REPORT ON GEOLOGICAL MAPPING
AND GEOPHYSICAL SURVEYING
ON
CADINGTON RESOURCES LTD.'S
NAMEIGOS LAKE PROPERTY
NAMEIGOS, MOZAMIBIK AND LIZAR TOWNSHIPS
SAULT ST. MARIE MINING DIVISION
DISTRICT OF Algoma, Ontario

BY
HENRY P HUTTERI

DURHAM GEOLOGICAL SERVICES INC.
BOX 1330
TIMMINS, ONTARIO
P4N 7J8

RECEIVED
OCT 24 1989

MICHAEL SEIDON
Archean greenstone and associated Sediments

Granitic Terrain

Archean Sediments, some volcanics and intrusions

DURHAM GEOLOGICAL SERVICES INC.

CADINGTON RESOURCES LTD.

PROPERTY LOCATION

Revisions

Date

Drawn K.B.

Scale 1:750,000

N.T.S.

Approved B.D.

Figure 1
INTRODUCTION

A program consisting of linecutting, geological mapping, magnetometer, and Max-Min II horizontal loop electromagnetic surveying has been completed over parts of Cadington Resources Ltd.'s Nameigos Lake property, located 60 kilometres northeast of the town of White River, Ontario.

The exploration program was undertaken over selected portions of the property during July, August and September 1988 in order to define the bedrock lithologies, locate favourable alteration zones, structural zones and geophysical anomalies which may be gold bearing.

The mapping and prospecting was carried out by Henry Hutteri of Durham Geological Services Inc. The linecutting and geophysical surveys were carried out by Guy Thibault Exploration Services.
PROPERTY DESCRIPTION, LOCATION AND ACCESS

The Nameigos Lake property consists of 200 contiguous unpatented mining claims located within Nameigos, Mozambik and Lizar townships, Sault Ste. Marie Mining Division, Ontario. The claims are currently held by Cadington Resources Ltd. (T-5009), 402-27 Queen Street East, Toronto, Ontario M5C 1R5. The claim numbers are listed in Appendix A.

The claim group lies approximately 60 kilometres northeast of the town of White River, Ontario, immediately southeast of Nameigos Lake.

Access to the property is by float plane, from White River, Chapleau or Hawk Junction. A gravel logging road also passes within 3 miles of the southeast portion of the claims. The Nameigos and Kabinakagami Rivers traverse the property and provide further access by canoe.

Labour, supplies and support facilities are available in White River and the town of Wawa, located 100 kilometres to the south.

PREVIOUS EXPLORATION

Very little exploration to date has been carried out over the Nameigos Lake property and surrounding area. In the early 1900's,
prospecting was carried out in Lizar Township, between the subject claim group and the Hiawatha Gold Mines, located 7.5 kilometres to the northeast. Gold was produced from the Hiawatha Gold Mine intermittently from 1937 to 1940.

In 1936 Cominco performed limited stripping and trenching on the Stenabough Occurrence located immediately north of the claim group in Nameigos township. Chip sampling reportedly yielded assays up to 0.24 oz/ton gold.

In 1972 and 1973, G.M. Siragusa and assistants mapped the Kabinakagami Lake and Esnagi Lake Areas, including the Nameigos Lake property, on behalf of the Ontario Geological Survey. The results of these mapping programs are found in OGS Reports 159 and 176.

In June 1987, Ferderber Geophysics Ltd. carried out an airborne magnetometer and VLF survey over a large property in Lizar Township held by River Oaks Corporation. The survey covered Cadington's Lizar Township claims.

In April 1988, B.M. Exploration Engineering performed linecutting, magnetometer and VLF-EM surveys (800' line spacings) on behalf of Cadington Resources Ltd. The surveys covered all of the claims within Nameigos and Mozambik townships.
REGIONAL GEOLOGY

The Esnagi-Kabinakagami Lake area is underlain by a northeast trending band of Archean age supracrustal rocks which have been somewhat folded, intruded into and enveloped by younger granitic rocks. These supracrustal rocks consist primarily of mafic to intermediate volcanics, lesser clastic sediments, minor iron formations, felsic and ultramafic volcanic rocks. Numerous quartz porphyry dykes have intruded the sequence along regional northeast trending shear/fracture zones. Younger northwest trending diabase dykes cut all other lithologies. The metamorphic grade is generally lower to middle amphibolite facies.

