

2.15128

41P11NW8603 2.15128 CABOT

LOGISTICAL & INTERPRETATION REPORT

INDUCED POLARIZATION SURVEY

on the

CLAW LAKE PROSPECT

CABOT TOWNSHIP (N.T.S. 41P/11), ONTARIO

LARDER LAKE MINING DIVISION

for

JONPOL EXPLORATIONS LIMITED

2.3860

R.J. Meikle d. Jow Rayan Exploration Ltd.

676 Murray Street, Timmins, Ontario P4N 7B2

(705) 268-4866

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INTRODUCTION

Rayan Exploration Ltd., Timmins, Ontario was contracted to carry out a limited Test I.P. Survey on the "Claw Lake Prospect Property" for Jonpol Explorations Limited under supervision of Tom Obradovich. The survey was done on June 10,13,14,1993. The survey consisted of approximately 2.6 kilometres of I.P. using a "dipoledipole electrode array" with a dipole spacing of 25m, reading N=1,2,3,4.

The survey showed a good correlation with known mineralization as well as outlining some new untested anomalies.

This report deals with the survey specifications and a brief interpretation of the I.P. results. Geology and Previous Work was dealt with in a report on the property by Glenn J. Mullan, Nov.20/92.

LOCATION AND ACCESS

The property is located approximately 18 km northwest of Shining Tree and 90 km south of Timmins in Cabot Township, Larder Lake Mining Division, Ontario.

Access to the property is via a network of maintained and abandoned logging roads. Highway #560 is taken 15 km northeast of Shining Tree, north on the Grassy Lake Road for 21 km, and west for 20 km. A grown in road leads south from this point to within 500m of the NW corner of the grid.

CLAIM STATUS

The I.P. Survey was performed on a 16 unit unpatented Block Claim #1188885 in south-central Cabot Township, Larder Lake Mining Division, Ontario.

PERSONNEL

The following personnel were involved with the project:

- R. Meikle Timmins, Ontario
- E. Brunet Timmins, Ontario
- W. Pearson Timmins, Ontario
 - J. Meikle Timmins, Ontario





General IP Theory

The IP method involves applying voltage across two electrodes in a pulsed manner i.e. 2 seconds on, 2 seconds off. A second "dipole" or electrode pair, measures the residual potential or voltage between them after the voltage is shut off or during the 2 second off cycle. The potential is recorded at different times after the shut off. If, for example, there is sulphide mineralization within the measuring dipoles, they will be polarized or charges set up on the sulphide particles. This polarization gives the zone a capacitor effect, thereby blocking the current delay giving a higher chargeability reading.

A typical signature for many gold showings would be a chargeability high, resistivity high and magnetic low. This would be characteristic of a mineralized, highly altered carbonated and/or silicified zone. However, this is by no means the only geological setting for gold, therefore every profile should be looked at individually and correlated with all other geophysicalgeological data.

Electrode Array

The electrode array used for the survey was the Dipole-Dipole Array. In this array two current electrodes (C1, C2) and two receiver or potential electrodes are moved down a line in unison. In this case the "a" spacing or distance between each dipole was fixed at 25 meters apart. For an N=1 reading, the closest C1 and P1 were 25 meters apart. The C1-C2 dipole remain in the same place while the potential dipole (P1-P2) moves ahead one "a" spacing and the array is ready for an N=2 reading etc.

IP Survey Parameters

The IP survey was carried out using the following parameters:

Method: Time Domain Electrode Array: Dipole-Dipole "a" spacing: 25 meters Number of Dipoles Read: 1-4 Pulse Duration: 2 seconds on, 2 seconds off Delay Time: 500 milliseconds Integration Time: 420 milliseconds Receiver: EDA IP-2 Transmitter: Scintrex IPC-9, 200 watt Data Presentation: Map No.1, back map pocket Puesodesction Format

SURVEY RESULTS

The I.P. Survey outlined several interesting anomalies, some correlating with known mineralization and some new ones. The following is a brief interpretation of each anomaly for each of the three lines read:

ГЗМ

- Survey coverage 725n-125n
 - A short section of this line was read to cover the recently discovered shear zone called the "Beaver Zone".
 - A chargeability anomaly was detected from <u>535n-600n</u> with a conductive section at 587n.
 - The conductive part of this anomaly is coincident with a VLF conductor shown in a report on the property by Glenn J. Mullen, Nov.20/93. This conductor is not marked on the map because of a missed reading in the beaver pond. The VLF conductor appears to be coincident with a NE trending creek/beaver dam from L5W/400N to L2W/725N, open to the NE while the SW extension is rather ambiguous probably due to poor coupling with Cutler Maine transmitter station direction, as well as the presence of an EW trending conductor converging with it at this point.
 - It appears that the anomaly on L5W/400N and L3W/587N are the same feature although this VLF conductor was only tested on two lines by the current I.P. Survey.
 - The anomaly on L3W shows a zone of high chargeability (non conductive), on the south flank of the conductive I.P. anomaly.
 - It should be noted that the I.P. electrode array had to be shifted 35m to the east to cross on a beaver dam and get a continuous profile.
- L4W Survey coverage 100n-550s
 - broad chargeability anomaly from <u>175s-325s</u> with a higher chargeable section between 175s-225s. This more chargeable section is less resistive than the southern part of the anomaly.
 - The more resistive southern part may be the same zone described by Mullen, 1992, as a mineralized quartz blow-out and may be contiguous with the anomaly on L5W/212s-275s.
 - The more chargeable part between 175s-225s may be the same contact zone described under L5W/87s-160s.

L5W

Survey coverage - 750n-525s

- <u>212s-275s</u> This is a resistive, broad chargeability high characteristic of diss. sulphides.
- may be contiguous with a feature at L450W/250S described by Mullen(1992 report), as a "large quartz blow-out, locally well mineralized with pyrite and red (hematite?) stain, with grab sample assays of 0.07, 0.14, 0.24, oz/t Au."
- <u>875-160s</u> This is a resistive, broad chargeability high with the same characteristics as the above zone.
 - This zone may be a response from a feature at L350W/175S and described by Mullen(1992 report), as "on north side of Claw Creek, host rocks are both Volcanics and Diorite variably mineralized with pyrite and molybdenum with assays of 0.03, 0.05, 0.33, oz/t Au from grab samples and muck piles from old trenches."
- <u>125n</u> This is a narrow, resistive, chargeability high approximately 3X background on the north side of Claw Creek.
- As would be expected there is no VLF response because of the high resistivity.
 This appears to be a new zone and could be caused by diss. sulphides and as such should be explained.
- <u>380n-410n</u> This is a narrow, conductive, chargeable anomaly on the south side of Claw Creek.
- The VLF data is ambiguous in this area because of the convergence of the NE trending "Beaver Zone" and an EW VLF conductor. However it appears that there is a coincident VLF response and that this I.P./VLF anomaly is contiguous with the response on the "Beaver Shear Zone" to the NE on L3W.
- <u>535n-open to north</u> This is a broad moderately resistive, chargeability high with increasing chargeability to the north. The cause of this broad anomaly is not known but it should be explained and traced out if it is mineralization. It has some of the highest chargeability values of the current I.P. survey.



CONCLUSIONS AND RECOMMENDATIONS

The very limited amount of I.P. Survey carried out suggests that it is an excellent tool for delineating the mineralized shear zones and contacts known to exist on the property as well as outlining new ones not previously tested because of overburden cover. The survey also proved useful in discriminating the numerous VLF conductors as to which ones probably are caused by sulphides. It is difficult to correlate the various I.P. anomalies with the spotty limited amount of survey done. However, the following zones are believed to be contiguous and are described as follows:

Zone A - This zone is coincident with the NE trending shear zone called the "Beaver Zone" which had some significant gold values. This zone was only tested on L3W and L5W by the I.P. Survey. While the VLF outlines the zone well, the coupling direction is poor and I.P. would be more reliable in both tracing out the zone and outlining areas with higher sulphide concentrations.

Zone B - This is a very broad, highly chargeable zone on the north end of L5W, open to the north. The magnetic survey data was not available at the time of this writing, but a check should be made to see if the zone is coincident with a dike which could be chargeable and parallel to or at an oblique angle to the line which could account for the very broad response.

Zone C - This is resistive, narrow chargeable zone detected on L5W/125n but not covered on the adjacent lines. The response is similar to other zones on the property which had significant Au values and it should be traced out with I.P. and explained.

