REPORT ON COMBINED HELICOPTER BORNE MAGNETIC, ELECTROMAGNETIC AND VLF SURVEY

SWAYZE AREA, ONTARIO

TOOMS, HALCROW, GREENLAW TOWNSHIPS

PORCUPINE MINING DIVISION

for

REGAL PETROLEUM LTD.

by

AERODAT LIMITED

June, 1984

PROJECT 5433

TABLE OF C

LIST OF MAPS

(Scale: 1:10,000)

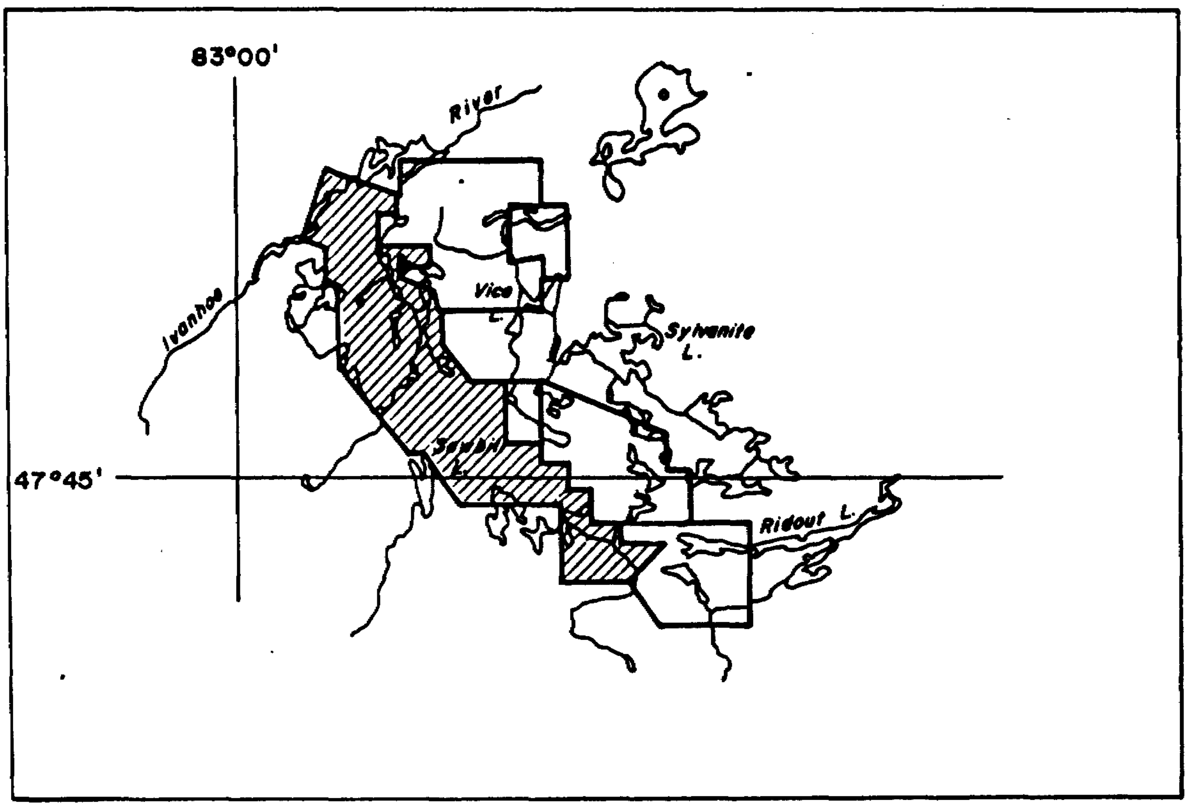
1. INTRODUCTION

This report describes an airborne geophysical survey carried out by Aerodat Limited. Equipment operated included a 3-frequency electromagnetic system, a magnetometer, a VLF-EM system, and a radar positioning system.

The survey, located near Chapleau, Ontario, was flown from March 31 to April 3, 1984. A total of approximately 925 line kilometers (575 line miles) of data were collected. This report refers to a part of this survey, consisting of 205.38 line miles.

2. SURVEY AREA LOCATION

The index map below outlines the total survey block; the shaded zone is the area relating to this report. The nominal line spacing was 100 meters.



3. AIRCRAFT AND EQUIPMENT

3.1 Aircraft

The helicopter used for the survey was an Aerospatiale A-Star 350D owned and operated by Maple Leaf Helicopters. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a nominal altitude of 60 meters.

3.2 Equipment

3.2.1 Electromagnetic System

The electromagnetic system was an Aerodat 3 frequency system. Two vertical coaxial coil pairs were operated at 946 and 4575 Hz and a horizontal coplanar coil pair at 4175 Hz. The transmitter-receiver separation was 7 meters. In-phase and quadrature signals were measured simultaneously for the 3 frequencies with a time-constant of 0.1 seconds. The electromagnetic bird was towed 30 meters below the helicopter.

3.2.2 VLF-EM System

The VLF-EM System was a Herz 1A. This instrument measures the total field and vertical quadrature component of the selected frequency. The sensor was towed in a bird 13.7 meters below the helicopter. The station used was NAA (Cutler, Maine, 24.0 kHz).

3.2.3 Magnetometer

The magnetometer was a Geometrics G-803 proton precession type. The sensitivity of the instrument was 1 gamma at a 0.5 second sample rate. The sensor was towed in a bird 13.7 meters below the helicopter.

3.2.4 Magnetic Base Station

An IFG proton precession type magnetometer was operated at the base of operations to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system.

3.2.5 Radar Altimeter

A Hoffman HRA-100 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude for maximum accuracy.

3.2.6 Tracking Camera

A geocam tracking camera was used to record flight path on 35 mm film. The camera was operated in strip mode and the fiducial numbers for cross-reference to the analog and digital data were imprinted on the margin of the film.

3.2.7 Analog Recorder

An RMS dot-matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data was recorded:

Channel	Input	Scale
00	Altimeter (500 ft at top of chart)	10 ft/mm
04	high freq. quadrature	2 ppm/mm
03	high freq. in-phase	2 ppm/mm
06	mid freq. quadrature	4 ppm/mm
05	mid freq. in-phase	4 ppm/mm
02	low freq. quadrature	2 ppm/mm
01	low freq. in-phase	2 ppm/mm
15	magnetometer	25 gamma/mm
14	magnetometer	2.5 gamma/mm
07	VLF-EM Total Field	2.5%/mm
08	VLF-EM Quadrature	2.5%/mm

3.2.8 Digital Recorder

A Perle DAC/NAV data system recorded the survey data on magnetic tape. Information recorded was as follows:

Equipment	Interval
EM	0.1 second
VLF-EM	0.5 second
magnetometer	0.5 second
altimeter	1.0 second
fiducial (time)	1.0 second
fiducial (manual)	0.2 second
MRS III	0.2 second

3.2.9 Radar Positioning System

A Motorola Mini-Ranger (MRS III) radar navigation system was utilized for both navigation and track recovery. Transponders located at fixed known locations were interrogated several times per second and the ranges from these points to the helicopter measured to several meter accuracy. A navigational computer triangulates the position of the helicopter and provides the pilot with navigation information. The range/range data was recorded on magnetic tape for subsequent flight path determination.

4. DATA PRESENTATION

4.1 Base Map and Flight Path Recovery

The base map is a photomosaic at a scale of 1:10,000.

