

LOG NO: <i>March 1/91</i> RD.
ACTION:
FILE NO:

Assessment Report

on

GEOPHYSICAL AND PHYSICAL WORK

on the

CACHE Placer Claim

Record No. PC 84

Fort Steele Mining Division

NTS Map 82F 8/E

North Latitude 49 Degrees 24 Minutes 12 Seconds

West Longitude 116 Degrees 01 Minutes 44 Seconds

Submitted by

W. Greg Fillion, Professional Prospector

FMC # 307315

February 20, 1991

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

21,010

## TABLE OF CONTENTS

### INTRODUCTION

- i). General geographic and physiographic position and access to the claim
- ii). Property definition, history, current owners/operators, and brief economic assessment of property
- iii). Summary of work performed on the claim for assessment purposes
  - Physical Work
  - Survey Grid Preparation
  - VLF-EM Survey and Topographic Survey
  - Differential Proton Magnetometer Survey
  - Seismic Survey

### DETAILED TECHNICAL DATA AND INTERPRETATION

### PLAN MAPS

### ITEMIZED COST STATEMENT

### AUTHOR'S QUALIFICATIONS

Assessment Report  
on  
GEOPHYSICAL AND PHYSICAL WORK

on the  
CACHE Placer Claim  
Record No. PC 84  
Fort Steele Mining Division

W. Greg Filion, Professional Prospector  
FMC # 307315  
February 20, 1991

INTRODUCTION

- i) The CACHE claim is a 500 metre by 850 metre placer claim situated on Weaver Creek adjacent to the Moyie River claims, approximately 16 kilometres west southwest of Cranbrook, B. C. Access is by four wheel drive road off the Semlin Creek Road and along the power line road, or by taking the Moyie River Road to the power line intersection past the Weaver Creek bridge, then proceeding back toward the creek along the power line. These roads provide excellent access to the area of interest and both sides of the creek.
  
- ii) The CACHE claim is owned and operated by W.G. Filion, of Lillooet, B.C. and Irvine Jobe, of Kimberley, B.C.. Numerous archive records and Minister of Mines Annual Reports attest to a productive history of gold mining along the Moyie River and its tributary, the Weaver Creek.

Weaver Creek's first recorded placer production was between 1876 and 1880. Three major periods of production are indicated and the location of worked areas are still evident today. The total production on the creek of 759 fine ounces of gold ended in 1930 and the creek has not been worked much since that time, even though the price of gold has jumped from \$18 to \$400. Reports to the Minister of Mines over the years seem to indicate that historically, ground water problems due to geography have physically prevented proper and continued working of the gravels. Past workings of the Moyie River, from the confluence of Weaver Creek downstream to the Moyie Falls, yielded 5,545 ounces recorded to 1945. To my knowledge, only one commercial enterprise of considerable size has been operated since then. This operation is located on the main Moyie River, 300 to 500 metres upstream from the confluence of Weaver Creek, and was reported to have turned a handsome profit in the early 1980's. This set of claims is currently in production for Queenstake.

Research clearly indicates that the Moyie River drainage has been the 2nd most productive placer area in this mining district, having been surpassed only by the Wild Horse River. Of the 5,545 recorded ounces found in the Moyie drainage, Weaver Creek alone contributed more than 759 ounces from three small areas along the creek.

The country rock is Middle Aldridge formation intruded by meta-gabbro sills and dykes, quartz, pegmatite, and fine-grained diorites.

The intrusions are much tougher rocks that tend to stand up from the Aldridge when eroded. This has created an intersection of two ridges, forming the mouth of a small canyon 792 metres from the confluence of Weaver Creek and the Moyie River. The bedrock rises to form the creek bed at this point, and collected upstream are stream gravels caught in a rock basin 600 metres long and an average 100 metres wide. All of this gravel appears to have been washed downstream from old workings. Depth of the gravel deposit is unknown at the time of writing, and the deposit appears to have had little work done, as the bedrock rim at the downstream end also holds up the water table, making shafting impossible. The CACHE claim covers the entire gravel deposit sitting behind the bedrock rim of the canyon.

The gold in this area is believed to have come from two known sources and there may be more as yet undiscovered. Oxidized pyrite mineralization associated with the Old Baldy Fault along the skyline between Moyie River and Perry Creek is recognized as one definite source. Prospector's Dream prospect on the north fork of Weaver Creek is suggested as a remnant of a much larger ore body that has eroded away, resulting in the placer deposit in Weaver Creek as well as the deposit below on the main Moyie River, which has been worked on a very large scale during the last 10 years. The last ice sheet, as determined by Cominco geologists, seems to have been stationary at this location, and has seemingly left the placers near their sources.

The gravel deposit on the CACHE claim sits at the only point on Weaver Creek where collection can take place and, as indicated by our topographic survey, where the creek begins to flow at an angle less than 4 degrees. This being the angle a sluice box is set on, it is suggested that any point on a placer stream where this angle occurs will result in a natural concentration of heavy materials. Taking into consideration that all gold lost by workings upstream would be washed down into the gravel deposit on the CACHE claim, and that the creek gradient is favorable, heavy minerals should have dropped out here.

iii) Work completed on the CACHE CLAIM during 1990 includes:

Physical Work

Hand testing of the surface gravels 792 metres from its confluence with the Moyie, at the lower end of the gravel deposit, yielded 1/2 pennyweight in gold in 10 pans of gravel off bedrock (20 pennies per ounce). Similar hand panning at 1167 metres indicated only fine colors. This test site was at the top end of the gravel deposit, where the creek is dropping at slightly more than 3 degrees, and near the first visible bedrock outcrop at the top end of the claim.

Survey Grid Preparation

1.5 kilometres of new line were cut and flagged in preparation for carrying out survey work. Grid lines running north/south were cut 50 metres apart, and east/west grid lines were cut at 20 N and 40 N of the claim's centreline.

850 metres of the centreline were also upgraded to serve as the baseline of the survey grid.

#### VLF-EM Survey

A total of 1480 metres of grid were covered, with VLF data being recorded at 20 metre intervals along north/south grid lines.

#### Topographic Survey

Data was collected for a 10 foot contour gradient of the gravel deposit and immediate surroundings, simultaneous with the collection of the VLF data.

#### Differential Proton Magnetometer Survey

Proton magnetometer data was collected along 1480 metres of grid at intervals of 20 metres on north/south lines, at line ends if less than 20 metres from the last shot, and every 25 metres along the centreline. Data was also taken along 650 metres of creekbed. Two readings were taken at each station, first with the instrument sensor held at one meter above ground level and then at two meters above ground level. The difference between these readings aids the placer miner in differentiating between near-surface anomalies and bedrock anomalies.

#### Seismic Survey

The survey was carried out with a Scintrex S-2 "Echo" 12 channel portable seismograph unit and System & Application software package. 25 shots were recorded onto computer disk in the field. Data was collected using geophones spaced every 5 metres over a total of 1000 metres of grid line.

