

# MAR 19940001: MOUNTAIN LAKE

Received date: Sep 27, 1994

Public release date: Sep 28, 1995

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19940001

**MONOPROS LIMITED**

**METALLIC MINERAL EXPLORATION PERMIT  
ASSESSMENT REPORT, MOUNTAIN LAKE PROSPECT, ALBERTA**

**B.D. Wood and A.C. Williams  
20 September 1994**

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## 1.0 SUMMARY

The following report outlines assessment work that was completed over the Mountain Lake Prospect in Northern Alberta. Line cutting and a ground magnetometer survey were completed over the mineral permits held. The survey outlined two magnetic high anomalies that are elongated in a northwest-southeast direction. These anomalies are believed to represent kimberlite intrusions.

## 2.0 INTRODUCTION

Phantom Exploration carried out a 138.4 km ground magnetometer survey from February 15 to April 3, 1994 over a known kimberlite intrusion. The survey was conducted to outline accurately the limits of the diatreme. The diatreme had previously been identified by surface sediment sampling for kimberlitic indicator minerals.

## 3.0 LOCATION AND ACCESS

The property is located in northwestern Alberta, 75 km northeast of Grande Prairie on highway 676 (See Figure 1). The property lies within three permits and encompasses 30 legal subdivisions (480 Ha). The location and area of the permits is outlined in Table 1 and displayed in Figure 2.

**TABLE 1: Location and Area of Permits Encompassing Mountain Lake Property**

<u>PERMIT NUMBER</u>	<u>LOCATION</u>	<u>AREA</u>
9390080014	5-25-074: 35L1, L2 ,L7-L10, L15, L16; 5-25-074: 36L2-L7 ,L10-L15	320 Ha
9390080019	5-24-075: 6L1-L8	128 Ha
9390080020	5-25-075: 1L1,L8	34 Ha

## 4.0 PERMIT TABULATION

Permits 9390080014, 9390080019 and 9390080020 are held by Monopros Limited. This report is being submitted by Bradley D. Wood and Andrew Williams for Monopros Limited.

## 5.0

### WORK PERFORMED

The kimberlite is located in a forested area, therefore it was required to cut traverse lines in order to carry out the magnetic survey. Phantom Exploration Services was contracted to establish the survey grid. They cut north-south lines approximately one metre wide and spaced at 100 metre intervals. East-west control lines were spaced at 400 metre intervals. Pickets were placed at 25 metre intervals along the survey lines. In total 138.4 line km of line were cleared and picketed.

An Alberta Survey Control Marker (#205096) is located at grid coordinates 1590N/456.5E. This marker can be used to tie the grid onto a map location (UTM Coordinates 6146150.076N/454601.690E).

The magnetic survey was performed using a hand held magnetometer carried by the operator who walked each survey line, taking a measurement every 12.5 metres. The magnetometer was a Scintrex EDA Omni-IV unit consisting of a console attached to a harness so that the console can be carried resting against the operators chest. The console is attached via a cable to a sensor which sits on a 2 metre pole. The sensor is a multiple turn coil immersed in a hydrocarbon fluid, sealed in a cylinder measuring approximately 5 cm in diameter and 20 cm in length. The operator was free of any magnetic materials, particularly penknives, compasses and other ferrous metals.

The instrument measures the frequency of a decaying current created by the precession of protons in the hydrocarbon fluid. The frequency of this very weak alternating current can be related to the intensity of the earth's magnetic field. The instrument displays the earth's magnetic field intensity in units of nanoteslas (abbreviated as nT). Variations in the earth's magnetic field on a local scale, such as this survey, are due to variations in the concentration and magnetic properties of magnetic minerals contained in the rocks. The most common magnetic mineral is magnetite which is ubiquitous, thereby making the magnetic method widely applicable.

A second magnetometer (the base station) was located at a fixed position and recorded the variation of the earth's magnetic field with time. This variation was then subtracted from the field (or mobile) instrument data to give a data set which varies only with position, and is therefore attributable to local variations in magnetic minerals in the underlying rocks. This correction is performed at the end of each day and the data are plotted up the same evening to determine if any errors have occurred.