The flight path was derived from the Mini Ranger radar positioning system. The distance from the helicopter to two established reference locations was measured several times per second, and the position of the helicopter mathematically calculated by triangulation. It is estimated that the flight path is generally accurate to about 10 meters with respect to the topographic detail of the base map. The flight path is presented with fiducials for cross-reference to both the analog and digital data.

4.2 Electromagnetic Profile Maps

The electromagnetic data was recorded digitally at a sample rate of 10/second with a time constant of 0.1 second. A two stage digital filtering process was carried out to reject major sferic events, and to reduce system noise. The process is outlined below.

Local atmospheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with a geological phenomenon. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events.

The signal to noise ratio was further enhanced by the application of a low pass digital filter. It has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant permits maximum profile shape resolution.

Following the filtering processes, a base level correction was made. The correction applied is a linear function of time that ensures that the corrected amplitude of the various in-phase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data was then presented in profile map form.

The in-phase and quadrature responses of the 946 Hz coaxial configuration were presented with flight path and electromagnetic anomaly information on the base map.

The in-phase and quadrature responses of the 4575 Hz coaxial and the 4175 Hz coplanar coil configurations were presented as a two colour overlay.

4.3 Total Field Magnetic Contours

The aeromagnetic data was corrected for diurnal variations by subtraction of the digitally recorded base station magnetic profile. No correction for regional variation was applied.

The corrected profile data was interpolated onto a regular grid at a 25 m true scale interval using a cubic spline technique. The grid provided the basis for threading the presented contours at a 10 gamma interval.

The aeromagnetic data was presented with electromagnetic anomaly information on the base map.

4.4 VLF-EM Total Field Contours

The VLF-EM signal, from NAA (Cutler, Maine), was compiled in map form. The mean response level of the total field signal was removed and the data was gridded and contoured at an interval of 2%.

The VLF-EM data was presented with electromagnetic anomaly information on the base map.

5. INTERPRETATION

The Ontario Department of Mines, Geological Map # 2116 indicates the survey area to be largely covered by basic to intermediate volcanic rocks with some acid volcanic rocks noted, particularly in the northeast. Archean acid igneous rocks border the survey area to the north and west. A zone of metasedimentary rock extends in an east-west direction through the southern map sheet then continues in a NW/SE direction through the central sheet; a second more irregular unit occurs on the northern sheet. Several faults have been mapped in the area and strike in a NNW/SSE direction.

Aeromagnetics

The aeromagnetic contour map reflects the general geology as mapped but adds considerable detail. The intense magnetic activity along the southwestern margin of the survey area is the typical expression of basic volcanic rocks. Parallel to and in contact with this unit is a zone of low magnetization, typical of metasedimentary rocks. This zone of metasedimentary rocks extends through the central sheet into the southern sheet where it offsets to the north at a mapped fault. Other areas of metasedimentary rocks are suggested at the extreme SE corner of the project, the NE corner of the central sheet and the NE corner of the northern sheet.

In the NW corner of the northern sheet a sharp change in magnetic pattern is noted along an ENE/WSW trending contact. This is likely the edge of the acid igneous complex.

Scattered throughout the central part of the survey area are isolated, sometimes elongated magnetic anomalies. The stronger anomalies of several hundred or more gammas amplitude likely reflect basic volcanic rock. In some cases, the very intense features may be indicative of iron formation.

Also noted in the central region are numerous dykes striking in a N to NNW direction as well as in a NE direction. The amplitude of the associated magnetic anomalies ranges from tens to hundreds of gammas and may reflect differences in composition as well as thickness.

Other weaker, 20 to 50 gamma, anomalies are noted throughout the central area. These anomalies form a low amplitude, often irregular background and probably reflect acid volcanic rocks. As noted previously the metasedimentary rocks are also of low magnetization and a clear differentiation between the two units is difficult to make qualitatively. The magnetic lows in the central area may reflect sedimentary rocks or simply a transition to lower magnetization in acid volcanic rocks.

Electromagnetics

The HEM profile data was analysed and those responses interpreted to be of bedrock as opposed to surficial origin were identified. Many of the conductors are of low conductance, less than 2 mhos, and typical of electrolytic conduction in faults or shears or possible minor disseminated mineralization. As a result their response characteristics are most clearly noted on the higher frequency coil pairs.

The survey area is geologically favorable for both gold and base metal mineralization. Higher conductance responses of say 8 mhos or greater are an indication of electronic conduction due to significant sulphide or graphite mineralization and therefore warrant added consideration as base metal targets. This is not the case for gold mineralization where minor disseminated accessory mineralization may provide the only indirect indication of a favorable zone.

The emphasis in the electromagnetic interpretation was therefore directed at the identification of potential bedrock conductors without emphasis on conductance. Although a formal magnetic interpretation is beyond the scope of this report the conductors have been grouped on the basis of their geologic association as inferred from the magnetic data. The general categorization is as follows:

1. Conductors within a low featureless magnetic zone, interpreted to be indicative of metasedimentary rocks.

2. Conductors within a zone of low magnetic relief, interpreted to be indicative of acid to intermediate volcanic rocks.

3. Conductors within an area of strong magnetic relief, interpreted to be indicative of intermediate to basic volcanic rocks.

4. Conductor interpreted to be on a contact between volcanic and sedimentary rocks.

5. Conductor interpreted to be on a contact between different volcanic rocks.

As noted previously in the discussion of the magnetic data the distinction between metasedimentary and acid volcanic rocks is the least reliable and hence categories 1 and 2 as well as 4 and 5 may often be interchanged.

VLF-EM

The VLF-EM system is sensitive to lower conductance anomalies than the HEM system. It may map more clearly a weak conductor along a fault or shear but at the same time be more responsive to conductive overburden and lake bottom sediments.

The VLF contour maps were reviewed and conductive axes, not identified by the HEM system and interpreted to be of probable bedrock as opposed to surficial origin, have been indicated.

6. RECOMMENDATIONS

The general survey area is favorable for both gold and base metal mineralization. The airborne geophysical survey has identified numerous conductors within both metasedimentary and volcanic rocks that may indirectly indicate zones favorable to gold mineralization. Several conductors of higher conductance may also warrant investigation as potential base metal prospects.

Relative priorities for ground follow up investigation should be assigned by those most familiar with the detailed geology of the area.

Respectfully submitted,

AERODAT LIMITED

R. L. Scott Hogg, P.Eng.

REGISTERED PROFESSIONAL ENGINEER
R. L. S. HOGG
PROVINCE OF ONTARIO

RLSH/cb
Encl.

APPENDIX 1

GENERAL INTERPRETIVE CONSIDERATIONS

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat 3 frequency system utilizes 2 different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at 2 widely separated frequencies and the horizontal coplanar coil pair is operated at a frequency approximately aligned with one of the coaxial frequencies.

The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its conductivity and its size and shape; the "geometrical" property of the response is largely a function of the conductors shape and orientation with respect to the measuring transmitter and receiver.

Electrical Considerations

For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large in-phase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for a vertical half-plane model on the accompanying phasor diagram. Other physical models will show the same trend but different quantitative relationships.

The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in ppm as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth at selected anomalies. The results of this calculation are presented in table form in Appendix II and the conductance and in-phase amplitude are presented in symbolized form on the map presentation.

The conductance and depth values as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, its conductivity and thickness may vary with depth and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

Most overburden will have an indicated conductance of less than 2 mhos; however, more conductive clays may have an apparent conductance of say 2 to 4 mhos. Also in the low conductance range will be electrolytic conductors in faults and shears.

The higher ranges of conductance, greater than 4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to sulphide or graphite bearing rocks.

