GRAVITY SURVEY

of the

BLUE CLAIMS (1 to 29 inclusive) GROUP
YUKON TERRITORY

Map Sheet 105K-12
Latitude 62° 37' N. and Longitude 133° 42' W.

for

CANADIAN RESERVE OIL AND GAS LTD.

by

OVERLAND EXPLORATION
SERVICES (1969) ~~LTD.~~

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $16,350

D.B. Craig
Resident Geologist of
~~Resident Mining Engineer~~

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

Commissioner of Yukon Territory

Job No. 71-182
Aug. 11 to Aug. 28, 1971

David K.Y. Chen

INTRODUCTION

In August 1971, Overland Exploration Services (1969) Ltd., conducted a gravity survey on the Blue Claim Group, Claims No.s 1 to 29 inclusive. These claims are situated in two blocks on Map Sheet 105K-12, five miles directly south of Two Pete Mountain at latitude 52° 37' North and longitude 133° 42' West. Overland flew in a camp by helicopter to a location on a creek immediately east of the Blue Claims. The work was conducted from this camp and all food and supplies were supplied by helicopter while the job was in progress.

Claim Grant Numbers are:

BLUE	1	- Y 61569		9	- Y 61577
	2	- Y 61570		10	- Y 61578
	3	- Y 61571		11	- Y 61579
	4	- Y 61572		12	- Y 61580
	5	- Y 61573		13	- Y 61581
	6	- Y 61574		14	- Y 61582
	7	- Y 61575		15	- Y 61583
	8	- Y 61576		16	- Y 61584

17 - Y 61585
18 - Y 61586
19 - Y 61587
20 - Y 61588
21 - Y 61589
22 - Y 61590
23 - Y 61591
24 - Y 61592
25 - Y 61593
26 - Y 61594
27 - Y 61595
28 - Y 61596
29 - Y 61597

The Blue Claims are located in two separate groups, No.'s 1 to 20 inclusive in the northernmost group, and No.'s 21 to 29 inclusive in the southern group. The groups are approximately 3,000 feet apart. A north-south base line was cut to cross both groups of claims and east-west grid lines were then cut at right angles to the base line. Grid lines have been spaced at 750 feet apart with station spacing being at 200 foot intervals along the grid and base lines. In all 25 miles of line were cut, surveyed and metered. The hand cut lines were cut wide enough to permit line of sight for the topographic survey.

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INTERPRETATION

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TECHNICAL DATA

Bouguer Free-Air Correction Factor	- 0.06
Latitude Correction	- 4911.15 feet/milligal
Density	- 2.65
Diurnal Drift	- taken from base plots
Terrain Corrections	- taken where necessary
Meter Numbers	- Worden No. 806 LaCoste & Romberg No.'s 181 & 225
Meter Constants	- No. 806 - 0.20961 181 - 1.05556 225 - 1.06040
Base Value	- Arbitrary value of 500 milligals

SURVEY & FIELD PROCEDURE

The horizontal and vertical survey was conducted with a TI-A theodolite. Stations were located and elevated along each of the grid lines. The elevation was then closed across the extremities of the grid lines, all of the closures thus formed were under 2.5 feet. A field plot of the actual elevation closures has been included with this report. The gravity readings were taken with a Worden Master and LaCoste and Romberg meter and stations were metered on a two and one-half hour run from base to base interval. The base station plots were used for graphing the diurnal gravity drift which in turn was applied to all station readings. Each gravity station run had several repeat stations from preceding runs in order to prove the repeatability of the gravity meter. The repeats were all within a 0.00 to 0.08 milligal range. All gravity readings were corrected for diurnal drift, Bouguer Free-Air-Correction, latitude correction, and terrain correction. A density factor of

0.06 for a surface density of 2.65 has been used in this interpretation.

INTERPRETATION

Included with this report are the following maps

- Elevation Map
- Bouguer Gravity Map
- Residual Gravity Map
- Bouguer Profiles showing regional gradient and residual features.

The interpretation of this report is mainly based on the Bouguer Profiles of the surveyed area. It is the profiles which have been examined for anomalous trends and it is from the profile gradient that model studies have been conducted of significant gradient changes. Any gradient changes emanating from within the upper 1,500 feet of the geological section are deemed to be "residual" and are shown as being positive or negative on the Residual Map.

