

4442

A REPORT

ON

AN INDUCED POLARIZATION SURVEY

Kamloops Area, British Columbia

92 I / 9E

FOR

MANNY CONSULTANTS LIMITED

Vancouver, British Columbia

The Harp Claim Group
(50°, 120°, N. E.)

Claims Surveyed : 9-16, 18, 21-26, 29-38

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, British Columbia

AUGUST 1972

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4442 MAP

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INTRODUCTION

Between August 2nd and 14th, 1972, Peter E. Walcott & Associates Ltd. carried out an induced polarization (I.P.) survey over part of a property, located in the Kamloops area of British Columbia, held by Sarafand Development Ltd. N.P.L.

The survey was carried out over N 45° W lines which were turned off at right angles from a N 45° E baseline, and which were chained and picketed at 100 foot intervals.

Measurements (first and second separation) of apparent chargeability (the I.P. response parameter) were made over the lines (800 feet apart in two areas) using the "pole - dipole" method of surveying with a 400 foot dipole. Simultaneous measurements of apparent resistivity were also made.

The chargeability and resistivity data are presented in profile form on maps W-157-1 and 2 that accompany this report.

The progress of the survey was considerably hampered by three factors namely the condition of the lines, severe ground noise, and the quality of the helpers as explained below.

The survey was originally designed to be carried out on the original soil sampling lines, but after the current wire was pre-laid these were found to be too crooked, and to have too many right angle turns so that the lines had to be repositioned.

The survey was carried out during the period of severe sunspot activity that caused considerable telluric noise on earth resulting in considerable mistriggering in the receiver operation.

The survey was mostly conducted on a fairly steep slope and the original helpers were unable to pack 60 lb wire packs up this slope.

PROPERTY, LOCATION AND ACCESS

The property is situated in the Kamloops Mining Division of British Columbia and consists of the following claims:

HARP 1 - 40 inclusive

The claims are situated for the most on a fairly steep hillside one mile east of Shumway Lake and some 12 miles south of the town of Kamloops.

Access is easily obtained by two wheel drive vehicle along the Campbell Lake gravel road which turns off the Kamloops-Merritt Highway at the north end of Shumway Lake.

PREVIOUS WORK

Previous work done on the claim group includes recent soil sampling and some drifting in the depression years.

The results of this are documented in a report by E.A. Amendolagine P.Eng.

PURPOSE

The purpose of the survey was to attempt to locate by the induced polarization method the possible presence of disseminated sulphide occurrences on the property.

GEOLOGY

The reader is referred to a report by E.A. Amendolagine
of Manny Consultants Limited.

SURVEY SPECIFICATIONS

The induced polarization (I.P.) survey was carried out using a pulse-type system manufactured by Hunttec Limited of Toronto, Ontario. Measurements with this system are made in the time domain.

The system consists basically of three units: a receiver, a transmitter and a motor-generator. The transmitter, which provides a maximum of 7.5 kw d.c. to the ground, obtains its power from the 7.5 kw 400 cycle, three phase generator driven by a gasoline engine. The cycling rate of the transmitter is 1.5 seconds "current-on" and 0.5 seconds "current-off" with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through electrodes C₁ and C₂, the primary voltage (V) appearing between the two potential electrodes, P₁ and P₂, during the "current-on" part of the cycle, and a secondary or overvoltage (V_s) appearing between P₁ and P₂ during the "current-off" part of the cycle.

The apparent chargeability (M_a) is calculated by dividing the secondary voltage by the primary voltage and multiplying by 400, which is the sampling time in milliseconds of the receiver unit. The apparent resistivity (P_a) in ohm-meters is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity obtained are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The survey was carried out using the "pole-dipole" method of surveying. In this method the current electrode C₁ and the two potential electrodes, P₁ and P₂, are moved in unison along the survey lines. The spacing "na" (n an integer) between C₁ and P₁ is kept constant for each traverse at a distance roughly equal to the depth to be explored by that traverse, while that of P₁ - P₂ (the dipole) is kept constant at "a". The second current electrode C₂ is kept fixed at "infinity".

Thus, on a "pole-dipole array" traverse with an electrode spacing of 200 feet, a body lying at a depth of 100 feet will produce a strong response, whereas the same body lying at a depth of 200 feet will only just be detected. By running subsequent traverses at different electrode separations, more precise estimates can be made of depth, width, thickness and percentage of sulphides of causative bodies located by the I.P. method.

SURVEY SPECIFICATIONS cont'd

The survey was conducted using a 400 foot dipole, and obtaining first and second separation measurements over the area surveyed.

