42C04SE0051 42C04SE0016 DAVID LAKES 010

A-534

REPORT ON AN AIRBORNE MAGNETIC AND VLF-EM SURVEY DAVID LAKES AREA SAULT STE. MARIE MINING DIVISION, ONTARIO

for

DAIWAN ENGINEERING LTD.

RECEIVED
MAR 14 1986 MAR 1 7 1986
MINING LANDS SECTION

by

TERRAQUEST LTD.
Toronto, Canada

February 26, 1985

42C04SE0051 42C04SE0016 DAVID LAKES

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No. A-534-2, Vertical Magnetic Gradient
No. A-534-3, VLF-EM Survey
No. A-534-4, Interpretation

1. INTRODUCTION

This report describes the specifications and results of a geophysical survey carried out for Daiwan Engineering Ltd., 1010-409 Granville, Vancouver, B.C. V6C 1W9 by Terraquest Ltd., 905 - 121 Richmond St. W., Toronto, Canada. The field work was performed from December 3 to 16, 1985 and the data processing, interpretation and reporting from December 17 to February 26, 1986.

The purpose of a survey of this type is two-fold. One is to prospect directly for anomalously conductive and magnetic areas in the earth's crust which may be caused by, or at least related to, mineral deposits. A second is to use the magnetic and conductivity patterns derived from the survey results to assist in mapping geology, and to indicate the presence of faults, shear zones, folding, alteration zones and other structures potentially favourable to the presence of gold and base-metal concentration. To achieve this purpose the survey area was systematically traversed by an aircraft carrying geophysical instruments along parallel flight lines spaced at even intervals, 100 meters above the terrain surface, and aligned so as to intersect the regional geology in a way to provide the optimum contour patterns of geophysical data.

2. THE PROPERTY

The property is located in the Area of David Lakes map (claims map M-12), in the Saulte Ste. Marie Mining Division of Ontario about 60 kilometers west northwest of the town of Wawa. The property lies along the southest boundry of the Pukaskwa National Park and can be reached by helicopter from Wawa.

The latitude and longitude are 48 degrees 03 min., and 85 degrees 40 min. respectively, and the N.T.S. reference is 42C/4.

The survey covers 234 claims, filed on Report of Work # 182 with the Mining Recorder.

3. GEOLOGY

Map References

1. Map 2332: Pukaskwa River. scale 1:63,360, O.D.M. 1975

The survey area is underlain by an Early Precambrian sedimentary - volcanogenic syncline trending to the east northeast. A narrow band of conglomerates near the axial plane are flanked by thick sequences of

greywackes, arkoses and fine grained sediments. These in turn are flanked by mafic to intermediate volcanics. Beyond the survey to the east and west the sedimentary sequences are intercalated with felsic and mafic volcanics. The sedimentary - volcanogenic belt is bounded to the north and south by batholithic granitic rocks.

4. SURVEY SPECIFICATIONS

4.1 Instruments

The survey was carried out using a Cessna 182 aircraft, registration C-FAKK, which carries a magnetometer and a VLF electromagnetic detector.

The magnetometer is a proton precession type with the sensor element mounted in an extension of the right wing tip. It's specifications are as follows:

Resolution:	0.5 gamma
Accuracy:	One gamma
Cycle time:	One second
Range:	20000-100000 gammas in 23 overlapping steps
Gradient tolerance:	Up to 5000 gammas per meter
Model:	GSM-8BA
Manufacturer:	GEM Systems Inc., 105 Scarsdale Rd., Don Mills, Ontario, M3B 2R5

The VLF-EM unit uses three orthoganol detector coils to measure (a) the total field strength of the time-varying EM field and (b) the phase relationship between the vertical coil and both the "along line" coil (LINE) and the "cross-line" coil (ORTHO). The LINE coil is tuned to a transmitter station that is ideally positioned at right angles to the flight lines, while the ORTHO coil transmitter should be in line with the flight lines. It's specifications are:

Accuracy:	1%
Reading interval:	1/2 second
Model:	TOTEM 2A
Manufacturer:	Herz Industries, Toronto

The VLF sensor is mounted in the left wing tip extension.

Other instruments are:

- King KRA-10A Radar altimeter
- UDAS-100 data processor with Digidata nine track tape recorder, manufactured by Urtec Ltd., Markham, Ontario.
- Geocam video camera and recorder for flight path recovery, manufactured by Geotech Ltd., Markham, Ontario.

Suite 905, 121 Richmond Street West, Toronto, Canada, M5H 2K1 Telephone (416) 869-0010

