

To: [unclear] completed by  
[unclear] Evaluation Unit.  
[unclear] testation worth by:  
*D. H. Hirdley*  
[unclear]  
[unclear] as to cost in the amount  
46,969.67  
for *R. E. Redden*  
[unclear]  
[unclear] as representation work  
[unclear] Section 53(4) Yukon Quartz  
[unclear]  
*John Smith*  
COMMISSIONER OF YUKON

Report On

Magnetometer and Electromagnetic Survey

For

Jaye Explorations Limited

On The

Bin Mineral Claims

Claim Sheet 105K-7

Approximately 133° 00' W, 62° 22' N

Whitehorse Mining District

Yukon Territory

Surveys Performed  
By:

WATTS, GRIFFIS AND McOUAT LIMITED

March 26 to May 11, 1966

Toronto, Ontario  
May 27, 1966

C. K. O'Connor, P. Eng.

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## SUMMARY AND CONCLUSIONS

A combined magnetometer and electromagnetic survey was carried out on the Bin mineral claims numbers 32, 34, 36, 38 and 40 to 64 inclusive for Jaye Explorations Limited in March, April and May, 1966.

A total of approximately 27 line miles of grid were surveyed in reconnaissance fashion and appropriate detailing was done over anomalous areas.

Some delays were encountered during the course of the survey due to poor communications, equipment breakdowns, and heavy snow, which explains the time involved to complete the surveys.

Only one significant magnetic anomaly was located. This anomaly trends westerly along the south boundary of the claim group and varies from 100 to 1,000 gammas above background. The anomaly is open to the south and east of the Company's property. Several weak annular magnetic anomalies further to the west and apparently on strike are probably related to the main anomaly.

The balance of the surveyed area is extremely flat magnetically.

The electromagnetic survey located a considerable number of weak to strong conductors. These varied in length from several hundred to over 5,000 feet in length.

The greatest concentration of conductors are located in the southern half of the surveyed area.

The conductors defined follow quite closely the geological strike of the rock units on the property, which is generally east-west with a swing to the northwest and northeast at the west and east ends of the grid respectively.

The electromagnetic profiles predominantly indicate a northerly dip to the underlying formations.

It is believed that most, if not all, of the conductors located are caused by graphite in graphitic horizons and slate.

The major and subsidiary magnetic anomalies are believed to be caused by either a band of volcanics within the sediments, or pyrrhotite possibly accompanied by base metal sulphides.

There is reasonably close correlation between the most southerly strong conductor and the magnetic anomalies which lie just to the south of it.

Because of the known association of graphite with sulphides in the Vangorda Creek Area, this magnetic and electromagnetic feature is considered to be a possible indication of mineralization.

There were no other magnetic anomalies or conductors located during this survey which the author can reasonably attribute to sulphides.

Because of the type of mineralization for which the area is known, however, sulphides would not necessarily be detected by either of the methods used in this survey.

It was therefore recommended to the Company that a gravity survey be conducted also, and such a survey has just been completed over the eastern two-thirds of the grid covered by the survey described herein.

Several anomalies of moderate intensity were located by the gravity survey. In view of the known success of gravity methods outlining sulphide bodies in the area, these anomalies can be considered as possible indications of base metal sulphides regardless of their correlation with any magnetic anomalies or electromagnetic conductors.

### RECOMMENDATIONS

On the basis of the results obtained and with good knowledge of the nature of the mineral deposits found to-date in the Vangorda Creek Area, it is recommended that at least two diamond drill holes of an approximate length of 500 feet each be drilled to test the number 1 electromagnetic conductor and the magnetic anomalies located near the south boundary of the surveyed area. These holes should be laid out as follows:

- |            |   |
|------------|---|
| Hole No. 1 | Collar at 18 + 00 W, 29 + 00 S <sub>1</sub> drill S 10° W true<br>at -60° dip, approximate depth 500 feet |
| Hole No. 2 | Collar at 40 + 50 W, 28 + 00 S <sub>1</sub> drill S 45° W true<br>at -60° dip, approximate depth 500 feet |

The above drill target priorities should be subject to reevaluation in the light of information obtained from the gravity survey.

Also, depending on initial results, additional drilling of other electromagnetic conductors or magnetic anomalies may be warranted.

### INTRODUCTION

Watts, Griffis and McQuat Limited acting as consultants for Jaye Explorations Limited, recommended that a combined magnetometer and electromagnetic survey be carried out over the Company's original claim group which consisted of 30 claims.

On receiving approval from the Company, a two-man geophysical crew was moved on to the property on March 26, 1966.

After some delays, the surveys were completed on May 11, 1966 and the crew moved off the property.

The purpose of the survey was to locate any magnetic and/or electromagnetic anomalies which might represent sulphide mineralization.

A gravity survey was recommended to complement to above surveys and a portion of the grid was also covered by this method. The gravity surveys were discontinued temporarily due to very poor ground conditions, but will be resumed shortly when conditions improve.

Jaye Explorations Limited has acquired an additional 39 claims adjoining to the west and north of the original group.

It is expected that these claims will also be geophysically surveyed commencing shortly after break-up.

### PROPERTY

The property of Jaye Explorations Limited presently consists of 69 contiguous unpatented mineral claims known as the Bin claims numbered 32, 34, 36, 38 to 88 inclusive and the Extra claims 1 to 15 inclusive.

The area covered by the magnetometer and electromagnetic survey described in this report includes the Bin claims numbers 32, 34, 36 38 and 40 to 64 inclusive.

## LOCATION, ACCESS AND TOPOGRAPHY

The Company's claims adjoin immediately to the west of Anvil Mining Corporation's "Ace" claim group on Sheet 105 K-7 about 16 miles northeast of the Pelly River and about 150 miles northeast of Whitehorse.

Access to the property is best provided by helicopter from Ross River.

Roads can be followed from Whitehorse, via Johnson's Crossing and Ross River to the Pelly River crossing at Blind Creek, a total distance of about 230 miles. From the mouth of Blind Creek a tractor road follows the valley upstream to the "Ace" claim group of Anvil, about four miles east of the Company's claims.

The surveyed area is at an elevation of about 4,500 feet to 5,200 feet above sea level. The northern part of the grid is on a plateau which drops off to the south just south of Baseline 1 towards a creek near the property's south boundary.

A small lake is located on the plateau at the east end of the property. This lake is a little too short to accommodate fixed-wing aircraft and the water is stagnant and unsuitable for drinking.

It is not felt that topography materially affected the results of the electromagnetic survey.

## GENERAL GEOLOGY

The Vangorda Creek Area is underlain mainly by Paleozoic sediments and volcanics which have been intruded by Cretaceous granitic rocks.

Generally the sediments and volcanics are highly sheared and metamorphosed while the intrusives are fresh in appearance.

The important deposits of the area are lead-zinc-silver replacement type zones which appear to favour a quartzitic schist horizon within the Paleozoic sedimentary sequence.

Barren sulphide horizons are also known to occur, but mostly within volcanic rocks.

There is abundant graphite and slate in the area. Graphite is associated with the sulphide deposit on Vangorda Creek.

Numerous basic and ultrabasic intrusives have been found locally.

The Company's claims are indicated on the geological map (GSC Map No. 13 - 1961 "Tay River") to be entirely underlain by the favourable sedimentary horizon.

### SURVEY SPECIFICATIONS

The surveys were conducted on crosslines spaced 400 feet apart trending N 10° E true.

Two baselines were established trending approximately N 80° W true. Baseline 1 is near the centre of the area surveyed and was cut east and west from Post No. 1 of the Bin 47 mineral claim.

Baseline 2 was established by cutting and chaining south at right angles from Baseline 1 and 0 + 00 W for 3,000 feet, then turning N 80° W to parallel Baseline 1.

Baseline 2 is shown on the enclosed map to be crooked. Actually it is quite straight and probably closely parallels Baseline 1. Errors in chainage down the side slope between the two lines account for the apparent deviations. A transit was not used for turning off the crosslines and the chainages are only a close approximation.

Several intermediate crosslines were established south of Baseline 2 in the area of the main magnetic anomaly.

A total of 29 miles of line were cut and chained on the property. Readings were taken at 100-foot intervals except in the area of the main magnetic anomaly where magnetometer readings were taken at 50-foot intervals on several lines south of Baseline 2.

The instruments employed in the survey were a Sharpe MF-1 fluxgate magnetometer with a sensitivity of 20 gammas per scale division, and a Sharpe SE-250 (the SE-250 is a vertical loop type E. M. unit used to measure dip angles) electromagnetic unit.

The broadside technique of electromagnetic surveying with a coil separation of 400 feet was used for the reconnaissance E. M. survey.

Detailed E. M. surveying employing the fan method was done over many of the individual conductors.

