B-420

41010NE9137 2.8181 GARNET

010

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

REPORT ON AN AIRBORNE MAGNETIC AND VLF-EM SURVEY GARNET TOWNSHIP PORCUPINE MINING DIVISION, ONTARIO

for

WESTERN PACIFIC ENERGY CORPORATION

RECEIVED
JUN 03 1985
MINING LANDS SECTION

by

TERRAQUEST LTD.
Toronto, Canada

MAY 27, 1985

41010NE9137 2.8181 GARNET

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1. INTRODUCTION

This report describes the specifications and results of a geophysical survey carried out for Western Pacific Energy Corporation of Vancouver, B.C. by Terraquest Ltd., 905 - 121 Richmond St. W., Toronto, Canada. The field work was performed on December 20, 1984, and the data processing, interpretation and reporting from January to May, 1985.

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 100 meters apart, 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 Garnet township, in the Porcupine Mining Division of Ontario about 60 kilometers east of the town of Chapleau. The claims are divided into two groups as shown in figure 3 and referred to as the Garnet and Fawn Creek groups. They lie in the centre of the township and can be reached by forestry road from the east end of Highway 667 some 30 km southwest.

The latitude and longitude are 47 degrees 43 min., and 82 degrees 32 min. respectively, and the N.T.S. reference is 42 0/10.
The claim numbers are P 797501-575, 798029-056, 798059-072, and 798080-099.

3. GEOLOGY

Map References

1. Map 2070, Swayze, Dore Twps, 1:31,680 O.G.S. 1965.
2. Map 51-f, Cunningham, Garnet, 1:63,360, O.D.M. 1942.

The main suite of rock types underlying both claim groups is Keewatin-aged basic volcanics, largely basalt and andesite. Intrusions of granodiorite occur in several places and iron formation is common, usually associated with the volcanics. Some exposures of diabase are seen trending approximately north 15 degrees west. A number of faults cut through the areas, striking in the same direction.