Several gold occurrences lie in close proximity to Cadington Resources Ltd.'s Nameigos Lake property (Figure 3). The following descriptions are taken from OGS Report 159 and 176 by G.M. Siragusa.

The Stenabough Gold Occurrence lies immediately north of the property boundary in Nameigos township (#1 Figure 3). Trenching and stripping in 1936 by Cominco exposed a pyritic silicified zone at least 38 feet wide. This zone crosscut the surrounding mafic volcanics which strike 310° with a dip of 70-75° NE. Samples taken by Cominco in 1937 across the zone yielded the following assays: 0-3 ft. trace, 3-6 ft. trace, 6-9 ft. 0.1 oz/ton Au, 9-12 ft. 0.22 oz/ton Au, 12-15 ft. trace, 15-18 ft. 0.04 oz/ton Au, 18-31 ft.
**LEGEND**

**MAFIC INTRUSIVE ROCKS**
5 Diabase dikes.

**FELSIC INTRUSIVE AND METAMORPHIC ROCKS**
4d Granodiorite, trondhjemite.
4f Microlime-quartz pegmatite.

**METASEDIMENTS**
3b Finely foliated to submassive sandstone.
3c Garnetiferous metasediments.
3e Conglomeratic sandstone, conglomerate.
1f Iron formation.

**METAVOLCANICS**
**FELSIC METAVOLCANICS**
2 Unsubdivided.
2c Quartz porphyry.

**MAFIC TO INTERMEDIATE METAVOLCANICS**
1a Fine-to-medium-grained foliated to submassive amphibolite.
1b Medium-grained, foliated to massive amphibolite.
1h Quartz veins, sheeted quartz veins, quartz pods.
1j Porphyritic flows.
1r Garnetiferous.

6 Mineral deposit; mining property unsurveyed

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**Revised**

DURHAM GEOLOGICAL SERVICES INC.
For: CADINGTON RESOURCES LTD.

Title: Regional Geology Map Showing Grid Areas

Date: June 1987
Drawn: C.G.
Scale: NTS:

Approved: P#: 3
0.22 oz/ton Au, 21-24 ft. trace, 24-27 ft. 0.02 oz/ton Au, 27-30 ft. no sample dyke, 30-33 ft. 0.1 oz/ton Au, 33-36 ft. 0.1 oz/ton Au and 36-38 ft. 0.24 oz/ton Au.

The Nameigos Lake Occurrence (#2) lies northwest of the property on the shore of Nameigos Lake. The occurrence consists of pyrite, sphalerite and chalcopyrite mineralization within a 3m wide band of biotite-chlorite schist. A composite grab sample taken by Siragusa yielded 0.25% Zn and 0.05% Cu.

The Vasey-Stenabough Occurrence (#3) is located approximately one kilometre north of the property boundary in Lizar Township. Mineralization is reported to consist of gold, pyrite, chalcopyrite, galena and sphalerite within quartz veins within a sheared quartz porphyry dyke. Sampling by Erie Canadian Mines Ltd. in 1937 yielded the following results; (5 samples) 0.01 oz/ton Au, (3 samples) 0.02 oz/ton Au, 0.03 oz/ton Au, (5 samples) 0.06 oz/ton Au, 0.08 oz/ton Au, 0.09 oz/ton Au, 0.11 oz/ton Au, 0.15 oz/ton Au, 0.27 oz/ton Au, 0.40 oz/ton Au and 0.45 oz/ton Au.

The Charpentier Lead-Zinc Occurrence (#4) located approximately 800m north of the Nameigos Lake property in Lizar Township. Pyrite, galena and sphalerite mineralization occurs within quartz veins along the sheared contact of a felsic dyke with granitic gneisses and mafic schists. The shear zone strikes N 80° W and has been exposed for a strike length of 150 feet. No assays
are reported.