Sulphide minerals with the exception of sphalerite, cinnabar and stibnite are good conductors; however, they may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant concentration in association with minor conductive sulphides, and the electromagnetic response only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive it would not be expected to exist in sufficient quantity to create a recognizable anomaly, but minor accessory sulphide mineralization could provide a useful indirect indication.

In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization; however, a moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The change in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver.

In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes. As the dip of the conductor decreases from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side.

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible. As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar/coaxial) of about 4/1*.

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial coil pair.

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor; a pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8.*

Overburden anomalies often produce broad poorly defined anomaly profiles.. In most cases the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ratio of 4.*

Occasionally if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak.

*It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to 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 can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

The relatively high frequency of VLF 15-25 kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground the depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field response is an indicator of the existence and position of a conductivity anomaly. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

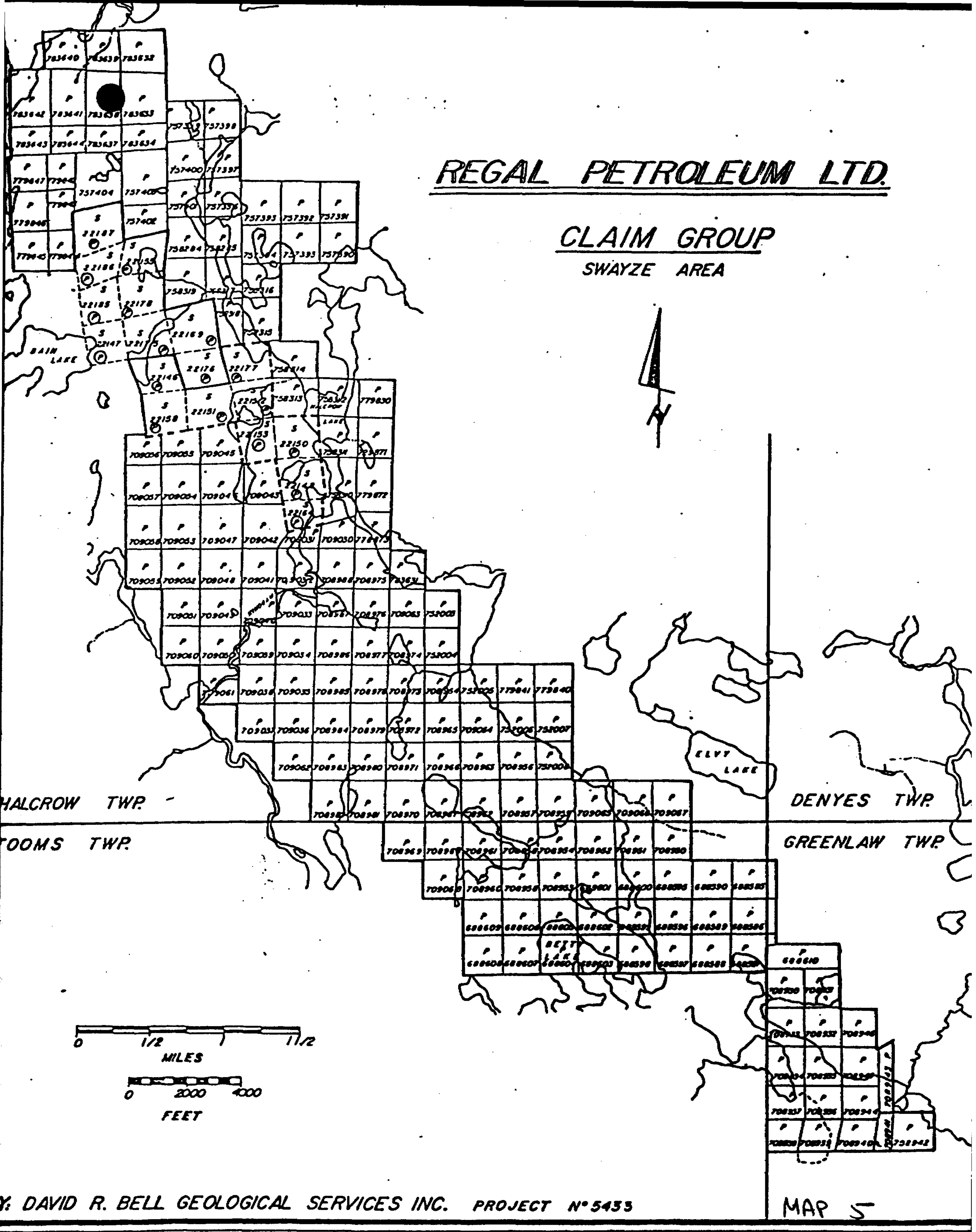
The vertical quadrature component over steeply dipping sheet like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree change in instrument orientation as occurs on reciprocal line headings. During digital processing of the quadrature data for map presentation this is corrected for by normalizing the sign to one of the flight line headings.


REGAL PETROLEUM LTD.
CLAIM GROUP
SWAYZE AREA
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BAIN LAKE
ELVY LAKE
BETT LAKE
HALCROW TWP.
DENYES TWP.
TOOMS TWP.
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Y: DAVID R. BELL GEOLOGICAL SERVICES INC.
PROJECT N° 5433
MAP 5

Ministry of Natural Resources
Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

W.R. *

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27

The Mini

41010NW0016 2.7152 HALCROW

900

Type of Survey(s): HELICOPTER BORNE EM and MAGNETICS

Township or Area: Tooms, Greenlaw, Halcrow

Claim Holder(s): REGAL PETROLEUM LTD

Prospector's Licence No.: T-1309

Address: 403-595 Howe St., Vancouver, B.C

Survey Company: AERODAT LTD.

Date of Survey (from & to): 31 / 3 / 84 – 3 / 4 / 84 (Day / Mo. / Yr.)

Total Miles of line Cut: —

Name and Address of Author (of Geo-Technical report): R.L. Scott Hogg, 3883 Nashua Dr., Mississauga, Ont.

Credits Requested per Each Claim in Columns at right

Special Provisions

For first survey:
Enter 40 days. (This includes line cutting)

For each additional survey: using the same grid:
Enter 20 days (for each)

Geophysical	Days per Claim
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

RECEIVED
AUG 30 1984
MINING LANDS SECTION

Man Days

Complete reverse side and enter total(s) here

Geophysical	Days per Claim
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

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AUG 21 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Airborne Credits

Note: Special provisions credits do not apply to Airborne Surveys.

	Days per Claim
Electromagnetic	40
Magnetometer	40
Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

RECORDED
AUG 21 1984
Receipt No.

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)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	688585		P	708931	
	688586			708932	
	688587			708933	
	688588			708934	
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	688602			708944	
	688603			708945	
	688604			708946	
	688605			708950	
	688606			708951	
	688607			708952	
	688608			708953	
	688609			708954	
	688610			708955	
	708930			708956	

Total number of mining claims covered by this report of work: 173

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
13,840	Aug. 21/84	(signature)
	Date Approved as Recorded: Sept 25/84	**Branch Director:** (signature)

Date: Aug 20, 1984

Recorded Holder or Agent (Signature): R. A. Bell

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: R.A. Bell c/o D.R. Bell Geological Services Inc, Box 1250 Timmins, Ontario P4N 7J5

Date Certified: Aug 20 84

Certified by (Signature): R A Bell

1362 (81/9)

Ministry of Natural Resources
Ontario

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

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The Mining Act

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

Type of Survey(s): HELICOPTER BORNE EM AND MAGNETIC
Township or Area: Tooms – Halcrow.
Claim Holder(s): REGAL PETROLEUM LTD
Prospector's Licence No.: T-1309.
Address: 403-595 Howe St., Vancouver, B.C.
Survey Company: AERODAT LTD.
Date of Survey (from & to): 31 Day 3 Mo. 84 Yr. | 3 Day 4 Mo. 84 Yr.
Total Miles of line Cut: —
Name and Address of Author (of Geo-Technical report): R. L. Scott. Hogg. 3883 Nashua Dr. Mississauga, Ont.