Since returning the computer unit and attachments to Scintrex, it has been difficult to find an IBM compatible computer with two 3.5" disk drives and a printer that will properly run the system and application software. Hardcopy plots of individual traces are not yet available. The results of this survey are a critical part of the overall analysis of the 1990 assessment work, and these results should be available for submission to the Minister within the next 90 days.



## DETAILED TECHNICAL DATA AND EVALUATION

VLF-EM Survey

A total of 2.1 km of VLF-EM Survey was completed, with readings being taken at 20 metre intervals along each north/south grid line (spaced every 50 metres). A Sabre Electronics Model 27 VLF-EM receiver was used for this survey. Focus of the survey was a search for conductive zones which might be related to placer deposition. The Annapolis transmitting station was used in the survey, as it seemed the best choice for the orientation of the grid.

Using the VLF-EM method, results were plotted as dip angle (relative angle from the receiver to the source of the secondary field) and null signal strength, keeping field strength constantly at 50. By design, conductors are located at field strength maxima simultaneous with a favourable dip angle crossover from positive to negative. A near surface anomaly should be detected where there is a correlation between the VLF-EM crossover points and the differential magnetometer highs as indicated by the differential proton magnetometer survey. The secondary purpose of this VLF survey is to identify bedrock anomalies where magnetometer highs or lows correlate, indicating special consideration and possible elimination of otherwise interesting data. Such is the case on line 250 E, 30 N.

Results of the 1990 VLF-EM survey are plotted on Map 5. Seven crossover points are indicated by a "C" on this map.

### Topographic Survey

Data was collected with a Alti-Plus D1 Pretel digital altimeter for a 10 foot contour gradient of the gravel deposit and immediate surroundings, simultaneous with the collection of the VLF data. Problems were encountered due to atmospheric pressure changes throughout the day, and we should have conducted a separate survey in order to minimize error during data collection. See Data Maps 1, 2, & 3.

The top of the surveyed area sits at 4180 feet. The gravel deposit slopes gently eastward to an elevation of 4130 feet, a drop of only 50 feet (15.2 metres) in 450 metres. This is a slope of 2 degrees, which would tend to indicate that all material washing down the creek would be deposited in the area. However, due to the steep sided nature of the bedrock structure containing the creek, only a constant amount of material can remain deposited at this location. It should be noted that this is the only place on the entire length of the creek where it is possible for a substantial amount of washed material to collect. At the end of the gravel deposit the creek falls into a steep canyon, descending in places at a rate of 100 feet (30.5 metres) in 100 metres, or at 17 degrees. This is also the case for the entire length of creek above CACHE claim.

### Differential Proton Magnetometer Survey

A Scintrex MP-2 Proton Precision Magnetometer was used to conduct the survey along 1.5 km of grid line and along 0.7 km of the creek. In areas of low gradient such as on this claim, it is appropriate at each station to

take two readings with a one metre sensor separation difference. The resulting differentials of these two readings have been plotted, and an area of elevated magnetometer differentials is indicated on Map 6.

### Seismic Survey

The survey was carried out with a Scintrex S-2 "Echo" 12 channel portable seismograph unit and System & Application software package. 25 shots were recorded onto computer disk in the field. Data was collected using geophones spaced every 5 metres, for a total of 1.0 kilometres of grid line.

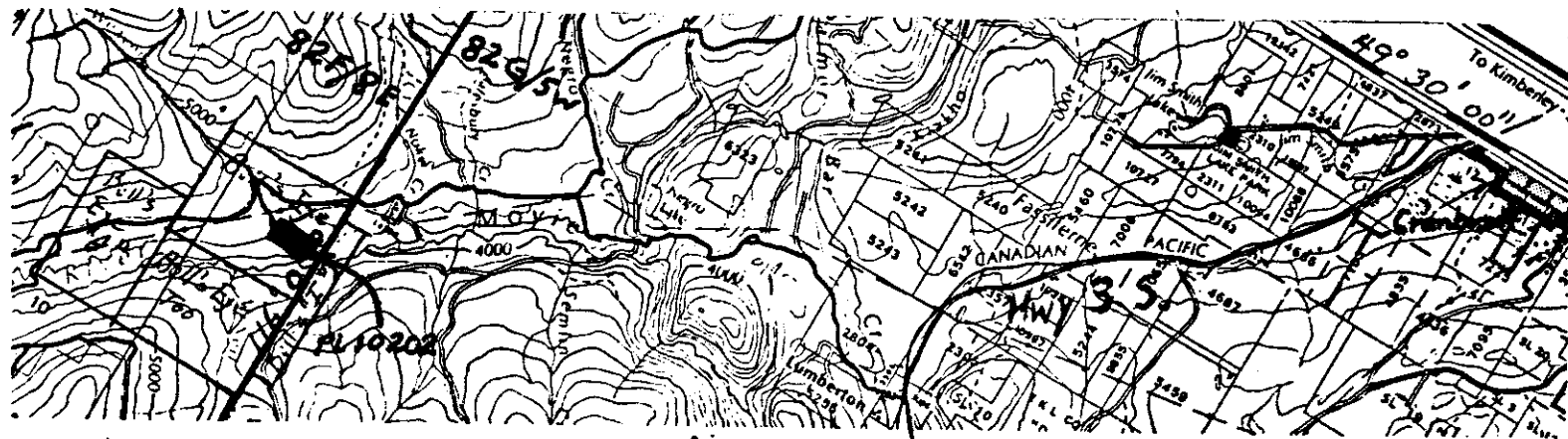
Taking a seismic observation with the Echo involved the following steps: First, the shot point was selected and up to 12 geophones were connected in series. Then the trigger switch cable for the hammer source was connected and a metal plate for striking was located at a 5 metre offset from the first geophone. After the desired recording parameters were entered onto the computer screen, the Echo was "armed" and the source operator was signaled to "shoot". The received traces were then saved to disk.

Analysis and production of hardcopy printouts could not be carried out in the field because the portable unit was very quick to drain its battery power source and because no printer came with the unit. Since returning the Echo and attachments to Scintrex, it has been difficult to find an IBM compatible computer with two 3 1/2" disk drives and a printer that will

properly run the system and application software. Currently a computer expert at UBC is offering assistance in locating suitable hardware and in getting the program running. Analysis of hardcopy plots of individual traces or groups of traces should define the bedrock configuration likely to be a main factor controlling the deposition of placer minerals on this claim. The focus of this survey is to locate and determine the depth of any depressions in the bedrock that correspond with VLF and differential proton magnetometer highs. When the seismic data is available, it is our intent in the 1991 season to sink as many as 3 shafts down to any bedrock "traps" that look economically promising.

