

GM 31549

TURAM ELECTROMAGNETIC AND MAGNETIC SURVEY ON THE SETABE PROPERTY

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Énergie et Ressources
naturelles

Québec 

GEOSEARCH CONSULTANTS LIMITED

TURAM ELECTROMAGNETIC AND MAGNETIC SURVEY

for

CANADIAN OCCIDENTAL PETROLEUM LTD.

on the

SETABE PROPERTY, LA MOTTE TWP.

QUEBEC.

(To Accompany Maps 75-5 to 75-8)

Ministère des Richesses Naturelles, Québec	
SERVICE DE LA	
DOCUMENTATION TECHNIQUE	
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INTRODUCTION

A Turam electromagnetic and magnetic survey was carried out for Canadian Occidental Petroleum Ltd. on Lots 35 to 37, Range II and on 32 adjacent claims on Lac Malartic, La Motte Township, Quebec, in January 1975. The property is located 18 miles south of Amos from where it is accessible by secondary roads.

The purpose of this survey was to locate and evaluate sub-surface geo-electrical conductors which might prove to be base metal orebodies. No conductors were located. The accompanying maps show the area surveyed and the results obtained.

METHOD AND INTERPRETATION OF RESULTS

Turam Electromagnetic Survey

The model 2S Turam equipment was used for this survey. It was manufactured and developed in Sweden by the ABEM Instrument Group of the Craelius Company.

In common with other electromagnetic inductive systems the Turam method is based on the fact that a secondary current is induced in an electrical conductor when the conductor is subjected to an electromagnetic field. This secondary current creates its own electromagnetic field which, together with the primary applied field, produces a resultant electromagnetic field. This resultant field, which can be detected and measured, differs both in phase and amplitude from the calculated primary field; these differences may indicate the presence of a conductor.

The primary alternating field is created by the use of a large horizontal rectangular loop, energized by a current at 660 Hz or 220 Hz. The receiving system consists of two coils 100 feet apart, connected to a compensator-amplifier which measures the complex field-strength ratios and phase-differences between successive points on traverses outside and perpendicular to a long side of the primary loop. Both the phase-difference readings and the reduced field-strength ratios are plotted as curves at points mid-way between the coil positions. The reduced ratios are the measured ratios divided by the normal ratios. The normal ratios may be calculated from the geometry of the primary loop and from the location of the points at which the readings were taken in relationship to the loop.

The conductivity of steeply dipping conductors may be estimated from the following chart:

Ratio Anomaly > 1.00	Negative Phase-difference	Conductivity
Very small or nil	Small to medium	Very poor
Small	Medium to large	Poor
Large	Medium	Good
Large	Small	Very good

In areas of conductive overburden, the amplitudes of anomalous readings, both the phase and the ratio, increase as their distance from the primary loop increases.

Magnetometer Survey

A Geometrics Model G-816 proton magnetometer which measures the total magnetic field was used for this survey. Readings were recorded to one gamma accuracy with a plotted reading of zero equivalent to the absolute reading of 58,900 gammas.

Corrections were applied to the readings by re-reading previously established base stations, located along the base line and on the 67N tie line, at time intervals not exceeding approximately 55 minutes.

RESULTS

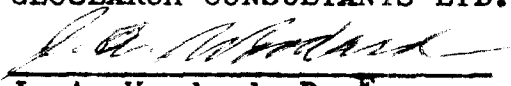
No conductors were located. Numerous anomalous readings were recorded which are deemed to be caused by either conductive overburden or electrical interference.

The magnetic results indicate that the map area is mainly underlain by a highly magnetic rock type- probably peridotite. The southeastern portion of Map 75-8 shows definite north-south strikes. If any conductors occur with this strike direction they would not be detected by this Turam survey along north-south lines.

Recommendations

The magnetometer results should be used to interpolate the known geology. After a geological assessment, a re-survey of selected portions along east-west lines should be given some consideration.

Respectfully submitted,
GEOSEARCH CONSULTANTS LTD.


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