

MID-WEST MINES LTD. & VENTURES MINING LTD.

SOUTH GROUP

105-K-2, 62°05'N, 132°31'W

Whitehorse M.D., Y.T.

Report on

AIRBORNE GEOPHYSICAL SURVEY

AND BULLDOZER FOLLOW-UP

JUNE 1966 and JANUARY 26 - FEBRUARY 8, 1967

by

E.H. SEVENSMA, Ph. D., P. ENG.

27  
Whitehorse, Y.T.

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

*D.C. Fridlay*  
RESIDENT GEOLOGIST

Approved as to cost in the amount  
of: \$4728.03

*A. S. Hudson*  
RESIDENT MINING ENGINEER

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

*[Signature]*  
COMMISSIONER OF YUKON

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1. INTRODUCTION

The South Group of claims is located South of Olgie Lake, adjoining the Snowcap Group on the South.

The South claims cover in part, a zone of slightly metamorphic schists mapped by the G.S.C. as the equivalent of the formations containing the Vangorda Creek area base-metal sulphide bodies.

As the claims cover ground underlain by three different formations, namely volcanics, sedimentary schists and granite, an airborne survey with the Lockwood helicopter-borne equipment was chosen for the initial reconnaissance.

As pronounced anomalous magnetic and electromagnetic fields were located, a detailed data reduction was requested from Lockwood Survey Corporation and bulldozer linecutting was recommended in preparation for a geochemical survey to be carried out later in the 1967 field season.

2. PROPERTY

The property consists of the following claims (figure 2):

	<u>Grant Numbers</u>	<u>Date of record</u>
South 1 - 48	99461 - 99508	February 16, 1966
EM 1 - 24	Y10542 - Y10565	September 15, 1966

The claims lie at latitude 62°05'N and longitude 132°31'W, sheet 105-K-2, on a partly well-timbered Northeast slope between elevations of 3000' and 4000', and are now accessible along a 7 mile tote road from the recently improved Canol Road where it crosses Tenas Creek about 7 miles North of Ross River.

The climate is rigorous, temperatures reaching about -60°F in mid-winter. Snowfall is relatively light, with usually not much more than 2' of packed snow at the end of the winter.

### 3. HISTORY

The claims which form the subject of this report were staked in early 1966, after the discovery of the large Faro deposit by the Dynasty-Cyprus team had focussed the attention on the Vangorda Creek schists as the host rocks for several large strata-bound sulphide deposits.

The original discovery in the area had been made by prospectors Kulan and Thompson on Vangorda Creek in 1953, which discovery was developed by Prospector's Airways.

The latter discovery resulted in a staking rush and much activity in the general area in 1954-1955, after which exploration died down until 1962-1963 when Kerr Addison Mines acquired ground, followed by Dynasty Explorations in 1964.

In the meantime, the Canol Road from Johnson's Crossing to Ross River had been rehabilitated and in 1965-1966, the Watson Lake to Ross River road was completed and the area is now open to more sustained exploration work.

The district must be rated as a major base-metal camp, and there are now at least 60 million tons of about 10% zinc-lead-copper ore with about 1½ oz/t silver outlined in five bodies; the majority of this tonnage is minable by open pit. If market conditions remain relatively favorable, production may start within the next few years.

The Mid-West Mines - Ventures Mining combination holds several groups in the area. There is no record of any previous work in the area where the South Group is located; in the area where the West Group lies, Dynasty has at one time carried out an airborne magnetic survey.

### 4. REGIONAL GEOLOGY

Only 1" = 4 mile regional reconnaissance mapping by the G.S.C. is available, mostly obtained by mapping by helicopter.

The Vangorda Creek area is underlain by a NW trending anticline of quartz-sericite schists with varying amounts of chloritic schists, limy schists, graphitic schists and occasional hornfelses, generally referred to by the G.S.C. as Unit 7.

These formations are believed to be of Mississippian age, and are overlain by a series of andesitic volcanics associated with minor

argillites and quartzites (G.S.C. Unit 8) which, in turn, are covered by a series of argillaceous quartzites and conglomerates (G.S.C. Unit 9). Of the latter, only a few remnants remain in the area.

The older Devonian, comprising cherts, quartzites and limestones, appears to the Northeast, as shown by the attached 1" = 4 mile map.

Intrusives of varying composition and age occur in the district; a granodioritic character predominates, and their age, based on isotope dating, is believed to lie in the Cretaceous to Tertiary range.

Tertiary basic flows occur both to the NE and the SW of the general district, the nearest large occurrence lies from 12 - 30 miles SE of Ross River.

Strong faulting took place in the Cretaceous and Tertiary with good evidence of a total right-lateral movement of about 250 miles along the Tintina Trench (G.S.C. Paper 65-2, P.57).

Significant NE trending faults are indicated across the NW striking anticlinal belt.

The presently known sulphide bodies, essentially pyritic-pyrrhotite bodies carrying significant base-metal values in something like 50% of their mass, occur in the schists and are generally conformable to the bedding.

Personal observations of various occurrences east of the Tintina Trench have indicated to the writer that recumbent folding and imbricated structures are present and may be important factors in determining the shape of the above-mentioned sulphide masses.

These considerations on age of the formations, on type of ore and on the tectonic style suggest considerable remobilization of sulphides, regardless of their first mode of deposition.

Field evidence also suggests that skarnified contacts of intrusives, breccia zones (possible breccia pipes), shears, shear-zone intersections and possibly other geological features could be significant controls of cross-cutting ore deposits of either the high grade bonanza type or of the large low-grade type in this area.

## 5. LOCKWOOD AIRBORNE METHOD

This method will detect formations that are electrically conductive, and subsequent work can then be concentrated over and near these zones, by using geochemical and geophysical reconnaissance methods.

This method of initial reconnaissance is particularly suited to areas without a well defined drainage pattern along which stream silt sampling could provide complete initial reconnaissance. It is also the best tool for areas with relatively extensive overburden and few outcrops.

The Lockwood method uses a single frequency of 4000 cps to generate a primary electromagnetic field. The transmitter loop is carried in a fiberglass bird and is oriented with the loop axis parallel to the direction of flight. A receiving loop is located 30' away in the other end of the bird; the loops are coaxial.