## ITEMIZED COST STATEMENT

Rentals (including shipping from/to Toronto)		
Seismograph Unit (\$1,040.00 per week)		1,505.63
Proton Magnetometer (\$300.00 per week)		336.50
Physical Work		400.00
Survey Grid Preparation		800.00
VLF-EM and Altimeter Survey		530.00
Proton Magnetometer Survey		750.00
Seismic Survey		440.00
Camp Costs		
Trailer rental 2 weeks	200.00	
Fuel, transportation costs (2 vehicles)	305.00	
Camp supplies	<u>240.00</u>	
Total		<u>745.00</u>
TOTAL EXPENDITURES FOR ASSESSMENT PURPOSES		<u>5,507.13</u>
NOT INCLUDED IN ORIGINAL SUBMISSION FIGURE		
Report Costs (preparation, supplies, copying)		250.00



Placer Claim 84 is a restaking  
of PL 10202

To Moyie

Map #1

B.M.M. 45

Negro Cr.

82 F 8 E

Noke Cr.

OLD BALDY PK B.M.M. 46

A 11634

406

Deep  
Pockets  
#72

56

PLC  
16406

L  
3773

TL 39066

TL 40166

B.M.M. 44

PL  
41

L  
1372

L  
371A

VIPI72

PL  
4068

(Y)

TL 40498

MINERS  
DREAM

Z

PL  
16454

P52061

Weather

PC 39

PC 38

PC 37

PC 36

PL 16434

TL 40166  
12195P

P43327

P43326

P39843

P39844

(Y), P52761

PL 16433

BC 1164

P52182

P52182

P52182

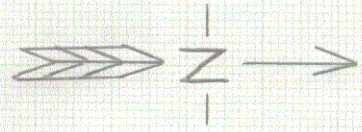
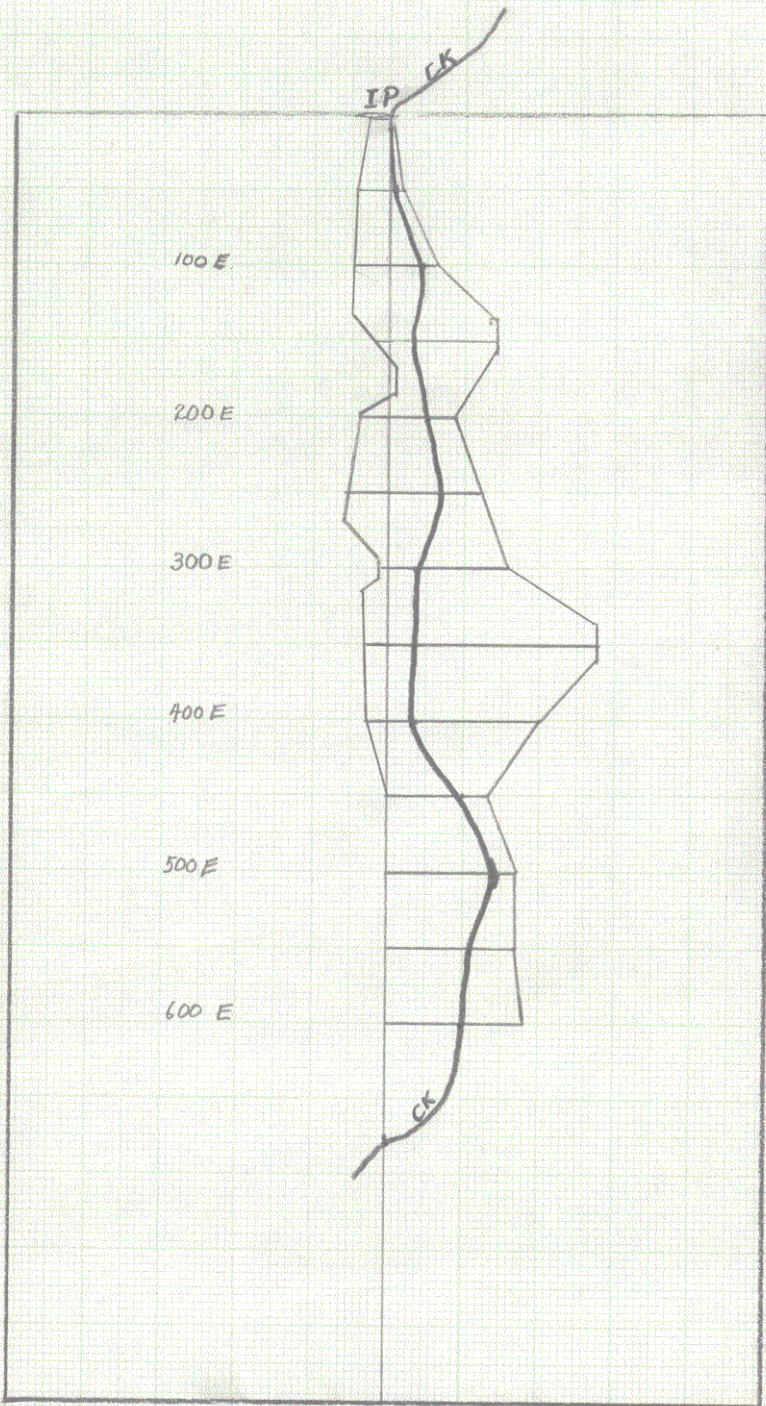
PL 10262

