REPORT ON

AIRBORNE GEOPHYSICAL SURVEYS

ON

FREDERICK HOUSE LAKE PROJECT

EVELYN - DUNDONALD - GERMAN TOWNSHIPS

ONTARIO

FOR

KANGELD RESOURCES LIMITED

BY

H. FERDERBER GEOPHYSICS

JULY 5, 1985

FENTON SCOTT, P. ENG.

INTRODUCTION

An airborne geophysical survey was carried out over a claim group in Evelyn, Dundonald, German Townships, Cochrane District of Ontario, by H. Ferderber Geophysics.

Data was collected on VLF and magnetometer responses. The survey was flown from a base at Timmins, Ontario.

PURPOSE OF SURVEY

The survey was designed to provide data which would:

1. Permit an interpretation of geological structure through recording variations in magnetic mineral content of the formations underlying the survey area. In particular, this survey was designed to assist in locating the projection of the Pipestone Fault.

2. Identify potentially economic mineral concentrations which may have marked variations in accessory magnetic minerals.

3. Identify linear structures, such as major strike-slip faults and shear zones, which may result in current concentrations of VLF signals. Such structures may affect the concentrations of economic minerals, notably precious metals.

4. Identify shallow, potentially valuable metallic sulfide deposits whose lower electrical resistance will localize secondary VLF-EM fields.

SURVEY AREA

The survey covered a claim block in Evelny, Dundonald, German Townships, Porcupine Mining Division, Ontario. The 138 mining claims included in the survey are shown on the map included.

EQUIPMENT

The aircraft used in this survey was a Cessna 172 owned and operated by H.Ferderber Geophysics. The sensors for geophysical data were mounted in modified wing tip installations.

Magnetometer The instrument used was a GEM GSM - 18 proton precession type. The sensitivity of the device was set at 2 gammas at a 1 second sampling rate. Data was recorded on paper on an on-board recorder.

VLF - EM Systems The instrument used was a Herz Totem 1 A. The total field and vertical resultant field was recorded on analogue tape. The transmitter station for this survey was Cutler, Maine, at a frequency of 24.0 kiloherz. The system was accurate to 1%.

SURVEY METHOD

The aircraft was flown at a terrain clearance of 250 feet. Navigation consisted of reference to an air photo mosaic, with manual fiducials recorded on the mosaic simultaneously with the geophysical tapes.

Line direction was North-South, and line spacing was one-twelfth mile (440 feet) (134 meters).

DATA PRESENTATION

Flight lines, fiducials points, and geophysical responses are shown on air photo mosaics at a scale of 1/15, 840 (quarter mile). These mosaics also show the outlines of the claim group, together with enough numbers to permit boundary identifications.

Magnetic Contour Maps Correction of the aeromagnetic data for diurnal variation was by reference to a cross-line. The corrected profiles were then reduced to appropriate field strength intervals, and presented as contours at 20 gamma intervals.

VLF - EM Maps The axes of conductivity were selected on each analogue tape, and transferred to the mosaics with reference to fiducials points.These axes are further discriminated between those conductors showing an increase in total field strength, and those whose position relates to "crossover" points on the vertical field components.

INTERPRETATION OF RESULTS

VLF - EM Survey Except for cultural features, which have been discarded in interpretation, the VLF - Em response showed no significant variation over the Kangeld claim block. This lack of variation is due to thick cover of resistance, glaciofluvial sands and gravels, which mask any bedrock conductors which may be present.

Magnetometer Survey The magnetic response can be used to interpret bedrock structures.

One of the purposes of the magnetometer survey is to estimate the projection of the Pipestone Fault.

Two alternative projections are possible.

In one case, the fault contact may extend west-northwest through a point one kilometer north of the highway at Connaught.

In the second case, the Pipestone Fault may mark the south edge of the magnetic highs (caused by ultramafic sills) which extend through the northwest-southeast axis of the claim group.

These two alternative interpretations are shown on the survey map.

It should be noted that the former Hollinger nickel deposit occurs on an island in Frederickhouse Lake between magnetic highs. The northerly of these highs has not been investigated.

The magnetic high at the northwest corner of the Kangeld Claims appears to magnetite in an uninvestigated, large, ultramafic body.

FREDERICK LAKE HOUSE

EVELYN TWP

MATHESON TWP.