The bird is suspended at the end of a 70' cable and is towed by a helicopter at an elevation of 100' above the ground.

A magnetometer of the Gulf Mark III type, also located in the bird, measures the total intensity of the magnetic field.

Recorders and a positioning camera are carried on the helicopter and are handled by an operator who indicates to the pilot the planned course plotted on 1" = 1320' airphotographs and who marks fiducial points on the recorder's strips.

In general, the flight lines are laid out at right angles to the strike of the formations and at distances varying from 600' to 1500' apart.

If a conductive body in the ground is crossed by the helicopter carrying this equipment, the primary electromagnetic field creates eddy currents in this conductor which cause the generation of a secondary electromagnetic field. This secondary field is generally of the same frequency as the primary field but out-of-phase with it; it is detected by the receiver loop in the bird.

As a variation in the distance between the transmitter and the receiver coils will create a strong in-phase response, both coils are in a fixed position in the relatively rigid bird. This will eliminate false responses. Increasing out-of-phase responses will be obtained over bodies of low to medium conductivity; as the conductivity increases beyond the medium range, this out-of-phase response falls off again.

In-phase responses are increasingly stronger as the conductivity rises from poor to very high.

The strength of the response is measured in parts per million. For the above-cited reasons, the ratio of the in-phase to the out-of-phase responses is less than one for bodies of poor to medium conductivity and increases rapidly as the conductivity varies from medium to high.

The response is also a function of the size of the conducting body and of the distance from the bird to it.

The maximum distance at which a highly conductive body of large size will give a response is still somewhat unknown, but appears to be about 300' between the bird and the top of the conducting body.

Various geological bodies are electrical conductors and geological conductors are manifold and of greatly varying size, shape and conductivity, the latter often being a function of the internal texture of the conductor.

Some examples of conducting bodies are:

- Massive pyrrhotite
- Massive pyrite
- Disseminated pyrrhotite and/or pyrite
- Graphitic schists
- Talc schists, especially when wet
- Chlorite (serpentine) schists
- Wet overburden in swamp
- Lake-bottom deposits
- Wet shears

Due to their schistose nature, graphitic schists may be excellent conductors if the individual graphite flakes form a conductive layer.

Massive sulphide bodies with 10 - 20% interstitial quartz may be excellent conductors if the main sulphide is pyrrhotite and if the individual grains of sulphide have large contact areas.

Their conductivity drops off rapidly if the main sulphide is pyrite and if the individual iron sulphide grains are isolated by interstitial non-conductors like silica or sphalerite.

For these reasons, a combined magnetic - electromagnetic airborne survey is essentially a geological mapping tool, especially so as the amount of magnetite in rock is even more of a geological variable than conductivity.

The reliability of the method is principally a function of the elevation above ground that can be maintained. Correlation of responses on adjacent lines flown at different elevations, due to weather or topographical conditions, may not be satisfactory. This happens if the survey is flown with too light a helicopter.

Providing the bird is flown at a steady elevation above the ground, interpretation of airborne data is largely a function of the geological conditions.

Different geological environments will lead to different appraisals of quantitatively very similar airborne geophysical responses.

In general, experience has shown that long conductors (several thousand feet or several miles) with relatively low ratios of 1 or less are likely to be of a formational nature, like graphitic schists. Smaller conductors of better than 1, or preferably 2, ratios may represent near-surface sulphide occurrences.

In certain areas, coincidence of magnetic and electromagnetic highs is critical because of an association of sulphides and magnetite. Most magnetic highs are however a reflection of increased magnetite content of the underlying rock formations, and high magnetic readings may have no more than a very indirect relationship to unusual sulphide concentrations in any given area.

Other geological factors complicating a qualitative interpretation are, for example, the frequent association of graphite and sulphide bodies or the presence of sulphide deposits the mass of which is buried beyond the range of the electromagnetic field but that do have a small near-surface expression.

An airborne geophysical survey should therefore be considered as a mapping tool enabling the exploration effort to be directed towards limited portions of the area flown and further ground work in restricted areas should use methods like geological mapping, geochemical reconnaissance, ground EM and gravity to assess conductors or magnetic highs detected by airborne methods.

## 6. RESULTS OF LOCKWOOD SURVEY

### A. General

The South Group survey was carried out at a 660' line spacing. The lines were extended beyond the actual boundaries of the property into open ground, as it was known that the belt of volcanics and schists extended in these areas, especially to the Southeast.

In this particular survey, this technique proved especially useful as a number of the anomalous features were found to extend across the property boundaries and would have been more difficult to correlate and interpret had the survey been flown over a more restricted area.

### B. Magnetism

The SW part of the property is clearly underlain by volcanic rocks reflected by a magnetic intensity of well above background values, namely up to over 6000 $\gamma$  versus a background value of about 5200 $\gamma$ . Along their NE boundary these volcanics terminate abruptly, either by faulting or by erosion of a SW dipping layer. Geophoto analysis of the area suggests that the latter hypothesis is the more likely.

Three other magnetic anomalies lie on and near the claim area.

Two of these, lying on the claims, form a more or less E-W trending belt, cut off on the North by a feature interpreted as an ENE trending fault.

The WNW termination of this anomaly has a peak of about 140 $\gamma$  above background and is due to a relatively shallow source.

The ESE termination of this anomaly has a similar peak value, but the rounded top suggests a deeper source.

The general configuration of this anomalous area is reminiscent of a skarn-type body near a granite contact with selective concentrations of diffuse magnetite, rather than of volcanics.

The third anomaly lies off the claims to the NE. Located on only two lines, its value above background is 500 $\gamma$  and its configuration is reminiscent of an anomaly associated with an ultrabasic body.

### C. Electromagnetics

The most remarkable feature is a pronounced belt of high conductivity (up to 228 ppm) with ratios generally around 1.5. This is a feature quite characteristic of highly graphitic schists which have been folded.

This belt has a very straight contact against the magnetic volcanics to the SW, and on the NNW is believed to be cut off by the ENE fault suggested by topography, EM results and by magnetics. The EM configuration also suggests a possible fold plunging to the WNW.