P52182

P52182

P52182

Map #2



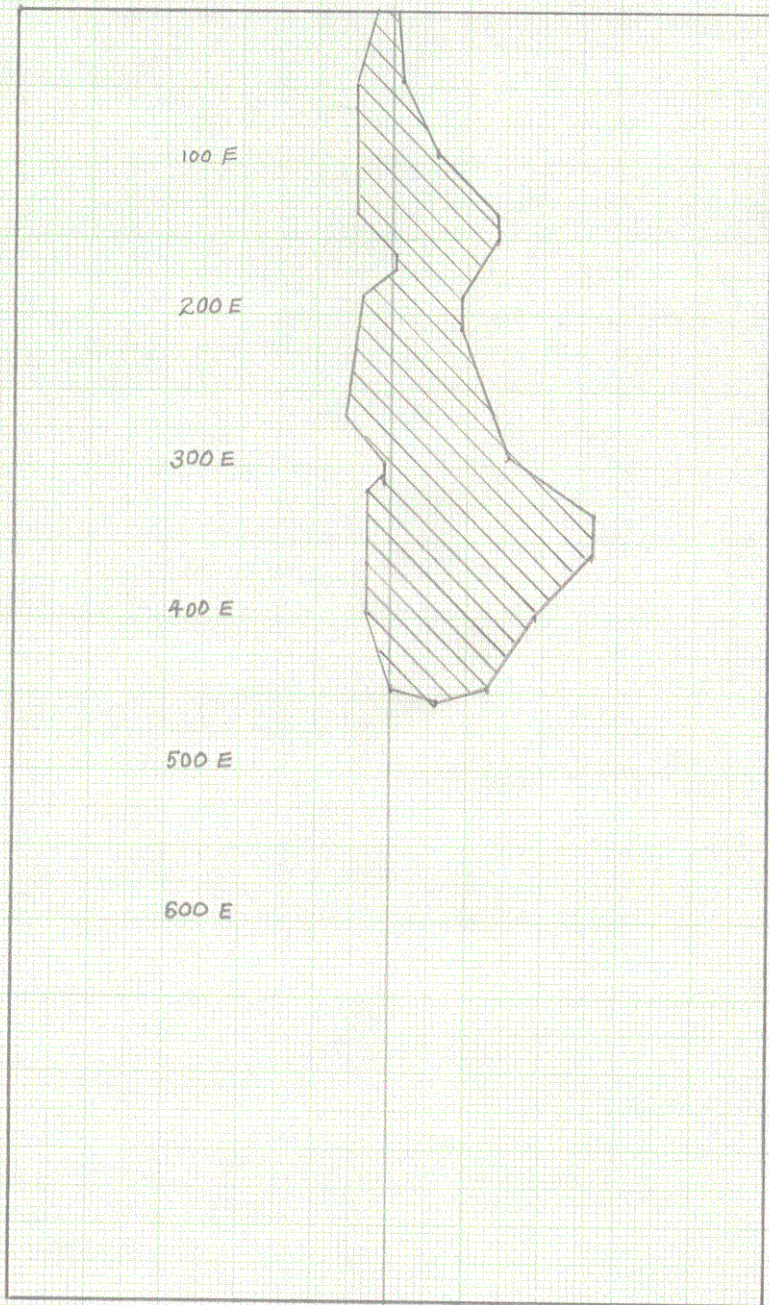
Area Surveyed

Placer Claim 84 01, 02, 91

Scale 1cm = 100m  
1:10000

Map #3



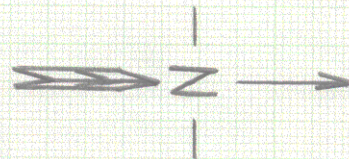
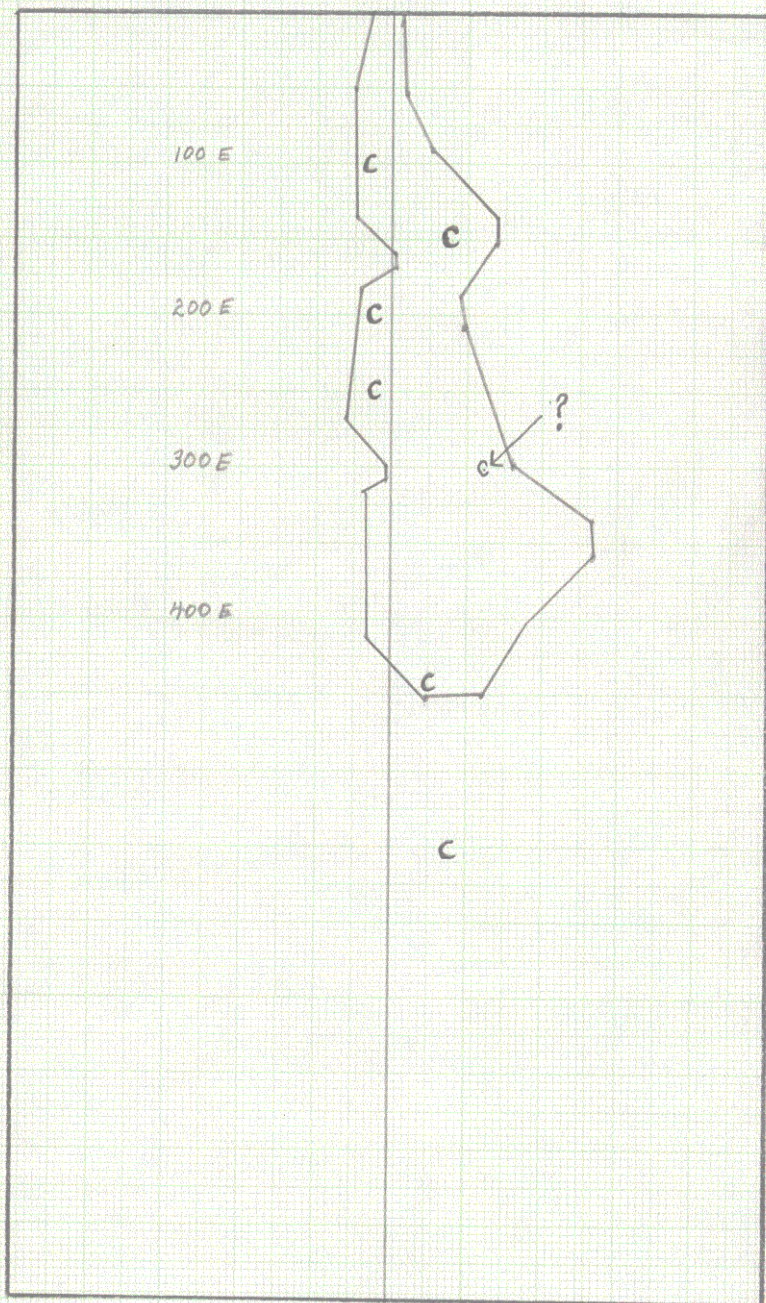