The final data set consists of a corrected magnetic field intensity measurements, with corresponding line and picket locations for each measurement. The data were then contoured using a computer program on an IBM PC compatible computer and a map was produced at a scale of 1:5000. The map is a set of contours joining points of equal intensity (ie. an isomagnetic contour map), which in turn are determined from a grid of equally spaced points (or nodes) that have been interpolated from the original data. A grid of nodes at 12.5 metre separation was computed (2.5 mm at map scale) for the map.

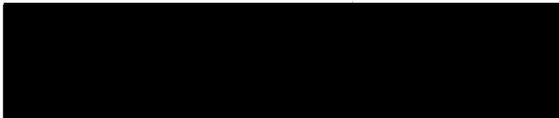
6.0 CONCLUSIONS

The magnetic dataset exhibits a uniform, monotonic gradient, increasing from west to east. This gradient is caused by the presence of deeply buried magnetic rocks (ie. the crystalline basement) and had no importance with regard to the objectives of this survey.

The data set also shows rapid fluctuations along each line of data, giving the map a "spotty" or "noisy" background. This arises from small very near surface magnetic clasts in the soils. Those fluctuations are of no importance for the present survey.

In the centre of the map two magnetic highs (anomalies) can be observed. They are located at line 800E / picket 800N and at line 500E / picket 1350N. The anomalies are elongate in the northwest-southeast direction. The anomalies are likely to represent kimberlite intrusions.

It is concluded therefore that the survey was successful and met with the stated objective. It is recommended that the anomalies be investigated further with a drilling program.

