060788

A Geophysical Report on the Alberta and Yukon Claim Groups

Mayo M.D. Sheet 105-M-13

Lat. 63° 54'N., Long. 135° 41'W.

September 18th. to October 3rd. 1971

For Canadian Reserve Oil and Gas Limited

By E.J. Wilson, Supervised by R.W. Stemp, P.Eng.

Spartan Aero Limited, Ottawa

December 2nd., 1971

SPARTAN AERO LIMITED

SUMMARY

Previous resistivity work on the property located several anomalies. These were relocated and detailed using the vertical loop - fixed transmitter E.M. method. Drilling is recommended.

It was found that the VLF-EM method fails in this area where appreciable thickness of conductive overburden is present.

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Maps Accompanying this Report:-

Vertical Loop, EM 16 and Vertical Magnetic Survey, Profile Presentation. Scale: 1 inch = 200 feet.

I. INTRODUCTION

A geophysical survey was conducted on behalf of Canadian Reserve Oil and Gas Limited by Spartan Aero Limited on a portion of the Alberta and Yukon Mineral Claim Groups during the period from the 18th. September to the 3rd. October 1971. These claims appear on the Mt. Haldane Sheet, 105-M-13.

Most surveying was done using the vertical loop (fixed transmitter) electromagnetic method with some testing using a VLF electromagnetometer (VLF EM) and magnetometer (Mag.).

The objective of the survey was to relocate conductors discovered by a previous survey, possibly lead-zinc-silver-cadimium bearing bodies and to select drill sites.

A total of 11,800 feet of vertical loop EM and 3,300 feet of VLF EM and magnetic profiling was performed on old relocated cut lines and some chain and compass lines.

This is divided between the two claim groups as follows:

Alberta Claim Nos. 1 to 4 inclusive	Vertical Loop 8,700 feet.
	VLF EM and Mag. 3,300 feet.
Yukon Claim No. 2	Vertical Loop 3,100 feet.

One hundred foot station spacing was employed throughout the survey on lines spaced from 200 to 400 feet apart.

Personnel associated with this project were as follows:

J. Strebchuck	Penticton, B.C.	Prospector
E.R. Rockel	Richmond, B.C.	Geophysicist
E.J. Wilson	Ottawa, Ontario	Geophysicist
R.W. Stemp, P.Eng.	Ottawa, Ontario.	Chief Geophysicist.

II. GEOLOGY

It is inferred from mapping by the Geological Survey of Canada that the claims are underlain by thick-bedded quartzite, thin-bedded quartzite, graphitic schist and minor limestone of the Central Quartzite Formation of the Yukon Group which is Precambrian or Palaeozoic in age. Mapped close by are sills of quartz-feldspar porphyry or granite porphyry intruding the above rocks.

Glacial deposits, mainly till, glacio-fluvial deposits and glacio-lacustrine gravel sand and silt cover the survey area to a depth of 50 to 100 feet.

Examination of exposed bedrock on the Wayne mineral claim no. 5 to the immediate northeast reveals predominantly thin-bedded quartzite dipping southerly at about 30°.

III. GEOPHYSICAL INSTRUMENTATION AND METHODS

Three geophysical instruments were employed for the survey. A Sharpe SE 300 unit in the vertical loop, fixed transmitter mode with 400 feet separation between the transmitter and traverse line. A. Ronka EM 16 VLF EM unit (Serial no. 111) and a Sharpe MF 1 Vertical Fluxgate magnetometer (Serial 409109).

An old hand cut grid was used for location control. In addition one line and several extensions were marked out by flagging using a chain and compass.

SE 300 data is profiled in such a way that a conductor gives a "crossover" response which has its minimum on the left side and its maximum on the right side of the conductor axis. EM 16 data is presented in the same way. The magnetic-profiles have an arbitrary base level of 395 gammas on line 4+00E at 3+00N. Magnetic closures were made and corrections applied to remove diurnal drift.

IV. DISCUSSION AND RESULTS

An EM search using the fixed transmitter - moving receiver quickly located two strong conductors trending approximately E.NE. Detailing was performed and each was traced along strike until the response was very weak.

Strongest responses were obtained from the southern most conductor. The strike is somewhat sinuous over its 2,000 feet length and it runs through the south corner of Wayne mineral claim no. 5. The two crossovers located on the east end on Alberta mineral claim no. 1 are weak and their location only paced.

The other conductor has a straight strike running almost due east-west over a length of 1,500 feet. It appears to weaken or perhaps divide up as it approaches the Wayne mineral claim no. 5 at the east end. Measurements were made at a second frequency on one traverse over each conductor for information on conductivity. Each conductor has medium conductivity, the southern one being a little higher. Interpretation (Mining Geophysics Vol. II, S.E.G., 1967) of the profile show the northern conductor to be covered by about 50 to 80 feet of overburden and dipping approximately 80° south. The southern conductor is covered by about 50 feet of overburden and dipping approximately 50° to 60° south.