The features which are being sought are gravity positives which can be identified with a source contrast of 1.00 specific gravity. This is the average minimum

contrast that we can expect to find between the altered sedimentary host rock and the massive sulphide bodies.

Complicating the search are two events that will nearly satisfy the above perameters for density contrast. One is a cone or ridge of dense native rock surrounded by several hundred feet of surface till. The second is a mass of altered quartzite or skarn that can be very dense (up to 3.5) and if adjacent to a phyllite with a density of 2.65 will appear as a positive gravity anomaly which is similar to the anomaly produced by massive sulphide bodies.

In most instances only drilling will verify the cause of the anomaly.

The following is a discussion of the maps presented.

BOUGUER GRAVITY MAP

The Bouguer Gravity Map of the Blue Claims displays very little contrast, there are only two milligals of relief across the entire area. Though there are some isolated highs and lows evident, they have very little meaning in the Bouguer form, and it is the Residual Map which must be examined for an interpretation. Much of this work is on or near the intrusive granites and this is probably why the Bouguer gravity displays such a homogenous background. We can expect much greater shallow density variations in the altered sedimentary section than in the granite section and therefore, it is not a surprise that the map has a subdued contrast. Although the granite is not an ideal host rock, the gravity anomalies found should be given favorable consideration. We say this because the actual sediment-granite contact takes place very near the Blue Claims and due to lack of out-cropping we cannot be sure of the exact position of the contact. There may be mineralization present at or near the suspected contact.

RESIDUAL GRAVITY MAP

The Residual Gravity Map shows the difference (in gravity) between the observed gravity and the regional gravity gradient. The regional gravity gradient on the Blue Claims Group has been constructed from a profile analysis of the surveyed gravity lines and is designed to attempt to eliminate deep-seated gravity features which complicate the identification of the shallow-sourced gravity features. These shallow features may indicate mineralized areas. By using this method, the deep seated gravity events are filtered out or suppressed to a point where the remaining or residual gravity is (mostly) emanating from above a predetermined maximum depth. In the case of the Mark Claims Group area this investigation depth is 1,500 feet or less below surface.

The Blue Claims No.'s 1 to 29 inclusive show many low relief gravity positives distributed across the area of the survey. The more important of these would appear to be in the northern portion of the map.

The following is a discussion of the more prominent features.

ANOMALY "A" - is a linear feature striking northwest-southeast and best fits a vertical cylinder model burried at a depth of 400 feet. The excess mass calculates a tonnage of 10,000,000 metric tons.

ANOMALY "B" - has two similar anomalies labelled "B" on the Residual Map. Both are similar in size, shape and depth so will be discussed together. Again, we have used a vertical cylinder model and estimate the "B" anomalies are burried at a depth of 600 feet. The size of the causative mass is approximately the same as the "A" anomaly.

ANOMALY "C" - is a small 0.80 milligal positive which only appears on one grid line. More work is needed to define this feature.

ANOMALY "D" has two similar features of very low relief with a suggested burial depth of ± 400 feet. These anomalies are probably of no importance as they only attain a magnitude of 0.40 milligals.

CONCLUSIONS

Because of the low magnitude of all of the anomalies we would suggest some follow up I.P. surveys over the major gravity highs. If there is no I.P. response we would suggest one drill hole on a selected feature to give a final evaluation of this type of gravity positive. If there should be several co-ordinating I.P., gravity anomalies then we would suggest coring where the best coincidence occurs.

Respectfully submitted by:

OVERLAND EXPLORATION
SERVICES (1969) LTD.