Subscripts were used on the maps to denote chainages with respect to Baseline 1 and Baseline 2, and any references in the text to specific locations on the maps will use the subscripts 1 and 2.

## DISCUSSION AND INTERPRETATION OF RESULTS

### A. Magnetometer Survey

The grid generally showed very little magnetic relief. The map is contoured at 200-gamma intervals. Only one significant anomaly was outlined. This anomaly is located south of and closely parallel to Baseline 2 from L 36 W to L 12 W at which point it trends southeast off the Company's claims. The peak intensity is about 1,000 gammas above background and is located on L 18 W at about  $1 + 50 S_2$ . At this location the north flank of the anomaly is relatively steep and would seem to indicate a southerly dip, however, without further information on the characteristics of this anomaly which is open towards the south, an interpretation as to its cause and the attitude of any horizon which it may represent are purely speculative.

The somewhat erratic nature of the anomaly which is relatively weak over a length of about 1,000 feet at the west end before increasing in intensity sharply between L 24 W and L 22 W indicates that sulphides may be a possible cause rather than a rock unit such as volcanics, which would be expected to be more uniform magnetically.

Further to the west along Baseline 2, there are several small annular magnetic anomalies of about 50 to 150-gamma intensity which appear to be on strike with the main anomaly and are probably caused by the same agent.

There are no other magnetic features of apparent interest.

## B. Electromagnetic Survey

A great number of conductors were located or indicated during the course of the survey. Several are long linear features probably representing major stratigraphic horizons. The shorter weaker conductors probably represent intermittent conductive zones along and within stratigraphic horizons.

The conductors are numbered from 1 to 32 on the map. Of this total, 17 were partially or completely detailed using the fan method.

Of the balance, some may be spurious, their indications caused by topographic effects, conductive overburden, or distortion of profiles due to adjacent stronger conductors.

In addition to the above total, there may be other weak conductors present which could be masked by the effects from adjacent stronger conductors.

It is possible that most, if not all, of the conductive zones on the grid are caused by graphite or graphitic slate.

The conductors from 1 to 17 are numbered in essentially decreasing order of magnitude and strength.

They provide a good indication of the strike and dip of the underlying formations.

The strike varies from east-west in the south central part of the grid swinging to the northwest and the west end and east-northeast on the east and north sides. A majority of the evidence indicates a northerly dip to the stratigraphic horizons within the area surveyed.

The number 1 conductor is at least 5,000 feet long running from L 12 W at 0 + 50 S<sub>2</sub> west beyond L 60 W at 21 + 00 S<sub>1</sub>. This conductor is strong over its entire length. From L 16 W to L 20 W the conductor follows the flank of the highest portion of the magnetic anomaly. Further to the west the conductor passes slightly to the north of the weaker magnetic anomalies.

A graphitic horizon is closely associated with the lead-zinc-silver deposit of Vangorda Mines Limited and thus the relationship between the number 1 conductor and the magnetic anomalies may be considered a favourable indication of sulphide mineralization.

The number 2 conductor essentially parallels number 1 about 400 to 800 feet to the north from L 40 W at 22 + 60 S<sub>1</sub> east beyond L 0 + 00 at 25 + 00 S<sub>1</sub>. This conductor is also strong over its entire length to where it dies out rapidly beyond L 40 W.

The dips of the number 1 and 2 conductors cannot be reliably determined because of the distortion of the fan method profiles on each due to their close parallelism.

The number 3 conductor is almost parallel with number 2 a further 1,000 feet north, running from L 36 W at 13 + 00 S<sub>1</sub> east beyond L 0 + 00 at 16 + 00 S<sub>1</sub>. The fan method profiles strongly suggest a moderate northerly dip for this conductor which is strong along its entire length except for an apparent gap between L 20 W and L 16 W at about 15 + 50 S<sub>1</sub>. This conductor is also sharply cut off at the western end.

The number 4 conductor is about 1,800 feet long running from L 20 W at 7 + 50 S<sub>1</sub> east to L 4 W at 4 + 00 S<sub>1</sub>. The profiles across the strong central portion of this conductor indicate a moderate north dip.

Conductor number 5 is at least 1,200 feet long running from L 12 E at 6 + 50 S<sub>1</sub> east to L 24 E at 8 + 00 S<sub>1</sub>. The profiles on this conductor, which is strong over the central 600 feet, are inconclusive regarding the dip.

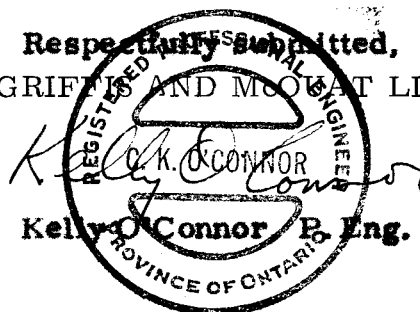
Conductor number 6 is in the extreme east-southeast corner of the grid trending east-northeast, and was strong from L 36 E at 9 + 80 S<sub>1</sub> to L 40 E at 7 + 00 S<sub>1</sub>. The conductor is open at both ends beyond the grid. A north dip is indicated.

Conductor number 7 was located on L 8 W and L 12 W at about 4 + 00 N<sub>1</sub>. This conductor which is medium to strong in the centre of its approximate 800-foot length, is indicated to have a definite moderate to flat northerly dip.

The balance of the conductors which were detailed are of weak to moderate strength, ranging in length from about 300 to 400 feet to 1,400 to 1,600 feet. Profiles on these conductors are generally variable to inconclusive regarding the dip.