The latter structure leaves open the possibility that the †140 magnetic anomaly mentioned previously is not a skarn-zone, but a weakly magnetic limb of the volcanics, dipping to the NNW.

The strong EM anomaly dies out towards the East in a number of narrow East-trending zones of medium conductivity of about 40 ppm with some remarkably good ratios between 4.0 & 5.0. Ratios of this type may be associated with features like narrow graphite slate-beds or massive sulphide beds.

Along lines 26, 27 and 28, there is a remarkable change in the electromagnetic pattern related to the deeply eroded N-S part of the creek valley in this area.

East of this creek, there are two large conducting zones of high conductivity with excellent ratios. Both zones each have a large horse-shoe shape, one about  $\frac{1}{2}$  mile across, the other about  $\frac{3}{4}$  miles across.

The largest and most Southerly, with ratios of from 3 - 4.5, is located in an area of flat magnetic relief; the Northerly one, with ratios of over 5, lies on the flank of the magnetic anomaly which suggests the presence of an ultrabasic.

The large Southerly conductor was staked as the EM group by Mid-West Mines and Ventures Mining following their airborne survey.

The largest part of the smaller and Northerly conductor has been staked as the Olgie Group by Cominco Limited, who conducted a geochemical survey on the adjacent Snowcap. Whether the Olgie Group was staked as a result of the airborne survey conducted by Cominco on the Snowcap, or as a result of their geochemical reconnaissance, is not known.

Another conductor of interest lies South of the lake which straddles the SW boundary of the South Group.

This conductor is of medium strength (up to 70 ppm) and exhibits some good ratios in the centre and some poor ones on the edges. It is about 4000' long by 2000' wide and lies on the edge of a magnetic high probably related to volcanics. The suggested causative body corresponding to this EM anomaly is probably tabular.

The characteristics of this conductor and its geological location adjacent to a magnetic high give it a high rating as a worthwhile exploration target, and it has consequently been staked by Mid-West Mines and Ventures Mining as part of the EM Group.

#### D. Summary

The main feature of the property is the presence of a well defined volcanic belt in contact, by either faulting or stratigraphy, with a folded belt of graphitic schists.

This latter belt terminates in conductors with characteristics that may reflect sulphides and further East there are two very promising conductors, one of which has been fully covered by the EM claims.

An isolated conductor, lying to the SW on the EM claims also presents an excellent exploration target.

It should be stressed that in the Vangorda area ore bodies have been found to be associated with graphitic schists and consequently, any area of graphitic schists warrants careful prospecting, preferably by geochemical methods, and especially so along its contacts with surrounding formations.

The geophysical pattern is a complex one, and warrants full-scale geochemical and geological prospecting over the South and EM claims, with more detailed emphasis on the electrically conducting zones described above.

#### 7. PROPERTY ACCESS, LINECUTTING AND TRENCHING

The property which is the subject of this report lies some eight air miles from the community of Ross River in a northwesterly direction. This property is located on the north slope of a height of land which separates it from the Tintina trench and Pelly River valley. This ridge, rising 1500 feet above the valley, is cut at a point about six miles southeast of the property by the transverse valley of the Ross River. A recently reactivated part of the Canol road follows this valley and thus provides a convenient route with favorable grades to within six miles of the east end of the property. A tote road along Tenas Creek was completed earlier this season and extended access to within four miles of the claim boundary.

It should be noted that no summer crossing exists as yet over the Pelly River at Ross River and vehicular traffic and heavy equipment must move by a much longer route after the ice is out.

Construction of the South Group tote road started at a point on Tenas Creek 2.7 miles from the Canol road. Reconnaissance of the area indicated that the best approach was to cross Tenas Creek near a north flowing tributary utilizing a valley along the small streams to ascend the 500 foot difference in elevation between the valley and the property. A site was selected for the crossing which afforded natural approaches and nearby timber of a size adequate for construction of a bridge. Frost encountered in the first quarter mile and a small side-hill cut presented the only difficulties in advancing the road to within 2000 feet of the property. At this point it was necessary to cross the south fork of Tenas Creek which is confined by a narrow valley. On completion of this crossing, which will require a short bridge for summer use, the road was extended to the northeast corner of the property on mineral claim South 11. An alternate route terminating near the corner of South mineral claims 9, 10, 11 and 12 was also constructed from the south fork crossing, following the creek.

A total of four and a half miles of tote road was completed to provide winter access to Ross River, a distance of 14.3 miles.

Boundary surveys completed during the summer confirmed the claim locations in relation to topographic features and an airborne survey described elsewhere in this report defined several areas of interest, mainly on the eastern part of the group. The prime objective in the linecutting program was the establishment of an east-west base-line. Work was hampered by the heavy timber, difficult terrain and generally adverse weather conditions. About two miles of line were completed as shown on figure 5. The base-line was stripped to mineral soil over most of its length and trenching and stripping was employed at several points along the connecting north-south line. A chain and compass survey was used to tie in the linecutting with the claim posts shown on figure 5. Also shown are the locations of trenches and stripped areas, marked 1 to 4 and described in detail below.

Cut No. 1 - on line: 12' wide x 75' long x 4' max. depth =	67 cu. yds.
Cut No. 2 - side hill: 20' wide x 60' long x 8' max. depth	= 178 cu. yds.
Sub-total	245 cu. yds.
(In the above total it is estimated that 1/3 was frozen ground)	
Stripping No. 3: 42' wide x 65' long x 2' deep =	195 cu. yds.
(Of the above approximately 1/2 was frozen ground)	
Stripping No. 4: 9' wide x 2525' long x 1' deep =	842 cu. yds.
(Continuous trench to mineral soil - unfrozen)	
Total	<u>1,282 cu. yds.</u>

Of this total 182 cubic yards was frozen with the balance being unfrozen, unconsolidated soil and gravel with occasional boulders.

#### 8. PERSONNEL AND COSTS

Reference to all personnel engaged in work on this property will be found in the attached Appendix "A".

A summary of costs incurred by this work is provided in Appendix "B".

