010

GEOPHYSICAL SURVEY REPORT

on the

MEUNIER PROJECT

Langmuir East Grid / North Extensions

and

Langmuir West Grid

Langmuir and Fallon Townships

Porcupine Mining Division

District of Timiskaming, Ontario

for

David J. Meunier

April 10, 1985

Brian H. Madill

Geological Technician

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Date: March 1985

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INTRODUCTION

The Meunier PROJECT CONSISTS OF TWO (2) groups of mining claims which are owned by David J. Meunier. The East Group, the Langmuir East Grid / North Extensions is found in Langmuir Township while The West Group, the Langmuir West Grid is found in Langmuir and Fallon Townships.

Grids were subsequently established over the two (2) groups of claims in May and June of 1984. Two geophysical surveys (Magnetic and Electromagnetic) were completed in October of 1984. The instruments used were the Scintrex MF-2 Fluxgate magnetometer and the Geonics VLF EM-16 electromagnetic unit.

The purpose of this report is to briefly describe the results of these two (2) surveys.

PROPERTY DESCRIPTION

The East Group, the Langmuir East Grid / North Extensions consists of a contiguous block of forty-five (45) unpatented mining claims, located in Langmuir township, Porcupine Mining Division, District of Timiskaming, Ontario, and are further described as follows:

Claim No.		No. of Claims
P-753439-441	(inclusive)	3
P-779596-599	(inclusive)	4
P-779601-608	(inclusive)	8
P-779895-896	(inclusive)	2
P-779939-946	(inclusive)	8
P-780001-006	(inclusive)	6
P-826402-409	(inclusive)	8
P-826411-415	(inclusive)	5
P-826417		1
Total number of claims		45

The West Group, the Langmuir West Grid consists of a contiguous block of nineteen (19) unpatented mining claims located around the one mile post, of the common boundary of Langmuir and Fallon townships, Porcupine Mining Division, District of Timiskaming, Ontario, and are further described as follows:

Claim No.	No. of Claims
P-758882-887 (inclusive)	6
P-779600	1
P-780007	1
P-781331-332 (inclusive)	2
P-825712-717 (inclusive)	6
P-826277	1
P-826280-281 (inclusive)	2
Total number of claims	19

LOCATION AND ACCESS

The property is located approximately 19 miles southeast of South Porcupine. Access can be gained by travelling southward along an all weather road a distance of 9.5 miles from the railroad crossing at Connaught Hill. At this point the Night Hawk Timber Company Ltd. private access road continues southward through Shaw and Eldorado Townships a distance of 9 miles to the junction of an old swamp buggy / winter road which is approximately L2W / 2450 N on the Langmuir West Grid. Walking eastward along this swamp buggy / winter road a distance of 2 miles will access the west boundary (L20W / 0+25s) of the Langmuir East Grid / North Extensions.

Access can also be gained by continuing past the Night Hawk Timber Company Ltd. private access road a distance of 5.3 miles to the Langmuir Mine Site. One mile east of the

mine site on the Night Hawk River is a boat launch. Travelling southward along the Night Hawk River a distance of 4.5 miles will access the central portion of the Langmuir East Grid / North Extensions. (see Fig 1(a) and 1(b))

PREVIOUS WORK

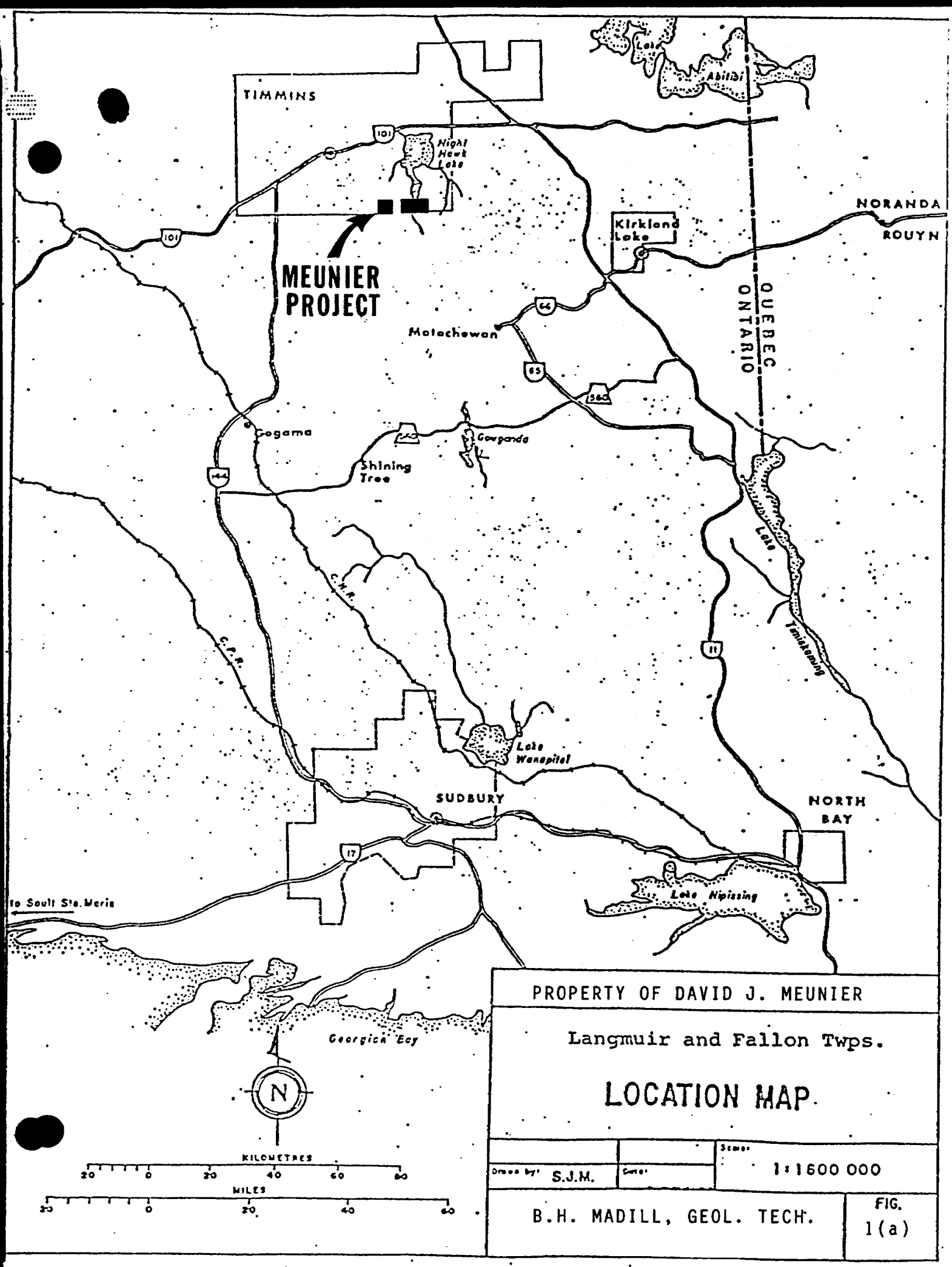
See Table 1

SURVEY PROCEDURE

The East Group: For the Langmuir East Grid a line (0+00) was cut due north from the 4 mile post located on the common boundary between Langmuir and Fallon Townships, a distance of 1600 meters. From the 4 mile post, at 800 meters north, along Line 0+00 a baseline was turned off at right angles and extended 1300 meters east and 2000 meters west.

A grid system of picket lines at 100 meter spacings, with stations every 25 meters, was cut at right angles to the baseline. Within this grid system and starting from L10+50 W are lines cut at 50 meters intervals up to Line 1+00E. From here the lines are cut @ 1+75E, 2+25E, 2+75E, 3+25E, 3+75E and 4+00E.

An east-west tie-line was turned off at right angles from line 0+00, at 800 meters north from the baseline, and extended 1300 meters east and 2000 meters west.



PROPERTY OF DAVID J. MEUNIER

Langmuir and Fallon Twps.

