

GM 34023

REPORT ON GROUND GEOPHYSICAL & GEOLOGICAL FOLLOW-UP, JAMES BAY JOINT VENTURE

Documents complémentaires

Additional Files



Licence



Licence

Cette première page a été ajoutée
au document et ne fait pas partie du
rapport tel que soumis par les auteurs.

Énergie et Ressources
naturelles

Québec 

REPORT ON
GROUND GEOPHYSICAL & GEOLOGICAL FOLLOW-UP
JAMES BAY JOINT VENTURE
BY
CANEX PLACER LIMITED

Ministère des Richesses Naturelles, Québec
SERVICE DE LA
DOCUMENTATION TECHNIQUE
30 JAN 1976
Date:
No GM: 34023

LIST OF CONTENTS

PART I Ground Geophysical Follow-Up by J.B. Boniwell

PART II Geological Report by F.M. Isenor

APPENDIX Assay Reports

Accompanying Maps

Bound into Report:

Figure 1	Location of Airborne Surveys	1" = 16 miles
2	Location of Grids, Area B	1" = $\frac{1}{2}$ mile
3	Location of Grids, Area C	1" = $\frac{1}{2}$ mile
4	Location of Grids, Area D	1" = $\frac{1}{2}$ mile
Figure D-1	Prospecting over L-8 & L-18 Systems	1" = $\frac{1}{4}$ mile
D-2	Prospecting over L-72 System	1" = $\frac{1}{4}$ mile
D-3	Prospecting over L-90 System	1" = $\frac{1}{4}$ mile

In Map Pockets:

Drawing No.	B-1, B-2, B-3	Ground Mag., EM.17 & Geological Surveys - Anomaly B-1	1" = 200'
No.	B-4, B-5, B-6	Ground Mag., EM.17 & Geological Surveys - Anomaly B-2	1" = 200'
No.	C-1, C-2, C-3	Ground Mag., EM.17 & Geological Surveys - Anomalies C-4 & C-5	1" = 200'
No.	C-4, C-5, C-6	Ground Mag., EM.17 & Geological Surveys - Anomaly C-6	1" = 200'
No.	C-7, C-8, C-9	Ground Mag., EM.17 & Geological Surveys - Anomaly C-8	1" = 200'
No.	C-10, C-11, C-12	Ground Mag., EM.17 & Geological Surveys - Anomaly C-9	1" = 200'
No.	D-1, D-2, D-3	Ground Mag., EM.17 & Geological Surveys - Anomaly D-10	1" = 200'
No.	D-4, D-5, D-6	Ground Mag., EM.17 & Geological Surveys - Anomalies D-11, 12 & 13	1" = 200'
No.	D-7, D-8, D-9	Ground Mag., EM.17 & Geological Surveys - Anomaly D-14	1" = 200'
No.	D-10, D-11, D-12	Ground Mag., EM.17 & Geological Surveys - Anomaly D-15	1" = 200'



**EXCALIBUR
INTERNATIONAL
CONSULTANTS LTD.**

1522 Clearwater Drive, Mississauga, Ont., Canada L5E 3A3 • Tel. (416) 278-1545

PART I

GROUND GEOPHYSICAL FOLLOW-UP

JAMES BAY JOINT VENTURE

TWPS. 1815, 1917, 2018, 2019, P.Q.
1916

FOR

CANEX PLACER LIMITED

BY

J. B. Bonfwell
Exploration Geophysical Consultant

- December 13, 1974 -

LIST OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
WORK UNDERTAKEN	1
DISCUSSION OF RESULTS	2
GRID B-1	2
GRID B-2	2
GRIDS C-4, C-5	3
GRID C-6	3
GRID C-8	4
GRID C-9	4
GRID D-10	5
GRID D-11, D-12, D-13	6
GRID D-14	8
GRID D-15	8
CONCLUSIONS AND RECOMMENDATIONS	9