Gravel Deposit  
stream washed

Placer Claim 84

01-02-91

Map #4



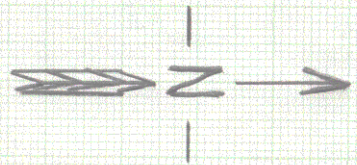
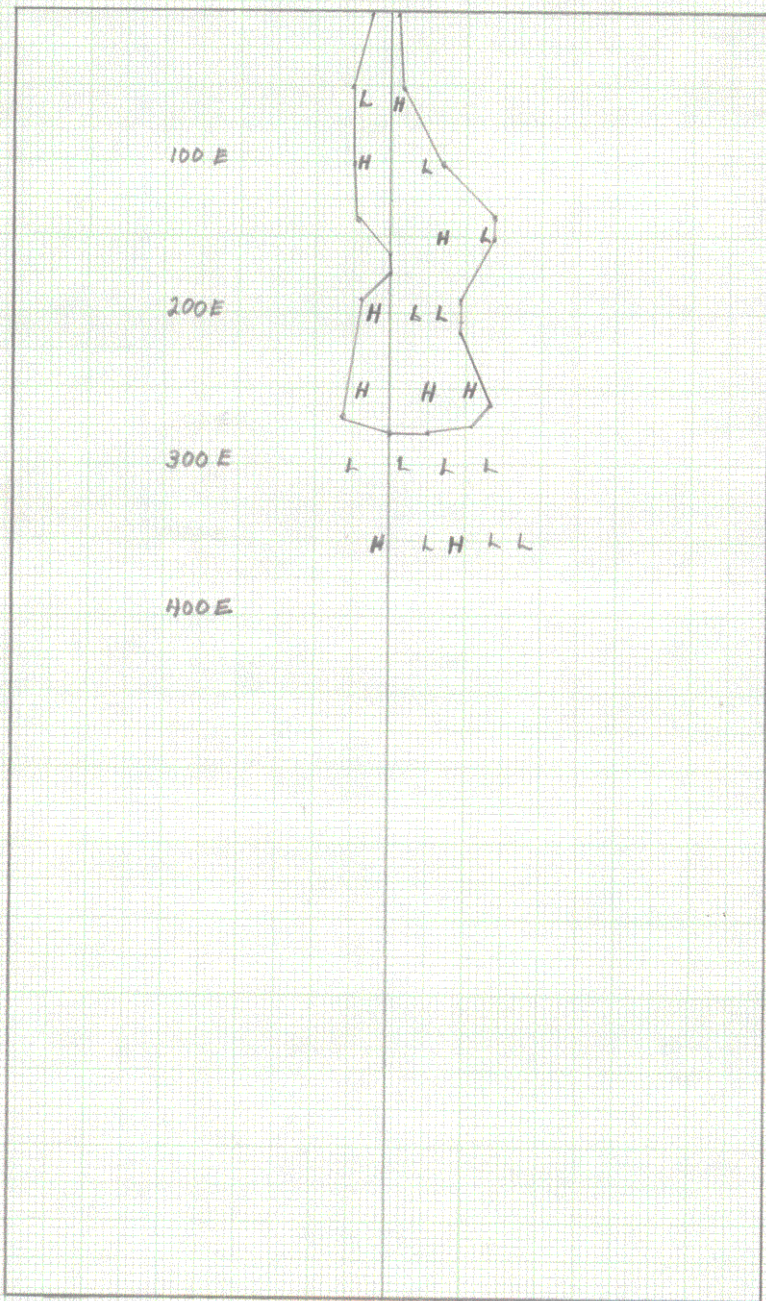
VLF-EM

Crossovers indicated by "C"

Placer Claim 84

01-02-91

Map #5



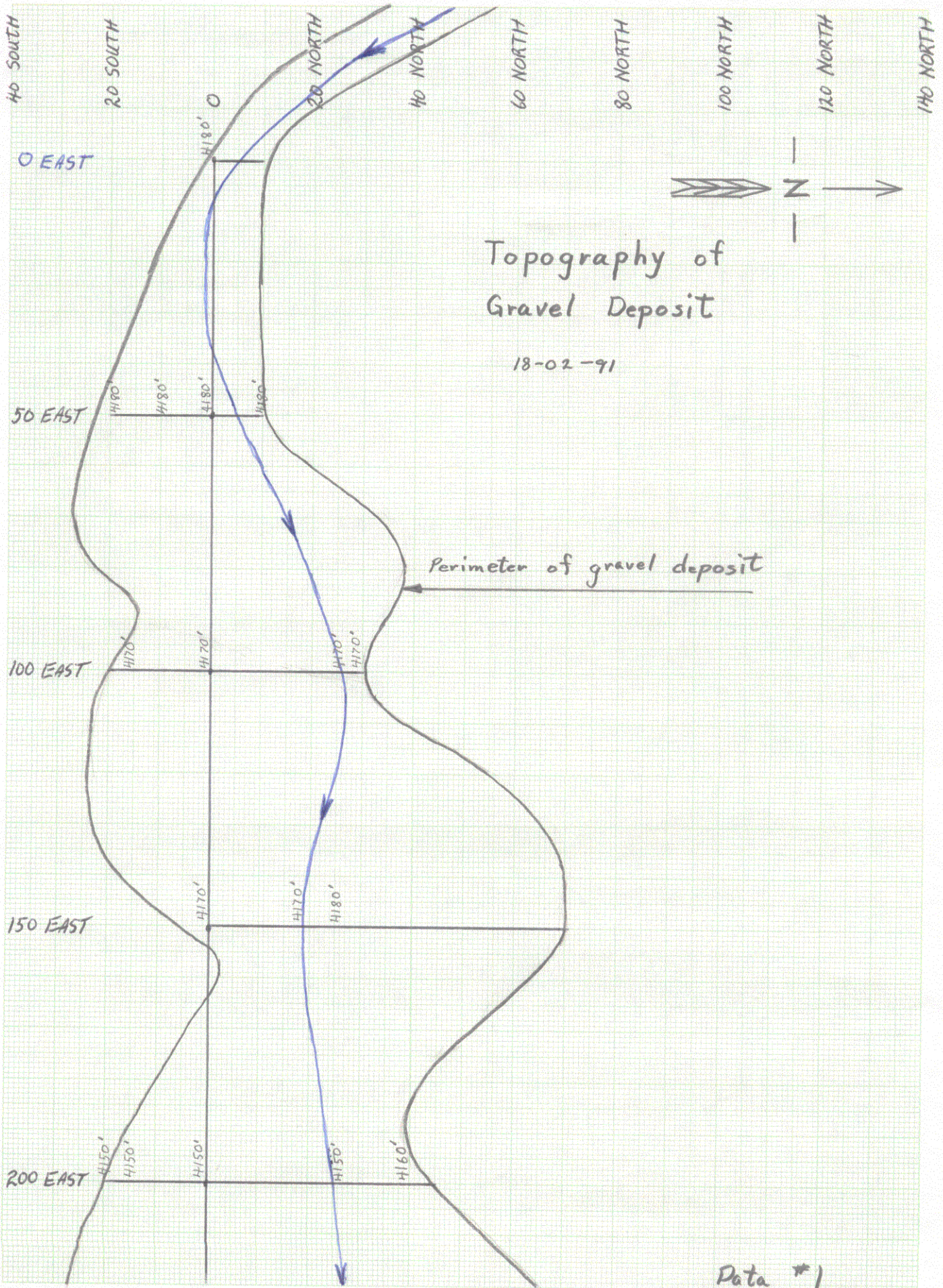
0 - 250 Low  
 251 - 750 Average  
 751 - 2000 High

### Differential Magnetometer

Area outlined has elevated magnetometer differentials  
 Readings were taken at 1 meter and 2 meters above  
 ground level  
 example @1m 58250 - @2m 57500 = 750 differential