DISCUSSION OF RESULTS

The results of the I.P. survey as performed with a 400 foot dipole showed most of the area covered to exhibit a high variable chargeability background as can be seen from Map W-157-1 with the highest readings observed on the northern end of the property.

Lower chargeability readings were obtained on Lines 32 and 40 N.

No correlation was obtained between the higher I.P. values and the weak copper soil results.

The granite contact cuts diagonally across the eastern edge of the survey area on Line 116 N as can be seen from the drop in chargeability and the increase in the resistivity values.

The resistivity survey (Map W-157-2) did little except indicate overburden thickness and/or overburden and bedrock conductivity.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between August 2nd and 14th, 1972, Peter E. Walcott & Associates Limited carried out an induced polarization (I.P.) survey over a property held by Sarafand Development Ltd. N.P.L.

The property, i.e. the HARP claims, is located some 12 miles south of the town of Kamloops, British Columbia.

The I.P. survey showed the property to exhibit a high variable chargeability background.

No correlation was obtained between the higher chargeability values and the weak copper soil results.

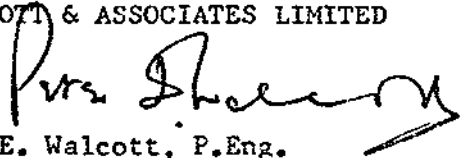
Lower chargeability readings were obtained over the observed granitic outcroppings on Line 116 N.

As a result the writer concludes that the rocks of the underlying Cache Creek group give rise to large polarization effects and that the variations in these effects are caused by changes in rock type within the group and/or the presence of pyrite mineralization.

He therefore suggests that (1) the property be geologically mapped to substantiate the above before any decisions regarding its status be made, and (2) the geophysical results be reinterpreted if necessary on the completion of the geological study.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED


Peter E. Walcott, P.Eng.
Geophysicist

Vancouver, B.C.
August 1972

APPENDIX

COST OF SURVEY

Peter E. Walcott & Associates Limited undertook the survey on a daily basis. Mobilization, accommodation and draughting costs were extra.

At the time of writing the draughting had not been completed so that their cost was estimated at \$250.00 with a result that the total cost of services provided by Peter E. Walcott & Associates was \$6,355.08.

Declared before me at the *city*
of *Vancouver*, in the
Province of British Columbia, this *13*
day of *February* 1973, A.D.



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

Sub-mining Recorder

PERSONNEL EMPLOYED ON SURVEY

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	3rd - 14th, and 25th Aug., 1972
G. MacMillan	Geophysical Operator	" "	2nd - 14th Aug. 1972
V. Pashniak	"	" "	"
L. Perreault	"	" "	8th - 12th Aug. 1972
P. Charlie	Helper	" "	2nd - 14th Aug. 1972
Pool help	Helper	Manny Consultants Ltd. 4550 Harriet St., Vancouver, B.C.	2nd - 7th Aug. 1972
Pool help	"	" "	Aug. 4th - 12th. 1972
J. Walcott	Typing	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C.	Aug. 30th, 1972
J. Davis	Draughting	" "	Aug. 25th - 31st, 1972

Declared before me at the City
of Vancouver, in the
Province of British Columbia, this 13
day of February 1973, A.D.

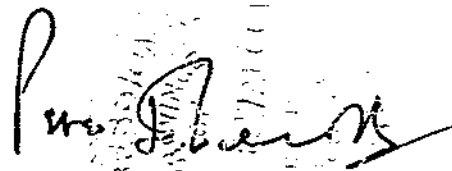
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

