OUTOKUMPU MINES Ltd.
Geophysical Assessment Report
Eldorado-Langmuir Property

P1204501, P1204502, P1204503, P1204504,
P1204505, P1204506, P1204507, P1204508,
P1204512. Eldorado Twp.
P1181894, P1198994, P1204410.
Langmuir Twp.

N.T.S. 42 - A - SW
Porcupine Mining Division

November, 1994.

Summary

Outokumpu Mines Ltd. evaluates the Eldorado-Langmuir property with 56.65 km of line-cutting, mag and HLEM surveys in October of 1994. Four HLEM conductors with concurring high magnetic susceptibilities warrant drill testing.

Induced Polarization Survey recommended for better delineation before drill testing.

Table of Contents

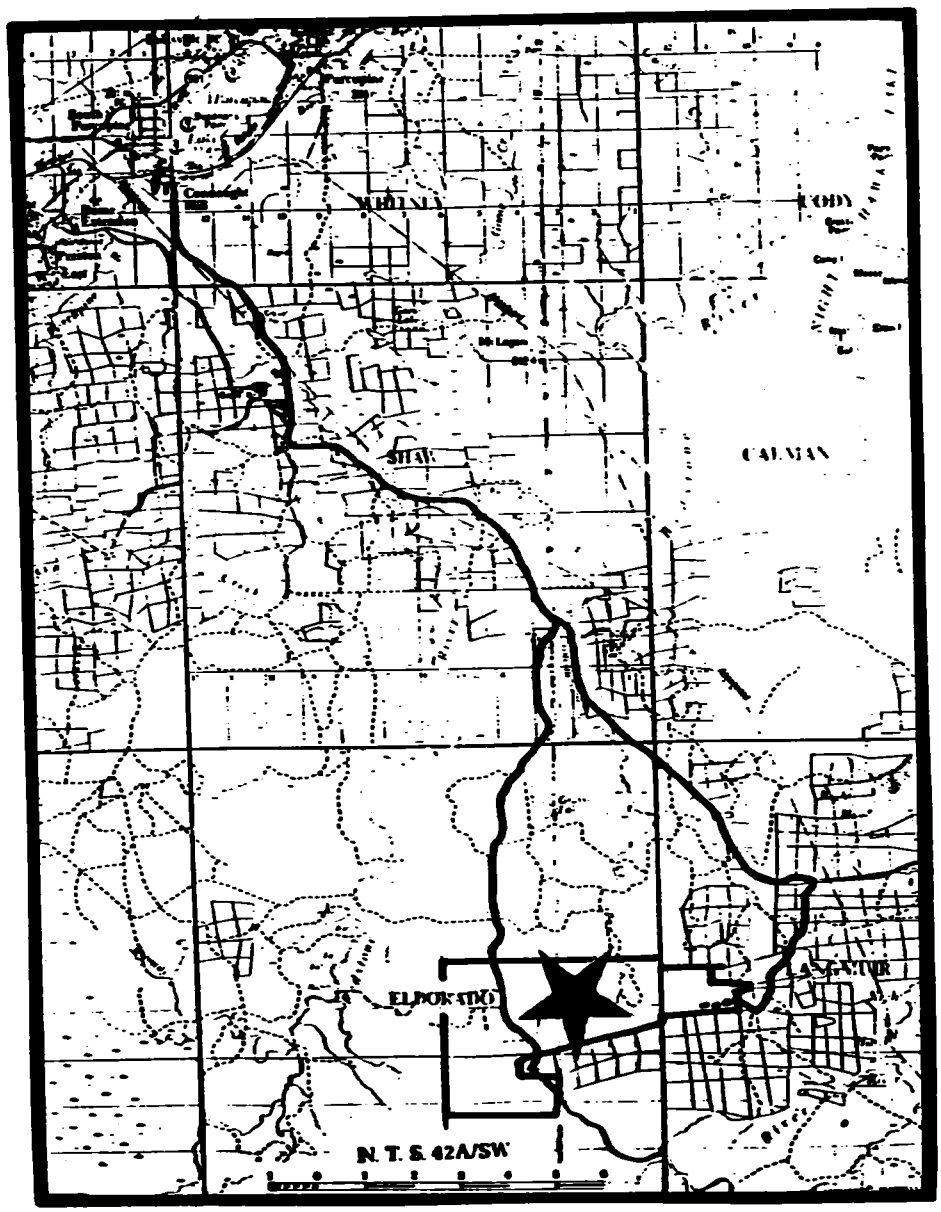
List of Figures

Pocket

Introduction

Incorporating line cutting, HLEM and Mag surveys Outokumpu Mines Ltd. evaluates the Eldorado-Langmuir property. Being roughly 20 km south of South Porcupine, the property adjoins both Eldorado and Langmuir Townships. Initiating the survey in August 1994, M. C. Exploration Services completes 56.65 km of surveys.

FIGURE 1



Location and Access

Reaching the east border of the property is 20 km's of gravel road extending from South Porcupine. Travelling bush roads with an ATV then reaches the grid in Langmuir Township. Accessing the west parcel of the property is a right turn at the crossroads in Shaw Twp. This second gravel road prolongs NS across the property in Eldorado Twp.

Property

Covering an extent in Eldorado and Langmuir Townships the property contains twelve adjoining claims. The EW baseline crossing the Eldorado-Langmuir township line embodies roughly 40% of the estimated 80 x 16 Hectares. Refer to Figure 2.

Eldorado Claims; P1204501, P1204502, P1204503, P1204504, P1204506, P1204507, P1204508 and P1204512.
Langmuir Claims; P1181894, P1198994 and P1204410.

Staking of all claims by Outokumpu Mines, took place during the month of April, 1994.

Work History

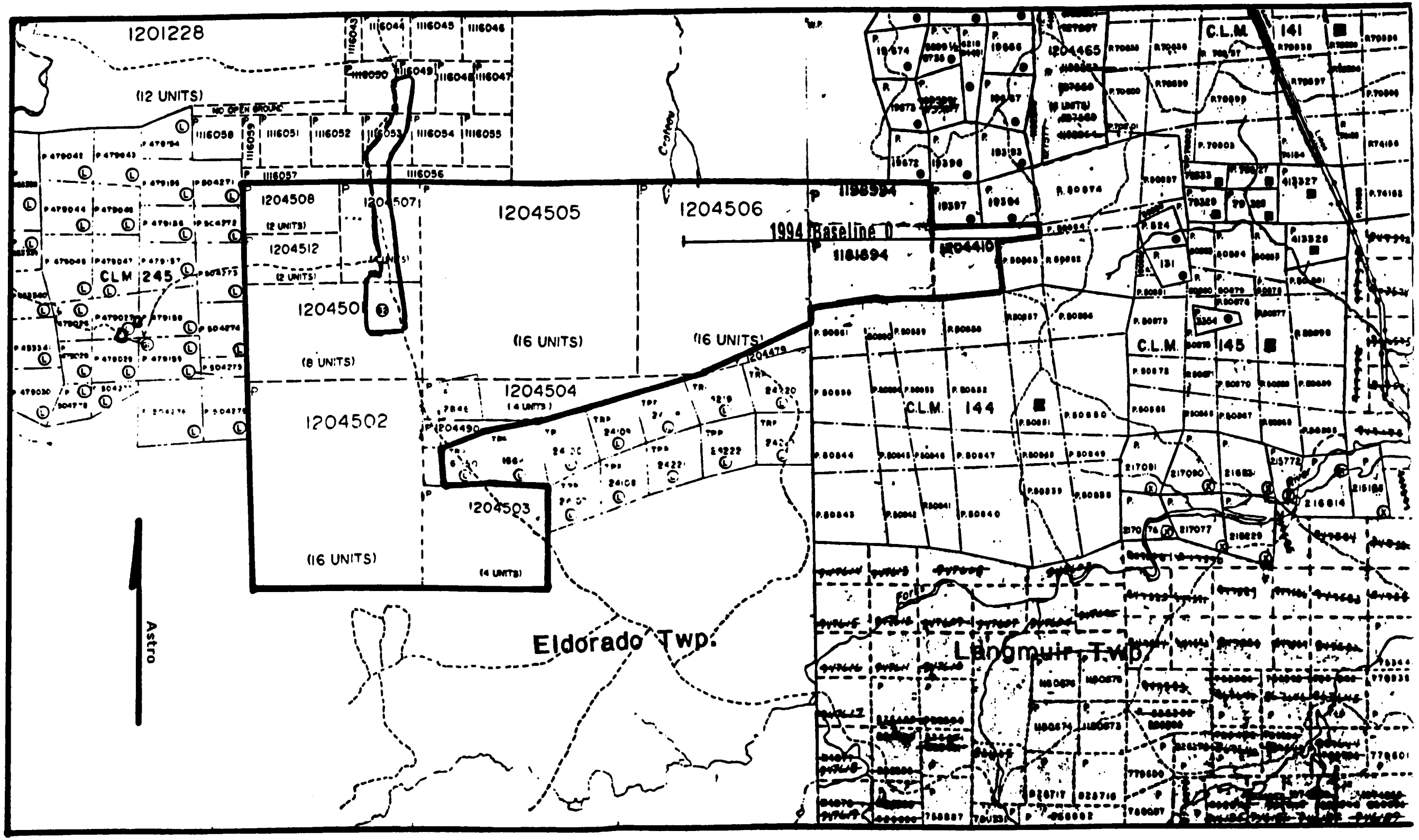
Acknowledging five assessment files found in the Resident Geologist's Office, Timmins, Ontario.