Zone D - This zone is on the contact between the intrusive and the volcanics. While only two lines were surveyed over the contact, I believe that the anomalies on L5W/87s-160s and on L4W/200s, are on this contact and are contiguous. Significant Au values were obtained by Mullen(1992 report) on the contact at 350W/175s. His best grab sample assay was 0.33oz/t Au. Again this horizon should be delineated with I.P.

Zone E - This zone is parallel and 50-75m south of zone 'D'. This is assuming that the anomaly on L5W/212s-275s and L4W/275sare the same feature. Mullen reports significant Au values at 450W/250s on a feature he describes as a large quartz blow-out, locally well mineralized with pyrite. His best grab sample was 0.24oz/t Au. This zone would be delineated along with zone 'D' by the same recommended I.P. Survey. Zone F - This is a broad area on L4W from 150s to the BL-O, open the north. The chargeability readings were extremely noisy in this area with a mixture of some legitimate looking highs to unrepeatable negative readings. The resistivity data shows a complex mixture of high resistivity and some moderately conductive areas. The magnetic map should be obtained to check for a dike which could be at or close to the line direction. A different I.P. array, possibly a gradient array described below, should be used in this area if there is no dike. There appears to be some legitimate high chargeabilities and as such the area should be explained.

The following recommendations are made based on the current I.P. Survey results:

- 1. All of the I.P. anomalies should be explained because of the excellent correlation with the known mineralized zones. There is believed to be a good correlation between sulphide content and gold grade.
- 2. A thorough compilation of the I.P. data with all other available geophysical and geological data should be done to determine the effectiveness of the I.P. Survey. If the six I.P. zones(A-F), are not resolved enough to plan an initial drill program, the entire grid should be surveyed with I.P. The possibility of detecting more anomalies similar to zone 'C' appears to be good in areas of overburden not previously detected.
- 3. If more I.P. survey is deemed necessary, I would recommend trying a different electrode array. Claw Creek and tributaries make getting complete coverage very time consuming and thus expensive. A "Gradient Array" I.P. survey is recommended. This survey yields one chargeability and one resistivity value at each station measured. Vertical resolution suffers but horizontal resolution and anomaly location would be better. This should result in at least twice as much survey coverage as the "Dipole-Dipole Array" for the same costs. A Gradient Array survey would involve placing a current electrode north and south of the grid in the centre. The middle 1/3 portion of the area between the two current electrodes can be surveyed, going east and west as far as signal strength permits. The resistivities on the current I.P. Survey suggest that one or two electrode spreads would be necessary to cover the grid.

CERTIFICATION

I, Raymond Joseph Meikle of Timmins, Ontario hereby certify that:

1. I hold a three year Technologist Diploma from the Haileybury School of Mines, Haileybury, Ontario, obtained in May 1975.

2. I have been practising my profession since 1973 in Ontario, Quebec, Nova Scotia, New Brunswick, Newfoundland, NWT, Manitoba, Germany and Chile.

3. I have been employed directly with Teck Corporation, Metallgessellschaft Canada Ltd. Sabina Industries, .S. Middleton Exploration Services Ltd., self employed 1979-1985 (Rayan Exploration Ltd.) and currently with Rayan Exploration Ltd.

4. I have based conclusions and recommendations contained in this report on knowledge of the area, my previous experience and on the results of the field work conducted on the property during June, 1993.

5. I hold no interest, directly or indirectly in this property, nor do I expect to receive any interest or considerations from the property other than professional fees charged for geophysical consulting and contracting.

Dated this

24th day of June, 1993 at Timmins, Ontario.

Tinjechi

R.J. Meikle







RON GASHINSKI - SENIOR MANAGER MINING LANDS BRANCH - GEOSCIENCE APPROVALS SECTION 3 1993 WILLET GREEN MILLER CENTRE 933 RAMSEY LAKE ROAD, 6TH FLOOR SUDBURY, ONTARIO P3E 6B5

November 17th, 1993

RECE

<u>Re: Claw Lake Prospect - Cabot Twp. (I.P. Survey)</u>

File #2.15128 Transaction #W9380.00190

Dear Mr. Gashinski,

Regarding the above file, find enclosed the following:

- Copies of Appendicies A & B

These materials were provided by R. J. Meikle of Rayan Exploration who authored the submitted I.P. report.