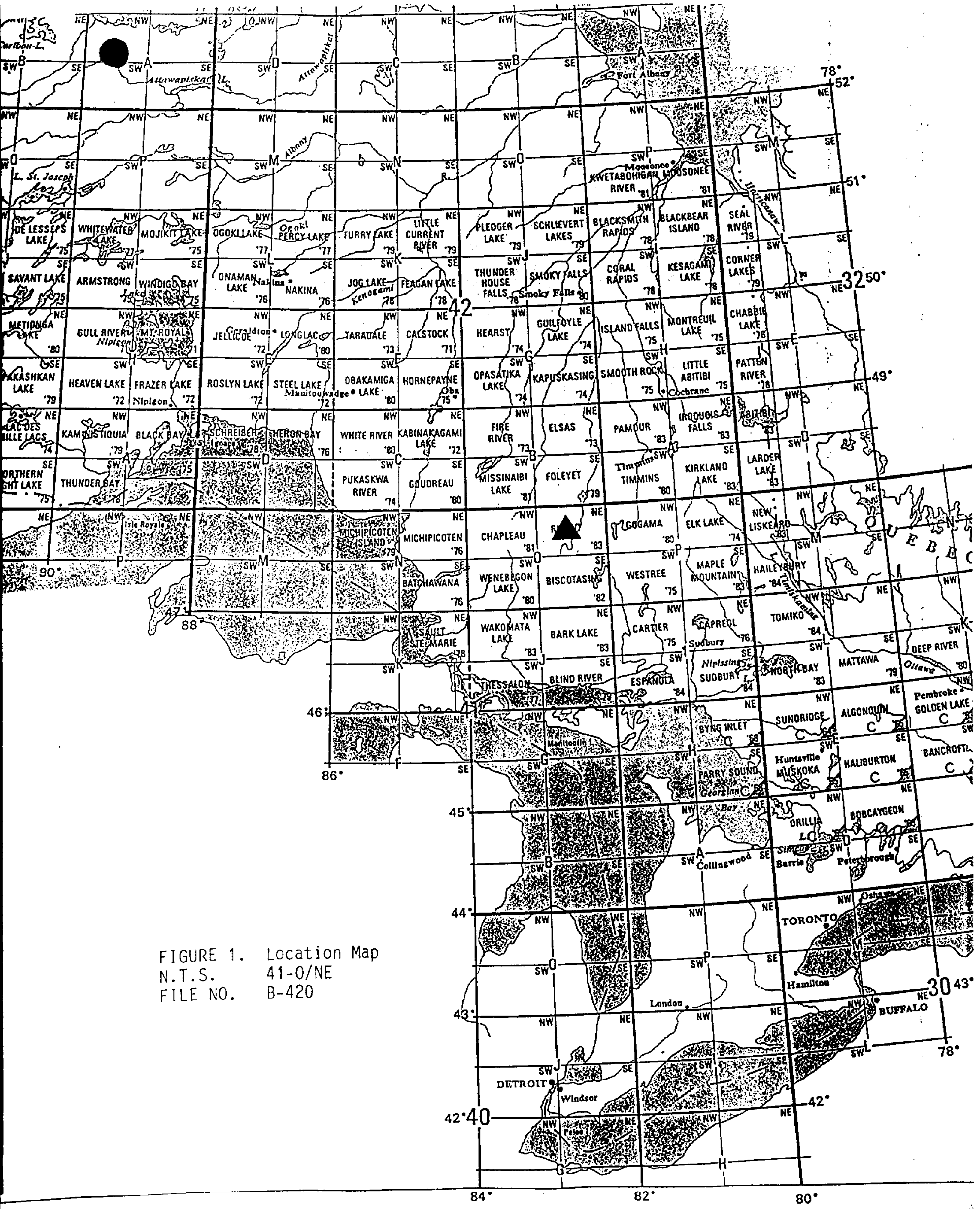

FIGURE 1. Location Map
N.T.S. 41-O/NE
FILE NO. B-420

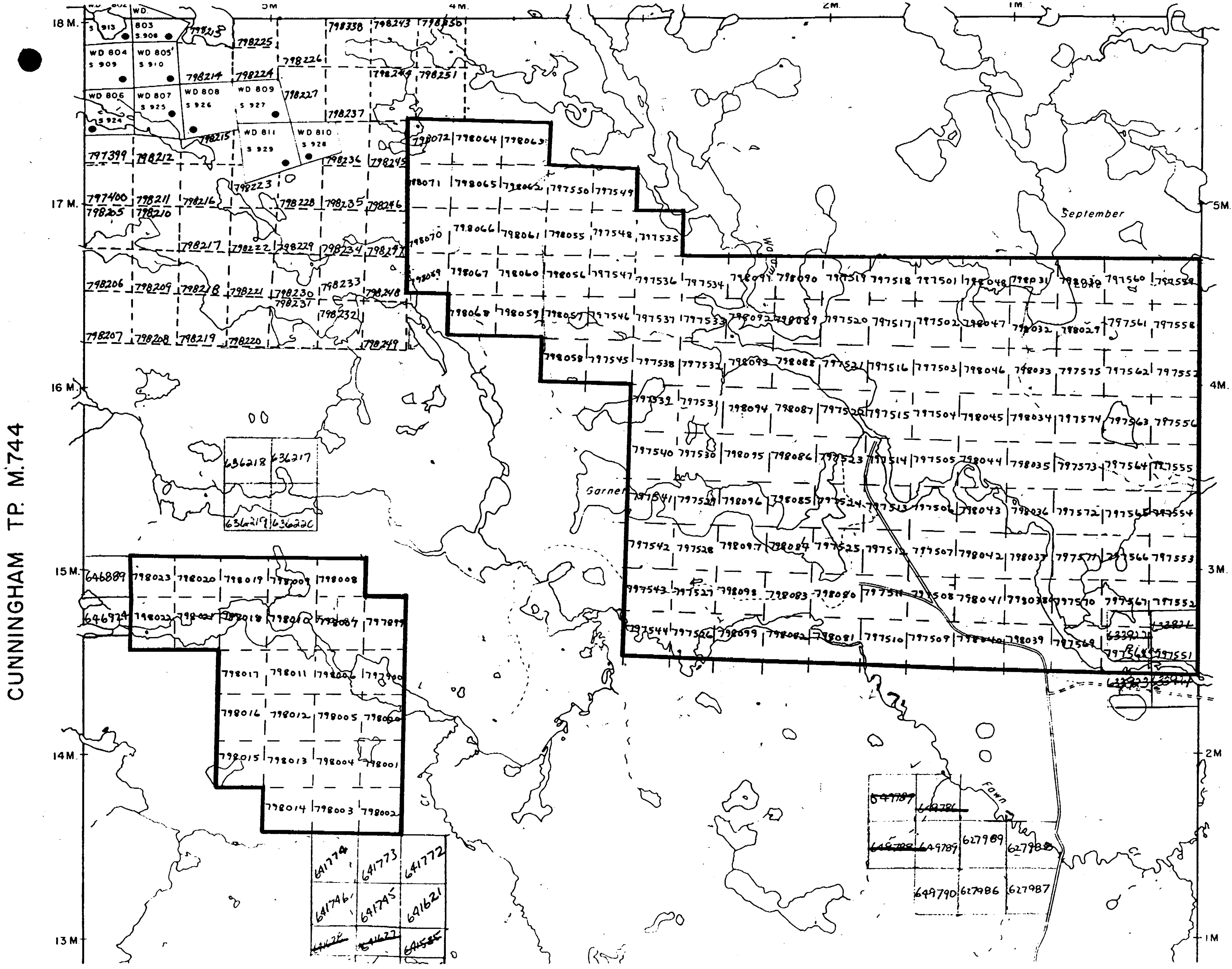

FIGURE 2. Claim Map
LOCATION Garnet Twp.
FILE NO. B-420

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.

4.2 Lines and Data

a) Line spacing:	100 meters
b) Line direction:	0 degrees
c) Terrain clearance:	100 meters
d) Average ground speed:	156 km/hr.
e) Data point interval:	

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Magnetic: 42 meters
VLF-EM: 21 meters

f) Tie Line interval: 2 kilometers
g) Channel 1 (LINE): NAA Cutler, Me., 24.0 kHz
h) Channel 2 (ORTHO): NSS Annapolis, 21.4 kHz
i) Line km over total survey area: 401
j) Line km over claim groups: 216

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 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.

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.

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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.

6. 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 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.

6.2 Interpretation

The magnetic field, particularly in the Garnet group, is dominated by anomalies generated by the iron formation. Two major magnetic bands are seen crossing the full width of the property. They are resolved into three or more bands in the vertical gradient data. A number of occurrences of iron formation are mapped within these anomalies which clearly establishes their identity as iron formation.

There does not seem to be a way to differentiate the volcanics, granodiorite, and granite using the magnetic data alone. The dominating character of the iron formation undoubtedly contributes to this condition by subduing the weaker response from the less magnetically active units. A more advanced filtering technique would

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probably enable this distinction to be made.

A diabase dyke is seen striking from north to south through the west side of the Fawn Creek group and a number of faults have been inferred from lateral displacements of the linear magnetic anomalies.

The VLF data shows a number of conductive anomalies which have been marked along their conductive axes and categorised according to phase response. The iron formation is clearly conductive in many places which may indicate the presence of sulphides minerals in the iron formation. These should be investigated further by conventional EM or induced polarisation methods.

Many of the other conductors lie on lakes and are probably caused by lake bottom sediments

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.

per [signature] M.Sc.

Roger K. Watson, B.A.Sc., P.Eng.
Geophysicist

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Ministry of Natural Resources
Ontario

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

#117/

#117/85

The Mini

41010NE9137 2.8181 GARNET

900

Type of Survey(s)	Township or Area
AIRBORNE MAG & V.L.F.	GARNET TOWNSHIP.

Claim Holder(s)	Prospector's Licence No.
D.G. INNES	C-32477 ✓

Address
R.R.#1, CALLANDER, ONTARIO. POH 1HO

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
TERRAQUEST LIMITED	20 Day 12 Mo. 84 Yr. – 20 Day 12 Mo. 84 Yr.	359 KM.