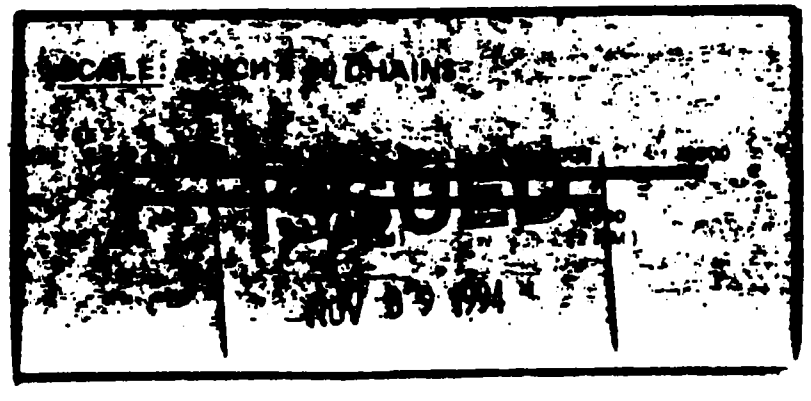
T- 652 ; McWatters Gold Mines Ltd. & Quebec Manitou Mines Ltd.

1961 EM, Mag and Geological surveys on 54 adjoining claims bordering south and east of the Eldorado-Langmuir Property. 1962 DDH testing resolved 0.428% Ni and 0.65% Ni assays in DDH #13. Delineating roughly 600ft of 0.70% Ni mineralization with further DDH's and trenching. In 1971 a section of 6 DDH's explains several narrow zones carrying up to 5% sulfides.

T- 1016 ; Urban Quebec Mines Ltd.

1964 DD logs with available assays. DDH Q1 and Q2 reports minor Cu assays (0.09 to 0.37%) and 0.99% Ni in hole Q1. Situating the five DDH's on the east portion of the Eldorado-Langmuir Property.





Eldorado-Langmuir Property

FIGURE 2

T- 1387 ; E. Galata Property

1969 Mag, HLEM and DDH evaluation by Falconbridge Ltd over the same gridded area. Investigating disseminated sulfides along folded and inconsistent contacts.

T- 1391 ; Pyrotex Mining and Exploration Co. Ltd.

1967 EM coverage with five DDH's tests roughly 90% of the Eldorado-Langmuir Property. Delineating a 300 x 15 ft Iron Sulfide mineralization centering the property. No assays reported.

T- 3363 ; Granges Inc.

1990 extensive exploration development including line cutting, EM, Mag, Geological, Geochemical surveys followed by trenching.

Since 1959 Nickel mineralization associated with ultramafics is the prime exploration target.

Geology

The Eldorado-Langmuir property is in an area of complex geology. Siliceous iron formation, basic tuffs, andesite and rhyolite are intruded by serpentinized peridotite, gabbro-diorite, granitic rocks and diabase. Earlier stripping by McWaters-Quebec Manitou Mines exposed a band of iron formation of the massive pyrite-pyrrhotite type in Langmuir Twp. The differentiated ultrabasics are more likely hosts for nickel deposits. Two discoveries of Cu mineralization occur on claim 1204506, Eldorado Twp in a tuffaceous greenstone outcrop. A magnetic band of iron formation is exposed along the outcrop, trending 100 Deg and dipping 60 Deg. S. (early developments by E. Galata).

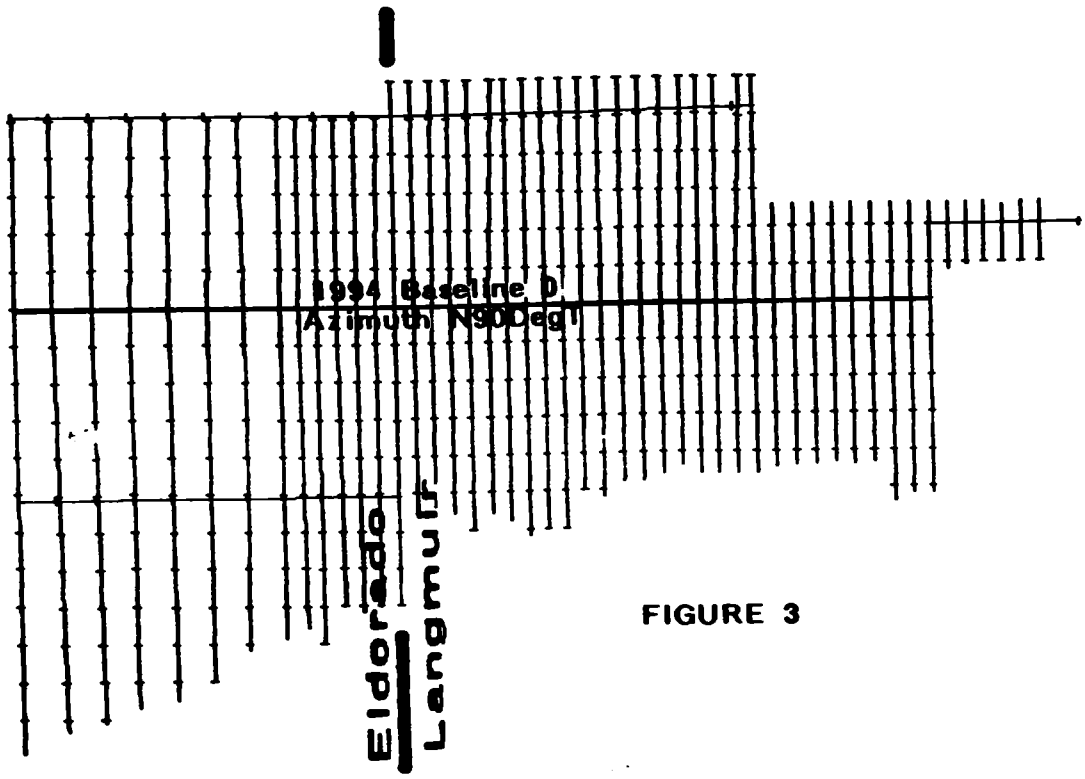


FIGURE 3

Running N90DegT for a length of 2.4 km's, baseline 0 intersects the Eldorado-Langmuir NS township line at 0+00E. Turning lines at 90 Degs with 50 and 100 meter separations, and using 25 meter station intervals for control. A total of 56.65 km's of grid lines cover all claims in Langmuir twp. and claim P1204506 in Eldorado twp. Thus proceeding with a Total Field Magnetic Survey using the EDA PPM 350 (.05 nT precision) in conjunction with the PPM 400 base station. Performing diurnal corrections at 30 second intervals with a reference field of 58825 nT's. Leveling the 5567 stations read on all lines with the base station location at 800W/ 440S. Surveying cross lines only with the Max-Min I9 using a 100 m coil spacing with 440, 1760, 3520 Hz frequencies. A total of 2279 stations of HLEM evaluate the property.

Presenting the magnetic results on plan 3, with 50 nT contours. Ranging from 50584 to 77985 nT's the magnetic samples shown on plan 2 have a base of 53000 nT removed. Showing the HLEM results are plan's 4, 5 and 6. Profiling both inphase and outphase elements at a scale of 1 cm = 20 %.

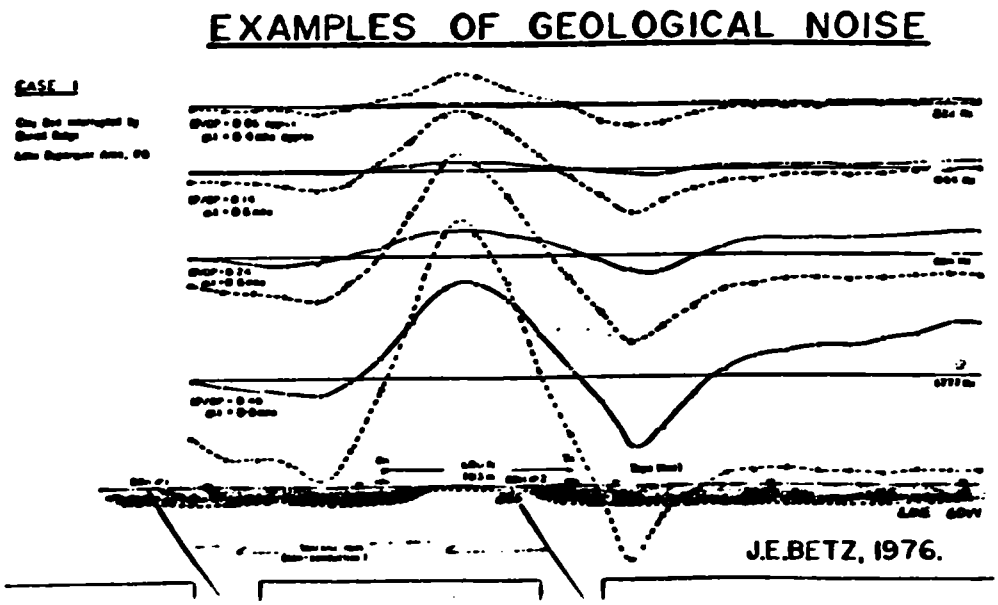
Seen on the NW portion of plan 3 are diffused contours implying an underlay of granite rocks. A low magnetic intensity limiting the acid intrusives insinuates a fault contact. Suspecting basic extrusives abide south along the contact then get crowded running grid east. Flanking south of the basic extrusives are ultramafic units showing very high magnetic susceptibilities. Dominating High magnetic intensities on the east portion of the grid reflect ultramafic units. The high mag seen on line 1000W from 200S to BL0 is problematic for lack of coverage. Associating this latter response with abiding ultramafics.

Irregular magnetic responses show a bisecting fault from 600W/ 500N to 650E/ 500S.

Isolated mag highs correlating with HEM anomalies support local iron formations. Notable highs are; L150E to 350E @ 400S, L400E to 600E @ 200S, L750E/200S to 900E/ 125S. The separate mag high seen at L600W/ 400S to 400W/ 450S combines a very weak and narrow HEM response.

HLEM Evaluation

Conductors residing on the grid are problematic due to their narrow widths. Operators questioning the rapid cross overs took intermediate readings at 12.5 meters ensuring anomaly attributes. Also geological noise (altering till) credits additional noise. Thus the propagation of the conductive zones differ with the altering frequencies. Confirming conductor axis on plan 7 with the most reliable 440Hz frequency.