Toronto, Ontario  
May 27, 1966

Respectfully Submitted,  
WATTS, GRIFFIN AND MOULTON LIMITED,



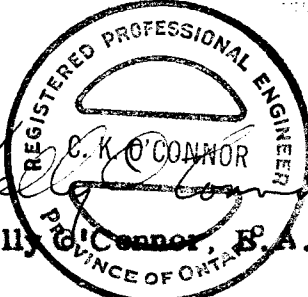


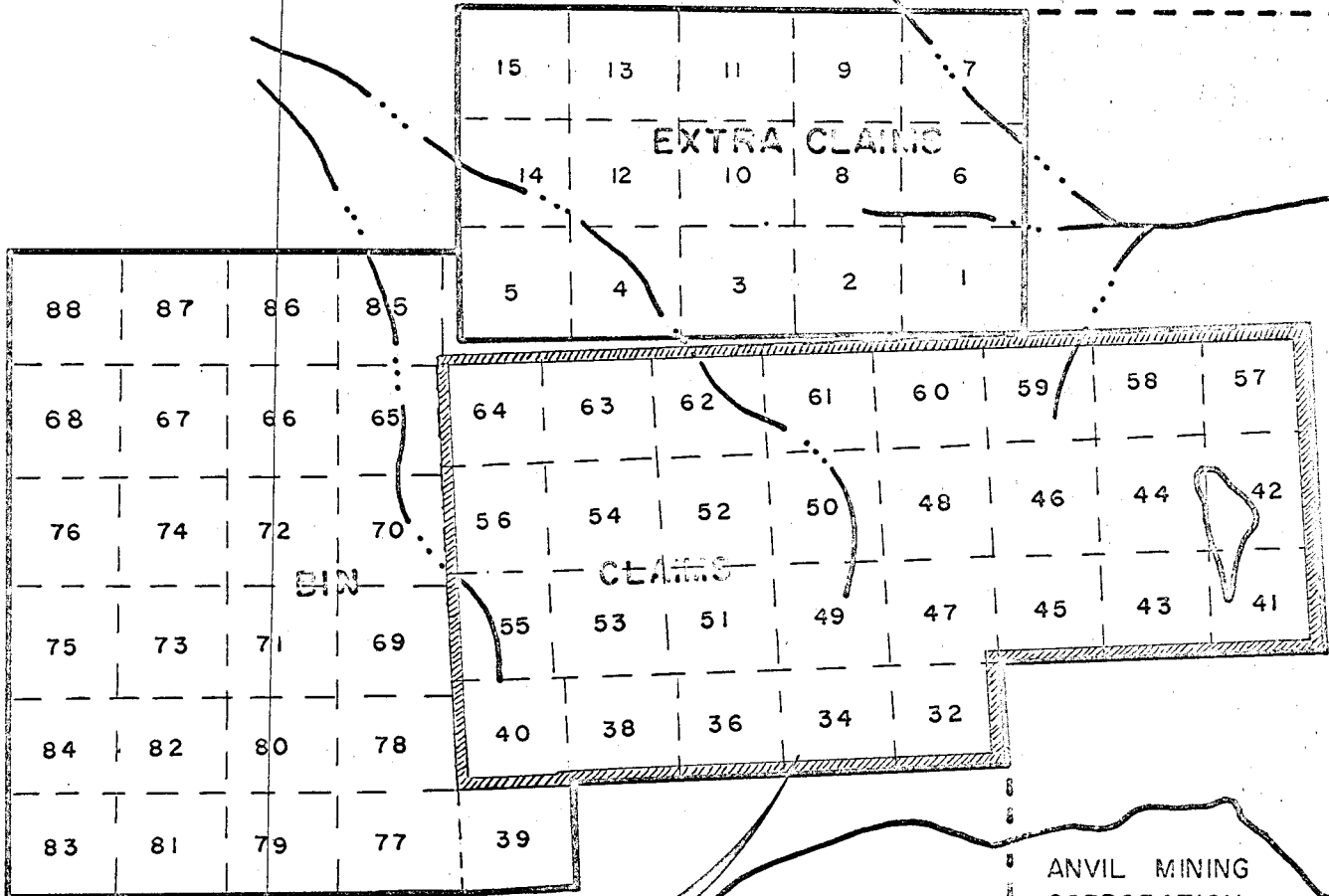
CERTIFICATE

I, Caven Kelly O'Connor hereby certify that,

1. I am a geological engineer and reside at 202 Wilson Avenue, Toronto, Ontario.
2. I am a graduate of the University of Toronto in 1962 with the degree of Bachelor of Applied Science.
3. I am a registered Professional Engineer in the Province of Ontario.
4. I have been continuously engaged in my profession for four years.
5. I have personally supervised the progress of the geophysical survey described in this report and attest to its accuracy and validity.

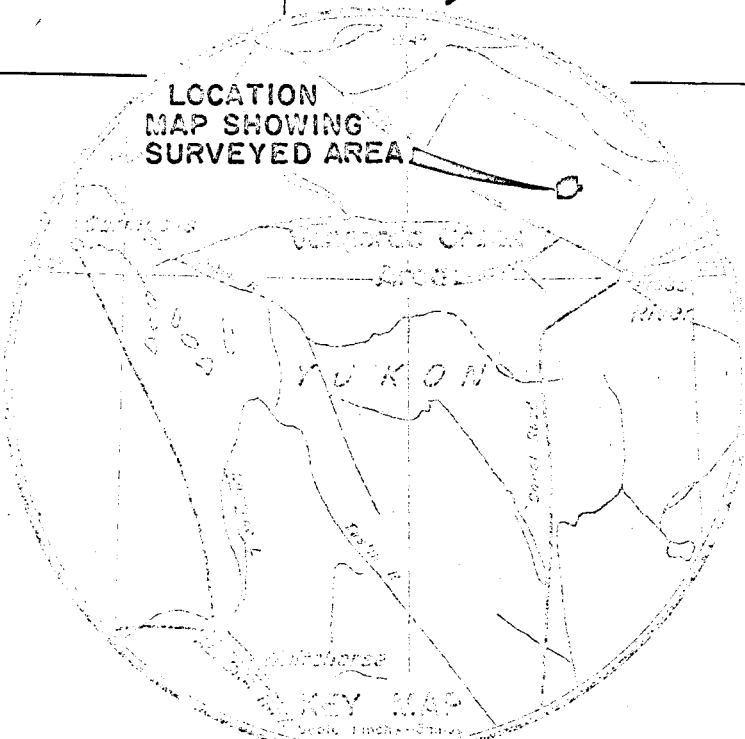
Toronto, Ontario  
May 27, 1966

A circular seal for a Registered Professional Engineer in the Province of Ontario. The seal features a stylized 'E' in the center. The text 'REGISTERED PROFESSIONAL ENGINEER' is written along the top inner edge, and 'PROVINCE OF ONTARIO' is written along the bottom inner edge. The name 'C. K. O'CONNOR' is stamped across the center of the seal. A handwritten signature is written over the seal.  
Kelly O'Connor, B.A.Sc., P. Eng.

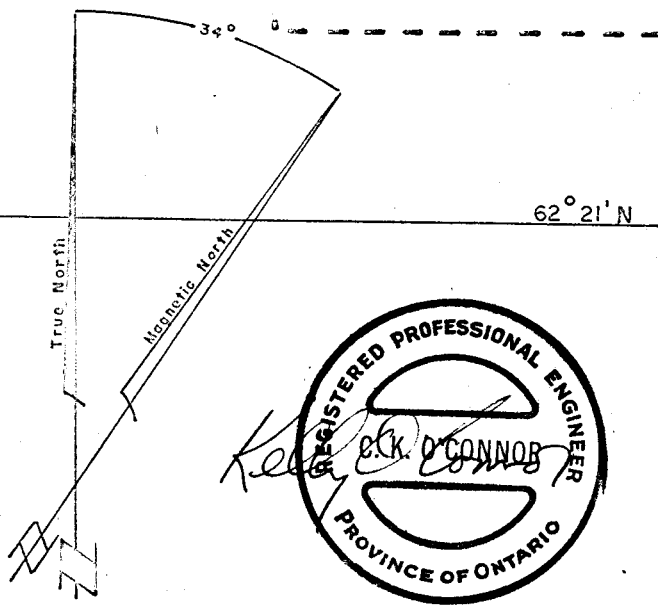


OUTLINE OF SURVEYED AREA

ANVIL MINING CORPORATION  
"ACE" GROUP



LOCATION MAP SHOWING SURVEYED AREA

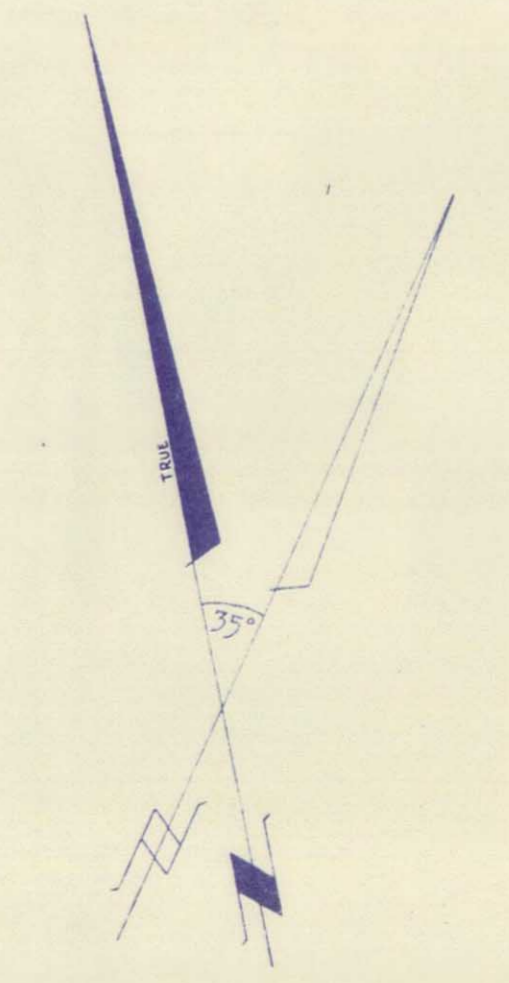
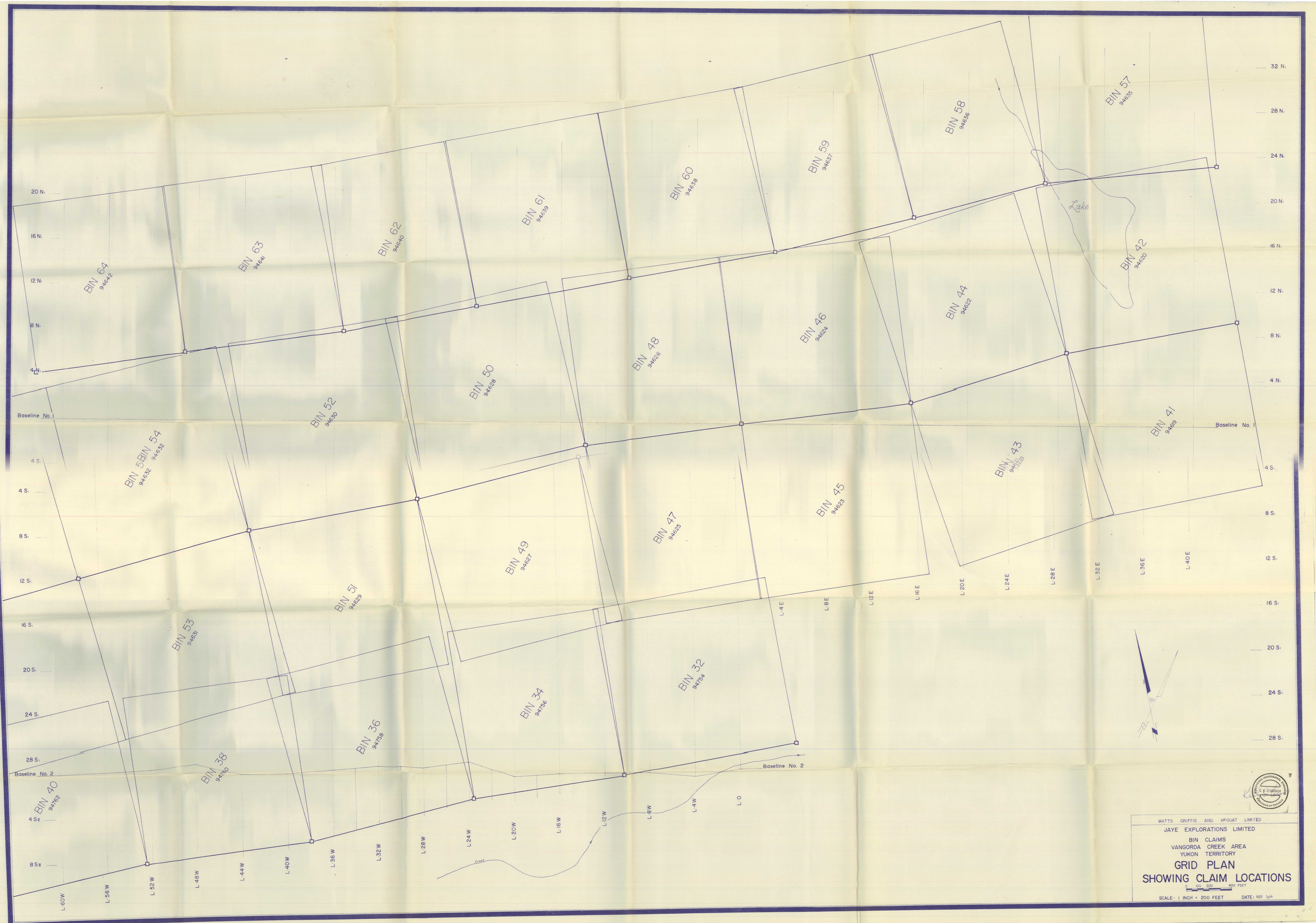