Placer Claim 84  
 01-02-91

Map #6

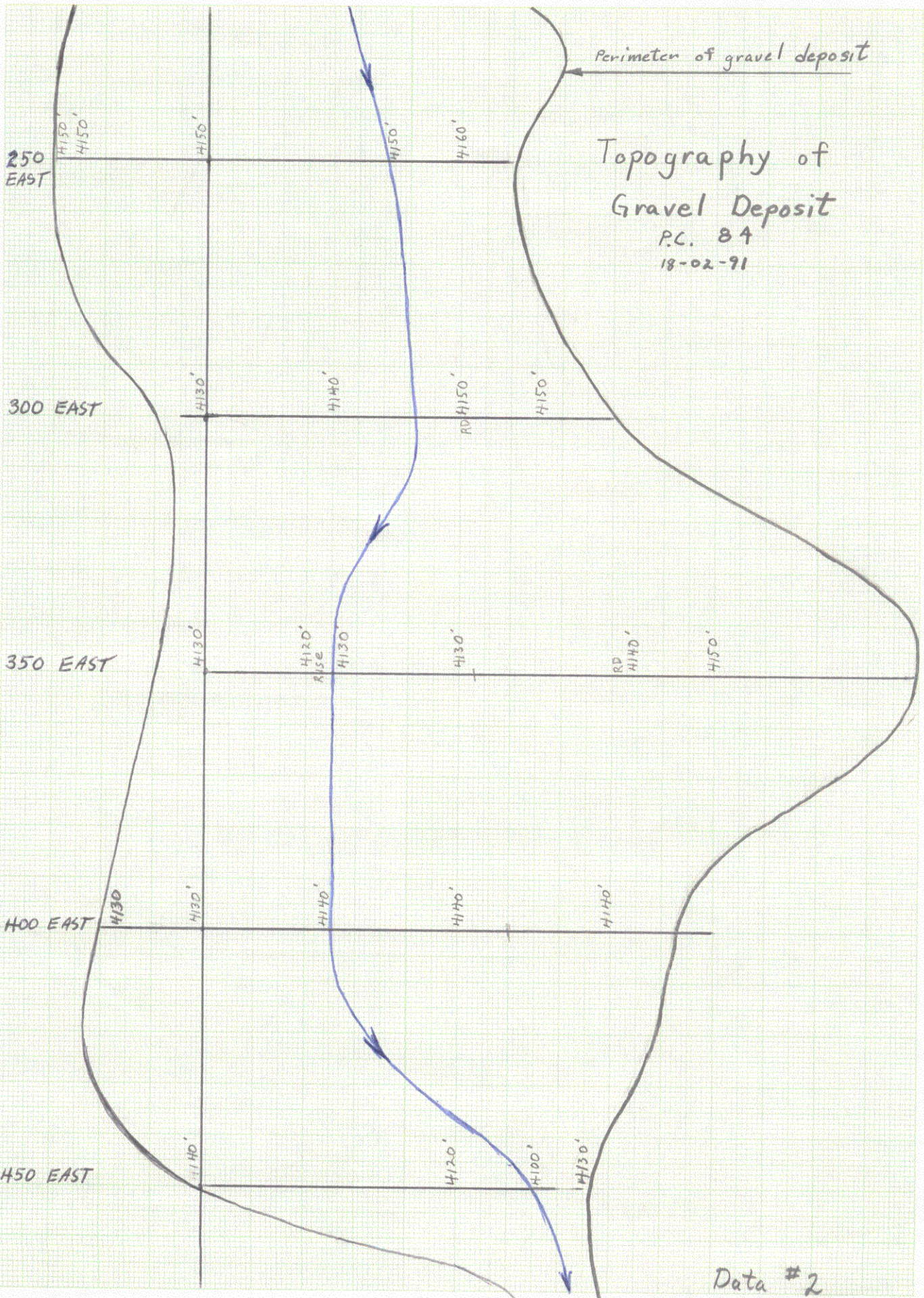


# Topography of Gravel Deposit

18-02-91

Perimeter of gravel deposit

Data #1



Perimeter of gravel deposit

Topography of  
Gravel Deposit  
P.C. 84  
18-02-91

250 EAST

300 EAST

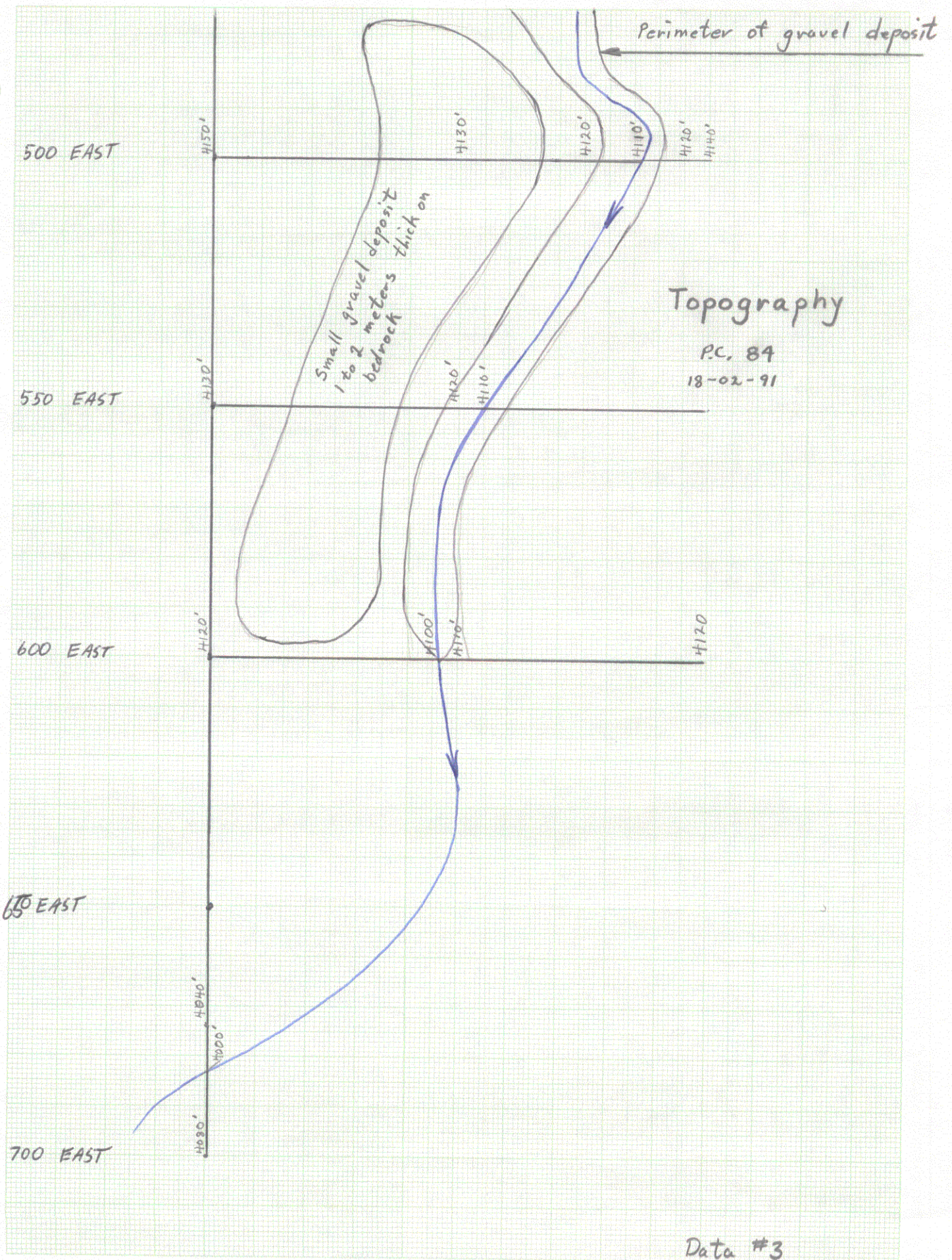
350 EAST