## 9. SUMMARY AND RECOMMENDATIONS

Within the regional geological framework, the South Group is a well located group. Its position within the favorable schists as related to the nearby Orchay intrusive is very similar to the position of the Faro body in relation to the Anvil intrusive (figure 1).

The property is located near the intersection of pronounced N7 and ENE trending lineaments, which is a characteristic of all ore discoveries made so far in the area.

Airborne geophysical work has located several promising conductive zones with electrical characteristics often associated with near-surface sulphide masses.

Initial trenching has indicated the presence of relatively abundant disseminated pyrite.

A good access road has been built and the property is now easily accessible and relatively minor road improvements, including a log-bridge over a fork of Tenas Creek, will provide road access on a year-round basis.

The use of a D-7 cat with a ripper, rather than the D-6 used in the present program, would permit extension of the road across the full length of the property.

A program of geological mapping and of reconnaissance streamsilt and soil sampling is recommended with emphasis on the areas specified in the text, using a ripper-equipped D-7 to cut the sample lines.

Estimated cost is as follows:-

100 cat hours @ \$28.00 per hour	\$ 2,800
Geological mapping, 2 weeks	1,200
Streamsilt and soil sampling, 600 samples @ \$5.00	3,000
Transportation	1,000
Engineering, overhead	2,000
Contingencies	<u>2,500</u>
Total	<u>\$12,500</u>

Respectfully submitted,



P.H. Sevensma, Ph.D., P. Eng.

FHS/lz

February 15, 1967

CERTIFICATE

I, PETER H. SEVENSMA, of Vancouver, B.C. do hereby certify that:

1. I am a graduate of the University of Geneva, Switzerland (Physics and Chemistry 1937; Geology and Mineralogy 1937) where I obtained my Ph. D. in Geological and Mineralogical Sciences in 1941.
2. I am a Consulting Geological Engineer and a registered member in good standing of the Association of Professional Engineers of British Columbia and of the Association of Professional Engineers of Yukon Territory.
3. From February 1948 until December 1965 I have been engaged continuously in mining and exploration geology in the employ of Cominco Limited. As a Senior Exploration Geologist, I have worked extensively both in Eastern and Western Canada. Since December 30th, 1965, I have worked extensively in the Yukon Territory as an independent Consulting Geologist.
4. I have not personally examined the claims which are the subject of this report, but H.S. Aikins, a member of my staff, has examined these claims and supervised all the bulldozer work in the field and located by chain and compass all the claim posts considered critical in ascertaining the location of the group.
5. I have not received, nor do I expect to receive or acquire, directly or indirectly, any interest in any of the properties or securities of Mid-West Mines Limited or of Ventures Mining Limited.

Respectfully submitted,



P.H. Sevensma, Ph.D., P. Eng.

February 15, 1967

APPENDIX A

LIST OF FIRMS AND INDIVIDUALS ENGAGED IN WORK PROGRAMS ON THE  
SOUTH GROUP MINERAL CLAIMS FOR MID-WEST MINES LTD. & VENTURES MINING LTD.

Boundary Survey: August 29 - September 2, 1966 and October 16 - 26, 1966	Alrae Explorations Ltd. Operators: C. Nelson F. Holcapek E. Gheseger
Geological Consultants: June, 1966 - February 15, 1967 January 12 - February 15, 1967 January 29 - February 1, 1967	P.H. Sevensma Consultants Ltd. Supervision, field and office studies- Dr. P.H. Sevensma Field supervision and surveys - H.S. Aikins Field work assistant - C.E. Allen
Geophysical Survey: July, 1966 - February 15, 1967	Lockwood Survey Corporation Archer, Cathro & Associates Ltd. Exploration Geophysics Yukon Ltd.
Truck rental: January 13 - February 3, 1967	A. MacDonald Consultants Ltd.
Camp Equipment, Supplies & Lodging: January 13 - February 3, 1967	Ross River Enterprises Ltd.
General Contractor: January 26 - February 3, 1967	Liard Construction Ltd. Equipment Operator - D. Saunders