JAYE EXPLORATIONS LIMITED  
LOCATION MAP  
SHOWING SURVEYED AREA

VANCOUVER COAST AREA  
Milne Bay Mining District  
— YUKON TERRITORY —

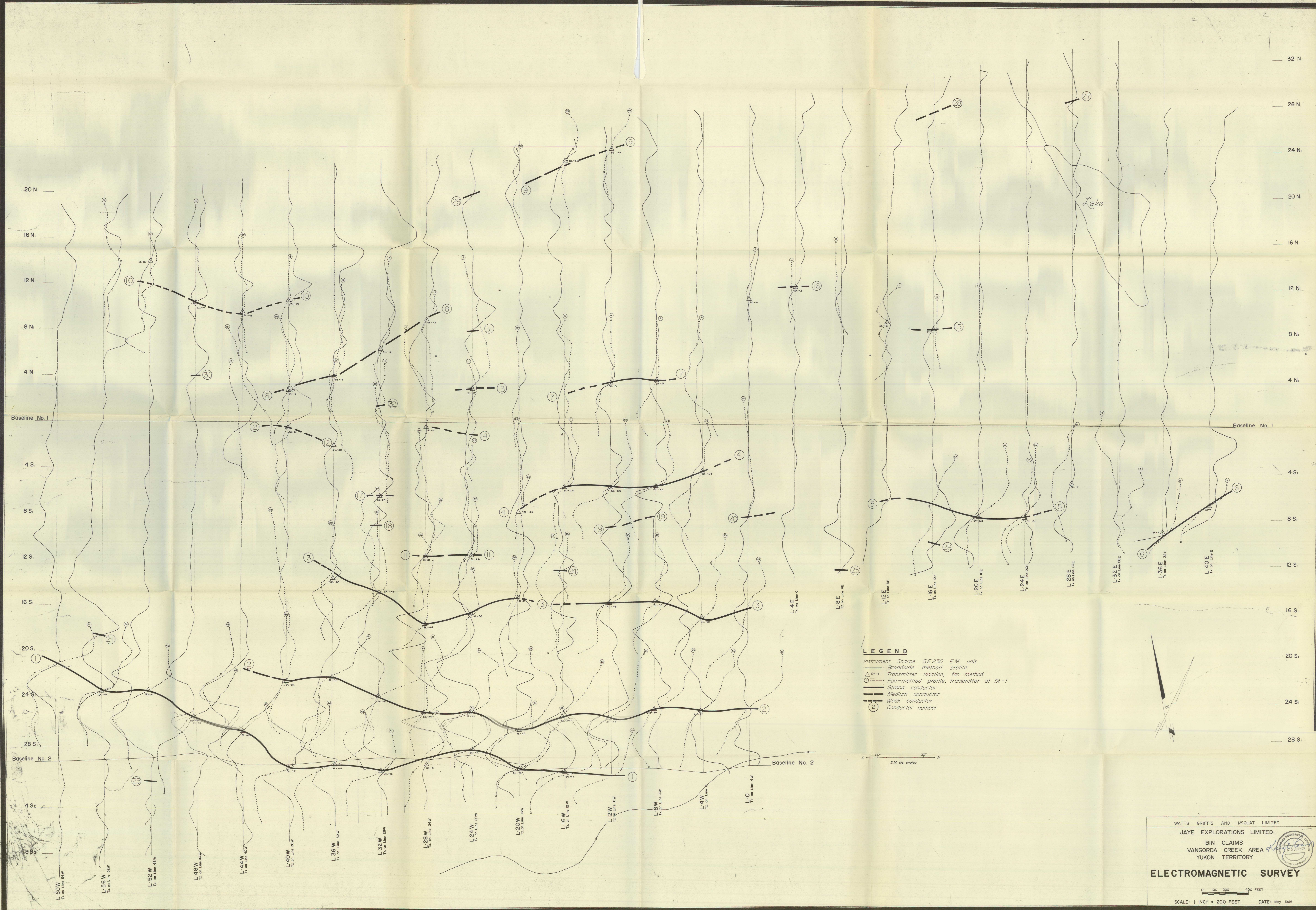
Scale 1/250,000

May 1961



WATTS GRIFFIS AND MFOUAT LIMITED  
 JAYE EXPLORATIONS LIMITED  
 BIN CLAIMS  
 VANGORDA CREEK AREA  
 YUKON TERRITORY  
**GRID PLAN**  
**SHOWING CLAIM LOCATIONS**  
 0 100 200 400 FEET  
 SCALE: 1 INCH = 200 FEET      DATE: MAY 1964



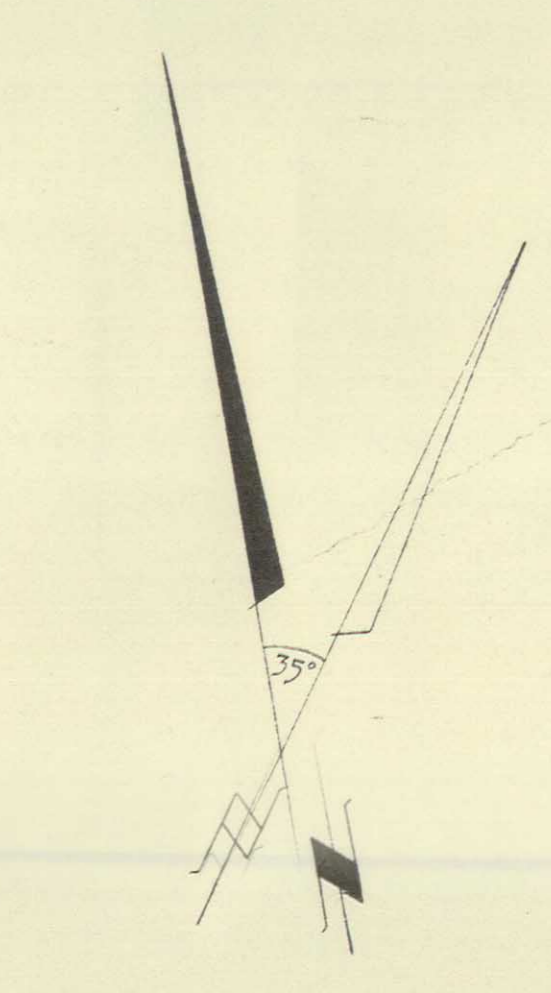


20 N.  
16 N.  
12 N.  
8 N.  
4 N.  
Baseline No. 1  
4 S.  
8 S.  
12 S.  
16 S.  
20 S.  
24 S.  
28 S.  
Baseline No. 2  
4 S.  
8 S.

