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MINING LANDS SECTION

HELICOPTER GEOPHYSICAL SURVEY

WITH THE

REXHEM - 1 SYSTEM

SAVANT LAKE AREA, ONTARIO.

for

RAM PETROLEUM LIMITED

by

GEOPHYSICAL SURVEYS INC.,

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1- INTRODUCTION

Geophysical Surveys Inc. has carried out an airborne geophysical survey of 113 line kilometers in the Savant Lake area for RAM PETROLEUM LTD. on May 17, 1981.

The survey area is shown on the index map (figure 1) and the lines oriented North-South are spaced 200 meters apart.

Our helicopter geophysical platform has been called REXHEM-1 which is an acronym formed from Relevés d'Exploration Hélicoptés ElectroMagnétiques.

The REXHEM-1 instrumentation includes an EM-33 from Geonics Ltd, with coaxial max-coupled at a frequency of 736 Hz, a G803 proton magnetometer from Geometrics Ltd, a VLF system TOTEM-1A from Herz Industries Limited, and a digital data acquisition system from Sonotek Limited. The VLF station used on this project is NAA Cutler, Me. which frequency is 17.8Khz.

The electromagnetic coils mounted in the bird shell and operating at a frequency of 736 Hz were towed 100 feet below the helicopter at an average height of 120 feet above ground.

The magnetic sensor was towed 60 feet below the helicopter at an average height of 160 feet above ground. The survey data quality is excellent particularly with a noise level of less than one ppm on the electromagnetic traces and of two gammas on the magnetic records. The data processing and interpretation were done in Quebec from May to July 1981 on a Sigma 6, Xerox computer and a Calcomp 925/1036 drum plotter.

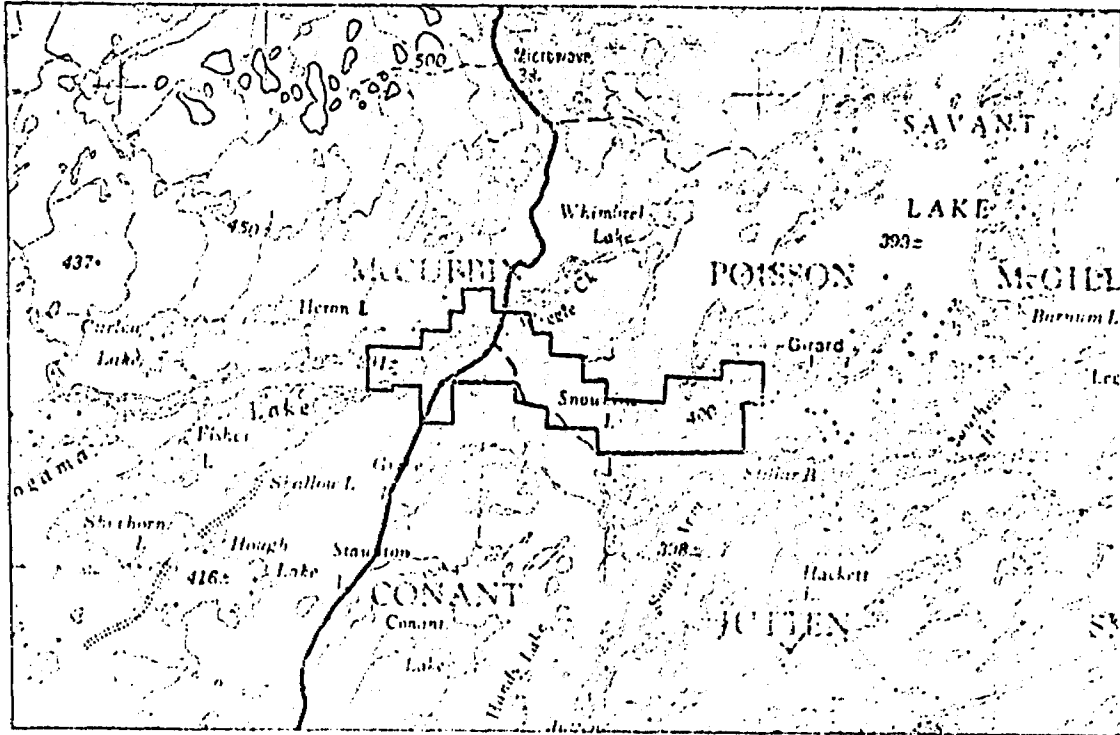


FIGURE 1.

2- DATA PRESENTATION

The maps at a scale of 1:10,000 accompanying this report are:

- the electromagnetic anomalies shown by symbols ( 1 map )
- the quadrature and total field profiles of the VLF-EM ( 1 map )
- the contours of the total magnetic field ( 1 map )

The geophysical data were recorded digitally in the helicopter and processed on a Sigma 6, Xerox computer.

3- SURVEY RESULTS

Most of the electromagnetic anomalies are located in the west part of the survey area and the conductor axis, 0.5 to 2km in length, are oriented east-west. The electromagnetic anomalies have variable conductivity-thickness products (3 to 25 mhos) and amplitude. The anomalies recommended for ground follow-up surveys (see table II ) have been selected accordingly to their conductivity-thickness value and the shape of their in phase and quadrature responses.

Many anomalies related to presence of magnetite ( negative inphase without quadrature response ) have been detected between lines 100 and 390 but have not been plotted on the electromagnetic anomalies map.

The others anomalies in the eastern part of the survey area are located on both sides of the magnetic structure. They

have weak amplitudes, low conductivity-thickness values ( average 6 mhos ) but their shape is generally punctual. The anomalies 2001A, 2201A, 2500B and 3800A have been also detected by the VLF-EM.

The ground follow-up targets are enumerated at Table I.

Among the favorable VLF-EM conductors we have selected in first priority for ground follow-up the axis 4, 5, 12, 6, 11 and in second priority the axis 2 and 10.

#### 4- GENERAL INTERPRETATION

A vertical half-plane model is used as the theoretical model for the phasor diagram (figure 2).

The in-phase and quadrature amplitudes are transferred on this diagram to determine the apparent conductance and the conductor depth.

The apparent conductance obtained this way is the product of the electrical conductivity and average thickness.

The best conductivity-thickness product approximations are made from the stronger anomaly responses, whereas for weaker anomalies less than 3 ppm, the approximation is less valid, usually the mhos calculation for each conductor is a good discriminating parameter. Depth estimates to the tops of the conductors should however be treated with caution as the geometry and strength of the anomaly are critical in this approximation.

DIAGRAMME DE LA PHASE  
PHASOR DIAGRAM

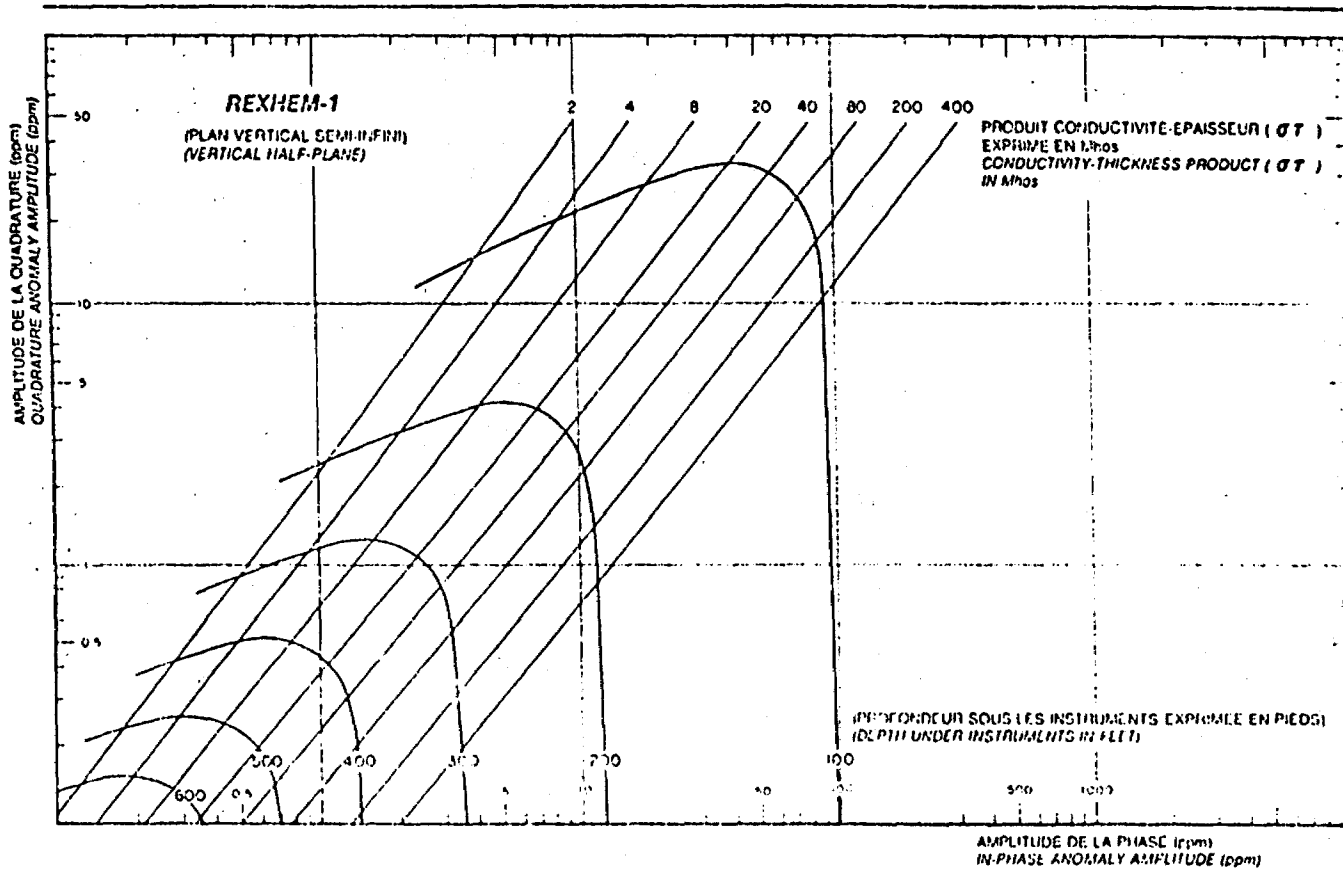


FIGURE 2.

Most overburden have apparent conductances lower than 4 mhos and also the very weak bedrock conductors and the "structural" conductors such as unmineralized faults and shears.

Ordinarily, the overburden conductor are easily distinguished from these bedrock and structural features by the shapes of their responses. The overburden conductors are identified by the symbol X on the electromagnetic anomalies map but, when the anomaly cannot be related with confidence to an overburden response the X is put in a circle. (see the legend of the electromagnetic anomalies map).

Poor to moderate conductance (4 to 20 mhos) may originate from massive sulphides, if they are not well connected or if they are of a poorly-conducting variety such as pyrite or galena.

A strong conductance higher than 20 mhos indicates well-connected mineralization extending throughout a fairly large region, and this often suggests either graphitic zones or massive sulphides.

When long conductors without magnetic correlation are located on/or parallel to known faults or photographic linears, graphite is most likely the cause. It is unfortunate that graphite can also occur as relatively short conductors and produce attractive looking anomalies. With no other information than the airborne results, these must be examined on the ground.

An EM anomaly with a magnetic correlation may be caused by a conductor which is also magnetic, or by a conductor which lies near a magnetic body.

The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite.



Conductive and magnetic bodies in close association are often graphite and magnetite. It is usually very difficult to distinguish between these cases.

When the conductor is strongly magnetic, the amplitude of the inphase EM anomaly is weakened and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign. These anomalies are indicated by the letter M inside a circle on the electromagnetic anomalies map.

Contact zones can often be predicted when anomaly trends coincide with the lines of maximum gradient along a flanking magnetic anomaly.

Power lines sometimes produce spurious anomalies but, these can be identified by reference to the monitor trace.