The Charpentier Gold-silver Occurrence (#5) is located approximately 400m northeast of the claims in a banded granular quartz vein averaging less than 1 foot in width. The vein strikes N55° to N60° degrees East and lies within hornblende-chlorite schists which locally strike N 70° west. Assay results are reported to be very erratic due to the presence of visible gold.

PROPERTY GEOLOGY

A program of geological mapping, prospecting and sampling was carried out over Grids A and B on the Nameigos Lake property. The work was carried out by Henry Hutteri, from August 21 to September 15, 1989. The objective of the survey was to identify the various bedrock lithologies, to collect structural data where available and to locate areas of alteration and anomalous gold mineralization. All grid lines and base lines were walked during the course of the survey. The results of the geological survey are presented on two separate maps in the back pocket of this report. Geological mapping was conducted at a scale of 1:2500.

Lithologies encountered on both grid areas include mafic to intermediate volcanics, sediments, felsic intrusive and mafic intrusive rocks. All area rocks have been subjected to lower amphibolite grade of metamorphism. Outcrop exposure was 2-3% on
Grid A and 1% on Grid B with the bulk of the exposures confined to a few large hills and ridges.

**MAFIC TO INTERMEDIATE VOLCANICS**

Mafic to intermediate volcanic rocks underlie the majority of both grid areas. They are typically dark green in colour, massive to semi-massive, fine grained and equigranular to coarse grained and porphyroblastic. The finer grained amphibolite is usually weathered relatively smooth and consisted primarily of hornblende with minor plagioclase. The medium to coarse grained, porphyroblastic variety had a slightly knobby weathered surface and consisted of 60-80% rounded anhedral hornblende crystals within a finer grained, plagioclase rich matrix. Needle-like hornblende crystals up to 1cm long were observed in some outcroppings rather than the more common rounded, anhedral crystals. Very little carbonate or chlorite alteration was observed to be present within the massive amphibolites.

Moderate to well foliated mafic to intermediate volcanic rocks were observed on both grid areas, although fairly limited in occurrence. Within Grid A, several relatively narrow (1-2m) exposures were observed throughout the grid area having several orientations. Moderate to well foliated mafic to intermediate volcanics of similar widths were observed on Grid B in only one or two locations in the west-central portion of the grid. These zones appeared to be concordant with the surrounding lithologies with a
strike direction of 110-125°. Rocks within these local shear zones are fine grained, moderate to well foliated, dark green weakly chloritic with variable amounts of calcite alteration.

Variolitic flows were observed on Grid A along the base line between lines 17W and 18W. The variolites occurred as clusters of fine grained spherical, oval to slightly elongated, light grey-white structures averaging 1cm in diameter within a dark green fine grained massive amphibolitic matrix.

Pillow lavas were also observed along the western margin of Grid A. The pillow shapes were poorly preserved, appeared to be relatively undeformed and had an average length of 50cm and width of 15cm. The matrix was fine grained, dark green and amphibolitic and the pillows appeared to have a general north-south strike direction.

Garnetiferous amphibolites were observed on the west-central portion of Grid B. These units commonly consisted of fine grained, massive amphibolite with a variable garnet content of 5 to 20%. The garnets were the reddish almandine variety and varied from 1 to 5mm in diameter. The weathered surface was generally lumpy with the more resistant garnets weathering above the matrix material. These garnetiferous units are believed to have developed because of higher iron concentrations within certain mafic flows. These garnetiferous flows were noted in a few outcroppings to contain
magnetite.

FELsic INTRUSIVES

Aplite, quartz porphyry, feldspar porphyry and quartz-feldspar porphyry dykes were observed frequently in the western half of Grid A and rarely on Grid B.

The aplite dykes were fine grained, equigranular, fairly hard, massive to semi-massive, weathered white to faint pink in colour with a pink to tan or grey fresh surface. They averaged 1 to 2 metres in width and had slightly irregular contacts. The surrounding mafic volcanic rocks were commonly sheared along the contacts with the aplite dykes. Strike directions of 200°, 260° and 349° were observed for aplite dykes.