32 N.  
28 N.  
24 N.  
20 N.  
16 N.  
12 N.  
8 N.  
4 N.  
Baseline No. 1  
4 S.  
8 S.  
12 S.  
16 S.  
20 S.  
24 S.  
28 S.

**LEGEND**  
 Instrument, Sharpe SE 250 EM unit  
 — Broadside method profile  
 △ St-1 Transmitter location, fan-method  
 ⊙ Fan-method profile, transmitter at St-1  
 — Strong conductor  
 — Medium conductor  
 — Weak conductor  
 (2) Conductor number

20° 20°  
 S N  
 E.M. dip angles



WATTS GRIFFIS AND MCQUAT LIMITED  
 JAYE EXPLORATIONS LIMITED  
 BIN CLAIMS  
 VANGORDA CREEK AREA  
 YUKON TERRITORY  
**ELECTROMAGNETIC SURVEY**  
 0 100 200 400 FEET  
 SCALE: 1 INCH = 200 FEET DATE: May 1966

GRAVITY INTERPRETATION

BIN GROUP CLAIMS

Yukon Territory

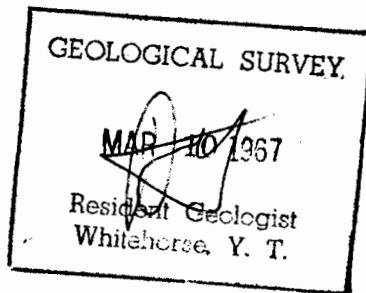
for

JAYE EXPLORATIONS, LTD.

by

ROBERT G. CALESKI, P.Geoph.

June, 1966



This report has been examined by  
the Geological Evaluation Unit.  
Approved as to technical worth by:

*P. C. Fridley*  
RESIDENT GEOLOGIST

Approved as to cost in the amount  
of: \$ 48,969.67

*R. G. Caleski*  
EVIDENT MINING ENGINEER

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

*James Stewart*  
COMMISSIONER OF YUKON

SIN GROUP CLAIMS  
Gravity Interpretation

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During April & May, 1966, United Geophysical Company of America conducted a gravity survey on the Sin Group of Claims, Yukon Territory, for the account of Jays Explorations, Ltd. Approximately 920 stations were surveyed and read. United prepared topographic and bouguer maps of the field data. These are included in this report.

After spot-checking computations for accuracy, the writer plotted bouguer gravity regional and residual profiles, (copy of profile work-sheet not attached to this report, but mailed under separate cover.) Regionals were drawn through the profiles and tied. Regional and residual maps (both included in this report were prepared by the profile method. Also prepared was another residual map by the template method. Computations were based on the residual profiles and profile-residual map.

Topographic Map:

Elevation varies from a low of 4556' at the east end of Base Line 2, along the southern extremity of the area worked, to a high of 5052' near the centre. Sharply incised small stream valleys occur in the northeastern and northwestern portions of the area. However, the dominant topographic feature is a scarp extending in a northeast to east direction in the south half of the group from the west boundary to the east boundary. It is

about 200' high with a slope as steep as 100' in 400'.

#### Bouguer Map:

The bouguer map was computed with an elevation correction factor of .060 (corresponding to a surface density of approximately 2.7 g/cc.) This map shows two anomalies of probable significant closure and a third of possible significance. These will be discussed in detail under the section on the profile-residual map. Several minor positive anomalies tend to coincide with sharp topographic low features - particularly in the northern part of the area. This suggests that these lows may be partially filled with an excess of low density overburden material or that the assumed density of near surface materials of 2.7 is a little high. However, the coincidence of topographic lows and gravity highs, where it occurs, is not a striking one; and any error caused by the use of the .060 elevation correction factor is minor. It is significant that the scarp is not reflected in the gravity picture.

#### Regional Map:

The regional map, constructed from the profiles, shows a strong, deep-seated high extending from the northeastern corner of the area to the southeastern corner. The heavy rocks contributing to this excess of gravity lie below a depth of 2000'. Although the composition of them is unknown, it may be assumed that their presence is somehow related to mineralization in the area as a whole.

#### Residual Gravity Map (from profiles)

One outstanding anomaly, two "good" anomalies and

several minor gravity highs are shown on this map. They are described below under letter designations:

"A" - 0.6 mgals of gravity relief.  
Fairly symmetrical, elongate in east-west direction.  
Depth to top of causative heavy mass:  $270' \pm$   
Maximum width -  $350' \pm$   
Length -  $1350' \pm$   
Tonnage - 15,000,000, bulk of it lying within red line on map.

Possible small shallow offshoots from the main mass exist as shown by red lines on map.

This anomaly is similar in configuration in many respects to those observed in this part of the Yukon in association with known massive sulphide deposits.

"B" - 0.6 mgals of gravity relief  
Depth to top of causative heavy mass:  $500' \pm$   
Roughly circular in shape, with an offshoot to the southwest.  
Diameter -  $350'$   
Tonnage 6,000,000.

Note that the elevation of the top of the causative mass of this anomaly is very near that of the top of the materials causing the "A" anomaly.

"C" - 0.6 mgals of gravity relief  
Depth to top of causative mass:  $195' \pm$   
Maximum width -  $250' \pm$

Length - 600' ±

Tonnage - 5,000,000.

The northeast flank of this anomaly is affected to a considerable extent by the topography, and the above calculations are in error to some degree. However, the anomaly is genuine and truly reflects a mass of heavy materials below.

"D" and "E" - Small sharp positives at the south boundary of the area. Both are poorly defined because the survey did not extend far enough southward to completely map their south flanks. Where line BB crosses "E" there is a topographic influence. Nevertheless, "D" and "E" may represent veins of heavy material. "E" appears to be vertical with its top very near the surface. "D" is more deeply buried, and it probably has north dip.

"F" - A positive on the east edge of the area worked. It is probably due to incorrect topographic correction. However this is not certain; and attention is drawn to it so that it may receive further investigation.

Residual Gravity Map (1400' template):

This map confirms the presence of the "A", "B" and "C" anomalies. However it shows them somewhat restricted in size due to the filtering effect on the deeper portions of the heavy masses. It failed to show up any significant anomalies not seen on the profile-residual map.

The computations which led to the size and depth estimates were based on assumed country rock density of 2.7 and anomaly-causing heavy mass density of 3.6. These density values are roughly correct for the country rock and massive sulphide deposits, respectively, of the Vangorda area. Computations based on them in the Vangorda area have proved remarkably accurate. In this region they may be in error. Should the contrast between country rock and ore bodies be less than 0.9, the depths will be shallower and the tonnages greater than shown. Should the contrast be greater, the converse will be true.

Summary:

Three significant gravity anomalies have been found on the Sin Claims. I believe them to be due to massive sulphide deposits at depths to top of 195' to 500'. Combined calculated tonnage is 26,000,000 tons.

Recommendations:

1. Drill "A" anomaly between 10 south on line 8 W and 20 south on 4 W.
2. Drill "C" anomaly after completing an E-W gravity line across it.
3. If economic, drill a deep hole on the "B" anomaly 700' west of base C on the base line.
4. Consider shallow slant holes to test the "D" and "E" anomalies on lines 20 W and 00, respectively.
5. Add gravity programs as follows:

- (a) Extend line 4 E to the south 2400'.
- (b) Extend lines 00 to 24E inclusive, south 800'.
- (c) Extend lines 16E, 20E and 24E north 800'.
- (d) Add a line running northward from 22N on line 12E to 27N on 24E.
- (e) Extend line 40E north 1200'.
- (f) Add line 44E from 34 to 35N.

