REPORT ON THE AIRBORNE GEOPHYSICAL SURVEY ON THE PROPERTY OF SKEAD HOLDING LTD. MANN TOWNSHIP, ONTARIO

BY

H. FERDERBER GEOPHYSICS LTD.

January, 1988
Val d'Or, Quebec

G.N. Henriksen, B.Sc.
Geologist

REPORT ON THE AIRBORNE GEOPHYSICAL SURVEY ON THE PROPERTY OF SKEAD HOLDING LTD. MANN TOWNSHIP, ONTARIO

INTRODUCTION

On December 11 to December 14, 1987 an airborne geophysical survey was carried out on the property of Skead Holding Ltd. in Mann Township, Ontario. Magnetic and VLF-electromagnetic data was collected by the airborne division of H. Ferderber Geophysics Ltd. The survey was flown from base at Nellie Lake-Iroquois Falls, Ontario. A total of 11.22 miles of data was collected.

The magnetic survey provides information which helps define underlying geological structures and identifies any potential economic concentrations from magnetic variations in accessory magnetic minerals. The VLF-electromagnetic survey outlines conductive zones which may represent shear zones and/or metallic sulphide deposits containing gold mineralization.

PROPERTY DESCRIPTION, LOCATION AND ACCESS

The Skead Holding Ltd. property is comprised of 6 claims in Mann Township, Porcupine Mining Division, Ontario. The claims cover approximately 96 hectares in the northeast corner of the township, are registered with the Ontario Mining Recorder's Office in Timmins and are listed below.

Claim List

P 918936
918937
918938
918939
918940
918941

The property is located approximately 21.7 km (13 miles) south of the town of Cochrane, 26.7 km (16 miles) northwest of the town of Iroquois Falls and 10 km (6 miles) west of the village of Potter.

Access to the property is easily obtained from the village of Potter which lies along Highway 11 between Cochrane and Iroquois Falls. By taking a secondary road due west from Potter for about five and a quarter miles, continuing westward at all junctions, a southwest bend in the road is reached. The central part of the eastern boundary of the property lies about one quarter mile further west of the bend. The road continues westward, traversing the property.

A small lake lies in the northeast corner of the property. The property appears to be vegetated by deciduous trees in the north and coniferous trees in the south. Topographic relief is low and the terrain is relative dry.

The Canadian National Railway line passes by the village of Potter. Supplies, services and qualified manpower can be obtained in the Cochrane-Iroquois Fall-Timmins area.

GEOLOGY

The property lies in the northwestern part of Abitibi Greenstone Belt in the Superior Province of Canadian Shield. The Ontario Department of Mines Geological Compilation Series Map 2205, Timmins-Kirkland Lake Sheet indicates the property to be underlain by metamorphosed ultramafic rocks and intermediate to mafic metavolcanic rocks.

The northern two thirds is shown as being underlain by metamorphosed peridotite-dunite-pyroxenite-serpentinite. The serpentinite may be composed of ultramafic flow rocks. The southern third of the property is thought to be unerlain by metamorphosed mafic flows and pyroclastic rocks.

The contact between the metavolcanics and metamorphosed ultramafics trends northwest and appears to coincide with the linear zone defined by the change in vegetation from deciduous trees in the north part of the property and coniferous trees in the south part of the property.

A Ni-Cu occurrence lies about one mile west-northwest of the northwest corner of the property, along strike of the metamorphosed ultramafic rocks. About three and one half miles west of the northern part of the property lies a Ni-Cu-Pd occurrence which appears to be along strike of the geology of the claim group.

INSTRUMENTATION AND SURVEY METHODS

The survey was completed using a 1972 Cessna 172, fixed-wing aircraft, call letters CF-EWK, owned and operated by H. Ferderber Geophysics Ltd. The pilot and navigator/operator were Y. Saucier and M. Caron, respectively, of Val d'Or. Geophysical sensors were mounted in modified wing tips. The geophysical, navigation and data aquisition systems are described below.