Neither conductors are magnetic nor have any EM 16 response. The lack of EM 16 response is due to the thickness of conductive overburden and perhaps in part to the poor coupling the conductors have with the primary VLF field from Washington.

V. CONCLUSIONS AND RECOMMENDATIONS

Both conductors detailed are good prospects. They are probably sulphide bodies but a graphitic source should not be discounted as their attitude is similar to the bedrock attitude. The medium conductivity noted may signify the presence of high proportions of sphalerite, a fact supported by observations on the Wayne mineral claim no. 5.

Initially two drill holes are recommended to test these conductors. One on line 4+00E at 0+20S, 100 feet south of the X.O. picket (0+80N) at an angle of - 60° to the north for 200 feet and the other at chainage 6+00E - 6+90S, 100 feet south of the X.O. picket (6+00E - 5+90S) at - 60° to the north for 150 feet.

In view of the failure of the EM 16 to respond to these conductors because of the overburden it is recommended that any further exploration be carried out using conventional EM techniques in areas of significant overburden cover. The most efficient approach would be to use the parallel line method in conjunction with magnetometer measurements on cleared lines.

Respectfully submitted,

E.J. Wilson, B.Sc.,
Geophysicist.

Robert W. Stemp, P.Eng.,
Chief Geophysicist.

OTTAWA, ONTARIO,
December 2nd., 1971.

SPARTAN AERO LIMITED

References

Boyle, R.W.,

1965, Geology, Geochemistry and origin of the lead-zinc-silver deposits at the Keno Hill - Galena Hill Area.

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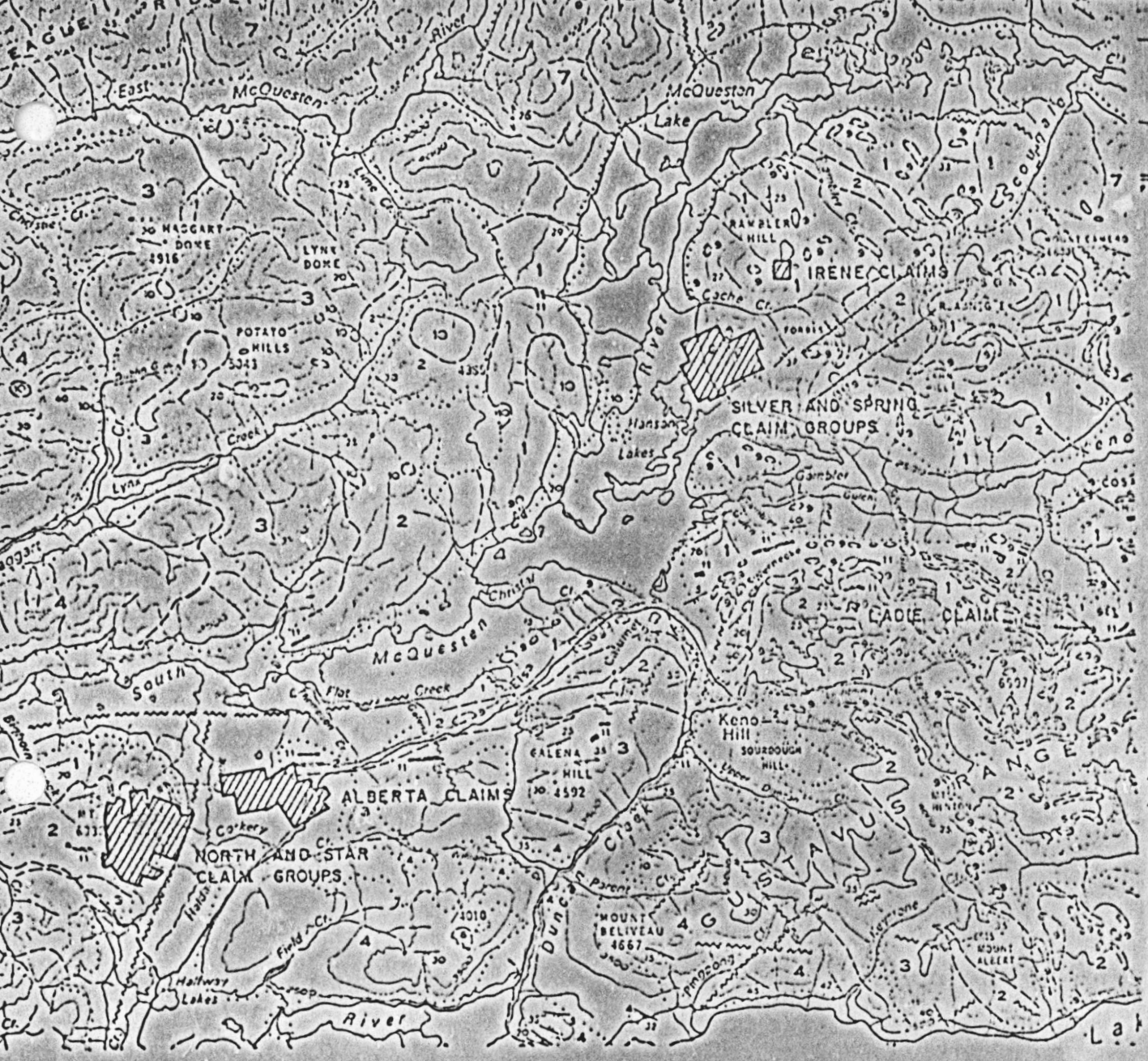
1967, Mining Geophysics Vol. II Theory.