As for the summary of exploration and references, note that this was submitted in a report dated December 31st, 1992 and authored by myself (section 4.0).

As regards any references or bibliography for the I.P. survey, Mr. Meikle has indicated he has only used his own reports which were accepted previously by Mining Lands.

Trusting this is to your satisfaction,

Yours Glenr J Mullan

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APPENDIX A

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Specifications			4		• • •
Dipoles	Two simultaneous input di	poles			
Input Voltage (Vp) Range	40 microvolts to 4 volts, w overvoltage protection.	th automatic ranging	and		
Vp Resolution	10 microvolts.				
Vp Accuracy		over temperature ra	noe.		
Chargeability Resolution				1 I I	
Chargeability Accuracy	0.3% tγpical; maximum 1% for Vp>10 mV.	over temperature ra	nge	• •	
Automatic SP Compensation	$\ldots \pm 1$ V with linear drift corr	ection up to 1 mV/s.			
Input impedance	1 Megohm				:
Sample Rate	10 milliseconds.				
Synchronization	Minimum primary voltage i	evel of 40 microvolts.	· ·.		•
Rejection Filters	50 and 60 Hz power line rej 100 dB	ection greater than			
Grounding Resistance Check	100 ohm to 128 kilo-ohm.				:
Compatible Transmitters	Any time domain waveforn duration of 1 or 2 seconds stability of 100 ppm.	n transmitter with a p and a crystal timing	ulse		
Programmable Parameters	Geometric parameters, tim current, type of array and s	e parameter, intensity station number.	y of		
Display	Two line, 32-character alpha display protected by an inte temperature conditions.	anumeric liquid crysta ernal heater for low	1		
Memory Capacity	600 sets of readings.				
RS-232C Serial VO Interface	1200 baud, 8 data bits, 1 st	op bit, no parity.			
Console Power Supply		batteries with a F 70 mA and auto pow	/er		
Operating Environmental Range	25°C to + 55°C; 0-100% weatherproof.	relative humidity,		•	
Storage Temperature Range	40°C to +60°C.			EDAInstruments Inc	
Weight and Dimensions	. 5.5 kg, 310x230x210 mm.			Toronto, Ontario	,
Standard System Complement	, . Instrument console with car operations manual.	rying strap, batteries	and	Telex: 06 23222 EDA TOR Cable: Instruments Toronio 14161 425 7800	
Available Options	 Stainless steel transmitting sulphate receiving electrode leads, wire spools, interface batteries, charger and softw 	electrodes, copper es, alligator clips, bridg cables, rechargeable vare programs.	6	in U.S.A E.D.A. Instruments Inc. 5151 Ward Road, Wheat Ridge, Culorado U.S.A. 80033 4508 452 5442	
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APPENDIX B

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INDUCED POLARIZATION AND D.C. RESISTIVITY TRANSMITTER

2.0 SPECIFICATIONS

Maximum Output Power

Output Voltage

Output Current

Meter Ranges

Automatic Cycle Timing

Automatic Polarity Change

Pulse Durations

1

Period Time Stability and Accuracy

Open Loop Protection

Synchronization Output

Internal Power Sources

External Power Sources

200W defined as when current is on and into a resistive load. P. 3

Switch selectable at nominal settings of 15, 150, 210, 300, 425, 600 or 850 V.

1.5 A maximum.

Switch selectable at 50 mA, 150 mA, 500 mA, 1500 mA full scale with accuracy of $\pm 3\%$ of full scale.

TiT:T:T; on:off:on:off.

Each 2T.

T is switch selectable at 1, 2, 4, 8, 16 or 32 seconds.

Crystal controlled to better than 0.002 percent of the selected pulse duration.

High voltage is automatically turned off if the output power is less than 2 W. This can be overridden manually for testing purposes. This protection is not effective at the 15 V output.

Optically isolated, suitable for external synchronization of the IPR-11 multichannel IP Receiver.

Two battery packs are standard, each containing 4 GC 660-i lead-acid gel-type batteries giving 24 V at 12 Ah.

One Penlite battery, Eveready E91 or equivalent.