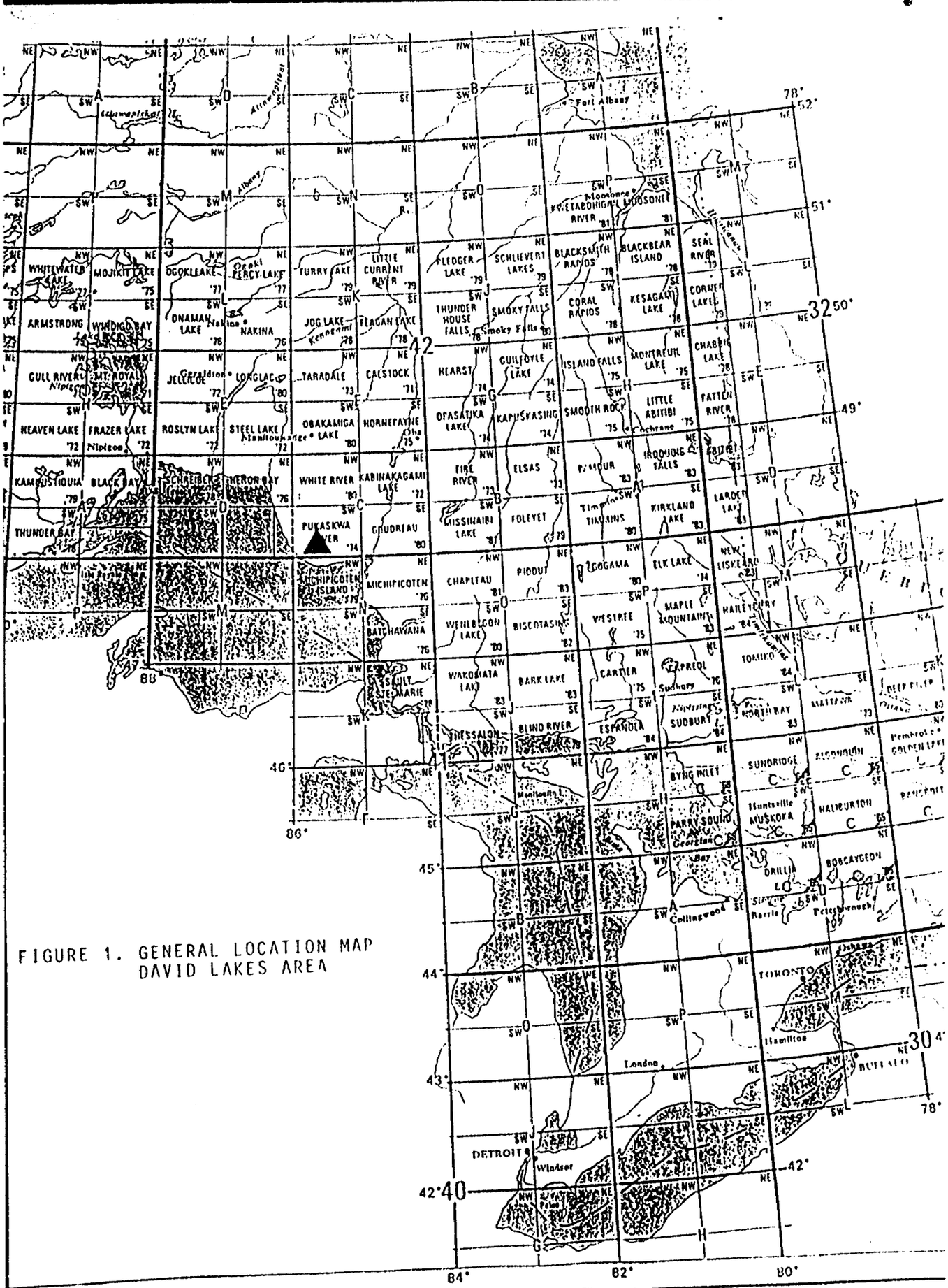


FIGURE 1. GENERAL LOCATION MAP
DAVID LAKES AREA

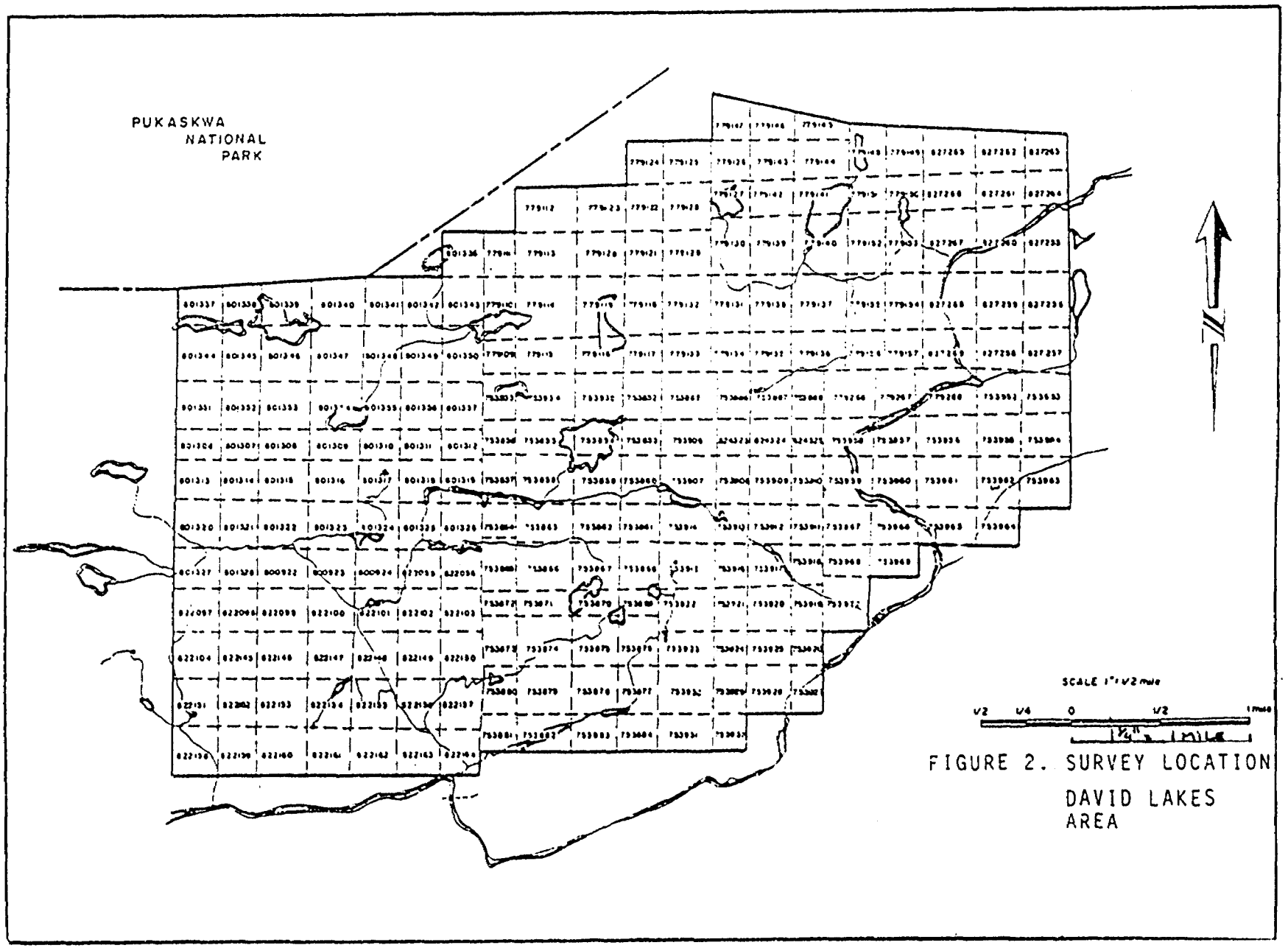


FIGURE 2. SURVEY LOCATION

DAVID LAKES
AREA

4.2 Lines and Data

a) Line spacing:	100 meters
b) Line direction:	360 degrees
c) Terrain clearance:	100 meters
d) Average ground speed:	156 km/hr.
e) Data point interval:	Magnetic: 42 meters
	VLF-EM: 21 meters
f) Tie Line interval:	2 kilometers
g) Channel 1 (LINE):	lines 1-9,58-81: NLK Seattle,24.8 kHz.
	lines 10-57: NAA Cutler, Me., 24.0 kHz
h) Channel 2 (ORTHO):	NSS Annapolis. 21.4 kHz

i) Line km over total survey area: 443
j) Line km over claim groups: 421

4.3 Tolerances

a) Line spacing: Any gaps wider than twice the line spacing and longer than 10 times the line spacing were filled in by a new line.
b) Terrain clearance: Portions of line which were flown above 125 meters for more than one km were reflown if safety considerations were acceptable.
c) Diurnal magnetic variation: Less than twenty gammas deviation from a smooth background over a period of two minutes or less as seen on the base station analogue record.
d) Manoeuvre noise: Approximately +/-5 gammas.

4.4 Photomosaics

For navigating the aircraft and recovering the flight path, mosaics of aerial photographs were made from existing air photos. In order to provide a semi-controlled base the photos were laid down on a topographic map which had been photographically adjusted to the photo scale. The laydown was then photographed and printed at the final map scale.

5. DATA PROCESSING

Flight path recovery was carried out in the field using a video tape viewer to observe the flight path as recorded by the Geocam video camera system. The flight path recovery was completed daily to enable reflights to be selected where needed for the following day.

The magnetic data was levelled in the standard manner by tying survey lines to the tie lines. The IGRF was not been removed. The total field was contoured by computer using a program provided by Dataplotting Services Inc. To do this the final levelled data set is

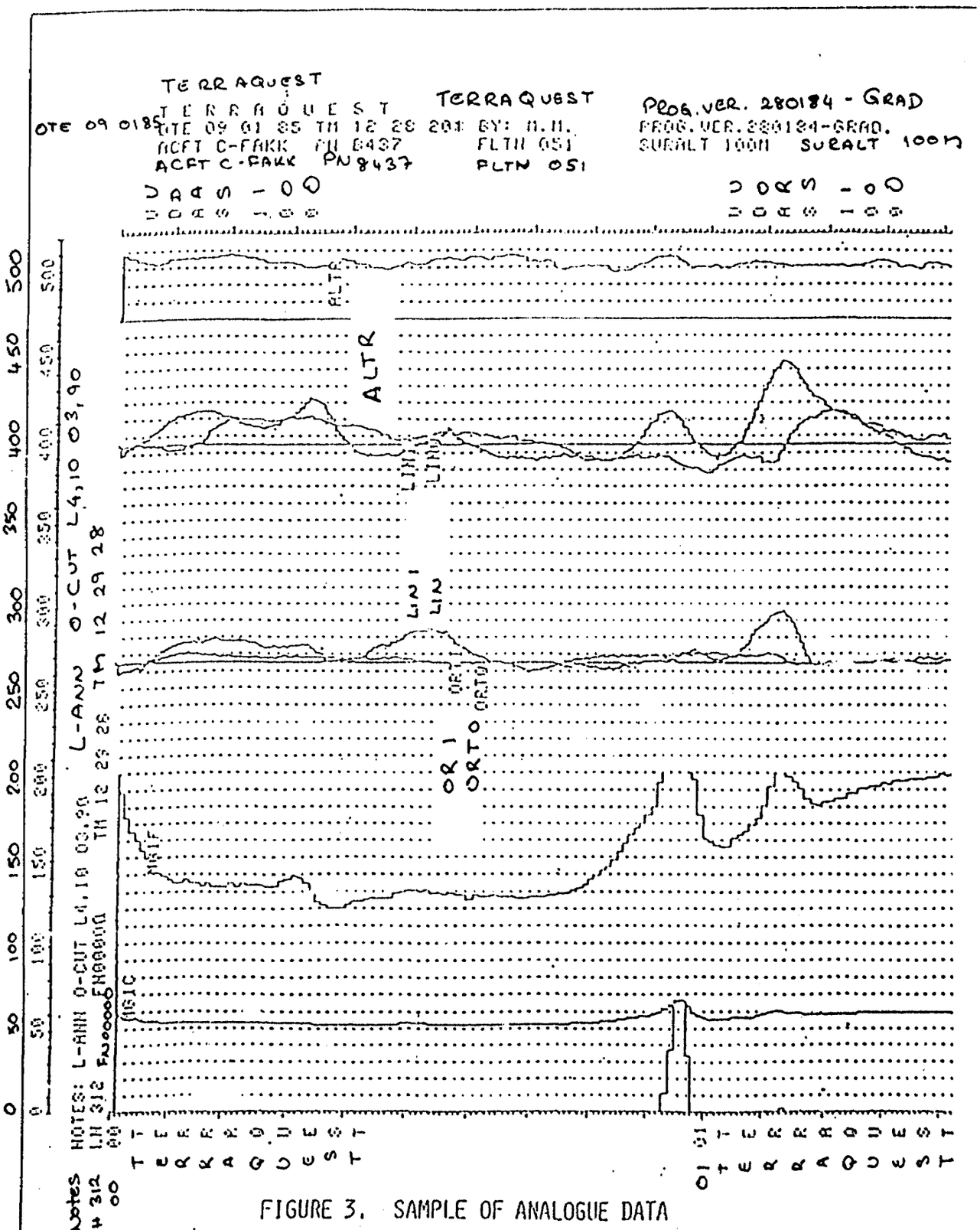


FIGURE 3. SAMPLE OF ANALOGUE DATA

gridded at a grid cell spacing of 1/4 the flight line spacing.