Several outcroppings of quartz-feldspar porphyry dykes were encountered on Grid A, while none were found on Grid B. Typically they were massive to weakly foliated, relatively hard, white weathering and porphyritic with a light grey-green fresh surface. The quartz eyes were rounded, clear and glassy, varied from <1 to 8mm and averaged 2mm in diameter and varied from a few percent to 10-15% in volume. The feldspar crystals were orange-white in colour, 1 to 3mm in diameter, and were mottled in appearance. The matrix material was fine grained and siliceous with minor disseminated hornblende and biotite observed at times. These dykes
were fairly wide, in some cases greater than 8m wide. The contacts of the quartz-feldspar porphyries were not directly observed in any of the exposures, however the 2 main strike directions are believed to be southeast and south-southwest. Moderately strong calcite alteration was noted in some outcappings.

Feldspar porphyry dykes were noted in only a few outcroppings on Grid A. They show a medium to dark grey fresh and weathered surface with 1-3mm white rounded, anhedral plagioclase feldspars within a very fine grained, hard, siliceous matrix containing a moderately strong, pervasive calcite alteration and minor biotite. The feldspar porphyries observed were massive, and appeared to be similar in size to and, in places even gradational into the quartz-feldspar porphyries.

SEDIMENTS

Fine grained, biotitic schists, siltstone, sulphide ironstones and garnetiferous sediments were found to underlie approximately 10% of Grid B. There were no sediments found on Grid A. The sediments were found to underlie in the southwest corner of Grid B and strike 275-300° and dip of 70-80° north. The biotitic schists and siltstones were fine grained, moderately hard, with a medium grey fresh surface and show no recognizable bedding structures. The biotite content was variable with the biotite rich sediments appearing fairly schistose, and brown weathering. The less
biotitic, fine grained siltstones weather medium grey and have a poor foliation developed. One percent disseminated pyrite was observed in one exposure of biotitic schist. One small exposure of dark green brown hornblende-biotite schist, with 10-15% biotite was exposed on TL 8W/2+50N. This unit probably represents an interflow sediment or a sediment contaminated mafic flow.

Minor poorly exposed cherty sulphide ironstone was found intercalated with the other sediments and mafic volcanics in the southwest corner of Grid B. This unit where observed was very hard and massive with a medium grey cherty looking fresh surface and a gossanous, red-brown weathered surface. Sulphides consisted of 5-10% fine disseminated pyrite and occasional small, irregular blotches of chalcopyrite. The ironstone also contained a moderate amount of calcite and was moderate to strongly magnetic, probably due to the presence of fine disseminated magnetite and or pyrrhotite.

One large angular boulder of schistose, biotite rich, garnetiferous sediment was found in the southwest corner of the grid area. It was fine grained and biotite rich and contained 5% reddish almandine garnet porphyroblasts up to 5mm in diameter.

MAFIC INTRUSIVES

Mafic intrusive rocks consisting of mafic to intermediate
dykes and diabase dykes were found to underlie approximately 5% of Grid A and 1-2% of Grid B.

Narrow, 15-30 cm wide, fine grained mafic to intermediate dykes were mapped in only a few locations on Grid A. They show a medium grey fresh surface, a medium to light grey weathered surface, are massive, non-magnetic and have a tendency to pinch and swell along strike. They have an average strike of 335° and are hosted by weak to moderately sheared mafic volcanic rocks. These dykes are comprised of 50-70% 1mm anhedral hornblende porphyroblasts within a finer grained, lighter coloured matrix of plagioclase, quartz and hornblende.

Northeast and northwest trending diabase dykes were exposed on both grids. The diabase dykes have a grey-brown weathered surface, a medium grey-green fresh surface, are massive, medium grained, fairly hard, and are primarily comprised of plagioclase and hornblende. The diabase dykes, where observed are moderately magnetic and contain occasional <1mm black magnetite grains.