Respectfully submitted,

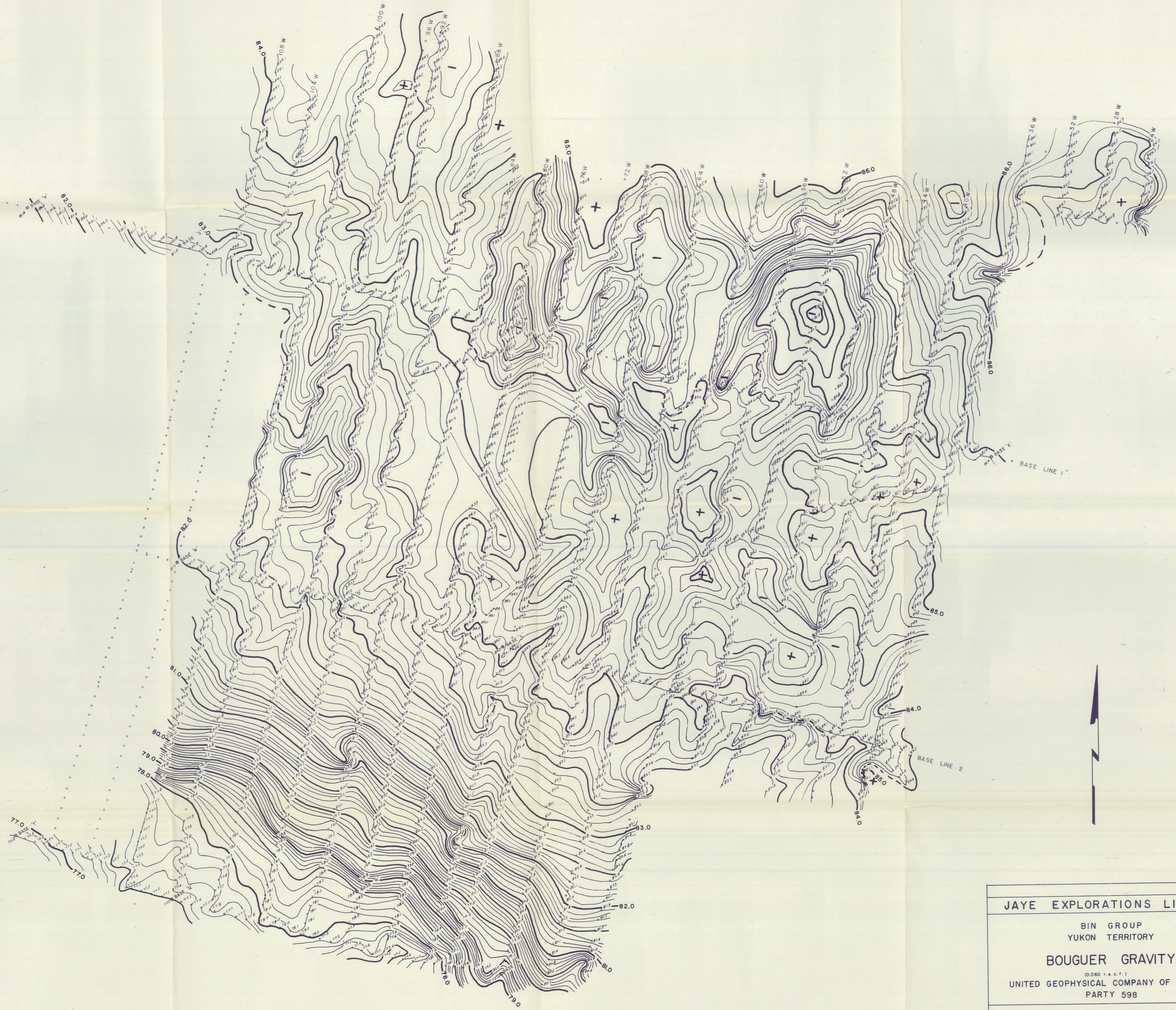


Robert G. Calocki, P. Geoph.

June 8, 1966.







JAYE EXPLORATIONS LIMITED	
BIN GROUP YUKON TERRITORY	
BOUGUER GRAVITY	
<small>(0.050 l. e. c. f.)</small>	
UNITED GEOPHYSICAL COMPANY OF AMERICA	
PARTY 598	
Contour Interval : 0.10 m.g.	Interpretation by : J. G. Webster
Scale : 1 inch = 200'	Date : August 1966



GRAVITY INTERPRETATION

Bin Group Claims - West Portion

for

Jayo Explorations, Ltd.

by

Robert D. Galeski, P. Geol.

September, 1966

GEOLOGICAL SURVEY  
MAR 10 1967  
Resident Geologist  
Whitehorse, Y. T.

This report has been examined by  
the Geological Evaluation Unit.  
Approved as to technical worth by:

*R. J. Galloway*  
RESIDENT GEOLOGIST

Approved as to cost in the amount  
of \$ 48,969.67

*H. S. Redden*  
RESIDENT MINING ENGINEER

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

*[Signature]*  
COMMISSIONER OF MINES

## BIN CLAIMS (Southern Portion)

### Gravity Interpretation

During July and August, 1966, United Geophysical Company of America conducted a gravity survey on the western portion of the Bin Claims, Yukon Territory, for the account of Jure Explorations, Ltd. 1546 stations were surveyed and read. United prepared topographic and Bouguer maps of the field data. These are included in this report.

#### NEAR-SURFACE EFFECTS

Elevation changes are great within the area, varying from 4779' a.s.l. to 6104' a.s.l. The elevation correction factor of .060 (corresponding to a density of approximately 2.7 for near-surface materials) used in preparing the Bouguer map did not adequately correct for these changes. The hill, peaked on line 52 $\frac{1}{2}$  north of base line 1, appeared as an extreme Bouguer low; the stream valley along the northern part of line 80 $\frac{1}{2}$  as a low; and the steep north slope in the north part as a strong, north-dipping gradient. The writer requested United to prepare another Bouguer map based on an elevation correction factor corresponding to a surface density of 2.0. It was thought that an interpretation could be based on both Bouguer maps,

using each where most applicable.

The second Bouguer map properly corrected for the high elevation on line 52W, indicating that the hill here is indeed a pile of low density material. It over-corrected in the southern portion of the area, indicating that only part of the increased elevation consists of light material. At the extreme southernmost part of this area, both Bouguer maps show steep south gravity gradient which I interpret as an indication of a probable deep-seated rock change - perhaps along an easterly trending fault. The Bouguer low along the north part of line 30W corresponding to a stream valley and some of its tributaries was accentuated. It appears that rocks of higher density than 2.7 exist in and around base H, in the stream valley along line 30W and in the tributary southeast of base H. Elsewhere in the area, the second Bouguer map tended to distort.

#### TERRAIN CORRECTIONS

In view of the extreme elevation changes, a sampling of terrain corrections was made in critical areas. In one place a terrain corrections change of

0.4 mgals. in 100' was found. Lesser, but significant changes were found elsewhere. Therefore the decision was made to terrain correct the entire area. United prepared these corrections in the western part of the area, and the writer and his staff prepared those in the eastern portion. Because of the time-consuming nature of these corrections and the considerable expense involved, only one-half of the stations were done. In local areas where values changed rapidly all stations were corrected. Terrain correction values were then contoured, interpolated to the edges of the mapped area, and then applied to all stations. The writer then prepared a terrain corrected Bouguer map (based on values computed with a .050 density factor). This map is included in this report.

#### PROFILES AND RESIDUALS

Profiles were constructed using the terrain corrected Bouguer values based on a near-surface density factor of 2.7. In drawing residuals on these profiles some allowance was made for the Bouguer low along the north part of line 50<sup>a</sup> and in the vicinity of the hill on line 52. Thus the Bouguer low on line 50<sup>a</sup> was removed on the residual map and the other one was softened.

ed (however it still appears as a residual low). The Bouguer low in the stream tributary southeast of base N is too sharp to be removed in this manner, and it appears on the residual map. The steep gravity gradient south of base line 2 was controlled by the use of template residuals.

### ANOMALIES

Because of the above extraordinary machinations needed to handle the extreme topographic and near-surface density variations, the conclusions to be derived from the residual map should be used with some caution. However several areas of interest are apparent.

#### 1. Anomaly 1

This is small in areal extent, being well expressed only on line 440. Apex is 400' south of base J on base line 1. This is the sharpest feature in the entire Bin Group, having a residual positive value of about 1.0 gals. Using a density contrast of 0.9, depth to top is approximately 100' and tonnage is 5,000,000+. The sharp low to the southwest coincides with a stream valley which is approximately 100' deep. Since it appears that rocks heavier than 2.7 exist in

the valley, it is a possibility that an ore body existing at A will extend southwestward and be at or near the surface in the stream bed. If so, there will be greater tonnage than computed above, and there may be some evidence of its existence where the stream valley crosses line 63W about 700' south of base line 1.

### 2. Anomaly 2

Anomaly 2 can best be evaluated on the profile of line 100W. There is no question but what it is a strong, positive feature. Its appearance is typical of a residual positive existing on a steep regional flank. However, because of its location at the edge of the surveyed area and its position on a steep regional gradient, it cannot be properly evaluated with the data at hand. Nevertheless its potential is large, inasmuch as 1.3+ mgals. of relief are apparent, and areal extent may be considerable. From what can be deduced from this one profile a depth to top of 200' to 250' is reasonable.

### 3. Anomaly 3

This positive feature is best expressed at the north end of line 40W. It has 0.3 to 0.9 mgals. relief

in the north and south directions, but only 0.3 to 0.4 mgals. in the east and west directions. It has the appearance of a near-horizontal slab with possible thickness up to 20'. Depth would be 200' to 400'. However, here again, we are lacking good regional control because the anomaly occurs in the corner of the surveyed area.

