Geophysical Survey Report

covering

Borehole Pulse EM Surveys
over the
Matagamasi Lake Property
for
Flag Resources (1985) Ltd.
during
March, 1999.

by

CRONE GEOPHYSICS & EXPLORATION LTD.

Survey Area: Matagamasi Lake, Sudbury Ontario
Survey Type: 3D Borehole Pulse EM Survey
Hole Surveyed: ML94-1
Survey Operators: Ryan Kilty, Henry Odwar
Survey Period: March 23-31, 1999
Report By: Henry Odwar
Report Date: May, 1999
Submitted To: Flag Resources (1985) Ltd.
Calgary, Alberta.
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PULSE ELECTROMAGNETIC SURVEY

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1.0 INTRODUCTION

This geophysical survey report outlines the survey parameters for the 3D Borehole Pulse EM survey carried out for Flag Resources (1985) Ltd. at their Property around Matagamasi Lake near Sudbury, Ontario.

2.0 PROPERTY LOCATION AND ACCESS

The survey area is located near Sudbury, Ontario. The survey crew accessed the property on a daily basis by road from the city of Sudbury using a vehicle, ski-doo and ATV.

3.0 PERSONNEL

The personnel involved in this project included:

Henry Odwar  Survey Operator  Toronto, Ontario
Ryan Kilty  Survey Operator  Toronto, Ontario

A helper was provided by Flag Resources (1985) Ltd.

4.0 SURVEY PARAMETERS

Table I: Survey Parameters

<table>
<thead>
<tr>
<th>Tx Loop</th>
<th>Loop Co-ordinates</th>
<th>Loop Size</th>
<th>Current</th>
<th>Time Base</th>
<th>Ramp Time</th>
<th>Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOOP1</td>
<td>0 E - 620 E</td>
<td>0 N - 620 N</td>
<td>~600m x 600m</td>
<td>20 amps</td>
<td>16.66 ms</td>
<td>1.5 ms</td>
</tr>
</tbody>
</table>

Table II: Survey Coverage Borehole

<table>
<thead>
<tr>
<th>Hole</th>
<th>Survey Date</th>
<th>Collar co-ordinates</th>
<th>Dip*</th>
<th>Azimuth*</th>
<th>Depth (m)</th>
<th>Surveyed Section</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>ML94-1</td>
<td>24-10-98</td>
<td>200 E 200 N</td>
<td>~89</td>
<td>~156</td>
<td>770 m</td>
<td>10 - 700 m</td>
<td>X,Y,Z</td>
</tr>
</tbody>
</table>

5.0 SURVEY METHODS

The Crone Pulse EM system is a time domain electromagnetic method that utilizes an alternating pulsed primary current with a controlled shut-off and measures the rate of decay of the induced secondary field across a series of time windows during the off-time. The system uses a transmit loop of any size or shape. A portable 120VDC, 4.5hp Motor Generator powers the PEM 2.4 kW Transmitter which provides a precise
current waveform through the loop. The receiver apparatus is moved along surface lines or down boreholes.

The transmitter cycle consists of slowly increasing the current over a few milliseconds, a constant current, abrupt linear termination of the current ("Ramp Time"), and finally, zero current for a selected length of time in milliseconds ("Time Base"). The EMF created by the shutting-off of the current induces eddy currents in nearby conductive material thus setting-up a secondary magnetic field. When the primary field is terminated, this magnetic field will decay with time. The amplitude of the secondary field and the decay rate are dependent on the quality and size of the conductor. The receiver, which is synchronized to the off-time of the transmitter, measures this transient magnetic field where it cuts the receiver apparatus. These readings are across fixed time windows or "Channels" and are recorded with the PEM Digital Receiver. Synchronization between the receiver and transmitter is maintained by a direct cable, radio link, or crystal clock.

Detailed equipment specifications can be found in Appendix E.

Borehole PEM: The 3D borehole equipment uses an axial component (Z) probe and a cross-component (XY) probe to measure the three components of the induced secondary field. The first pass with the 'Z' probe detects any in-hole or off-hole anomalies and gives information of size, conductivity, and distances to the edges of conductors. The second pass with the 'XY' probe measures two orthogonal components of the EM field in a plane orientated at right angles to the borehole. These results give directional information to the center of the conductive body.

While being lowered down the hole, the probe will rotate about its axis. This rotation will cause a change in the measurement of the X and Y components of the EM field. The correction can be made by comparing the measurement of the 'PP' channel to theoretical values and calculating the amount of probe rotation. To calculate the theoretical 'PP' value requires knowing the co-ordinates of the loop and the hole, and the hole deviations. A second method of rotation correction involves the use of the orientation tool. This attachment for the XY probe uses dipmeters to calculate the rotation and the dip of the probe at every survey point. The dipmeters are accurate to 0.5 degrees from vertical.