Responding to geological noise the most 3520HZ detects weaker conductivity thickness on all anomalies. The intermediate 1760Hz is reliable for evaluating conductivity thickness. The lower frequency, due to narrow zones amplifies response parameters which derives conductivity thickness. This 440HZ frequency is reliable locating anomaly axis.

Depicting anomalies A to L on plans 4, 5 and 6, then classifying conductors on HLEM ANOMALY INTERPRETATION sheets included in report.

Implications

Several conductors having significant conductivity thickness warrant drill testing. Anomaly G on plan 7 proves matched conductivity thickness on 440 and 1760HZ. Being homogeneous with depth warrants drill testing. Other notable conductors; C (50W/335S), E (400E/285S), F (350E/170S) warrant additional study.

A Further evaluation delineating favorable targets requires past DDH's and trenches be located on the grid. Better conductor classification can be proven by plotting results at a favorable 1: 2000 scale.

Recommending Induced Polarization technique be used in the future. An A spacing of 50 meters advancing plot points at 25 meters would best define the narrow conductors on the property. Reading n1 to n6 giving ample information sounding zones at depth and Pole-Dipole Array for it's best Signal/ Noise ratio.

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HLEM ANOMALY INTERPRETATION

Grid : Eldorado-Langmuir Company : OutoKumpu Mines.

Anomaly	Center Axis	Width	I/P	O/P	∝	d	σS	Dip
A	1000w/170S'	≈40m	-10	-5	19.8	42 m	57.0	Grid North
(A- multiple zone or fractured zone - 200m strike)								
B	800w/0+00	≈10m	-2	-2	2	32m	5.7	N.V.
(B - 300m Strike)								
C	050w/330S'	<1m	-3	0	52	60m	149	N.V.
(C - 300m strike, irregular propagation)								
D	300E/410S'	<.5m	-1	0	52	64m	149	N.V.
(D - 100m strike)								
E	400E/280S'	<1m	-1	0	52	64m	149	N.V.
(E - 150m strike)								
F	550E/165S'	<1m	-4	0	79	64m	227	N.V.
(F - 100m Strike)								
G	950E/100S'	<1m	-3	-3		45m	17.3	N.V.
(G - 300m Strike)								

Instrument : MMT9 Frequency : 440 Hz.

Coil Spacing : 100m Date : Nov. 19 94.

d = depth, σS = Conductivity Thickness, ∝ = Response Parameter.

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HLEM ANOMALY INTERPRETATION

Grid : Eldorada-Langmuir Company : OutoKumpu Mines.

Anomaly	Center Axis	Width	I/P	O/P	α	d	σS	Dip
G	1000E/655'	10m	-3	-2		48m	21.6	N.V.
(G - 300m Strike)								
G	1050E/205'	≈50m	-7	-4		48m	43.2	N.V.
(G - runs close to line direction)								
H	1100E/150S'	<0.5m	0	0	-	—	-	N.V.
(H - positive amplitude)								

Instrument : MMT9 Frequency : 440 Hz.

Coil Spacing : 100m Date : NOV. 10/84

Sheet 2 of 2.

d = depth, σS = Conductivity Thickness, α = Response Parameter.

Inphase Range = -10 to +10, mean = 0.26 %

Outphase Range = -5 to +4, mean = 0.263 %

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HLEM ANOMALY INTERPRETATION

Grid : Eldorado-Langmuir Company : OutoKumpu Mines.

Anomaly	Center Axis	Width	I/P	O/P	∝	d	σS	Dip
A	1000w/1855'	≈10m	-14.5	-11	1.5	25m	4.3	N.V.
(A-open to the West, ? strike.)								
C	50w/335.5'	<1m	-35	0	50	62m	36	N.
(C-300m strike - 300w to 0)								
E	400w/285.5'	<1m	-1.5	0	50	65m	36	N.V.
(E-250m strike- 300E to 550E)								
F	350E/170.5'	<1m	-35	0	50	62m	36	N.V.
(F-150m strike - 450E to 600E)								
G	900E/130.5'	<1m	-7	-3		53m	17.3	N.V.
(G- had 400m strike - 800E to 1100E)								
G	950E/95.5'	<0.5m	-5	-4		48m	5.4	N.V.
G	1000E/60.5'	≈10m	-4	-5		33m	3.6	N.V.
G	1050E/20.5'	≈80m	-11	-3		45m	36	N.V.
(G-runs near line direction-adds to strike length)								

Instrument : HHT9 Frequency : 1760 Hz.

Coil Spacing : 100m Date : Nov 10/94

Sheet 1 of 1.

d = depth, σS = Conductivity Thickness, ∝ = Response Parameter.

Inphase Range = -14 to +11, mean = 0.58

Outphase Range = -10 to +16, mean = 1.04%

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HLEM ANOMALY INTERPRETATION

Grid ; Eldorado-Langmuir Company ; Outokumpu Mines.

Anomaly	Center Axis	Width	I/P	O/P	∝	d	σS	Dip
A	1000W/185S'	∝/m	-17	-16.5	7.5	18m	2.7	N.V.
(A - 100m strike, undefined to the West)								
B	700W/65W	≈20m	-5.5	-16.5	2	8m	0.71	N.V.
(B - ≈ 400m strike - contact type response)								
C	50W/335S'	<1m	-4.5	0	70	66m	25	N.V.
(C - approx. 500m of strike length)								
D	250E/430S'	<1m	-1	0	65	68m	234	N.V
(D - multiple or deep response)								
E	400E/285S'	<1m	-2	0	-	-	-	N.V.
(E - very narrow)								
F	550E/170S'	<0.5m	-6	0	10	58m	3.6	N.V.
(F - 150m strike)								
G	900E/130S'	<1m	-10	-6	15	38m	5.4	N.V
(G - roughly 300m strike)								

Instrument ; MMT9 Frequency ; 3520 Hz.

Coil Spacing ; 100m Date ; Nov. 10/94.

Sheet 1 of 2.

d = depth, σS = Conductivity Thickness, ∝ = Response Parameter.

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HLEM ANOMALY INTERPRETATION

Grid : Eldorado-Langmuir Company : OutoKumpu Mines.

Anomaly	Center Axis	Width	I/P	O/P	∝	d	σS	Dip
G	950E/100S'	21m	-8	-5.5	10	40m	3.6	N.V.
G	1000E/ 55S'	20m	-7	-13.5	3	11m	1.1	N.V.
H	1100E/150S'	10.5m	-2	-3.5	5	33m	1.8	N.V.
(H- roughly 50 m strike length)								
I	700W/410S'	21m	-4	-10.5	2	8m	0.71	N.V.
(I- 200m strike l)								
J	50W/180N	10m	-7	-23	2	5m	0.71	N.V.
(J- good o/p response, roughly 75m strike l)								
K	300E/60S'	?	-4	-10.5	1.5	8m	0.5	N.V.
(K- multiple response)								
L	600E/	—	—	—	—	—	—	
(L- outphase anomaly)								

Instrument : MMI 9 Frequency : 3520 Hz.

Coil Spacing : 100m Date : Nov. 10/94.

Sheet 2 of 2.

d = depth, σS = Conductivity Thickness, ∝ = Response Parameter.

Inphase Range = -17 to +15, mean = 1.9 %

Outphase Range = -22 to +27, mean = 1.50 %

SURVEY PROCEDURE

MAGNETICS

Theory:

The magnetic method is based on measuring alteration in the shape and magnitude of the earth's naturally occurring magnetic field caused by changes in the magnetization of the rocks in the earth.

These changes in magnetization are due mainly to the presence of the magnetic minerals, of which the most common is magnetite, and to a lesser extent ilmenite, pyrrhotite, and some less common minerals.

Magnetic anomalies in the earth's field are caused by changes in two types of magnetization: induced and remanent (permanent). Induced magnetization is caused by the magnetic field being altered and enhanced by increases in the magnetic susceptibility of the rocks, which is a function of the concentration of the magnetic minerals.

Remanent magnetism is independent of the earth's magnetic field, and is the permanent magnetization of the magnetic particles (magnetite, etc.) in the rocks. This is created when these particles orient themselves parallel to the ambient field when cooling. This magnetization may not be in the same direction as the present earth's field, due to changes in the orientation of the rock or the field.

The most common method of measuring the total magnetic field in ground exploration is with a proton precession magnetometer. This device measures the effect of the magnetic field on the magnetic dipole of hydrogen protons. This dipole is caused by the "spin" of the proton, and in a magnetometer these dipoles in a sample of hydrogen-rich fluid are oriented parallel to a magnetic field applied by an electric coil surrounding the sample. After this magnetic field is removed, the dipoles begin to precess (wobble) around their orientation under the influence of the ambient earth's magnetic field. The frequency of this precession is proportional to the earth's magnetic field intensity.

Field Method:

The magnetics data was collected with an EDA PPM 350 proton procession magnetometer, which measures the absolute value of the earth's magnetic field to an accuracy of +/- 1 gammas. The magnetometer was carried down the survey line by a single operator, with the sensor mounted on an aluminum pole to remove it from any surface geologic noise. Readings were taken at 12.5m intervals.

The readings were corrected for changes in the earth's total field (diurnal drift) with an EDA PPM 400 base station magnetometer, which recorded readings every 30 seconds as the survey was being conducted. The data from both magnetometers was then dumped with a computer and base corrected values were computed.

SURVEY PROCEDURE

MAX-MIN II

Theory:

The Max-Min II is a frequency domain, horizontal loop electromagnetic (HLEM) system, based on measuring the response of conductors to a transmitted, time varying electromagnetic field.

