3631

REPORT ON THE INDUCED POLARIZATION SURVEY

on the

P. O. D. CLAIMS

by

P. P. NIELSEN, B. Sc., Geophysicist

G. C. Gutrath, B. Sc., P. Eng.

Vancouver, B.C.

Kamloops Mining Division

Long. 120°55'W.
Lat. 50°36'N.

92 I / 10 W

DATE: April 30, 1972

N. T. S. 92I 10

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REPORT ON THE INDUCED POLARIZATION SURVEY

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P.O.D. CLAIMS

INTRODUCTION

From July 29 to August 7, 1971 a line-cutting and Induced Polarization program was executed on the P. O. D. claims situated approximately 4 miles southwest of Tunkwa Lake, Highland Valley area, B. C. The work was executed by Atled Exploration Management under the direct supervision of P. P. Nielsen, geophysicist on behalf of Dusty-Mac Mines Ltd.

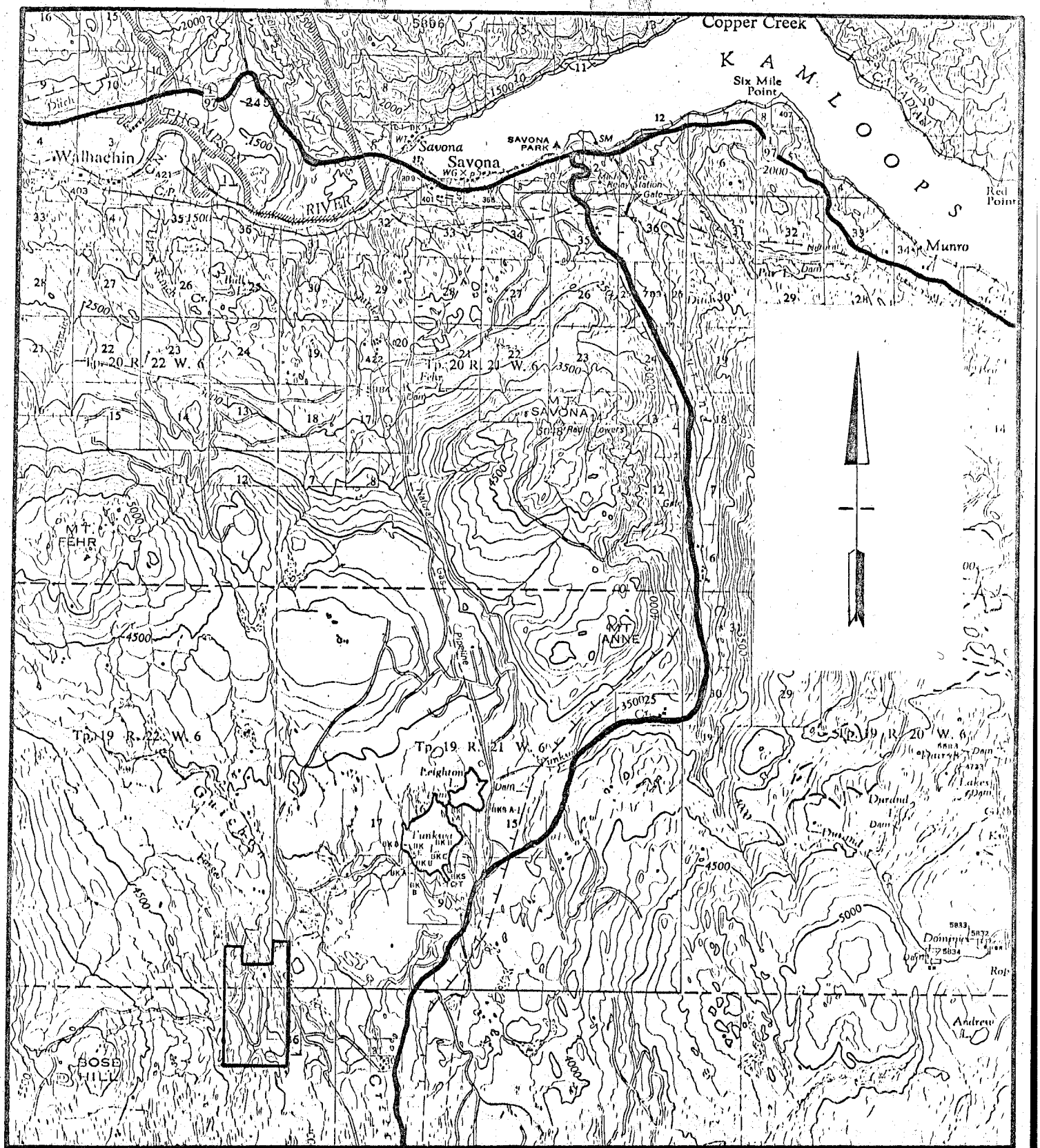
The purpose of the survey was to explore for a large, low-grade Copper-Molybdenum deposit similar to those found in the Bethlehem-Valley Copper area to the west.