6.0 PRODUCTION SUMMARY

Table III: Production Summary

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 23, 1999</td>
<td>Crone crew arrives in Sudbury.</td>
</tr>
<tr>
<td>March 24, 1999</td>
<td>Laid loop LOOP1 and acquired Z component.</td>
</tr>
<tr>
<td>March 25, 1999</td>
<td>Acquired X and Y components, Picked up gear and loop.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>March 26, 1999</td>
<td>On stand-by until 10 a.m.; Crone crew leaves Sudbury.</td>
</tr>
<tr>
<td>March 28, 1999</td>
<td>Crone crew arrives in Sudbury.</td>
</tr>
<tr>
<td>March 29, 1999</td>
<td>Arrived survey area; hole was blocked.</td>
</tr>
<tr>
<td>March 30, 1999</td>
<td>Looked for holes unsuccessfully.</td>
</tr>
<tr>
<td>March 31, 1999</td>
<td>Hole not found; Crone crew leaves for Toronto.</td>
</tr>
</tbody>
</table>

2.10740

Respectfully submitted,

Henry Odwar, M.Sc.
Crone Geophysics & Exploration Ltd.
APPENDIX A:

PEM DATA
MALAGAMASI LAKE

3-D Borehole Pulse EM Survey
Borehole & Loop Location Map
Hole: ML94-1
Survey Date: Mar 24, 1999
Crone Geophysics & Exploration Ltd.
FLAG RESOURCES (1985) Ltd.
MATAGAMASI LAKE
3-D Borehole Pulse EM Survey
Hole Section with Primary Field
Hole: ML94-1
Survey Date: Mar 24, 1999
Crane Geophysics & Exploration Ltd.
FLAG RESOURCES          MATAGAMASI LAKE
Hole ML94-1             X Component
Data Corrected for Probe Rotation using Orientation Tool #10
X COMPONENT dBx/dt nanoTesla/sec - 20 channels and PF
Scale: 1:2500
Data Corrected for Probe Rotation using Orientation Tool #10
Y COMPONENT dB/dt nanoTesla/sec - 20 channels and PP
Scale: 1:2500
Crone Geophysics and Exploration Ltd
3607 Wolfedale Road, Mississauga, Ontario

March 31, 1999
To: Mr. Murdo McLeod, Flag Resources Ltd
From: Bill Ravenhurst, Crone Geophysics and Exploration Ltd.
Re: Brief Interpretation of Pulse EM Data from Hole ML94-1

A three component borehole Pulse EM survey was performed by Crone Geophysics and Exploration Ltd. for Flag Resources Ltd. in their hole ML94-01 at Matagamasi Lake on March 24, 1999. A plan map is included which shows the position of the hole relative to the 600m X 600m transmit loop which was laid out. The data set consists of a Primary Pulse reading and 20 channels in the off-time for all three components - X, Y, and Z. The positive X component points North, while the positive component points west and the Z component points up the axis of the hole.

In order for an EM system to detect a target, the target must be conductive and have electrical continuity over a distance of at least a few meters. For a highly conductive target, the expected response would be an anomaly extending into the late-time channels (channels 15-20). It is clear that there are no such anomalies in the Z component data from this survey. This means that there are no large, highly conductive and electrically connected bodies with a radius of 150m around the hole, or within 50m beyond the end of the hole. The conductive mineralization intersected over the entire length of the hole, must be poorly connected in order to explain this response.

The X and Y components display a 16 channel build-up towards the bottom of the hole. This is impossible to reconcile with the Z component response in terms of normal induction phenomena (from the primary magnetic field). Therefore, I believe that this response represents electrical current flowing up the axis of the borehole, parallel to the probe, due to the primary electrical field set up by the transmitter loop. This type of response has been seen elsewhere on occasion, and it is possible that this large package of altered rock is responsible for the exaggeration of this phenomenon. The magnetic field from such currents is entirely in the X and Y direction, explaining the lack of a Z component response. Thus, I believe that the response in the X and Y components in not of interest in terms of target identification.

In summary, the Pulse EM survey indicates that there are no large conductive targets within a 150m radius around the hole and within 50m beyond the end of the hole.

Sincerely,
Bill Ravenhurst
Geophysicist
March 31, 1999

To: Mr. Mundo McLeod, Flag Resources Ltd.

From: Bill Ravenhurst, Cronne Geophysics & Exploration Ltd.

Re: Brief Interpretation of Pulse EM Data from Hole ML94-1

A three-component borehole Pulse EM survey was performed by Cronne Geophysics & Exploration Ltd. for Flag Resources (1983) Ltd. in their hole ML94-01 at Management Lake on March 24, 1999. A plan map is included which shows the position of the hole relative to the 400m x 600m magnetic loop which was laid out. This data set consists of a Primary Pulse reading and 20 channels in the off-time for all three components - X, Y, and Z. The positive X component points North, while the positive Y component points west and the Z component points up the axis of the hole.

In order for an EM system to detect a target, the target must be conductive and have electrical continuity over a distance of at least a few metres. For a highly conductive target, the expected response would be an anomaly extending into the late-time channels (channels 15-20). It is clear that there are no such anomalies in the Z-component data from this survey. This means that there are no large, highly conductive and electrically connected bodies within a radius of 150m around the hole, or within 50m beyond the end of the hole. The conductive mineralization intersected over the entire length of the hole, must be poorly connected in order to explain this response.