Railroad pipeline and other artificial conductors are recognized by studying the film strips.

Commercial sulphide ore bodies are rare, and those that respond to airborne survey methods usually have medium to high conductivity. Many have magnetic correlation caused by magnetite and/or pyrrhotite and most of them are relatively short conductors.

The VLF-EM conductor axis are shown on the maps and are always located directly over the peak of the total field amplitude or at the cross-over of the quadrature component.

However, overburden effects can shift the cross-over position away from the peak of the total field component.

The VLF anomalies related to the overburden are usually very wide. The lateral change of ground resistivity from a bedrock to a conductive overburden may caused a strong VLF anomaly (edge effect).

Ground follow-up surveys is recommended in priority over narrow and strong VLF anomalies and more particularly when these anomalies are associated with a magnetic anomaly.

The VLF conductor axis are oriented more or less perpendicular to the flight lines; axis displacement or discontinuity may indicate the presence of faults.

5- REXHEM-1 INSTRUMENTATION

- . An electromagnetic system EM-33 from Geonics Limited (phase and quadrature)
- . A GS03 proton precession magnetometer from Geometrics Limited with one gamma sensitivity at a sampling rate of 1 second.
- . A VLF system TOTEM-1A from Herz Industries (total field and quadrature)
- . A digital data system SDS-1200 from Sonotek Limited
- . A magnetic tape console Minideck from Digi-Data
- . An ACR-8 analogue recorder from Numec Limited
- . A radar altimeter AN/APN-171 from Honeywell (accuracy of  $\pm 5$  feet)
- . A 35mm camera from Spar Aero Limited.

6- REXHEM-1 ELECTROMAGNETOMETER DESCRIPTION

The electromagnetometer EM-33 consists of a helicopter towed bird containing transmitter and receiver coils in a standard coaxial (maximum-coupled) configuration which survey experience has shown to be optimum for the detection of ore bodies with simultaneous rejection of overburden noise.

The transmitter frequency (normally 736 Hz) can be varied from 400 to 4000 Hertz to suit the customers particular survey requirements.

The inphase and quadrature components are measured at two rise times of 0.6 second and 2.4 seconds.

THE ADVANCED DESIGN OF THIS SYSTEM OFFERS THE FOLLOWING FEATURES

A. A noise level smaller than 0.5ppm achieved by employment of recently developed composite material for the bird shell yielding a degree of structural rigidity not previously attained and by a new suspension system reducing bird bending noise. The noise level is actually the lowest among all the helicopter electromagnetic system.

The high signal to noise ratio permits detection of conductor to a depth of about 90 meters.

B. Four channels of EM data. Inphase and quadrature components are recorded on four channels at two rise times of 0.6 second and 2.4 seconds allowing a large depth of detection without sacrificing resolution.

C. High resolution. The short rise time of 0.6 second combined with the small coil separation of 6 meters, provide exceptionally high resolution. The EM-33 is an ideal system to discriminate closely spaced multiple conductors and to identify conductors too small to be detected by airborne electromagnetic system having a large coil separation.

D. Increased depth of exploration particularly on the two channels recording the inphase and quadrature components at the long rise time of 2.4 seconds.

These two high sensitivity channels with a noise level lower than 0.5ppm provide a greater depth of exploration beyond the range of the other helicopter electromagnetic systems.

E. The system is equipped with a 60 Hertz power line monitor to prevent identification of power lines as target conductors and a "spherics" monitor channel which indicated the presence and strength of spherics. Examination of this chart trace which does not respond to subsurface conductors, enables the data reduction crew to immediately remove spherics and other external interference from the actual data traces.

F. Improved electronic signal processing substantially reducing interference from thunderstorm radiation "spherics" and from radar, FM, television and standard broadcast transmitters. The REXIEM-1 system can then be flown near urban areas.

G. A rigid bird shell shorter and heavier than the other helicopter bird EM systems has been designed to increase the coils stability in flight, the signal to noise ratio and therefore the depth of penetration.

7- DESCRIPTION OF THE ANALOGUE CHART AND FILM

The geophysical data were recorded digitally on a magnetic tape and also on an eight channels analogue chart (figure 3). These channels of information are:

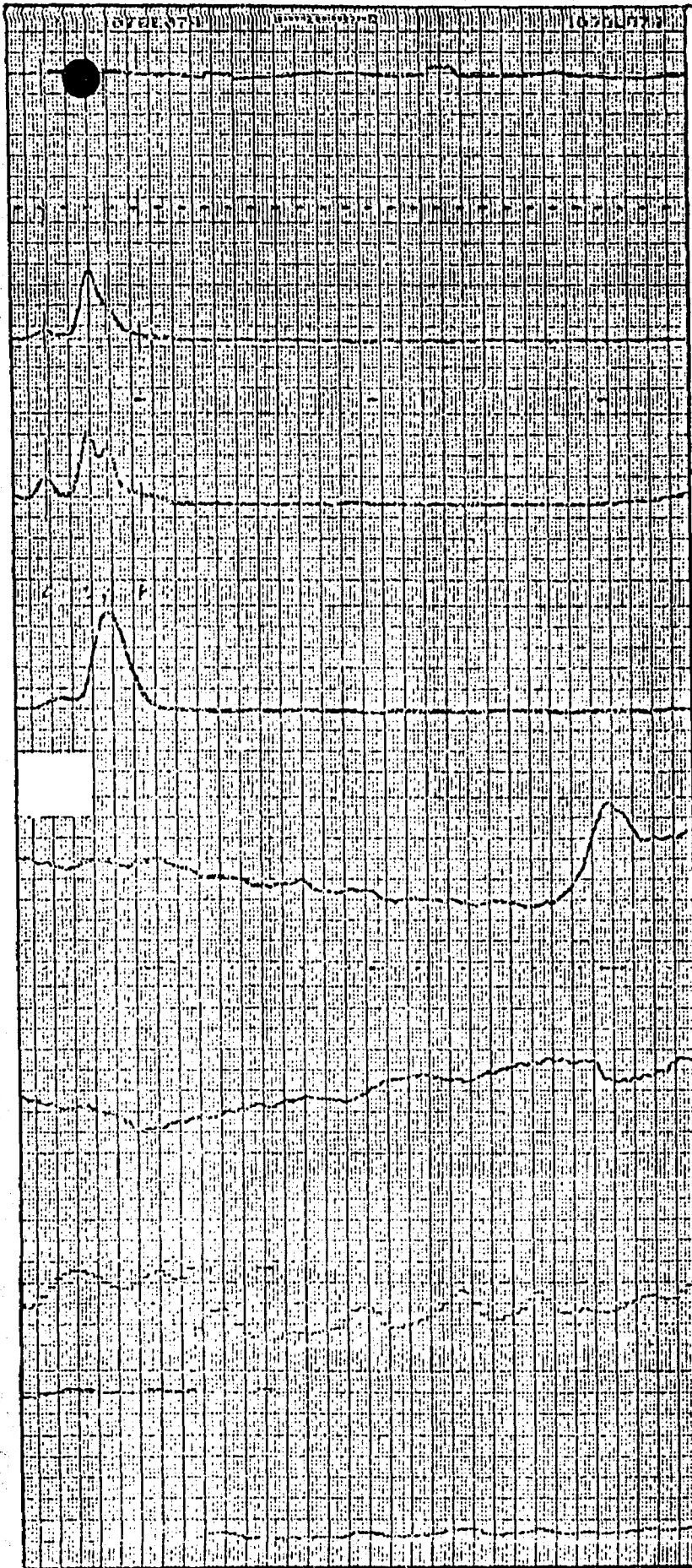
- i) the elevation above ground;
- ii) the electromagnetic data, phase and quadrature recorded at an integration time of 0.6 and 2.4 seconds;
- iii) the VLF-EM data, total field and quadrature responses;
- iiii) the magnetic data shown at two different vertical scales (100 gammas and 1000 gammas).

The analogue chart scale is approximatively equal at 1:18 500, the chart paper moves through the recorder console at a speed of 1.5mm/sec. and the average speed of the helicopter is 100 kilometres per hour.

The line number and fiducial numbers are printed automatically on the analogue chart at an interval of twenty fids, for example line 148 and fid number 1010 will be printed 1010L148 and the next numbers on the chart will be 1030L148, 1050L148, etc...

The camera fiducial marks, printed on the analogue chart at an interval of 4.5mm or 3 secondes, indicate each point where a photograph was taken.

The fiducial numbers and line number are also printed automatically on the 35mm film, a fid number appears on every frame of the film but on the twentieth frame the fid number is replaced by the line number. These 35mm photographs are used for the flight path recovery.



FIDUCIAL AND FLIGHT LINE NUMBER

HELICOPTER ELEVATION  
(0 to 400 feet)

FIDUCIALS

PHASE 0.6s.  
1ppm / div.

60 Hz MONITOR

QUADRATURE 0.6s.  
1ppm / div.

SPHERICS MONITOR

PHASE 2.4s.  
0.5 ppm / div.

VLF  
total field 1.5% / div.

VLF  
quadrature 1.5% / div.

MAGNETOMETER  
(100 gammas scale)

MAGNETOMETER  
(1000 gammas scale)

FIGURE 3.

8-

ANOMALY LIST

\*\*\* RAM PETROLEUMS LTD. \*\*\*

ANOMALY	FIDUCIAL	PHASE (PPM)	QUAD. (PPM)	CONDUCTOR		ELEVATION (FEET)	MAGNETOMETER	
				MHOS	DEPTH		FIDUCIAL	GAMMAS
700 A	237.0	1	1	6	250	130		
700 B	238.0	1	1	6	220	100		
700 C	238.8	1	2	3	75	50		
1401 A	457.5	1	1	6	170	150		
1500 A	462.8	1	1	6	250	130		
1500 B	473.5	-20	5			80	473.5	2000
1601 A	497.0	1	1	6	260	60		
1700 A	502.0	2	2	7	135	80		
1700 B	506.0	1	1	6	180	60		
1900 A	558.8	1	1	6	250	130		
2001 A	577.5	1	1	6	220	100		
2100 A	598.0	1	1	6	200	80		
2201 A	617.6	1	2	3	115	90		
2300 A	652.2	1	1	6	260	140		
2500 A	686.5	2	2	7	165	110		
2500 B	700.8	-3	2			130	700.8	6000
2601 A	713.5	2	1	17	220	100		
2700 A	754.8	1	1	6	220	100		
2900 A	775.5	1	1	60		130		
3001 A	800.5	1	1	6	260	140		
3001 B	802.7	1	1	6	180	60		



\*\*\* RAM PETROLEUMS LTD. \*\*\*

ANOMALY	FIDUCIAL	PHASE (PPM)	QUAD. (PPM)	CONDUCTOR		ELEVATION (FEET)	MAGNETOMETER	
				MHS	DEPTH		FIDUCIAL	GAMMAS
3001 C	819.0	2	1		240	120		
3600 A	951.0	1	1	6	210	90		
3701 A	975.7	1	1	6	270	150		
3701 B	991.0	1	2	3	185	160		
3701 C	992.6	2	2	7	195	140		
3800 A	1014.5	1	1	6	210	90	1014.5	1000
3901 A	1052.0	1	1	6	210	90		
3901 B	1064.0	-1	5	0		110	1064.0	1200
4000 A	1073.0	3	2	14	180	120		
4000 B	1073.8	2	4	3	120	140		
4000 C	1079.5	2	4	3	80	100		
4000 D	1081.5	2	2	7	135	80		
4000 E	1082.7	2	3	4	135	120		
4000 F	1083.5	5	4	14	90	90		
4000 G	1084.0	4	2	20	180	130	1087.0	1000
4000 H	1093.0	1	1	6	230	110		
4000 K	1095.5	1	1	6	230	110		
4101 A	1106.8	1	1	6	230	110		
4101 B	1108.0	2	1	17	190	170		
4101 C	1109.5	1	3	1	120	140		
4101 D	1113.8	0	4	0		100	1113.8	1000
4101 E	1116.2	4	7	5	20	60		
4101 F	1116.8	3	5	4	60	70		
4101 G	1119.2	6	8	7	100	140		
4101 H	1120.5	6	5	14	140	150		
4101 K	1121.0	4	2	20	160	110		
4101 M	1122.2	1	1	6	210	90		
4101 N	1123.3	4	7	5	40	80		
4101 P	1124.6	3	8	3	20	80		
4101 R	1125.2	3	7	3	20	70		
4101 S	1126.5	7	12	6		70		
4101 T	1127.5	5	10	4		70		
4101 W	1128.2	4	11	3		60		
4101 X	1129.5	5	8	5	10	60		
4101 Y	1130.2	6	7	8	50	80		
4101 Z	1133.0	7	8	8	30	70		

