

2015

GEOPHYSICAL SURVEY

BIDIUK COPPER PROSPECT

NRM 3 AND NRM 4

MINERAL CLAIMS

53° 21 3/4' N. Lat.

132° 28 1/2' N. Long.

Vancouver, B. C.

August, 1969

*S. N. Charteris*  
S. N. Charteris

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Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. **2015** MAP .....

GEOPHYSICAL SURVEY  
BIDIUK COPPER PROSPECT

INTRODUCTION

A geophysical survey was conducted over a portion of the property to determine if extension to the known bornite - chalcopyrite skarn mineralization. This tactite zone strikes eastward into heavily overburdened lowlands.

The surveys and line cutting were done by Mr. S. Presunka and Mr. M. Boyko between July 20th and July 31st, 1969. S. N. Charteris examined the property and anomalous conductors on July 31st.

LOCATION AND ACCESS

The claim group east from the east shore of Shields Bay in Rennell Sound, Queen Charlotte Islands, B. C. Most of the work has been done in the vicinity of the mineralization near the shallow bay at Latitude  $53^{\circ} 21 \frac{3}{4}'$  N. Longitude  $132^{\circ} 28 \frac{1}{2}'$  N.

The bay can be reached by boat or plane. Queen Charlotte City is the closest major centre, 16 miles to the south east.

SCOPE OF SURVEY

A 1200 foot baseline was cut on a  $110^{\circ}$  bearing and picket-lines at 100 foot intervals were cut and chained, with slope corrections, for 1000 feet to the north of the baseline and to the ocean, south of the baseline. Geophysical readings were taken at 50 foot intervals along the picket lines.

METHOD OF SURVEY

Magnetic readings were taken with a Sharpe MF-1 fluxgate magnetometer with a sensitivity of 1 gamma per scale division. A datum of 30,638 gammas was assumed. Diurnal corrections to the

Continued. . . .

readings were made and plotted on the accompanying 1" = 100' map.

RONKA EM-16 SURVEY

The VLF radio stations operating for communications with submarines have a vertical antenna. The antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, there will be secondary fields radiating from these bodies. This equipment measures the vertical components of these secondary fields.

The EM-16 is simply a sensitive receiver covering the frequency band of the new VLF transmitting stations, with means of measuring the vertical field components.

The receiver has two inputs with two receiving coils built into the instrument. One coil has normally vertical axis and the other is horizontal.

The signal from one of the coils (vertical axis) is first minimized by tilting the coil. The tilt-angle is calibrated in percentages. The remaining signal in this coil is finally balanced out by a measured percentage of a signal from the other coil, after being shifted by  $90^{\circ}$ . The axis of this coil is at right angles to the axis of the first coil. This coil is kept normally parallel to the primary field.

Thus, if the secondary signals are small compared to the primary horizontal field, the mechanical tilt-angle is an accurate measure of the vertical real-component, and the compensation  $\pi/2$ -signal from the horizontal coil is a measure of the quadrature vertical signal.

The primary field from the remote vertical antenna is

similar in nature to the "AFMAG" whereby measurements are made on the natural audiofrequency magnetic fields. In contrast, the VLF stations provide the ideal in transmitter source as follows:

- 1) No coupling effect between the transmitter and the formations.
- 2) No significant topographic interference.

The VLF stations used in this survey were:

<u>Station</u>	<u>Location</u>	<u>Frequency</u>	<u>Bearing from Property</u>
	Hawaii	23.4	275°
NPG	Seattle	18.6	140°

GEOLOGY OF THE CLAIMS

The claims cover the north east striking contact of a medium grained quartz diorite with a brecciated volcanic sedimentary assemblage. Dark green, structureless amygdaloidal andeso - basalts form the hills east of the intrusive contact. A band of brecciated skarnified metasediments outcrops near the shore.

Irregular pods of bornite with minor chalcopyrite occur in this skarnified band, that extends at 110° from the contact with the quartz diorite. The zone of mineralization in the limited exposure is at least 20 feet wide but less than 30 feet. To the west it is terminated by the quartz diorite; its eastern limit is unknown. The geophysical survey was done to delimit the eastern extension.

