

REPORT ON THE ELECTROMAGNETIC SURVEY

FGS MINERAL CLAIMS

54°N/127°W - S.E.

G.E. Dirom, P. Eng.

J.T. Walker

Noranda Exploration Company, Limited

Omineca Mining Division

July 10, 1967 to July 22, 1967

52-6/11

1605

1605

Report on the
Electromagnetic
Survey
on the
Fog Mineral Claims
of
Noranda Exploration Company, Limited
by
G.E. Dirom, P. Eng.
J.T. Walker

Sunsets Property
British Columbia

Omineca Mining Division
54°N/127°W - S.E.

Date Started July 10, 1967
Date Completed July 22, 1967

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
Location Map - Figure 1 ^{#1}	
GENERAL GEOLOGY	1
BASE MAP AND GRID PREPARATION	2
ELECTROMAGNETIC SURVEY	
Method	2
Presentation of Results	4
Discussion of Results	4
CONCLUSIONS & RECOMMENDATIONS	5
PLAN MAPS (in pocket)	
E.M.-16 Survey 1" = 400 ft. (figure 2) ^{#2}	
Topographic Map 1" = 1000 ft. (figure 3) ^{#3} showing claim outline	

Report on the
Electromagnetic Survey
On The
Sunsets Property
Noranda Exploration Company, Limited

INTRODUCTION:

The Sunsets Property referred to in this report lies approximately twenty-two air-miles South 9° West of Smithers, British Columbia. Access to the property is by helicopter from Smithers.

The property consists of seventy-two contiguous mineral claims in the Omineca Mining Division. The Electromagnetic survey has covered all or a portion of the following Mineral Claims:

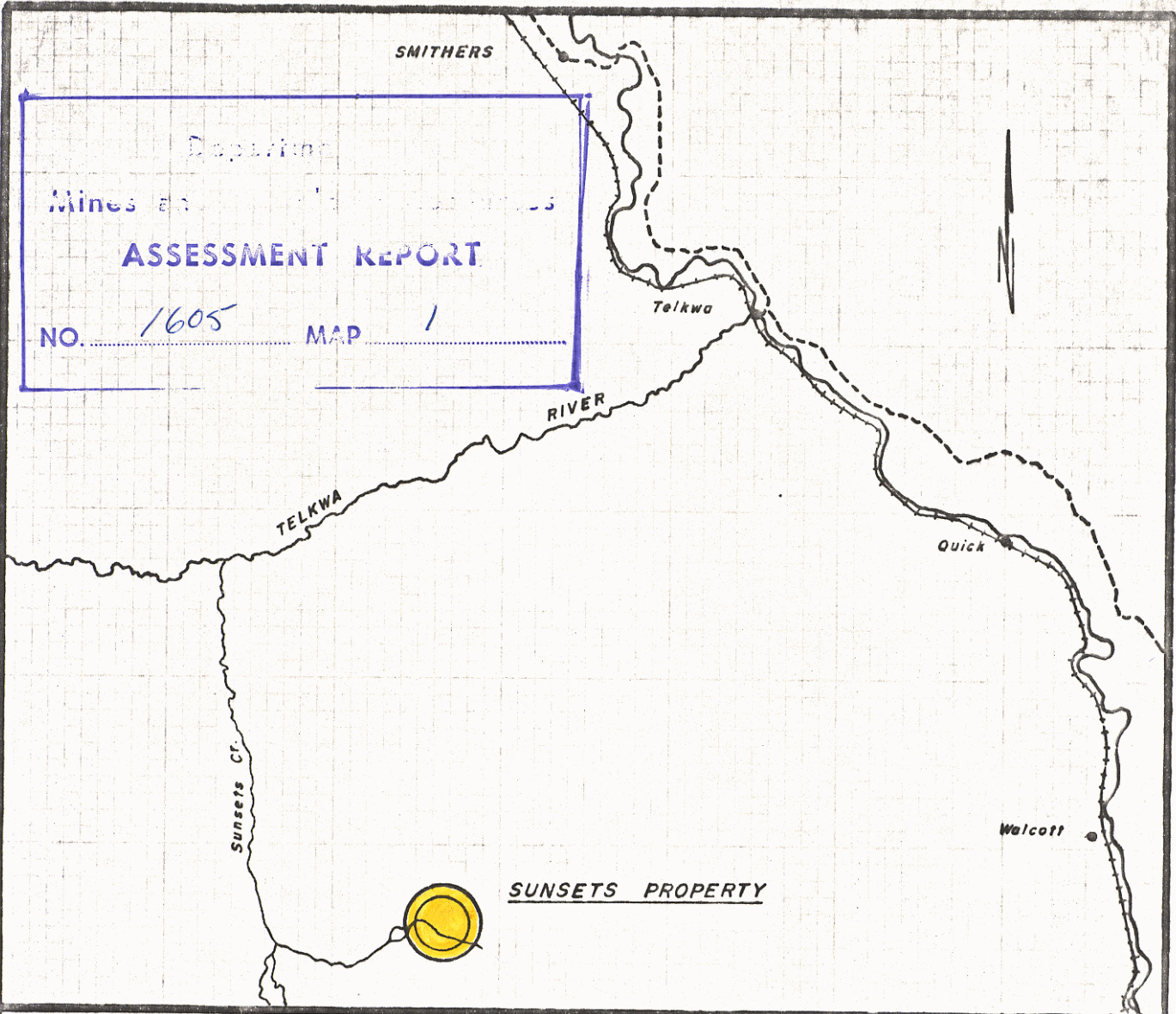
Fog 3 - 10 inclusive
Fog 33 - 37 inclusive
Fog 40 - 42 inclusive
Fog 53 - 56 inclusive
Fog 58
Fog 72 and 74

