

REPORT ON

VLF-EM SURVEY

FOR

RECEIVED

APR 1 4 1982

MINING LANDS SECTION

CLAIM NUMBERS P.555233 P.546619 to 627 INCL. P.532104 to 112 INCL.

MACKLEM TOWNSHIP

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

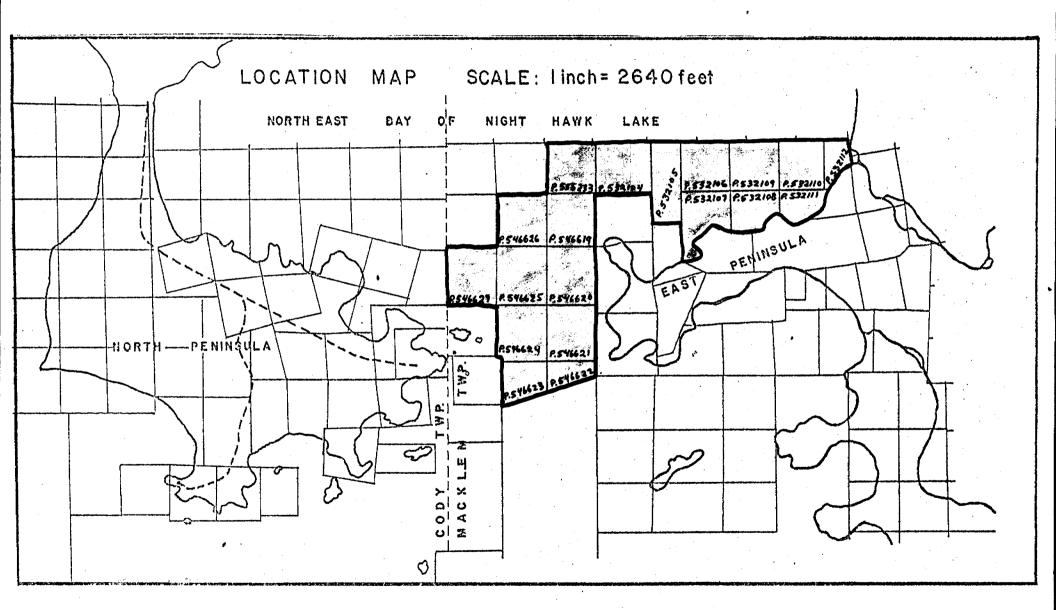
BY

PAMOUR PORCUPINE MINES LIMITED

MARCH 1982



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TABLE OF CONTENTS

PAGE Title Page 1 Table of Contents 2 Location Map 3 Introduction 3 Accessibility 3 Property Owner 4 Previous Work 4 Geology Geophysical Survey 4 Survey Procedures 5 Data Presentation 5 Interpretation 7 Conclusions and Recommendations t:

Appendix A - Personnel Appendix B - Instrument Specifications

Maps - North of East Peninsula West of East Peninsula

INTRODUCTION

A VLF-EM survey was conducted on 19 claims located north and west of the East Peninsula of Night Hawk Lake in the northwestern part of Macklem Township, Ontario. The survey was conducted to identify major faults and structures in the area, and to locate anomalies relating to the possible ore zone extension of the gold bearing carbonate and porphyry body drilled by Ronocco Gold Mines Limited.

ACCESSIBILITY

The survey area can be reached in the winter via highway 101 to Fredrick House Bridge, then southwards on highway 803 to the Gold Hawk property on the North Peninsula. The claims can be reached by a 1 mile skidoo trip across the mouth of the Northeast Bay of Night Hawk Lake. A further trip around the north part of the East Peninsula for about $1\frac{1}{2}$ miles is the eastern boundary of the claim group.