GEOPHYSICAL SURVEY

The higher magnetic in the north west portion of the grid may represent the irregular contact of the intrusive with the volcanics. Mr. Presunka considers the magnetic lows extending south east from the 250 N. on line 2 W. to be the focus of a strong shearing. No

shearing is visible but a deep draw does follow this magnetic low.

ELECTROMAGNETIC SURVEY

(1) Station 23.4 (Hawaii)

Only a very weak conductor, less than 50 feet long could be detected over the bornite mineralization. Another weak conductor trends sub parallel to line 2 E. crossing the quartz diorite volcanic contact. This may represent a sheared zone.

(2) Station 18.6

For some reason, the salt water has a particularly strong masking effect on the conductivity of structures oriented in the direction of the field from this station. Meaningful results are thus difficult to obtain. Mr. Presunka infers a weak conductor coincident with the magnetic low that strikes south easterly from 2E., 2N.

CONCLUSIONS

- (1) The magnetometer survey has helped to outline the trend of the quartz diorite volcanic contact.
- (2) There is no meaningful geophysical expression of the bornite mineralization in the tactite zone.

SNC/rg

  
S. N. Charteris

DOMINION OF CANADA:  
PROVINCE OF BRITISH COLUMBIA.  
To Wit:

**In the Matter of** Geophysical Survey on  
NRM 3 and NRM 4  
Mineral Claims

I, S. N. Charteris

of #500 - 1112 West Pender Street, Vancouver 1, B.C.

in the Province of British Columbia, do solemnly declare that the following work has been completed between July 20th and August 21st.

S. Presunka	-	Geophysical Operation 12 days @ \$35.00 per day	\$ 420.00
M. Boyko	-	Assistant 12 days @ \$35.00 per day	420.00
S. N. Charteris	-	Geologist 1 day	<u>N/C</u>
			\$ 840.00 =====

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City  
of Vancouver, in the  
Province of British Columbia, this 15th  
day of October, A.D.  
1969.

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*A Commissioner for taking Affidavits within British Columbia or  
A Notary Public in and for the Province of British Columbia.*

In the Matter of

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**Statutory Declaration**  
(CANADA EVIDENCE ACT)

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# FALCONBRIDGE NICKEL MINES LIMITED

1112 WEST PENDER STREET

VANCOUVER 1, B. C., CANADA

TELEPHONE: 682-6242

TELEX: 04-5938

October 6, 1969

The Mining Recorder,  
Vancouver, B. C.

Dear Sir:

This is to certify that the geophysical work conducted on a portion of the grid on the NRM 3 and NRM 4 mineral claims was done under my supervision.

Mr. S. Presunka is a fully qualified geophysical operator with over 13 years experience from Labrador to British Columbia in this capacity. He conducted the geophysical work for Falconbridge Nickel Mines Ltd., in British Columbia for the past 4 years.

Mr. Boyko acted as his assistant.

Interpretation was done by the writer.