The vertical magnetic gradient is computed from the total field data using a method of transforming the data set into the frequency domain, applying a transfer function to calculate the gradient, and then transforming back into the spatial domain. The method is described by a number of authors including Grant, 1972 and Spector, 1968.

The VLF data was treated automatically so as to normalize the non conductive background areas to 100 (total field strength) and zero (quadrature). The algorithms to do this were developed by Terraquest and will be provided to anyone interested by application to the company.

All of these dataprocessing calculations and map contouring were carried out by Dataplotting Services Inc. of Toronto.

INTERPRETATION

6.1 General Approach

To satisfy the purpose of the survey as stated in the introduction, the interpretation procedure was carried out on both the magnetic and VLF data. On a local scale the magnetic gradient contour patterns were used to outline geological units which have different magnetic intensity and patterns or "signatures". Where possible these are related to existing geology to provide a geological identity to the units. On a regional scale the total field contour patterns were used in the same way.

Faults and shear zones are interpreted mainly from lateral displacements of otherwise linear magnetic anomalies but also from long narrow "lows". The direction of regional faulting in the general area is taken into account when selecting faults. Folding is usually seen as curved regional patterns. Alteration zones can show up as

Grant, F.S. and Spector A.; 1970; Statistical Models for Interpreting Aeromagnetic Data; Geophysics, Vol 35

Grant, F.S.; Review of Data Processing and Interpretation Methods in Gravity and Magnetics; Geophysics, August 1972.

Spector, A.; Spectral Analysis of Aeromagnetic maps; unpublished thesis; University of Toronto, 1961.

anomalously quiet areas, often adjacent to strong, circular anomalies that represent intrusives. Magnetic anomalies that are caused by iron deposits of ore quality are usually obvious owing to their high amplitude, often in tens of thousands of gammas.

VLF anomalies are categorized according to whether the phase response is normal, reverse, or no phase at all. The significance of the differing phase responses is not completely understood although in general reverse phase indicates either overburden as the source or a conductor with considerable depth extent, or both. Normal phase response is theoretically caused by surface conductors with limited depth extent.

Areas showing a smooth response somewhat above background (ie. 110 or so) are likely caused by overburden which is thick enough and conductive enough to saturate at these frequencies. In this case no response from bedrock is seen.

6.2 Interpretation

The total magnetic field has a relief of approximately 550 gammas and shows relatively good resolution of lithologic units, particularly the northwest trending dykes.

The vertical gradient data substantially improves the resolution of most lithologies and is used as the basis for magnetic mapping. The diabase dykes possess a very strong magnetic signature and can be readily detected by their narrow, crosscutting form. Some of the northwest and northeast trending dykes appear to be cut by north trending dykes. Some are often associated with fault displacement.

Zone "D" to the northeast is a similar narrow linear trend but possesses a dramatic magnetic low response. It is interpreted to represent a diabase dyke with reversed polarity.

The volcanic terrain is charaterized by intermediate (Unit 1) to strong (Unit 1m) magnetic response. Unit 1m usually takes the form of narrow stratiform horizons. The enhanced magnetics may be related to (a) the more mafic components including hypabyssal mafic volcanics, (b) disseminated sulphides particularly pyrrhotite or (c) lean iron formation. The magnetic high zone along the southeastern boundry may represent thermal or chemical alteration related to the granitic intrusion.

The granitic suite also possesses a variable magnetic pattern. Relatively low magnetic response zones (Unit 6) surround intensely magnetized horizons and masses (Unit 6m). The stronger magnetic activity may be related to xenoliths of country rock, alteration of the granites or magnetic components within the granitic melt.

The sedimentary suite exhibits a very low magnetic response. Magnetic activty within the areas geologically mapped as sediments have been interpreted as either diabase dykes or intercalated volcanics. The complexity of the magnetic pattern indicates that the geology is considerably more detailed and intricate than presently mapped.

The VLF-EM data shows numerous very strong well defined conductor axes generally trending to the east northeast. Most of them coincide with magnetically mapped faults and air photo lineaments suggesting a fault related origin. This could include conductive gouge, water saturation or disseminated sulphide mineralization, particularly pyrrhotite. Several conductor axes which coincide with volcanic horizons bear the greatest potential for sulphide origins and should be followed up by detailed mapping and ground EM or I.P. techniques.

7. SUMMARY

A combined magnetic and VLF-EM survey has been done on the survey area at a data density of approximately 1.6 km. per mineral claim. The magnetic data has been used to modify and update the existing geology and has shown a number of new contacts and faults. A number of VLF-EM conductor axes were found of which some are believed to be have potential sulphide origin and have been recommended for additional investigation.

TERRAQUEST LTD.

Charles Q. Barrie, M.Sc.
Geologist

AIRBORNE GEOHYSICAL SURVEY CONTRACT Q-5064
David Lakes
Wawa, Ont.

The following specifications set out the detail of work to be carried out by Terraquest Limited (Contractor) 905-121 Richmond St. West Toronto, Ontario M5H 2K1 for (Client) Daiwan Engineering Ltd., 1010-409 Granville, Vancouver, B.C., V6C 1W9

1. GENERAL

The Contractor hereby undertakes on the terms and conditions hereinafter contained, to use its best efforts to perform for the Client an airborne geophysical survey, hereinafter referred to as the "Survey".

2. SERVICES

The services to be provided by the Contractor in connection with the survey shall include the preparation of mosaics and other data prior to flying, the flying itself and all supervision thereof and the preparation and delivery to the Client of the documents specified in Section 13 of this agreement.

3 SURVEY AREA

The survey area consists of 234 claims in the David Lakes area of Ontario about 75 km north west of Wawa. The survey will consist of about 408 line kilometers. See Figure #1

4. TIMING

The contract shall commence in early November 1985 and completed as soon as environmental conditions and serviceablity of equipment permits.The preliminary maps can be ready as soon as a week and a half after the flying has been completed. The final drafted VLF/E.M. and magnetic maps will be completed and delivered to the client within eight weeks of survey flying.

5 EQUIPMENT

The survey instruments to be provided by the Contractor for the purpose of the survey are:

a) A Herz Totem 2A dual frequency V.L.F. electromagnetic system installed in a pod assembly attached to wing pods mounted on a Cessna 182 fixed wing aircraft.

b) GEM Systems GSM-8BA proton precession airborne magnetometer. Urtec UDAS 100 data aquistion system system with chart recorder for analogue data presentation and nine track tape recorder for digital data storage.

d) Geotech Datacam Video flight path camera with intervalometer and fiducial marking system.

e) Radar Altimeter and other necessary naviagational and radio comunication equipment.

f) GEM Systems GSM-8BA proton precession base station magnetometer with analogue chart recorder.

g) All consumables (chart paper, magnetic video cassettes)

6. PERSONNEL

The contractor will supply experienced personnel to execute the Survey, viz: operator/navigator, pilot and dataman and such personnel as necessary to subsequently reduce, compile and report on the data.

7. DATA RECORDING

During the course of the Survey the following data are to be recorded:

a) Digital
   i) The V.L.F. E.M. data, magnetic data, fiducial records, altimeter readings and time will be recorded digitally.

b) Analogue
   i) The V.L.F. total field and vertical quadrature component.
   ii) Total magnetic field strength recorded, at one second intervals, at two different scales (nomially, 200 and 2000nT full scale).
   iii) A record of terrain clearance as provided by the radar altimeter.
   iv) A video tape record of the terrain passing below the aircraft as recorded by the Datacam tracking camera
   v) Time markers impressed sychronously on the video tape and analogue records.

8. ACCEPTABLE DATA AND SURVEY PROCEDURES

Acceptable survey data and procedures will adhere to the specifications set out below and subsequently in sections 9, 10 and 11

a) Survey flights will be discontinued when persistently unacceptable data are obtained on three consective lines
b) Reflights will be performed over those portions of lines where specified criteria are not met.