PROPERTY OWNER

The property is owned 100% by:

Pamour Porcupine Mines Limited P.O. Bag 2010, TIMMINS, Ontario. P4N 7X7

The claims were staked and recorded for Pamour Mines on the following dates:

Claim No.	P.555233					March 4, 1980
Claim No.	P.546619	to	627	incl.	: -	• October 4, 1979
Claim No.	P.532104	to	112	incl.	-	- August 21,1979

The work was conducted by personnel employed by Pamour Porcupine Mines Limited, TIMMINS, Ontario and were under the supervision of Mr. Kian A. Jensen, B.Sc., Exploration Geophysicist-Geologist. A list of the personnel and their functions are listed in Appendix A.

CLAIMS SURVEYED

The claim group was surveyed in two parts, the western part during 1980-81 and the northern part during 1981-82. The following is a list of mining claims and the year surveyed:



P.532104		1981-82
P.532105		1981-82
P.532106		1981-82
P.532107		1981-82
P.532108		1981-82
P.532109	-	1981-82
P.532110		1981-82
P.532111		1981-82
P.532112		1981-82

P.546619		1980-81
P.546620		1980-81
P.546621	<u> </u>	1980-81
P.546622	-	1980-81
P.546623		1980-81
P.546624		1980-81
P.546625		1980-81
P.546626	-	1980-81
P.546627		1981-82
P.555233		1980-81

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PREVIOUS WORK

The land portion of the East Peninsula has received a vast amount of work by Ronocco Gold Mines during 1928 to 1940's. This work included geological mapping and an extensive drilling program. The lake portion covered by Pamour's claims has received a small amount of work, which includes a magnetometer survey in 1965 by Broulan Reef Mines, and Inco from 1969 to 1973. Inco's work consisted of geophysical surveys (magnetic), diamond drilling and basal till sampling.

Since the staking of these claims, Pamour Porcupine Mines has conducted a total field magnetic intensity survey and one diamond drill hole.

GEOLOGY

The majority of the underlying rocks are extremely altered to schist of varying composition. Intuded into these schist are irregular shape and varying sizes of ultramafics. From the few diamond drillholes located within the claim group, there exists carbonate zones and porphyry bodies. The northern shore of the East Peninsula is a moderately mineralized carbonated ore zone.

GEOPHYSICAL SURVEY

VLF - EM Specifications

The instrument specifications for the Phoenix VLF-2 unit is found in Appendix B. Survey accuracy by tie-in and repeat data is ±1° for the dip and ±5% for the horizontal field strength (HFS.).

Survey Procedures

The VLF-2 instruments were tuned to Cutler, Maine (17.8 KHz) at the calibration stations. Since the grids were surveyed in different years, there are four calibration stations. During the

100-81 season, calibration stations were located at the baseline on Line 0 with a HFS of 155%. Due to a thaw in February and later heavy snow fall, the grid was obliterated and was reestablished with a new calibration station at 28+00N on Line 4E with a HFS of 125%. During the 1980-81 survey, tie-ins and repeat stations had an accuracy of ±2° dip and ±5% HFS, However with the established grid and the new calibration station, the tie-in was out by 50% of the HFS.

During the 1981-82 season, a land calibration station was established on Line 12W at 2+00S for grid west of the North Peninsula. This land base station was also tied to station 43+00N on Line 26W located north of the East Peninsula. At both of the 1981-82 calibration stations the HFS was tied to and calibrated at 100%.

Once the calibration station(s) were established the north-south traverses lines were surveyed using the Crone Convension. All dip values were recorded facing the direction of Cutler and the HFS was recorded while the operator was facing south.

During the 1980-81 season, a total of 7.9 line miles was surveyed to establish 419 stations and the following year 7.8 line miles were surveyed to establish 412 stations. The total miles of grid layout for both seasons was 19.1 line miles.

Data Presentation

The VLF-EM survey results are presented on two maps at a scale of 1 inch to 200 feet. The data values are written at the station and the dip values are profiled. The conductors are indicated by thick dashed lines and are lettered from "A" to "X".