Name and Address of Author (of Geo-Technical report)
ROGER K WATSON 111 RICHMOND ST. W., TORONTO, ONTARIO. M5H 2G4

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	

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Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	40
	Magnetometer	40
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

PORCUPINE MINING DIVISION
RECEIVED
APR 03 1985
A.M. P.M.
7,8,9,10,11,12,1,2,3,4,5,6

Calculation of Expenditure Days Credits

Total Expenditures				Total Days Credits
$	÷	15	=	

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)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	797501	80	P	797502	80
	797503	80		797504	80
	797505	80		797506	80
	797507	80		797508	80
	797509	80		797510	80
	797511	80 7512		797512	80
	797513	80		797514	80
	797515	80		797516	80
	797517	80		797518	80
	797519	80		797520	80
	797521	80		797522	80
	797523	80		797524	80
	797525	80		797526	80
	797527	80		797528	80
	797529	80		797530	80
	797531	80		797532	80
	797533	80		797534	80
	797535	80		797536	80
	797537	80		797538	80
	797539	80		797540	80
	797541	80		797542	80
	797543	80		797544	80
	797545	80		797546	80

Total number of mining claims covered by this report of work. 159

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
12,720	Apr 3/85	C Hanley
	Date Approved as Recorded	Branch Director
	85.7.03	

Date	Recorded Holder or Agent (Signature)
April 1/85	Ray Lashbrook

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
Raymond L Lashbrook, P.O.BOX 447, NORTH BAY, ONT. P1B 8J1

Date Certified	Certified by (Signature)
April 1/85	Ray Lashbrook

1362 (81/9)

MINING CLAIM	MINING CLAIM	MINING CLAIM	MINING CLAIM
797547	797548	797549	797550
797551	797552	797553	797554
797555	797556	797557	797558
797559	797560	797561	797562
797563	797564	797565	797566
797567	797568	797569	797570
797571	797572	797573	797574
797575/	798029	798030	798031
798032	798033	798034	798035
798036	798037	798038	798039
798040	798041	798042	798043
798044	798045	798046	798047
798048	798055	798057	798058
798056	798059	798060	798061
798062	798063	798064	798065
798066	798067	798068	798069
798070	798071	798072	798080
798081	798082	798083	798084
798085	798086	798087	798088
798089	798090	798091	798092
798093	798094	798095	798096
798097	798098	798099	

GARNET TOWNSHIP

FAWN GROUPS

797899	797900	798000
798001	798002	798003
798004	798005	798006
798007	798008	798009
798010	798011	798012
798013	798014	798015
798016	798017	798018
798019	798020	798021
798022	798023	

REGISTERED

May 23, 1985 Report of Work #117

D.G. Innes
R.R.#1
Callander, Ontario
POH 1HO

Dear Sir:

RE: Mining Claims P 797501, et al, in the Township of Garnet

I have not received the reports and maps (in duplicate) for the Airborne Electromagnetic & Magnetometer Survey on the above-mentioned claims.

As the assessment "Report of Work" was recorded by the Mining Recorder on April 3, 1985, the 60 day period allowed by Section 77 of the Mining Act for the submission of the technical reports and maps to this office will expire on June 3, 1985.

If the material is not submitted to this office by June 3, 1985, I will have no alternative but to instruct the Mining Recorder to delete the work credits from the claim record sheets.

For further information, please contact Mr. Arthur Barr at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