LOCATION MAP

		Scale: 1:1600 000
Drawn by: S.J.M.	Date:	
B.H. MADILL, GEOL. TECH.		FIG. 1(a)

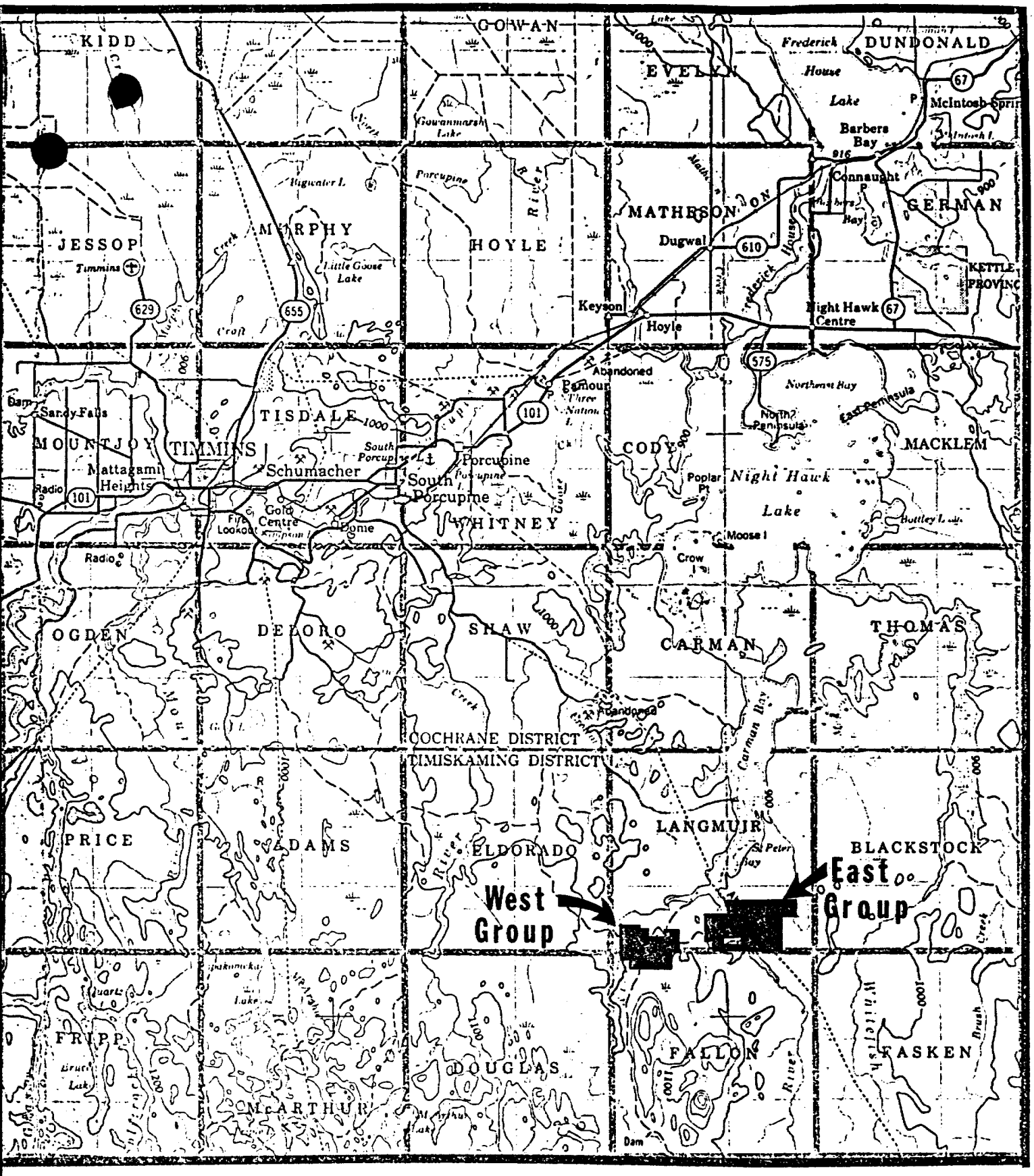


Fig. 1(b)

LOCATION MAP

Scale: 1 : 250,000

miles 5 0 5 10 miles

Table 1

SUMMARY OF EXPLORATION WORK

Property Name	Number of Claims	Geophysics			Geological Map	Diamond Drilling			Assessment File Number			Year Work Done	Remarks
		MAG.	EM.	IP.		Number of Holes	Total Footage		Timmins	Toronto			
Acme Gas and Oil Company Limited	18	*	*						T-1250	63-2044		1966	Magnetic and electromagnetic survey flown by Canadian Aero Mineral Surveys.
Canadian John's Manville Company Ltd.	9				*	3	902		T-657			1958	Formerly held 9 claims in area mainly held by Maybrun Mines in 1967
Dominion Gulf Company [1951]	27	*			*				T-122 T-480	63-273		1951	Formerly held 25 claims covering large outcrop area in Southeastern part of Langmuir.
Extender Minerals of Canada Limited	1					1	168		T-1894			1982	Formerly held 1 claim over barite showing in south-central Langmuir.
The International Nickel Company of Canada Ltd.	125	*	*			13	8871		T-1386			1972-1973	
Mercier Explorations Ltd	8	*	*		*				T-2568	2.6376		1983	Radiometric survey also completed over property
Magoma Mines Limited	11	*	*						T-993	63-1493		1965	
Maybrun Mines Limited	12	*	*			3	1498		T-959	63-1484		1965	
Mespi Mines Limited	3	*	*						T-787	63-2044 63-1400		1964	Magnetic and EM. surveys flown by Hunting Survey Corporation.
Miller Claims	2	*	*			3	120'		T-519			1958	Nicolet Asbestos Mines Ltd. optioned property.
Northern Barite Developement Co.	14								T-134			1946	
Peerless Canadian Explorations Limited	7	*	*			5	2100					1965	Mr. Patrick J. Sullivan of Scarborough appears to own these files.
United Porcupine Mines Limited	10	*							T-1221	63-1823		1965	

For the North Extensions a baseline was established 3000 meters along the east-west claim line between the number 3 post of claim 826415 (#4 post of claim 826402)and the number 2 post of claim 826417 (#1 post of claim 826409)

A grid system of picket lines at 100 meter spacings, with stations every 25 meters, was cut at right angles to the baseline.

The West Group: For the Langmuir West Grid a baseline was established along the common boundary between Langmuir and Fallon Townships. Station 0+00 was established at the number 2 post of claim number 781331 (approximately 30 meters east of the 1 mile post.) and the baseline extended 1100 meters east and 1100 meters west.

A grid system of picket lines at 100 meter spacings, with stations every 25 meters was cut at right angles to the baseline.

A tie-line at 800 meters south was established at right angles to the grid system of picket lines and extended 1900 meters between Lines 1100 east and 800 west.

Readings were taken every 25 meters along the picket lines.

Two Primary Magnetic base stations were established, one for the Langmuir West Grid (Base Station No. 2) and one for the Langmuir East Grid / North Extensions (Base Station No.3).

TOPOGRAPHY AND VEGETATION

Elevation everywhere on the two claim groups ranges between 900 and 1100 feet as indicated on the 1:250,000 topographic map 42A "TIMMINS". Numerous topographic ridges were encountered and except for a large outcrop running through the southwest portion of the Langmuir East Grid outcrops did not exceed 15 meters above the generally flat terrain.

Pleistocene and recent deposits cover much of the two claim groups. The material, predominantly clay and silt, forms an extensive glaciolacustrine plain which covers the southwest part of Langmuir Township and southwards along the western boundary of Fallon Township. (Lee, Hulbert A., 1979: N.O.E.G.T.S., Data Base Maps, Kirkland Lake and Timmins., O.G.S., Maps 5030 and 5029, Scale 1:100,000)

On the Langmuir East Grid / North Extensions, the Night Hawk River flows northwesterly through the centre of the claim group. On the east side of the Night Hawk River, in the north-central portion lies a large northerly trending outcrop. This outcrop is bounded on the west and south by a clay plain overgrown with second growth poplar, and alders, with a small amount of spruce muskeg. To the east and north there are extensive areas of swampy ground overgrown with alders and on

the northeast a sandplain with jackpine. To the west of the Night Hawk River outcrop is extensive along the south boundary and in the central portion of the claim group. These are bounded on the east by a clay plain overgrown with poplar, birch, and willow while to the west lies areas of swampy ground overgrown with spruce, alder and some poplar.

On the Langmuir West Grid outcrops are confined to the northeast and west central portion of the claim group. To the northwest and central portion a large area has been cut over. Vegetation consists mainly of jackpine and spruce. To the east and southeast the area consists of swampy ground of spruce, alder, with some cedar and tamarack. The extreme southwest is a mixture of poplar, spruce, jackpine and balsam.