STRUCTURE, ALTERATION AND MINERALIZATION

Four main shear directions at 047°, 340-350°, 270-280°, and 073° were observed (on Grid A) during the course of the mapping program. These zones were generally narrow (1-2m) and several joint directions were observed to have similar orientations of 040°.
The gold-bearing shear/vein systems located north of Grid A are documented as having similar orientations; 280-290° and 055-060°. The abrupt termination and somewhat arcuate strike of the diabase dykes on Grid A suggest that some northwest faulting or minor folding may have occurred. Within Grid B, minor shearing parallel to the stratigraphy (θ 110°) was observed only in the southwest corner, however, bedrock exposure overall was relatively poor. The most significant structure observed to be present on this grid is an altered shear/fault zone which coincides with the Nameigos River. Shear orientations observed in two outcroppings of this zone along the river banks were 310 to 330°.

Alterations observed on Grid A consisted of a relatively few scattered occurrences of chlorite, calcite and sericite alteration. A 2 cm rusty chlorite-sericite-schist seam containing 3-5% pyrite within a larger 280° shear zone was noted at L8W/0+40S. A weak to moderately foliated, chloritic zone containing a pervasive calcium calcite alteration and small irregular quartz blebs trending 345° was observed at L19+40W/1+25S. A rusty, micaceous schist with disseminated pyrite trending 073° at L13W/5+25N yielded a strongly anomalous Arsenic (As) value of 422 ppm. Several quartz veinlets (1-10cm) containing calcite and rarely pyrite were found at L6W/2+30S (394 ppm As), L6W/2+15S (462 ppm As), BLO/17+25W, BLO/17+75W and 15+20W/0+35S. A 10-25cm wide quartz vein/silicified breccia zone containing trace pyrite (striking 318°) was exposed
crosscutting mafic volcanics and an aplite dyke on the eastern boundary, approximately 50m north of L3W/3+00S. This zone yielded a strongly anomalous As value of 405 ppm. A 20 to 40cm white and grey, coarse grained, granular quartz vein/bleb striking 340° was observed at L15+25W/0+50S. The wallrock of this vein contained weak sericite alteration, trace pyrite and yielded an anomalous As value of 386 ppm. A second large coarse granular, milky white, slightly irregular quartz vein was poorly exposed at L15W/7+20N. This vein was hosted by an aplitic rock and may possibly be part of a large boulder. The several aplite and quartz-feldspar porphyry dykes exposed on Grid A appeared to contain anomalous concentrations of arsenic although no significant alteration, mineralization or shearing was evident. Samples of dyke material containing elevated arsenic levels were found at L15+25W/0+50S (450 ppm As), L16W/3+90N (383 ppm As), L16W/4+75N (452 ppm As) and L8W/1+50S (boulder - 463 ppm As). Anomalous arsenic values were also obtained from samples of sheared and massive mafic volcanics at L8W/1+50S (951 ppm As) and L12W/0+75N (470 ppm As).

Within Grid B, the only significant alteration was observed in two outcroppings of sheared, silicified mafic volcanics along the banks of the Nameigos River. Shearing and strong silicification was observed in the southernmost exposure near the south boundary of the grid, while shearing, silicification, iron carbonate alteration and a fine grained sericite alteration with minor green mica and 1% pyrite was observed in the northernmost
outcropping of this zone at L5S/6+25W. Samples of this material contained weakly anomalous arsenic values. Four samples of a cherty, gossanous sulphide ironstone containing disseminated pyrite and marcasite were taken from an old trench located approximately 300m north of Grid B. No significant anomalous gold values were obtained from these samples.

During the course of the geological mapping program a total of 37 grab samples were collected for analysis from the two grid areas. All samples were analyzed for gold and arsenic by Min En Labs of Timmins, Ontario. The analytical results can be found in Appendix B.

The background gold and arsenic content for the area appears to be <10 ppb and <10 ppm respectively. The highest value for gold obtained from Grid A was 10 ppb, while 30 ppb was the highest value obtained on Grid B. Although no significantly anomalous gold values were obtained from samples taken several strongly anomalous arsenic values were obtained in several samples as previously described.