Magnetometer

The magnetometer used was a GEM Systems GSM-11, high sensitivity airborne proton (Overhauser) magnetometer. The instrument continuously measures the Earth's magnetic field at a 0.01 gamma sensitivity for 1 reading per second or 0.05 gamma to 10 readings per second at a 0.1 gamma absolute accuracy. The analog output is on 3 channels, from 1 to 10,000 gammas full scale.

VLF-EM System

A Herz Totem 2A VLF-EM System was used. To measure the change in the total field and in the vertical quadrature field on two frequencies simultaneously, with an accuracy of 1%. The primary transmitting station of Cutler Maine, (NAA) frequency 24.0 KHz was employed in survey.

Radar Altimeter

The ground clearance was measured with a King 10/10 A radar altimeter. The survey was flown at a mean clearance of 300 feet with the altimeter producing an accuracy of 5% (15 feet) at this altitute.

Tracking Camera and Video Centre

A RCA TC-200 colour video camera and Galaxy 200 video centre was used to record the flight path on standard VHS type video tapes. Manual fiducials were indicated on the picture frames for reference with the digital printout. Flight path recovery was aided using a Panasonic Colour Video Monitor-S1300 and Video Cassette Recorder AG-2500.

Data Aquisition System

A Picodas Group Inc. PDAS 1100 data aquisition system featuring seven analog inputs with two frequency inputs and external interfacing was used. A Termiflex Corp. ST/32 Keyboard control unit and Sharp Corp. LCD display unit are connected to the data aquisition system. At present this system stores the altimeter VLF-1 inphase, VLF-1 quadrature, VLF-2 inphase, VLF-2 quatrature, magnetic field (coarse), magnetic field (fine), and the fourth difference (noise), and fiducials on 3.5 inch floppy disk drive. The data is then printed out in digital and profile form.

The survey was conducted on north-south lines at an aircraft altitude of 300 feet. The lines were Flown at spacings of 100 meters at a speed of approximately 90 miles per hour. Navigation was visual using airphoto mosaics, at a scale of one inch to 1320 feet, manual fiducials and the flight path recovery system as references.

DATA PRESENTATION

Flight lines, fiducial points and geophysical responses were reproduced from the topographic maps on maps at a scale of one inch to 1320 feet (15,840). The outline of the claim group and claim map are shown on each sheet.

The aeromagnetic data was corrected for diurnal variations by using a base line as reference. The data was then reduced to a base level of 58,000 gammas, contoured at 100, 500 and 1000 gamma intervals and presented on Map MG-1,

A base value was determined for the VLF-EM data and the change in the total field strength as a percentage of the base value was calculated. The values were plotted on map EM-1. The positive values were contoured at intervals of 2%. The conductor axes were determined and labelled A, B, C, etc. No priority was attached to the labelling system.

SURVEY RESULTS AND INTERPRETATION

Magnetic Survey Map MG-1

The survey outlined two distinct northwest trending magnetic anomalous zones traversing the property. A magnetic high anomalous zone located in the northern half of the property has a steep magnetic gradient, magnetic values in excess of 4000 gammas above background and overlies rocks indicated as being metamorphosed ultramafics. A magnetic low anomalous zone on the southern half of the property has a shallow magnetic gradient and overlies rocks indicated as being intermediate to mafic metavolcanics. The contact between the two rock units has a northwest trend and traverses the central part of the property.

VLF-electromagnetic Survey Map EM-1

Conductive zone A is a short, north-northwest trending conductor located in the northeast part of the property. It lies along the south shoulder of a magnetic high anomalous zone cross cutting the magnetic contours at an oblique angle aoverlies probable metamorphosed ultramafic rocks. Conductor "A" may represent a structural break possibly a shear zone.

CONCLUSIONS

The airborne VLF-electromagnetic and magnetic surveys were successful in outlining possible shear zones and helping define the underlying geology of the Skead Holding Ltd. property in Mann Township, Ontario. Rocks of high magnetic susceptability trending northwest underly the north half of the property and are probably metamorphosed ultramafics. The Ni-Cu occurrence, one mile west-northwest of the property, lies along strike of the metamorphosed ultramafic rocks. Rocks of low magnetic susceptability underly the southern half of the property are thought to be intermidiate to mafic metavolcanics. The contact between the metamorphosed ultramafic rocks and the intermediate to mafic metavolcanic rocks trends west-northwest and traverses the central part of the property.