W. T. Salt

W.G. Crook

David K.Y. Chen

/jp

LINE 24
LINE 25
LINE 26
LINE 27
LINE 28
LINE 29
LINE 30
LINE 31
LINE 32
LINE 33
LINE 34
LINE 35
LINE 36
LINE 37
BASE LINE
732.00
731.00
730.00
729.00
N

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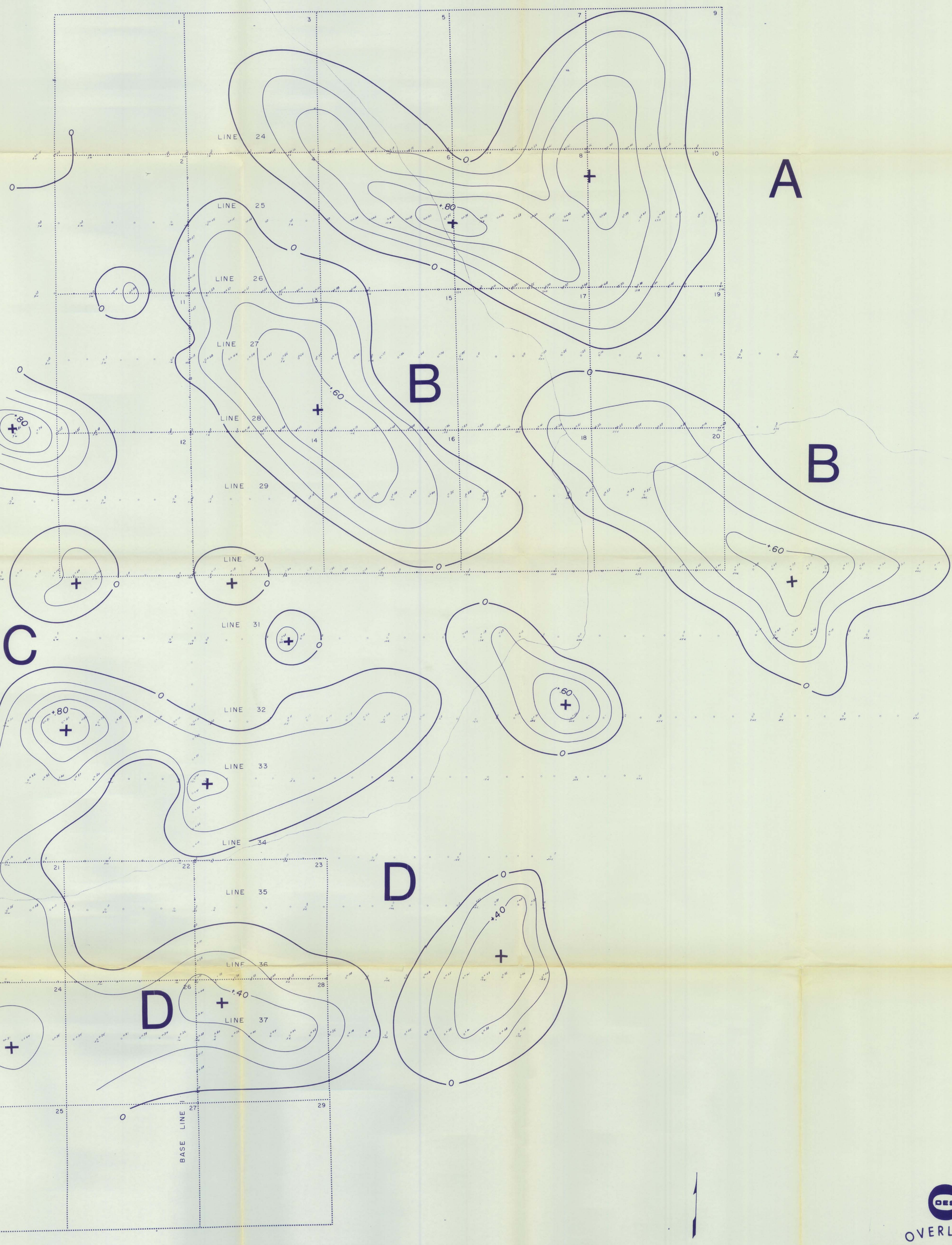
FOR
CANADIAN RESERVE OIL AND GAS LTD.

BLUE CLAIM GROUP No's 1 - 29
TWOPETE CREEK AREA YUKON TERR.

BOUGUER GRAVITY MAP

Scale 1" = 400' C.I. 0.50 mgl



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BLUE CLAIM GROUP Nos 1-29

TWOPETE CREEK AREA YUKON TERR

RESIDUAL GRAVITY MAP

Scale 1"= 400'

C.I. 0.20 mgl.

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TWOPETE CREEK AREA YUKON TERR.

SURFACE ELEVATION MAP

1" = 400'

C.I. 25 feet