GEOPHYSICAL SURVEYS

Linecutting

Two grids were established on the Nameigos Lake Property (figure 3). Grid A (Lizar Township) consisted of 24.95 kilometres of grid lines and baselines, the baselines being oriented at 045°. Grid B (Nameigos Township) consisted of 25.13 kilometres of grid
lines and baselines, the baseline being oriented at 135°. On both grids, lines were cut at 100m spacings and pickets were erected at 25 metre intervals.

**Magnetometer Survey**

A magnetic survey was carried out over both grids from August 21 to September 15, 1989 by a 2 man crew from Guy Thibault Exploration Services. Magnetic data was collected with a Geometrics G816 proton precession magnetometer which measures the absolute value of the total magnetic field of the earth with an accuracy of + 1n Tesla. The magnetometer readings were taken at 25m intervals along the grid lines and corrected for diurnal drift by repeated readings at base stations at tie points several times during the day. A total of 1013 and 936 readings were taken on Grid A and B respectively.

**Max-Min II Survey**

A Max-Min II horizontal loop electromagnetic survey was carried out over both grids from August 21 to September 15, 1989 by the same two man crew from Guy Thibault Exploration Services. The transmitter and receiver were carried in-line along the grid lines separated by a constant coil separation of 150 metres. Readings were taken at 25m intervals with transmitter frequencies of 440 Hz and 1777 Hz. A total of 758 and 800 readings were taken
on Grids A and B respectively during the course of the survey.

Geophysical Survey Results

Grid A is characterized by a series of narrow, somewhat irregular, strongly magnetic, northeast, north-south and north-northwest striking diabase dykes. These dykes are primarily in the western half of the grid. The magnetic gradient on the eastern half of the grid is located relatively flat and appears to be underlain predominantly by mafic volcanic rocks. The irregular outlines of the diabase dykes may indicate that late faulting or folding has occurred.

Grid B is characterized by a series of northwest trending moderate to strongly magnetic lenticular anomalies west of the Nameigos River that are caused by diabase, a magnetic garnetiferous amphibolite unit and possibly by magnetite or pyrrhotite bearing ironstone. East of the Nameigos River, the background magnetic values are distinctly lower with a few narrow linear, moderate to strongly magnetic northeast and northwest trending anomalies which reflect the presence of diabase dykes. One small, strongly magnetic rounded anomaly centred at LO/1+00W was not exposed at surface but may represent an irregularly shaped diabase or other mafic intrusive unit.

A large, broad flat magnetic low that occupies the southeast
portion of the grid may be the result of an underlying granitic intrusion. No outcrop exposures were located in the southeast portion of the grid in the area of the magnetic low. The differing magnetic signature on opposite sides of the river tends to support the assumption that a fault zone underlies the Nameigos River.

On both Grid A and B, the electromagnetic data is dominated by several weak to moderately strong quadrature anomalies. All of these anomalies are believed to have been caused by non bedrock sources such as conductive clay filled valleys.

CONCLUSIONS AND RECOMMENDATIONS

A program of linecutting, geological mapping and geophysical surveying has been completed on a portion of Cadington Resources Ltd.'s Nameigos Lake Property.

The work was concentrated on two separate grids within Lizar and Nameigos Townships. Grid A (Lizar Township was found to be predominantly by mafic to intermediate volcanics and by lesser amounts of aplite, quartz-feldspar porphyry and diabase dykes. Grid B (Nameigos Township) was found to be primarily by mafic to intermediate volcanic rocks and by lesser amounts of sediments and diabase dykes.

The geological mapping was successful in outlining various
geological environments favourable for hosting gold mineralization on both grids, and the magnetometer survey provided useful information for areas with poor bedrock exposure. The Max-Min II Survey, however, did not outline any conductive zones on either grid. This does not rule out the possibility of there being potentially gold-bearing disseminated sulphide zones within the grid areas since the Max-Min system cannot detect disseminated sulphide mineralization which is typically associated with several types of gold deposits.

No significantly anomalous gold values were obtained from the samples taken however, favourable alteration zones, structure zones and strong arsenic values were encountered which warrant follow-up drilling.