The transmitted, or primary EM field is a sinusoidally varying field at any of five different frequencies. This field induces an electromotive force, (emf), or voltage, in any conductor through which the field passes. This is defined by:

$$\int E.dl = -\frac{\partial \Phi}{\partial t} \quad \text{(the Faraday Induction Principle)}$$

where E is the electric field strength in volts/metre (and so $\int E.dl$ is the emf around a closed loop) and Φ is the magnetic flux through the conductor loop. This emf causes a "secondary" current to flow in the conductor in turn generating a secondary electromagnetic field.

This changing secondary field induces an emf in the receiver coil (by the Farady law) at the same frequency, but which differs from the primary field in magnitude and phase. The difference in phase (the phase angle) is a function of the conductance of the conductor(s), both the target and the overburden and host rock.

The magnitude of the secondary is also dependant on the conductance, and also on the dimensions, depth, and geometry of the target, as well as on the interference from overburden and the host rock.

These two parameters (phase angle and magnitude) are measured by measuring the strength of the secondary field in two components: the real field or that part "in-phase" with the primary field; and the imaginary field, or that part in "quadrature" or 90 degrees out of phase from the primary field.

The magnitude and phase angle of the response is also a function of the frequency of the primary field. A higher frequency field generates a stronger response to weaker conductors, but a lower frequency tends to pass through weak conductors and penetrate to a greater depth. The lower frequency also tends to energise the full thickness of a conductor, and gives a better measure of its true conductivity-thickness product (conductance).

For these reasons two or more frequencies are usually used; the lower for penetration and accurate measure of good conductors, and the higher frequency for strong response to weak conductors.

Distinction between conductive targets, overburden, and host rock responses are made by studying the shape of the secondary field, and the difference in the frequency responses.

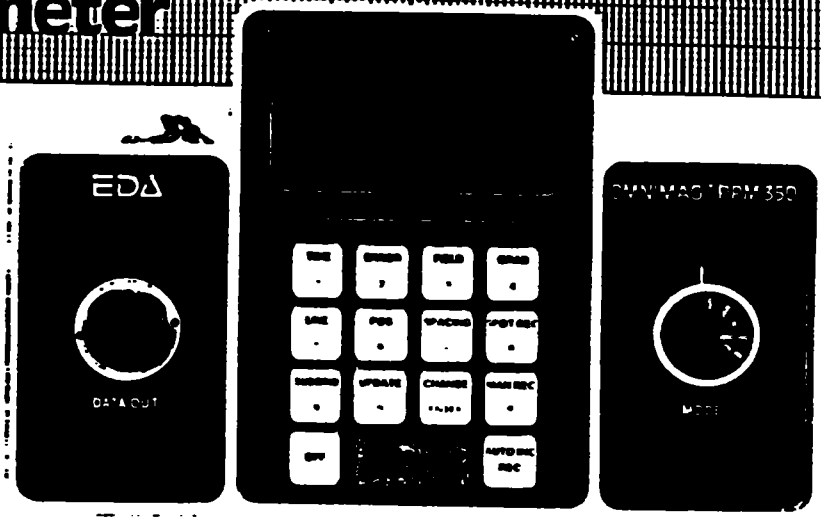
The transmitted primary field also creates an emf in the receiver coil, which is much stronger that the secondary, and which must be corrected for by the receiver. This is done by electronically creating an emf in the receiver, whose magnitude is determined by the distance from receiver to transmitter as set on the receiver, and whose phase is derived from the receiver via an interconnecting wire.

Field Method:

The Max-Min II survey was carried out in the "maximum coupled" mode (horizontal co-planar). The transmitter and receiver are carried in-line down the survey line separated by a constant distance (in this case 200m) with the receiver leading. Three transmitter frequencies were used: 440 Hz, 1760 Hz, and 3520 Hz and readings were taken every 25m. The transmitter and receiver are connected by a cable, for phase reference and operator communication.

OMNIMAG PPM-350 Total Field Magnetometer

EDA



The PPM-350 is the latest addition to EDA's OMNIMAG*™ series of magnetometers and gradiometers. It is engineered to provide users with the latest state-of-the-art advances in microprocessor technology, including many features that are unique in the field.

Major benefits and features include:

- Significant increase in productivity
- Lowered survey costs
- Automatic diurnal correction
- Programmable grid coordinates
- Highly reproduceable data
- Ergonomic design
- Simplified fieldwork
- Computer-compatible

Specifications

Dynamic Range	18,000 to 93,000 gammas
Sensitivity	±0.02 gamma
Statistical Error Resolution	0.01 gamma
Standard Memory Capacity	1383 data blocks or readings
Absolute Accuracy	±15 ppm at 23°C, 50 ppm over the operating temperature range
Display Resolution	0.1 gamma
Capture Range	±25% relative to ambient field strength of last stored value
Display	Custom-designed, ruggedized liquid crystal display with an operating temperature range from −35°C to +55°C
Gradient Tolerance	5,000 gammas per meter
Sensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy
Sensor Cable	Remains flexible in temperature range; includes low strain connector
Operating Environmental Range	−35°C to +55°C; 0–100% relative humidity; weather-proof
Power Supply	Non-magnetic rechargeable sealed lead acid battery cartridge or belt; or, Disposable "C" cell battery cartridge or belt
Battery Cartridge Life	2,000 to 5,000 readings, depending upon ambient temperature and rate of readings
Weight and Dimensions	
Instrument Console only	3.4 kg, 238 x 150 x 250 mm
Lead Acid Battery Cartridge	1.9 kg
Sensor	1.2 kg, 56 mm diameter x 200 mm
System Complement	Electronics console; sensor with 3-meter cable; sensor staff; power supply; harness assembly; operation manual.

EDA is a pioneer in the development of advanced geophysical systems and has created many innovations that increase field productivity and lower survey costs.

EDA's OMNIMAG series consists of the PPM-350 Total Field Magnetometer, PPM-400 Base Station Magnetometer, and the PPM-500 Vertical Gradiometer. Contact us *now* for details.

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APEX MAXMIN I-9
PORTABLE EM

The MaxMin I ground EM Systems are designed for mineral and water exploration and for geoengineering applications. They expand the highly popular MaxMin II and III EM System concepts. The frequency range is extended to seven octaves from four. The ranges and numbers of coil separations are increased and new operating modes are added. The receiver can also be used independently for measurements with powerline sources. The advanced spheric and powerline noise rejection is further improved, resulting in faster and more accurate surveys, particularly at larger coil separations. Several receivers may be operated along a single reference cable.

Mating plug in data acquisition computer is available for use with Maxmin I for automatic digital data acquisition and processing. The computer specifications are in a separate data sheet.

MAX 1-3 SPECIFICATIONS:

Frequencies: 110, 220, 440, 880, 1760, 3520, 7040 and 14080 Hz, plus 50/60 Hz powerline frequency (receiver only).

Modes: MAX 1: Horizontal loop mode (Transmitter and receiver coil planes horizontal and coplanar).

MAX 2: Vertical coplanar loop mode (Transmitter and receiver coil planes vertical and coplanar).

MAX 3: Vertical coaxial loop mode (Transmitter and receiver coil planes vertical and coaxial).

MIN 1: Perpendicular loop mode 1 (Transmitter coil plane horizontal and receiver coil plane vertical).

MIN 2: Perpendicular loop mode 2 (Transmitter coil plane vertical and receiver coil plane horizontal).

Coil separations: 12.5, 25, 50, 75, 100, 125, 150, 200, 250, 300, & 400 metres (standard).

10, 20, 40, 60, 80, 100, 120, 160, 200, 240 & 320 metres (selected with grid switch inside of receiver).

50, 100, 200, 300, 400, 500, 600, 800, 1000, 1200 & 1600 feet (selected with grid switch inside of receiver).

Parameters measured: In-Phase and quadrature components of the secondary magnetic field, in % of primary (transmitted) field.

Field amplitude and/or tilt of 50/60 Hz powerline field.

Readouts: Analog direct readouts on edgewise panel meters for in-phase, quadrature and tilt, and for 50/60Hz amplitude. (Additional digital readouts when using the DAC, for which interfacing and controls are provided for plug-in).

Full scale of readouts: Analog in-phase and quadrature scales: 0±4%, 0±20%, 0±100%, switch activated. Analog tilt scale: 0±75% grade. (Digital in-phase and quad. 0±102.4%).

Resolution: Analog in-phase and quadrature 0.05% to 0.5%, analog tilt 1% grade. (Digital in-phase and quadrature 0.1%).

Repeatability: ±0.05% to ±1% normally, depending on frequency, coil separation & conditions.

Signal filtering: Powerline comb filter, continuous spherics noise clipping, autoadjusting time constant and other filtering.

Warning lights: Receiver signal and reference warning lights to indicate potential errors.

Survey depth: From surface down to 1.5 times coil separation used.

Transmitter dipole moments:

110 Hz: 220 Atm²	1760 Hz: 160 Atm²
220 Hz: 215 Atm²	3520 Hz: 80 Atm²
440 Hz: 210 Atm²	7040 Hz: 40 Atm²
880 Hz: 200 Atm²	14080 Hz: 20 Atm²

Reference cable: Light weight unshielded 4/2 conductor teflon cable for maximum temperature range and for minimum friction. Please specify cable lengths required.

Intercom: Voice communication link provided for operators via the reference cable.

Receiver power supply: Four standard 9V batteries (0.5Ah, alkaline). Life 30 hrs continuous duty, less in cold weather. Rechargeable battery and charger option available.

Transmitter power supply: Rechargeable sealed gel type lead acid 12V-13Ah batteries (4x6V-6½Ah) in canvas belt. Optional 12V-8Ah light duty belt pack available.

Transmitter battery charger: For 110-120/220-240VAC, 50/60/400 Hz and 12-15VDC supply operation, automatic float charge mode, three charge status indicator lights. Output 14.4V-1.25A nominal.

Operating temp: –40 to + 60 degrees Celsius.

Receiver weight: 8 kg, including the two integral ferrite cored antennas (9 kg with data acq. computer).

Transmitter weight: 16 kg with standard 12V-13Ah battery pack.
14 kg with light duty 12V-8Ah pack.