Overburden thickness (PROVISIONAL OVERBURDEN THICKNESS MAP[1], 1" to 1 mile: O.D.M. Prelim. Map P.789) for the two properties generally ranges from 0 to 100 feet. One small area near the east central boundary of the East Group of claims shows overburden thickness to be in the 100 to 150 foot range. The 50 to 100 foot range appears as a northwest to southeast trend bordering along both banks of the Night Hawk River and fanning out to the southeast. The northeast corner of the East Group is also covered by 50 to 100 feet of overburden. The West Group of claims appears to be covered by 50 to 100 feet of overburden while the east half ranges from 0 to 50 feet.

GENERAL GEOLOGY:

O.D.M. Geological Maps, 2206 (Langmuir and Blackstock Townships), and 2253 (Fallon and Fasken Townships) show the rocks covered by the two groups of claims to be of Archean age.

In the northern portions of the claim groups lies a thick sequence of extrusive ultramafic flow rocks. These consist mainly of serpentinized peridotite-pyroxenite exhibiting spinifex, and polygonal jointing textures. A portion of these extrusive ultramafic flow rocks found on the western group of claims shows heavy carbonatization.

To the south and overlying (?) the ultramafic rocks are mafic to intermediate metavolcanics. These consist of pillowed basalts and andesites and heavily metamorphosed layered amphibolites.

To the south of the mafic metavolcanics occurs a felsic intrusive. This intrusive consists mainly of monzonite with a contaminated border zone.

Northeast and north trending diabase dykes of the Matachewan type are numerous and intrusive to the above rocks.

Flat-lying Cobalt Group sediments outcrop in the

east-central and west central portion of the western group of claims. These sediments consist of arkose, argillite, greywacke and conglomerate.

Faults in a north, northeast and northwest direction are numerous. The Montreal River Fault extends northwest across Langmuir Township and is a major lineament in the area.

ECONOMIC GEOLOGY

Prior to 1962, the area was prospected mainly for gold in the siliceous iron formations found in the northeastern portion of Langmuir Township, and in granitic dykes and quartz veins within the serpentinized and carbonatized extrusive ultramafic flow rocks found in the southwestern portion (West group of claims) of Langmuir Township. Only traces of gold were uncovered. (Pyke, 1970)

Narrow asbestos veinlets, rarely continuous over lengths of 8 to 10 feet, occur in a few localities within the serpentinized peridotite pyroxenite that crosses through the northern portion of the two claim groups. These narrow veinlets also occur within the serpentinized dunite found in the northwestern quadrant of Langmuir Township. From the available data they do not seem to be present in sufficient quantity to be of economic value.

Between 1911 and 1948, intermittent mining operations by various companies produced approximately 1900 tons of barite (Guillet 1963, p. 14) from two narrow veins in the mafic to intermediate volcanics found in the south central part (the east group of claims) of Langmuir Township. Associated with the barite in trace amounts are epidote, fluorite, galena, pyrite, sphalerite, chalcopyrite and native silver. (O.D.M., Prelim. Geol. Map P.444).

In 1964, McWatters Gold Mines Limited discovered a nickel deposit in serpentinized dunite in the west-central portion of Langmuir Township. On the basis of vertical drilling, McWatters was able to outline 643,560 tons of nickel mineralization in two zones. The upper zone contains 477,770 tons grading 0.77% nickel, while in the lower zone 165,790 tons graded 1.92% nickel. There is no record of any production.

After extensive ground geophysical surveys from 1967 to 1971, The International Nickel Company of Canada Limited discovered a nickel deposit on claim P-70585 (Middleton, R.S. and Moon,Wooil, 1974: O.D.M. Prelim. Map P.789) in the north central portion of Langmuir Township. According to information gathered from Canadian Mines Handbook's 1972-73 through to 1978-79, the mine, in a joint venture with Noranda Mines Limited (operator) began production in June of 1973. Table 2 gives

the tons and average grade milled and the pounds of nickel in concentrate produced from June 1973 to March 1978 when production was terminated due to weak market conditions.

TABLE 2

YEAR	TONS MILLED	AVERAGE GRADE IN PERCENT	POUNDS NICKEL IN CONCENTRATE
1973	67,000	1.54%	1,464,300
1974	221,450	1.50%	5,409,300
1975	261,529	1.46%	6,134,000
1976	275,970	1.50%	7,000,000
1977	222,665	1.22%	4,318,000
1978	65,427	1.39%	1,404,000
TOTAL	1,114,041	1.43%	25,729,600

In 1978 exploration extended reserves in three known zones to an estimated 540,000 tons averaging 1.3% nickel.

INSTRUMENTATION:

See Fig. 2(a) and 2(b)

PRESENTATION OF RESULTS

i) Magnetic Survey:

The field data is presented in a pair of maps, drawing number 84-A-1E and drawing number 84-A-1W, at a horizontal scale of 1:5000 (metric), in the back pockets of this report.

Fig. 2(a)

EM16

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VLF Electromagnetic Unit

Pioneered and patented exclusively by Geonics Limited, the VLF method of electromagnetic surveying has been proven to be a major advance in exploration geophysical instrumentation.

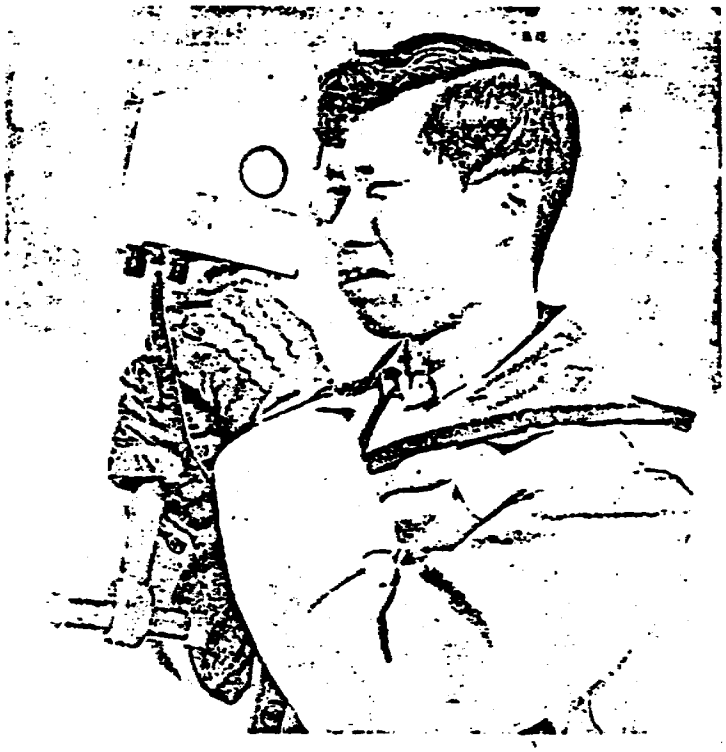
Since the beginning of 1965 a large number of mining companies have found the EM16 system to meet the need for a simple, light and effective exploration tool for mining geophysics.

The VLF method uses the military and time standard VLF transmissions as primary field. Only a receiver is then used to measure the secondary fields radiating from the local conductive targets. This allows a very light, one-man instrument to do the job. Because of the almost uniform primary field, good response from deeper targets is obtained.

The EM16 system provides the *in-phase* and *quadrature* components of the secondary field *with the polarities indicated.*

Interpretation technique has been highly developed particularly to differentiate deeper targets from the many surface indications.

Principle of Operation
The VLF transmitters have vertical antennas. The magnetic signal component is then horizontal and concentric around the transmitter location.



Specifications

Source of primary field	VLF transmitting stations.
Transmitting stations used	Any desired station frequency can be supplied with the instrument in the form of plug-in tuning units. Two tuning units can be plugged in at one time. A switch selects either station.
Operating frequency range	About 15-25 kHz.
Parameters measured	(1) The vertical in-phase component (tangent of the tilt angle of the polarization ellipsoid). (2) The vertical out-of-phase (quadrature) component (the short axis of the polarization ellipsoid compared to the long axis).
Method of reading	In-phase from a mechanical inclinometer and quadrature from a calibrated dial. Nulling by audio tone.
Scale range	In-phase ± 150%; quadrature ± 40%.
Readability	± 1%.
Reading time	10-40 seconds depending on signal strength.
Operating temperature range	—40 to 50° C.
Operating controls	ON-OFF switch, battery testing push button, station selector, switch, volume control, quadrature, dial ± 40%, inclinometer dial ± 150%.
Power Supply	6 size AA (penlight) alkaline cells. Life about 200 hours.
Dimensions	42 x 14 x 9 cm (16 x 5.5 x 3.5 in.)
Weight	1.6 kg (3.5 lbs.)
Instrument supplied with	Monotonic speaker, carrying case, manual of operation, 3 station selector plug-in tuning units (additional frequencies are optional), set of batteries.
Shipping weight	4.5 kg (10 lbs.)