Credits Requested per Each Claim in Columns at right

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

RECEIVED
AUG 30 1984
MINING LANDS SECTION

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

PORCUPINE MINING DIVISION
RECEIVED
AUG 21 1984
A.M. P.M.
7 8 9 10 11 12 1 2 3 4 5 6

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

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures: $ ______ ÷ 15 = Total Days Credits ______

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: Aug 20, 1984
Recorded Holder or Agent (Signature): R.A. Bell

Mining Claims Traversed (List in numerical sequence)

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	708978			709042	
	708979			709043	

Total number of mining claims covered by this report of work. 173

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: R.A. Bell c/o David R. Bell Geological Service Inc. Box 1250 Timmins, Ont P4N 7J5

Date Certified: Aug 20, 1984
Certified by (Signature): R.A. Bell

1362 (81/9)

Ministry of Natural Resources
Ontario

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

#5433 pg 3 of 4

The Mining Act

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

Type of Survey(s)	HELICOPTER BORNE EM AND MAGNETICS
Township or Area	Tooms + Halcrow
Claim Holder(s)	REGAL PETROLEUM LTD.
Prospector's Licence No.	T-1309
Address	403 - 595 Howe St., Vancouver, B.C.
Survey Company	AERODAT LTD.
Date of Survey (from & to)	31 Day 3 Mo. 84 Yr. 3 Day 4 Mo. 84 Yr.
Total Miles of line Cut	—
Name and Address of Author (of Geo-Technical report)	R. J. Scott Hogg, 3883 Nashua Dr., Mississauga, Ont.

RECEIVED
AUG 30 1984
MINING LANDS SECTION

PORCUPINE MINING DIVISION
RECEIVED
AUG 21 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Credits Requested per Each Claim in Columns at right

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

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

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

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	709045		P	709068	
	709046			752003	
	709047			752004	
	709048			752005	
	709049			752006	
	709050			752007	
	709051			752008	
	709052			757390	
	709053			757391	
	709054			757392	
	709055			757393	
	709056			757394	
	709057			757395	
	709058			757396	
	709059			757397	
	709060			757398	
	709061			757399	
	709062			757400	
	709063			757401	
	709064			757402	
	709065			757403	
	709066			757404	
	709067			758284	

Total number of mining claims covered by this report of work. 173

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

Date	Recorded Holder or Agent (Signature)
Aug 20, 1984	R. A. Bell

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
R.A. Bell c/o DAVID R. BELL GEOLOGICAL SERVICES INC. BOX 1250
TIMMINS, ONT P4N 7J5

Date Certified	Certified by (Signature)
Aug 20, 1984	R. A. Bell

1362 (81/9)

Ministry of Natural Resources

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

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

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

#5433 pg 4 of 4

The Mining Act

Type of Survey(s): HELICOPTER BORNE EM AND MAGNETICS

Township or Area: Toomy + Halcomb.

Claim Holder(s): REGAL PETROLEUM LTD.

Prospector's Licence No.: T-1309

Address: 403-595 Howe St., Vancouver B.C.

Survey Company: AERODAT LTD.

Date of Survey (from & to): 31 | 3 | 84 | 3 | 4 | 84 (Day | Mo. | Yr. | Day | Mo. | Yr.)

Total Miles of line Cut: ——

Name and Address of Author (of Geo-Technical report): R.L. Scott Hogg. 3883 Nashua Dr., Mississauga, Ont.

Credits Requested per Each Claim in Columns at right

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

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

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AUG 21 1984
A.M. P.M.
8,9,10,11,12,1,2,3,4,5,6

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

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date	Recorded Holder or Agent (Signature)
Aug 20, 1984	R.A. Bell

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	758285		P	783631	
	758310			783632	
	758311			783633	
	758312			783634	
	758313			783637	
	758314			783638	
	758315			783639	
	758316			783640	
	758317			783641	
	758318			783642	
	758319			783643	
	779840			783644	
	779841				
	779842				
	779843				
	779844				
	779845				
	779846				
	779847				
	779870				
	779871				
	779872				
	779873				

RECEIVED
AUG 30 1984
MINING LANDS SECTION

Total number of mining claims covered by this report of work. 173

For Office Use Only

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

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: R.A. BELL c/o DAVID R. BELL GEOLOGICAL SERVICES INC, BOX 1250 TIMMINS, ONT P4N 7J5

Date Certified: Aug 20/84

Certified by (Signature): R.A. Bell

1362 (81/9)

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.

#5433

Type of Survey(s) Helicopterborne EM and Mag

Township or Area Tooms, Halcrow, Greenlaw

Claim Holder(s) Regal Petroleum Ltd.

Survey Company Aerodat Ltd.

Author of Report Scott Hogg

Address of Author 3883 Nashue Dr., Mississauga, Ont.

Covering Dates of Survey Mar.31/84 to Aug.31, 1984
(linecutting to office)

Total Miles of Line Cut N/A

SPECIAL PROVISIONS CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

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

Magnetometer 40 Electromagnetic 40 Radiometric ______
(enter days per claim)

DATE: Sept.5/84 SIGNATURE: [signature]
Author of Report or Agent

OFFICE USE ONLY

Res. Geol. ________ Qualifications 2.4871

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

See attached list of
(prefix) (number)
claims, 6 pages

RECEIVED
SEP 10 1984
MINING LANDS SECTION

If space insufficient, attach list

TOTAL CLAIMS 173

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations ______________________ Number of Readings ______________________

Station interval ______________________ Line spacing ______________________

Profile scale ______________________

Contour interval ______________________

MAGNETIC

Instrument ______________________

Accuracy – Scale constant ______________________

Diurnal correction method ______________________

Base Station check-in interval (hours) ______________________

Base Station location and value ______________________

____

ELECTROMAGNETIC

Instrument ______________________

Coil configuration ______________________

Coil separation ______________________

Accuracy ______________________

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency ______________________
(specify V.L.F. station)

Parameters measured ______________________

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 ______________________

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) EM and Magnetics (Helicopter Borne)

Instrument(s) Aerodat 3 frequency Geonics EM/Geometrics G-803 proton magnetometer
(specify for each type of survey)

Accuracy °± 1 gamma
(specify for each type of survey)

Aircraft used Aerospatiale A-Star 350D Helicopter

Sensor altitude EM 30m / Mag 46.3m

Navigation and flight path recovery method Motorola Mini Ranger (MRS III) radar positioning path system/Geochem tracking camera to record flight

Aircraft altitude 60 m Line Spacing 100m

Miles flown over total area ~~205.38~~ miles 575 Over claims only ~~173~~ miles 205.38

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken ______

Total Number of Samples ______

Type of Sample ______
(Nature of Material)

Average Sample Weight ______

Method of Collection ______

Soil Horizon Sampled ______

Horizon Development ______

Sample Depth ______

Terrain ______

Drainage Development ______

Estimated Range of Overburden Thickness ______

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis ______

General ______

ANALYTICAL METHODS

Values expressed in: per cent ☐ p. p. m. ☐ p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others ______