9. FLYING SPECIFICATIONS

It is the Contractors responsibility to ensure that the aircraft crew strives to maintain the following specification. However, the pilot's decision as to safe operating conditions will be binding and reflights need not be undertaken where such conditions produce unacceptable data.

a) The survey flight direction will be such that it crosses the geological trend at 90 degrees.

b) The survey flight lines will be spaced intervals indicated in Section #3 of this contract and will not deviate from the intended flight path so as to form a gap larger than twice the line spacing of one kilometer or more.

c) Magnetic lie lines will be flown perpendicular to the survey lines at two km. intervals, preferably where local magnetic relief is subdued.

d) The aircraft will fly at an airspeed of 156 Km.per hr or less

e) Aircraft terrain clearance will be smoothly maintained at 100 meters or less and will not exceed 125 meters over a distance of one kilometer.

f) Navigation will be done visually on photo mosaics of the survey area.

g) The survey crew will be grounded during periods when diurnal activity exceeds 20nT over a two minute period.

10. CALIBRATION OF SURVEY INSTRUMENTS

The altimeter will be calibrated periodically during the survey. The E.M. base level will be established at a high altitude prior to each flight.

11. DATA QUALITY

a) The V.L.F. data will exhibit persistent peak-to-peak electronic noise of less than 4% at a time constant of one second. Sporadic noise bursts from atmospheric disturbances will be not more than one per kilometer.

b) Peak-to-peak noise on the magnetic record will be less than 3nT.

c) The altitude of the aircraft over flat terrain will be recorded with an accuracy of plus or minus 10%.

d) The output of the base station magnetometer will be recorded at a time rate and amplitude scale sufficient to define short term magnetic disturbances (nominally, two second intervals and analogue chart scale of one cm. = 10nT).

e) All analogue data will be legibly recorded. Flight path video will display useable clarity. Fiducal correlations will be maintained.

f) Magnetic levelling to correct for diurnal variation will be carried out in the standard manner utilizing the tie line intersections with the traverse lines.

12. DATA RECOVERY AND ACCESS

a) A flight path map, based on the navigators manual fiducials and verified by the flight path video tape will be completed as the survey progresses.

b) The client shall maintain the option to inspect the data in the field and select alternative specifications at their expense. provided adequate prior notification is given to to the contractor.

c) Digital data tapes will be shipped immediately to Toronto and tape contents listed to ensure requisit fidelity and completeness. Once it has been determined that acceptable digital records have been secured, edititing and computer processing of E.M. and aeromagnetic data will be initiated.

13. DATA PRESENTATION

All maps will be at a scale of 1:10,000 and all base maps are comprised of photomosaics with flight lines and fiducials. The delivery items are as follows:

a) Total magnetic field contours on a greyflex basemap with four paper copies.

b) Total magnetic field contours on colour applicon plot, one copy.

c) Calculated vertical magnetic gradient contours on a greyflex base map four paper copies

d) Calculated vertical magnetic gradient contours on a colour Applicon plot, one copy.

e) Total field contours (2%) of VLF data with quadrature profiles drawn along flight lines on a greyflex base map, four copies.

f) A report, giving equipment specifications, operational statistics, survey techniques and assessment work interpretation identifying significant conductors, structural features and geological units derived from the magnetic pattern.

INSURANCE AND LIABILITY

a) Terraquest Ltd. provides either directly or indirectly insurance coverage for personnel, equipment and damages arising out of the carrying of the survey.

b) Terraquest Ltd. agrees to save and keep harmless the Client from and against all damages, costs and expenses which the client may sustain, suffer or incur by reason of any act of omission ot Terraquest Ltd. in connection with the performance of the survey.

c) When the survey data is to be used for assessment credit, Terraquest Ltd. is not held liable for the compliation and filing of the Report of Work Form for the Governmental body involved with mineral exploration assessment credits. Terraquest is willing to assist the client in this aspect.

5. CHARGES

The Client agrees to pay the Contractor for an acceptable airborne survey with coverage encompassing flying, flight line recovery, compilation of VLF-E.M. and aeromagnetic data, and for the drafting of the survey area. The survey includes tie lines and two hundred meter over run to achieve the calculated vertical gradient.

16. PAYMENT

Payments will be made as follows:

a) Payment on signing of contract $5,746.00

b) Payment on completion of flying.....$5,746.00

c) payable on upon delivery of material described in Section 13.....$5,746.00

$17,238.00

Exclusive title to the Survey results shall not pass until full payment has been made to the Contractor for its services rendered. The rate of 2% per month is charged for over due accounts

Dated Thursday, September 19, 1985

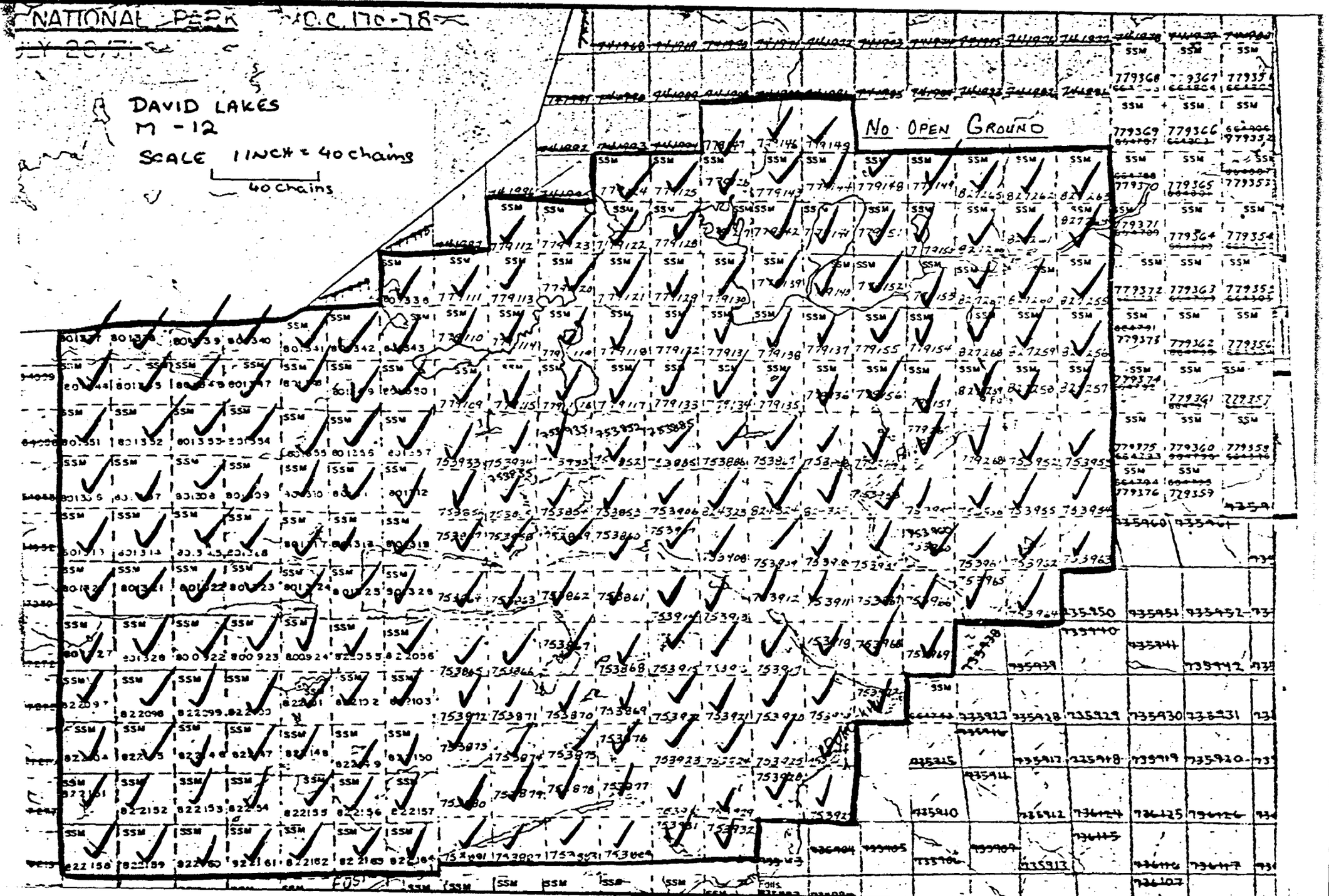
Accepted _____

Terraquest Ltd

Dated October 11, 1985

Accepted _____

Daiwan Engineering Ltd.