GEONICS LIMITED Designers & manufacturers of geophysical instruments

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Cables: Geonic's

Fig. 2(b) i

SCINTREX

MF-2 FLUXGATE MAGNETOMETER

The MF-2 is a completely new concept in vertical force fluxgate magnetometers. These instruments, which are designed for fast and accurate mineral ground surveys, are orientation independent, self levelling and require no tripod.

The MF-2 combines the electronics and sensor in one compact 3¾ lb. package. An external dry cell battery pack is provided as standard power source for the instrument. As an option, rechargeable batteries may be provided and housed directly in the instrument.

With the latest I.C. and F.E.T. circuitry and high precision components, a temperature stability better than 1 gamma per °C is standard (with .25 gamma on special order) over a range of —40° to +40°C.

The instrument has a built-in hemisphere polarity switch providing two overlapping ranges. For the Northern hemisphere the full range is +80,000 to —20,000 gammas, and reversible for the Southern hemisphere.

A calibrated feedback system can be provided which makes it possible to determine the total vertical component strength.

Measuring resolution, on the 100 gamma scale (optional) is 0.5 gamma, and on the 1000 gamma scale is 5 gammas.

The Scintrex MF series of magnetometers have been in use for many years in varied applications, e.g. ground reconnaissance, base station recording and monitoring, study of magnetic properties of rocks, observatory monitoring and recording of both vertical and horizontal components. A high impedance recorder outlet is standard.

OPTIONAL

a) MF-2G
The MF-2G Fluxgate Magnetometer has the same electronics and specifications as the MF-2, but the sensor is detached and enclosed in a small cylindrical tube which permits it to be oriented and tilted in any desired direction. A 25 foot cable connects the sensor to the instrument housing. This version is particularly suitable for the study of the magnetic properties of rocks, and the measurement of magnetic field components of any orientation, etc.

b) MF-2GS
The MF-2GS Magnetometer has the same electronics and specifications as the MF-2 but has two sensors, the enclosed self-levelling sensor of the MF-2 as well as the detached geoprobe of the MF-2G, either one of which can be employed at any one time. Thus, this instrument can be employed as the standard MF-2 and for the determination of the magnetic properties of rocks, etc.

c) MF-2-100
100 gammas and 300 gammas full scale ranges are added to the standard MF-2 and its options.

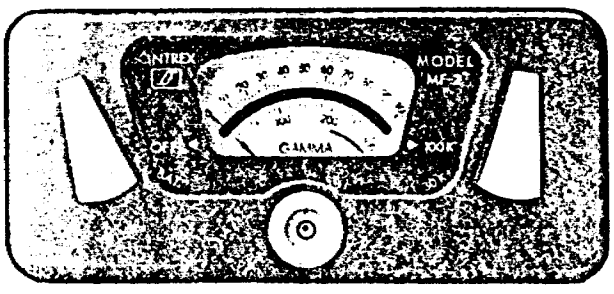

Fig. 2(b) ii

SPECIFICATIONS OF FLUXGATE MAGNETOMETER MODEL MF-2

	RANGES	SENSITIVITY
Standard: (MF-2)	Plus or minus	
	1,000 gammas f.sc.	20 gammas/div.
	3,000 gammas f.sc.	50 gammas/div.
	10,000 gammas f.sc.	200 gammas/div.
	30,000 gammas f.sc.	500 gammas/div.
	100,000 gammas f.sc.	2000 gammas/div.
Optional: (MF-2-100)	100 gammas f.sc.	2 gammas/div.
	300 gammas f.sc.	5 gammas/div.

Meter: Taut-band suspension
100 gamma scale 2.1" long — 50 div.
300 gamma scale 1.9" long — 60 div.

Resolution: All scale ranges ±0.5% of full scale.

Operating Temperature: —40°C to +40°C
—40°F to +100°F

Temperature Coefficient: Less than 1 gamma per °C (½ gamma/°F)

Noise Level: Less than 1 gamma P-P

Bucking Adjustments: (Latitude) —20,000 to +80,000 gammas
9 steps of 10,000 gammas plus fine control of 0 - 10,000 gammas by ten turn potentiometer. Reversible for southern hemisphere.

Recording Output: Standard — for high impedance recorder (> 1 megohm)
Optional — for low impedance recorder

Electrical Response: D.C. to 3 cps (3db down) on most sensitive range with meter in circuit. D.C. to 20 cps with meter network shorted for recording purposes.

Connector: Cannon KO2-16-10SN for plug Cannon KO3-16-10-PN and cover KO6-16-3/8

Batteries: Standard — battery pack (16 dry cell batteries)
Optional — internal 3 x 6V - 1 amp hr. Sealed lead acid rechargeable. Centralab GC 6101. Recharge time 8 hrs.

Consumption: 60 milliamperes — GC6101 batteries are rated for 16 hours continuous use.

Dimensions: 6¼"x 2¾"x 10" Instrument
161 mm x 71 mm x 254 mm

Weights: Standard 3 lb. 12 oz. — 1.7 kg
Optional 5 lb. 8 oz. — 2.5 kg (with rechargeable batteries)

Battery Charger: 6"x 2½"x 2½"
155 mm x 64 mm x 64 mm
110V-220V 50/60 Hz supply or 28-42V D.C. supply. Automatic charge rate and cutoff preset for Centralab GC6101 batteries.

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222 Snidercroft Road • Concord, Ontario, Canada

The magnetic data is illustrated as iso-magnetic contours on maps of corrected magnetic values recorded at each station.

ii) Electromagnetic Survey:

The field data is presented in a pair of maps, drawing number 84-B-1E and drawing number 84-B-1W, at a horizontal scale of 1:5000 (metric), in the back pockets of this report.

The VLF-EM data is illustrated as iso-electromagnetic contours acheived by transforming the zero-crossovers into peaks by means of a numerical filtering technique developed by D.C. Fraser.

DISCUSSION OF RESULTS

The results of the magnetic surveys show a reasonably accurate reflection of the geology across the two claim groups. A thick sequence of extrusive ultramafic flow rocks, consisting mainly of serpentinized peridotite-pyroxenite, is characterized by a complex series of magnetic highs and lows trending in a southwesterly direction through the central portion of the East Group of Claims, and on into the northeast quadrant of the West Group of Claims. This zone is characterized by magnetic highs commonly in the 2000-8000 gamma range, against magnetic lows in the 200 to 2000 gamma range. The highest value observed being 22,515 gammas located on L18E / 1+50 meters

south (re: North Extensions), and the lowest value observed was -5045 gammas located on L2W / 6+75 meters south (Langmuir East Grid). The extremely high magnetic values (above 5000 gammas) may be caused by local segregations of magnetite. In 1970, The International Nickel Company of Canada Limited drilled into one such anomaly with borehole 43290 to a depth of 944 feet. This diamond drill hole has been relocated at approximately 3+50W / 6+90 meters north (Langmuir East Grid). It was noted in the log that some sections were strongly magnetic. What is described as pyrrhotite specks was also noted throughout various sections of the hole.

Narrow veinlets of asbestos occur at a few localities within this unit [Pyke 1970, pg. 11]. One such showing located between L10+00W and L9+00W (Langmuir East Grid) at approximately 1+25 meters north lies in close proximity with an isolated magnetic low. (-1806 gammas).

The zone of higher magnetic relief that appears on the northeast quadrant of the West Group of claims is more subtle and void of extreme magnetic highs. The highest value observed, being 4067 gammas located at L10+00E / 2+00 N. According to Pyke, 1970, Pg.11, carbonatization is especially common at this end of the unit.

Surrounding the sequence of extrusive ultramafic rocks

are mafic to intermediate metavolcanics, consisting of pillowed basalts and andesites and heavily metamorphosed layered amphibolites. This unit correlates well with a belt of relatively flat magnetic relief (600-2000 gammas) that similarily surrounds the zone of higher magnetic relief.