#### 4. Anomaly 7

Weak, and based on rugged control. It should be considered only as a secondary target.

#### 5. Anomaly 8 (see terrain-corrected Bouguer map)

Inefficient control to determine residual values. This does not appear to have sufficient overall gravity relief or gravity gradient on the flanks to be of great economic interest.

High residual values occur along the north and south boundaries of the worked area at several points. Except for one anomaly at the east end of the south base line none has sufficient relief or gradient to be of great interest. All are subject to a lack of regional control. They are pointed out as areas worthy of

further investigation in the event the gravity programme is extended.

RECOMMENDATIONS

1. Fully investigate the A anomaly by:

(a) checking the stream valley to the south and southwest looking for float, using geochemical methods and possible shallow earth removal and

(b) drilling a hole at 43 of base line 1 on 64W to a depth no greater than 200'. This hole should be drilled whether or not there is encouragement from (a) above.

Had this anomaly been known at the time the east Nin claims were interpreted, it would have been rated higher than the A anomaly of the east Nin group.

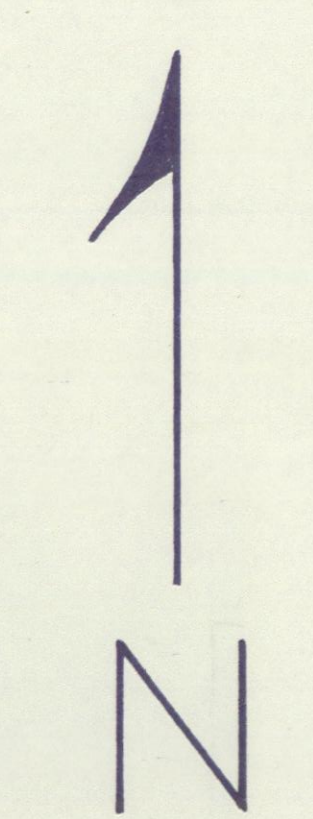
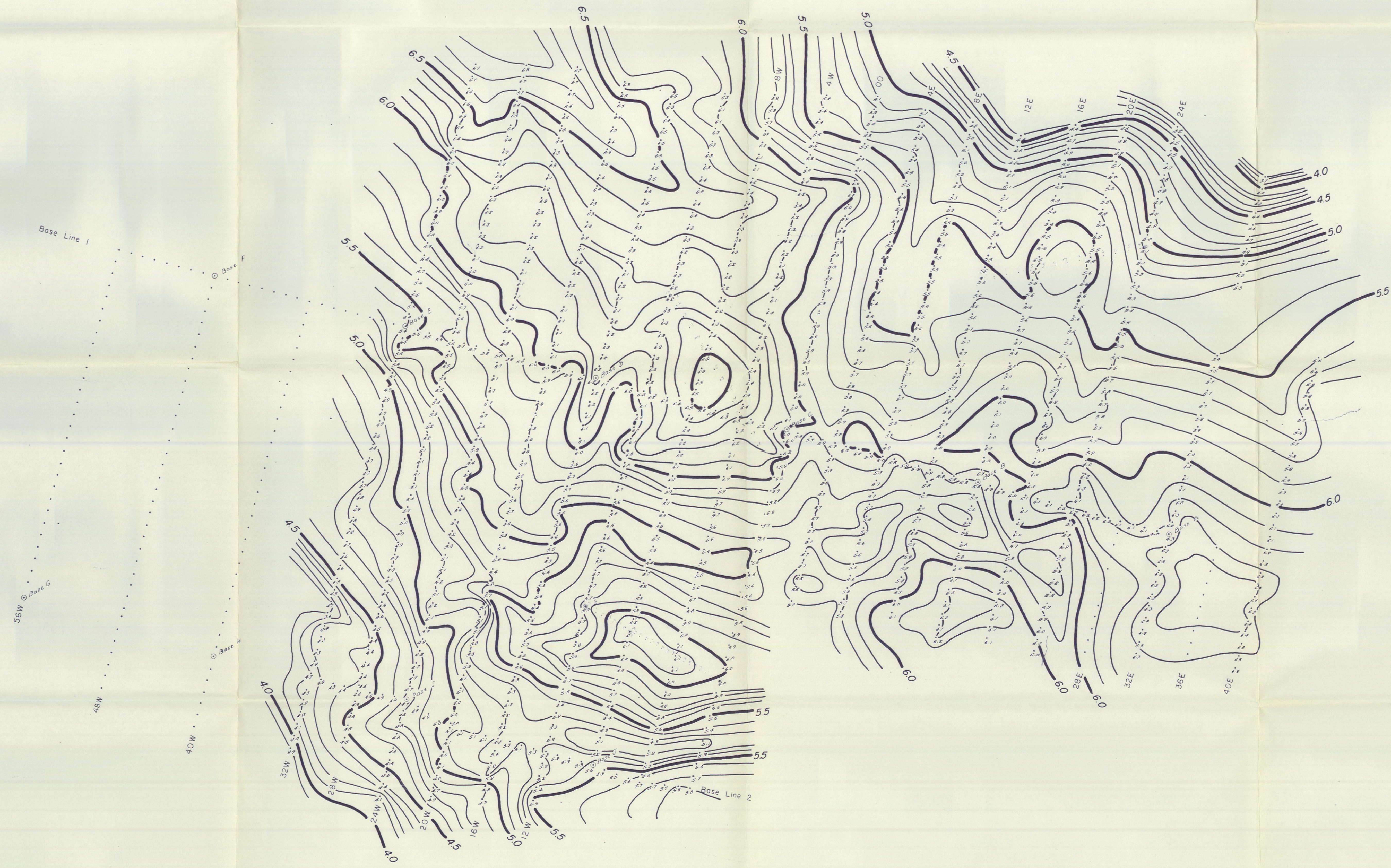
2. Take the gravity readings on surveyed lines 104W and 108W between base line 2 and the southernmost base line. There is a legitimate positive feature (B) on line 108W. This should be fully evaluated with the gravity meter, and a drilling location chosen on the basis of the results.

3. If a drill is brought into the area for examination A and B, C, D and E should also be tested while it is there. These five features are quite different from one another, and a failure on any one of them will not necessarily disprove any of the others.

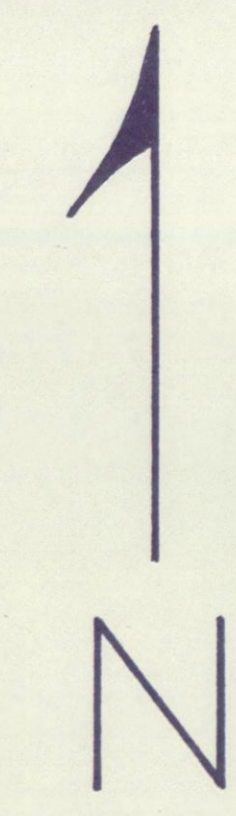
Respectfully submitted,

*E. M. Galeski*

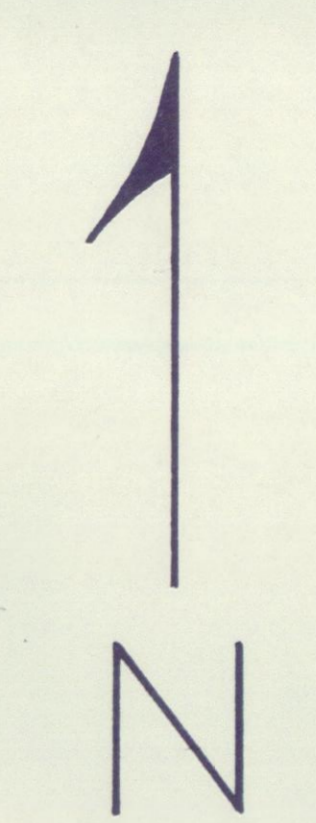
E. M. Galeski, P. Geoph.