\*\*\* RAM PETROLEUMS LTD. \*\*\*

ANOMALY	FIDUCIAL	PHASE (PPM)	QUAD. (PPM)	CONDUCTOR MHRS	DEPTH	ELEVATION (FEET)	MAGNETOMETER FIDUCIAL	GAMMAS
4101 A1	1134.0	25	9	60	20	70		
4200 A	1135.6	3	2	14	200	140		
4200 B	1136.8	7	5	17	150	160	1136.8	65
4200 C	1139.5	4	5	7	120	130		
4200 D	1140.5	11	10	14	50	90		
4200 E	1142.2	7	12	6		70		
4200 F	1143.5	10	7	20	55	80		
4200 G	1145.5	3	4	6	80	80		
4200 H	1147.0	5	5	8	70	80		
4200 K	1150.0	4	4	8	100	100		
4200 M	1151.6	5	5	8	80	90		
4200 N	1152.8	3	4	6	70	70		
4200 P	1153.8	1	3	1	70	90		
4200 R	1155.0	2	4	3	70	90		
4200 S	1156.0	1	2	3	105	80		
4200 T	1157.3	1	1	6	220	100	1157.5	1000
4200 W	1162.8	1	1	6	270	150		
4301 A	1174.0	1	1	6	180	60	1174.0	1000
4301 B	1175.8	3	5	4	40	50	1157.5	1000
4301 C	1177.0	4	5	7	50	60		
4301 D	1178.0	6	7	8	50	80		
4301 E	1178.8	3	5	4	60	70		
4301 F	1180.0	6	5	14	60	10		
4301 G	1182.5	4	4	8	100	100		
4301 H	1183.3	3	5	4	100	110		
4301 K	1185.0	13	12	14	15	70		
4301 M	1185.8	9	13	6		70		
4301 N	1187.0	10	10	14	30	80		
4301 P	1190.0	5	5	8	60	70		
4400 A	1205.8	8	10	8	20	80	1205.8	50
4400 B	1209.5	8	10	8	40	100		
4400 C	1211.8	11	8	18	65	100		
4400 D	1213.3	3	5	4	80	90		
4400 E	1214.2	2	3	4	135	120		
4400 F	1215.0	4	3	14	175	150		
4400 G	1215.8	2	3	4	135	120		
4400 H	1217.2	5	4	14	110	110		
4400 K	1218.0	6	4	17	125	120		
4400 M	1219.5	4	5	7	80	90		
4400 N	1221.0	3	4	6	80	80		
4400 P	1222.8	2	3	4	65	50		

\*\*\* RAM PETROLEUMS LTD. \*\*\*

ANOMALY	FIDUCIAL	PHASE (PPM)	QUAD. (PPM)	CONDUCTOR		ELEVATION (FEET)	MAGNETOMETER	
				MHRS	DEPTH		FIDUCIAL	GAMMAS
4501 A	11.0	5	7	6	20	50		
4501 B	12.0	9	9	11	50	90		
4501 C	13.2	7	8	8	20	60		
4501 D	14.5	8	7	14	30	60		
4501 E	15.5	7	7	11	50	80		
4501 F	16.3	3	4	6	80	30		
4501 G	18.3	4	6	6	70	100		
4501 H	19.6	9	6	20	90	110		
4501 K	21.2	8	5	20	120	130		
4501 M	25.2	9	7	17	55	80		
4501 N	25.8	6	4	17	105	100		
4501 P	26.5	2	1	17	2	130		
4600 A	33.5	6	4	17	155	150		
4600 B	34.8	1	1	6	250	130		
4600 C	40.0	5	5	8	160	170		
4600 D	41.0	8	5	20	140	150		
4600 E	42.5	2	2	7	225	170		
4600 F	44.5	3	3	8	125	160		
4600 G	45.0	5	4	14	170	170		
4600 H	46.0	6	5	14	170	180		
4600 K	48.0	5	3	20	155	130		
4600 M	50.0	1	1	6	160	140		
4701 A	62.0	3	5	4	160	170		
4701 B	62.8	5	5	8	160	170		
4701 C	63.5	18	9	35	125	170		
4701 D	64.8	9	9	11	140	180		
4701 E	65.5	6	8	7	140	180		
4701 F	67.0	8	9	8	130	180		
4701 G	68.3	3	6	4	30	70		
4800 A	70.5	4	6	6	30	110		
4800 B	71.5	3	6	4	80	120		
4800 C	73.5	10	7	20	155	180		
4800 D	75.0	8	9	8	120	170		
4800 E	76.2	11	7	20	150	180		
4800 F	77.0	3	3	8	25	200		
4901 A	89.0	3	5	4	130	140		
4901 B	90.5	3	5	4	110	120		
4901 C	93.0	17	11	22	70	120		
4901 D	94.0	17	14	16	140	120		
4901 E	95.0	8	12	7	40	120		

\*\*\* RAM PETROLEUMS LTD. \*\*\*

ANOMALY	FIDUCIAL	PHASE (PPM)	QUAD. (PPM)	CONDUCTOR		ELEVATION (FEET)	MAGNETOMETER	
				MHBS	DEPTH		FIDUCIAL	GAMMAS
4901 F	95.8	20	14	25	70	130		
5000 A	100.5	6	8	7	90	130		
5000 B	102.0	9	10	9	110	160		
5000 C	103.0	13	15	10	65	130		
5000 D	104.0	8	9	8	90	140		
5000 E	106.0	5	5	8	160	170		
5000 F	108.8	5	5	8	130	140		
5101 A	120.3	6	6	1	240	120		
5101 B	121.8	7	5	17	100	110		
5101 C	122.3	10	7	20	95	120		
5101 D	124.2	9	9	11	110	150		
5101 E	125.2	7	7	11	110	140		
5101 F	126.3	4	6	6	120	150		
5101 G	128.2	7	10	6		30		
5101 H	129.2	4	8	4		40		
5200 A	139.0	1	4	1	120	170		
5200 B	140.5	5	6	7	90	110		
5200 C	143.8	4	6	6	50	80		
5301 A	155.0	3	6	4	40	80		
5301 B	158.5	4	5	7	120	130		
5301 C	159.8	2	4	3	120	140		
5301 D	161.3	2	2	7	125	170		
-10002 A	176.8	3	4	6	70	70		
-10002 B	177.8	7	7	11	120	150		
*** -10002 C	180.0	3	4	6	170	170		
-10002 D	182.0	6	6	11	130	150		
-10002 E	184.2	5	7	6	110	140		
-10002 F	184.8	7	8	8		30		
-10002 G	188.8	4	6	6	10	40		
-10002 H	189.4	3	5	4	30	40		
-10002 K	191.0	1	3	1		20		
-10002 M	194.0	1	1	6	170	50		
-10002 N	196.2	2	1	17	180	60		
-10002 P	197.2	1	2	3	85	60		
-10002 R	245.3	1	2	3	65	40		

N.B. \*\*\* Mean that the anomalies have not been plotted

TABLE

TABLE I

LINE AND AXIS	ANOMALY	CONDUCTIVITY THICKNESS PRODUCT	MAGNETIC ASSOCIATION	VLF CORRESPONDING AXIS	NOTE	GROUND FOLLOW-UP PRIORITY
700	A	6		in the western prolongation of 11	- ponctual but weak EM-33 response	2
700	C	3			- ponctual but weak EM-33 response	2
1500	B	magnetic			direct 6000γ	- not well defined
Axis 33	1401A	6	Magnetic flank with strong gradient		- ponctual EM-33 responses	2
	1500A	6				
	1601A	6				
	1700B	6				
1900	A	6	On the north flank of a magnetic axis.	proximity of 9		2
2001	A	6		9		2
2201	A	3		7		2
2300	A	6		proximity of 7	- ponctual EM-33 responses	2
2601	A	17				2
3001	A	6			3	
3001	B	6			2	
3001	C	17			- ponctual EM-33 response	2
3600	A	6	south flank of magnetic axis		- very ponctual EM-33 response	1
370.]	C	7	north flank		- ponctual	2

TABLE I (cont'd)

LINE AND AXIS	ANOMALY	CONDUCTIVITY THICKNESS PRODUCT	MAGNETIC ASSOCIATION	VLF CORRESPONDING AXIS	NOTE	GROUND FOLLOW-UP PRIORITY
2500	A	7			- noisy. EM-33 response	3
2100	A	6				3
2700	A	6				3
4200	T	8	direct 1000γ		- not ponctual	2
3800	A	6	indirect 2500γ to the north	1	- not ponctual	2
2500	B	magnetic	direct 6000γ	7	- ponctual	3

TABLE II

LINE AND AXIS	ANOMALY	CONDUCTIVITY THICKNESS PRODUCT	MAGNETIC ASSOCIATION	VLF CORRESPONDING AXIS	NOTE	GROUND FOLLOW-UP PRIORITY
Axis 1	3901A	6	South flank of magnetic axis		<ul style="list-style-type: none"> <li>- ponctual EM-33 responses</li> <li>- shorts axis parallel to the main structure</li> <li>- these anomalies have been also detected along the tie line</li> </ul>	2
Axis 2	4000K	6				2
Axis 3	4000H	6				2
	4101A	6				2
	4101B	17				2
	4200N	6	2			
Axis 5	4101D		South flank of a magnetic axis		<ul style="list-style-type: none"> <li>- shorts axis parallel to the main structure</li> <li>- ponctual EM-33 responses</li> </ul>	2
	4200S	3				
	4301A	6				
	4400P	4				
T.L.10002	K	1	South flank of a magnetic axis		<ul style="list-style-type: none"> <li>- this axis cut the magnetic pattern</li> <li>- ponctual EM-33 response</li> </ul>	2
T.L.10002	M	6				
T.L.10002	N	17				
T.L.10002	P	3				
Axis 7	5101C	20	South flank of a magnetic axis		<ul style="list-style-type: none"> <li>- ponctual</li> </ul>	3
Axis 9	4101G	7				
Axis 10	4701C	35				
	4800E	20			<ul style="list-style-type: none"> <li>- cutting the magnetic pattern</li> <li>- short axis parallel to the main structure</li> <li>- very ponctual EM-33 responses</li> </ul>	1



TABLE II (cont'd)

LINE AND AXIS	ANOMALY	CONDUCTIVITY THICKNESS PRODUCT	MAGNETIC ASSOCIATION	VLF CORRESPONDING AXIS	NOTE	GROUND FOLLOW-UP PRIORITY
Axis 12	4901C	22			- very ponctual EM-33 responses	1
	5000D	8				
	5101D	11				
Axis 13	4901D	16			- very ponctual	2
	5000C	10			- ponctual	2
Axis 14	4800C	20			- very ponctual	1
	4901E	7			- ponctual	2
	5000B	9			- ponctual	2
Axis 15	4901F	25			- very ponctual	1
	5000A	7			- ponctual	2
	5101G	6			- ponctual	2
Axis 17	4101N	5			- ponctual	2
	4200H	8			- ponctual	2
Axis 20	4400E	4			- ponctual	3
Axis 22	4200F	20			- very ponctual	1
	4600D	20			- ponctual	1
Axis 23	4600H	20			- ponctual	1