NATIONAL PARK D.C. 170-78
DAVID LAKES
M - 12
SCALE 1 INCH = 40 chains
40 chains
No Open Ground

42C04SE0051 42C04SE0016 DAVID LAKES

900

Ministry of Natural Resources
Ontario

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

28961
#182-85

The Mining Act

Note: – If number of mining claims traversed exceeds space on this form attach a list.
– Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

F-08/86

Type of Survey: AIRBORNE MAGNTTOMETER & V.LF SLASH EM	Township or Area: DAVID LAKE AREA SAULT ST MARIE M.D.
Claim Holder(s): RUTH DITTO	Prospector's Licence No.: A 46909
Address: 1010-409 GRANVILLE STREET - VANCOUVER B.C V6C1W9	
Survey Company: TERRAQUEST LTD.	Date of Survey (from & to): 27 11 85 (Day Mo. Yr.) – 16 12 85 (Day Mo. Yr.)
Total Miles of line Cut: 408 KIL FLOWN	
Name and Address of Author (of Geo-Technical report): CHARLES Q BARRIE - SUITE 905-121 RICHMOND ST. WEST, TORONTO, ONT-M5H-2	

Credits Requested per Each Claim in Columns at right

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

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

Airborne Credits	80 DAYS PER CLAIM (2 YRS)	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	40
	Magnetometer	40
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.	Mining Claim Prefix	Number	Expend. Days Cr.
SSM	753852 TO	80	SSM	822145 TO	80
	753888 INCLS	DAYS		822164 INCLS	DAYS
	753906 TO	PER		827255 TO	PER
	753935 INCLS	CLAIM		827269 INCLS	CLAIM
	753952 TO	✓		824323	↓
	753964 INCLS	✓		824324	
	753972	✓		824325	↓
	779266	✓			
	779267	✓		See	
	779268	✓		attached	
	779109 TO	✓		list	
	779157 INCLS	✓			
	801306 TO	✓			
	801328 INCLS	✓			
	800922	✓			
	800923	✓			
	800924	✓			
	822055	✓			
	822056	✓			
	801336 TO	✓			
	801357 INCLS	✓			
	822097 TO	✓			
	822104 INCLS	✓			

S. S. MARIE MINING DIV.
RECEIVED
DEC 20 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

RECEIVED
JAN 02 1986
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 234

Expenditures (excludes power stripping)

Type of Work Performed: AIRBORNE MAGNETOMETER & VLF SLASH EM

Performed on Claim(s): ALL CLAIMS LISTED TOTAL OF 234

Calculation of Expenditure Days Credits

Total Expenditures $17,238.00 ÷ 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
18,220	Dec. 20/85	[illegible] St Jules
	Date Approved as Recorded	Branch Director
	AB 86.418	[illegible]

Date	Recorded Holder or Agent (Signature)
December 17/85	Ruth Ditto

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.H.D. PHILP. 1010-409 GRANVILLE ST. VANCOUVER BC V6C1W9

Date Certified: DECEMBER 16-85

Certified by (Signature): [signature]

1362 (81/9)

SSM 753852

	Initials	Date
Prepared By		
Approved By		

RE: AIRBORNE SURVEY BY TERRAQUEST LTD. ON THE FOLLOWING CLAIMS.

PAGE 1 of 2

Following

	1	2	3	4	5	6
SSM	753852		SSM 753915		SSM 779115	
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	907		SSM 753969		153	
	908		SSM 753972		154	
	909		SSM 779109		155	
	910		110		156	
	911		111		SSM 779157	
	912		112		SSM 779266	
	913		113		267	
	914		SSM 114		SSM 779268	

	Initials	Date
Prepared By		
Approved By		

RE AIRBORNE SURVEY BY TERRAQUEST LTD. ON THE FOLLOWING 234 CLAIMS

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923		156		247	
SSM 800 924 ✓		157		248	
801 306		158		SSM 827 249 ✓	
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310		162			
311		163			
312		SSM 822 164 ✓			
313		SSM 801 336 ✓			
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321		344 ✓			
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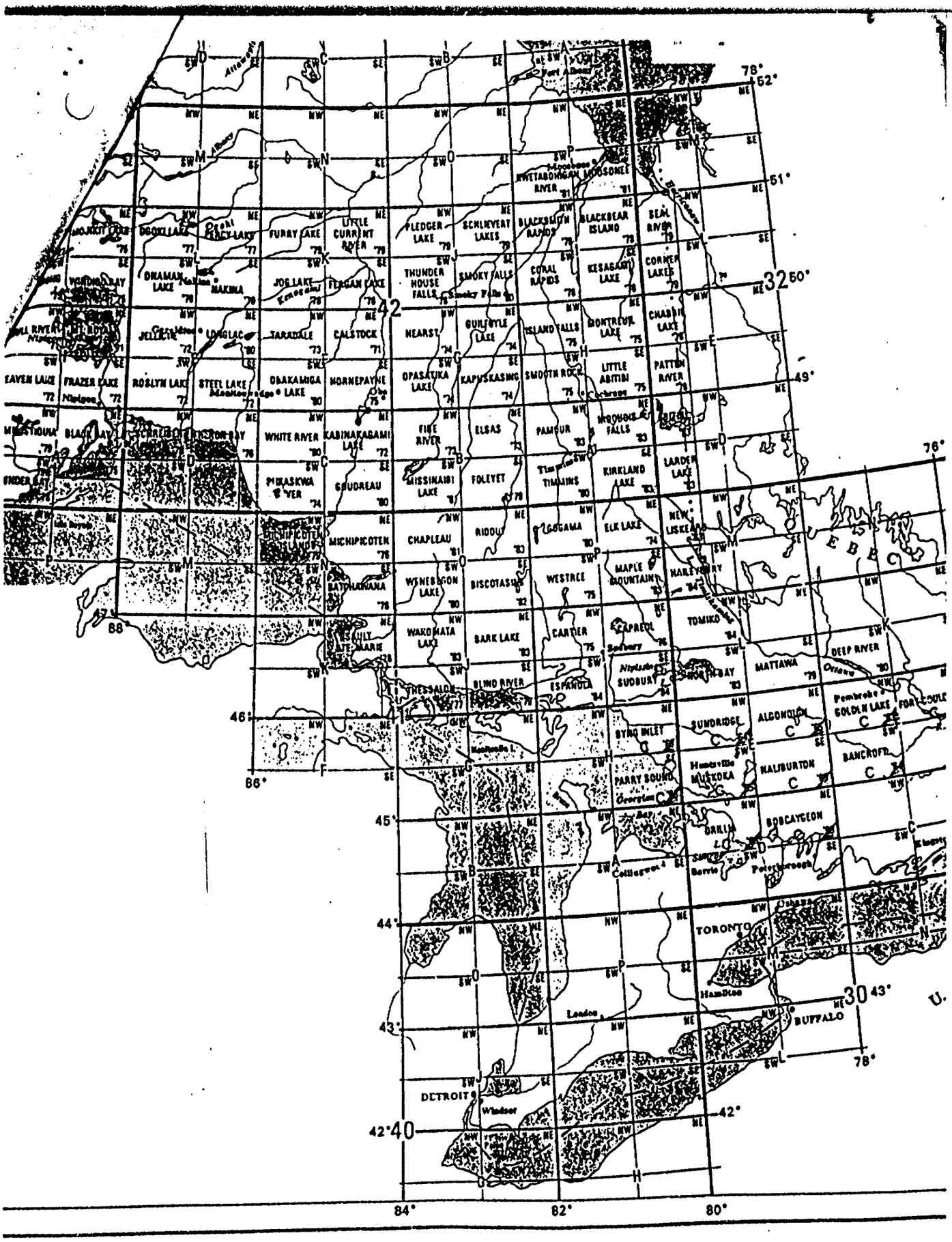
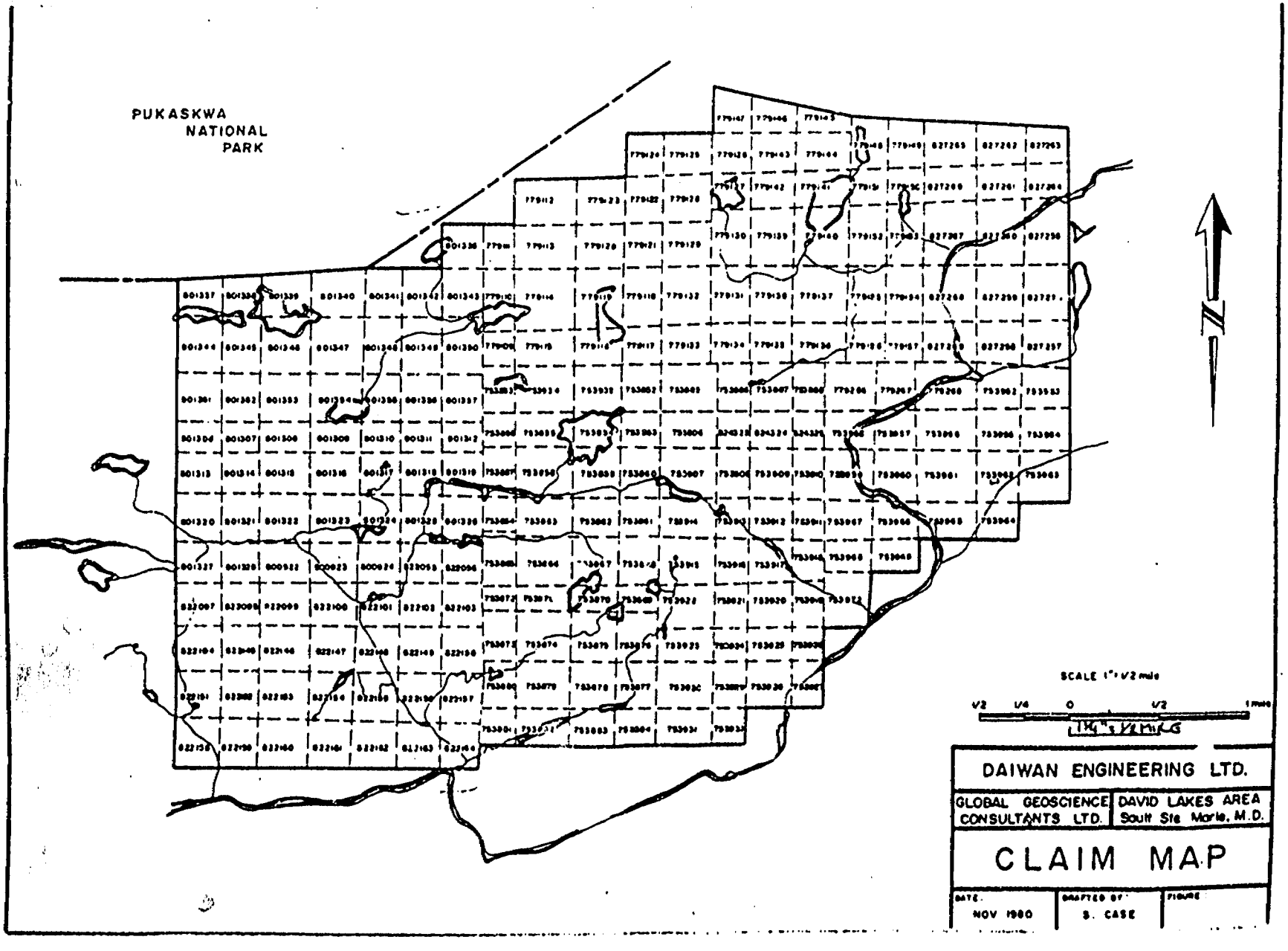
SSM 801 328 ✓		351			
SSM 822 055		352			
SSM 822 056 ✓		353			
822 097		354			
098		355			
099		356			
100		SSM 801 357 ✓			
101		824 323			
102		324			
103		SSM 824 325 ✓			
SSM 822 104 ✓		827 255			
822 145		256			
146		257			
147		258			
148		259			
149		260			
150		261			
151		262			
152		263			
153		264			
154 ✓		265			