The X and Y components display a 16 channel build-up towards the bottom of the hole. This is impossible to reconcile with the Z component response in terms of normal induction phenomena (from the primary magnetic field). Therefore, I believe that this response represents electrical current flowing up the axis of the borehole, parallel to the probe, due to the primary electric field set up by the transmitter loop. This type of response has been seen elsewhere on occasion, and it is possible that this large package of altered rock is responsible for the exaggeration of this phenomenon. The magnetic field from such currents is entirely in the X and Y direction, explaining the lack of a Z component response. Thus, I believe that the response in the X and Y components is not of interest in terms of target identification.
In summary, the Pulse EM survey indicates that there are no large conductive targets within a 150m radius around the hole, and within 50m beyond the end of the hole.

Sincerely,

[Signature]

Bill Ravenhorst
Geophysicist
NOTE
WITNESS POST LOCATED 21' SOUTH OF LK SHORE
DRILL HOLE LOCATED 95' (29m) SOUTH OF WIT POST (144)
Declaration of Assessment Work Performed on Mining Land

Mining Act, Sections 52(2) and 70(2), R.S.O. 1990

Declaration is made under section 52(2) of the Mining Act, R.S.O. 1990, and is required to be filed with the Ministry of Natural Resources. The work described below has been performed on mining land in accordance with the Mining Act and related regulations.

1. Recorded holder(s) (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Client Number</th>
<th>Telephone Number</th>
<th>Fax Number</th>
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</thead>
<tbody>
<tr>
<td>Tony Rogers</td>
<td>123</td>
<td>456</td>
<td>789</td>
</tr>
<tr>
<td>Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Office Use</th>
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<tbody>
<tr>
<td>Geotechnical: prospecting, surveys, analyses and work under section 18 (rocks)</td>
<td></td>
</tr>
<tr>
<td>Physical: drilling stripping, trenching and associated analyses</td>
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</tr>
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Commodity: Gypsum

Total $ Value of Work Estimated: $100,000

NTS Reference: 75T

Mining Division: Sudbury

District: Sudbury

3. Person or companies who prepared the technical report (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Telephone Number</th>
<th>Fax Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynn Oliver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Telephone Number</td>
<td>Fax Number</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Certification by Recorded Holder or Agent

I, [Recorded Holder's Name], do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent

Date: SEP 15 1999

5. RECEIVED

SEP 15 1999

GEOSCIENCE ASSESSMENT OFFICE
5. Work to be recorded and charged, work area being assigned to a claimant or a claimant's representative, and where work was performed, at the time work was performed. A map showing the contiguous claims must accompany this form.

<table>
<thead>
<tr>
<th>Claim #</th>
<th>Date Work Done</th>
<th>Number of Metric Units for each claimant or representative</th>
<th>Tonnage of work performed or the claimant or representative</th>
<th>Value of work applied to the claimant or representative</th>
<th>Balance of work assigned to other claimant or representative</th>
<th>Bank, type of work to be distributed at a future date</th>
</tr>
</thead>
<tbody>
<tr>
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<td>12</td>
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<td>$3,402</td>
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<td>1</td>
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<td>1</td>
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<tr>
<td><strong>Column Totals</strong></td>
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<td></td>
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<td></td>
<td>$7,7418</td>
<td>$7,400</td>
<td>$4,000</td>
<td>$0</td>
</tr>
</tbody>
</table>

1. **MURDO CLEW** do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/99 for assignment to contiguous claims or for application to the claims where the work was done.

Signature of Claimant or representative

Date: 15/1/99

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards or;
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

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SEP 15 1999
GEO SCIENCE ASSESSMENT OFFICE

2.19740
### Work Type

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Details of work</th>
<th>Cost Per Unit of work</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foamed</td>
<td></td>
<td></td>
<td>874.15</td>
</tr>
<tr>
<td>Soil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Associated Costs (e.g. supplies, mobilization and demobilization)

|                  |                 |                       |            |

### Transportation Costs

|                  |                 |                       |            |

### Food and Lodging Costs

|                  |                 |                       |            |

### Total Value of Assessment Work

|                  |                 |                       | 874.15     |

#### Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work.

#### Notes:

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in the statement of costs within 45 days of a request for verification and/or completion certification. If verification and/or correction/clarification is not made, the minister may reject all or part of the assessment work submitted.

#### Certification verifying costs:

I, [Name], declare that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form. I am authorized to make this certification.

[Signature]

SEP 15 1999

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SEP 15 1999

GEOSCIENCE ASSESSMENT OFFICE
December 22, 1999

Murdo C. McLeod
FLAG RESOURCES (1985) LIMITED
1650-540 5TH AVENUE S.W.
CALGARY, ALBERTA
T2P-0M2

Dear Sir or Madam:

Submission Number: 2.19740

Status

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact LUCILLE JEROME by e-mail at lucille.jerome@ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mismnpg.htm
The revisions outlined in the Notice dated November 22, 1999, have been addressed. Assessment work credit has been approved as outlined on the Declaration of Assessment Work Form that accompanied this submission.

Correspondence to:
Resident Geologist
Sudbury, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
Murdo C. McLeod
FLAG RESOURCES (1985) LIMITED
CALGARY, ALBERTA