AXIS CUTTING THE MAGNETIC PATTERN

The anomalies have been also detected on the tie line

TABLE II (cont'd)

LINE AND AXIS	ANOMALY	CONDUCTIVITY THICKNESS PRODUCT	MAGNETIC ASSOCIATION	VLF CORRESPONDING AXIS	NOTE	GROUND FOLLOW-UP PRIORITY	
Axis 24	4301K	14			- very ponctual	} AXIS CUTTING THE MAGNETIC PATTERN	1
Axis 25	4301M	6			- ponctual		2
	4501K	20			- ponctual		1
Axis 26	4301N	14			- very ponctual		1
Axis 28	4301P	8			- very ponctual		2
	4400A	8			- very ponctual		2
	4101Z	8			- ponctual		2
Axis 30	4101A	60			- very ponctual		1
	4200A	14			- ponctual		2
Axis 29	4501M	17			- very ponctual - proximity of the road		1
Axis 31	4501N	17			- ponctual, but located near a road and may be fictitious		1
	4600A	17			- ponctual		
T.L. 10002	R	3			- very ponctual, but weak EM-33 response	2	

Written by:

*René Fortin*

René Fortin, Geophysicist

Approved by:

*Claude Jobin*

Claude Jobin, Geophysicist



52J07NE0018 52J07NE0010 GREBE LAKE

900



Ontario

Ministry of Natural Resources

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL  
TECHNICAL DATA STATEMENT

File

RECEIVED

AUG 21 1981

MINING LANDS SECTION

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

Type of Survey(s) AIRBORNE GEOPHYSICAL  
Township or Area Poisson and McCubbin Townships  
Claim Holder(s) Ram Petroleums Limited (50%)  
Raylloyd Mines & Explorations Ltd. (50%)  
Survey Company Geophysical Surveys Inc.  
Author of Report Rene Fortin  
Address of Author 2272 Leon Harmel, Parc Jean-Talon Nord, QUEBEC, P.Q. G1N 4L2.  
Covering Dates of Survey May 17, 1981  
(linecutting to office)  
Total Miles of Line Cut n/a

MINING CLAIMS TRAVERSED  
List numerically

See Schedule attached  
(prefix) (number)

$70.22 \times 40 = 2808.8$   
 $\div 101 = 27.8$

$2808.8 \div 83 = 34$

$2808.8 \div 81 = 35$

If space insufficient, attach list

SPECIAL PROVISIONS  
CREDITS REQUESTED

DAYS  
per claim

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

ENTER 20 days for each  
additional survey using  
same grid.

- Geophysical  
-Electromagnetic \_\_\_\_\_  
-Magnetometer \_\_\_\_\_  
-Radiometric \_\_\_\_\_  
-Other \_\_\_\_\_  
Geological \_\_\_\_\_  
Geochemical \_\_\_\_\_

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

Magnetometer 30 Electromagnetic 30 VLF Radiometric n/a  
(enter days per claim)

DATE: 81-08-21 SIGNATURE: Rene Fortin  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications on this file

Previous Surveys

File No.	Type	Date	Claim Holder
			<u>H.D.</u>

TOTAL CLAIMS \_\_\_\_\_

OFFICE USE ONLY

SELF POTENTIAL

Instrument \_\_\_\_\_ Range \_\_\_\_\_

Survey Method \_\_\_\_\_

Corrections made \_\_\_\_\_

RADIOMETRIC

Instrument \_\_\_\_\_

Values measured \_\_\_\_\_

Energy windows (levels) \_\_\_\_\_

Height of instrument \_\_\_\_\_ Background Count \_\_\_\_\_

Size of detector \_\_\_\_\_

Overburden \_\_\_\_\_

(type, depth -- include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey \_\_\_\_\_

Instrument \_\_\_\_\_

Accuracy \_\_\_\_\_

Parameters measured \_\_\_\_\_

Additional information (for understanding results) \_\_\_\_\_

AIRBORNE SURVEYS

Type of survey(s) Combined EM - VLF - MAGNETIC

Instrument(s) Geometrics Mgn. - Totem VLF - GEONICS EM-33 system  
(specify for each type of survey)

Accuracy 1 gamma  
(specify for each type of survey)

Aircraft used Hughes 500D Helicopter

Sensor altitude Magnetometer 160 ft. above ground - EM sensors 120 ft above ground

Navigation and flight path recovery method Visual and Tracking Camera

Aircraft altitude 200 ft. above ground Line Spacing 200 m.

Miles flown over total area 70.22 miles Over claims only 70.22 miles



Ministry of  
Natural  
Resources

Your file: 52 J/7 NE (45)

1982 08 16

Our file: 2.4088

Mining Recorder  
Ministry of Natural Resources  
P.O. Box 669  
Sioux Lookout, Ontario  
PDV 2T0

Dear Sir:

RE: Airborne Geophysical (Electromagnetic V.L.F.  
and Magnetometer) Survey on Mining Claims  
PA 437120 et al in Poisson Township, Grebe  
Lake and McCubbin Township

The Airborne Geophysical (Electromagnetic V.L.F. and  
Magnetometer) Survey assessment work credits as listed  
with my Notice of Intent dated June 11, 1982, have  
been approved as of the above date.

Please inform the recorded holder of these mining claims  
and so indicate on your records.

Yours very truly,

E. F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: 416/965-1316

*7/28*  
A. Barr:sc

cc: Ram Petroleums Limited  
Toronto, Ontario  
Attn: Mr. Roger Barton  
Mr. Raymond G. Ramsay, Barrie.

cc: M. Rene Fortin  
Park Jean-Talon Nord, Quebec

cc: Resident Geologist  
Sioux Lookout, Ontario

Ministry of Natural Resources

**RECEIVED**

AUG 17 1982

RESIDENT GEOLOGIST  
SIOUX LOOKOUT



Ministry of  
Natural  
Resources

Ontario

1982 05 21

Mining Recorder  
Ministry of Natural Resources  
P.O. Box 669  
Sioux Lookout, Ontario  
POV 2T0

Your file:

2.4088

Our file:

Ministry of Natural Resources  
**RECEIVED**  
- 1982  
RESIDENT GEOLOGIST  
SIOUX LOOKOUT

Dear Sir:

Re: Airborne Geophysical (Electromagnetic & Magnetometer)  
Survey on Mining Claims PA 437120 et al in the  
Township of Poisson and Grebe Lake & McCubbin Twp.

The enclosed statement of assessment work credits for  
Airborne Geophysical (Electromagnetic and Magnetometer)  
surveys as shown on the attached statement have been  
approved as of the above date.

Please inform the recorded holder of these mining claims  
and so indicate on your records.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: 416/965-1316

A. Barr/amc

Encl.

cc: Ram Petroleums Limited  
Toronto, Ontario  
Attn: Mr. Roger Barton

cc: M. Rene Fortin  
Quebec, Ontario

cc: ✓ Resident Geologist  
Sioux Lookout, Ontario

) Duplicate Survey Report to  
) follow)



Ministry of  
Natural  
Resources

Ontario

**Technical Assessment  
Work Credits**

File  
2.4088

Recorded Holder **RAM PETROLEUMS LIMITED & RAYMOND G. RAMSAY**

Township or Area **POISSON TWP AND GREBE LAKE & McCUBBIN TWP.**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic <u>34</u> days	PA 437120 to 25 incl.
Magnetometer _____ days	437129
Radiometric _____ days	486011 to 19 incl.
Induced polarization _____ days	486077 to 86 incl.
Section 86 (18) _____ days	486358 to 72 incl.
Geological _____ days	486374 to 77 incl.
Geochemical _____ days	517568-69-71
Man days <input type="checkbox"/> Airborne <input checked="" type="checkbox"/>	543031 to 69 incl.
Special provision <input type="checkbox"/> Ground <input type="checkbox"/>	543065 to 70 incl.
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 86 (15a) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 86(18)-60:





Ontario

*meeting done*

Ministry of  
Natural  
Resources

Notification of recording  
of assessment work credits

*to the 6 be  
uniform*

YOUR FILE NO. 2.4088

Supervisor, Projects Unit  
Mining Lands Section  
Ministry of Natural Resources  
Room 1617, Whitney Block  
Queen's Park, Toronto  
M7A 1W3

**RECEIVED**

OCT 1 - 1981

MINING LANDS SECTION

Date of recording of work: June 25, 1981

Recorded holder: Ram Petroleums Limited and Raymond G. Ramsay

Address: Ste. 918, Box 17, 130 Adelaide St. W., Toronto, Ont.

Township or Area: Poisson Twp. M-1865 and Grebe Lake & McCubbin Twp. M-1804

Type of survey and number of Assessment days credit per claim	- Mining claims
Geophysical	SEE ATTACHED SCHEDULES
Electromagnetic <u>X</u> days	
Magnetometer <u>X</u> days	
VLF <u>X</u> days	
Radiometric _____ days	
Induced polarization _____ days	
Section 86 (18) _____ days	
Geological _____ days	
Geochemical _____ days	
Man days <input type="checkbox"/> Airborne <input checked="" type="checkbox"/>	
Special provision <input type="checkbox"/> Ground <input type="checkbox"/>	

Notice to recorded holder:

- Survey reports and maps in duplicate must be submitted to the Projects Unit, Toronto within 60 days from the date of recording of this work.
- Reports and maps are being forwarded to the Projects Unit with this letter.

*Raymond G. Ramsay*  
Mining recorder

c.c. Ram Petroleums Limited-Tor.

Raymond G. Ramsay-Barrie

#81-76; #81-77; #81-78

SCHEDULE - Magnetometer

CLAIM NO.	DAYS	CLAIM NO.	DAYS
PA 437120	30	PA 486371	30
PA 437121	30	PA 486372	30
PA 437122	30		
PA 437123	30	PA 486374	30
PA 437124	30	PA 486375	30
PA 437125	30	PA 486376	30
PA 437126	<del>30</del> 20	PA 486377	30
PA 437127	<del>30</del> 20		
PA 437128	<del>30</del> 20	PA 517557	<del>30</del> 20
PA 437129	30	PA 517558	<del>30</del> 20
PA 437130	<del>30</del> 20	PA 517559	<del>30</del> 20
PA 437131	<del>30</del> 20	PA 517560	<del>30</del> 20
		PA 517561	<del>30</del> 20
		PA 517562	<del>30</del> 20
PA 486010	30	PA 517563	<del>30</del> 20
PA 486011	30	PA 517564	<del>30</del> 20
PA 486012	30	PA 517565	<del>30</del> 20
PA 486013	30	PA 517566	<del>30</del> 20
PA 486014	30	PA 517567	<del>30</del> 20
PA 486015	30	PA 517568	30
PA 486016	30	PA 517569	30
PA 486017	30	PA 517570	<del>30</del> 20
PA 486018	30	PA 517571	30
PA 486019	30		
		PA 543031	30
PA 486077	30	PA 543032	30
PA 486078	30	PA 543033	30
PA 486079	30	PA 543034	30
PA 486080	30	PA 543035	30
PA 486081	30	PA 543036	30
PA 486082	30	PA 543037	30
PA 486083	30	PA 543038	30
PA 486084	30	PA 543039	30
PA 486085	30	PA 543040	30
PA 486086	30	PA 543041	30
		PA 543042	30
PA 486358	30	PA 543043	30
PA 486359	30	PA 543044	30
PA 486360	30	PA 543045	30
PA 486361	30	PA 543046	30
PA 486362	30	PA 543047	30
PA 486363	30	PA 543048	30
PA 486364	30	PA 543049	30
PA 486365	30	PA 543050	30
PA 486366	30	PA 543051	30
PA 486367	30	PA 543052	30
PA 486368	30	PA 543053	30
PA 486369	30	PA 543054	30
PA 486370	30	PA 543055	30
		PA 543056	30
		PA 543057	30
		PA 543058	30
		PA 543059	30
		PA 543065	30
		PA 543066	30
		PA 543067	30
		PA 543068	30
		PA 543069	30
		PA 543070	30