78°
52°
51°
50°
49°
76°
42
32
30
88
86°
46°
45°
44°
43°
42°40
84°
82°
80°
Moosonee
MOOSONEE
MOOSE RIVER
Moose River
Moosonee
Attawapiskat R.
Albany R.
Port Albany
Ogoki R.
Kenogami R.
Nakina
Geraldton
Longlac
Jellicoe
Manitouwadge
Schreiber
Terrace Bay
Marathon
Nipigon
Lake Nipigon
Black Bay
Rossport
Pukaskwa River
Michipicoten Island
Michipicoten
Batchawana
Sault Ste. Marie
Thessalon
Blind River
Espanola
Sudbury
Capreol
Sudbury
Nipissing
Lake Nipissing
North Bay
Mattawa
Deep River
Ottawa
Pembroke
Golden Lake
Foymount
Byng Inlet
Sundridge
Algonquin
Huntsville
Muskoka
Haliburton
Bancroft
Parry Sound
Georgian Bay
Bobcaygeon
Orillia
Simcoe
Barrie
Peterborough
Collingwood
TORONTO
Ontario
Hamilton
London
BUFFALO
DETROIT
Windsor
Lake Erie
Lake Huron
Manitoulin I.
Kagawong
Little Current
Mindemoya
Gore Bay
Providence Bay
Meldrum Bay
Spanish R.
Blind River
Serpent River
Cutler
Massey
Webbwood
Whitefish
Whitefish R.
Chapleau
Foleyet
Missinaibi Lake
Timmins
Kirkland Lake
Larder Lake
Cobalt
New Liskeard
Elk Lake
Gogama
Matheson
Iroquois Falls
Smooth Rock Falls
Island Falls
Montreuil Lake
Little Abitibi
Chapleau
Riddell
Biscotasing
Westree
Maple Mountain
Wakomata Lake
Bark Lake
Cartier
Capreol
Sudbury
Tomiko
Mattawa
Deep River
Byng Inlet
Sundridge
Algonquin
Pembroke
Golden Lake
Foymount


PUKASKWA
NATIONAL
PARK
SCALE 1" = 1/2 mile
1/2 1/4 0 1/2 1 mile
1" = 1/2 MILE
DAIWAN ENGINEERING LTD.
GLOBAL GEOSCIENCE CONSULTANTS LTD.
DAVID LAKES AREA
South Ste Marie, M.D.
CLAIM MAP
DATE
NOV 1980
DRAFTED BY
S. CASE
FIGURE

Mar. 18

Ministry of Northern Development and Mines

Ontario

Order of the Minister

Mining Act

Room 6610, Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3
416/965-4888

2.8961

In the matter of mining claims: SSM 753852, et al, in the Area of David Lake as listed on Report of Work #182.

On consideration of an application from the recorded holder, Ruth Ditto under Section 77 Subsection 22 of the Mining Act, I hereby order that the time for filing reports and plans in support of Airborne Geophysical (Em. & Mag.) assessment work recorded on December 20 19 85 be extended until and including March 18, 1986.

1986.02.18
Date

Signature of Director, Land Management Branch

Copies: Ruth Ditto
Suite 1010
409 Granville Street
Vancouver, B.C.
V6C 1W9

Terraquest Ltd
Suite 905
121 Richmond Street West
Toronto, Ontario
M5H 2K1
Attention: C. Barrie

Mining Recorder
Sault Ste. Marie, Ontario

R
AB

1333 (85/12)

April 7, 1986 File: 2.8961

Ruth Ditto
Suite 1010
409 Granville Street
Vancouver, B.C.
V6C 1W9

Dear Madam:

RE: Airborne Geophysical (Magnetometer & Electromagnetic) Surveys submitted on Mining Claims SSM 733852, et al, in the Area of David Lake

---

This will acknowledge receipt of the above-described surveys on March 14, 1986. Enclosed is the VLF plan (in duplicate) for these surveys. In order to complete your submission, please show the perimeter claim numbers on the plans and return them to this office quoting file 2.8961.

For further information, please contact (Mrs.) Susan Hurst at (416) 965-4888.

Yours sincerely,

J.C. Smith, Supervisor
Mining Lands Section

Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

SH/mc

cc: Mining Recorder
Sault Ste. Marie, Ontario
#182/85

C.Q. Barrie
Suite 905
121 Richmond Street West
Toronto, Ontario
M5H 2K1

Daiwan Engineering Ltd.
Consulting Engineers & Geologists

1010 - 409 Granville Street
Vancouver, B.C., Canada V6C 1W9
Telephone: (604) 688-1508

RECEIVED
Land Management Branch
Prepare reply ☐
COMMENTS PLEASE ☐
BY
APR 16 1986
S. E. YUNDT
J. R. MORTON
J. C. SMITH ✓
D. W. SCOTT
M. J. HOGAN
W. P. BROOK
O. FEGN

April 14, 1986

Ministry of Northern Development and Mines
Whitney Block, 6th Floor
Queen's Park
Toronto, Ontario
M7A 1W3

Attention: J.C. Smith, Supervisor
Mining Lands Section

Dear Sirs:

Re: File 2.8961 - Airborne Geophysical Survey,
David Lake Area

As requested in your letrer of April 7, 1986, the perimeter claim numbers have been inserted on the Airborne Magnetic Survey, Total Magnetic Field map.

Yours truly,

DAIWAN ENGINEERING LTD.