John Irvine
Subjuring Recorder

CERTIFICATION

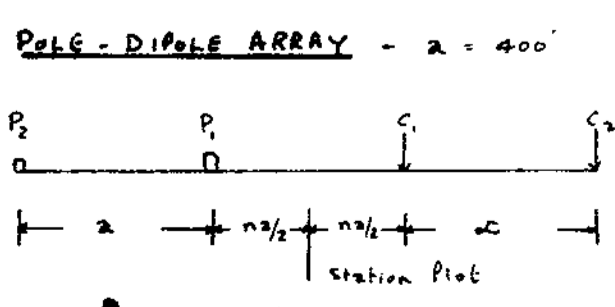
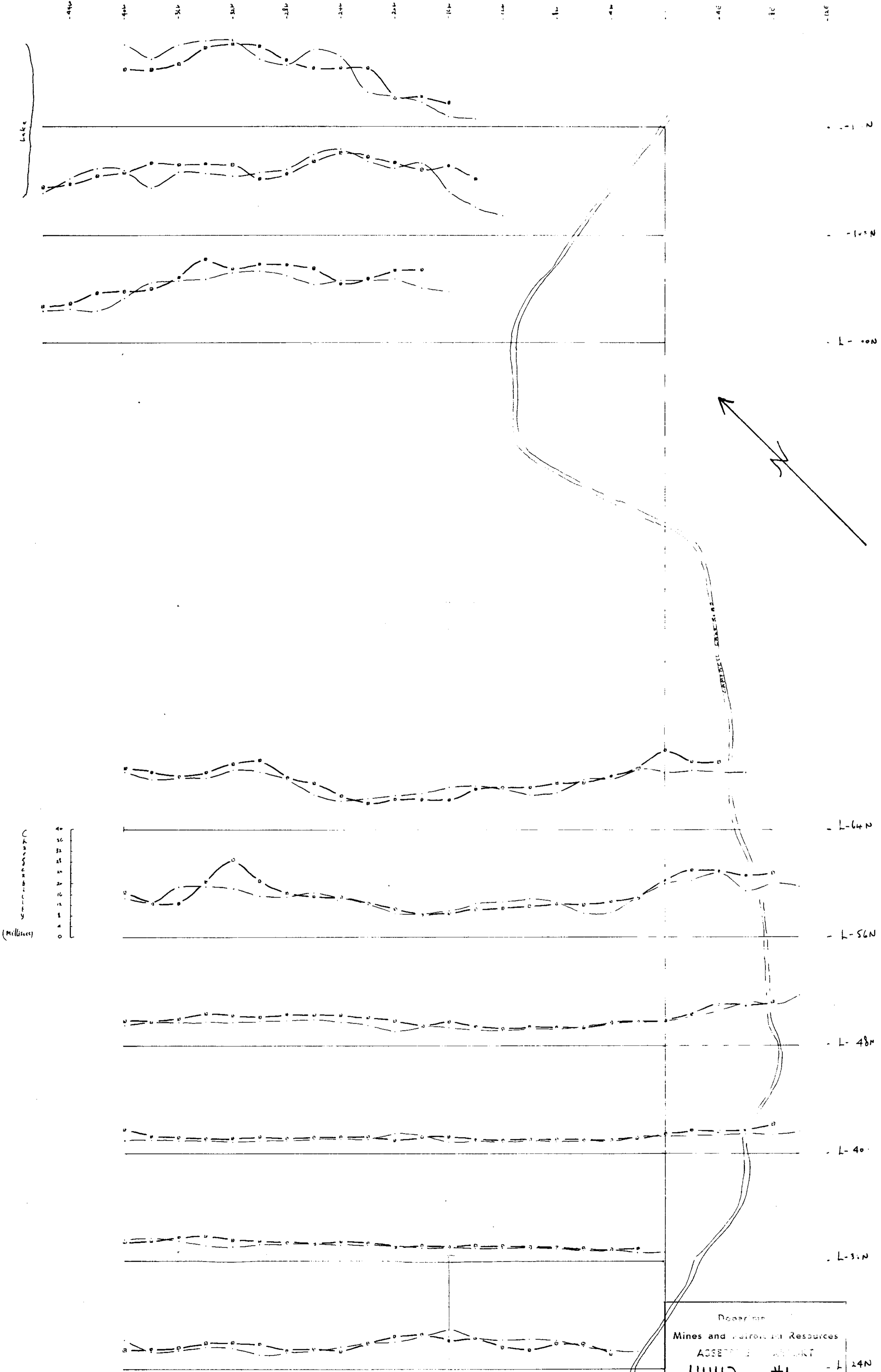
I, Peter E. Walcott of the Municipality of Coquitlam, British Columbia, hereby certify that:

1. I am a Graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.
2. I have been practising my profession for the last ten years.
3. I am a member of the Association of Professional Engineers of British Columbia, Ontario and the Yukon Territory.
4. I hold no interest, direct or indirect in the Harp claims.



Peter E. Walcott,
P.Eng.

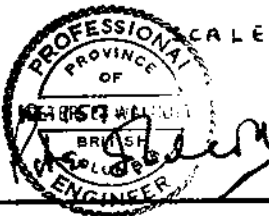
Vancouver, B.C.
August 1972



• $n=1$
 □ $n=2$

4442 M-1

Department of
 Mines and Technical Resources
 ASBESTOS DIVISION
 NO. 4442 MAP #1

MANNY CONSULTANTS LIMITED
 HARP CLAIMS, SHUMWAY LAKE AREA, KAMLOOPS B.C.
INDUCED POLARIZATION SURVEY
 PROFILES OF APPARENT CHARGEABILITY
 SCALE 1" = 400'
 PRELIM. MAP NO.  PETER E. WALCOTT & ASSOC. LTD.
 AUGUST 1972