PATRICIA MINING DIV.  
**RECEIVED**  
 JUN 25 1981  
 A.M. P.M.  
 7 8 9 10 11 12 1 2 3 4 5 6

RAM PETROLEUMS LIMITED

SCHEDULE - Electromagnetic

CLAIM NO.	DAYS	CLAIM NO.	DAYS
PA 437120	30	PA 486371	30
PA 437121	30	PA 486372	30
PA 437122	30		
PA 437123	30	PA 486374	30
PA 437124	30	PA 486375	30
PA 437125	30	PA 486376	30
PA 437126	<del>20</del> 0	PA 486377	30
PA 437127	<del>30</del> 0	63	
PA 437128	<del>30</del> 0	PA 517557	<del>30</del> 0
PA 437129	30	PA 517558	<del>30</del> 0
PA 437130	<del>20</del> 0	PA 517559	<del>30</del> 0
PA 437131	<del>30</del> 0	PA 517560	<del>30</del> 0
		PA 517561	<del>30</del> 0
PA 486010	<del>20</del> 0	PA 517562	<del>30</del> 0
PA 486011	<del>30</del> 5	PA 517563	<del>30</del> 0
PA 486012	<del>30</del> 20	PA 517564	<del>30</del> 0
PA 486013	30	PA 517565	<del>30</del> 0
PA 486014	30	PA 517566	<del>30</del> 0
PA 486015	30	PA 517567	<del>30</del> 0
PA 486016	30	PA 517568	<del>30</del> 0
PA 486017	30	PA 517569	30
PA 486018	30	PA 517570	<del>30</del> 0
PA 486019	30	PA 517571	30
PA 486077	30	PA 543031	30
PA 486078	30	PA 543032	30
PA 486079	30	PA 543033	30
PA 486080	30	PA 543034	30
PA 486081	30	PA 543035	30
PA 486082	30	PA 543036	30
PA 486083	30	PA 543037	30
PA 486084	30	PA 543038	30
PA 486085	30	PA 543039	30
PA 486086	30	PA 543040	30
		PA 543041	30
PA 486358	30	PA 543042	30
PA 486359	30	PA 543043	30
PA 486360	30	PA 543044	30
PA 486361	30	PA 543045	30
PA 486362	30	PA 543046	30
PA 486363	30	PA 543047	30
PA 486364	30	PA 543048	30
PA 486365	30	PA 543049	30
PA 486366	30	PA 543050	30
PA 486367	30	PA 543051	30
PA 486368	30	PA 543052	30
PA 486369	30	PA 543053	30
PA 486370	30	PA 543054	30
		PA 543055	30
		PA 543056	30
		PA 543057	30
		PA 543058	30
		PA 543059	30
		PA 543065	30
		PA 543066	30
		PA 543067	30
		PA 543068	30
		PA 543069	30
		PA 543070	30

PATRICIA MINING DIV.  
**RECEIVED**  
 JUN 25 1981  
 A.M. P.M.  
 7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6

800

RAM PETROLEUMS LIMITED

SCHEDULE - VLF

<u>CLAIM NO.</u>	<u>DAYS</u>	<u>CLAIM NO.</u>	<u>DAYS</u>
PA 437120	30 20	PA 486371	30 20
PA 437121	30 20	PA 486372	30 20
PA 437122	30 20		
PA 437123	30 20	PA 486374	30 20
PA 437124	30 20	PA 486375	30 20
PA 437125	30 20	PA 486376	30 20
PA 437126	30 0	PA 486377	30 20
PA 437127	30 0	65	
PA 437128	30 0	PA 517557	30 00
PA 437129	30 5	PA 517558	30 00
PA 437130	30 0	PA 517559	30 00
PA 437131	30 0	PA 517560	30 00
		PA 517561	30 00
		PA 517562	30 00
PA 486010	30 20	PA 517563	30 00
PA 486011	30 0	PA 517564	30 00
PA 486012	30 0	PA 517565	30 00
PA 486013	30 5	PA 517566	30 00
PA 486014	30 20	PA 517567	30 00
PA 486015	30 20	PA 517568	30 00
PA 486016	30 20	PA 517569	30 00
PA 486017	30 20	PA 517570	30 00
PA 486018	30 20	PA 517571	30 00
PA 486019	30 20		
		PA 543031	30 20
PA 486077	30 20	PA 543032	30 20
PA 486078	30	PA 543033	30 20
PA 486079	30	PA 543034	30 20
PA 486080	30	PA 543035	30 20
PA 486081	30	PA 543036	30 20
PA 486082	30	PA 543037	30 20
PA 486083	30	PA 543038	30 20
PA 486084	30	PA 543039	30 20
PA 486085	30	PA 543040	30 20
PA 486086	30	PA 543041	30 20
		PA 543042	30 20
PA 486358	30 20	PA 543043	30 20
PA 486359	30	PA 543044	30 20
PA 486360	30	PA 543045	30 20
PA 486361	30	PA 543046	30 20
PA 486362	30	PA 543047	30 20
PA 486363	30	PA 543048	30 20
PA 486364	30	PA 543049	30 20
PA 486365	30	PA 543050	30 20
PA 486366	30	PA 543051	30 20
PA 486367	30	PA 543052	30 20
PA 486368	30	PA 543053	30 20
PA 486369	30	PA 543054	30 20
PA 486370	30	PA 543055	30 20
		PA 543056	30 20
		PA 543057	30 20
		PA 543058	30 20
		PA 543059	30 20
		PA 543065	30 20
		PA 543066	30 20
		PA 543067	30 20
		PA 543068	30 20
		PA 543069	30 20
		PA 543070	30 20

8 claims

PATRICIA MINING DIV.  
**RECEIVED**  
 JUN 25 1981  
 A.M. P.M.  
 7,8,9,10,11,12,1,2,3,4,5,6

RAM PETROLEUMS LIMITED

SCHEDULE

CLAIM NO.

CLAIM NO.

PA 437120  
PA 437121  
PA 437122  
PA 437123  
PA 437124  
PA 437125  
PA 437126  
PA 437127  
PA 437128  
PA 437129  
PA 437130  
PA 437131

PA 486371  
✓ PA 486372

PA 486374  
PA 486375  
✓ PA 486376  
PA 483677

PA 517557  
PA 517558  
PA 517559  
PA 517560  
PA 517561  
PA 517562  
PA 517563  
PA 517564  
PA 517565  
✓ PA 517566  
PA 517567  
PA 517568  
PA 517569  
PA 517570  
PA 517571

PA 486010  
PA 486011  
PA 486012  
PA 486013  
PA 486014  
PA 486015  
PA 486016  
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PA 486018  
PA 486019

PA 543031  
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PA 543056  
PA 543057  
PA 543058  
PA 543059

✓ PA 486077  
PA 486078  
PA 486079  
PA 486080  
PA 486081  
PA 486082  
PA 486083  
PA 486084  
✓ PA 486085  
PA 486086

PA 486358  
PA 486359  
PA 486360  
PA 486361  
PA 486362  
PA 486363  
PA 486364  
PA 486365  
PA 486366  
✓ PA 486367  
PA 486368  
PA 486369  
PA 486370

PA 543065  
PA 543066  
PA 543067  
PA 543068  
PA 543069  
PA 543070



Ministry of  
Natural  
Resources

1982 05 21

Mining Recorder  
Ministry of Natural Resources  
P.O. Box 669  
Sioux Lookout, Ontario  
POV 2T0

Your file:  
Ministry of Natural Resources  
our file: A088  
**RECEIVED**  
1982

RESIDENT GEOLOGIST  
SIOUX LOOKOUT

Dear Sir:

Re: Airborne Geophysical (Electromagnetic & Magnetometer)  
Survey on Mining Claims PA 437120 et al in the Town-  
ship of Poisson and Grebe Lake and McCubbin Twp.

The enclosed statement of assessment work credits for  
Airborne Geophysical (Electromagnetic and Magnetometer)  
surveys as shown on the attached statement have been  
approved as of the above date.

Please inform the recorded holder of these mining claims  
and so indicate on your records.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch  
Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3

A. Barr/amc

Encl.

cc: Ram Petroleums Limited  
Toronto, Ontario  
Attn: Mr. Roger Barton/& Mr. Mr. Raymond G. Ramsay - Barrie

cc: M. Rene Fortin  
Quebec, Ontario

cc: ✓ Resident Geologist )  
Sioux Lookout, Ontario ) - Duplicate Survey Report to follow.



Ontario

Ministry of  
Natural  
Resources

### Technical Assessment Work Credits

File  
2.4088

Recorded Holder	RAM PETROLEUMS LIMITED AND RAYMOND G. RAMSAY
Township or Area	POISSON TWP. AND GREBE LAKE AND McCUBBIN TWP.

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical <u>V.L.F.</u> <u>35</u> days Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Section 86 (18) _____ days Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input checked="" type="checkbox"/> Special provision <input type="checkbox"/> Ground <input type="checkbox"/>  <input type="checkbox"/> Credits have been reduced because of partial coverage of claims.  <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	PA 437120 to 25 incl. 437129 486010 486013 to 19 incl. 486077 to 86 incl. 486358 to 72 incl. 486374 to 77 incl. 517569 517571 543031 to 59 incl. 543065 to 70 incl.

Special credits under section 86 (15a) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       Insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 86(18)-60:



Ontario

*waiting for...*

Ministry of  
Natural  
Resources

Notification of recording  
of assessment work credits

*to be  
returned*

YOUR FILE NO. 2.4088

Supervisor, Projects Unit  
Mining Lands Section  
Ministry of Natural Resources  
Room 1617, Whitney Block  
Queen's Park, Toronto  
M7A 1W3

**RECEIVED**

**OCT 1 - 1981**

**MINING LANDS SECTION**

Date of recording of work: June 25, 1981

Recorded holder: Ram Petroleums Limited and Raymond G. Ramsay

Address: Ste. 918, Box 17, 130 Adelaide St. W., Toronto, Ont.

Township or Area: Poisson Twp. M-1865 and Grebe Lake & McCubbin Twp. M-1804

Type of survey and number of Assessment days credit per claim	Mining claims
Geophysical	SEE ATTACHED SCHEDULES
Electromagnetic <u>  X  </u> days	
Magnetometer <u>  X  </u> days	
VLF <u>  X  </u> days	
Radiometric _____ days	
Induced polarization _____ days	
Section 86 (18) _____ days	
Geological _____ days	
Geochemical _____ days	
Man days <input type="checkbox"/> Airborne <input checked="" type="checkbox"/>	
Special provision <input type="checkbox"/> Ground <input type="checkbox"/>	

Notice to recorded holder:

- Survey reports and maps in duplicate must be submitted to the Projects Unit, Toronto within 60 days from the date of recording of this work.
- Reports and maps are being forwarded to the Projects Unit with this letter.

*[Signature]*  
Mining recorder

c.c. Ram Petroleums Limited-Tor.