Ruth Ditto

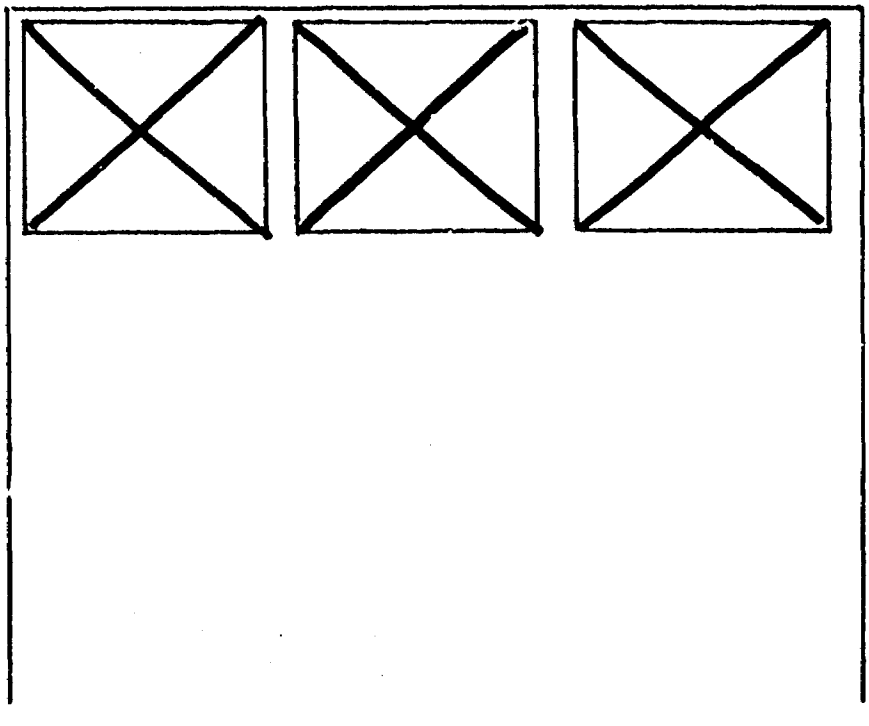
Ruth Ditto
RD:sec

RECEIVED
APR 17 1986
MINING LANDS SECTION

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

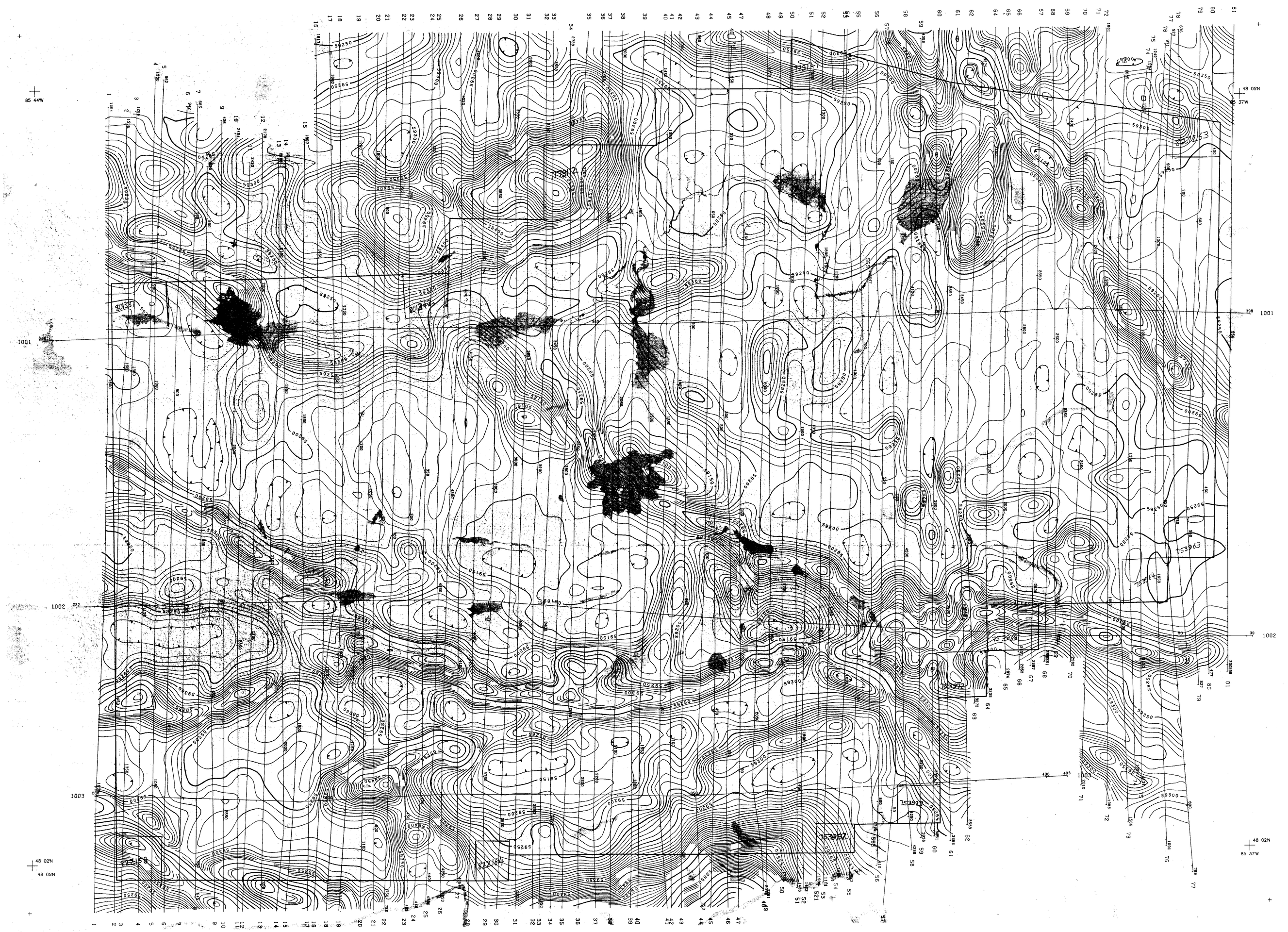
42C/04SE-0016 #1-3

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (x)



FOR ADDITIONAL INFORMATION SEE MAPS:

42C/04SE-0016 #4



LEGEND

Terrain Clearance	100 meters
Line Spacing	100 meters
1000 gammas	
250 gammas	
50 gammas	
10 gammas	

42 C/04SE-0016#1

DAIWAN ENGINEERING LTD.