Field Analysis (______ tests)

Extraction Method ______

Analytical Method ______

Reagents Used ______

Field Laboratory Analysis

No. (______ tests)

Extraction Method ______

Analytical Method ______

Reagents Used ______

Commercial Laboratory (______ tests)

Name of Laboratory ______

Extraction Method ______

Analytical Method ______

Reagents Used ______

General ______

REGAL PETROLEUM LIMITED - #5433 (SWAYZE PROJECT)

173 Staked Claims in Tooms, Halcrow and Greenlaw Townships, Porcupine Mining Division

Claim No.	Township	Recording Date
P688585	Tooms	March 4, 1983
P688586	Tooms	March 4, 1983
P688587	Tooms	March 4, 1983
P688588	Tooms	March 4, 1983
P688589	Tooms	March 4, 1983
P688590	Tooms	March 4, 1983
P688595	Tooms	March 4, 1983
P688596	Tooms	March 4, 1983
P688597	Tooms	March 4, 1983
P688598	Tooms	March 4, 1983
P688599	Tooms	March 4, 1983
P688600	Tooms	March 4, 1983
P688601	Tooms	March 4, 1983
P688602	Tooms	March 4, 1983
P688603	Tooms	March 4, 1983
P688604	Tooms	March 4, 1983
P688605	Tooms	March 4, 1983
P688606	Tooms	March 4, 1983
P688607	Tooms	March 4, 1983
P688608	Tooms	March 4, 1983
P688609	Tooms	March 4, 1983
P688610	Greenlaw	March 4, 1983
P708930	Greenlaw	March 4, 1983
P708931	Greenlaw	March 4, 1983
P708932	Greenlaw	March 4, 1983
P708933	Greenlaw	March 4, 1983
P708934	Greenlaw	March 4, 1983
P708935	Greenlaw	March 4, 1983
P708936	Greenlaw	March 4, 1983
P708937	Greenlaw	March 4, 1983
P708938	Greenlaw	March 4, 1983

REGAL PETROLEUM LIMITED - #5433 (SWAYZE PROJECT)

173 Staked Claims in Tooms, Halcrow and
Greenlaw Townships, Porcupine Mining Division

Claim No.	Township	Recording Date
P708939	Greenlaw	March 4, 1983
P708940	Greenlaw	March 4, 1983
P708941	Greenlaw	March 4, 1983
P708942	Greenlaw	March 4, 1983
P708943	Greenlaw	March 4, 1983
P708944	Greenlaw	March 4, 1983
P708945	Greenlaw	March 4, 1983
P708946	Greenlaw	March 4, 1983
P708950	Tooms	March 4, 1983
P708951	Tooms	March 4, 1983
P708952	Tooms	March 4, 1983
P708953	Tooms	March 4, 1983
P708954	Tooms	March 4, 1983
P708955	Tooms	March 4, 1983
P708956	Tooms	March 4, 1983
P708957	Tooms	March 4, 1983
P708958	Tooms	March 4, 1983
P708959	Tooms	March 4, 1983
P708960	Tooms	March 4, 1983
P708961	Tooms	March 4, 1983
P708962	Halcrow	March 4, 1983
P708963	Halcrow	March 4, 1983
P708964	Halcrow	March 4, 1983
P708965	Halcrow	March 4, 1983
P708966	Halcrow	March 4, 1983
P708967	Halcrow	March 4, 1983
P708968	Tooms	March 4, 1983
P708969	Tooms	March 4, 1983
P708970	Halcrow	March 4, 1983
P708971	Halcrow	March 4, 1983
P708972	Halcrow	March 4, 1983
P708973	Halcrow	March 4, 1983

REGAL PETROLEUM LIMITED - #5433 (SWAYZE PROJECT)

173 Staked Claims in Tooms, Halcrow and Greenlaw Townships, Porcupine Mining Division

Claim No.	Township	Recording Date
P708974	Halcrow	March 4, 1983
P708975	Halcrow	March 4, 1983
P708976	Halcrow	March 4, 1983
P708977	Halcrow	March 4, 1983
P708978	Halcrow	March 4, 1983
P708979	Halcrow	March 4, 1983
P708980	Halcrow	March 4, 1983
P708981	Halcrow	March 4, 1983
P708982	Halcrow	March 4, 1983
P708983	Halcrow	March 4, 1983
P708984	Halcrow	March 4, 1983
P708985	Halcrow	March 4, 1983
P708986	Halcrow	March 4, 1983
P708987	Halcrow	March 4, 1983
P708988	Halcrow	March 4, 1983
P709030	Halcrow	March 4, 1983
P709031	Halcrow	March 4, 1983
P709032	Halcrow	March 4, 1983
P709033	Halcrow	March 4, 1983
P709034	Halcrow	March 4, 1983
P709035	Halcrow	March 4, 1983
P709036	Halcrow	March 4, 1983
P709037	Halcrow	March 4, 1983
P709038	Halcrow	March 4, 1983
P709039	Halcrow	March 4, 1983
P709040	Halcrow	March 4, 1983
P709041	Halcrow	March 4, 1983
P709042	Halcrow	March 4, 1983
P709043	Halcrow	March 4, 1983
P709045	Halcrow	March 4, 1983

REGAL PETROLEUM LIMITED - #5433 (SWAYZE PROJECT)

173 Staked Claims in Tooms, Halcrow and Greenlaw Townships, Porcupine Mining Division

Claim No.	Township	Recording Date
P709046	Halcrow	March 4, 1983
P709047	Halcrow	March 4, 1983
P709048	Halcrow	March 4, 1983
P709049	Halcrow	March 4, 1983
P709050	Halcrow	March 4, 1983
P709051	Halcrow	March 4, 1983
P709052	Halcrow	March 4, 1983
P709053	Halcrow	March 4, 1983
P709054	Halcrow	March 4, 1983
P709055	Halcrow	March 4, 1983
P709056	Halcrow	March 4, 1983
P709057	Halcrow	March 4, 1983
P709058	Halcrow	March 4, 1983
P709059	Halcrow	March 4, 1983
P709060	Halcrow	March 4, 1983
P709061	Halcrow	March 4, 1983
P709062	Halcrow	March 4, 1983
P709063	Halcrow	March 4, 1983
P709064	Halcrow	March 4, 1983
P709065	Halcrow	March 4, 1983
P709066	Halcrow	March 4, 1983
P709067	Halcrow	March 4, 1983
P709068	Tooms	March 4, 1983
P757390	Halcrow	May 5, 1983
P757391	Halcrow	May 5, 1983
P757392	Halcrow	May 5, 1983
P757393	Halcrow	May 5, 1983
P757394	Halcrow	May 5, 1983
P757395	Halcrow	May 5, 1983
P757396	Halcrow	May 5, 1983

REGAL PETROLEUM LIMITED - #5433 (SWAYZE PROJECT)