A. Barr:mc

cc: Mining Recorder
Timmins, Ontario

cc: Roger K. Watson
111 Richmond Street West
Toronto, Ontario
M5H 2G4

Mining Lands Section   File No 2.8181

Control Sheet

TYPE OF SURVEY ✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

lgd

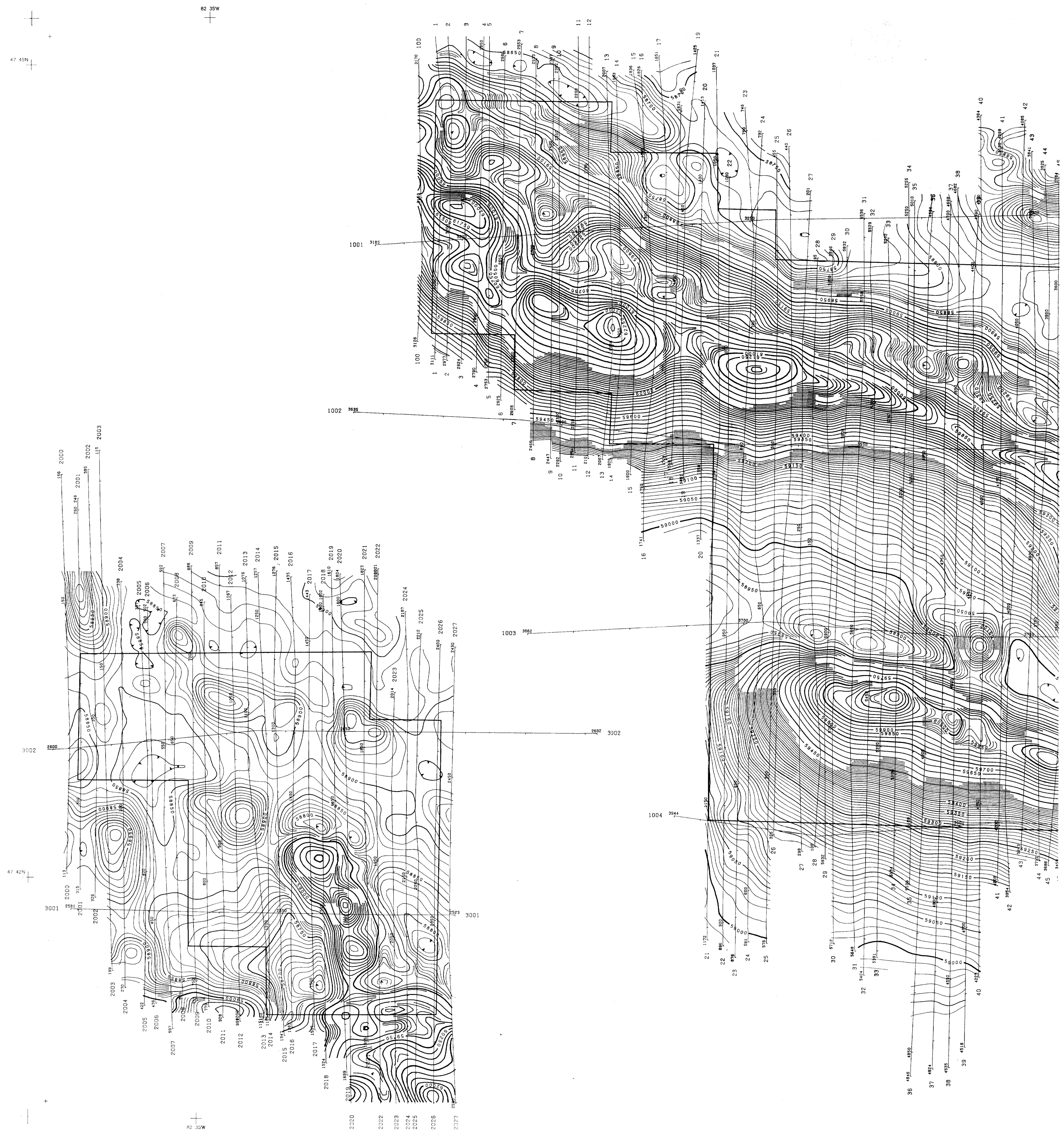
Dorey

Signature of Assessor

26/6/85

Date

LD



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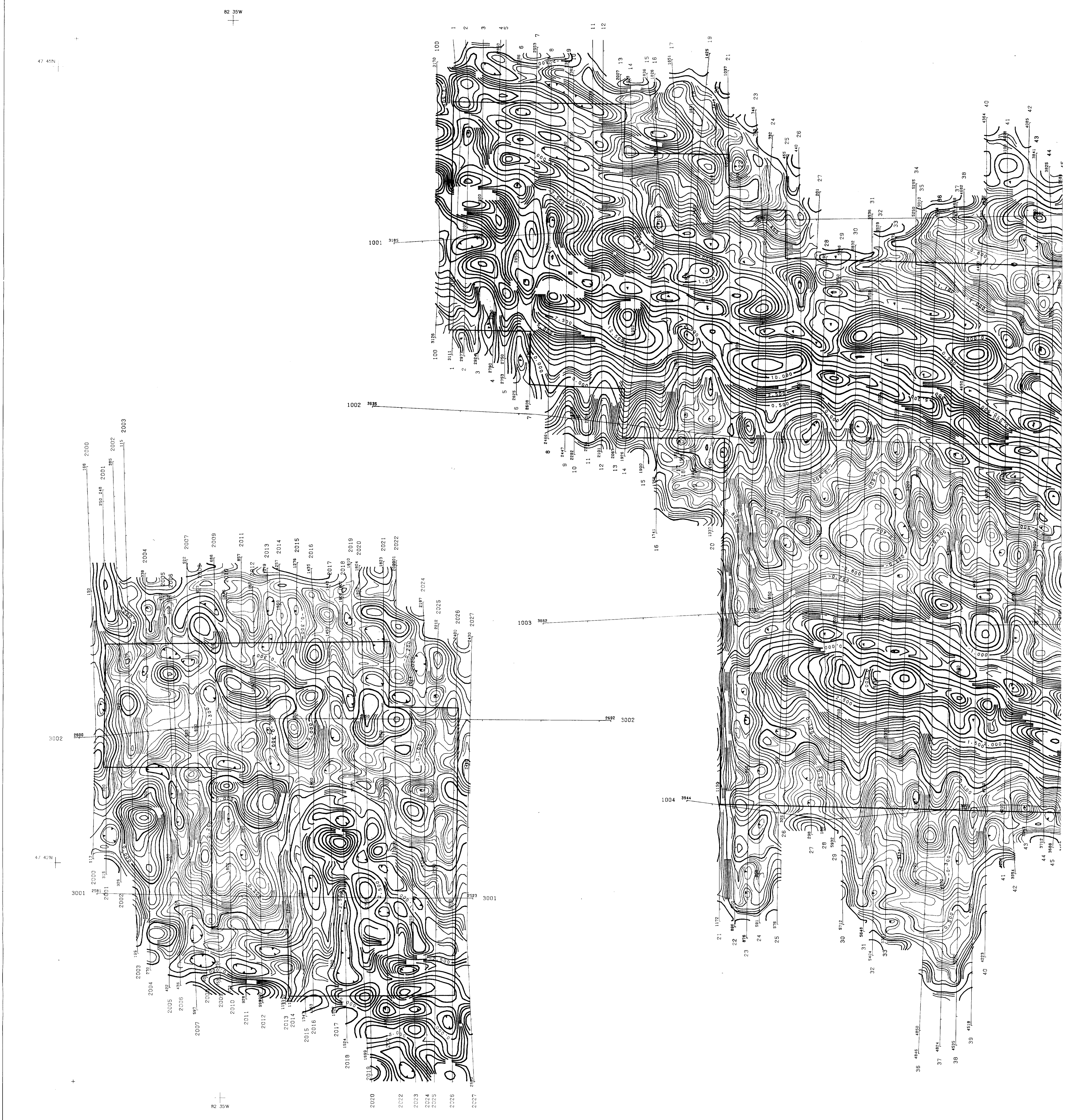
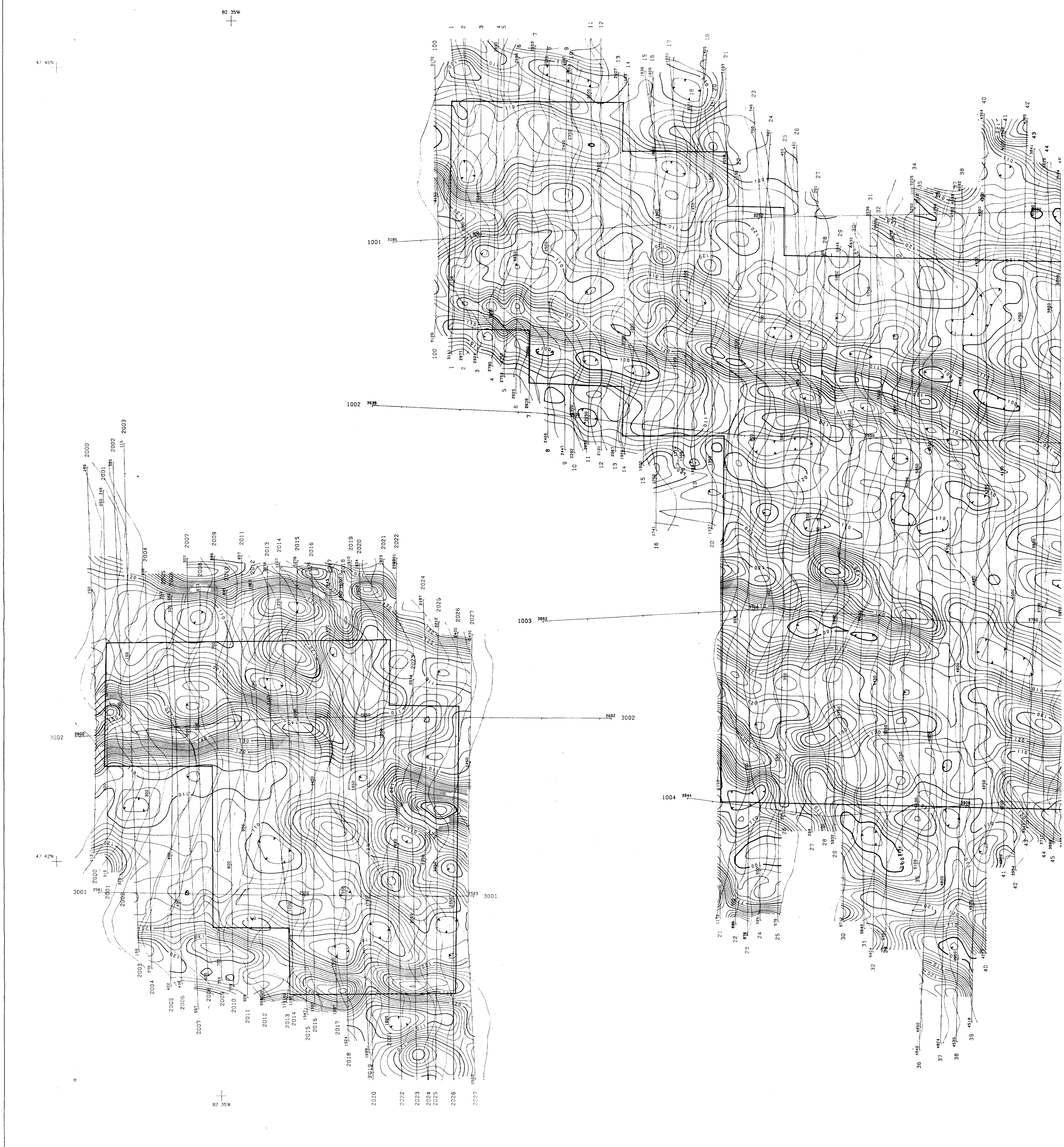
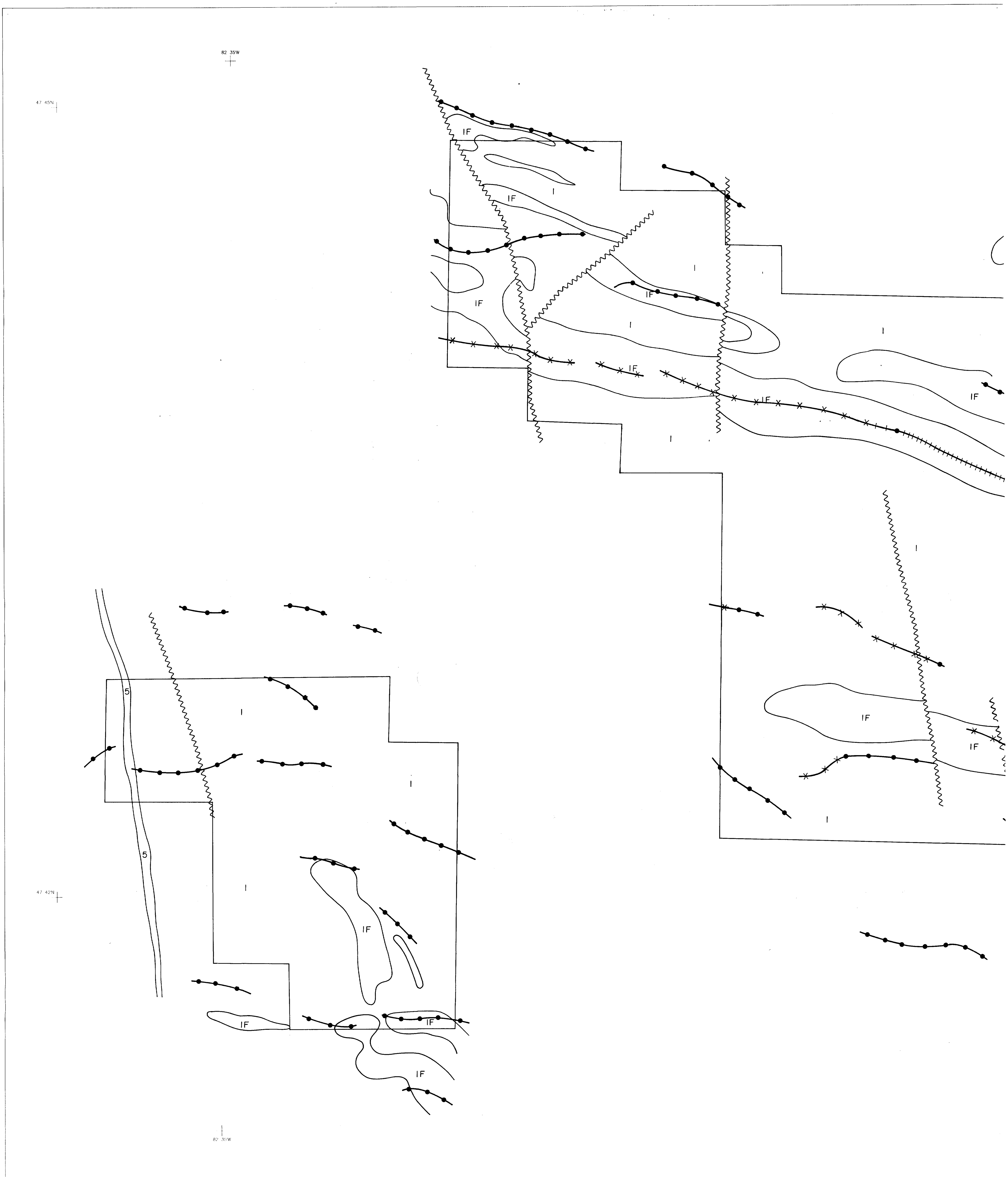