Interpretation

To assist in the interpretation the dip values were Fraser Filtered using the Crone Convension. The following are the conductors located during the VLF-EM survey.

Anomaly A

This moderate conductor appears to be the contact between the extremely altered schists and the ultramafic intrusive.

Anomaly B and C

These conductors (B and C) are moderate to strong and are probably related to a N25°W fault.

Anomaly D, E and F

These anomalies are probably due to a diabase dike which intruded the extremely altered rocks. The probable strike of the dike is about N55°E. Anomaly G

This conductors parallels the axis of a magnetic high and possibly represents a felsic dike near the N55°E fault zone.

Anomaly H

This conductor is probably due to the carbonated volcanics and massive chloritic volcanics. The western section is probably terminated by a N55°E fault.

Anomaly I

This conductor is due to the intrusive diabase dike.

322.

Anomaly J

The moderate anomaly may be due to sulphides in a moderate magnetic high which could be due to a N25W fault zone. However, due to the many rock shoals in the area, the anomaly may also reflect the bedrock topography.

Anomaly K

This may be the southwestern extension of the diabase dike interpretated as Anomaly I.

Anomaly L. M, N and R

These four conductors are due to the probable contact between a large ultramafic body and the extremely altered rocks (schist).

Anomaly O, P and Q

These moderate anomalies are possibly due to contacts within the schist in a moderate magnetic area.

Anomaly S and T

These conductors are related to the N55°W fault which is associated with a magnetic low.

Anomaly U and V

These two anomalies may be connected, however, it is the author's opinion that there is a fault separating these conductors. Anomaly U is probably in the schist while Anomaly V is related to a large carbonate zone.

Anomaly W

This conductor may be due to a lithological change in the schist or may be due to a N70°E fault.

CONCLUSIONS AND RECOMMENDATIONS

Several of the anomalies detected during the VLF-EM survey are related to contacts of the ultramafic bodies and the country rocks. Other anomalies are related to the various faults in the area.

The anomalies which may be interesting and requires future work are Anomalies G, H, J, P, U, V and W. These conductors may represent sulphide rich carbonate zones and porphyries and requires additional geophysical surveying probably with IP.

It is recommended that a grid style overburden drilling program be conducted in the future to identify any geochemical gold trains. Also, during the summer season, shoreline mapping should be conducted.

Upon completion of the above mentioned survey, a compilation of the data must be completed before any diamond drill program commences. The possible targets to concentrate future work on are Anomalies G, H, and V.

I hereby submit that this report and accompanying maps are accurate and true to the best of my knowledge and that they were completed by myself this 16th day of March, 1982.

Kien Afaran

Kian A. Jensen, B.Sc., Exploration Geophysicist-Geologist.

CURRICULUM VITAE

NAME: JENSEN, Kian A.

ADDRESS: 374 Patricia Boulevard, Timmins, Ontario P4N 6Y6

TELEPHONE: (705) 264-5748

BIRTHDATE: September 24, 1951

SEX: Male

STATUS: Married

EDUCATION: University of Waterloo, 1971 - 1975, B.Sc. Honour Earth Science, Geology Major

RELATED EXPERIENCE

PAMOUR PORCUPINE MINES LIMITED, PAMOUR NO. 1

March 2 to Present

Employed as a geologist/geophysicist in the Exploration

Department, Pamour No. 1. Responsible for conducting ground geophysical surveys, interpretation and reports. Other duties include geological mapping, drill core logging, ore calculations, and property evaluation.