Raymond G. Ramsay-Barrie

#81-76; #81-77; #81-78



SCHEDULE - Magnetometer

<u>CLAIM NO.</u>	<u>DAYS</u>	<u>CLAIM NO.</u>	<u>DAYS</u>
PA 437120*	30	PA 486371*	30
PA 437121*	30	PA 486372*	30
PA 437122*	30		
PA 437123*	30	PA 486374*	30
PA 437124*	30	PA 486375*	30
PA 437125*	30	PA 486376* 6	30
PA 437126* 12	<del>20</del> 20	PA 486377* 63	30
PA 437127*	<del>20</del> 20		
PA 437128*	<del>20</del> 20	PA 517557*	<del>20</del> 20
PA 437129*	30	PA 517558*	<del>20</del> 20
PA 437130*	<del>20</del> 20	PA 517559*	<del>20</del> 20
PA 437131*	<del>20</del> 20	PA 517560*	<del>20</del> 20
		PA 517561*	<del>20</del> 20
		PA 517562*	<del>20</del> 20
PA 486010*	30	PA 517563*	<del>20</del> 20
PA 486011*	30	PA 517564* 15	<del>20</del> 20
PA 486012*	30	PA 517565*	<del>20</del> 20
PA 486013*	30	PA 517566*	<del>20</del> 20
PA 486014*	30	PA 517567*	<del>20</del> 20
PA 486015* 10	30	PA 517568*	30
PA 486016*	30	PA 517569*	30
PA 486017*	30	PA 517570*	<del>20</del> 20
PA 486018*	30	PA 517571*	30
PA 486019*	30		
		PA 543031*	30
PA 486077*	30	PA 543032*	30
PA 486078*	30	PA 543033*	30
PA 486079*	30	PA 543034*	30
PA 486080*	30	PA 543035*	30
PA 486081* 11	30	PA 543036*	30
PA 486082*	30	PA 543037*	30
PA 486083*	30	PA 543038*	30
PA 486084*	30	PA 543039*	30
PA 486085*	30	PA 543040*	30
PA 486086*	30	PA 543041*	30
		PA 543042*	30
PA 486358*	30	PA 543043*	30
PA 486359*	30	PA 543044*	30
PA 486360*	30	PA 543045*	30
PA 486361*	30	PA 543046* 29	30
PA 486362*	30	PA 543047*	30
PA 486363* 13	30	PA 543048*	30
PA 486364*	30	PA 543049*	30
PA 486365*	30	PA 543050*	30
PA 486366*	30	PA 543051*	30
PA 486367*	30	PA 543052*	30
PA 486368*	30	PA 543053*	30
PA 486369*	30	PA 543054*	30
PA 486370*	30	PA 543055*	30
		PA 543056*	30
		PA 543057*	30
		PA 543058*	30
		PA 543059* 6	30
		PA 543065*	30
		PA 543066*	30
		PA 543067*	30
		PA 543068*	30
		PA 543069*	30
		PA 543070*	30

PATRICIA MINING DIV.  
**RECEIVED**  
 JUN 25 1981  
 A.M. P.M.  
 7 8 9 10 11 12 1 2 3 4 5 6

RAM PETROLEUMS LIMITED

SCHEDULE - Electromagnetic

CLAIM NO.	DAYS	CLAIM NO.	DAYS
PA 437120	30	PA 486371	30
PA 437121	30	PA 486372	30
PA 437122	30		
PA 437123	30	PA 486374	30
PA 437124	30	PA 486375	30
PA 437125	30	PA 486376	30
PA 437126	<del>30</del> 0	PA 486377	30
PA 437127	<del>30</del> 0	<del>63</del>	
PA 437128	<del>30</del> 0	PA 517557	<del>30</del> 0
PA 437129	30	PA 517558	<del>30</del> 0
PA 437130	<del>30</del> 0	PA 517559	<del>30</del> 0
PA 437131	<del>30</del> 0	PA 517560	<del>30</del> 0
		PA 517561	<del>30</del> 0
PA 486010	<del>30</del> 0	PA 517562	<del>30</del> 0
PA 486011	<del>30</del> 5	PA 517563	<del>30</del> 0
PA 486012	<del>30</del> 20	PA 517564	<del>30</del> 0
PA 486013	30	PA 517565	<del>30</del> 0
PA 486014	30	PA 517566	<del>30</del> 0
PA 486015	30	PA 517567	<del>30</del> 0
PA 486016	30	PA 517568	<del>30</del> 0
PA 486017	30	PA 517569	30
PA 486018	30	PA 517570	<del>30</del> 0
PA 486019	30	PA 517571	30
PA 486077	30	PA 543031	30
PA 486078	30	PA 543032	30
PA 486079	30	PA 543033	30
PA 486080	30	PA 543034	30
PA 486081	30	PA 543035	30
PA 486082	30	PA 543036	30
PA 486083	30	PA 543037	30
PA 486084	30	PA 543038	30
PA 486085	30	PA 543039	30
PA 486086	30	PA 543040	30
		PA 543041	30
PA 486358	30	PA 543042	30
PA 486359	30	PA 543043	30
PA 486360	30	PA 543044	30
PA 486361	30	PA 543045	30
PA 486362	30	PA 543046	30
PA 486363	30	PA 543047	30
PA 486364	30	PA 543048	30
PA 486365	30	PA 543049	30
PA 486366	30	PA 543050	30
PA 486367	30	PA 543051	30
PA 486368	30	PA 543052	30
PA 486369	30	PA 543053	30
PA 486370	30	PA 543054	30
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		PA 543056	30
		PA 543057	30
		PA 543058	30
		PA 543059	30
		PA 543065	30
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		PA 543067	30
		PA 543068	30
		PA 543069	30
		PA 543070	30

830

PATRICIA MINING DIV.  
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 JUN 25 1981  
 A.M. P.M.  
 7 8 9 10 11 12 1 2 3 4 5 6

RAM PETROLEUMS LIMITED

SCHEDULE - VLF

CLAIM NO.	DAYS	CLAIM NO.	DAYS
PA 437120	30 20	PA 486371	30 20
PA 437121	30 20	PA 486372	30 20
PA 437122	30 20		
PA 437123	30 20	PA 486374	30 20
PA 437124	30 20	PA 486375	30 20
PA 437125	30 20	PA 486376	30 20
PA 437126	30 0	PA 486377	30 20
PA 437127	30 0		
PA 437128	30 0	PA 517557	30 00
PA 437129	30 5	PA 517558	30 00
PA 437130	30 0	PA 517559	30 00
PA 437131	30 0	PA 517560	30 00
		PA 517561	30 00
		PA 517562	30 00
		PA 517563	30 00
PA 486010	30 20	PA 517564	30 00
PA 486011	30 0	PA 517565	30 00
PA 486012	30 0	PA 517566	30 00
PA 486013	30 5	PA 517567	30 00
PA 486014	30 20	PA 517568	30 00
PA 486015	30 20	PA 517569	30 00
PA 486016	30 20	PA 517570	30 00
PA 486017	30 20	PA 517571	30 00
PA 486018	30 20		
PA 486019	30 20		
		PA 543031	30 20
PA 486077	30 20	PA 543032	30 20
PA 486078	30	PA 543033	30 20
PA 486079	30	PA 543034	30 20
PA 486080	30	PA 543035	30 20
PA 486081	30	PA 543036	30 20
PA 486082	30	PA 543037	30 20
PA 486083	30	PA 543038	30 20
PA 486084	30	PA 543039	30 20
PA 486085	30	PA 543040	30 20
PA 486086	30	PA 543041	30 20
		PA 543042	30 20
		PA 543043	30 20
PA 486358	30 20	PA 543044	30 20
PA 486359	30	PA 543045	30 20
PA 486360	30	PA 543046	30 20
PA 486361	30	PA 543047	30 20
PA 486362	30	PA 543048	30 20
PA 486363	30	PA 543049	30 20
PA 486364	30	PA 543050	30 20
PA 486365	30	PA 543051	30 20
PA 486366	30	PA 543052	30 20
PA 486367	30	PA 543053	30 20
PA 486368	30	PA 543054	30 20
PA 486369	30	PA 543055	30 20
PA 486370	30	PA 543056	30 20
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		PA 543059	30 20
		PA 543065	30 20
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		PA 543068	30 20
		PA 543069	30 20
		PA 543070	30 20

PATRICIA MINING DIV.  
**RECEIVED**  
 JUN 25 1981  
 A.M. P.M.  
 7 8 9 10 11 12 1 2 3 4 5

8 claims

RAM PETROLEUMS LIMITED

SCHEDULE

CLAIM NO.

CLAIM NO.

✓ PA 437120  
PA 437121  
PA 437122  
PA 437123  
PA 437124  
PA 437125  
PA 437126  
PA 437127  
PA 437128  
PA 437129  
PA 437130  
✓ PA 437131

17

PA 486010  
PA 486011  
PA 486012  
PA 486013  
PA 486014  
PA 486015  
PA 486016  
PA 486017  
PA 486018  
✓ PA 486019

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✓ PA 486077  
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✓ PA 486086

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✓ PA 486371  
✓ PA 486372

PA 486374  
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PA 517557  
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PA 517571

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PA 543070

21

QUALIFICATIONS OF AUTHOR OF REPORT

Rene Fortin is qualified as follows:

1. he is a consulting geophysicist and resides at 1058 Gustave Langelier, Cap Rouge, Quebec G0A 1K0 and practices his profession at 2272 Leon Harmel, Parc Jean-Talon Nord, Quebec, P.Q. G1N 4L2
2. that he is a member of Ordre des Ingenieurs du Quebec and of Association des Geologues du Quebec.
3. he is a graduate of University of Quebec at Chicoutimi with a degree of Bachelor of Applied Science (Geological Engineering).
4. that he has been practising his profession continuously since graduation.
5. that he helped to organize the geophysical work on the property described and is familiar with the details of the work reported.

August 20, 1981.

RAM PETROLEUMS LIMITED

SCHEDULE

CLAIM NO.

PA 437120  
PA 437121  
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PA 437125  
PA 437126  
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PA 486370

CLAIM NO.

PA 486371  
PA 486372

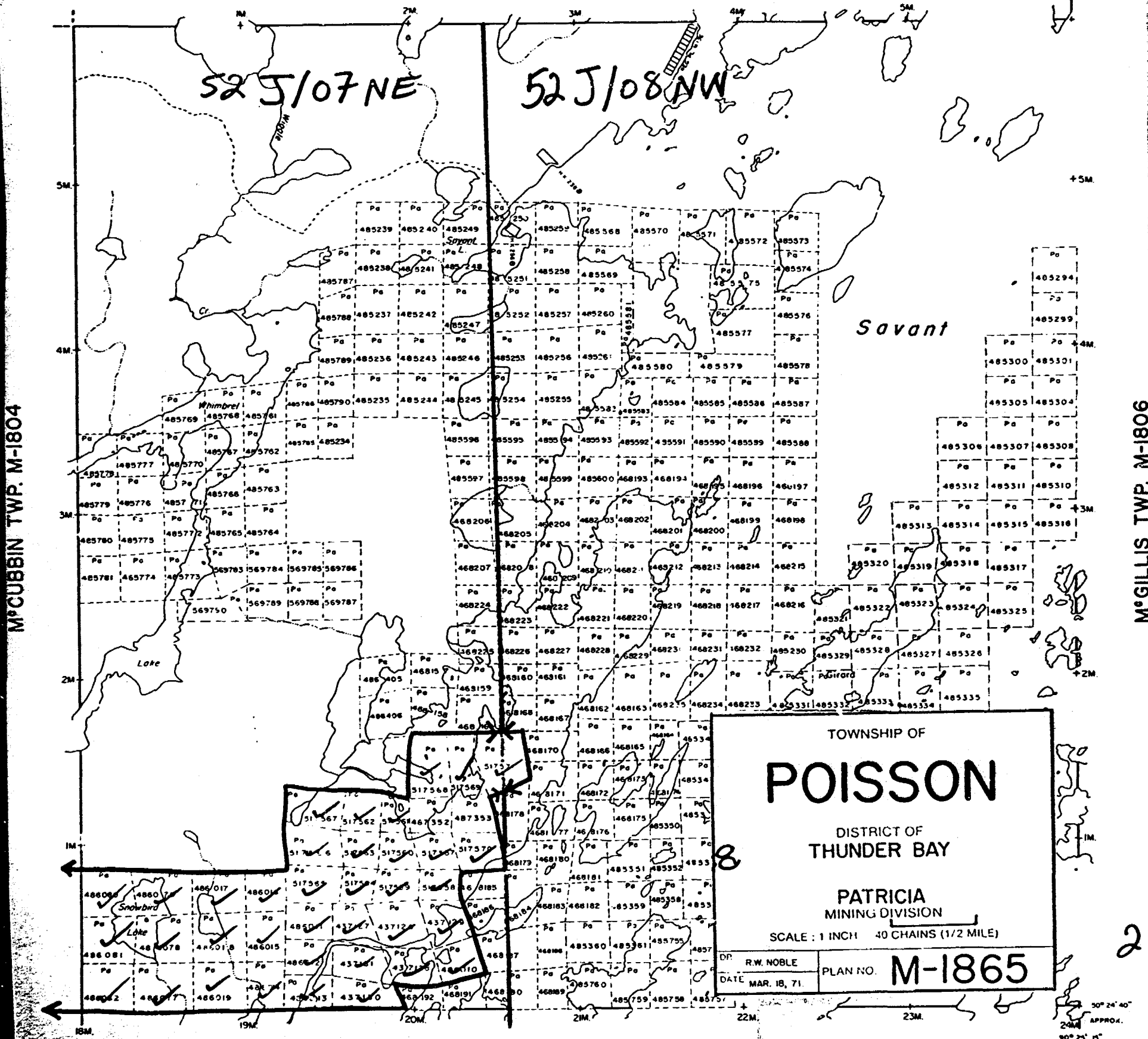
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BENNER TWP. M-1651