Conductive zone A outlined in the northeast part of the property appears to represent a bedrock conductor "A" possibly a shear zone within the metamorphosed ultramafic rocks.

RECOMMENDATIONS

Further work is warranted on the property especially in the areas of the above mentioned conductor and the assumed position of the geologic contact determined by the magnetic data.

An exploration program of ground geophysics should be undertaken. A combined gradient/total field magnetic survey and a horizontal loop-electromagnetic survey should be performed. Geophysical anomalies should then be tested by diamond drilling.

Respectfully submitted,

H. FERDERBER GEOPHYSICS LTD.

G.N. Henriksen, B.Sc.
Geologist

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

#

42A15SW0005 2.10807 MANN

900

(3816.00216) 2.10807 Min

Type of Survey: Airborne Magnetometer & EM Survey

Claim Holder(s): Skead Holdings Ltd.

Mann Twp.

Prospector's Licence No.: T-1956

Address: c/o P.O. Box 1110, Sault Ste. Marie, Ontario P6A 5N7

Survey Company: H. FERDERBER GEOPHYSICS LTD.

Date of Survey (from & to): 11 | 12 | 87 | 14 | 12 | 87 (Day | Mo. | Yr. | Day | Mo. | Yr.)

Total Miles of line Cut:

Name and Address of Author (of Geo-Technical report): R.A. Campbell, 169 Perrault Ave., Val d'Or, Quebec

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	

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JAN 08 1988

MINING LANDS SECTION

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	40
	Magnetometer	40
	Radiometric	

Expenditures (excludes power stripping)

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PORCUPINE MINING DIVISION

DEC 15 1987

12:55 PM

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.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	918936	
	918937	
	918938	
	918939	
	918940	
	918941	

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
FEB 24 1988
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RECORDED
DEC 15 1987

Total number of mining claims covered by this report of work: 6

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
480	Dec. 15/87	S. White
	Date Approved as Recorded: 19 Feb 88	Branch Director: W. Rowan

Date: Dec. 14/87

Recorded Holder or Agent (Signature): J. MacGregor

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: R.A. MacGregor, P.O. Box 1110, Sault Ste. Marie, Ontario P6A 5N7

Date Certified: Dec. 14/87

Certified by (Signature): J. MacGregor

1362 (85/12)

Ministry of Northern Development and Mines

Ontario

Geophysical-Geological-Geochemical Technical Data Statement

File _____

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-electromagnetic & Magnetic

Township or Area Mann Township

Claim Holder(s) Skead Holdings Ltd.

Survey Company H. Ferderber Geophysics Ltd.

Author of Report G.N. Henriksen

Address of Author 169 Perreault Ave., Val d'Or, Que.

Covering Dates of Survey December 11 to 14, 1987
(linecutting to office)

Total Miles of Line Cut Flown 11.22

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 40 Electromagnetic 40 Radiometric _____
(enter days per claim)

DATE: Feb. 5, 1988 SIGNATURE: Gordon N. Henriksen
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	918936
	918937
	918938
	918939
	918940
	918941

If space insufficient, attach list

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MINING LANDS SECTION

TOTAL CLAIMS 6

837 (85/12)

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) VLF-EM and Magnetometer

Instrument(s) Herz Totem 2A and GEM GSM-11
(specify for each type of survey)

Accuracy 1% and 0.1 gammas
(specify for each type of survey)

Aircraft used Cessna 172, fixed wing aircraft (CF-EWK)

Sensor altitude 300 feet

Navigation and flight path recovery method Visual navigation on airphoto mosaic manual fiducial points and RCA TC-200 Colour Video Camera.

Aircraft altitude 300 feet Line Spacing 100 meters

Miles flown over total area 11.22 Over claims only 6.75 miles

Ministry of Northern Development and Mines

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

Instructions: Please type or print.
- If number of mining claims traversed exceeds space on this form, attach a list.

Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns. Do not use shaded areas below.

Type of Survey(s): Airborne Magnetometer & EM Survey

Township or Area: Mann Twp.

Claim Holder(s): Skead Holdings Ltd.

Prospector's Licence No.: T-1956

Address: c/o P.O. Box 1110, Sault Ste. Marie, Ontario P6A 5N7

Survey Company: B. FERDERBER GEOPHYSICS LTD.

Date of Survey (from & to): 11 12 87 (Day Mo. Yr.) 14 12 87 (Day Mo. Yr.)

Total Miles of line Cut:

Name and Address of Author (of Geo Technical report): R.A. Campbell, 169 Perrault Ave., Val d'Or, Quebec

Credits Requested per Each Claim in Columns at right

		Days per Claim
Special Provisions: For first survey: Enter 40 days (This includes line cutting). For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Man Days: Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits: Note: Special provisions credits do not apply to Airborne Surveys.		Days per Claim
	Electromagnetic	40
	Magnetometer	40
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
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	918938				
	918939				
	918940				
	918941				

RECEIVED
FEB 08 1988
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 6

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.

Date: Dec. 14/87

Recorded Holder or Agent (Signature):

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

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: R.A. MacGregor, P.O. Box 1110, Sault Ste. Marie, Ontario P6A 5N7

WITHDRAWN FROM DISPOSITION

- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- MINING AND SURFACE RIGHTS

Order No.	Date	Disposition	File

W.P.R. WATER POWER RESERVE

HANNA TOWNSHIP

DUFF TOWNSHIP

NEWMARKET TOWNSHIP

LITTLE TOWNSHIP

VI V IV III II I

12 11 10 9 8 7 6 5 4 3 2 1

Pickerel Lake

Pickerel Cr.

Devonshire Road

Three Pics Road

Waterfalls

Frederick House River

Flint Cr.

W.P.R.

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	▬
" , MINING RIGHTS ONLY	▬
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	◔
CANCELLED	⊗
SAND & GRAVEL	◔
LAND USE PERMIT	*

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP 380, SEC. 63, SUBSEC 1.