24 V DC supply at maximum 10A.

Power for Battery Charger

Operating Temperature Range

Dimensions and Weights

115 or 230 VAC, 50 to 400 Hz, 100 W.

P. 1

Transmitters with two battery packs: 140 x 300 x 460 mm; 16.0 kg

Single battery pack: 140 x 300 x 150 mm; 6.2 kg

Charger: 140 x 300 x 150 mm; 5.5 kg

-30°C to +55°C.

Console, 2 battery packs, battery charger, carrying harness. Two giant banana plugs, minor spare parts kit.

Reels, wire, porous pots, electrodes, major spare parts kit, radio transceivers, back pack.

46 kg includes reusable wooden shipping case.

Standard Equipment

Optional Equipment

Shipping Weight



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Ministry of Northern Development and Mines Ministère du Développement du Nord et des Mines Geoscience Approvals Section Willet Green Miller Centre 933 Ramsey Lake Road 6th Floor Sudbury, Ontario P3E 6B5

Telephone: (705) 670-5853 Fax: (705) 670-5863

Our File: 2.15128 Transaction #: W9380.00190

December 15, 1993

Mining Recorder Ministry of Northern Development and Mines 4 Government Road East Kirkland Lake P2N 1A2

Dear Sir:

RE: APPROVAL OF ASSESSMENT WORK ON MINING CLAIM L1188885 IN CABOT TOWNSHIP.

The Assessment Credits for GEOPHYSICS, section 14 of the Mining Act Regulations, as listed on the above report of work, have been approved as of NOVEMBER 23, 1993.

Please indicate this approval on the claim record sheets.

If you have any questions please call Clive Stephenson at (705) 670-5856.

Yours sincerely

Ron C. Gashinski Senior Manager, Mining Lands Section Mining and Land Management Branch Mines and Minerals Division CDS/1s

cc: Resident Geologist Kirkland Lake Assessment Files Office Toronto

Ministry of Northern Developm and Mines	ent Report of We After Record	ork Conducted ling Claim	Transaction Number W9380.00190
Intario	Mini	ng Act	CLAW LAKE YNSPECT
ersonal information collected on this collection should be directed udbury, Ontario, P3E 6A5, telep	this form is obtained under the author to the Provincial Manager, Mining L hone (705) 670-7264.	Ity of the Mining Act. This information w ands, Ministry of Northern Developme	rill be used for correspondence. Questions about ent and Mines, Fourth Floor, 159 Cedar Street,
nstructions: - Please typ - Refer to th Recorder.	be or print and submit in dupl he Mining Act and Regulation	icate. s for requirements of filing ass	sessment work or consult the Mining
- A separate - Technical - A sketch,	e copy of this form must be o reports and maps must acco showing the claims the work	ompleted for each Work Group mpany this form in duplicate. is assigned to, must accompa	p. ny this form.
Recorded Holder(s)	John A Pollock	1 (Journa Color	Client No. 183468
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Rehabilitation	DIZ	n/5	
Other Authorized Work	RECEIVED		
Assays	AUG 1 3 1993		
Assignment from Reserve		_	
Total Assessment Work Cl	aimed on the Attached State	ment of Costs \$ 40\0	5.50
Note: The Minister may r holder cannot verif	eject for assessment work cr y expenditures claimed in the	edit all or part of the assessme	ant work submitted if the recorded days of a request for verification.
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Name		Addre	955
RAYAN ExeloRA	TIONS R.J. M	attle 676 Murray ?	Strut, Timmins, Ontario P4N 782
Tom OBRADONIA	un 75 (Balson Ave Kirk	land Later Onterio PON IW7
E. BRUMET, W.	PEARSN, J. Meille all	1/2 Rayon Explorations	(as alowe)
attach a schedule if necess	ary)		$\wedge \wedge$
Sertification of Beneficial	Interest * See Note No. 1	on reverse side	Properties Holder of Arth (Signature)
I certify that at the time the work report were recorded in the curren by the current recorded holder.	K was performed, the claims covered int holder's name or held under a benef interval and the second seco	in this work Calls	
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241 (03/91)

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units	Value of Assessment Work Done on this Claim	Value Applied to this Claim	Value Assigned from this Claim	Reserve: Work to be Claimed at a Future Date	ate from	Ith respect
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