M'CUBBIN TWP. M-1804

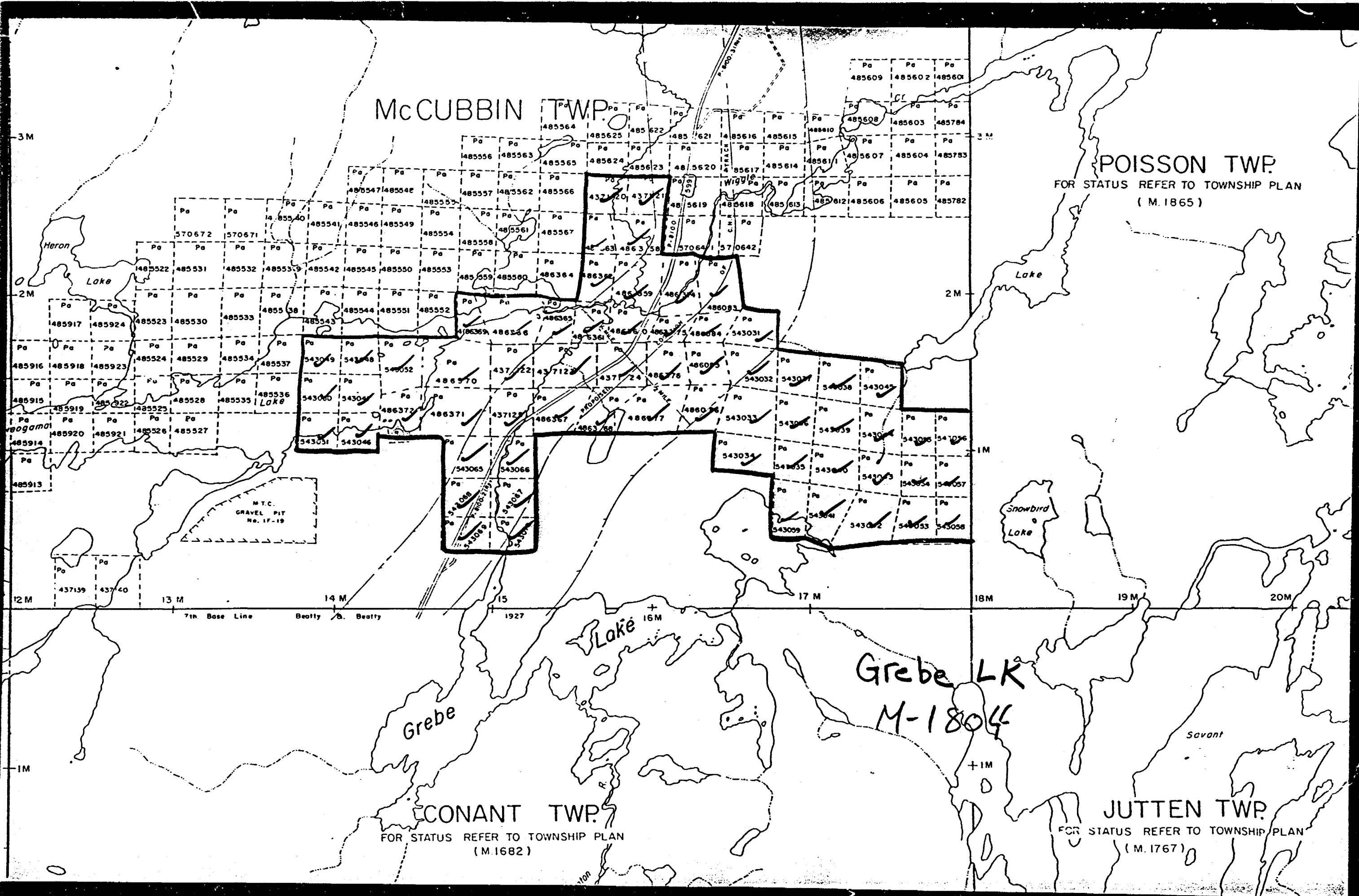
M'GILLIS TWP. M-1806

TOWNSHIP OF  
**POISSON**  
 DISTRICT OF  
 THUNDER BAY  
 PATRICIA  
 MINING DIVISION  
 SCALE: 1 INCH = 40 CHAINS (1/2 MILE)

DR. R.W. NOBLE	PLAN NO. <b>M-1865</b>
DATE MAR. 18, 71	

JUTTEN TWP. M-1767

30° 24' 40"  
24M APPROX.  
90° 25' 15"



McCUBBIN TWP.

POISSON TWP.

FOR STATUS REFER TO TOWNSHIP PLAN  
( M. 1865 )

CONANT TWP.

FOR STATUS REFER TO TOWNSHIP PLAN  
( M. 1682 )

Grebe LK  
M-1804

JUTTEN TWP.

FOR STATUS REFER TO TOWNSHIP PLAN  
( M. 1767 )

3M

2M

12M

1M

13M

14M

15

16M

17M

18M

19M

20M

7th. Base Line Beatty & Beatty

1927

+ 1M

Heron Lake

Lake

Snowbird Lake

Lake

Savant

M.T.C. GRAVEL PIT No. 17-19

Wagamon

Wiggle

UNION

PROVIDENT

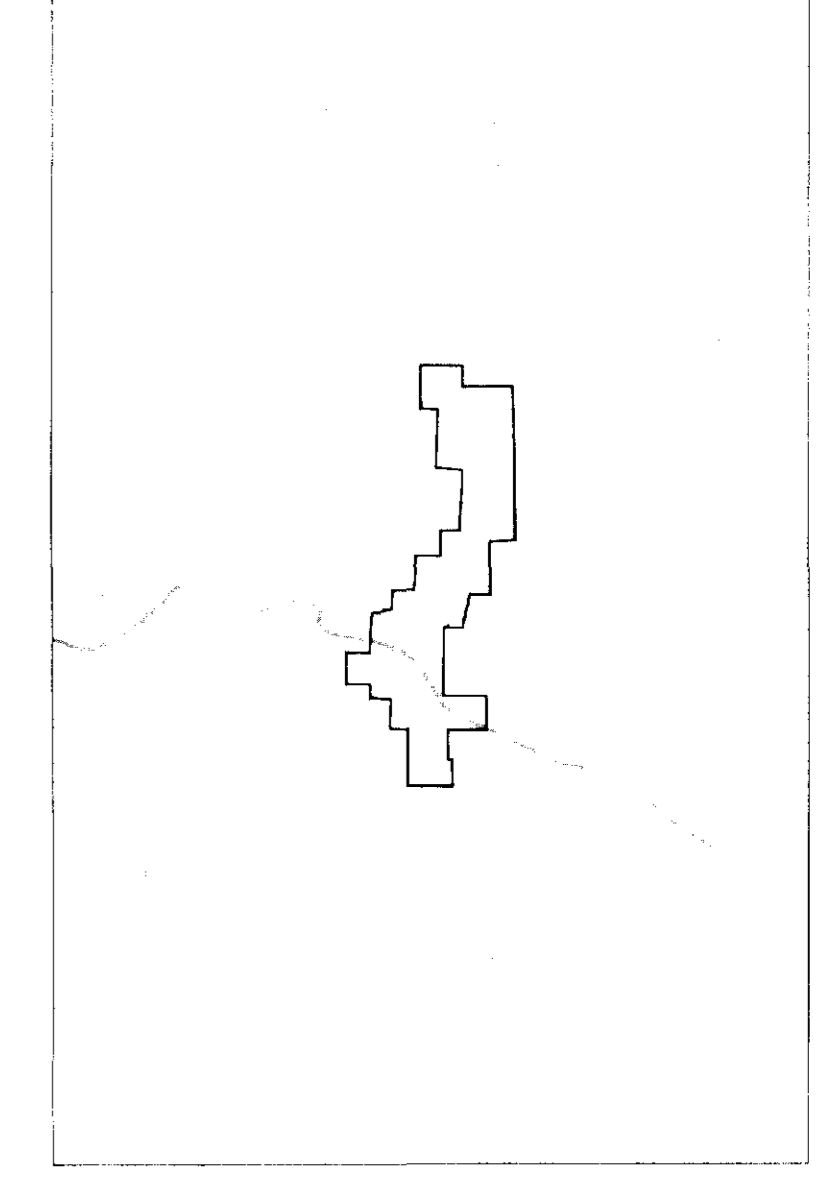
100



FOR ADDITIONAL  
INFORMATION

SEE MAPS:

52 J 107 NE-0010 # (1-3)



52 J/07 NE -0010 #1

LES RELIÉS GÉOPHYSIQUES INC.