DUNDONALD TWP.

GERMAN TWP.

KANGELD RESOURCES LTD

CLAIM LOCATIONS

Scale 1 : 31 680

W8506.00234

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

#1

42A10NW0566 2.8281 DUNDONALD

900

Mining Act — Do not use shaded areas below.

Type of Survey(s): AIRBORNE MAGNETOMETER, VLF-EM

Township or Area: EVELYN, DUNDONALD, GERHAN

Claim Holder(s): KANGELO RESOURCES LIMITED. 2) LARRY SALO 3) RANDALL SALO

Prospector's Licence No.: M-21873 M-21107 M-20010

Address: SUITE 1500 - 675 WEST HASTINGS STREET VANCOUVER V6B 1N2

Survey Company: H. FERDERBER GEOPHYSICS.

Date of Survey (from & to): 10 5 85 10 5 85 (Day / Mo. / Yr.)

Total Miles of line: 160 FLOWN

Name and Address of Author (of Geo-Technical report): FENTON SCOTT, 17 MALABAR PLACE, DON MILLS, ONTARIO.

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical - Electromagnetic	
	Geophysical - Magnetometer	
	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic (VLF)	30
	Magnetometer	30
	Radiometric	

RECEIVED
AUG - 8 1985
MINING LANDS SECTION

RECEIVED
JUL 15 1985

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	795050	
	LIST ATTACHED	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECORDED
JUL 15 1985
Recorder

Total number of mining claims covered by this report of work: 138

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures: $ ÷ 15 = Total Days Credits

Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
8,280	July 15/85	[signature]
	Date Approved as Recorded: 85.10.16	Branch Director: [signature]

Date: JULY 9/85

Recorded Holder or Agent (Signature): [signature] AGENT

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: FENTON SCOTT, 17 MALABAR PLACE DON MILLS, ONTARIO

Date Certified: JULY 9/85

Certified by (Signature): [signature]

1362 (81/01)

APPENDIX A

List of Mining Claims

DUNDONALD TOWNSHIP:

837720	837736	837763	837779	837796
837721	837737	837764	837780	837797
837722	837738	837765	837781	837798
837723	837739	837766	837782	837799
837724	837740	837767	837783	837800
837725	837741	837768	837784	837801
837726	837742	837769	837785	837806
837727	837743	837770	837786	837916
837728	837744	837771	837787	837917
837729	837756	837772	837788	837918
837730	837757	837773	837789	837919
837731	837758	837774	837791	837928
837732	837759	837775	837792	837929
837733	837760	837776	837793	838110
837734	837761	837777	837794	838112
837735	837762	837778	837795	

Donald McKinnon M-21873

EVELYN TOWNSHIP:

837790	837805	837924	837930	837934
837802	837921	837925	837931	837935
837803	837922	837926	837932	837936
837804	837923	837927	837933	838109

Donald McKinnon M-21873

GERMAN TOWNSHIP:

795050 Larry	795058	837710 M-21873	837718 M-21873	838118
795051 Sala	795059	837711	837719	838119
795052	795060	837712	838111	838120
795053 M-20011	795061	837713	838113	838121
795054	830719	837714	838114	838122
795055	837707	837715	838115	838123
795056	837708	837716	838116	838124
795057	837709	837717	838117	
	M-21873			

M-21873

Randall Sala M-21107

Total 138 claims

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) AIRBORNE VLF-EM, MAGNETOMETER
Township or Area GERMAN, EVELYN, DUNDONALD
Claim Holder(s) KANGELO RESOURCES LIMITED

Survey Company H. FERDERBER GEOPHYSICS
Author of Report FENTON SCOTT
Address of Author 17 MALABAR PLACE, DON MILLS.
Covering Dates of Survey MAY 10 / 85
(linecutting to office)
Total Miles of Line Cut 160 / (SOUTH HALF OF SURVEY

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

DAYS per claim

Geophysical
–Electromagnetic _____
–Magnetometer _____
–Radiometric _____
–Other _____
Geological _____
Geochemical _____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer 30 Electromagnetic 30 Radiometric _____
(enter days per claim)