400 EAST

450 EAST

4120'  
Rise

Data #2



Data #3

40S 20S 0N 20N 40N 60N 80N 100N 120N 140N

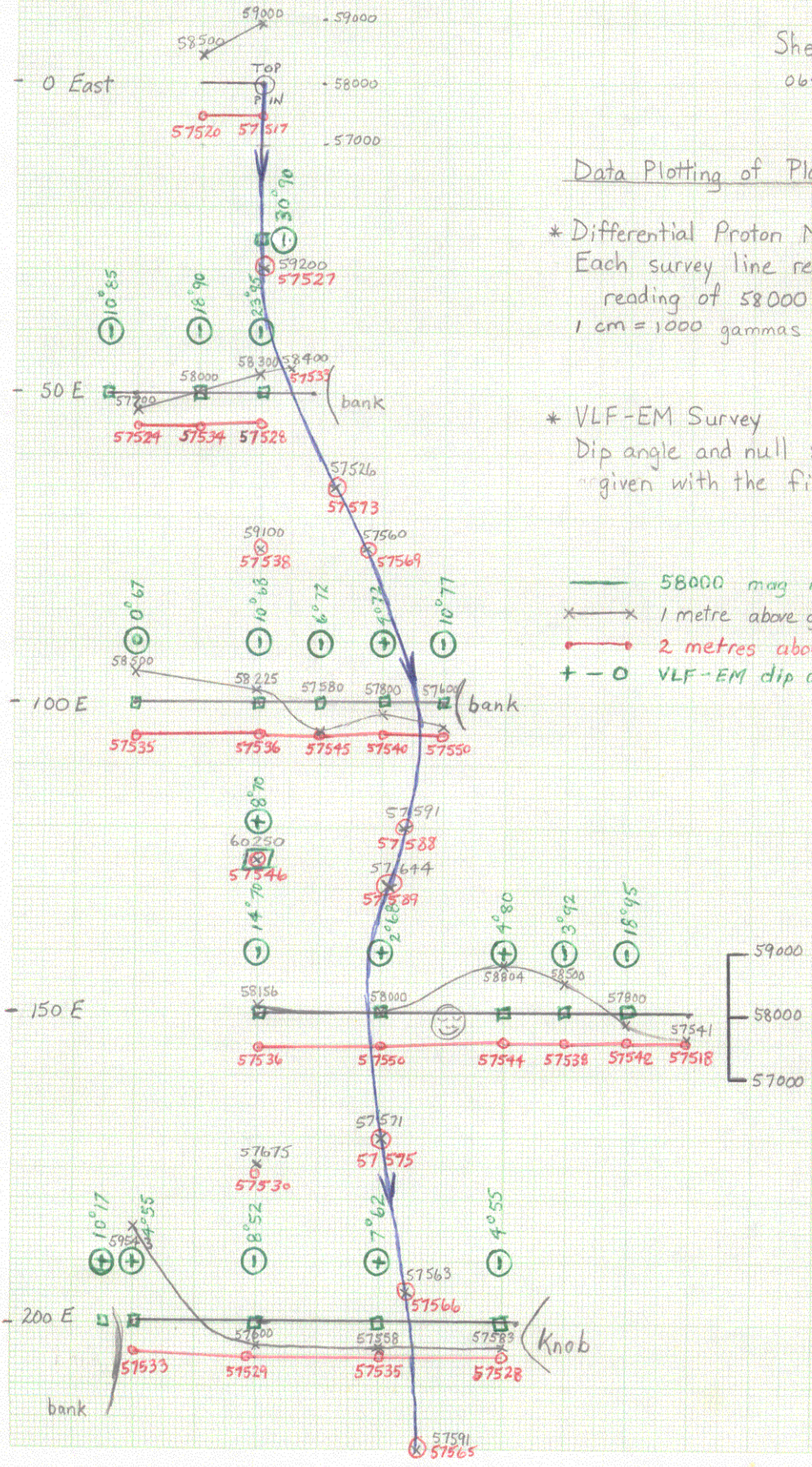
Sheet 1/3  
06-01-91

Data Plotting of Placer Claim 84

\* Differential Proton Magnetometer Survey  
Each survey line represents a magnetometer reading of 58000  
1 cm = 1000 gammas