Shipping weight: 60 kg plus weight of reference cables at 2.8 kg per 100 metres plus other optional items if any.

Standard spares: One spare transmitter battery pack, one spare transmitter battery charger, two spare transmitter retractile connecting cords, one spare set receiver batteries.

Specifications subject to change without notification.

APEX PARAMETRICS LIMITED

P.O. Box 818, Uxbridge
Ontario, Canada L0C 1K0

Telephone: 416-640-8102 Fax: 416-852-9688

Telex: 06-966625 APEXPARA UXB
Cables: APEXPARA TORONTO

I, Richard Daigle of Timmins, Ontario

Certify

1. Three years of HLEM (max-min) evaluation under the supervision of Mr. J. Betz (1979 - 1981).

2. Five years conducting, evaluating Geophysical surveys for Kidd Creek Mines Ltd under supervision of Mr. D. Londry (1981 - 1985).

3 Six years contracting various geophysical surveys in Bathurst, N.B. (1986 - 1991).

4. Third year as geophysical evaluator for M. C. Exploration Services Inc., Timmins Ontario.

6. I have no direct interest in the property reported upon.

Dated

Timmins,Ontario.

Mr. R. J. Daigle

Ministry of Northern Development and Mines

Ontario

Report of Work Conducted After Recording Claim

Mining Act

Transaction Number: W9560.00174

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

2.16074

Instructions:
- Please type or print and submit in duplicate.
- Refer to the Mining Act and Regulations for requi Recorder.
- A separate copy of this form must be completed
- Technical reports and maps must accompany thi
- A sketch, showing the claims the work is assigne

42A06SE0017 2.16074 ELDORADO

900

Recorded Holder(s)		Client No.
Outokumpu Mines Ltd.		178525
Address		**Telephone No.**
P.O. Box 1123, Suite 30A, 637 Algonquin Blvd. E, Timmins, Ontario, P4N 7H9		(705) 264-5024
Mining Division	**Township/Area**	**M or G Plan No.**
Porcupine	Langmuir and Eldorado	G-3226
Dates Work Performed From: August 15, 1994 To: October 15, 1994		

Work Performed (Check One Work Group Only)

	Work Group	Type
	Geotechnical Survey	Line Cutting, Magnetic, and HLEM Surveys
	Physical Work, Including Drilling	
	Rehabilitation	
	Other Authorized Work	
	Assays	
	Assignment from Reserve	

RECEIVED
JUN 28 1995
MINING LANDS BRANCH

Total Assessment Work Claimed on the Attached Statement of Costs $ 24,152

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
R. J. Daigle	P.O. Box 362, Porcupine, Ontario. P0N 1C0
M.C. Exploration Services, Inc.	P.O. Box 362, Porcupine, Ontario P0N 1C0

(attach a schedule if necessary)

Certification of Beneficial Interest * See Note No. 1 on reverse side

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date	Recorded Holder or Agent (Signature)
	April 3, 1995	Paul L

Certification of Work Report

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

Name and Address of Person Certifying

Paul Davis, P.O. Box 1123, Timmins, Ontario, P4N 7H9

Telepone No.	Date	Certified By (Signature)
(705) 264-5024	April 3, 1995	Paul L

For Office Use Only

Total Value Cr. Recorded	Date Recorded	Mining Recorder	Received Stamp
$24,152	AP	T. Binkley	RECEIVED (c) APR 3 1995 TB 12:15 PORCUPINE MINING DIVISION
	Deemed Approval Date: July 2 95	Date Approved	
	Date Notice for Amendments Sent		

0241 (03/91)

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units	Value of Assessment Work Done on this Claim	Value Applied to this Claim	Value Assigned from this Claim	Reserve: Work to be Claimed at a Future Date
	118 1894	6	5,175	4,800	0	375
	1198994	3	2,588	2,400	0	188
	1204410	3	2,589	2,400	0	189
	1204506	16	13,800	12,800	0	1,000
	4		24,152	22,400	0	1,752
	Total Number of Claims		Total Value Work Done	Total Value Work Applied	Total Assigned From	Total Reserve

0241 (03/91)

Credits you are claiming in this report may be cut back. In order to minimize the adverse effects of such deletions, please indicate from which claims you wish to priorize the deletion of credits. Please mark (✓) one of the following:

1. ☐ Credits are to be cut back starting with the claim listed last, working backwards.
2. ☒ Credits are to be cut back equally over all claims contained in this report of work.
3. ☐ Credits are to be cut back as priorized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature [signature]

Date April 3, 1995

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des mines

Ontario

Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction: W9560.00174

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7284.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7284.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre		
	Field Supervision Supervision sur le terrain		[redacted]
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type: Line Cutting	$ 14,162.50	
	Type: Geophysical Survey	$ 6,591.00	
	Type: Magnetometer Survey	$ 3,399.00	[redacted]
Supplies Used Fournitures utilisées	Type		
			[redacted]
Equipment Rental Location de matériel	Type		
			[redacted]
		Total Direct Costs Total des coûts directs	[redacted]

2. Indirect Costs/Coûts indirects

** Note: When claiming Rehabilitation work indirect costs are not allowable as assessment work.
Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type		
			[redacted]
Food and Lodging Nourriture et hébergement			[redacted]
Mobilization and Demobilization Mobilisation et démobilisation			[redacted]
		Sub Total of Indirect Costs Total partiel des coûts indirects	[redacted]
		Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)	[redacted]
		Total Value of Assessment Credit (Total of Direct and Allowable Indirect costs) / Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)	[redacted]

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note : Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
× 0.50 =	

Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Évaluation totale demandée
× 0.50 =	

RECEIVED
APR 3 1995
PORCUPINE MINING DIVISION

Certification Verifying Statement of Costs

I hereby certify:
that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as Project Geologist (Recorded Holder, Agent, Position in Company) I am authorized

to make this certification

Attestation de l'état des coûts

J'atteste par la présente :
que les montants indiqués sont le plus exact possible et que les dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de _____ (titulaire enregistré, représentant, poste occupé dans la compagnie) je suis autorisé

à faire cette attestation.

Signature	Date
[signature]	April 3, 1995

0212 (04/91)

Nota : Dans cette formule, lorsqu'il désigne des personnes, le masculin est utilisé au sens neutre.

Ontario

Ministry of Northern Development and Mines
Ministère du Développement du Nord et des Mines

Geoscience Approvals Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

June 28, 1995

Our File: 2.16074
Transaction #: W9560.00174

Mining Recorder
Ministry of Northern
Development & Mines
60 Wilson Avenue, 1st Floor
Timmins, Ontario
P4N 2S7

Dear Sir:

Subject: APPROVAL OF ASSESSMENT WORK CREDITS ON MINING CLAIMS P.1181894 ET AL IN LANGMUIR & ELDORADO TOWNSHIPS

Assessment work credits have been approved as outlined on the original report of work. The credits have been approved under Section 14 (Geophysical) of the Mining Act Regulations.

The approval date is June 28, 1995.

If you have any questions regarding this correspondence, please contact Lucille Jerome at (705) 670-5855.

ORIGINAL SIGNED BY:

Ron C. Gashinski
Senior Manager, Mining Lands Section
Mining and Land Management Branch
Mines and Minerals Division