82 35'W
47 45'N
47 42'N
1001
1002
1003
1004
3001
3002


82 35W
47 45N
47 42N
1001
1002
1003
1004
3001
3002
82 35W

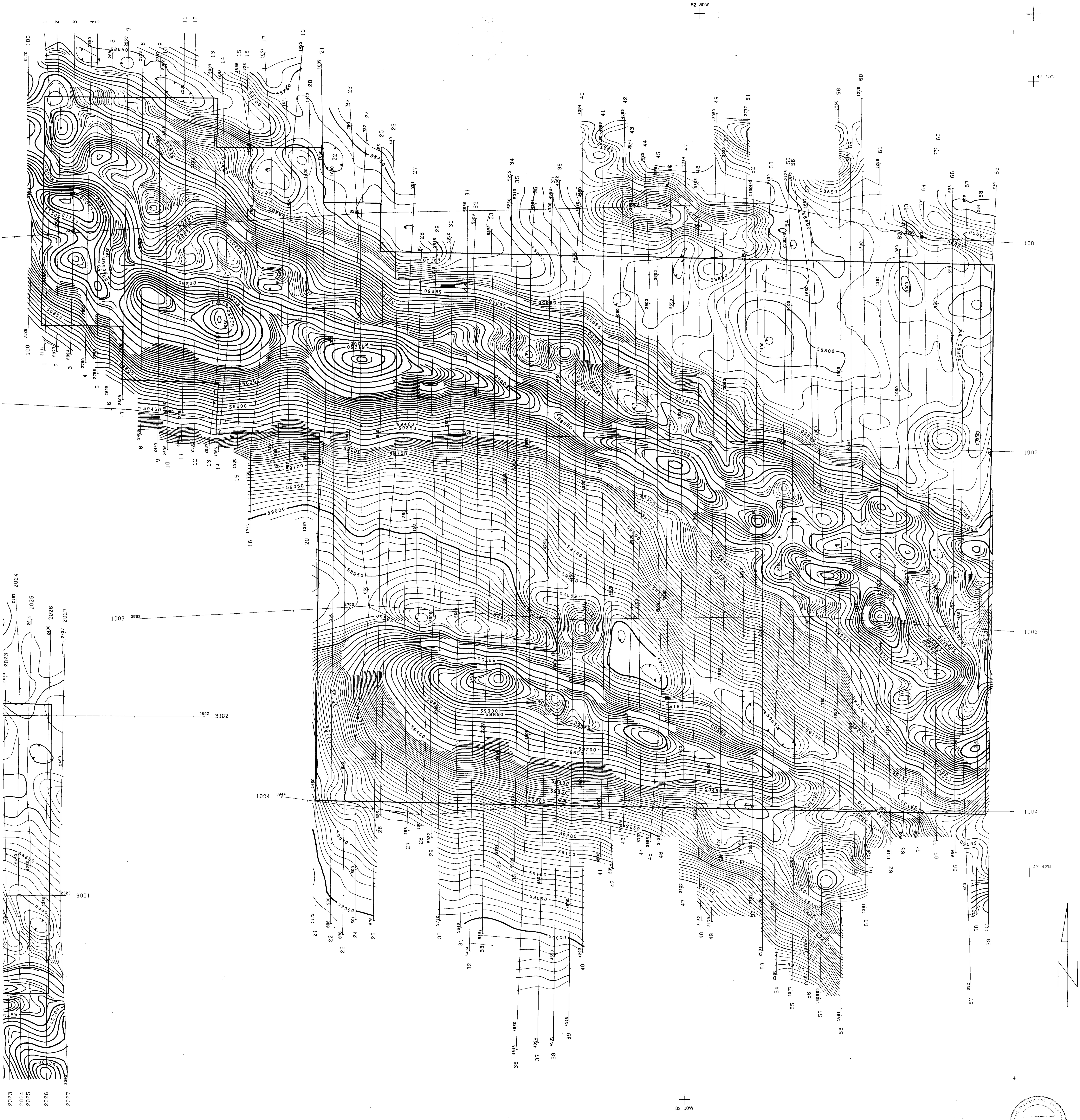


INTERPRETATION LEGEND

CONTACT
FAULT
1 BASIC VOLCANICS
5 DIABASE DYKE
IF IRON FORMATION (USUALLY IN 1)

VLF-EM CONDUCTOR AXES

NORMAL QUADRATURE
REVERSE QUADRATURE
IN PHASE ONLY (NO QUADRATURE)