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(APPROX.)

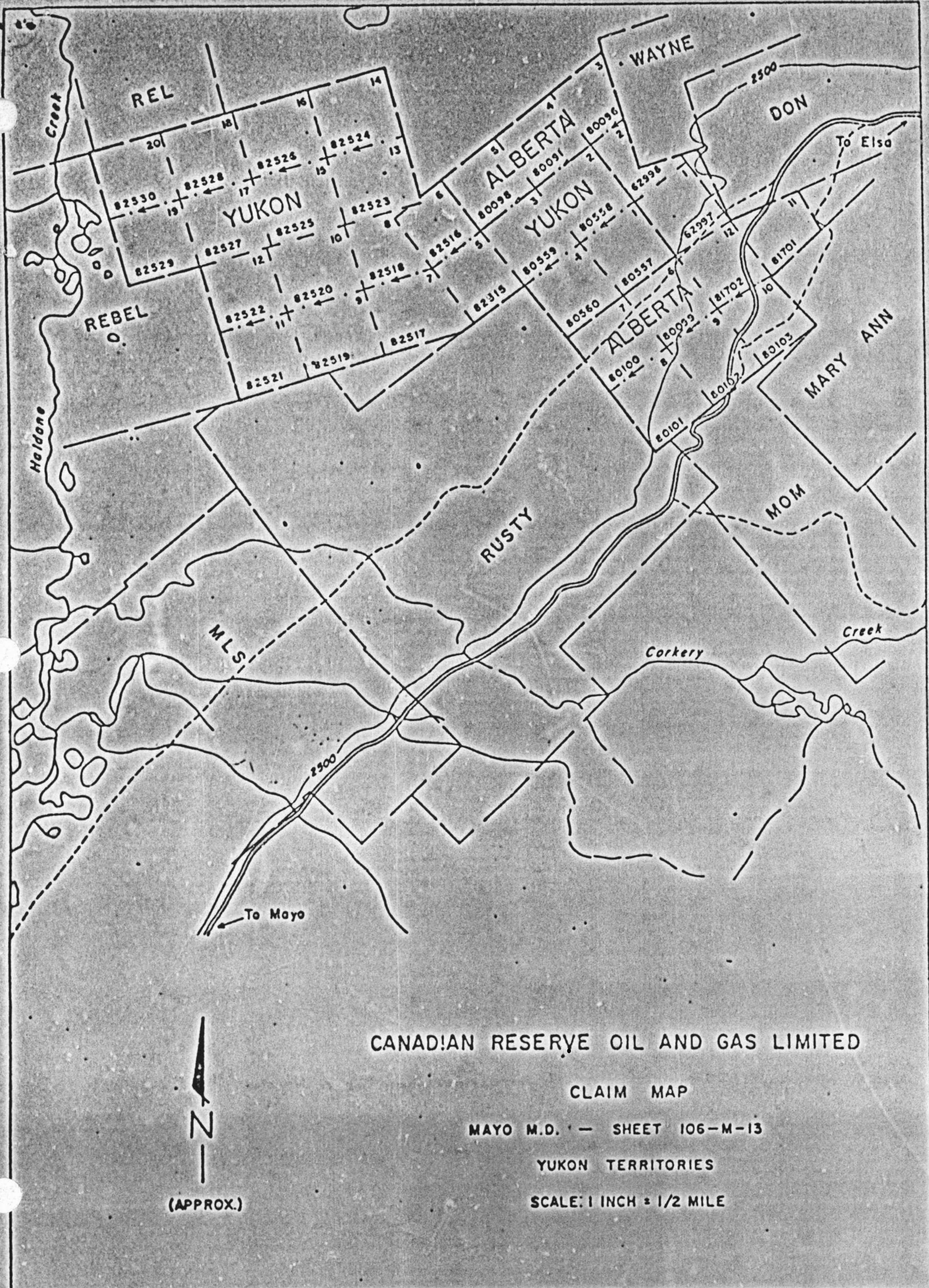
CANADIAN RESERVE OIL AND GAS LIMITED

CLAIM GROUP LOCATION MAP

MAYO M.D. — YUKON TERRITORIES

SCALE: 1 INCH = 4 MILES

FROM G.S.C. MAP 1147A



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CANADIAN RESERVE OIL AND GAS LIMITED
CLAIM MAP
MAYO M.D. — SHEET 106-M-13
YUKON TERRITORIES
SCALE: 1 INCH = 1/2 MILE

INCOMPLETE IMAGE