

A GEOPHYSICAL REPORT ON  
AN INDUCED POLARIZATION SURVEY  
JM #2 CLAIM GROUP

OSOYOOS MINING DIVISION, BRITISH COLUMBIA  
PROPERTY: JM #2 CLAIM GROUP  
LOCATION: 6 MILES NW OF HEDLEY, B.C.  
49° 120° SE  
REPORT BY: Thomas A. Conto, B.Sc.  
CLAIM OWNER: Anaconda American Brass Ltd.  
DATE OF WORK: 30 May - 22 June 1968

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Plate No. 1.	(In Pocket)
Plate No. 3.	(In Pocket)

### Introduction

Anaconda American Brass Limited staked the JM claims during the 1967 field season. The JM Claim Group No. 2 will consist of the following claims:

JM 9, JM 11, JM 13, JM 15 and JM 16.

A geophysical induced polarization survey was made over parts of the JM No. 2 Claim Group during the period 30 May to 22 June, 1968. The field work was under the general supervision of Thomas A. Conto and the instrument operator was David Broswick.

### Location and Accessibility

The JM claims are due west of McNulty Creek and approximately six miles northwest of Hedley in the Osoyoos Mining Division, B. C. (See location insert Plate No. 1). The group can be reached by a fire access road which leaves the main Hedley-Princeton Highway two miles west of Hedley.

### Purpose of the Induced Polarization Survey

Geochemical surveys in the area produced anomalous results in copper, lead, zinc and molybdenum. Outcrop on the JM Claims is very scarce. The cause of the geochemical anomaly could therefore not be determined. Induced polarization will locate "metallic" mineralization and was therefore used to locate specific areas of "metallic" mineral concentration.

### Survey Equipment and Field Procedure

The geophysical concept of Induced Polarization (I.P.) is thought to be the electro-chemical phenomenon that occurs at a solution - "metallic" mineral interface when the mode of conduction changes from ionic to electronic. When a D.C. current is transmitted through a "grounded" dipole the measured voltage in a nearby dipole will not drop instantly to the S.P. voltage, but will decay with time. This voltage decay is the measurable I.P. effect which results from various types of polarization or blocking. The most predominant type is the solution - "metallic" mineral interface.

This effect is measured in various ways and is reported as the I.P. parameter. The variation in instrumentation and mathematical treatment of the method results in such terms as "percent frequency effect", "chargeability", phase angle and "metal factor". The parameter used in our equipment is the concept of phase angle. The phase angle is the angle whose tangent is the area under the voltage decay curve of the receiver dipole when the current is off divided by the area when the current is on, assuming the current on and off times are equal.

The equipment used for the survey was manufactured by Anaconda. The transmitter uses a pulse time of 5 seconds. The receiver responds to the current on and off voltages and from this information a phase angle is calculated. The measurements are made along a surveyed line using a pole-dipole electrode configuration with a variable spacing between current and near leg of the receiver dipole. Normally at least two "a" spacings are used for each traverse. The plotting point is midway between the current electrode and the near potential electrode. The phase angle is reported in minutes of phase shift.

Details of the Survey

Chain and compass lines were cut and surveyed with stations marked at 100 foot intervals along each line. Readings were taken every 200 feet with spreads of 200 and 400 feet. The plotting point is midway between the current electrode and the near potential electrode.

Results of the Induced Polarization Survey

The location of the I.P. lines relative to the claim boundary is shown on Plate No. 1. The readings are plotted in profile form for each line traversed (see Plate No. 3). The horizontal scale is one inch to 400 feet. The vertical scale on each profile is one inch to 50 minutes of phase shift. Readings in excess of 30 minutes are considered anomalous.

The results of the induced polarization survey do not indicate any large concentrations of "metallic" mineralization near the ground surface.



Thomas A. Conto

TAC:rb  
29 August 1968

## ASSESSMENT DETAILS

Property: JM No. 2 Claim Group Mining Division: Osoyoos  
 Owner: Anaconda American Brass Ltd. Province: British Columbia  
 Location: 6 miles NW of Hedley Date of Work: May 30-June 22/68

Type of Survey: Geophysical (Induced Polarization)  
 Operating Man Days: 4  
 Operating Crew Days: 1  
 Supervisory Man Days: 2  
 Drafting and Typing: 2

Personnel Employed on Survey

Supervision and Interpretation: Thomas A. Conto

Drafting and Typing: Phil Emery  
 Ruth Broderick

## Field Technicians:

<u>Name</u>	<u>Category</u>	<u>Rate</u>	<u>Days Worked</u>	<u>Period</u>	<u>Wage</u>
Dave Broswick	Instrument Operator	475/mo.	1 and 8/15 days	June 16(2/3), 17(2/3), 18(1/5).	\$ 29.00
Peter Bruce	Helper	425/mo.	same	same	26.00
Jim Rutter	Helper	450/mo.	11/15 days	June 16(1/5), 17(2/3), 18(1/5).	13.00
Don James	Helper	450/mo.	same	same	<u>13.00</u>
Total					\$ 81.00

Declared before me at the *City*  
 of *Vancouver*, in the  
 Province of British Columbia, this *30<sup>th</sup>*  
 day of *August*, 1968, A.D.

*Thomas A. Conto*  
 Thomas A. Conto

*J. Paul*  
 A Commissioner of the Mines, within British Columbia or  
 A Notary Public in and for the Province of British Columbia,

**SUB-MINING RECORDER**

## APPENDIX II

## STATEMENT OF COSTS

## Field Crew:

Salaries (as per Appendix I)	\$ 81.00
Transportation @ \$15.00/crew/day	15.00
Room and Board @ \$11.00/man/day	44.00
Overhead @ 0.5 (Salaries + Room & Board)	62.50
Drafting and Typing	50.00
Supervision	<u>50.00</u>
Total	\$ 302.50

Declared before me at the *City*  
of *Vancouver*, in the  
Province of British Columbia, this *30th*  
day of *August, 1968*, A.D.

*Thomas A. Conto*  
Thomas A. Conto

*J. Paul*  
A Commissioner of Affidavits within British Columbia of  
A Notary Public for the Province of British Columbia.

SUB-MINING RECORDER

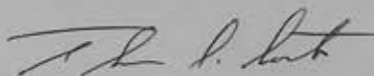


C E R T I F I C A T E

I, Thomas A. Conto, of the town of Britannia Beach, Province of British Columbia, do hereby certify that:

- 1) I am a geophysicist residing at Britannia Beach, British Columbia.
- 2) I am a graduate of the University of Utah with a B.Sc. Degree (1960) in Geophysics.
- 3) I am an associate member of the Society of Exploration Geophysicists.
- 4) I have been practising my profession for five years.
- 5) I have no direct or indirect interest, nor do I expect to receive any interest, direct or indirect, in the property of Anaconda American Brass Ltd.
- 6) The statements made in this report are based on a study of published literature and unpublished private reports and geophysical data.

Dated at Britannia Beach  
this 29th day of August 1968




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Thomas A. Conto, B.Sc. Geophysics

STATEMENT OF OPERATOR'S QUALIFICATIONS

I, Thomas A. Conto, do make the following statement:

- 1) David Broswick was the instrument operator for the Geophysical Survey conducted by Anaconda American Brass Ltd. on the JM Claim Group.
- 2) David Broswick had been working on an Induced Polarization Crew for ten months prior to the start of this survey. He worked as an instrument operator for six of the ten months.
- 3) David Broswick has been trained by Anaconda personnel to be an instrument operator and I consider him fully qualified.

  
Thomas A. Conto