LJ/jn

cc: Resident Geologist
Timmins, Ontario

Assessment Files Library
Sudbury, Ontario

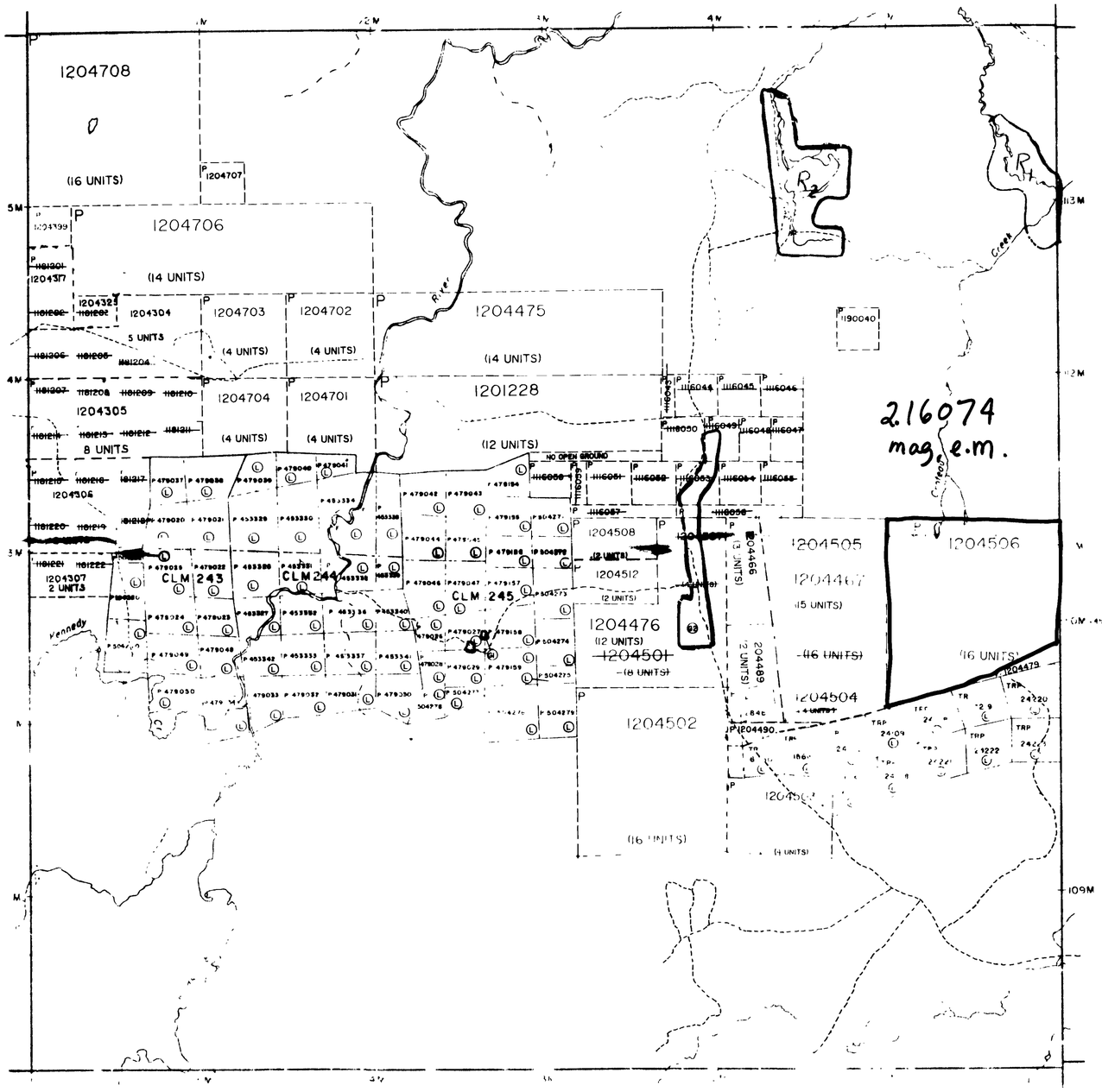
2.16074

Shaw Tp - M 311

Adams Tp. - M 261

Langmuir Tp. - M 292

Douglas Tp - M 274



THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON

THE TOWNSHIP OF

ELDORADO

DISTRICT OF TIMISKAMING

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	LO
MINING RIGHTS ONLY	MRO
SURFACE RIGHTS ONLY	SRO
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C
PATENTED SRO	P

NOTES

400 Surface Rights Reservation at shores of all lakes and rivers

GRAVEL, FILE 192287
GRAVEL, FILE 171598 AND FILE 172954

DUCKS UNLIMITED PENDING APPLICATION UNDER THE PUBLIC LANDS ACT S.R.O. WITHDRAWN

DUCKS UNLIMITED PENDING APPLICATION UNDER THE PUBLIC LANDS ACT S.R.O. WITHDRAWN

ISSUED
JUN 26 1995
PORCUPINE MINING DIVISION

ACTIVATED APRIL 26/94

PLAN NO M.276

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY

S.R.O. – SURFACE RIGHTS ONLY

M.+S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(R) ~~SSC 86/80~~	~~W-87/85~~	~~12/6/85~~	~~M.+S.~~	~~1985~~
		Re-opened	NRO 36/85	

R2 Application pending under PLA - surface rights withdrawn

NOTES

THIS TOWNSHIP LIES WITHIN THE MUNICIPALITY OF THE CITY OF TIMMINS

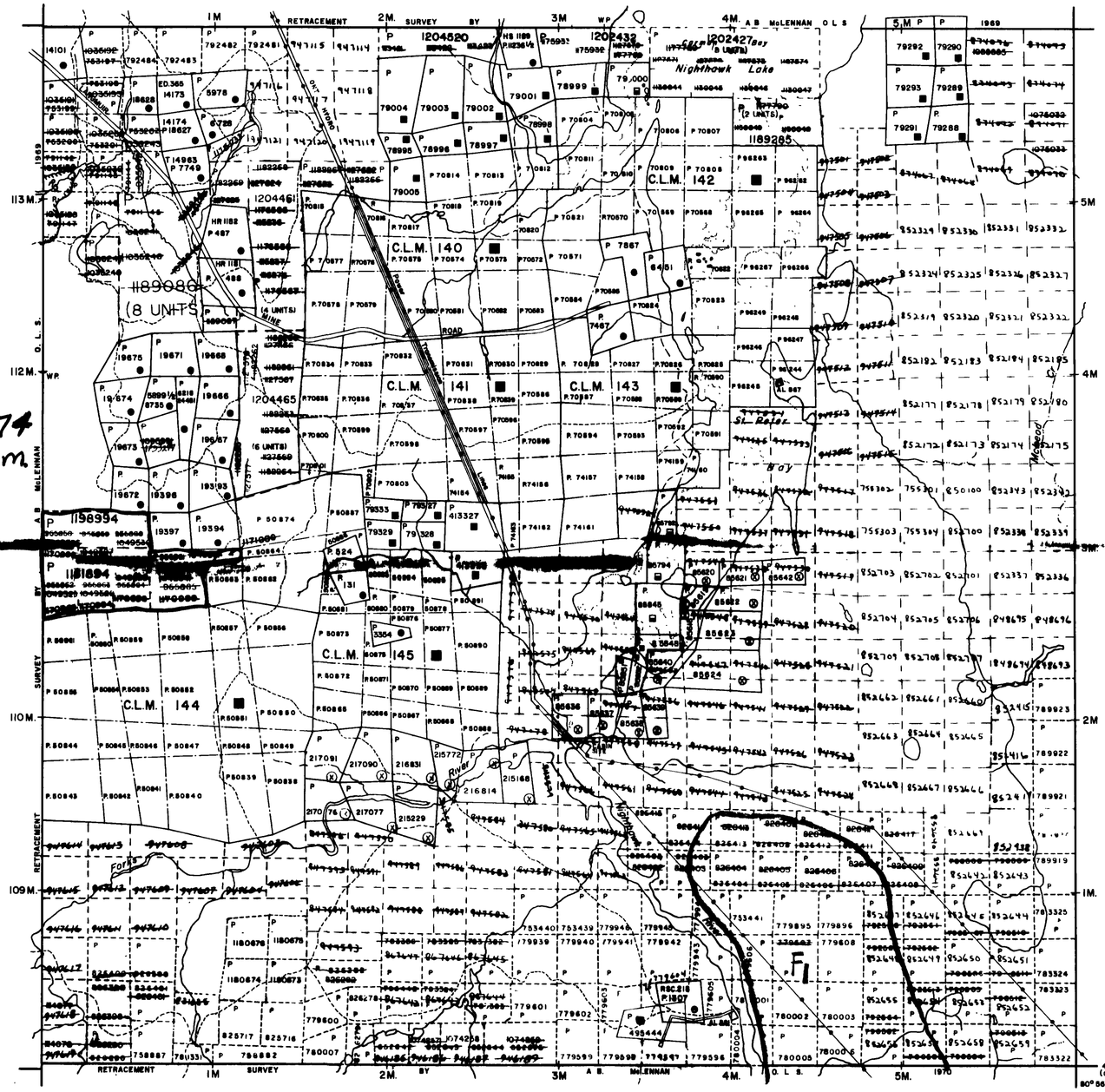
FLOODING RIGHTS ON NIGHTHAWK LAKE TO THE CONTOUR

~~June 1994~~

(H) THIS TWP. IS SUBJECT TO FOREST ACTIVITY IN 1995/96 FURTHER INFORMATION IS AVAILABLE ON FILE.

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

CARMAN TP.



ELDORADO TP.

BLACKSTOCK TP.

FALLON TP.

2.16074 mag. em.

ATV

LEGEND

- HIGHWAY AND ROUTE No
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC
  - LOTS, MINING CLAIMS, PARCELS, ETC
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	⊖
" , MINING RIGHTS ONLY	⊖
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	■
" , MINING RIGHTS ONLY	■
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	⊕
CANCELLED	⊗
SAND & GRAVEL	⊕

ALL LAND GRANTED PRIOR TO MAY 6, 1913, EXCEPT MINING RIGHTS, PATENTED BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000

METRES 0 200 1000 2000

ISSUED

TOWNSHIP

LANGMUIR

PORCUPINE MINING DIVISION

M.N.R. ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

2.16074

Ministry of Natural Resources — Land Management Branch — Ontario

Date MARCH, 1985

Number G-3226

TL 500 N

L 1000 W L 900 W L 800 W L 700 W L 600 W L 500 W L 400 W L 300 W L 250 W L 200 W L 150 W L 100 W L 50 W L 0 L 50 E L 100 E L 150 E L 200 E L 250 E L 300 E L 350 E L 400 E L 450 E L 500 E L 550 E L 600 E L 650 E L 700 E L 750 E L 800 E L 850 E L 900 E L 950 E

TL 500 N

L 1000 E L 1050 E L 1100 E L 1150 E L 1200 E L 1250 E L 1300 E L 1350 E L 1400 E L 1450 E L 1500 E L 1550 E L 1600 E L 1650 E L 1700 E

TL 200 N

TL 500 S

L 1000 W L 900 W L 800 W L 700 W L 600 W L 500 W L 400 W L 300 W L 250 W L 200 W L 150 W L 100 W L 50 W L 0 L 50 E L 100 E L 150 E L 200 E L 250 E L 300 E L 350 E L 400 E L 450 E L 500 E L 550 E L 600 E L 650 E L 700 E L 750 E L 800 E L 850 E L 900 E L 950 E L 1000 E L 1050 E L 1100 E L 1150 E L 1200 E L 1250 E L 1300 E L 1350 E L 1400 E

ELDORADO TWP.

LANGMUIR TWP

Scale 1:5000

100 0 100 200 300

(meters)

2.1607 4

LEGEND

Established Claim Post Location ■

Assumed Claim Post Location □

Established Claim Line Location — —

Assumed Claim Line Location — ··· —

Established DDH Location ⊙

Established ATV road = = = = =

PLAN 1

OUTOKUMPU MINES Ltd
Picket Line Map **Eldorado-Langmuir**
NTS: 42A/ 06 Porcupine Mining Division
M. C. Exploration Services Inc. Sept. 1994.

TL 500 N

BASELINE

TL 500 S

TL 200 N

2.16074

LEGEND

Total Field Magnetic Plan

Data with 53,000 nT Base Subtracted

5567 Ttl. Samples, Range; 50,054-77985nT's

Mean; 58704 nT's Deviation 57869nT's

Base Station Location; L 800W/ 440S.