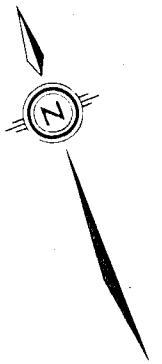
Yours very truly

FALCONBRIDGE NICKEL MINES LIMITED

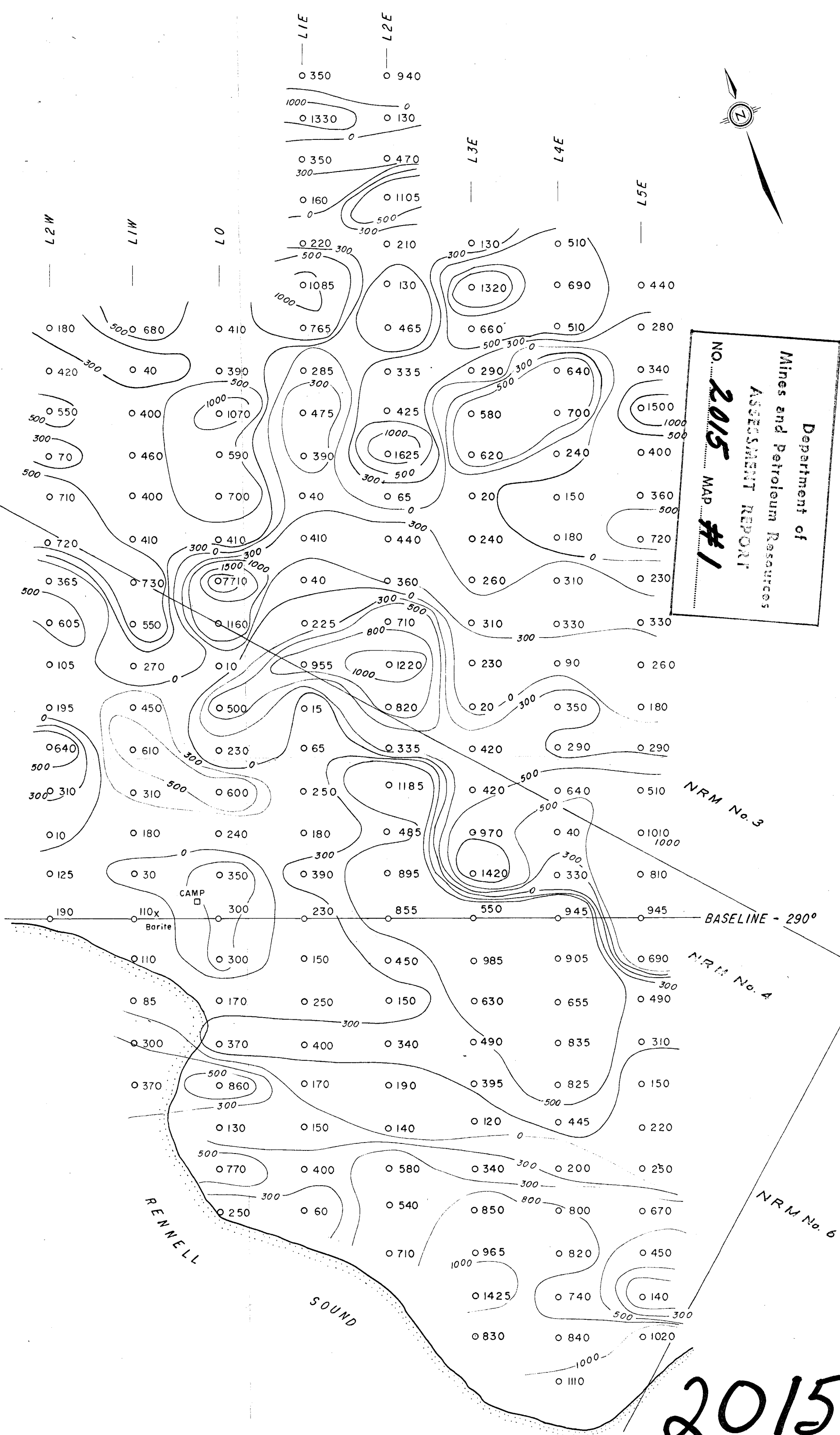


S. N. Charteris, P. Eng.

SNC/rg



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2015

LEGEND

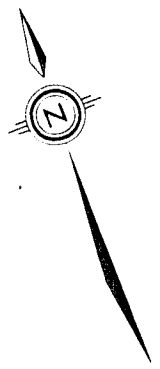
0250: MAGNETOMETER READING IN GAMMAS  
INSTRUMENT: M.F.I FLUXGATE  
OPERATOR: S. PRESUNKA