LOCATION AND ACCESS

The property is situated about 4 miles southwest of Tunkwa Lake which can be reached by a well maintained gravel road from the Trans-Canada highway at Savona. Logging roads provide good local access to most parts of the P.O.D. claims.

CLAIMS

NAME	RECORD NUMBER	OWNER	FREE MINERS CERTIFICATE NUMBER
P.O.D. #1 - 4	#79422-25)	D. J. McDonald	102046
P.O.D. #6	#79427)		102046
P.O.D. #8	#79429)		
P.O.D. #10	#79431)		
P.O.D. #11-16	#79432-37	Maxwell A. Marten	104892
P.O.D. #17-24	#88362-69	J. E. McDonald	100099
P.O.D. #25-28	#79446-49)	W. Bonin	100101
P.O.D. #29-32	#97141-44)		



N.T.S. 92I10

Scale: 1"= 2 miles

LOCATION MAP

POD CLAIMS

3631 M-1

Kamloops M.D.

April, 1972

R.P.N.

LINECUTTING

Two north-south directed lines were cut along the breadth of the claim group dividing its width roughly into thirds. The lines were each about 2.3 miles long separated by a 1,700 foot tie-line.

The lines were installed using the compass and slope-corrected chain method. Flagging and tree blazes were used with stations every 100 feet. A total of 4.9 line-miles of line were installed.

GROUND CONDITIONS

About two-thirds of the survey area appeared to be covered by overburden and the rest consisted of outcropping diorites partly covered by thin top-soil, fir and pine trees.

Two swamps hindered I. P. coverage on the northern lines.

Some contact resistance problems were encountered in that the top-soil was found to be extremely dry. It was found necessary to carry cans of water to improve the contact with the ground.

GEOLOGY (see report by: Dr. A. E. Nevin)

The claims are located on the northeast edge of the Guichon Creek batholith. The rocks exposed are quartz diorite called the "border phase" of the batholith.

One small pit exposes two parallel veins of quartz and tetrahedrite from one to two inches wide. Weak disseminated pyrite is present locally as are zones of chlorite and epidote alteration in the fracture plains.

SURVEY SPECIFICATIONS - Induced Polarization

The Equipment:

The Induced Polarization instrument was a 2.5 KW unit manufactured by Sharpe Instruments Ltd. of Toronto, Ontario, incorporating the Newmont remote-triggering type receiver and a solid state Pulse-Transient control unit.

The following specifications apply:-

Type of Current

Direct current broken at periodic intervals with a pulse duration of two seconds with alternate pulses being of opposite polarity.

Pulse Repetition Rate:

Two seconds "current on" and two seconds "current off".

Integrating Time:

Area under decay curve (M_a) = 0.65 seconds, area over decay curve (L) = 1.30 seconds. (delay time before integration = 0.45 seconds)

Maximum power available = 2.5 KW

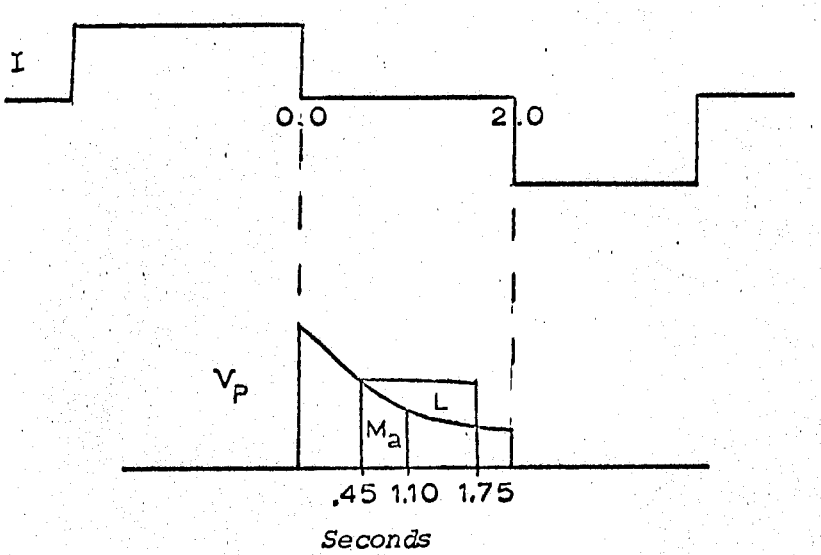
Minimum current available = 10 amps. D. C.

