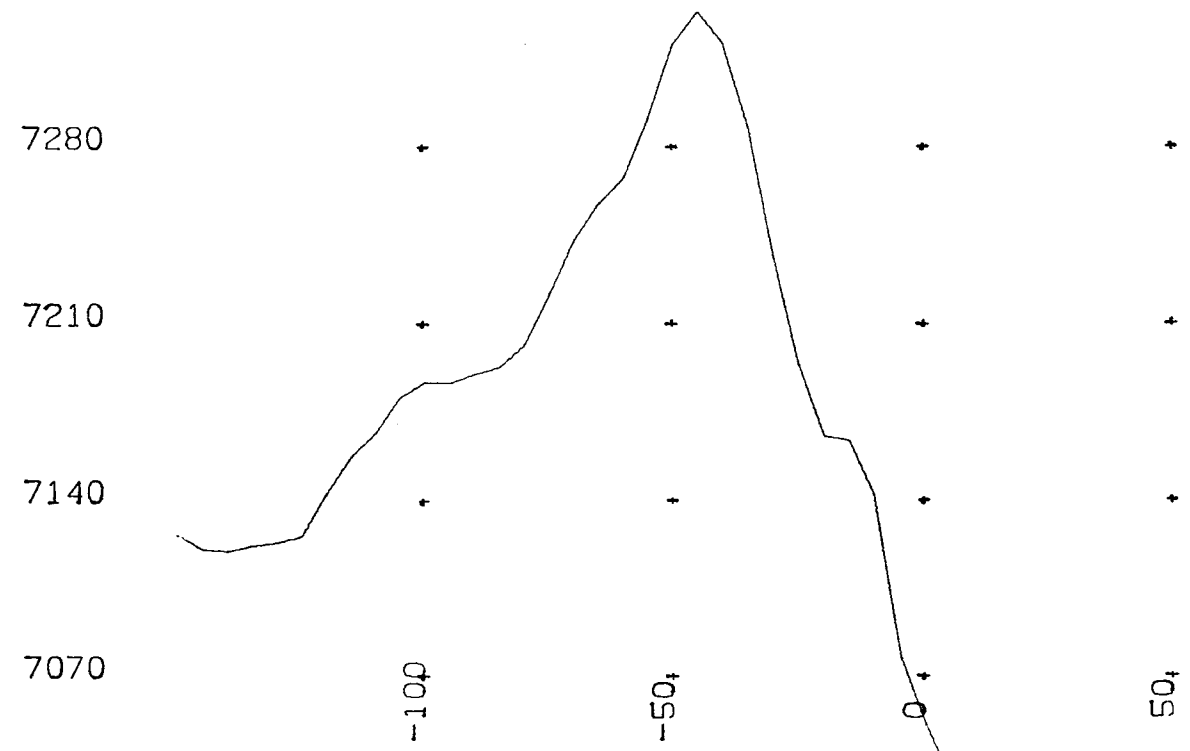
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Station 40  
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Station 60  
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