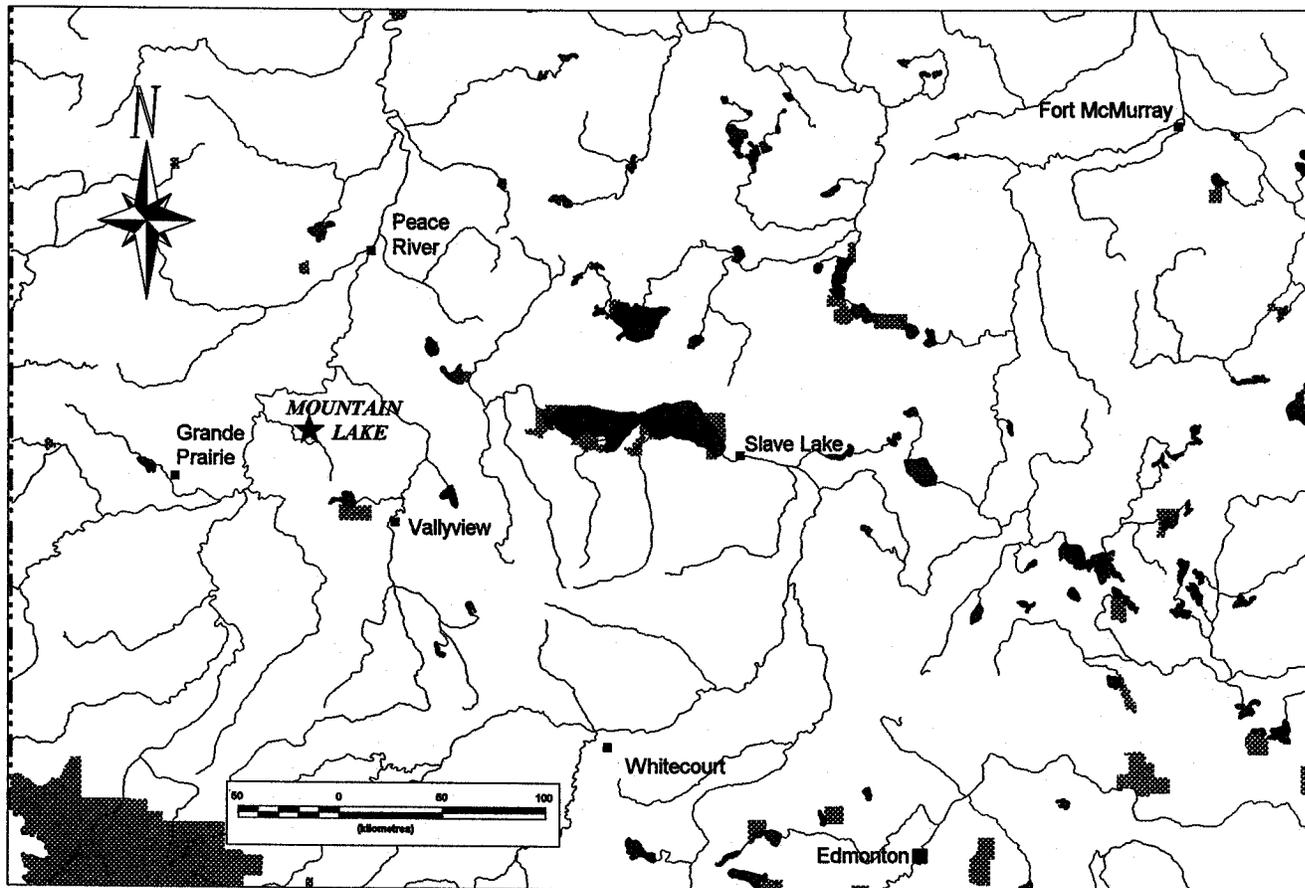
  
Bradley D. Wood  
Project Geologist  
Grande Prairie, Alberta

  
Andrew C. Williams  
Senior Geophysicist  
Toronto, Ontario

September 20, 1994

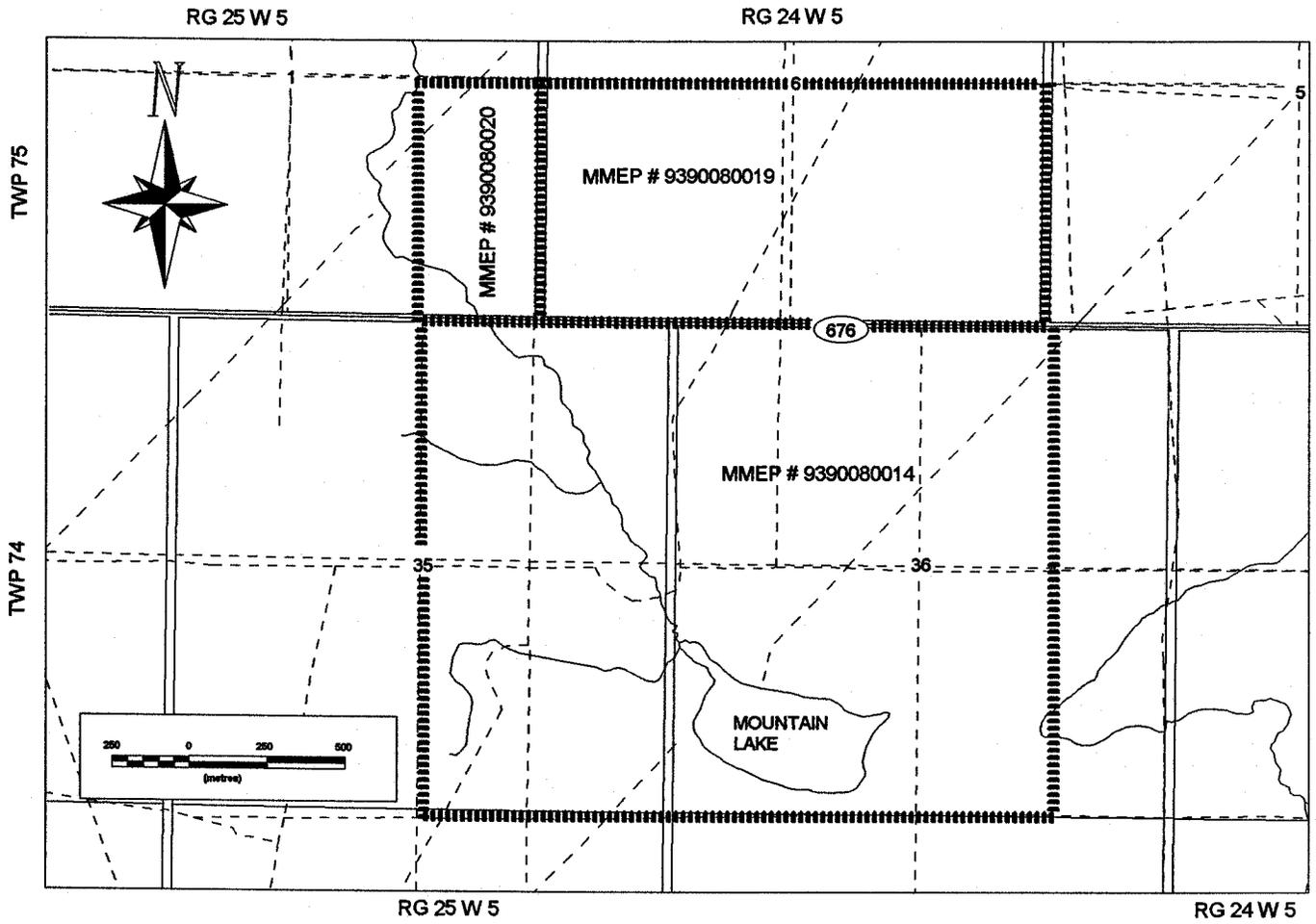
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**FIGURE 1: LOCATION MAP FOR THE MOUNTAIN LAKE PERMITS**