The mineral claims comprising the property were staked following a geochemical silting program. The Geophysical Survey described in this report was carried out in an attempt to locate any conductive zones of mineralization.

The survey was carried out under the direction of G.E. Dirom, P. Eng., with field supervision by J.T. Walker

GENERAL GEOLOGY

Rocks in the vicinity of the claim group are Hazelton Group volcanics intruded by a granodiorite porphyry plug. The area covered by the E.M.-16 survey lies entirely within this intrusive.



NORANDA EXPLORATION CO. LTD.

Location Map

SUNSETS PROPERTY

OMENICA MINING DIVISION

B.C.

SCALE: 1" = 4 MILES

W. H. Wood

J. J. Walker



FIG. 1

BASE MAP AND GRID PREPARATION

In order to carry out an Electromagnetic Survey, adequate control must be established, both to correlate the geophysical grid area to the anomalous geochemical silt results and to assist in interpreting the Electromagnetic Survey with due regard to topographic effects.

Initially a topographic base map of the area was prepared at a scale of 1 inch equals 1000 feet by Lockwood Survey Corporation Ltd., figure 3 of this Report. The airphotos were taken by Lockwood Survey Corporation Ltd. following layout of ground control markers.

A portion of this 1000 foot scale topographic map was in turn enlarged to 1 inch equals 400 feet and used as the base map for the Electromagnetic Survey.

For the purpose of the Electromagnetic Survey one 4000 foot Base Line was established. Using this base line, eleven grid lines were established by chaining, picketing and flagging. Station interval is 100 ft., grid line spacing is 400 ft. A total of 76,000 feet of line was layed out. A crew of three men carried out this work between July 4, 1967 and July 20, 1967.

ELECTROMAGNETIC SURVEY

Method

The Electromagnetic Survey was carried out utilizing an E.M.-16 receiver unit, serial number 47, manufactured by Geonics Limited, Toronto.