September 1978 to February 1981

September 1978 GEOTERREX LIMITED, 2060 Walkley Road, Ottawa

February 1981 typ

Employed as a geophysicist/party chief conducting various types of ground geophysical surveys. Other responsibilities included training personnel, logistic reports, job proposals, billings, data reduction and interpretation. Clients and types of surveys involved in are as follows:

Amoco Oil Limited - gravity survey

Ontario Hydro - seismic survey

Urangeschellshaft Canada Limited - Max-Min and horizontal PEM surveys

Energy, Mines and Resources, Earth Physics Branch - inertial gravity survey

Ceoterrex Limited, Calibogie test site - CEM, Max-Min, Proton magnetic and horizontal PEM surveys

Newmont Exploration of Canada Limited - drillhole PEM survey

Newmont Exploration of Canada Limited - EMP survey

E & B Exploration of Canada Limited - gravity survey

Energy, Mines and Resources, Earth Physics Branch inertial gravity survey

Geoterrex Limited, Calibogie test site - Elfast turam, IP and DEEPEM surveys

Abitibi-Price Inc. - interpretation of drillhole PEM survey

May to September 1978

RAYROCK RESOURCES LIMITED (MINES), 1011-2200 Yonge Street, Toronto

Employed as a field geologist conducting a reconnaissance geochemical survey for uranium in central North West Territories. Other responsibilities included rock sampling, reconnaissance mapping, claim work, and assisted in compiling airborne radiometric results.

to April 1975

September 1974 B.Sc. Thesis, "A Geophysical Investigation for Buried Bedrock Valleys in the Belwood Lake Area".

> This involved data acquisition, computer modelling, and interpretation of gravity and resistivity surveys.

September 1974 UNIVERSITY OF WATERLOO, Waterloo, Ontario

to April 1975 Employed to sort and catalogue rock suites and set up

museum displays of ore suites from Canadian mines.

May to

CANADIAN OCCIDENTAL PETROLEUM LIMITED, 311-215 Carlingview September 1974 Drive, Rexdale, Ontario

Sec. 23

Employed as a field geologist conducting reconnaissance and detail geochemical surveys for base metals in southcentral British Columbia. Other responsibilities included claim work, rock sampling, and the preparation of geochemical anomaly maps.

October to December 1973 UNIVERSITY OF WATERLOO, Waterloo, Ontario

Employed as a geophysical assistant conducting gravity, resistivity, and seismic surveys.

OTHER EMPLOYMENT

October 1977 GOLDEN TRIANGLE SECURITIES AND INVESTIGATIONS, 52A Francis to May 1978 Street, Kitchener, Ontario

Employed as a security guard at Pirelli Cables in Guelph, Ontario.

June 1975 to TOWERS DEPARIMENT STORES, 1013 Ontario Street, September 1977 Stratford, Ontario

Employed as a department manager responsible for staff schedules, ordering, inventory, and sales.

MEMBERSHIPS

Society of Exploration Geophysicists (1981) - Associate Member

Prospector's Licence (Individual) - A44525

APPENDIX

DATE

PERSONNEL

FUNCTION

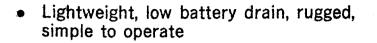
February 20, 1981
February 23, 1981
February 24, 1981
February 25, 1981
February 27, 1981
February 28, 1981
March 4, 1981
March 5, 1981
March 6, 1981
January 26, 1982
January 27, 1982
January 27, 1902
January 29, 1982
January 30, 1982
February 1, 1982
February 2, 1982
February 3, 1982
February 4, 1982
February 9, 1982
Febrauary 10, 1982
20024442j 20, 1902
March 15, 1982
March 16, 1982
March 10, 1902

Joel Fink, Rob Caine Grid Layout Grid Layout Joel Fink, Rob Caine Grid Layout Joel Fink, Rob Caine Joel Fink, Rob Caine Grid Layout Sharon Weicker Data Aquistion Sharon Weicker Data Aquistion Kian Jensen, Grid Layout Sharon Weicker Kian Jensen, Rob Caine Grid Layout Data Aquistion Sharon Weicker Grid Layout Kian Jensen D'Arcy Ryan, Byron Cooper Grid Layout D'Arcy Ryan Grid Layout D'Arcy Ryan Grid Layout D'Arcy Ryan, Byron Cooper Grid Layout Grid Layout D'Arcy Ryan Data Aquistion Byron Cooper D'Arcy Ryan Data Aquistion D'Arcy Ryan, Byron Cooper Data Aquistion Compilation D'Arcy Ryan Compilation D'Arcy Ryan Interpretation Kian Jensen Interpretation Kian Jensen