DATE: July 9/84 SIGNATURE: Fenton Scott
Author of Report or Agent

Res. Geol. _____ Qualifications 63.1263

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

P. 795050 ET AL
(prefix) (number)
LIST ATTACHED

If space insufficient, attach list

RECEIVED
JUL 15 1985
MINING LANDS SECTION

TOTAL CLAIMS 138

OFFICE USE ONLY

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

_____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

_____

Base station value and location _____

_____

Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

Instrument _____

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) MAGNETOMETER VLF-EM

Instrument(s) GEM-18BA TOTEM 1A

(specify for each type of survey)

Accuracy 2 GAMMAS 1%

(specify for each type of survey)

Aircraft used CESSNA 172

Sensor altitude 250'

Navigation and flight path recovery method VISUAL NAVIGATION, MANUAL FIDUCIALS ON AIR PHOTO MOSAICS

Aircraft altitude 250. Line Spacing 440'

Miles flown over total area 160 Over claims only 104

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

_____

_____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

_____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

_____

Drainage Development _____

Estimated Range of Overburden Thickness _____

_____

_____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

_____

_____

_____

General _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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795054	830719	837714	838114	838122
795055	837707	837715	838115	838123
795056	837708	837716	838116	838124
795057	837709	837717	838117	

Don MacKinnon

Jerry Soto

Randy Soto

Total 138 claims

Mining Lands Section

File No 2.8281

Control Sheet

TYPE OF SURVEY ✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

< Evelyn, Dundonald, German >

L.D.

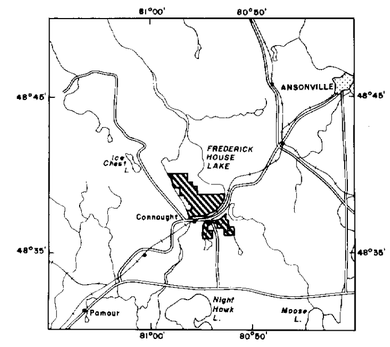
Sgd.

A. Hurst

Signature of Assessor

Oct 15/85.

Date



LEGEND

CONTOUR INTERVAL ____ 20 GAMMAS

500 GAMMA ____

100 GAMMA ____

20 GAMMA ____

MAGNETIC LOW ____

BASE VALUE ____ 58,000 GAMMAS

837934
838110
837790
837794
837775
837762
837713
837708
795050
838113
838115
838114
838118
838119
795053
838116
795056
838122
795059
795061
838124
837728
837721
838117
PIPESTONE FAULT ?
PIPESTONE FAULT ?
MCL
MCL
N

42A10NW0566 2.8281 DUNDONALD

200

KANGELD RESOURCES LIMITED

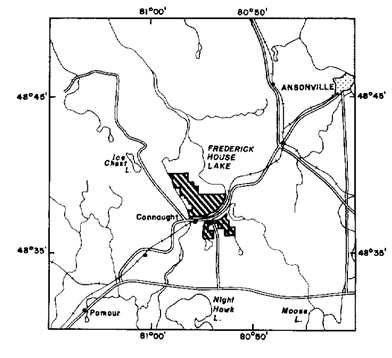
EVELYN, DUNDONALD & GERMAN TWPS. – COCHRANE DIST., ONTARIO

FREDERICK HOUSE LAKE PROJECT

AIRBORNE MAGNETIC SURVEY

INTERPRETED BY: F. SCOTT	N.T.S. 42 A/10	DATE: MAY - 1985
SCALE: 1" = 1320' 0 1000 2000 3000 FEET		PLATE 1 M

J-1493-85



LEGEND

CONDUCTOR AXIS

CONDUCTOR AXIS WITH QUADRATURE FIELD

INTERPRETATION

OVERBURDEN RESPONSE

BEDROCK RESPONSE (14)

837 934

838 110

837 728

837 721

837 713

837 708

795050

795053

795056

795059

838 113

838 115

838 114

838 118

838 116

838 117

838 119

838 122

MCL

N

210

42A10NW0566 2.8281 DUNDONALD

KANGELD RESOURCES LIMITED

EVELYN, DUNDONALD & GERMAN TWPS. – COCHRANE DIST., ONTARIO

FREDERICK HOUSE LAKE PROJECT

AIRBORNE V.L.F.-EM SURVEY

INTERPRETED BY:	N.T.S.	DATE:
F. SCOTT	42 A/10	MAY - 1985
SCALE: 1"=1320' 0 1000 2000 3000 FEET		PLATE 1 v

J-1493-85