To the south of the ultramafic rocks, and in contact with the mafic to intermediate metavolcanics is a felsic intrusive. This intrusive consists mainly of monzonite with a contaminated border zone in contact with the mafic metavolcanics. This intrusive is confined to the south and southwestern portion of the East Group of claims. A belt of high magnetic relief corresponding to the contaminated border zone can be traced across this claim group. According to Pyke 1970, pg. 23, rocks in this contaminated border zone range in composition from massive coarse grained pyroxene-amphibolite to mafic monzonite. Values commonly range from 2000-7000 gammas. The highest value observed was 12,696 gammas located at L3W / 6+25 S. and the lowest was -5045 gammas located at L2W / 6+75S. (East Group)

Diabase dykes are common in the area (Pyke, 1970) and several north-trending dykes and one northwest trending dyke can be traced across the two claim groups. The magnetic signature produced by these dykes frequently change as the dykes traverse the different rock types in the area. The northwest trending dyke is located in the northeast corner of the

East Group of claims and is characterized by a series of relative lows (1400-2000 gammas) in the ultramafic flow rocks. The presence of this dyke is confirmed by Dominion Gulf Company's [1951] geological mapping of the area in 1951. Near the west boundary of the East Group of claims lies a north-trending diabase dyke. This dyke appears to be offset by a northeast trending fault. Along the east boundary of the West Group of claims lies a series of magnetic highs in the 1500 to 2500 gamma range. This appears to correspond to a north-trending diabase that extends up from Fallon Township. Approximately 600 meters west, on the former gold property of Porcupine Miracle Mining Company Limited lies a fourth diabase dyke.

According to Pyke (O.G.S. Report 86,pg. 26) there are three main directions of faulting: north, northeast and northwest. The main fault structure in the area is the Montreal River fault which extends in a northwest direction through the central portion of the East Group of claims. This structure can be confirmed topographically by the presence of the Night Hawk River and also by the apparent offset in both magnetic and electromagnetic configurations. An abrupt change in magnetic configuration, and a series of north striking electromagnetic anomalies would support the interpretation of a north striking fault through the central section of the East Group of claims to where it would meet the Montreal River Fault. On the west Group of claims a north south linear of lows, and a coincident disruption of east west trending electromagnetic anomalies could represent

a north-striking fault structure through the central portion of this claim group. A northeast striking fault structure through the central portion of the West Group of claims is characterized by an electromagnetic anomaly and a disruption of the magnetic configuration found in the northeast corner of the Group. Another northeast striking fault structure characterized by the disruption of eastwest trending electromagnetic anomalies, and an off set of the magnetic configuration of a north striking diabase dyke can be traced across the East Group of claims to the Montreal River Fault. The interpretation of this fault is supported by the abundance of shearing encountered in drilling by Canadian John's Manville company limited in 1958, near the west boundary of the East Group of claims. On the east side of the Night Hawk River very close to the contact between the mafic to intermediate metavolcanics and the contaminated border zone of the felsic intrusive lies a linear of magnetic lows and a coincident strong electromagnetic anomaly. This feature was drilled by The International Nickel Company of Canada Limited in 1970, with Borehole number 43280 to a depth of 555 feet. Between footages 210 and 330 in the amphibolites, upwards of 30% lost core was noted in various sections. At a depth of 420 feet, a 15 foot section in the syenite near the contact with the amphibolites,pyrite specks and leaves were encountered in a sheared zone. This is strong evidence to confirm the presence of a fault along, or very near the contact of the above mentioned rock types. On the western half of the East Group of claim several smaller fault structures sub-parallel to the

Montreal River Fault can be depicted by offsets in the magnetic figurations and confirmed by disruptions in electromagnetic trends.

The VLF Electromagnetic Survey has outlined numerous eastwest striking anomalies. Proximal to the contact between the extrusive ultramafic flow rocks and the mafic to intermediate metavolcanies on the East Group of claims, lies a well defined electromagnetic anomaly. This anomaly appears displaced approximately 1000 feet to the north on the east side of the Montreal River Fault. To the south and confined to the east side of the Night Hawk River, and to the contact of the mafic metavolcanics and the contaminated border zone of the felsic intrusion lies another well defined anomaly. As mentioned previously this anomaly was drilled by The International Nickel Company of Canada Limited with borehole 43280 to a depth of 555 feet. It has been suggested that this anomaly was caused by faulting and shearing along the contact between these two rock types.

The majority of eastwest striking electromagnetic anomalies occuring in the ultramafic flows are associated with relative magnetic lows (1000-2000 gammas). One such conductor was drilled by Maybrun Mines Limited in 1965. Diamond drill hole 1, relocated at 19+30W / 0+25 meters south was drilled to a depth of 500 feet. The only thing of note in the log was the presence

of a 5 foot section at a depth of 20 feet, that was termed by Maybrum Mines Limited as a "Graphitic Phase". Many of these types of anomalies could possibly be caused by graphitic zones, zones of alteration or formational trends.

Two well defined eastwest striking electromagnetic anomalies found in the northwest quadrant of the East Group of claims, have associated with them, magnetic highs (above 2000 gammas). One anomaly located between L7+00W and L17+00W at approximately 4+00 N. has a strike length of 1000 meters. Several exploration pits within the boundaries defined by the anomaly were found to contain graphite. The other anomaly, located between L10+00W and L18+00W at approximately 7+00 N., has a strike length of 800 meters. This anomaly is buried under overburden and would require further work to define it's origin.

Numerous weaker, isolated anomalies occur throughout the two claim groups. These may be topographical effects, surface clays, clay lenses in overburden or conductive overburden.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the results of the geophysical survey's have clearly demonstrated important geological, regional lineaments and to some extent economic information about the area. Some of the more definite geophysical anomalies have been tested for base

metal, and to a minor extent, asbestos and gold. There are, however some definite geophysical anomalies that have not been tested and it is recommended that follow up geological and geochemical survey's be carried out to narrow down any potential base metal and/or gold deposits that may be found in these types of geological environments.

BIBLIOGRAPHY

1) HARPER, H.G. (1983): Mercier Explorations Inc., "Electromagnetic and Magnetic Surveys"; Fallon and Langmuir Townships.

2) LEE, H.A. (1979): "Northern Ontario Engineering Geology Terrain Study"; Data Base Map, Timmins; Ontario Geology Survey, Map 5029.

3) LEE, H.A. (1979): "Northern Ontario Engineering Geology Terrain Study"; Data Base Map, Kirkland Lake; Ontario Geology Survey, Map 5030.

4) MIDDLETON, R.S. and MOON, WOOIL (1974): "Ground Vertical component Magnetics, Langmuir Township"; Ontario Division of Mines; Prelim. Map P. 789.

5) NICHOLLS, E.B. (1965): "Geophysical Report on Property of Magoma Mines Ltd."; Langmuir Township.

6) PYKE, D.R. (1970): "Geology of Langmuir and Blackstock Townships"; Ontario Department of Mines; Geology Report 86.

7) RATCLIFFE, J.H. (1951): Dominion Gulf Company, "Report on Ground Magnetometer Survey."

8) SZETU, S.S. (1965): "Report on Geophysical Survey"; 12 Claim Property, Maybrun Mines Limited, Langmuir Township.

C E R T I F I C A T E

I, Brian Harold Madill, of Kirkland Lake, Ontario, certify with respect to this Geophysical Report:

1. That I am a Geological Technician and reside at House #7, Apt. A, Teck Hughes Property, Kirkland Lake, Ontario.

2. That I graduated from Cambrian College in Sudbury, Ontario in 1979 with a diploma as a Geological Technician.

3. That I have been practising my profession for a period of five (5) years and I am qualified to write this report.

April 10/85

Brian Madill

Brian Madill
Geological Technician

APPENDICES

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) GROUND GEOPHYSICAL (Mag. and Electromag.)
Township or Area LANGMUIR and FALLON
Claim Holder(s) David J. Meunier
P.O. Box 1624,403 Dome St., South Porcupine
Survey Company _____
Author of Report Brian H. Madill
Address of Author P.O. Box 833, Kirkland Lake, Ontario.
Covering Dates of Survey May 15th, 1984 to October 30th, 1984
(linecutting to office)
Total Miles of Line Cut 104.3 kilometers

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	40
–Magnetometer	20
–Radiometric	
–Other	
Geological	
Geochemical	

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

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

DATE: April 10/85 SIGNATURE: Brian Madill
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

P (see attached list)
(prefix) (number)

TOTAL CLAIMS 64

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 4218 Number of Readings MAG. 4369 VLF. 4218

Station interval 25 meters Line spacing 100 meters

Profile scale Fraser Filter method used.

Contour interval 600, 800, 1000, 1500, 2000, 3000, 4000, 5000 gammas and greater.