Measurements taken in the field were:-

1) The primary voltage Vp between the measuring (Potential) electrodes during "current on".
2) The current flowing through the current electrodes C_1 and C_2 .
3) The apparent chargeability M_a which is the integrating time of the area under the transient curve measured by the receiver.
4) The time integral of the area over the transient curve called L. The ratio of L/M_a can be of assistance in defining the shape of the transient curve and hence the interpretation of the chargeability response is enhanced.

SURVEY SPECIFICATIONS (cont'd)

Apparent resistivity is calculated by dividing Vp by the applied current and multiplying by a factor appropriate to the geometry of the electrode array used and the Ohm-meter units desired.



PRIMARY CURRENT WAVEFORM

TRANSIENT VOLTAGE WAVEFORM

FIG. 3

SURVEY SPECIFICATIONS (cont'd)

Electrode Configuration:

A 3-electrode array was used whereby the current electrode C_1 and two potential electrodes, P1 and P2, were separated by a distance "a" from each other and moved in unison along the survey lines taking measurements at regular intervals. The second current electrode C_2 is fixed at "infinity" (∞) which is a minimum distance of 6_a to the nearest station measured.

Both the east and west lines were surveyed using an "a" spacing of 400 feet with readings being taken at 200 foot intervals.

The station location is mid-way between C_1, the moving current electrode, and P_1, the nearest potential electrode. C_1 was kept to the north at all times.

Data Presentation:

Due to the reconnaissance nature of the survey and because no anomalous apparent chargeability responses were encountered, the results were plotted in profile form on a planimetric map showing the location of the traverse lines, stations, roads and claims.

The solid line profile represents the apparent chargeability values plotted to the west of the survey line at a scale of one inch = 10 milliseconds with the traverse line the datum. Apparent resistivity values are plotted as dashed profiles using a vertical scale of one inch = 500 Ohm-meters and the same datum.

RESULTS AND INTERPRETATION

The apparent chargeability profiles indicate a very flat low response of from 2.0 to 4.5 milliseconds. No recognizable correlation between the chargeability responses and observed pyrite in fractures can be made. The chargeability profiles appear to indicate that the background for this area is about 4.00 milli-seconds.

The apparent resistivity profiles show that the average resistivity of the underlying rocks is 300 $\pm$ 100 Ohm-meters. The higher peak values are interpreted as being due to faults. Further coverage would be necessary for line-to-line correlation of these peaks in order to trace these faults.

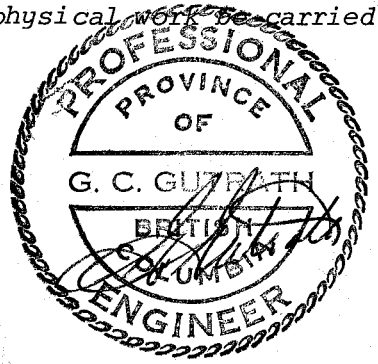
The traverses were terminated to the south by the presence of large areas of outcropping barren rocks after conference with the consultant geologist.

CONCLUSIONS AND RECOMMENDATIONS

Although the survey was purely of a reconnaissance nature with the two lines spaced about 1,700 feet apart, the survey results indicate that the possibility that a large, porphyry-type deposit exists in the area is remote.

The area of influence of the I.P. survey is approximately 400 feet each side of the traverse lines at surface and to a depth of up to 400 feet below these lines. A strip of ground approximately 800 feet wide between these two lines could then contain appreciable amounts of polarizable material beyond the range of detection by this survey. The same possibility exists 400 feet west of the west line and 400 feet east of the each line.

Based on all indications to date it is recommended that no further geophysical work be carried out on these claims.



Respectfully submitted,

G. C. Gutrath, P. Eng., B. Sc.,
President

P. P. Nielsen, B. Sc.,
Geophysicist

ATLED EXPLORATION MANAGEMENT LTD.

APPENDIX NO. I

Geophysicists' Statement of Qualifications

Author's Certificate

I, Philip P. Nielsen, do hereby certify that I graduated with a Bachelor of Science degree in Geophysics from the University of British Columbia in May 1969.

I have been actively and responsibly involved in mineral exploration throughout Western Canada and Alaska for the past six years. Prior to this period, I was an electronics technician in the R.C.A.F., where I worked on anti-submarine oriented geophysical equipment for five years.

I am presently a member of the C.I.M., S.E.G. and B. C. Society of Mining Geophysicists.

P.P. Nielsen

Philip P. Nielsen, B.Sc.