The operation and theory of the equipment used is described fully in the literature. A brief outline will be given here. The E.M.-16 is a sensitive radio receiver tuned by plug-in tuning modules to cover desired

frequencies in the V.L.F. communication band, and by means of an inclinometer, capable of measuring vertical field components. The magnetic component of the transmitted electromagnetic field is horizontally polarized. When these magnetic fields meet conductive bodies in the earth, secondary fields are set up which cause variations in the resultant field. By measuring this resultant field it is possible to map conductive zones. The method is similar to the standard Vertical Transmitting Loop E.M. system except the transmitter which is in effect located at infinity.

Two measurements are taken at each station, the tilt angle of null in percent slope from the horizontal and a "quadrature" reading in percent, which is a measure of the out of phase component of the resultant field. The reference signal for the "quadrature" nulling is obtained from a second coil mounted orthogonally to provide maximum coupling with the secondary field.

To obtain a reading, the receiver is first aligned in the field by means of nulling. Rotation is about a vertical axis. With the receiver now oriented in the vertical null plane, the tilt angle of the resultant field from the horizontal is measured by obtaining a null about the horizontal axis. At the same time, by nulling the remaining weak signal by quadrature dial adjustment, a measure of the out of phase component is obtained. The tilt angle of null and out of phase component are recorded, both in percent.

For this survey, using East-West grid lines, V.L.F. transmitting station near Seattle, Washington (N.P.G., frequency 18.6k Hz) was utilized. Readings were taken at 100 foot intervals, on eleven grid lines for a total of 76,000 feet.

Presentation of Results

The results of the survey are presented in Figure No. 2 of this report, a plan map at a scale of one inch equals 400 feet. Claim out-lines are also indicated. The tilt angle of null in percent slope of the resultant field and out of phase signal in percent are plotted in profile form along the lines at a vertical scale of 1 inch equals 40 percent. The conductor axis are indicated by appropriate symbols and arbitrarily graded as to definite possible, and probable.

Discussion of Results

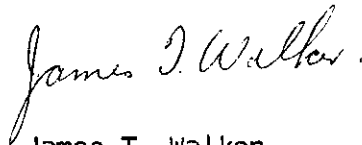
Large positive tilt angles are general throughout the survey. Steeply rising terrain to the North and East over most of the grid area is responsible for the predominately positive results. Because of the positive shift in tilt angle readings few normal cross-overs are indicated. Conductive zones are expressed as inflection points on the profile curve lying between positive maxima to the west and less positive minima to the east.

The results of the E.M.-16 survey indicate three long conductive zones. One conductor extends from line 16S to 20N between 40+00E and 50+00E. The second extends from line 16S to 16N between 20+00E and 25+00E. The third extends from 12S and 0+00N between 34+00E and 40+00E. In addition many weak one line conductors are indicated. Their significance is unknown.

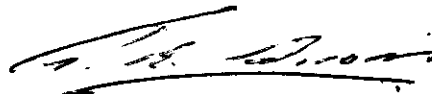
CONCLUSIONS AND RECOMMENDATIONS

Moderate to strong anomalous responses have been obtained in the E.M.-16 Electromagnetic Survey. The long narrow response to the East of the grid suggests a long narrow conductor, probably a structural expression. The more complex conductor pattern located centrally on the grid warrants further investigation.

Respectfully submitted,



James T. Walker
Geophysical Co-ordinator



G.E. Dirom
P. Eng.

June 14, 1968

SUPPLEMENT TO THE REPORT ON THE ELECTRO-
MAGNETIC SURVEY ON THE FOG MINERAL CLAIMS
OF NORANDA EXPLORATION COMPANY, LIMITED
BY G.E. DIROM, P. ENG., AND J.T. WALKER

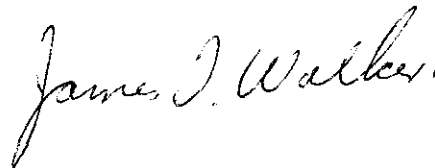
QUALIFICATIONS OF L. REINERTSON AND D. JOHNSON

Mr. L. Reinertson has been employed by Noranda Exploration Company, Limited since January 1966 as a field assistant and geophysical operator.