500 0 1000 Metres

10 0 10 20 30 40 50 60 70 Chains

500 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000

Received Sept 22/86

TOWNSHIP

MANN

MNR ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

RECEIVED JUN 29 1987 SURVEYS AND MAPPING BRANCH

Ontario Ministry of Natural Resources

Ministry of Northern Development and Mines

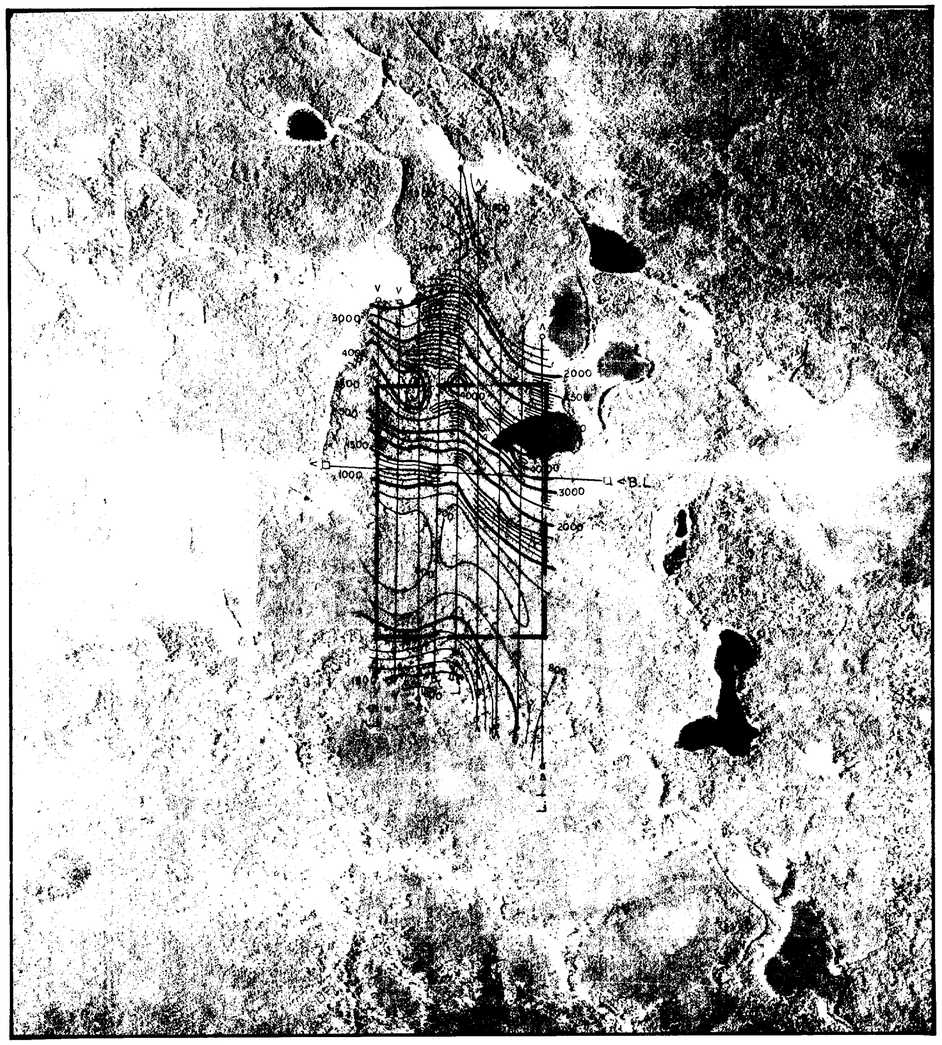
Date SEPTEMBER, 1986

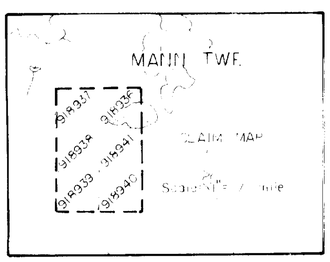
Number G-3537

ck. gl. PM

42A15SW0005 2.10807 MANN

200





LEGEND

TOTAL FIELD CONTOUR INTERVAL 100 GAMMAS

FIDUCIAL POINT

LINE DIRECTION

BASE VALUE 58000 GAMMAS

MAGNETIC LOW

1000 GAMMAS

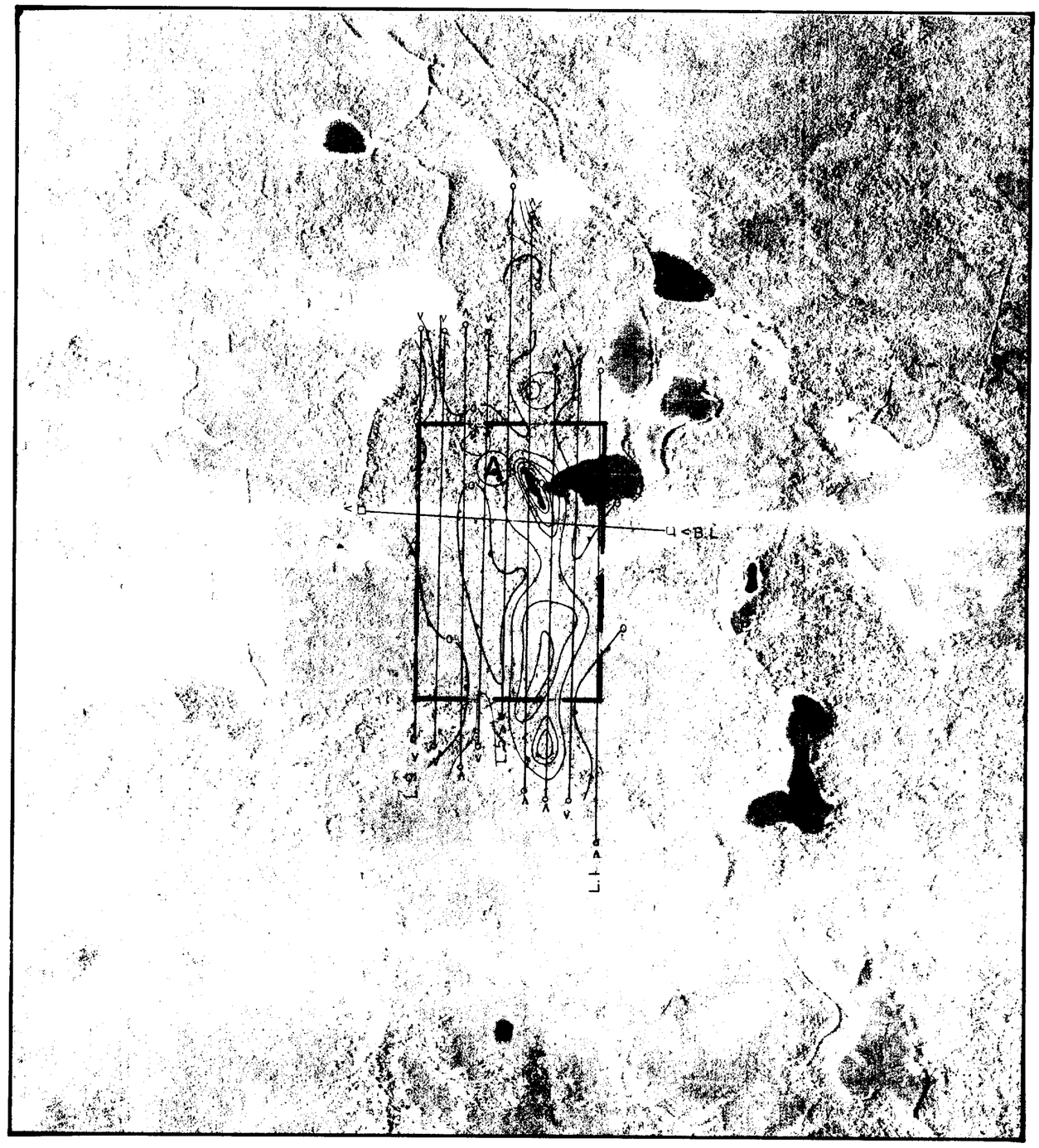
500 GAMMAS

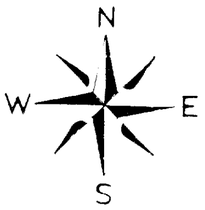