AIRBORNE MAGNETIC SURVEY
TOTAL MAGNETIC FIELD

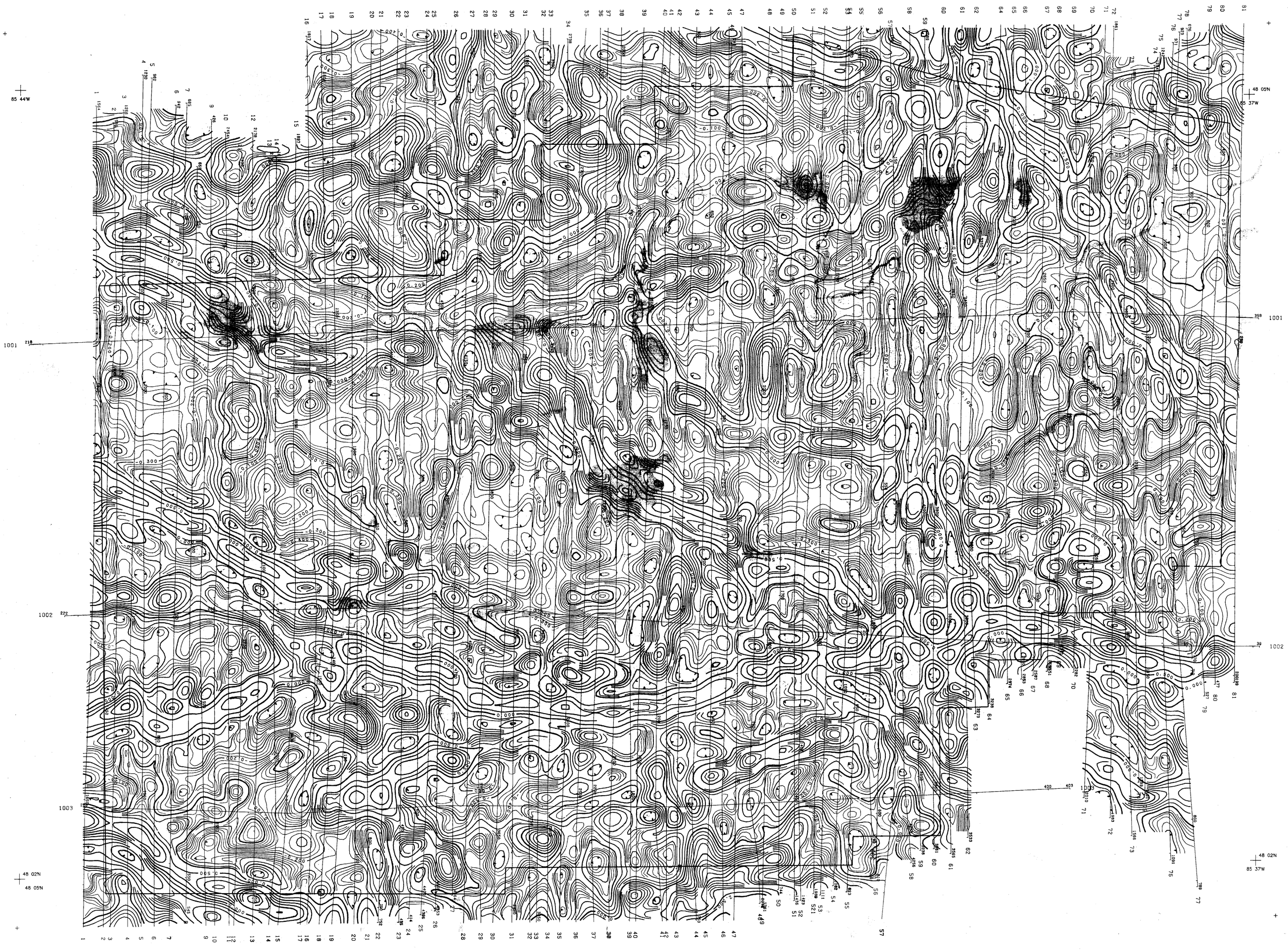
DAVID LAKES AREA

N.T.S. NO:	42 C/4	DRAWING NO.	A-534-1
SCALE	1:10,000	DATE:	February 1986

TERRAQUEST LTD.
TORONTO, CANADA

42C04SE0051 42C04SE0016 DAVID LAKES

200



LEGEND

Terrain Clearance	100 meters
Line Spacing	100 meters
2.500 gammas / meter	
.500 gammas / meter	
.100 gammas / meter	
.025 gammas / meter	

42C/04SE #2

DAIWAN ENGINEERING LTD.

AIRBORNE MAGNETIC SURVEY
VERTICAL MAGNETIC GRADIENT
Calculated From Total Field

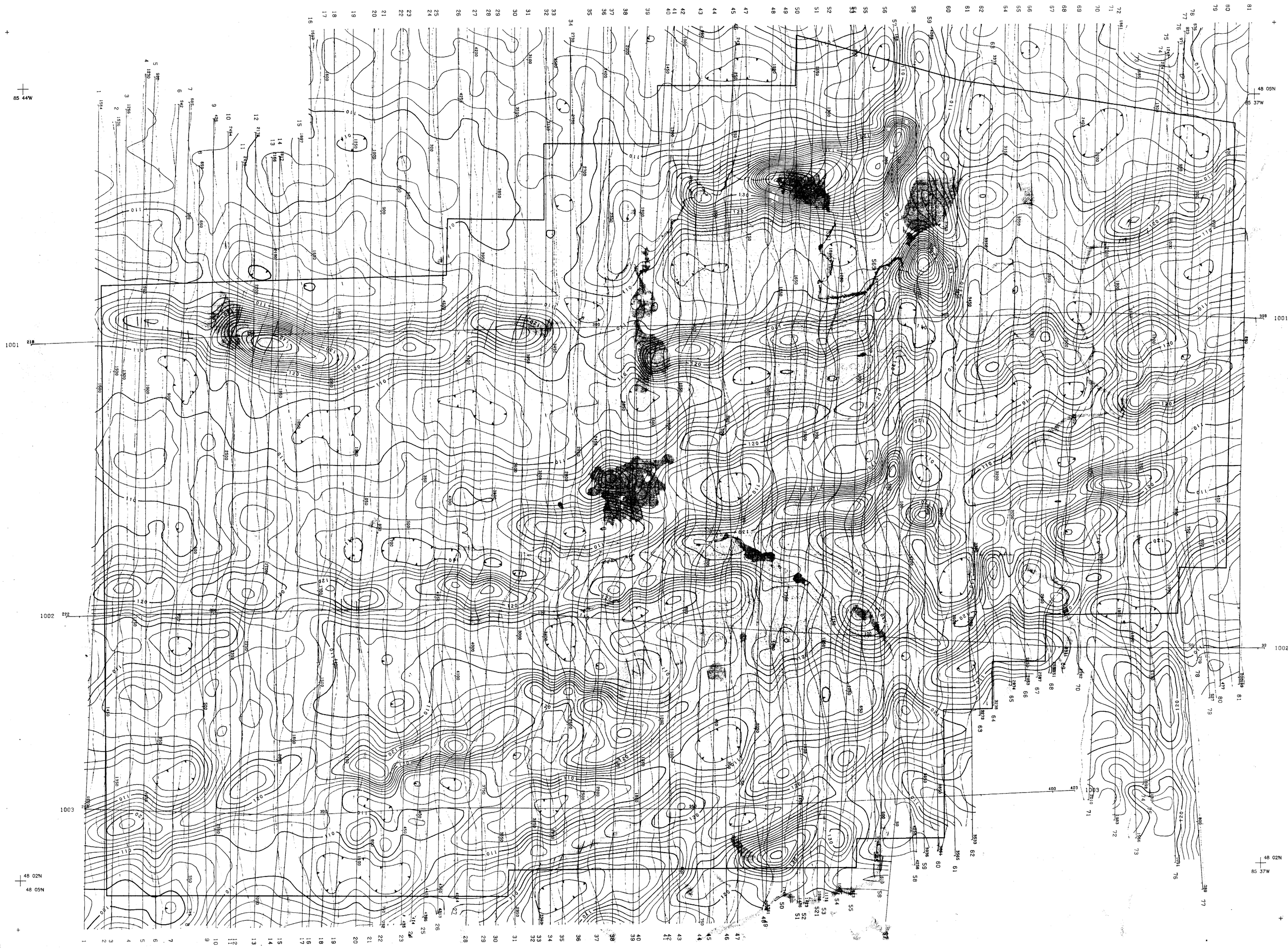
DAVID LAKES AREA

N.T.S. NO:	42 C/4	DRAWING NO.	A-534-2
SCALE	1:10,000	DATE:	February 1986

TERRAQUEST LTD.
TORONTO CANADA

42C04SE0051 42C04SE0016 DAVID LAKES

210



LEGEND

Terrain Clearance ..... 100 meters
Line Spacing ..... 100 meters

Field Strength
50% ——
10% ——
2% ——

QUADRATURE

VLF TRANSMITTER
NLK Seattle 24.8 kHz
Az. 288.1°
(Lines 1-9, 59-81)

VLF TRANSMITTER
NAA CUTLER 24.0 kHz
Az. 98.2
(Lines 10-57)

42C/04SE-0016
#3

DAIWAN ENGINEERING LTD.

AIRBORNE VLF-EM SURVEY
CONTOURS OF TOTAL FIELD STRENGTH
PROFILES OF QUADRATURE

DAVID LAKES AREA

N.T.S. NO:	42 C/4	DRAWING NO.	A-534-3
SCALE	1:10,000	DATE:	February 1986

TERRAQUEST LTD.
TORONTO CANADA

42C04SE0051 42C04SE0016 DAVID LAKES

220

85 44'W

48 05'N
85 37'W

48 02'N

48 02'N
85 37'W

LEGEND

INTERPRETATION

- Contact
- Fault
- Property Boundary

VLF-EM Conductor Axes

- normal quadrature
- reverse quadrature
- in phase only (no quadrature)
- resistivity zone

LITHOLOGY

8	Diabase dykes
6m	Magnetic units within 6
6	Batholithic granitic rocks
3	Metasediments
1m	Magnetic units within 1
1	Mafic to intermediate metavolcanics
D	Magnetic low zone

VLF TRANSMITTER
NLK Seattle 24.8 kHz
Az. 284.1°
(Lines 1-9, 59-81)

VLF TRANSMITTER
NAA CUTLER 24.0 kHz
Az. 98.2°
(Lines 10-57)

42C/04SE - 0016 #4

DAIWAN ENGINEERING LTD.

INTERPRETATION

DAVID LAKES AREA

N.T.S. NO:	42 C/4	DRAWING NO.	A-534-4
SCALE	1 : 10,000	DATE:	February 1986

TERRAQUEST LTD.
TORONTO, CANADA

42C04SE0016 42C04SE0016 DAVID LAKES