173 Staked Claims in Tooms, Halcrow and Greenlaw Townships, Porcupine Mining Division

Claim No.	Township	Recording Date
P757397	Halcrow	May 5, 1983
P757398	Halcrow	May 5, 1983
P757399	Halcrow	May 5, 1983
P757400	Halcrow	May 5, 1983
P757401	Halcrow	May 5, 1983
P757402	Halcrow	May 5, 1983
P757403	Halcrow	May 5, 1983
P757404	Halcrow	May 5, 1983
P758284	Halcrow	May 5, 1983
P758285	Halcrow	May 5, 1983
P758310	Halcrow	May 5, 1983
P758311	Halcrow	May 5, 1983
P758312	Halcrow	May 5, 1983
P758313	Halcrow	May 5, 1983
P758314	Halcrow	May 5, 1983
P758315	Halcrow	May 5, 1983
P758316	Halcrow	May 5, 1983
P758317	Halcrow	May 5, 1983
P758318	Halcrow	May 5, 1983
P758319	Halcrow	May 5, 1983
P752003	Halcrow	December 23, 1983
P752004	Halcrow	December 23, 1983
P752005	Halcrow	December 23, 1983
P752006	Halcrow	December 23, 1983
P752007	Halcrow	December 23, 1983
P752008	Halcrow	December 23, 1983
P779840	Halcrow	December 23, 1983
P779841	Halcrow	December 23, 1983
P779842	Halcrow	December 23, 1983
P779843	Halcrow	December 23, 1983

REGAL PETROLEUM LIMITED - #5433 (SWAYZE PROJECT)

173 Staked Claims in Tooms, Halcrow and Greenlaw Townships, Porcupine Mining Division

Claim No.	Township	Recording Date
P779844	Halcrow	December 23, 1983
P779845	Halcrow	December 23, 1983
P779846	Halcrow	December 23, 1983
P779847	Halcrow	December 23, 1983
P779870	Halcrow	December 23, 1983
P779871	Halcrow	December 23, 1983
P779872	Halcrow	December 23, 1983
P779873	Halcrow	December 23, 1983
P783631	Halcrow	December 23, 1983
P783632	Halcrow	December 23, 1983
P783633	Halcrow	December 23, 1983
P783634	Halcrow	December 23, 1983
P783637	Halcrow	December 23, 1983
P783638	Halcrow	December 23, 1983
P783639	Halcrow	December 23, 1983
P783640	Halcrow	December 23, 1983
P783641	Halcrow	December 23, 1983
P783642	Halcrow	December 23, 1983
P783643	Halcrow	December 23, 1983
P783644	Halcrow	December 23, 1983

1984 09 17

Your File: 335
Our File: 2.7152

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

Dear Sir:

We have received reports and maps for an Airborne Geophysical (Electromagnetic & Magnetometer) Survey submitted on Mining Claims P 688585 et al in the Townships of Tooms, Greenlaw & Halcrow.

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

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-6918

A. Barr:sc

cc: Regal Petroleum Limited
403 - 595 Howe Street
Vancouver, B.C.
V6C 2T5

cc: Scott Hogg
3883 Nashua Drive
Mississauga, Ontario
L4V 1R3

DAVID R. BELL GEOLOGICAL SERVICES INC.

251 THIRD AVE., SUITE 14
BOX 1250
TIMMINS, ONTARIO
P4N 7J5
(705) 264-4286

REGISTERED

September 5, 1984

Mr. F. Mathews
Lands Administration Branch
Mining Lands Section
Ministry of Natural Resources
Room 6610, Whitney Block
Queen's Park
Toronto, Ontario
M7A 1W3

Dear Mr. Mathews:

Re: Regal Petroleum Ltd. #5433, 173 claim property P688585 et al in Tooms, Halcrow and Greenlaw Townships

Enclosed please find 2 copies of a Helicopter Borne EM and Magnetic report covering the above property as per Ontario Ministry of Natural Resources requirements. The Report of Work regarding this was recorded August 21, 1984.

Please acknowledge receipt of the above reports.

Sincerely yours,

R.A. Bell

R.A. Bell
Vice-President

RAB/kg

Encl.

File - 5433 - corresp., claims
geophysical reports

RECEIVED
SEP 10 1984
MINING LANDS SECTION

Mining Lands Section

File No 2.7152

Control Sheet

TYPE OF SURVEY

✓ GEOPHYSICAL

_____ GEOLOGICAL

_____ GEOCHEMICAL

_____ EXPENDITURE

MINING LANDS COMMENTS:

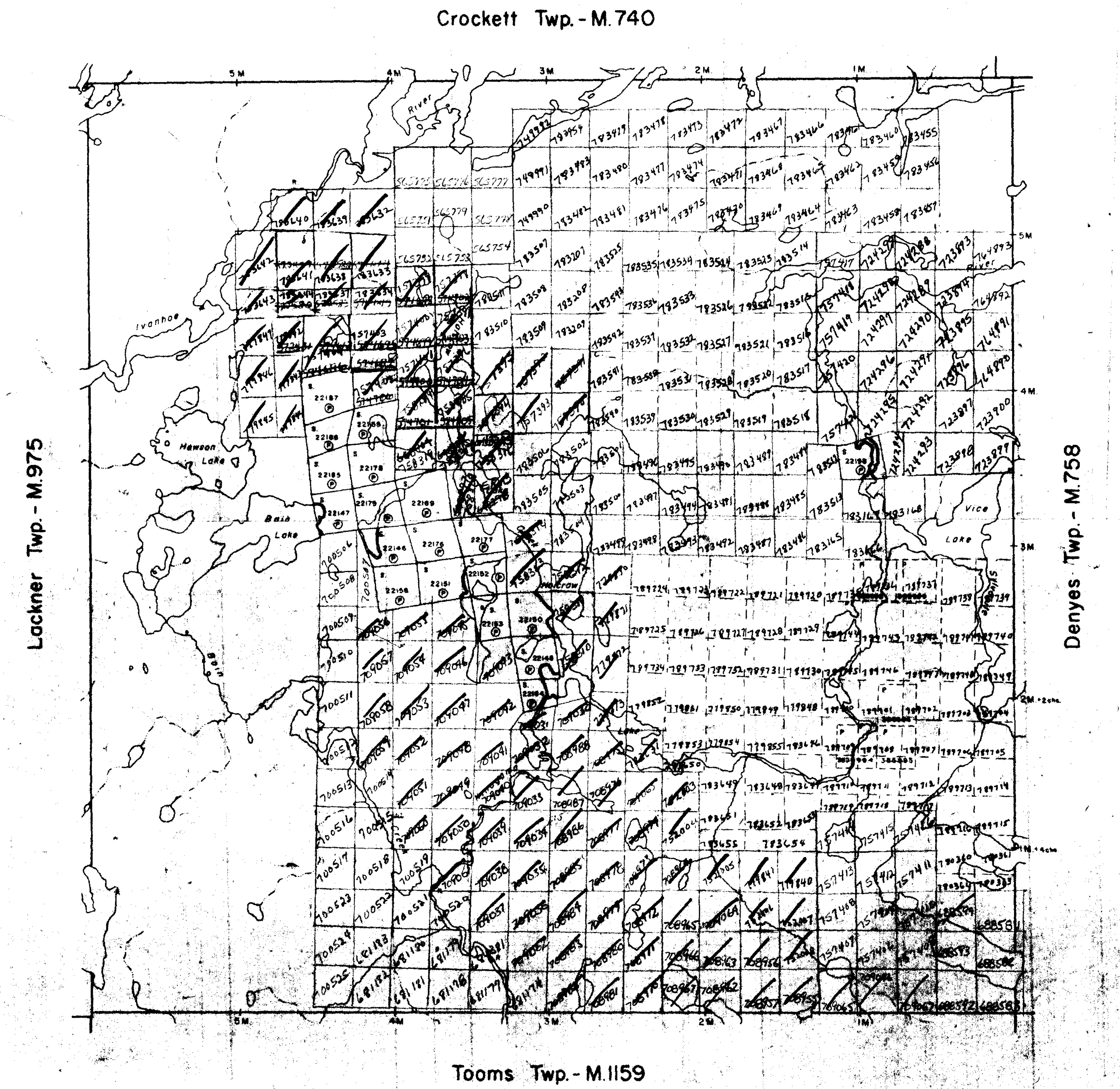
L.D. log

J. Hurst

Signature of Assessor

84-09-21

Date



THE TOWNSHIP

OF

HALCROW

DISTRICT OF
SUDBURY

PORCUPINE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.