and Report

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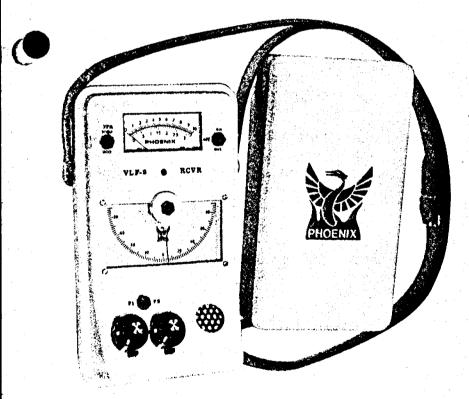
Electromagnetic Unit



• Two independent channels

VLF-2

- Each channel may select any station between 14.0 and 29.9 kHz
- Single crystal used for all frequencies
- Locking clinometer provides tilt-angle memory
- Superheterodyne detection and digital filtering provide extremely high selectivity and noise rejection





Military and time standard VLF transmitters are distributed over the world. These stations are used for geophysical EM surveying thus eliminating the need for a local transmitter and permitting one-man operation.

To ensure that a station excites the prospective conductor, two stations at approximately right angles are used during a survey (see data on back).

The choice of 160 frequencies in the range 14.0 to 29.9 kHz permits the use of a local EM transmitter when no suitable regular VLF station is available.

PHOENIX GEOPHYSICS LIMITED

Geophysical Consulting and Contracting, instrument Manufacture, Sale and Lease.

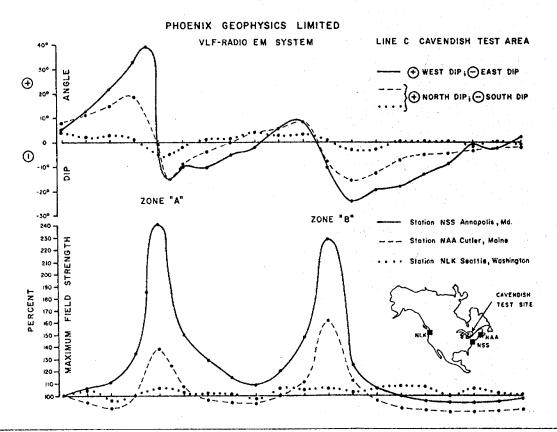
Head Office: 200 Yorkland Blvd. Willowdale, Ont., Canada M2J 1R5. Tel: (416) 493-6350 310 - 885 Dunsmulr St. Vancouver, B.C., Canada V6C 1N5. Tel: (604) 684-2285 4690 Ironton St. Denver, Colorado, U.S.A. 80239. Tel: (303) 373-0332