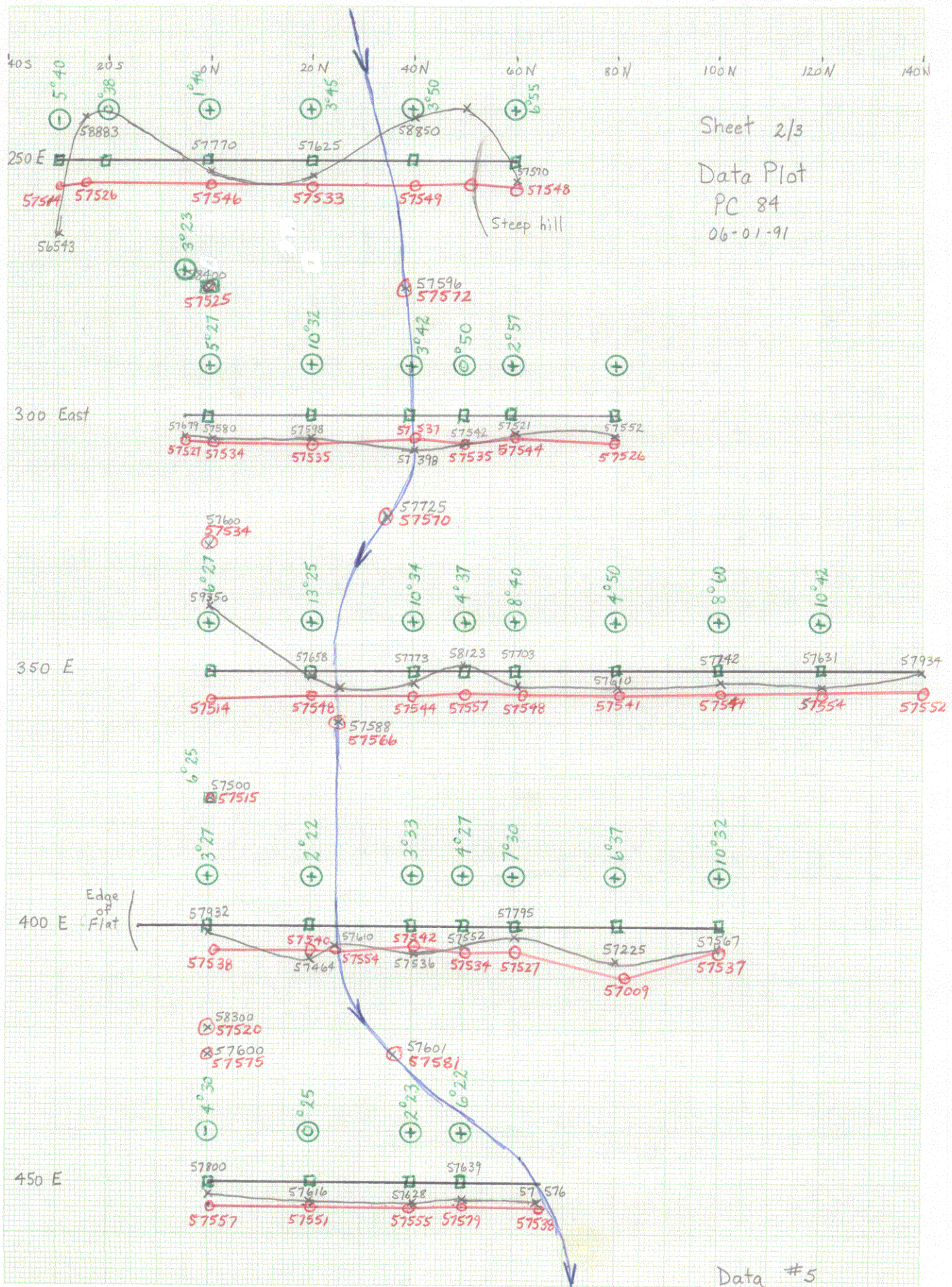
\* VLF-EM Survey  
Dip angle and null signal strength are given with the field strength kept at 50.

- 58000 mag reading
- ✕ — ✕ 1 metre above ground line
- 2 metres above ground line
- + - 0 VLF-EM dip angles



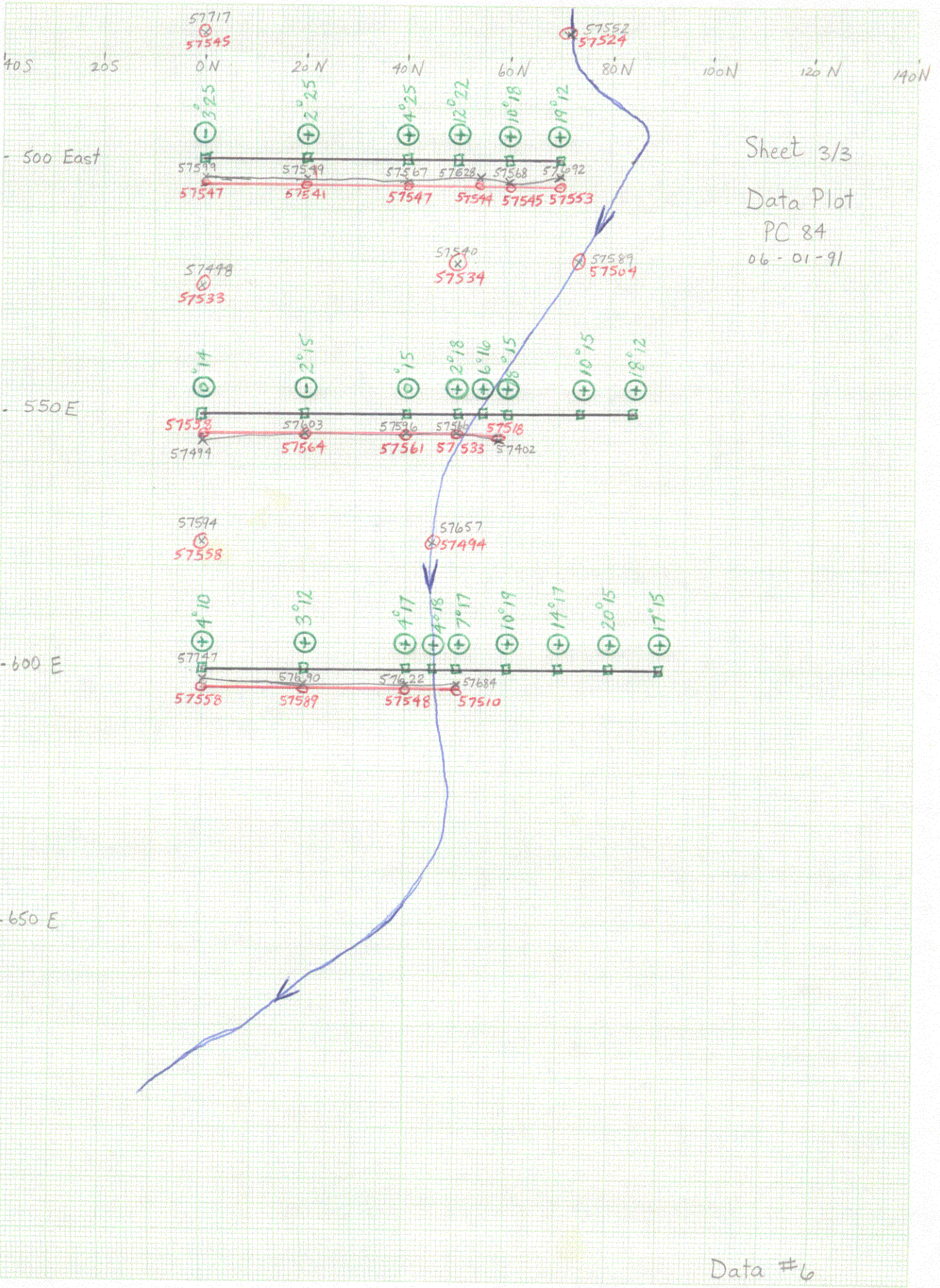
Data #4

See Data #5 ↓



Data #5





# MALASPINA COLLEGE

## Statement of Course Completion

GREG WILLIAM FILION

has

Successfully Completed 180 Hours of Instruction  
in

MINERAL EXPLORATION FOR PROSPECTORS


PRESENTED BY B.C. MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES  
B.C. MINISTRY OF EDUCATION


APRIL 16 to 30, 1983 - MESACHIE LAKE, B.C.


MAY 2, 1983

Dated at Nanaimo,  
British Columbia, Canada



  
\_\_\_\_\_  
Director / Dean

  
\_\_\_\_\_  
Registrar

  
\_\_\_\_\_  
Instructor