30 Second Duty Cycle, 58,825nT Ref. Fld.

INSTRUMENTS

OMNI IV PPM - 350, portable unit

OMNI IV PPM - 400, base station unit

PLAN 2

Scale 1:5000

100 0 100 200 300

(meters)

OUTOKUMPU MINES Ltd

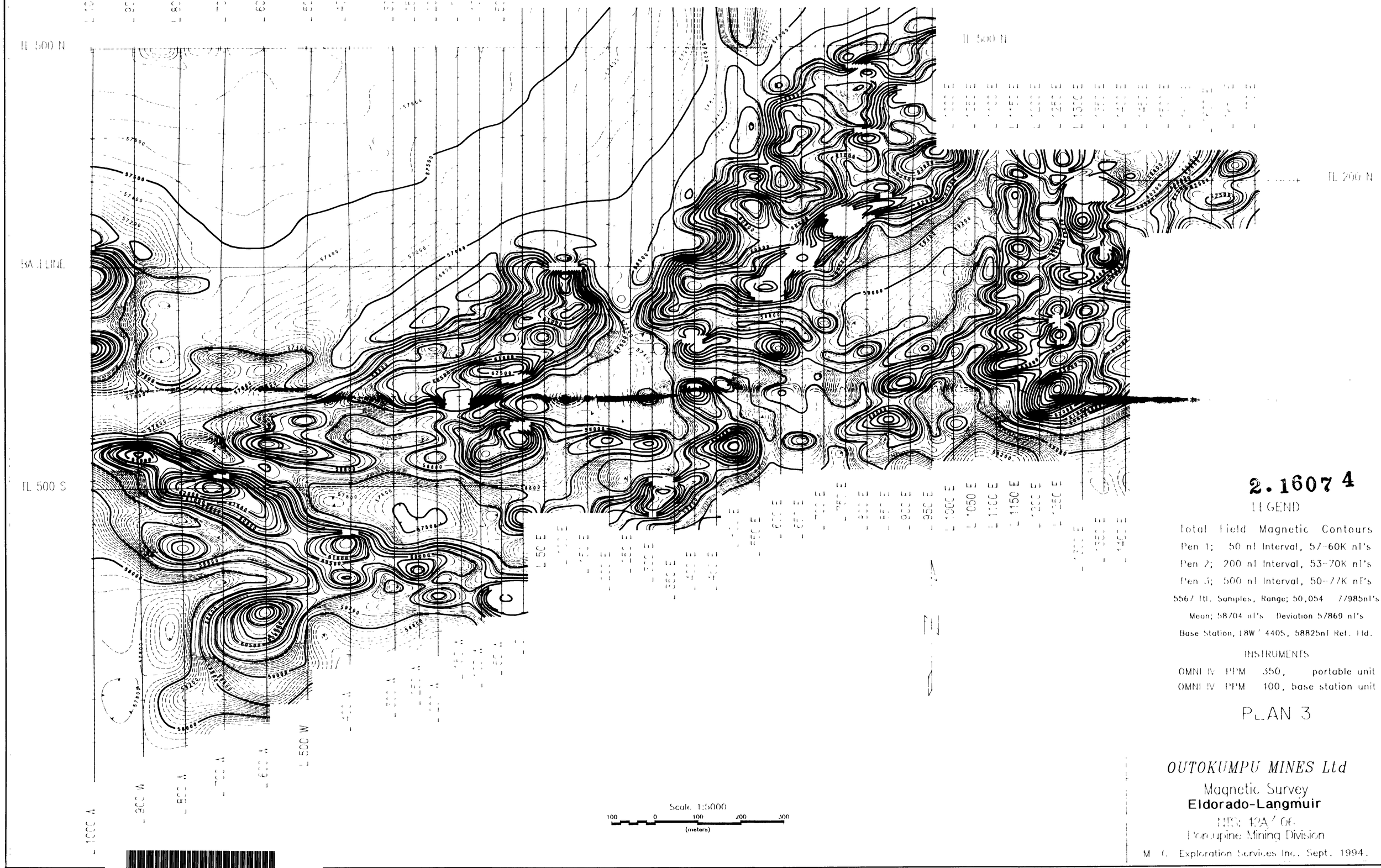
Magnetic Survey

Eldorado-Langmuir

NTS: 42A/ 06

Porcupine Mining Division

M. G. Exploration Services Inc. Sept. 1994.



2.16074

LEGEND

Total Field Magnetic Contours

Pen 1; 50 nT Interval, 57-60K nT's

Pen 2; 200 nT Interval, 53-70K nT's

Pen 3; 500 nT Interval, 50-77K nT's

5567 Tot. Samples, Range; 50,054 77985nT's

Mean; 58704 nT's Deviation 57869 nT's

Base Station, 18W / 440S, 58825nT Ref. Fld.

INSTRUMENTS

OMNI IV PPM 350, portable unit

OMNI IV PPM 100, base station unit

PLAN 3

OUTOKUMPU MINES Ltd

Magnetic Survey

Eldorado-Langmuir

NTS: 42A / 06

Porcupine Mining Division

M. C. Exploration Services Inc. Sept. 1994.

L 1000 W L 900 W L 800 W L 700 W L 600 W L 500 W L 400 W L 300 W L 250 W L 200 W L 150 W L 100 W L 50 W L 0 L 50 E L 100 E L 150 E L 200 E L 250 E L 300 E L 350 E L 400 E L 450 E L 500 E L 550 E L 600 E L 650 E L 700 E L 750 E L 800 E L 850 E L 900 E L 950 E

TL 500 N

TL 500 N

L 1000 E L 1050 E L 1100 E L 1150 E L 1200 E L 1250 E L 1300 E L 1350 E L 1400 E L 1450 E L 1500 E L 1550 E L 1600 E L 1650 E L 1700 E

TL 200 N

BASELINE

TL 500 S

L 1000 W L 900 W L 800 W L 700 W L 600 W L 500 W L 400 W L 300 W L 250 W L 200 W L 150 W L 100 W L 50 W L 0 L 50 E L 100 E L 150 E L 200 E L 250 E L 300 E L 350 E L 400 E L 450 E L 500 E L 550 E L 600 E L 650 E L 700 E L 750 E L 800 E L 850 E L 900 E L 950 E L 1000 E L 1050 E L 1100 E L 1150 E L 1200 E L 1250 E L 1300 E L 1350 E L 1400 E

Scale 1:5000

100 0 100 200 300

(meters)