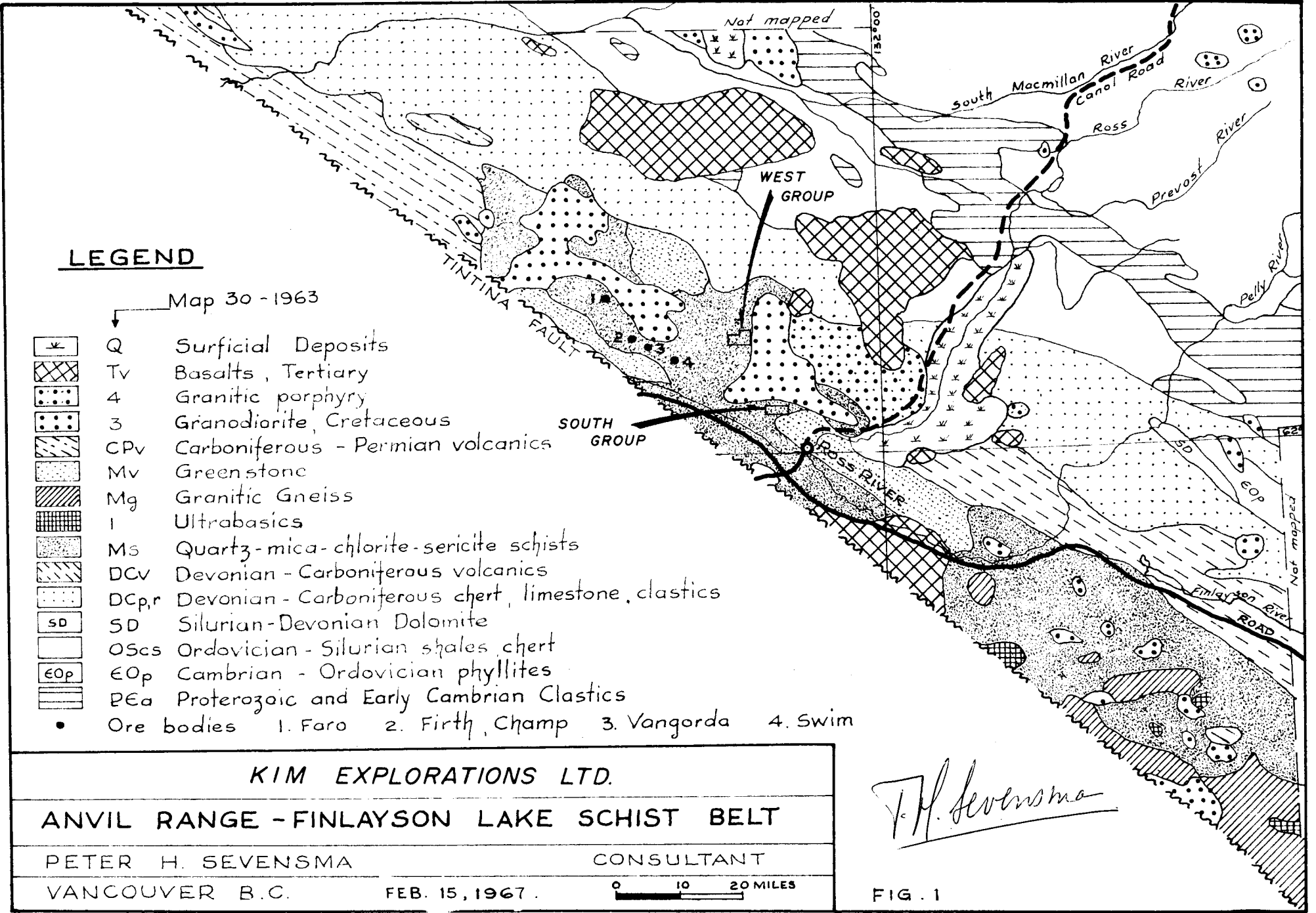
APPENDIX B

COST BREAKDOWN OF WORK DONE ON THE SOUTH GROUP  
OF MINERAL CLAIMS SINCE THE 16th DAY OF FEBRUARY, 1966

<u>Type of Work</u>	<u>Chq. #</u>	<u>Paid to</u>	<u>Amount</u>
<u>1. Boundary Survey &amp; Claim Location Survey</u>			
Wages and expenses	-	Alrae Explorations Ltd.	\$ 614.25 <i>913.25</i>
		<i>Tagging Posts 231 out</i>	
<u>2. Airborne Geophysics</u>			
Airborne Survey and expenses	-	P.H. Sevensma Cons.	186.35 ✓
Helicopter charter	-	Archer, Cathro & Assoc.	637.50 ✓
Instrument rental, preliminary plot	-	Archer, Cathro & Assoc.	866.00 ✓
Data reduction	-	Lockwood Survey Corp.	<u>910.80</u> ✓
			\$2,600.65
<u>3.*Supervision and Field Work</u>			
Wages and expenses, Jan.	2 (25%)	P.H. Sevensma Cons.	286.00 ✓
Wages and expenses, Feb.	17	P.H. Sevensma Cons.	738.77 ✓
Truck rental	15(part)	MacDonald Cons.	<u>120.00</u> ✓
			\$1,144.77
<u>4.*Camp Costs</u>			
Food and lodging	10	Ross River Enterprises	\$ 227.36 ✓
<u>5. Road Construction and Linecutting</u>			
*Road construction and linecutting ✓	13(part)	Liard Constr. Ltd.	1,284.00 <i>372</i>
Trenching - frozen material		<i>912 out</i>	
182 cu.yds. @ \$2.00/cu.yd.			364.00 <i>out</i>
- soil and gravel			
1100 cu.yds. @ \$.75/cu.yd.			<u>825.00</u> <i>out</i>
			\$2,473.00
Total value of work completed on South Group claims			<u><u>\$7,060.03</u></u>
















\* Expenses incurred under these headings have been distributed as follows:  
 Linecutting 29% or \$756.56  
 Road construction 71% or 1,899.57

*P.H. Sevensma*



**LEGEND**

Map 30 - 1963

-  Q Surficial Deposits
-  Tv Basalts, Tertiary
-  4 Granitic porphyry
-  3 Granodiorite, Cretaceous
-  CPv Carboniferous - Permian volcanics
-  Mv Greenstone
-  Mg Granitic Gneiss
-  I Ultrabasics
-  Ms Quartz-mica-chlorite-sericite schists
-  DCv Devonian - Carboniferous volcanics
-  DCp,r Devonian - Carboniferous chert, limestone, clastics
-  SD Silurian-Devonian Dolomite
-  OScs Ordovician - Silurian shales, chert
-  EO<sub>p</sub> Cambrian - Ordovician phyllites
-  PEa Proterozoic and Early Cambrian Clastics
- Ore bodies 1. Faro 2. Firth, Champ 3. Vangorda 4. Swim

**KIM EXPLORATIONS LTD.**

**ANVIL RANGE - FINLAYSON LAKE SCHIST BELT**

PETER H. SEVENSMA

CONSULTANT

VANCOUVER B.C.

FEB. 15, 1967.