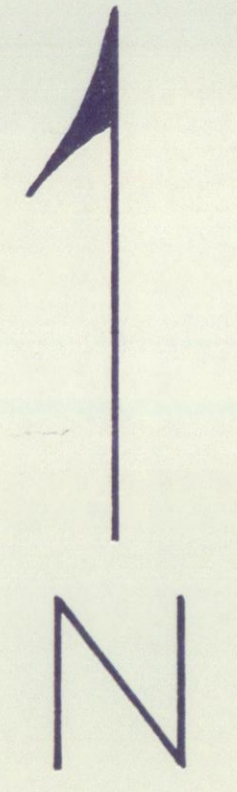
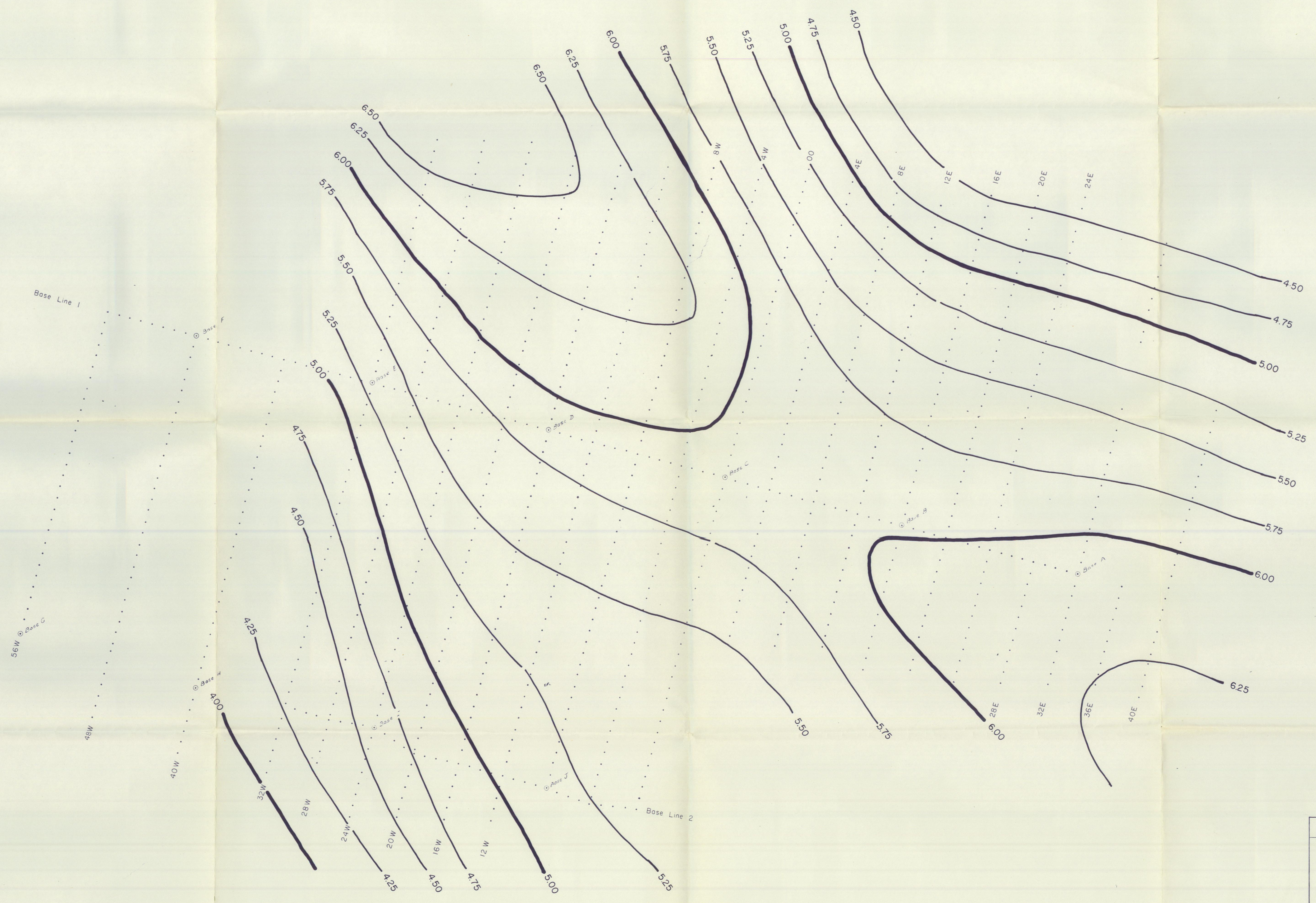
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Scale 1 in. = 400 ft.	Date June 1966

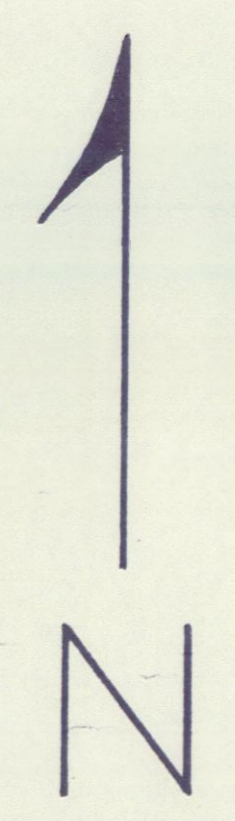
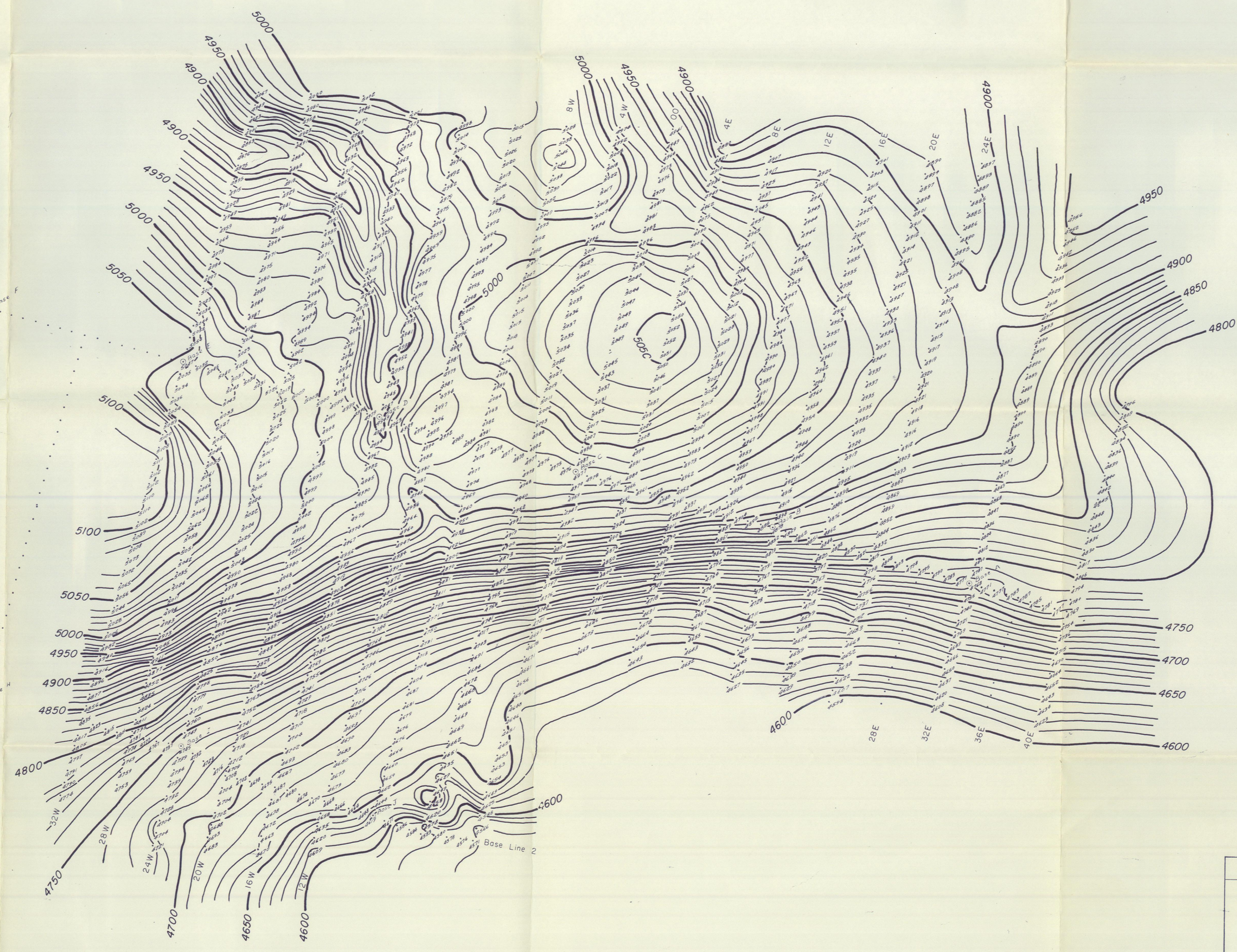


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Scale 1 in = 400 ft.	Date June 1966



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REGIONAL GRAVITY	
(From Profiles)	
UNITED GEOPHYSICAL COMPANY OF AMERICA	
Contour Interval 0.25 Mg.	Interpretation by R.B. Galeski
Scale 1 inch = 400 ft.	Date June 1966

Base Line 1  
Base C  
Base H  
Base E  
56W  
48W  
40W



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Contour Interval 10 FEET Interpretation by R. Z. EDGO  
Scale 1" = 400' Date MAY, 1966