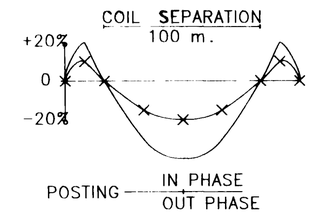
MAX-MIN HORIZONTAL LOOP LEGEND

1 cm. = 20 %

FREQUENCY 440 Hz

IN PHASE ——

OUT PHASE - - - -



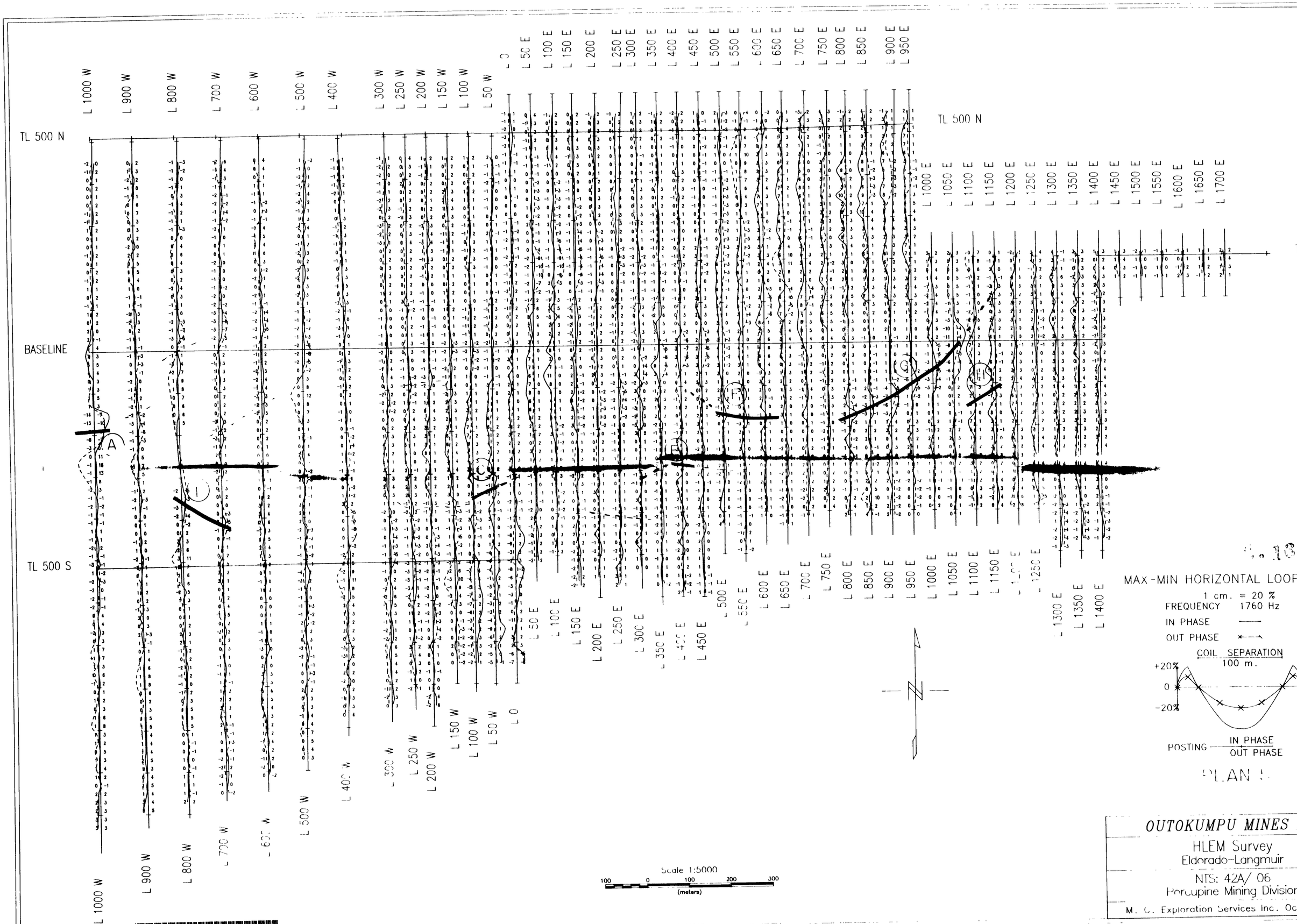
PLAN 4

OUTOKUMPU MINES Ltd

HLEM Survey
Eldorado-Langmuir

NTS: 42A/ 06
Porcupine Mining Division

M. U. Exploration Services Inc. Oct. 1994.



MAX-MIN HORIZONTAL LOOP LEGEND

1 cm. = 20 %
FREQUENCY 1760 Hz
IN PHASE
OUT PHASE

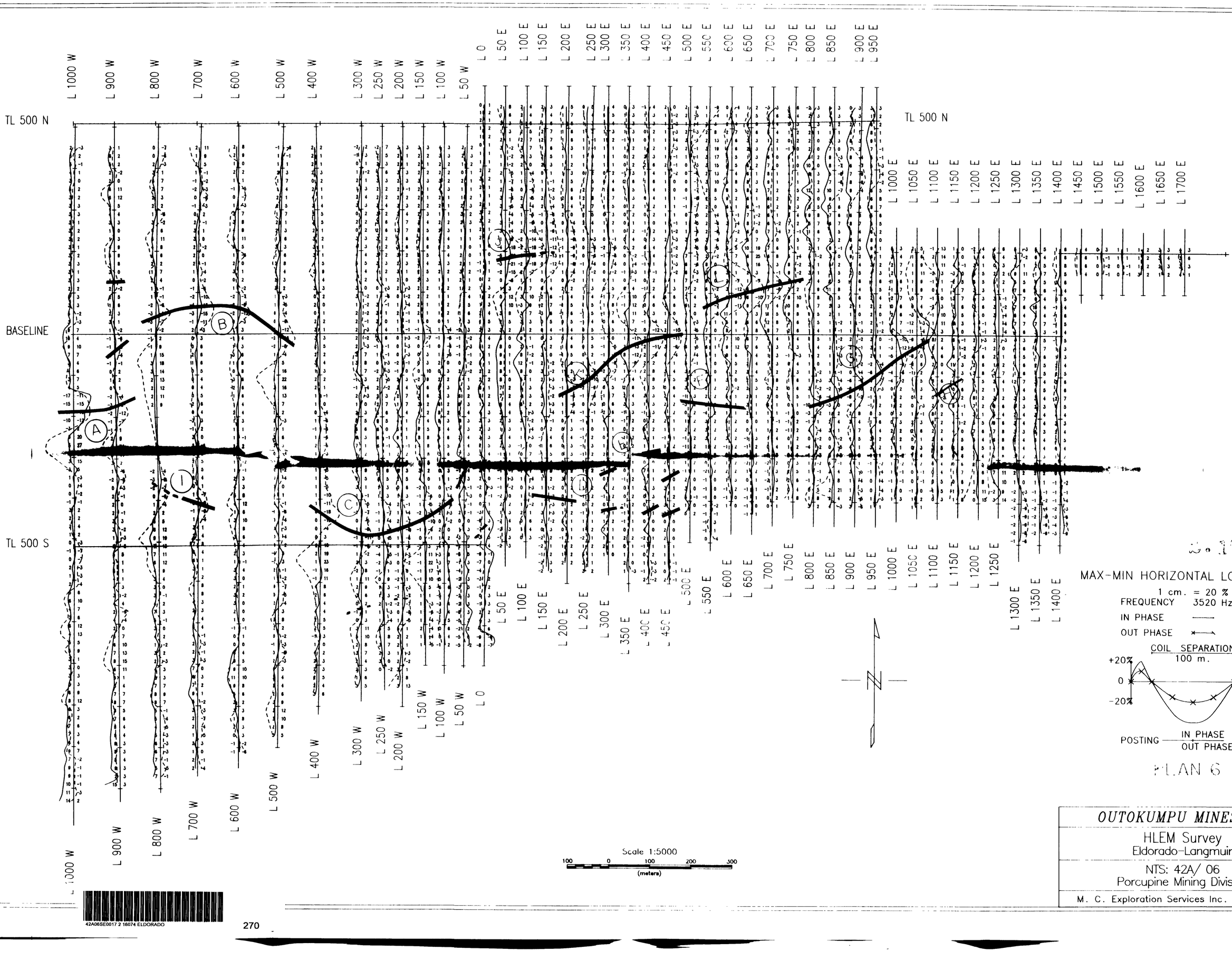
POSTING IN PHASE / OUT PHASE

PLAN 5

16074

OUTOKUMPU MINES Ltd

HLEM Survey
Eldorado-Langmuir
NTS: 42A/ 06
Porcupine Mining Division
M. G. Exploration Services Inc. Oct. 1994.



MAX-MIN HORIZONTAL LOOP LEGEND

1 cm. = 20 %
FREQUENCY 3520 Hz
IN PHASE
OUT PHASE

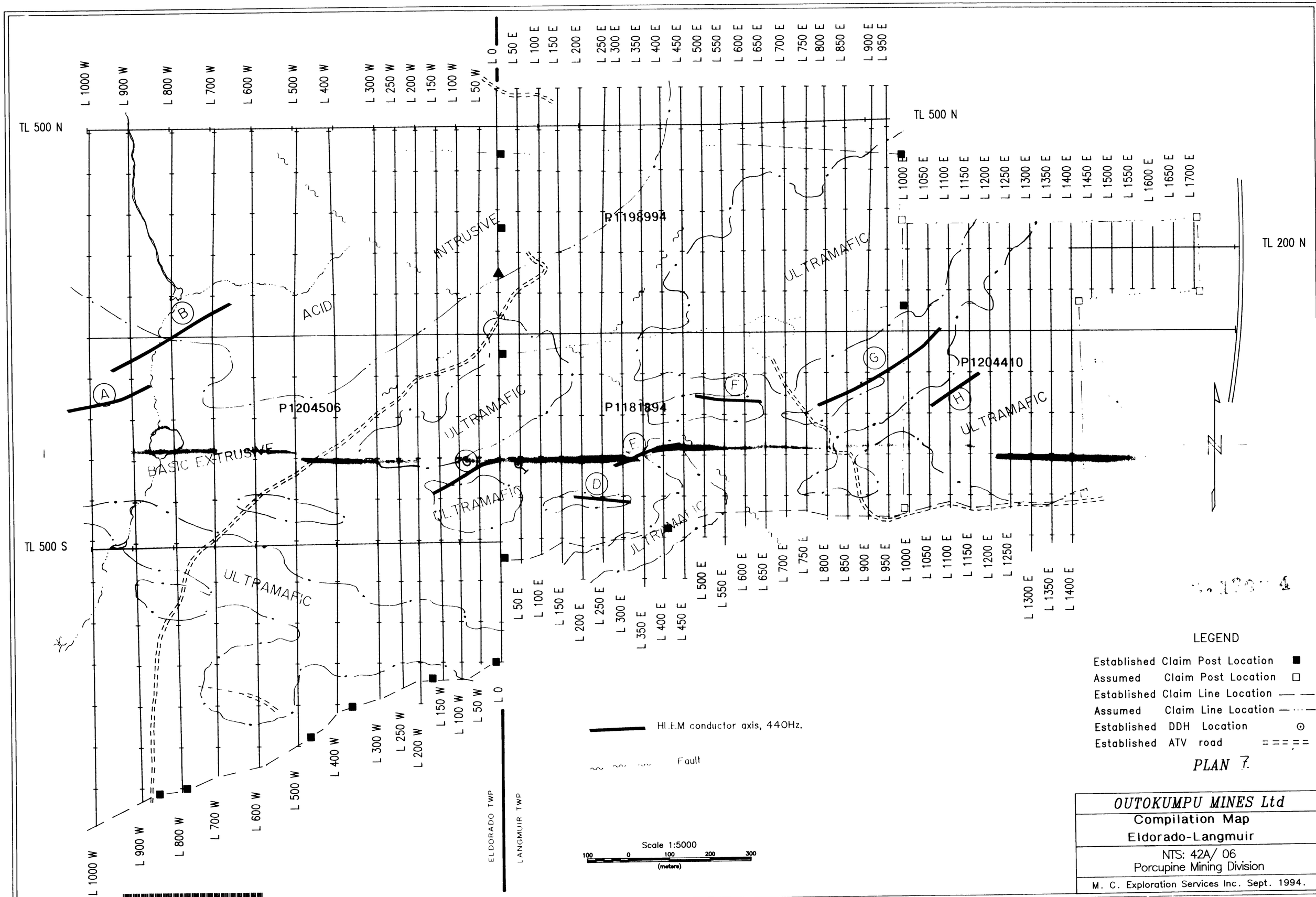
POSTING — IN PHASE / OUT PHASE

PLAN 6

Scale 1:5000

100 0 100 200 300
(meters)

OUTOKUMPU MINES Ltd
HLEM Survey Eldorado-Langmuir
NTS: 42A/ 06 Porcupine Mining Division
M. C. Exploration Services Inc. Oct. 1994.



LEGEND

Established Claim Post Location ■
Assumed Claim Post Location □
Established Claim Line Location — —
Assumed Claim Line Location — · · · —
Established DDH Location ⊙
Established ATV road = = = = =

PLAN 7.

OUTOKUMPU MINES Ltd
Compilation Map
Eldorado-Langmuir
NTS: 42A/ 06 Porcupine Mining Division
M. C. Exploration Services Inc. Sept. 1994.