It is recommended that 2000 feet of diamond drilling be carried out to test various geological targets on both grid areas. A second phase of drilling would be contingent upon the results of the preliminary drill program.
REFERENCES

Siragusa, G.M.
1977
Geology of the Kabinakagami Lake, District of Algoma; Ontario Division of Mines, GR 159, 39p. Accompanied by Map 2355, scale 1:63,360.

Siragusa, G.M.
1978

Tortosa, D.J.J.
et al 1988

CERTIFICATION


1. I am a graduate of Laurentian University having obtained an Honours Bachelor of Science Degree in Geology in 1985.

2. I have been practicing my profession in Canada since 1985.

3. I have no direct or indirect interest in the properties, leases or securities of Cadington Resources Ltd. nor do I expect to receive any.

4. That this report is the product of my knowledge of the area, and examination of previous work and reports, and information obtained during exploration programs conducted on the property.

Dated at Timmins
this 13th day of October 1989

Henry P. Hutteri, H. Bsc.
CADINGTON RESOURCES LTD.
NAMEIGOS LAKE PROPERTY
CLAIM LIST

Lizar Township

895067 - 070 *
895078 - 083 *
895092 - 097 *
895106 - 110 *
895111
895118 - 123
988298 - 301
988304 - 305

Mozambik Township

979606 - 647
988271 - 288
988292 - 297
988302 - 303

Nameigos Township

969472 - 477 *
969478 - 485
969486 - 488 *
969489 - 511
979699 - 736
979737 - 742 *
979743 - 748

Note * claims covered by current work program
Certificate of Analysis

Certificate No. 76158
Date Sept. 14, 1989

Received Sept. 11, 1989

Split Core Samples

Submitted by Durham Geological Services Ltd., Timmins, Ontario. ATTENTION: H. Hutteri
Proj. #D-57 File #92-0792

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NOTE: Arsenic results to follow.

Per G. Lebel - Manager /ns

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244  FAX (705)642-3300
Certificate of Analysis

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Per G. Lebel - Manager
Established 1928

Swastika Laboratories
A Division of Assayers Corporation Ltd.
Assaying - Consulting - Representation

Certificate of Analysis

Certificate No. 76158 - A  Date Sept. 19, 1989
Received Sept. 11, 1989  29 Split Core Samples & Rock
Submitted by Durham Geological Services Ltd., Timmins, Ontario.

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Per G. Lebel - Manager

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244  FAX (705) 642-3300
### Certificate of Analysis

**Certificate No.:** 76352 - A  
**Date:** Oct. 2, 1989

**Received:** Sept. 26, 1989  
**Rock Samples:** 12

**Submitted by:** Durham Geological Services Ltd., Timmins, Ontario.

**Project #:** D-57  
**File #:** 92-0848  
**ATTENTION:** H. Hutteri

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P.O. Box 10, Swastika, Ontario P0K 1T0  
Telephone (705) 642-3244  
FAX (705) 642-3300
- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180 m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.
SPECIFICATIONS:

Frequencies: 222, 444, 668, 1777 and 3555 Hz.

Modes of Operation:
- **MAX**: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with reference cable.
- **MIN**: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
- **V.L.**: Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250 m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIIF).

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

Scale Ranges:
- In-Phase: ±20%, ±100% by push-button switch.
- Quadrature: ±20%, ±100% by push-button switch.
- Tilt: ±75% slope.

Readability: In-Phase and Quadrature: 0.25% to 0.5% ; Tilt: 1%.

Repeatability: ±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output: 222 Hz: 220 Atm²
- 444 Hz: 220 Atm²
- 668 Hz: 120 Atm²
- 1777 Hz: 60 Atm²
- 3555 Hz: 30 Atm²

Receiver Batteries: 9V trans radio type batteries (4). Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

Transmitter Batteries: 12V 6 Ah Gel-type rechargeable battery. (Charger supplied).

Reference Cable: Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Voice Link: Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Indicator Lights: Built-in signal and reference warning lights to indicate erroneous readings.

Temperature Range: -40°C to +80°C (-40°F to +140°F).

Receiver Weight: 6 kg (13 lbs.)

Transmitter Weight: 13 kg (29 lbs.)

Shipping Weight: Typically 60 kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notice.