**BIDIUK COPPER  
MAGNETOMETER SURVEY**

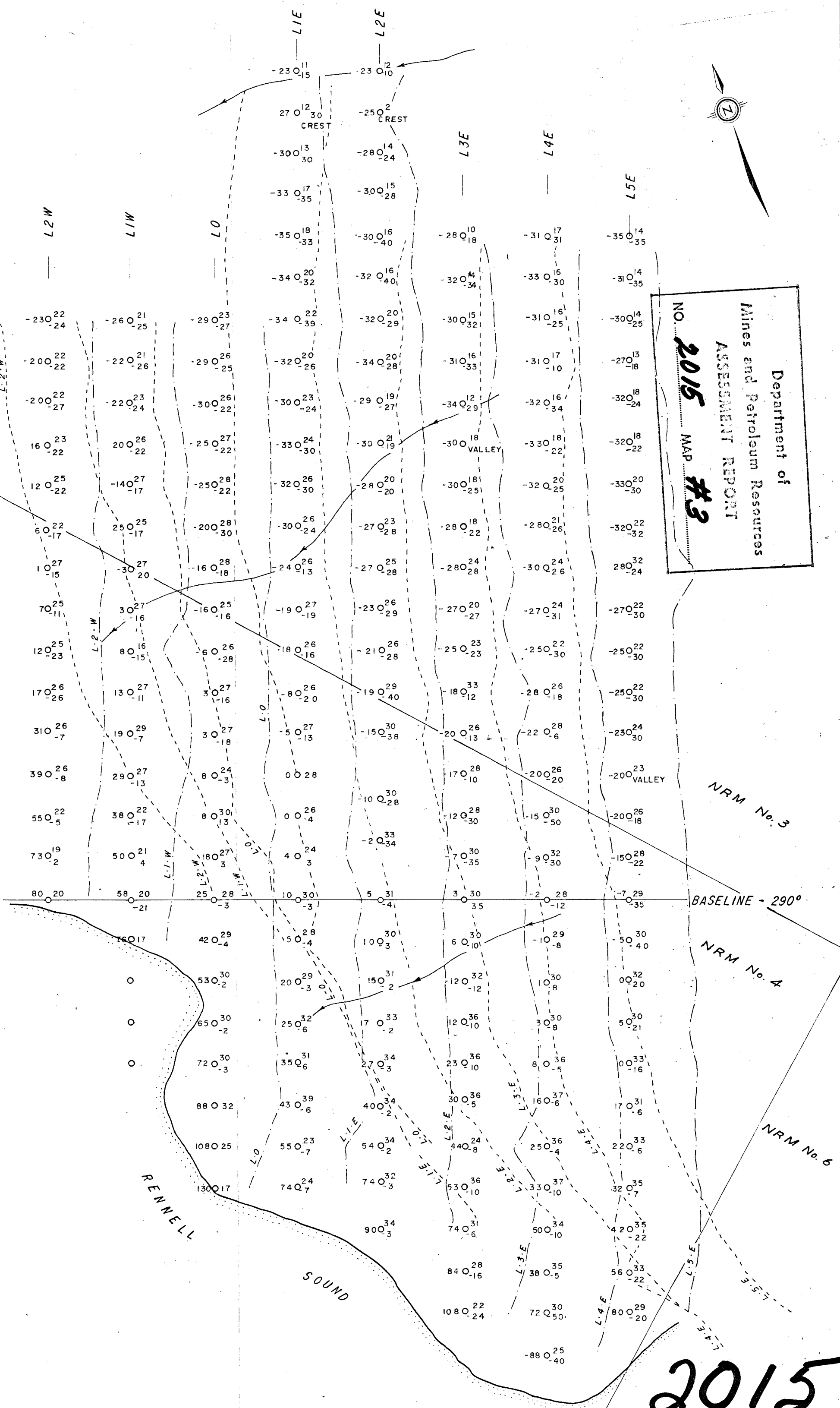
RENNELL SOUND - QUEEN CHARLOTTE IS. B.C.

SCALE  
FEET 100 50 0 100 200 300 FEET

*J. M. ...*  
1.5.14



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2015

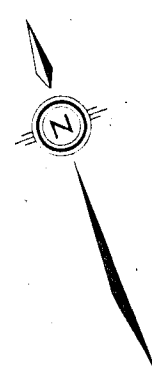
LEGEND

(INPHASE) 70<sup>5</sup> (QUADRATURE)  
30 (SLOPE ANGLE °)