MAGNETIC

Instrument SCINTREX MF-2 FLUXGATE MAGNETOMETER

Accuracy – Scale constant plus or minus 5 gammas

Diurnal correction method CLOSED LOOPS

Base Station check-in interval (hours) DAILY (8 to 10 hours)

Base Station location and value BASE STATION #3 L2E / 3 + 60 S. RE: North Ext.) Value: 875 gammas | BASE STATION #2 junction of logging roads in Fallon Twp. (approx. 3960' S. from Twp. line along L 0+00) Value: 700 gammas

ELECTROMAGNETIC

Instrument GEONICS VLF EM-16

Coil configuration vertical and horizontal

Coil separation Infinity

Accuracy plus or minus 1%

Method: [X] Fixed transmitter [ ] Shoot back [ ] In line [ ] Parallel line

Frequency CUTLER, MAINE (NAA 24.0 kHz.) (specify V.L.F. station)

Parameters measured Vertical in-phase (dip angle) and out-of-phase (quadrature) components of the polarization ellipsoid.

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

MINING CLAIMS TRAVERSED

P-753439	P-780001
P-753440	P-780002
P-753441	P-780003
	P-780004
P-758882	P-780005
P-758883	P-780006
P-758884	P-780007
P-758885	
P-758886	P-781331
P-758887	P-781332
P-779596	P-825712
P-779597	P-825713
P-779598	P-825714
P-779599	P-825715
P-779600	P-825716
P-779601	P-825717
P-779602	
P-779603	P-826277
P-779604	P-826280
P-779605	P-826281
P-779606	
P-779607	P-826402
P-779608	P-826403
	P-826404
P-779895	P-826405
P-779896	P-826406
	P-826407
P-779939	P-826408
P-779940	P-826409
P-779941	
P-779942	P-826411
P-779943	P-826412
P-770044	P-826413
P-779945	P-826414
P-779946	P-826415
	P-826417

TOTAL CLAIMS 64 sixty-four

Ministry of Natural Resources
Ontario

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

#1401

The Minis

42A07SW0064 2.8628 LANGMUIR

900

Type of Survey(s)
Ground Geophysical(Electromagnetic and Magnetic)

Township or Area
Fallon and Langmuir

Claim Holder(s)
David J. Meunier

Prospector's Licence No.
M-17157

Survey Company
JIM WHELAN and BRIAN LADOUCEUR

Survey Dates (linecutting to office): 15 Day | 05 Mo. | 84 Yr. | 30 Day | 10 Mo. | 84 Yr.

Total Miles of line Cut
104.3 kM.

Name and Address of Author (of Geo-Technical report)
Brian H. Madill, P.O. Box 833, Kirkland Lake, Ontario P2N 3K4

Special Provisions Credits Requested

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

Man Days

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

Airborne Credits

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

RECEIVED
APR 22 1985
MINING LANDS SECTION
A.M. 7 8 9 10 11 12 1 2 3 4 5 6

Expenditures (excludes power stripping)

RECEIVED
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

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.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	(see attached list)				

RECEIVED
MAY 09 1985
MINING LANDS SECTION

RECORDED
APR 24 85
Receipt No.

Total number of mining claims covered by this report of work. 64

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
3,840	April 22/85	
	Date Approved/Recorded 85.5.14	Resident Gold Commissioner

Report Completed

Date of Report	Recorded Holder or Agent (Signature)
April 10/85	Brian Madill

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
Brian H. Madill P.O. Box 833
Kirkland Lake, Ont. P2N 3K4

Date Certified: April 10/85

Certified by, (Signature): Brian Madill

1362 (81/2)

MINING CLAIMS TRAVERSED

P-753439	P-780001
P-753440	P-780002
P-753441	P-780003
	P-780004
P-758882	P-780005
P-758883	P-780006
P-758884	P-780007
P-758885	
P-758886	P-781331
P-758887	P-781332
P-779596	P-825712
P-779597	P-825713
P-779598	P-825714
P-779599	P-825715
P-779600	P-825716
P-779601	P-825717
P-779602	
P-779603	P-826277
P-779604	P-826280
P-779605	P-826281
P-779606	
P-779607	P-826402
P-779608	P-826403
	P-826404
P-779895	P-826405
P-779896	P-826406
	P-826407
P-779939	P-826408
P-779940	P-826409
P-779941	
P-779942	P-826411
P-779943	P-826412
P-770044	P-826413
P-779945	P-826414
P-779946	P-826415
	P-826417

TOTAL CLAIMS 64 sixty-four

Mining Lands Section

File No 28028

Control Sheet

TYPE OF SURVEY

✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

cpl L.D.

J. Hurst

Signature of Assessor

95-05-10

Date

1985 05 02 File: 2.8028

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We received reports and maps on April 22, 1985 for a Geophysical (Magnetometer and Electromagnetic) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 753439, et al, in the Townships of Fallon & Langmuir.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with your office prior to the submission of this technical data. Please forward a copy as soon as possible.

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: Brian H. Madill
P.O. Box 833
Kirkland Lake, Ontario
P2N 3K4
cc: Daird J. Meunier
P.O. Box 1624
403 Dome Street
Timmins, Ontario
P4N 7W7

April 18, 1985

Mr. Arthur Barr,
Lands Management Branch,
Ministry of Natural Resources,
Room 6610, 6th Floor Whitney Block,
99 Wellesley Street, W.,
Queens Park,
TORONTO, Ontario.

Dear Mr. Barr:

Should approval be given for the Geophysical Report enclosed, would you please send a copy of the assesment credits to the following address

Mr. Brian H. Madill,
P.O. Box 833,
Kirkland Lake, Ontario.
P2N 3K4.