SAVANT LAKE AREA

ELECTROMAGNETIC ANOMALIES MAP

1981

SURVEY AND COMPILATION BY  
GEOPHYSICAL SURVEYS INC

SCALE 1:10,000

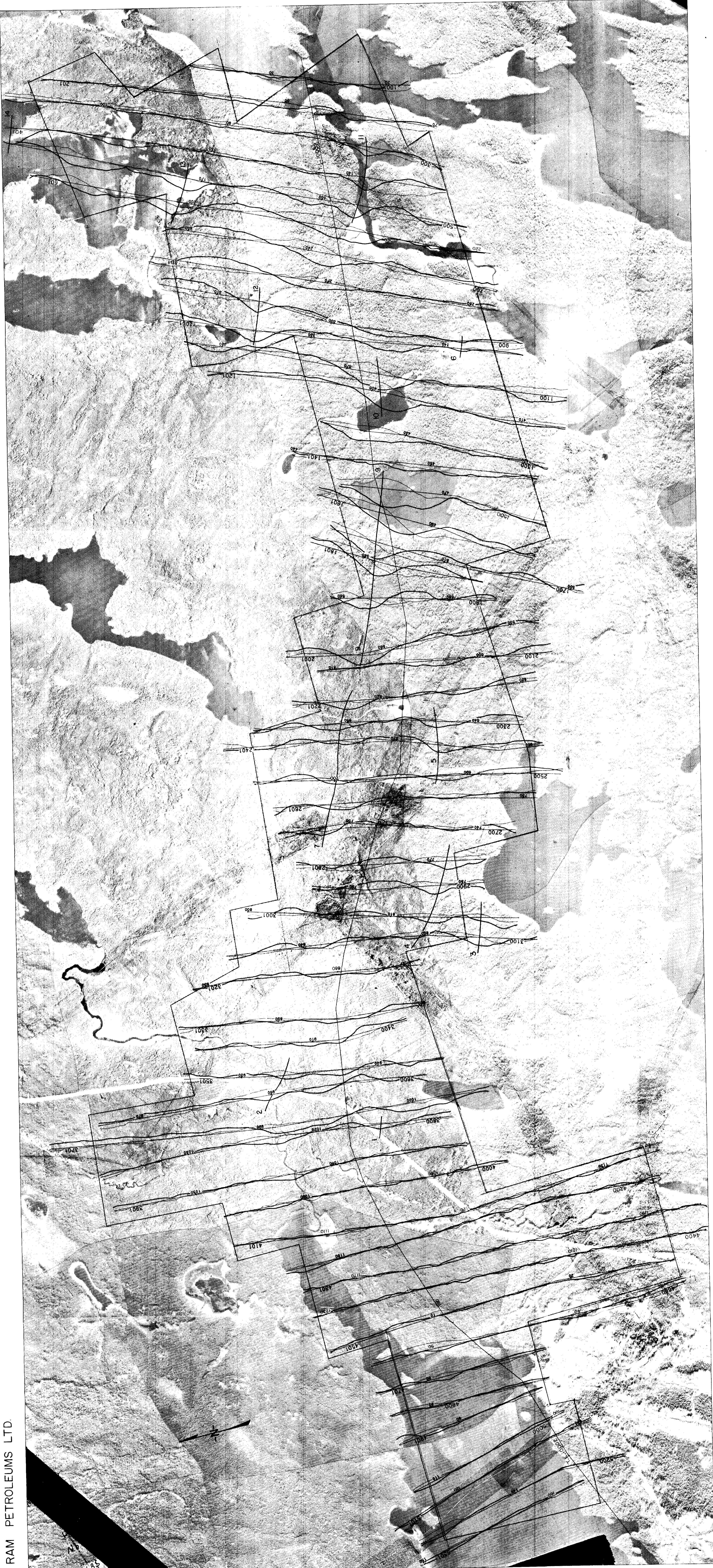
NOTE: The magnetic anomalies shown on this map are based on the magnetic field measurements taken during the helicopter magnetic and electromagnetic surveys conducted in 1981. The magnetic field measurements were taken with a magnetic field intensity of 4.75 G and a vector magnetic field of 1.0 G. The magnetic field intensity was measured in Gauss and the vector magnetic field was measured in Gauss/cm.

ASTRONOMIC NORTH

- LEGEND
- Anomaly 2 (Gauss)
  - Anomaly 3 (Gauss)
  - Anomaly 4 (Gauss)
  - Anomaly 5 (Gauss)
  - Anomaly 6 (Gauss)
  - Anomaly 7 (Gauss)
  - Anomaly 8 (Gauss)
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  - Anomaly 96 (Gauss)
  - Anomaly 97 (Gauss)
  - Anomaly 98 (Gauss)
  - Anomaly 99 (Gauss)
  - Anomaly 100 (Gauss)



200



### SAVANT LAKE AREA

TOTAL FIELD AND QUADRATURE PROFILES OF THE VLF-EM

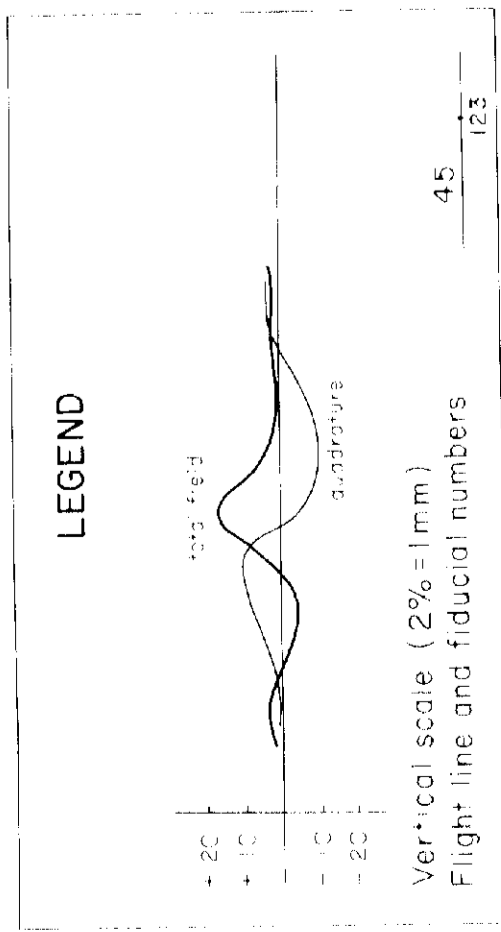
1981

SURVEY AND COMPILATION BY GEOPHYSICAL SURVEYS INC

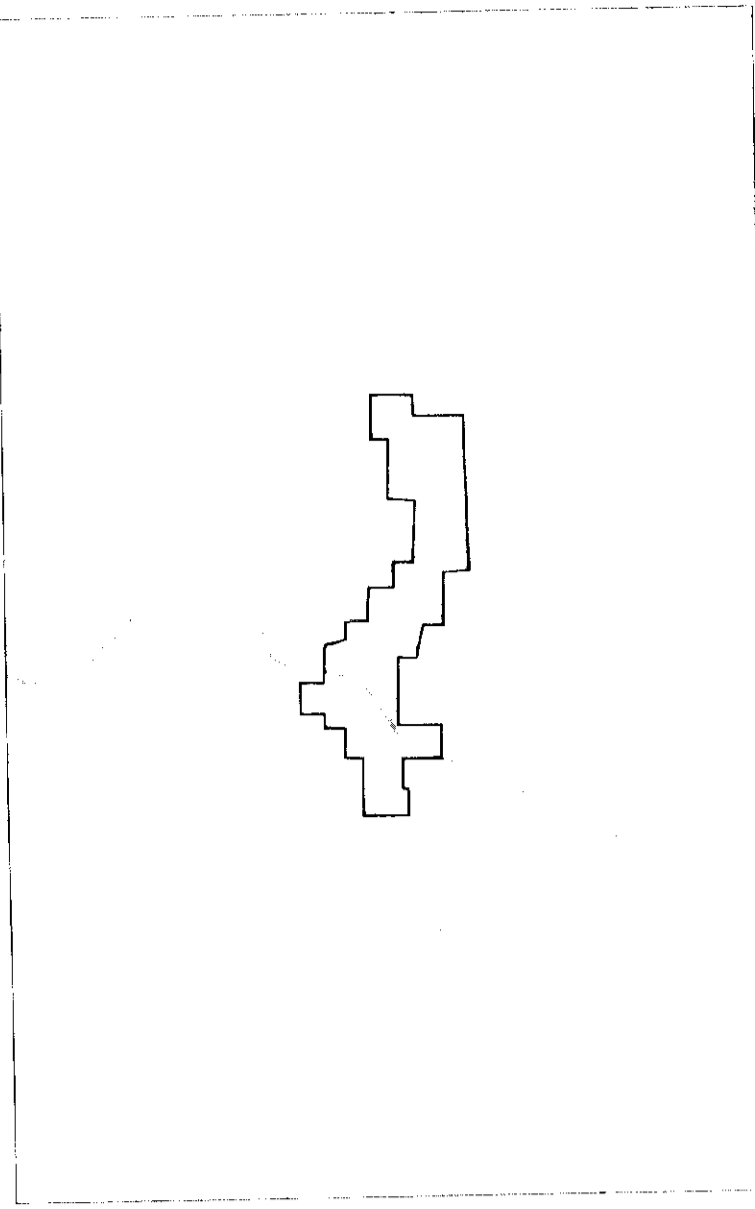
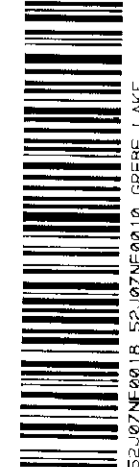
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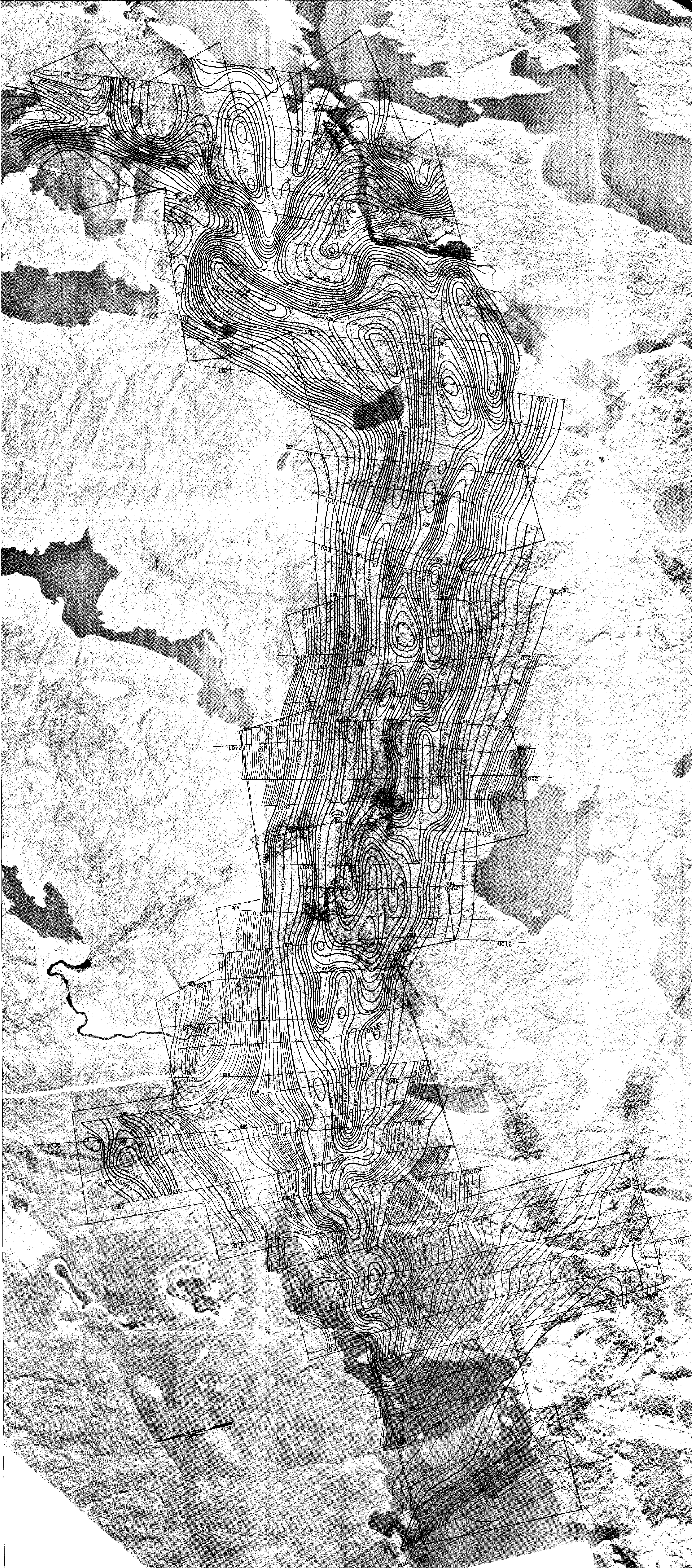


N.A.S. Order No. 178 4442



LES RECHERCHES GÉOPHYSIQUES S.

SA 5107 NE - 0010 #2



**LEGEND**

ISOMAGNETIC LINES (absolute total field)

- 4000 gamma
- 3000 gamma
- 2000 gamma
- 1000 gamma
- 25 gamma
- Magnetic depression
- Flight lines (400 310 200 numbers)
- Contour interval : 25 gamma

**SAVANT LAKE AREA**

TOTAL MAGNETIC FIELD MAP

1981

SURVEY AND COMPILATION BY  
GEOLOGICAL SURVEYS INC

SCALE 1:10,000

NOTE: The magnetic intensity readings on this map were obtained by the use of a REXHEM-1 system. The magnetic intensity readings were obtained by the use of a REXHEM-1 system. The magnetic intensity readings were obtained by the use of a REXHEM-1 system.

AS-100000 NORTH