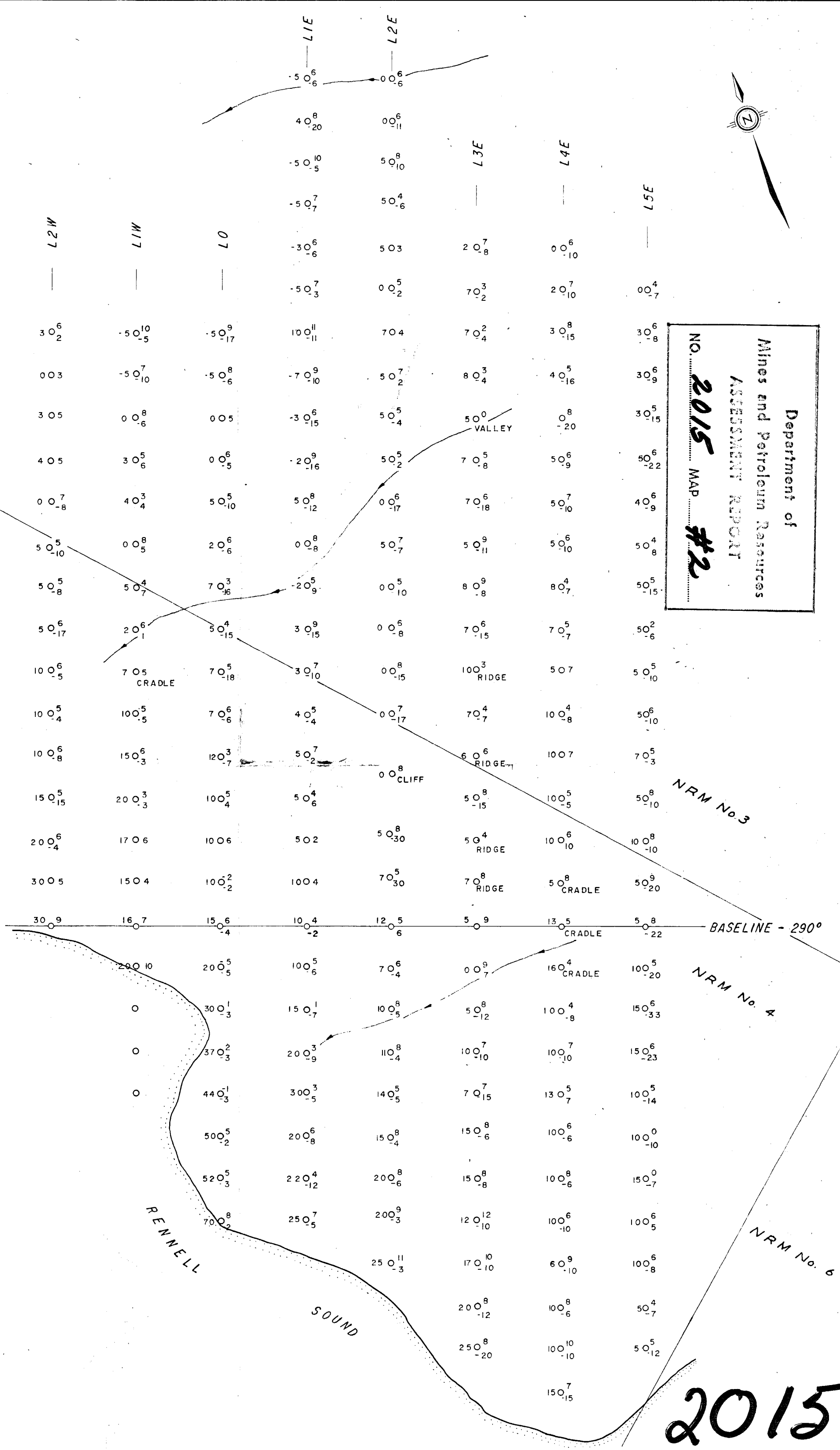
BIDIUK COPPER  
RONKA E.M. 16 SURVEY (ST. 18.6)

RENNELL SOUND - QUEEN CHARLOTTE IS. B.C.

SCALE  
FEET 100 50 0 100 200 300 FEET



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NO. 2015 MAP #2



LEGEND  
(INPHASE) 70<sup>5</sup> (QUADRATURE)  
30 (SLOPE ANGLE °)

**BIDIUK COPPER**  
**RONKA E.M. 16 SURVEY (ST. 23.4)**  
RENNELL SOUND - QUEEN CHARLOTTE IS. B.C.