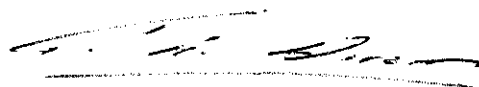
Mr. D. Johnson was employed by Noranda Exploration Company, Limited from October 1964 to September 1966, and from May 1967 to September 1967 as a field assistant and geophysical operator.

Both Mr. L. Reinertson and Mr. D. Johnson have been trained in field procedures by Mr. J.T. Walker, Geophysical Co-ordinator for B.C., Noranda Exploration Company, Limited, under the supervision of G.E. Dirom, P.Eng., Regional Geologist, Noranda Exploration Company, Limited, D.K. Fountain, P. Eng., Staff Geophysicist, Toronto Office, Noranda Exploration Company, Limited, and B.O. Brynelsen, P. Eng., Manager - Western Division, Noranda Exploration Company, Limited.

Respectfully submitted,



James T. Walker
Geophysical Co-ordinator



G.E. Dirom
P. Eng.

August 25, 1968

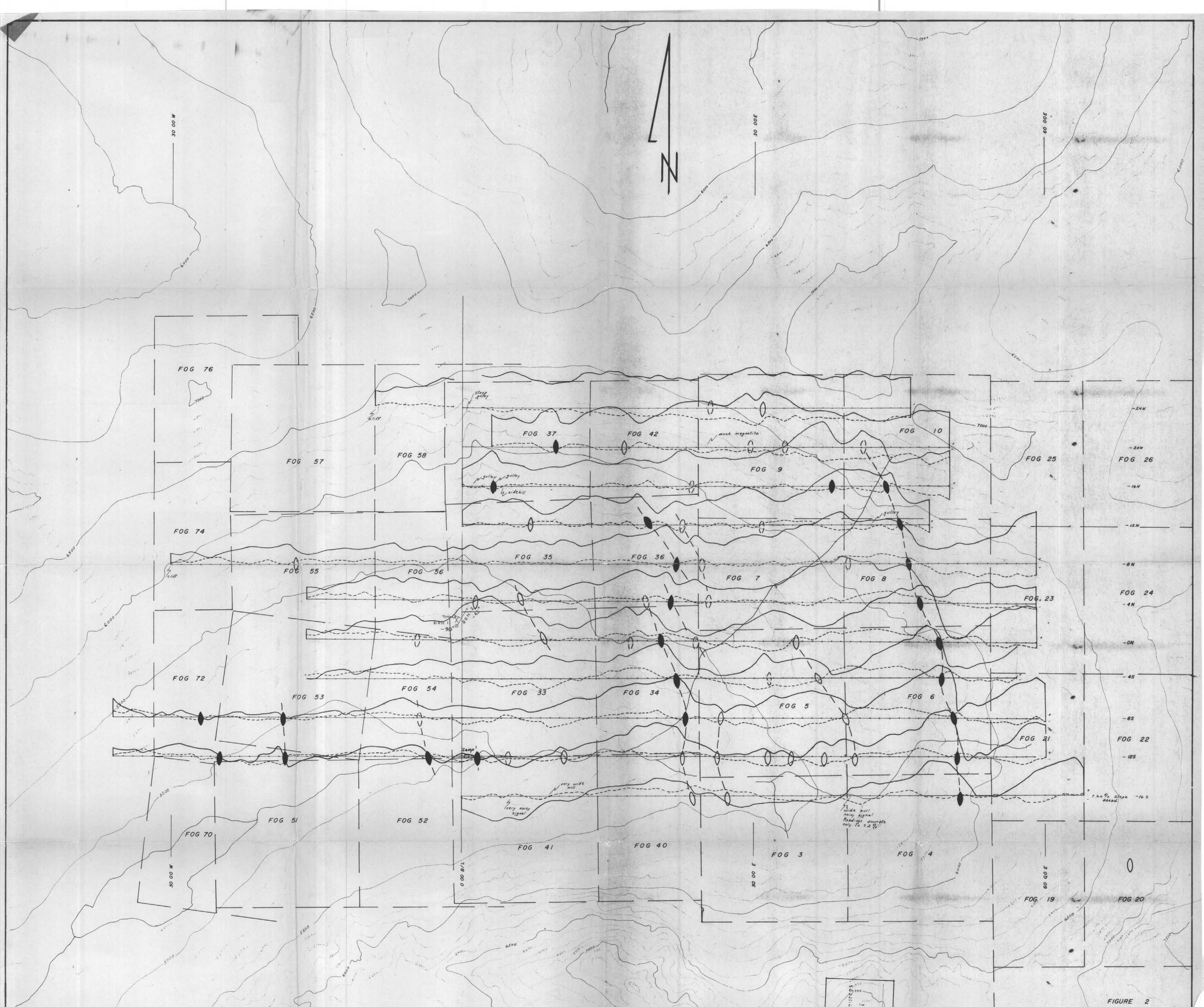


FIGURE 2

To Accompany Geophysical Report By G.E. Drom, P. Eng. and J.T. Walker on the Fog Mineral Claims on Sunsets Creek, Omineca Mining Division, Dated June 14, 1968

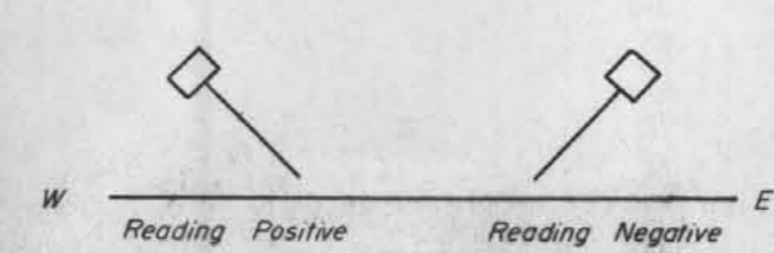
J. T. Walker
James J. Walker



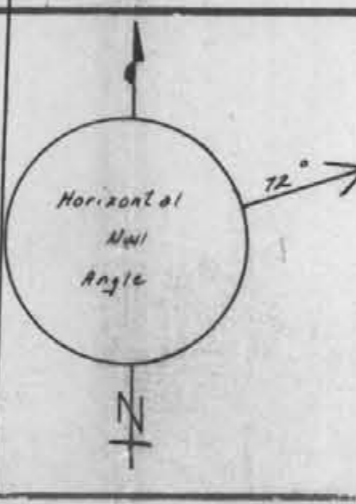
- LEGEND**
- Tilt angle of Null in % of Resultant Field 1"= 40%
 - Tilt angle in % of out of Phase Component 1"= 40%
 - Claim Outlines
 - Definite Conductor Axis
 - Possible Conductor Axis
 - Probable Conductor Axis