Specifications

Parameters Measured	:	Orientation and magnitude of the major and minor axes of the ellipse of polarization.			
Enquency Selection, Front Panel	:	Dual channel, front panel selectable (F1 or F2) each with independent precision 10-turn dial gain control.	na ang ang ang ang ang ang ang ang ang a		
Frequency Selection, Internal	:	F1 and F2 can be selected by internol switches within the range 14.0 to 29.9 kHz in 100 Hz increments.	All of the established static be selected, or alternat local VLF transmitter may	ively, a	
Detection And Filtering		Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greater rejection of interfering stations and 60 cycle noise than conventional	which transmits at any frequency in the range 14.0 to 29.9 kHz.		
		receivers.	VLF Station Free	uency /Lu-)	
Meter Display	:	2 ranges: 0 to 300 or 0 to 1000. Background is typically set at 100. Meter is also used as dip angle null indicator and battery test.	Bordegux, France Odessa (Black Sea) Rugby, U.K.	(kHz) 15.1 15.6 16.0	
Audio	:	Crystal speaker. 2500 Hz used as null indicator.	Moscow, U.S.S.R. Yosamal, Japan	17.1	
Clinometer	:	\pm 90°, +0.5° resolution. Normal locking, push button release.	Hegaland, Norway Cutler, Maine Seattle, Washington	17.6 17.8 18.6	
Battery	;	One standard 9v transistor radio battery. Average life expectancy - 1 to 3 months (battery drain is 3 mA)	Malabar, Java Oxford, U.K. Paris, France	19.0 19.6 20.7	
Temperature Range	:	-40° to + 60° C.	Annapolis, Maryland Northwest Cape, Australia	21.4	
Dimensions	:	8 x 22 x 14 cm (3 x 9 x 6 inches).	Laulualei, Howaii Buenos Aires, Argentina	23.4 23.6	
Weight	:	850 grams (1.9 pounds).	Rome, Italy	27.2	

Field Data

results below illustrate the need for using two mogonal stations when the strike of the prospective conductor is not well-known. The dip angle and amplitude data measured using station NLK in Seattle, Washington, show only a very weak anomaly associated with the two conductive sulphide zones at Cavendish, Ontario. The results obtained using Cutler, Maine reveal a more prominent anomaly, but the best response was obtained using Annapolis, Maryland since the station lies almost due south and the transmitted electromagnetic field is thus maximum-coupled with the North-South trending conductors.

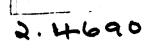


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Kian A. Jensen Special Provisions Credits Re		ia BIV		MINS, Ont aims Traversed (ncal	
Instructions	Geophysical	Days per	M	ining Claim	Expend.	M	ining Cialm	Expend,
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For each additional survey: using the same grid:				546620			· · · · · · · · · · · · · · · · · · ·	
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credits do not apply to Airborne Surveys.	Electromagnetic			532109				
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Certification Verifying Rep	ort of Work-		J AV		•	7		<u> </u>
I hereby certify that I have or withesed same buring an					· · · · · ·			d the work
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AN AN	1982 PM			Date Certified		Cortified	by (Signature)	



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Mining Lands Comments

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1982 04 19

Mining Recorder Ministry of Natural Resources 60 Wilson Avenue Timmins, Ontario P4N 257

Dear Sir:

(Electromagnetic) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 532104 et al in the Township of Macklem.

This material will be examined and assessed and a statement of assessment work credits will be issued. Yours very truly,

Yours very truly,

E.F. Anderson Director Land Management Branch

Whitney Block, Room 6450 Queen's Park Toronto, Ontario M7A 1W3 Phone: 416/965-1316

J. Skura/amc

cc: Pamour Porcupine Mines, Limited Constraints of the second s Constraints of the second sec Timmins, Ontario

Pamour Porcupine Mines, Limited Administration Building P.O. Bag 2010 Timmins, Ontario, Canada P4N 7X7



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April 5, 1982

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MINING LANDS SECTION

Mr. E. F. Anderson, Director, Land Management Branch, Whitney Block, Room 6450, Queen's Park, TORONTO, Ontario. M7A 1W3

> Re: VLF-EM Survey for Mining Claims P.555233, P.546619 to 627 incl., and P.532104 to 112 incl., Macklem Township District of Cochrane, Porcupine Mining Division.

Dear Sir:

Please find enclosed the reports for the VLF-EM survey for the above contiguous claims in Macklem Township.

The report of work has been filled at the Timmins office.

If any problems arise pretaining to the survey, please contact myself or Mr. Ed van Hees at (705) 235-3311.

Kian Afernaem

Kian A. Jensen, B.Sc., Exploration Geophysicist-Geologist.

Enclosure:

KAJ/kg