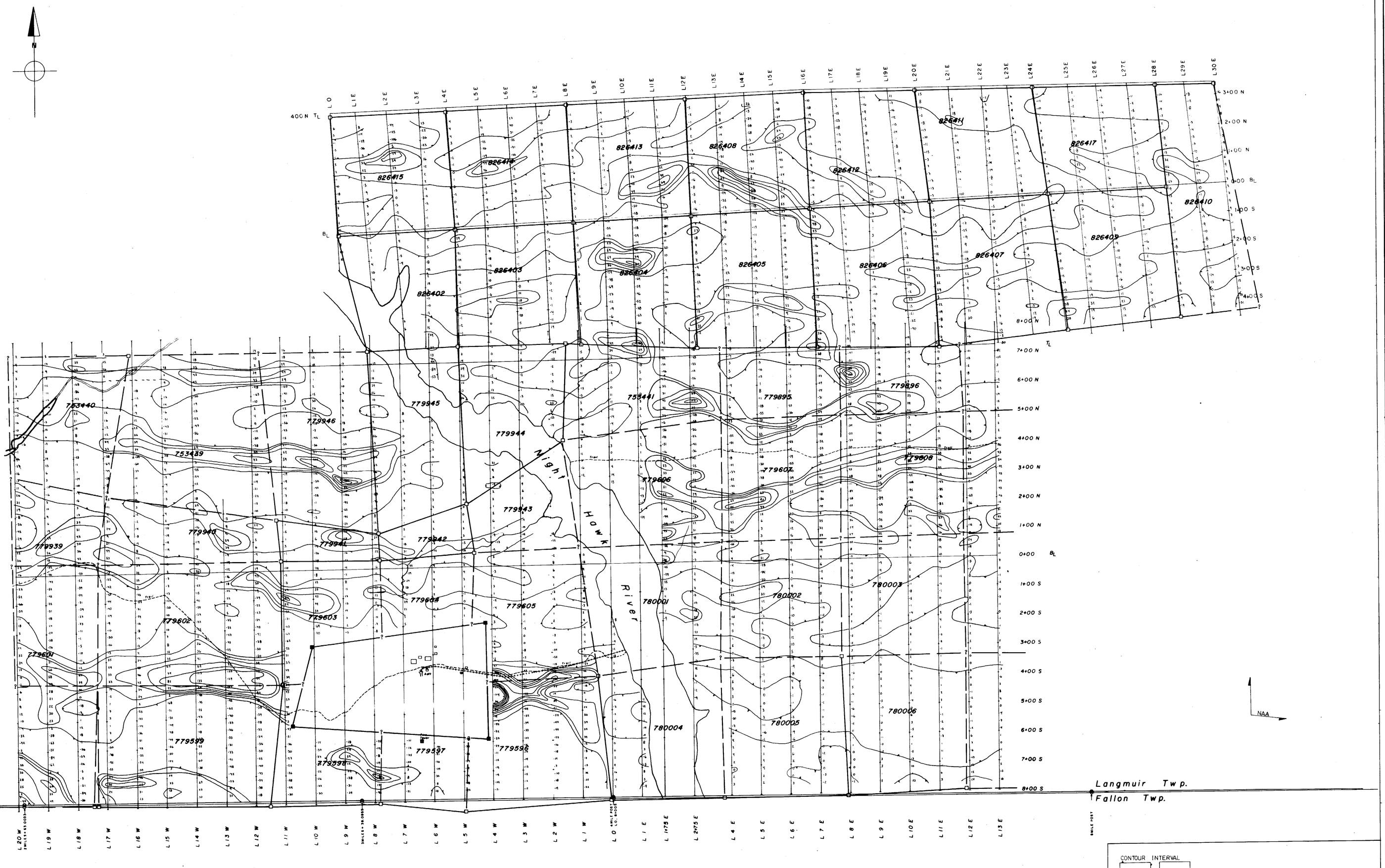
Sincerely

Brian Madill

2.8028

	m	em		m	em
753439	✓	✓	780001	✓	✓
40	✓	✓	2	✓	✓
41	✓	✓	3	✓	✓
758882	✓	✓	4	✓	✓
83	✓	✓	5	✓	✓
84	✓	✓	6	✓	✓
85	✓	✓	7	✓	✓
86	✓	✓	781331	✓	✓
87	✓	✓	32	✓	✓
779596	✓	✓	825712	✓	✓
97	✓	✓	13	✓	✓
98	✓	✓	14	✓	✓
99	✓	✓	15	✓	✓
600	✓	✓	16	✓	✓
1	✓	✓	17	✓	✓
2	✓	✓	826277	✓	✓
3	✓	✓	80	✓	✓
4	✓	✓	81	✓	✓
5	✓	✓	826402	✓	✓
6	✓	✓	3	✓	✓
7	✓	✓	4	✓	✓
8	✓	✓	5	✓	✓
779895	✓	✓	6	✓	✓
96	✓	✓	7	✓	✓
779939	✓	✓	8	✓	✓
40	✓	✓	9	✓	✓
41	✓	✓	826411	✓	✓
42	✓	✓	12	✓	✓
43	✓	✓	13	✓	✓
44	✓	✓	14	✓	✓
45	✓	✓	15	✓	✓
46	✓	✓	17	✓	✓