1605

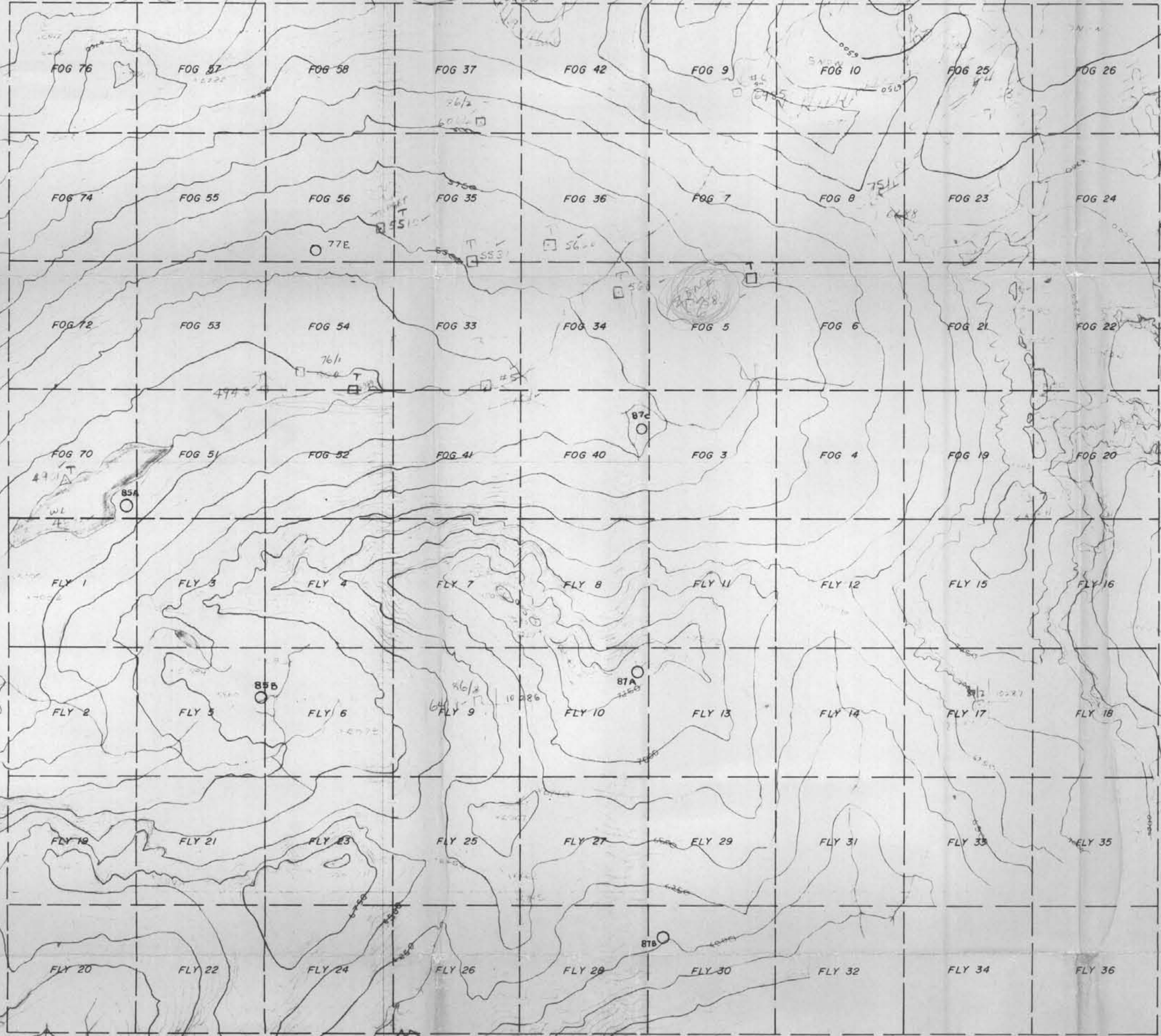
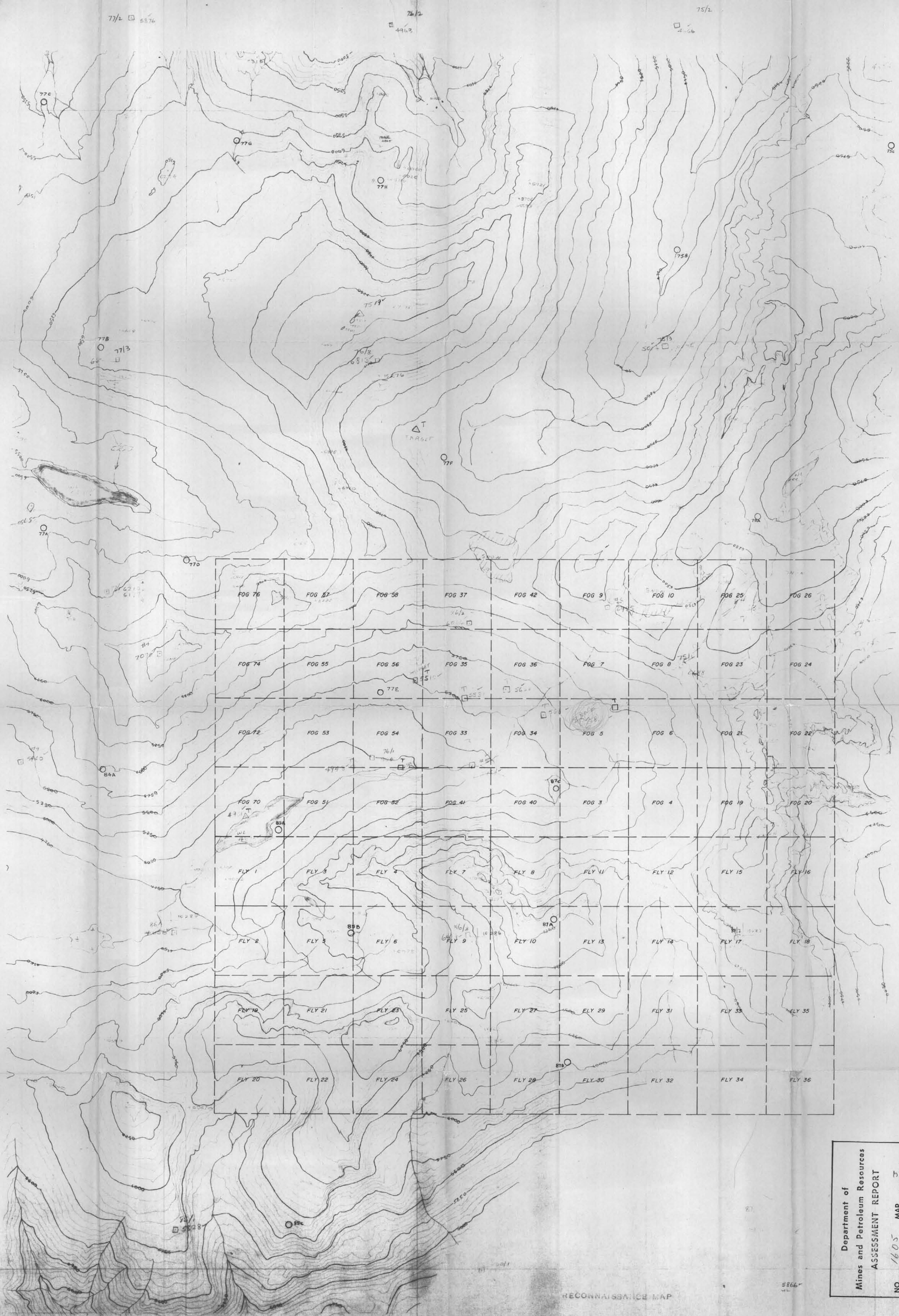
INSTRUMENT ORIENTATION ILLUSTRATING SIGN OF TILT ANGLE OF NULL



Department of Mines and Petroleum Resources
Geophysical Report
NO. 1605 M.C.P. 2



NORANDA EXPLORATION COMPANY LTD.	
SUNSETS	
EM-16 SURVEY	
OPERATORS: L. Reinertson & D. John	
Vertical Scale: 1"=40'	Dip angle 3/4 Quad
Field note by	SCALE 1"=400'
T. Walker	DATE
	JULY 1967



RECONNAISSANCE MAP

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1605 MAP

BASED ON 93L 1/1E
1/50,000 MAP
ARBITRARY 5000 GRID
SCALE BASED ON 93L 1/1E
G.S.C. DATUM

1605

To accompany Geophysical Report by G.E. Dism, P.Eng.
and J.T. Walker on the FOG Mineral Claims on Sunsets
Creek, Ontario Mining Division, dated June 14, 1968.

James J. Walker

FIG. 3

NORANDA EXPLORATION COMPANY LIMITED		
SUNSETS PROPERTY		
CLAIM MAP		
1" = 1000'	Lockwood 66370	Date: JUNE - 1968
	Drawn By	Map No. 93L/6