SCALE: 1 : 3 500 000

**FIGURE 2: LOCATION MAP DISPLAYING PERMIT BOUNDARIES**



**LEGEND**

..... PERMIT BOUNDARIES

SCALE: 1 : 25 000

APPENDIX 1 STATEMENT OF EXPENDITURES

DATE: 15 February, 1991 to 3 April, 1991

LINES CUT @ \$300/KM	\$41,520.00
MAGNETOMETER @ \$120/KM	<u>\$16,608.00</u>
TOTAL	\$58,128.00

Signed at Toronto this 20th day of September 1994.

Sworn before me )  
 )  
in the Municipality of Metropolitan )  
 )  
Toronto in the Province of Ontario )  
 )  
this 20th day of September, 1994 )

  
Andrew C. Williams

*Jerilyn Elizabeth Lamb*

Jerilyn Elizabeth Lamb, a Commissioner, etc.,  
Municipality of Metropolitan Toronto, for  
Monopros Limited. Expires August 31, 1996.

## APPENDIX 2 AUTHORS

**Bradley D. Wood**  
Project Geologist,  
Monopros Limited.

### **Qualifications:**

HBSc Geology with Energy and Fuel Science, Lakehead University, Graduated 1989

Employed by Monopros Limited since April 1989.

Fellow Member of GAC, Member of CIM, PDAC, Calgary MEG, Edmonton GAC, Manitoba PDA.

Member in training of NAPEGG.

**Andrew C. Williams**  
Senior Geophysicist  
Monopros Limited

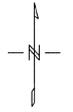
### **Qualifications:**

B.Sc. (Hons.) Geophysics, University of Melbourne 1984

Currently employed by Monopros Limited from July, 1990.