100 GAMMAS

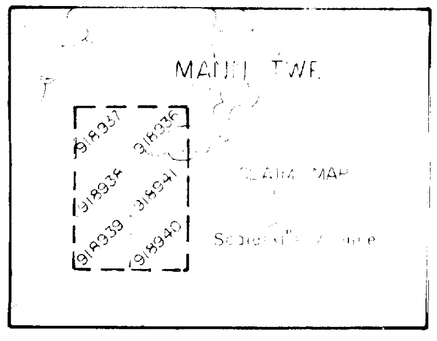
TYPE OF WORK: AIRBORNE MAGNETIC SURVEY	
CLIENT: R.A. MACGREGOR 210807	
PROJECT: SKEAD HOLDING LTD.	AREA: MANN TWP. ONT.
H. Ferderber Geophysics Ltd.	SCALE: 1" = 1/4 mile; DATE: JAN. 1988
	DRAWN BY: W.H.; MAP OR SHEET NO: MG-1

42A15SW0005 2.10807 MANN

210







LEGEND

TOTAL FIELD CONTOUR INTERVAL 2 %

CONDUCTOR AXIS

FIDUCIAL POINT

LINE DIRECTION

STATION USED: CUTLER, MAINE, USA. (N.A.A. 24.0 kHz.)

LESS THAN ZERO

10%

2%

0%

TYPE OF WORK

AIRBORNE V.L.F.-EM SURVEY

CLIENT

R.A. MACGREGOR

2.10807

PROJECT	AREA	
SKEAD HOLDING LTD.	MANN TWP. ONT.	
H. Ferderber Geophysics Ltd.	SCALE 1" = 1/4 mile	DATE JAN. 1988
	DRAWN BY S.H.	MAP OR SHEET NO. EM-1