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 455-1612 Cables: APEXPARA TORONTO Telex: 06-966775 APEXPARA MKHM
PORTABLE PROTON MAGNETOMETER
MODEL G-816
Data Sheet
August 1974

★ 1 gamma sensitivity and repeatability
★ Very small size and weight: less than 12 lbs complete with batteries and sensor
★ Over 10,000 readings per set of alkaline “D” cell (flashlight) batteries
★ Provision to attach sensor to carrying harness for use without staff
★ Pushbutton operation—numeric display directly in gammas
★ Total field measurements— independent of orientation—no calibration—no leveling

The Model G-816 is a complete portable magnetometer for all man-carry field applications. As an accurate yet simple to operate instrument, it features an outstanding combination of one gamma sensitivity and repeatability, compact size and weight, operation on standard universally available flashlight batteries, ruggedized packaging and very low price.

The G-816 magnetometer allows precise mapping of very small or large amplitude anomalies for ground geophysical surveys, or for detail follow-up to aeromagnetic reconnaissance surveys. It is a rugged, lightweight, and versatile instrument, equally well suited for field studies in geophysics, research programs or other magnetic mapping application where low cost, dependable operation and accurate measurements are required.

For marine, airborne or ground recording systems consider GeoMetrics Models G-801, G-803, and G-826.
**Ministry of Northern Development and Mines**

**Ontario**

**Report of Work**

(geophysical, geological and geochemical surveys)

**Type of Survey(s)**
- geological mapping
- line cutting

**Recorded Holder(s)**
- Cadington Resources Limited

**Address**
- 27 Queen Street E., Suite 402, Toronto, Ontario M5C 1R5

**Survey Company**
- Durham Geological Services Inc.

**Name and Address of Author (of Geo-Technical Report)**
- Henry Hutteri, Box 1330, Timmins, Ontario P4N 7J8

**Date of Survey (from to)**
- 21.8.89, 15.9.89

**Credits Requested per Each Claim in Columns at right Mining Claims Traversed (List in numerical sequence)**

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**Special Provisions**

- 40 days (this includes line cutting)
- 20 days (for each)

**Man Days**

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**Airborne Credits**

- Electromagnetic
- Magnetometer
- Other

**Total miles flown over claim(s).**
- 36

**Certification Verifying Report of Work**

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

**Name and Address of Person Certifying**
- Henry Hutteri, Box 1330, Timmins, Ontario P4N 7J8

**Date**
- Oct. 2, 1989

**Certified By (Signature)**
- [Signature]

**For Office Use Only**

**Total Days Cr. Recorded**
- [Signature]

**Date Approved as Recorded**
- [Signature]

**Received Stamp**
- [Stamp]

**Date Recorded**
- Feb. 16/89

**Date Approved as Recorded**
- Provincial Manager, Mining Lands
**Type of Survey(s)**

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**Recorded Holder(s)**

- Cadington Resources Limited

**Address**

27 Queen Street East, Suite 402, Toronto, Ontario M5C 1R5

**Survey Company**

Guy Thibault Exploration Services

**Name and Address of Author (of Geo-Technical Report)**

Henry Hutteri, Box 1330, Timmins, Ontario P4N 7J8

**Date of Survey**

21 08 89

**Credits Requested per Each Claim in Columns at right**

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**For Office Use Only**

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Certification Verifying Report of Work

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

Name and Address of Person Certifying

Henry Hutteri, Box 1330, Timmins, Ontario P4N 7J8

Telephone No. 705-268-6644

Date Oct. 2/89

Certified By (Signature)
March 16, 1990

Dear Sir:


The assessment work credits, as listed with the above-mentioned Notice Intent have been approved as of the above date.

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

Yours sincerely,

[Signature]

W.R. Cowan
Provincial Manager, Mining Lands Mines & Minerals Division

LS: pt
Enclosure

cc: Mr. G.H. Ferguson
Mining and Lands Commissioner
Toronto, Ontario

Cadington Resources Ltd.
Toronto, Ontario

Henry Hutteri
Timmins, Ontario

Resident Geologist
Wawa, Ontario