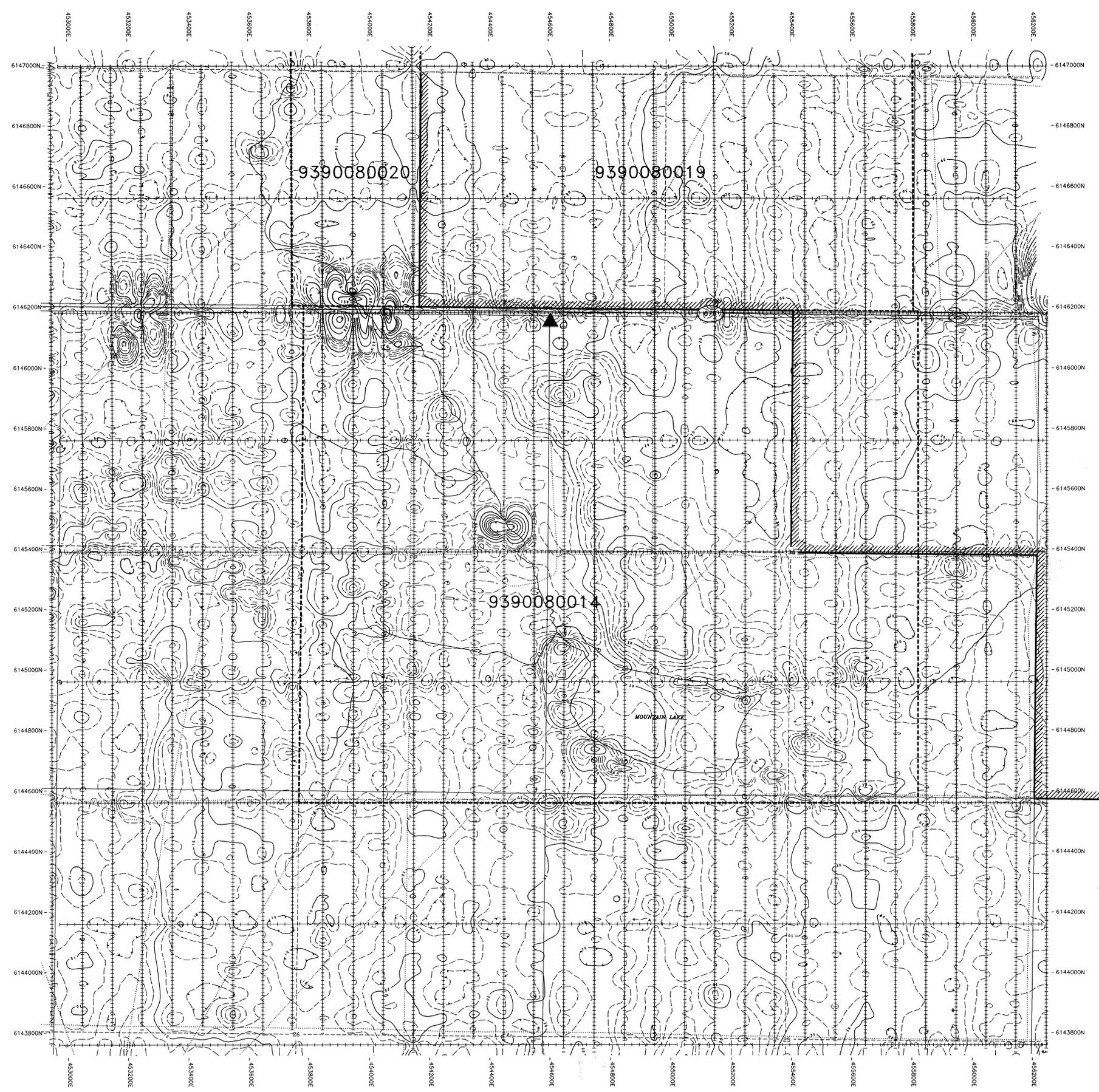
Previously employed by Anglo American Corporation of South Africa Limited (1987-1990) and Stockdale Prospecting Limited (1984-1986).

Fellow of the Geological Society of Canada, Member of the Society of Exploration Geophysicists and the Australian Society of Exploration Geophysicists.



R25 W5

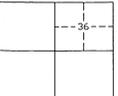
R24 W5

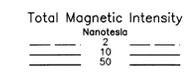


TWP 75

TWP 74

**LEGEND**

-  ASCM # 205096  
UTM Coordinates - 6148150.070N/454601.690E  
Grid Coordinates - 1590N/456.5E  
25m south of centre of road  
600m east of where the creek from Mountain Lake crosses the road
-  Township, Section, Quarter Boundaries
-  Geophysical Grid (Hand cut)
-  Existing Cut Line
-  ROAD
-  MIMP BOUNDARY
-  WHITE AREA
-  WHITE/GREEN AREA BOUNDARY
-  GREEN AREA
-  STREAM
-  LAKE



Instrument: EDA OMNI PLUS  
Reading Interval: 12.5 m  
Base Station Datum: 59000 nT  
XYZ data file: mtm\_utm.xyz

**Survey Grid Specifications**

Operator: R. Midgough  
Company: Phantom Exploration Services  
Surveyed From: 15 Feb 1991  
To: 02 Apr 1991  
Traverse Interval: 100 m  
Picket Interval: 25 m



**MONOPROS LIMITED**

Alberta  
WHITEMUD CREEK  
Mountain Lake

Ground Magnetic Survey  
Total Magnetic Field Contours

NO.	Description	By	AUTHOR	ACW	SCALE
1			ACW		5000
2			MZY		
3					
DATE:	02 Apr 1991	MTS:	83N05		

R25 W5