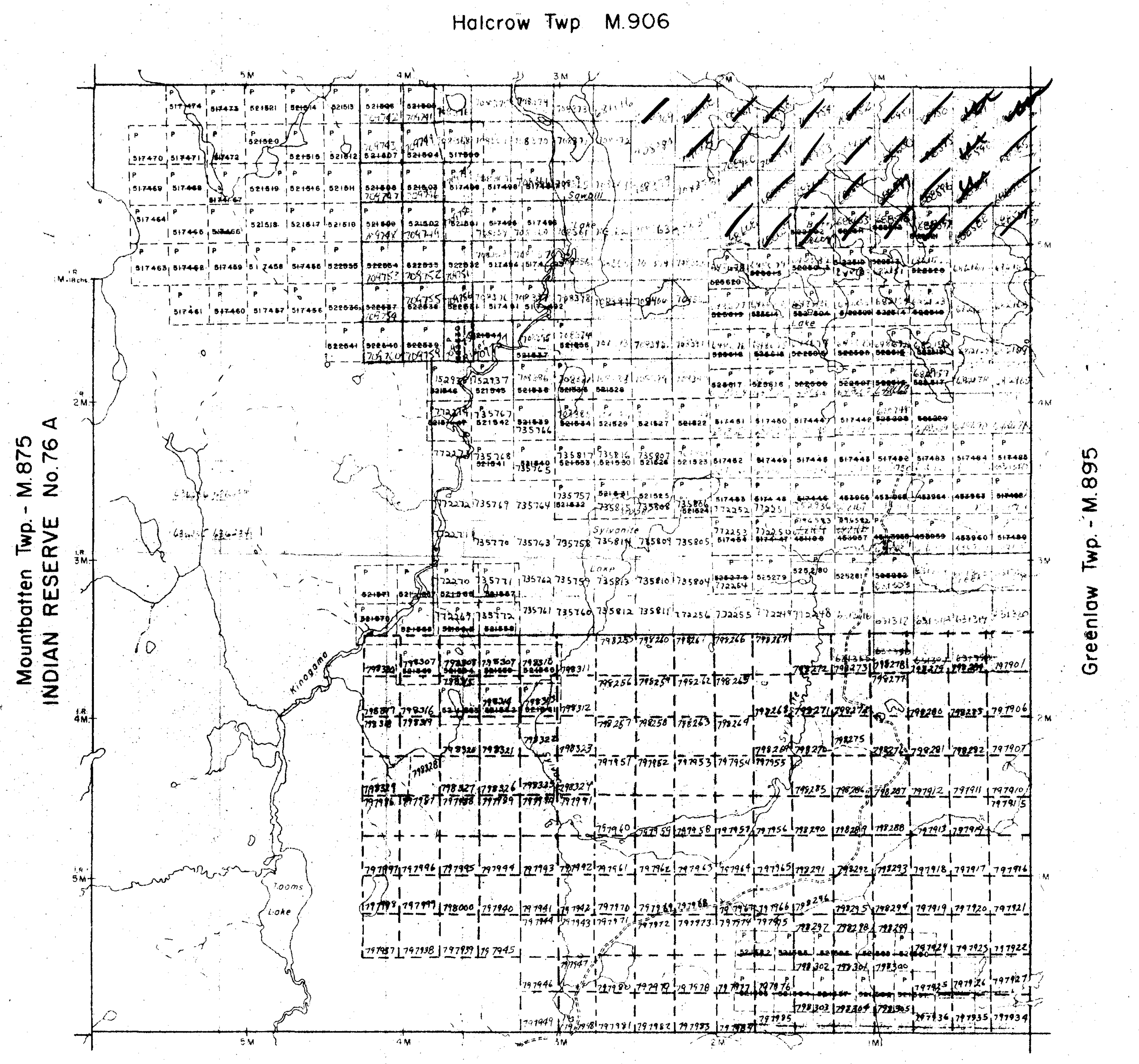
NOTES

400' Surface Rights Reservation around all lakes and rivers.

DATE OF ISSUE
SEP 2[illegible] 1981
Ministry of Natural Resources
TORONTO

PLAN NO. **M.906**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



THE TOWNSHIP OF

TOOMS

DISTRICT OF
SUDBURY

PORCUPINE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒
CANCELLED	

NOTES

400' Surface Rights Reservation around all lakes and rivers.