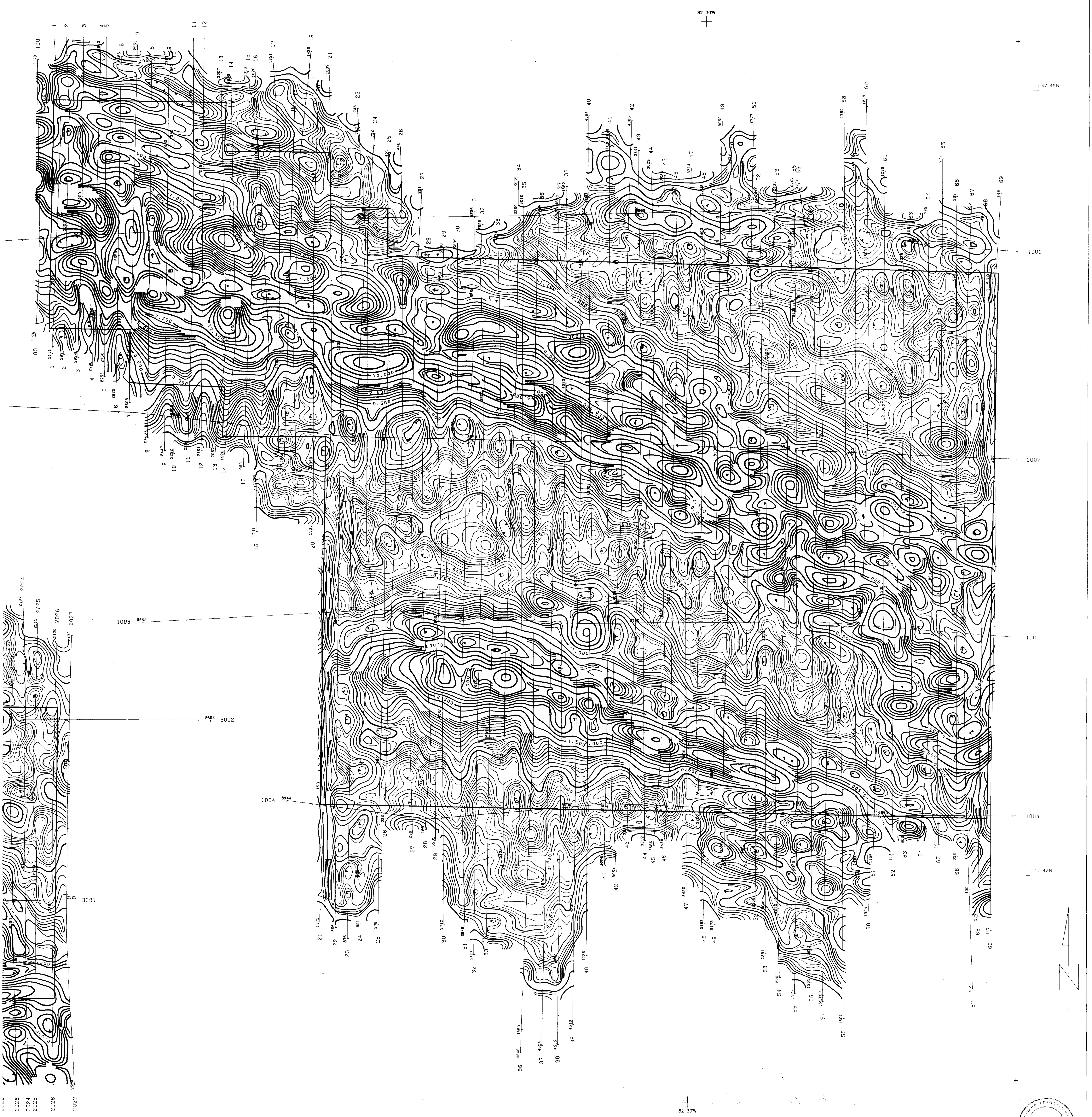


LEGEND

PROPERTY BOUNDARY ......
TERRAIN CLEARANCE .... 100 meters
LINE SPACING .... 100 meters

1000 gammas
250 gammas
50 gammas
10 gammas

WESTERN PACIFIC ENERGY CORPORATION			
AIRBORNE MAGNETIC SURVEY TOTAL MAGNETIC FIELD			
FAWN CREEK AND GARNET CLAIM GROUPS			
N.T.S. NO:	41 0/10	DRAWING NO.	B-420-1
SCALE	1 : 10,000	DATE:	APRIL 1985
TERRAQUEST LTD. **TORONTO, CANADA**			



REGISTERED PROFESSIONAL ENGINEER
R. K. WATSON
PROVINCE OF ONTARIO

28181

LEGEND

PROPERTY BOUNDARY ....
TERRAIN CLEARANCE .... 100 meters
LINE SPACING .... 100 meters

2.500 gammas / METER
.500 gammas / METER
.100 gammas / METER
.025 gammas / METER

WESTERN PACIFIC ENERGY CORPORATION

AIRBORNE MAGNETIC SURVEY
VERTICAL MAGNETIC GRADIENT
Calculated From Total Field

FAWN CREEK AND GARNET CLAIM GROUPS

N.T.S. NO:	41 0/10	DRAWING NO.	B-420-2
SCALE	1 : 10,000	DATE:	APRIL 1985

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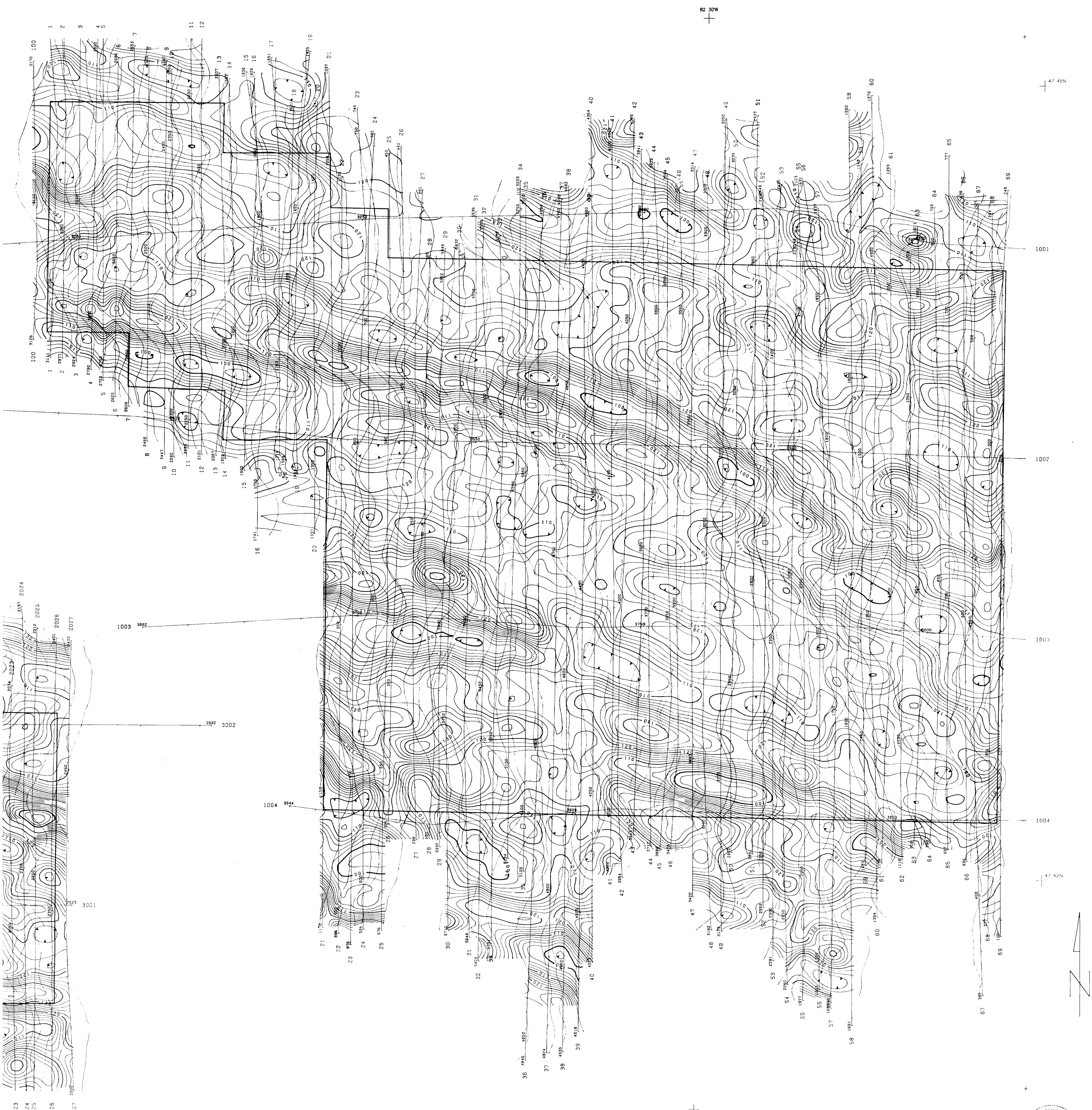