0 10 20 MILES

*P. H. Sevensma*

FIG. 1



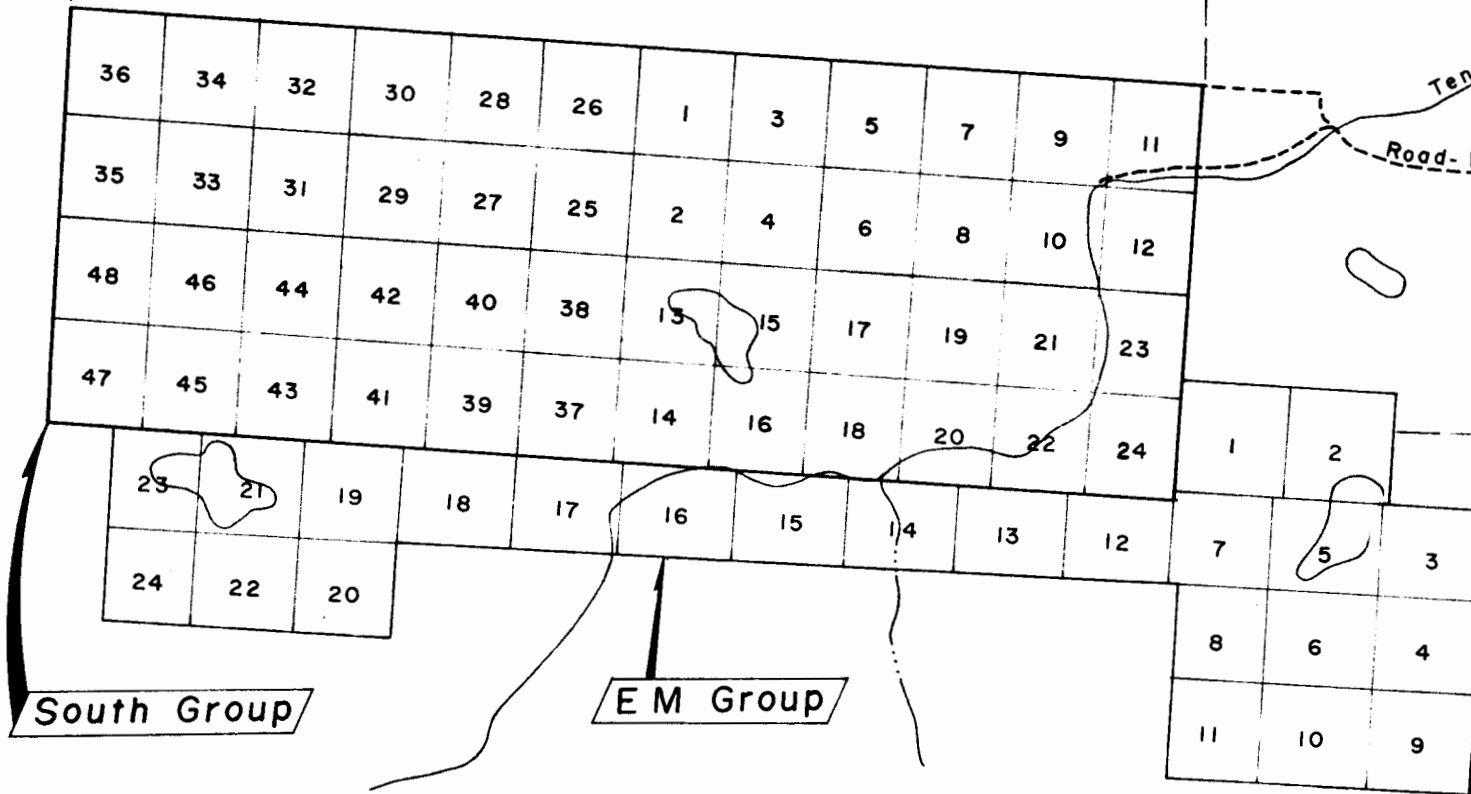
Snowcap Group

OLGIE LAKE

Olgie Group

Tenas Cr.

Road - 14.3 miles to Ross River



South Group

EM Group

KIM EXPLORATIONS LTD.

PRELIMINARY CLAIM MAP - SOUTH GROUP

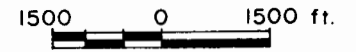
Whitehorse M.D.

105 K-182

P.H. Sevensma Consultants Ltd. - Vancouver, B.C.

Feb. 15, 1967

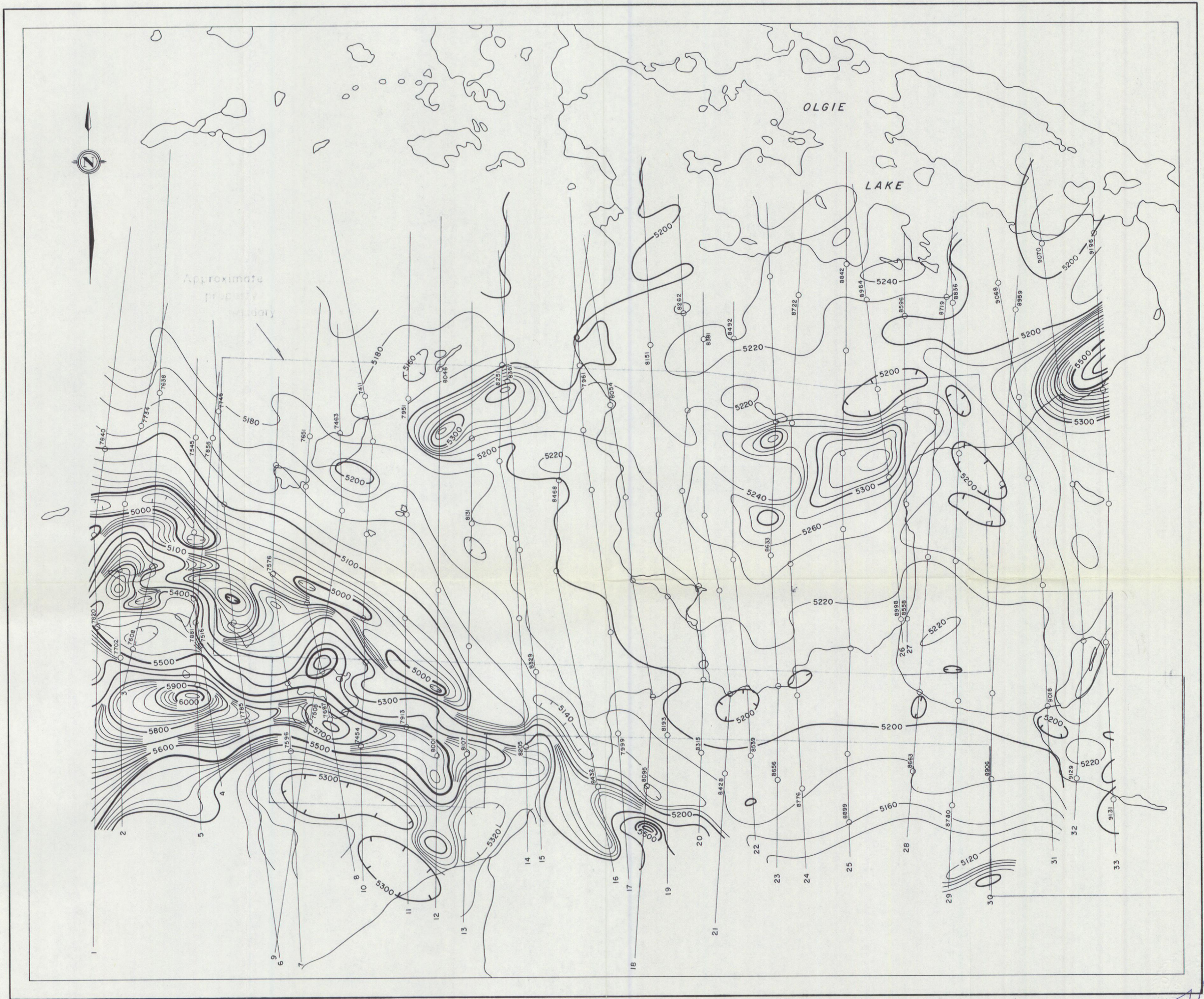
Scale:



*P.H. Sevensma*

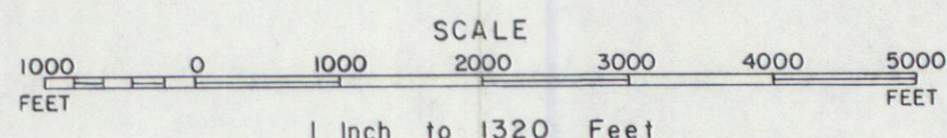
FIG. 2

MID-WEST MINES LIMITED AND VENTURES MINING LIMITED  
 AIRBORNE GEOPHYSICAL SURVEY



- CONTOUR INTERVAL ..... 20 GAMMA
- MEAN FLIGHT LINE SPACING ..... 1000 FEET
- MEAN TERRAIN CLEARANCE ..... 200 FEET
- 500 GAMMA CONTOUR .....
- 100 GAMMA CONTOUR .....
- 20 GAMMA CONTOUR .....
- MAGNETIC LOW .....
- FIDUCIAL POINTS .....
- FLIGHT LINES .....

PETER H. SEVENSMA PH.D. P. ENG.  
 CONSULTANT  
 VANCOUVER B.C.



SOUTH GROUP  
 YUKON TERRITORY

AEROMAGNETIC MAP

Flown and Compiled by  
 LOCKWOOD SURVEY CORPORATION LIMITED  
 TORONTO, CANADA  
 1966

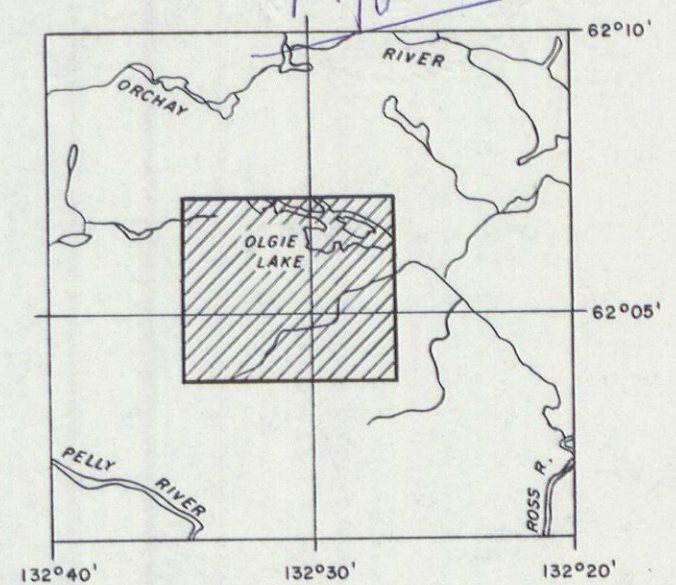
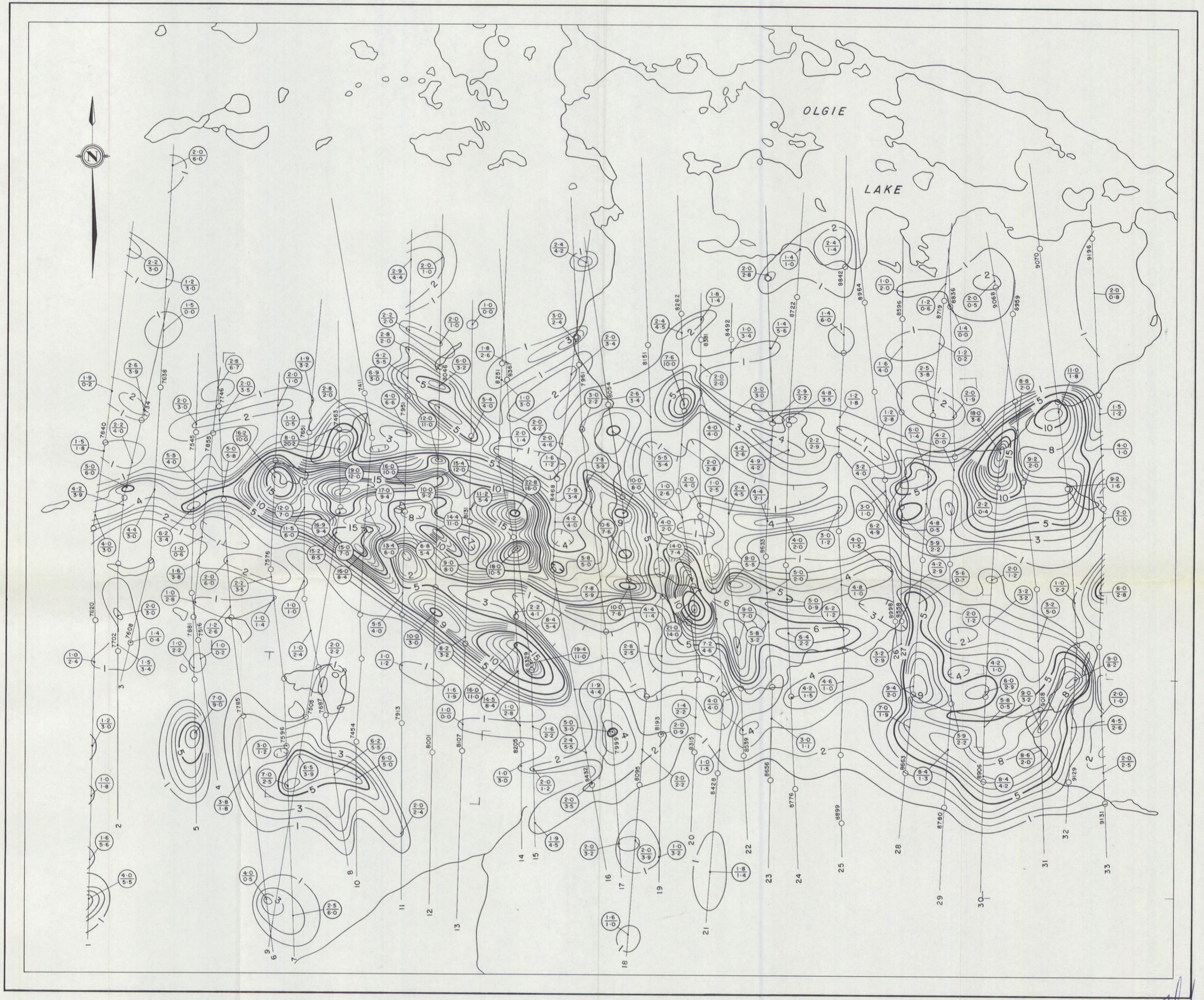