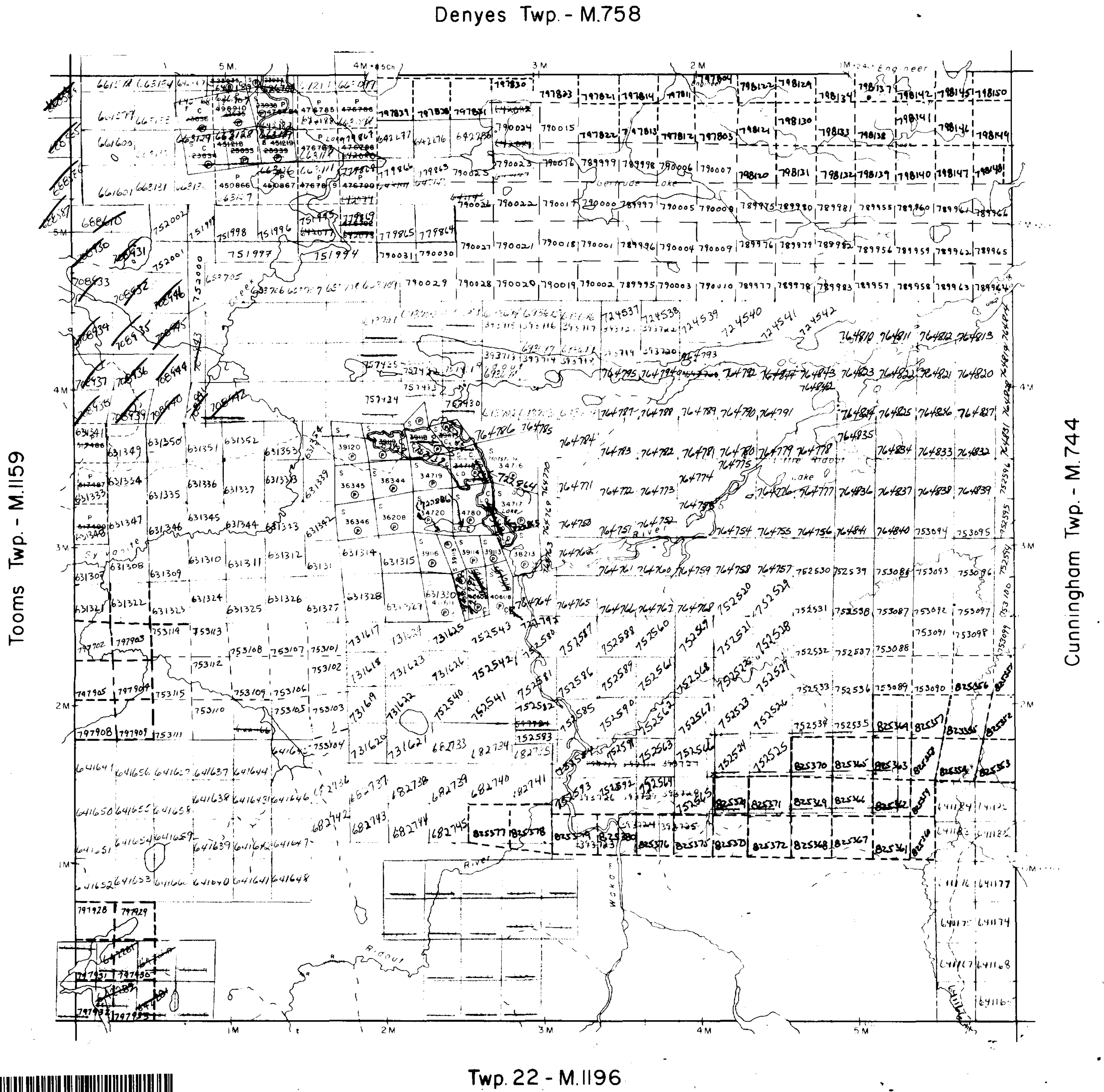
RECEIVED

PLAN NO. M.1159

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEY AND MAPPING BRANCH

41010NW0016 2.7152 HALCROW

210



THE TOWNSHIP
OF

GREENLAW

DISTRICT OF
SUDBURY

PORCUPINE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒
CANCELLED	C

NOTES

400' Surface Rights Reservation around all lakes and rivers

PLAN NO. M.895

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

41010NW0016 2.7152 HALCROW

220


REGAL PETROLEUM LIMITED
AIRBORNE ELECTROMAGNETIC SURVEY
INTERPRETATION MAP
SWAYZE AREA
ONTARIO
March, April 1984
410
AERODAT LIMITED
VLF-EM conductor axis
Interpreted Fault
30 metres
EM RESPONSE
> 500
250 – 500
60 – 125
30 – 60
4 – 8
< 2
based on
230

REGAL PETROLEUM LIMITED

PROJECT 5433

AIRBORNE ELECTROMAGNETIC SURVEY PROFILES

SWAYZE AREA

ONTARIO

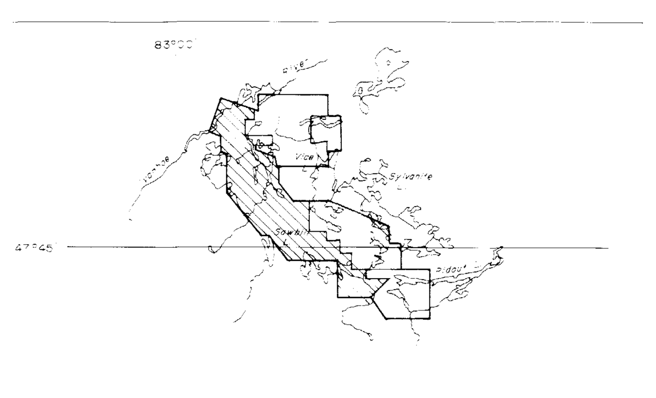
SCALE 1:10,000

AERODAT LIMITED

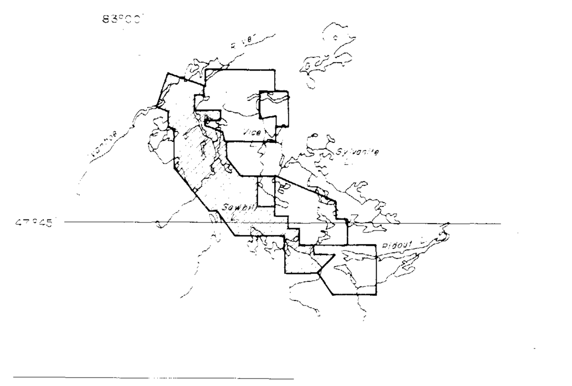
DATE: March, April 1984

N.T.S. No: 41 O

MAP No: 2



COAXIAL - 946 Hz



REGAL PETROLEUM LIMITED

PROJECT 5433

TOTAL FIELD MAGNETIC MAP

SWAYZE AREA

ONTARIO

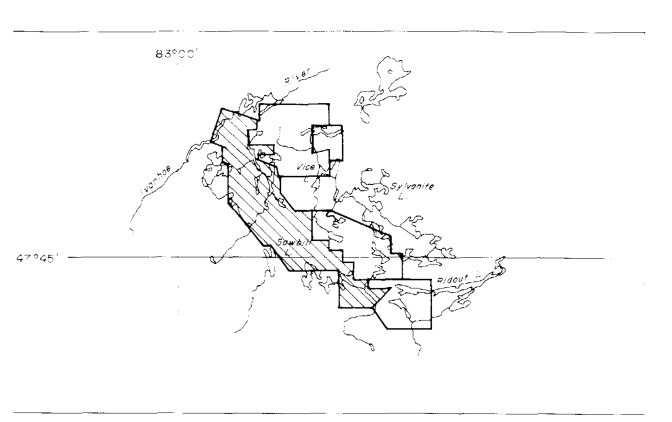
SCALE 1/10,000

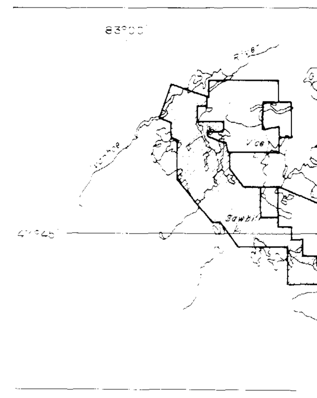
0 330 660 1320 1/2 mile

0 100 200 500 1 Kilometre

AERODAT LIMITED

DATE:	March, April 1984
N.T.S. No:	41 O
MAP No:	3





REGAL PETROLEUM LIMITED

PROJECT 5433

VLF-EM TOTAL FIELD CONTOURS

SWAYZE AREA

ONTARIO

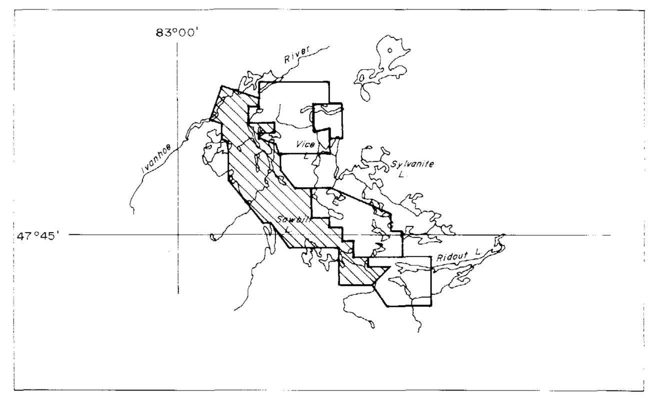
SCALE 1/10,000

0 330 660 1320 1/2 mile

0 100 200 500 1 Kilometre

AERODAT LIMITED

DATE:	March, April 1984
N.T.S. No:	41 O
MAP No:	4

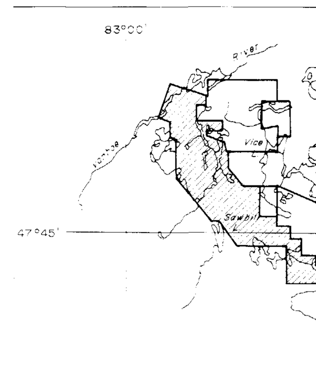


50% ....

10% ....

2% ....

contour interval 2%



260