LEGEND

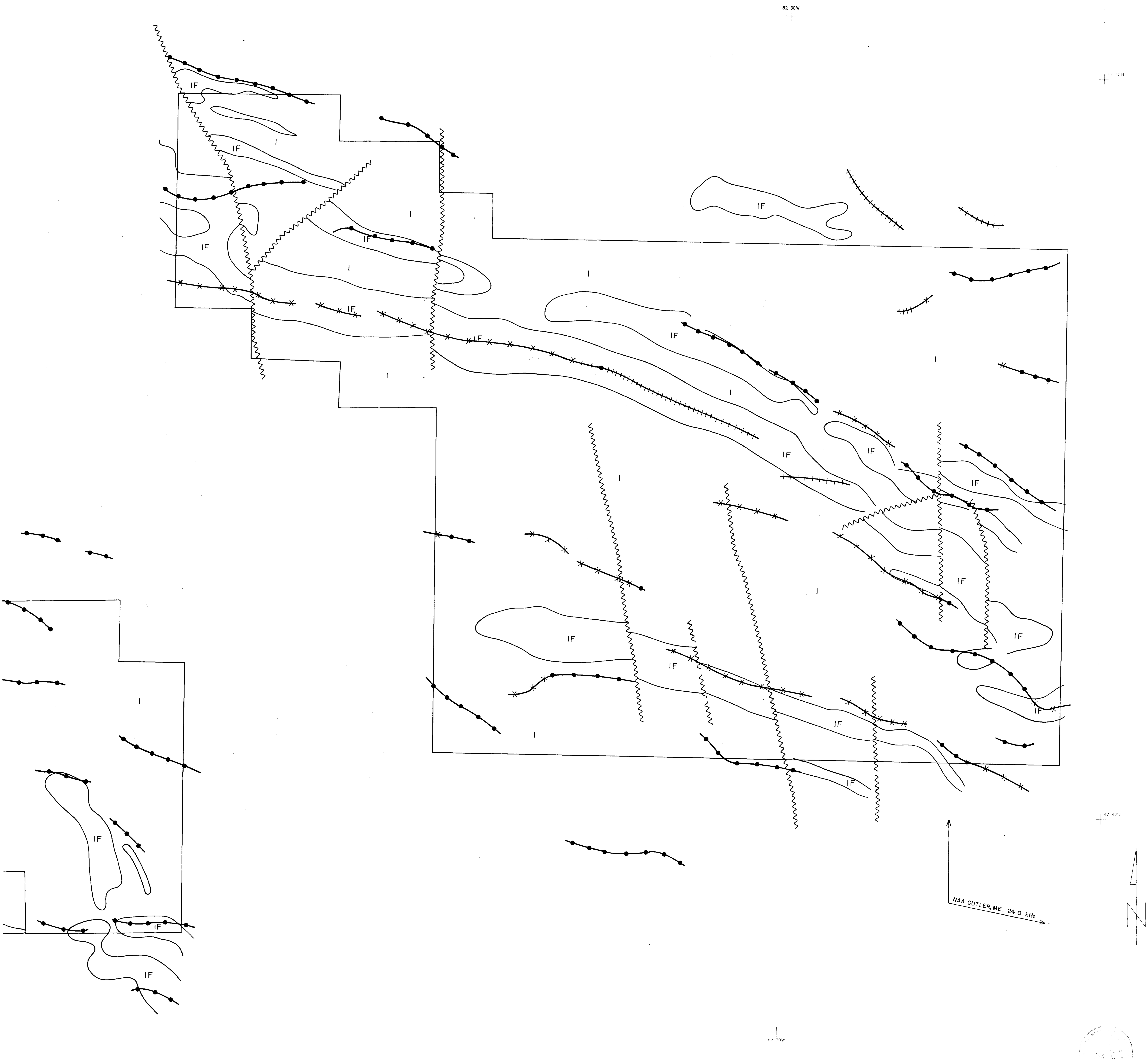
PROPERTY BOUNDARY ......
TERRAIN CLEARANCE .... 100 meters
LINE SPACING .... 100 meters

FIELD STRENGTH
50 %
10 %
2 %

QUADRATURE
+10% -10%

WESTERN PACIFIC ENERGY CORPORATION	
AIRBORNE VLF EM SURVEY CONTOURS OF TOTAL FIELD STRENGTH PROFILES OF QUADRATURE	
FAWN CREEK AND GARNET CLAIM GROUPS	
N.T.S. NO: 41 O/10	DRAWING NO. B 420-3
SCALE 1 : 10,000	DATE: APRIL 1985
TERRAQUEST LTD. TORONTO, CANADA	

R. K. WATSON



INTERPRETATION LEGEND

(line)	CONTACT
(zigzag line)	FAULT
I	BASIC VOLCANICS
5	DIABASE DYKE
IF	IRON FORMATION (USUALLY IN 1)

LEGEND

PROPERTY BOUNDARY ......

VLF-EM CONDUCTOR AXES

NORMAL QUADRATURE

REVERSE QUADRATURE

IN PHASE ONLY
(NO QUADRATURE)

WESTERN PACIFIC ENERGY CORPORATION

INTERPRETATION

FAWN CREEK AND GARNET CLAIM GROUPS

N.T.S. NO:	41 O/10	DRAWING NO.	B-420-4
SCALE	1 : 10,000	DATE:	APRIL 1985

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