FIG. 3

# MID-WEST MINES LIMITED AND VENTURES MINING LIMITED AIRBORNE GEOPHYSICAL SURVEY



MEAN FLIGHT LINE SPACING ----- 1000 FEET  
 MEAN TERRAIN CLEARANCE ----- 200 FEET  
 ELECTROMAGNETIC CONTOURS 5, 10, 15 etc. -----  
 1, 2, 3, 4 etc. -----  
 NEGATIVE CONTOURS -5, -10 etc. -----  
 -1, -2, -3, -4 etc. -----  
 FIDUCIAL POINTS ----- 3690  
 FLIGHT LINES -----

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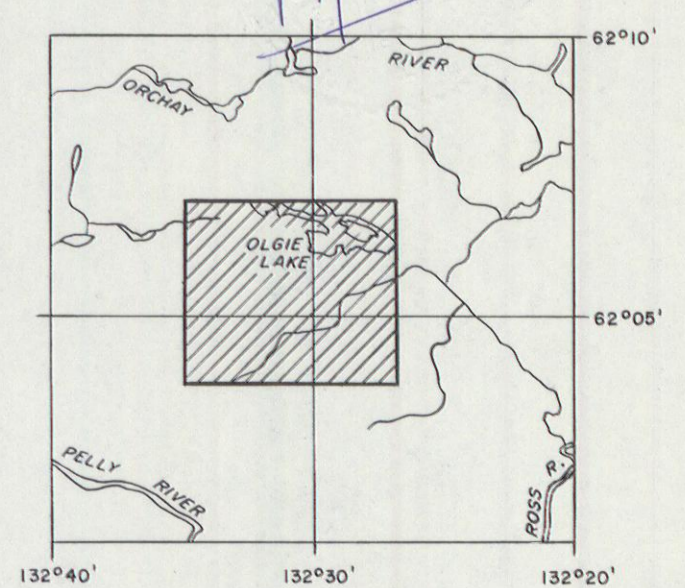
SCALE  
 1000 0 1000 2000 3000 4000 5000  
 FEET  
 1 Inch to 1320 Feet  
 (Approx.)

## ELECTROMAGNETIC MAP

FIG. 4

Flown and Compiled by  
 LOCKWOOD SURVEY CORPORATION LIMITED  
 TORONTO, CANADA  
 1966

The contours represent amplitude of in phase response of the resultant field expressed in parts per million of the primary.  
 The figures  $\frac{2.3}{0.2}$  represent amplitude in phase component / quadrature component  
 The frequency of the primary current is 4000 cycles per second.  
 The contour interval is 10 parts per million.



*T.H. Johnson*

OLGIE LAKE



COMINCO LTD - Option  
(Snowcap Group)

OPEN GROUND

COMINCO LTD. (Olgie Grp.)

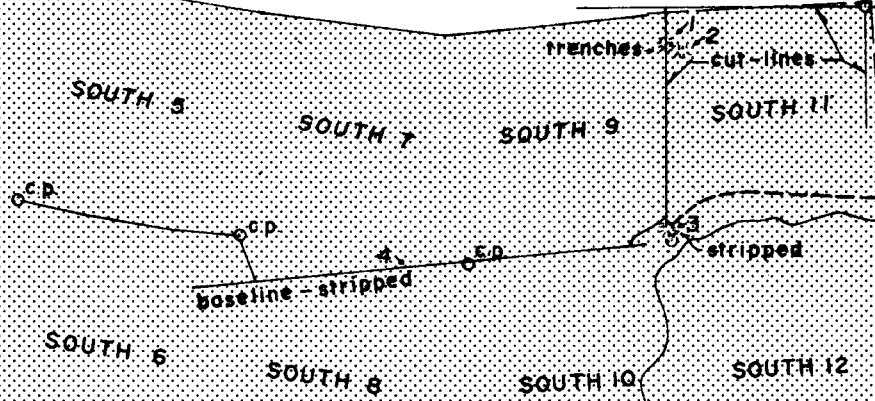
No. 1 posts, Olgie 182

Tenas Cr.

Rd - 4wd.

To Canal Road 6.7 miles

OPEN  
GROUND



*T.H. Sevensma*

**KIM EXPLORATIONS LTD.**

ROADS, LINE CUTTING & TRENCHING - South Grp.

Whitehorse M.D. 105 K-1/2

P.H. Sevensma Consultants Ltd. - Vancouver B.C.

Feb. 16, 1967

Scale: 1000 0 1000 ft.

FIG. 5