~~826401~~ ✓



CONTOUR INTERVAL

0 → 20	20 → 40
40 → 60	60 → 80
80 → 100	OVER 100

INSTRUMENT USED : GEONICS EM-16
TRANSMITTER : CUTLER MAINE (NAA) 24.0 KHZ
FRASER METHOD USED
OPERERATOR FACING NORTH

LANGMUIR EAST GRID + NORTH EXTENSIONS

	DATE
DRAWN BY	
GEOLOGY BY	
ENGINEERING BY	
APPROVED BY	

DRAWING No (84-A-1E) | MARCH 1985

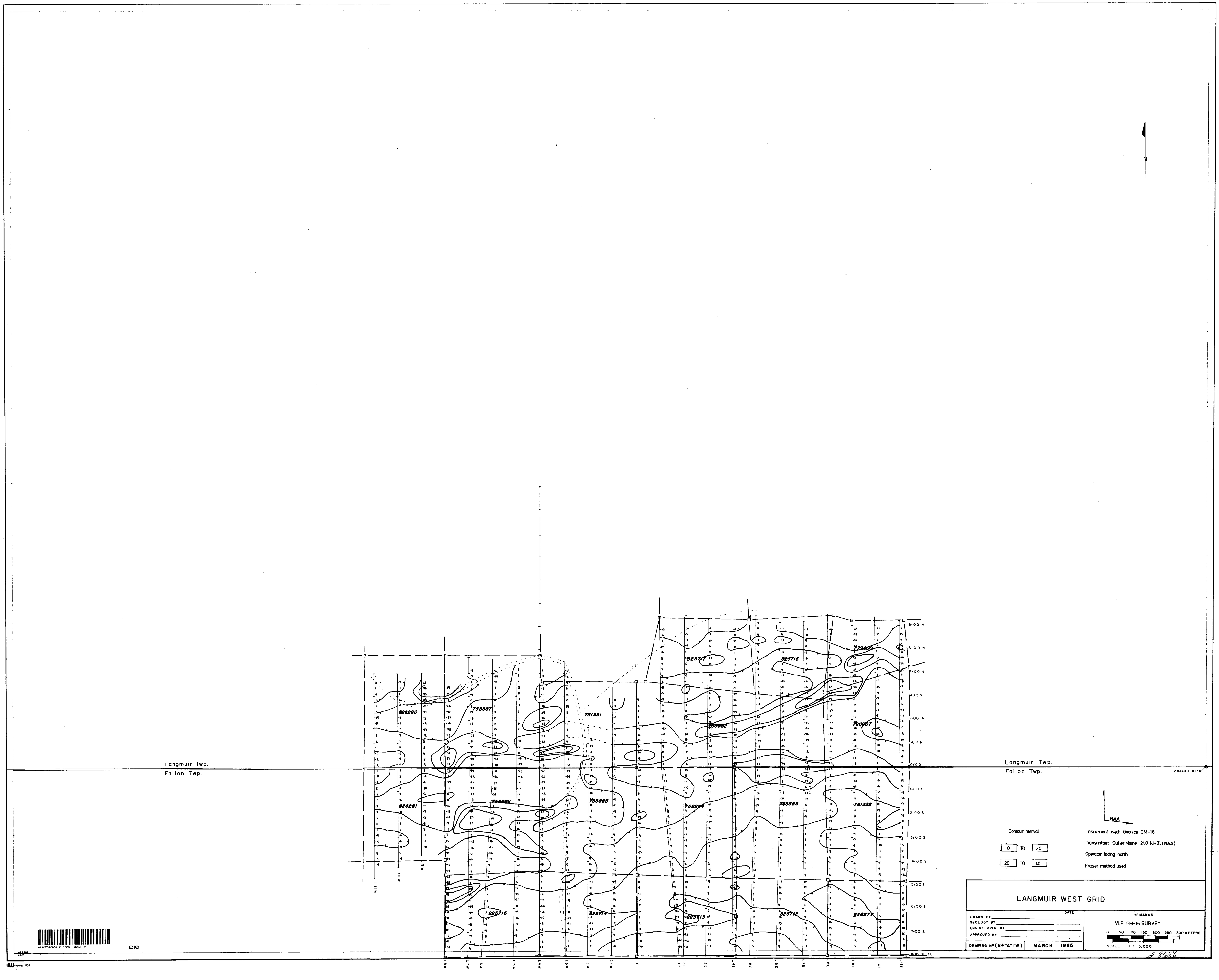
REMARKS

ELECTROMAGNETIC SURVEY

0 50 100 150 200 250 300 METERS

SCALE 1 : 5,000

2 8038


LANGMUIR WEST GRID
DRAWN BY
GEOLOGY BY
ENGINEERING BY
APPROVED BY
DATE
DRAWING Nº (84-A-1W)
MARCH 1985
REMARKS
VLF EM-16 SURVEY
0 50 100 150 200 250 300 METERS
SCALE 1 : 5,000
2.8028
Contour interval
0 TO 20
20 TO 40
Instrument used: Geonics EM-16
Transmitter: Cutler Maine 24.0 KHZ. (NAA)
Operator facing north
Fraser method used
NAA
N
Langmuir Twp.
Fallon Twp.
Langmuir Twp.
Fallon Twp.
2 mi. + 40.00 ch.
6+00 N
5+00 N
4+00 N
3+00 N
2+00 N
1+00 N
0+00
1+00 S
2+00 S
3+00 S
4+00 S
5+00 S
6+00 S
7+00 S
8+00 S TL
L11W
L10W
L9W
L8W
L7W
L6W
L5W
L4W
L3W
L2W
L1W
L0
L1E
L2E
L3E
L4E
L5E
L6E
L7E
L8E
L9E
L10E
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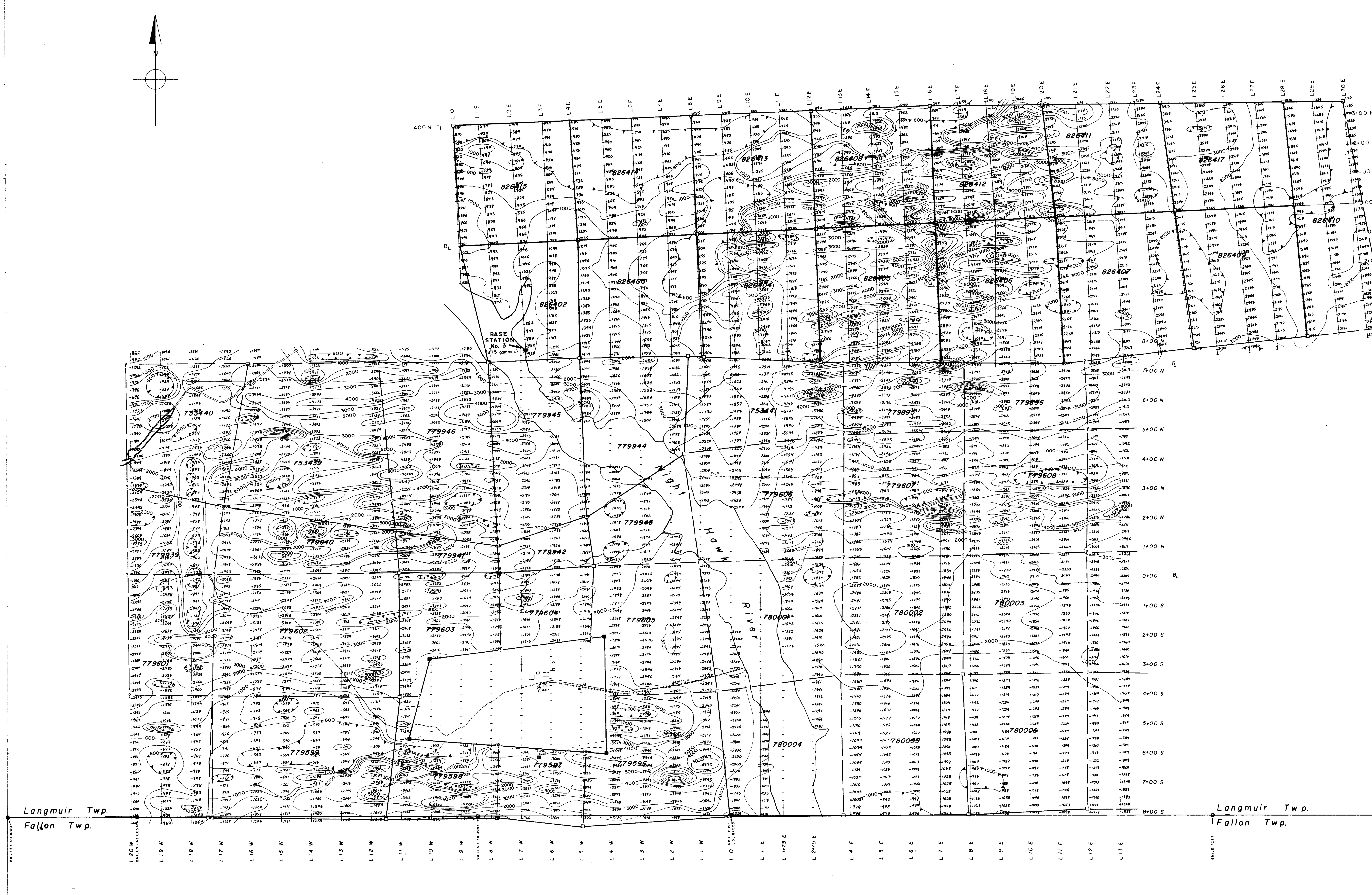


LEGEND

Contour Intervals (gammas)

600	to	800
800	to	1000
1000	to	1500
1500	to	2000
2000	to	3000
3000	to	4000
4000	to	5000 and greater

LANGMUIR EAST GRID + NORTH EXTENSIONS

	DATE
DRAWN BY	
GEOLOGY BY	
ENGINEERING BY	
APPROVED BY	

DRAWING Nº (84-B-1E) MARCH 1985

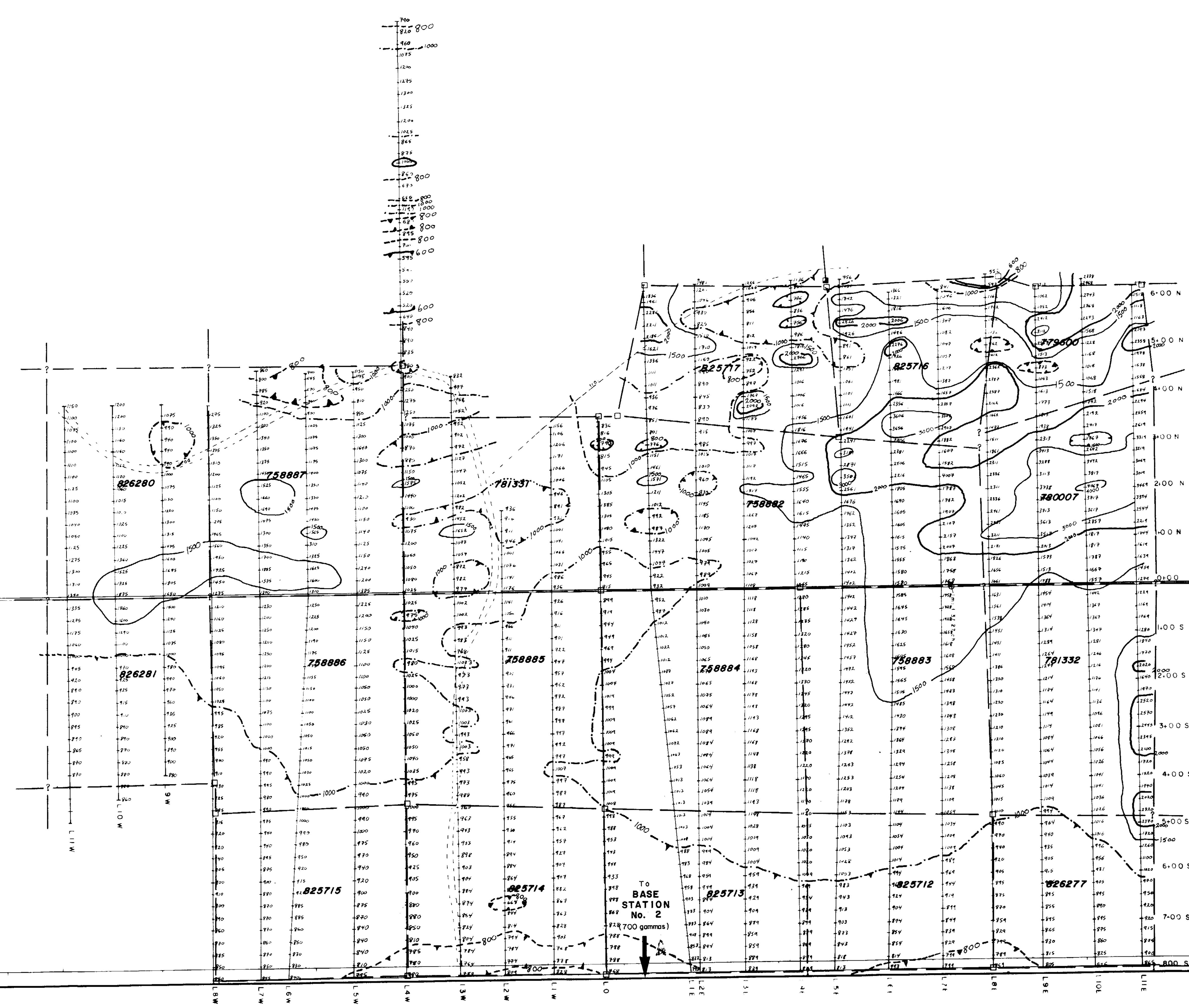
REMARKS

MAGNETOMETER SURVEY

INSTRUMENT: Scintrex MF-2 Fluxgate Magnetometer

0 50 100 150 200 250 300 METERS

SCALE 1 : 5,000



Langmuir Twp.
Fallon Twp.

N

LEGEND

Contour Intervals
(gammas)

600	to	800
800	to	1000
1000	to	1500
1500	to	2000
2000	to	3000
3000	to	4000
4000	to	5000 and greater

NOTE: BASE STATION No. 2 is at junction of logging roads approximately 3960 feet south from twp. line along L 0+00

LANGMUIR WEST GRID

DRAWN BY Brian Ladouceur DATE 11/22/84
GEOLOGY BY
ENGINEERING BY
APPROVED BY

DRAWING Nº (84-B-1W) MARCH 1985

REMARKS
MAGNETOMETER SURVEY
Instrument: Scintrex MF-2 Fluxgate Magnet.
0 50 100 150 200 250 300 METERS
SCALE 1 : 5,000

2.8028

230