Vancouver, British Columbia

APPENDIX II

ENGINEER'S CERTIFICATE

I, GORDON C. GUTRATH, of 3636 Lakedale Avenue, in the Municipality of Burnaby, in the Province of British Columbia, DO HEREBY CERTIFY:-

1. *That I am a consulting geologist with a business address of 420 - 475 Howe Street, Vancouver 1, British Columbia.*

2. *That I am a graduate of the University of British Columbia where I obtained my B. Sc. in the geological science in 1960.*

3. *That I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers in the Province of British Columbia.*

4. *That I have practised my profession as a geologist for the past ten years, and*

5. *That I have no interest, direct or indirect, in the property with which this report is concerned, nor do I expect to receive any such interest.*

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA G. C. GUTRATH

Gordon C. Gutrath, B.Sc., P.Eng.

DATED at the City of Vancouver, Province of British Columbia this 8th day of May, 1972.

APPENDIX III

Personnel

Linecutting

July 28 - August 1, 1971

J. Lerner
W. Giesbrecht
A. Shard
K. Lerner

Geophysical Survey

August 3 - August 6, 1971

P. Nielsen - Crew Chief - I.P. operator
A. Shard)
W. Giesbrecht) - Field assistants
K. Lerner)

16th of August, 1971

INVOICE

Dusty Mac Mines Ltd. (N.P.L.),
1710 - 1177, West Hastings Street,
Vancouver 1,
B. C.

Attention: Mr. C.R. Jonsson

Re: LINE CUTTING AND INDUCED POLARIZATION SURVEY
POD CLAIMS, TUNKWA LAKE AREA, BRITISH COLUMBIA

1.	Mobilization-Demobilization (From and to Cache Creek)		
	(a) four men at standby rate of $275.00/day for one day.....	$	275.00
	(b) Food and Accommodation.....	$	80.00
	(c) Transportation: truck rental plus $0.10 per mile, plus gas and oil.....	$	50.00
	(d) Plus 10% of (b) and (c).....	$	13.00
		$	418.00
2.	Linecutting: (4.9 line-miles)		
	(a) eight man days @ $45.00/man/day.....	$	360.00
	(b) Food and Accommodation.....	$	130.00
	(c) Transportation: truck rental, gas, etc.	$	58.00
	(d) Materials, Flagging, files, etc.....	$	12.00
	(e) Plus 10% of (b), (c) and (d).....	$	20.00
		$	580.00

continued:

Page 2 of Invoice to:

Dusty Mac Mines Ltd. (N.P.L.),
Vancouver 1, B. C.

Attention: Mr. C.R. Jonsson

Re: Linecutting and Induced Polarization Survey,
Pod Claims, Tunkwa Lake Area, British Columbia

3.	**Induced Polarization Survey: (3.4 line-miles)**	
	(a) Production: three days @ $350.00/day.....	$ 1,050.00
	(b) Food and Accommodation.....	$ 120.00
	(c) Transportation: (includes airline passage for one man, one-way, Vancouver-Kamloops)	$ 80.00
	)d) Plus 10% of (b) and (c).....	$ 20.00
		$ 1,270.00
4.	**Administration:** (Telephone Calls, Typing, etc.)	$ 50.00
	TOTAL AMOUNT OWING.....	$ 2,318.00

2318.00 Revenue
1685.00
633.00 Rec. Exp.

Paid
Deposited
Sept. 13/71

Declared before me at the City
of Vancouver, in the
Province of British Columbia, this 12
day of May 1972, A.D.

Andrew E. Nevin
ANDREW E. NEVIN

Joan Turner

"FOR" CLAIMS

SWAMP

R.O.D. CLAIM BOUNDARY APPROXIMATE

TO BETHLEHEM

WEST LINE

64N
60N
56N
52N
48N
44N
40N
36N
32N
28N
24N
20N
16N
12N
8N
4N
0
4S
8S
12S
16S
20S
24S
28S
32S
36S
40S

TIE-LINE

EAST LINE

R.O.D. CLAIM BOUNDARY

TO TUNKWA LAKE

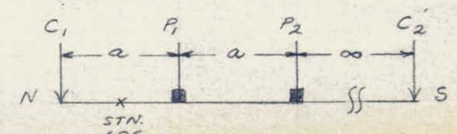
N

LEGEND

APPARENT CHARGEABILITY IN MILLISECONDS

APPARENT RESISTIVITY IN OHM-METERS

THREE ELECTRODE ARRAY



a = 400 FEET

INSTRUMENT USED :- SEIGEL MK VII
2.5 KW.

SURVEY DATE :- AUG. 1971.

TO ACCOMPANY REPORT BY :-
P.P. NIELSEN, B.Sc., GEOPHYSICIST
G.C. GUTRATH, B.Sc., P. ENG.

P.P. Nielsen

POD CLAIMS
TUNKWA LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
PROFILES

KAMLOOPS M.D. N.T.S. 92I/6

ATLED EXPLORATION MANAGEMENT LTD.

APRIL 1972 BY: P.P.N.

400 200 0 400 800
SCALE IN FEET

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA G.C. GUTRATH