Microfilm

PAGE DE DIMENSION HORS STANDARD

MICROFILMÉE SUR 35 MM ET

POSITIONNÉE À LA SUITE DES

PRÉSENTES PAGES STANDARDS

Numérique

PAGE DE DIMENSION HORS STANDARD

NUMÉRISÉE ET POSITIONNÉE À LA

SUITE DES PRÉSENTES PAGES STANDARDS

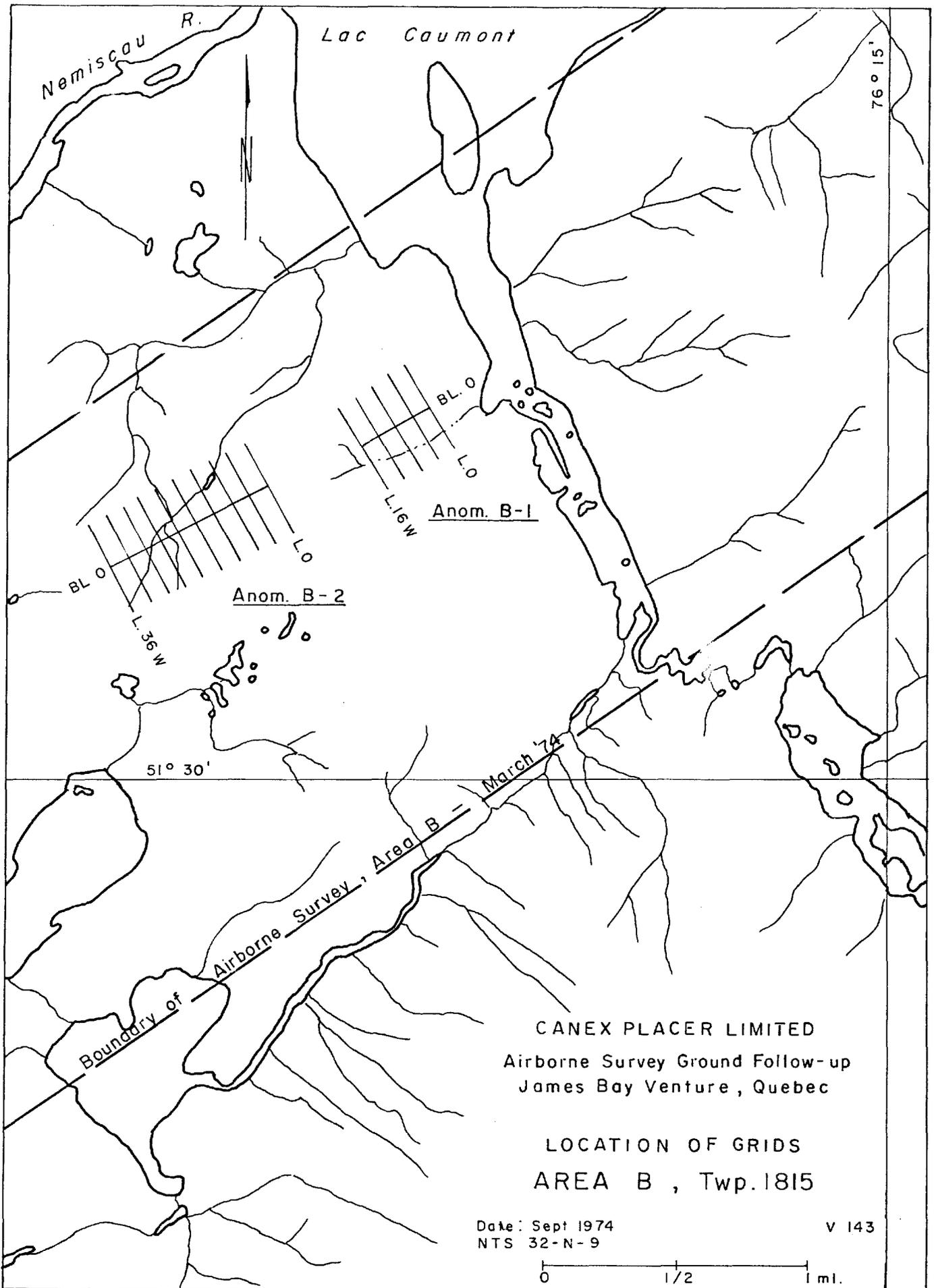


Fig. 2

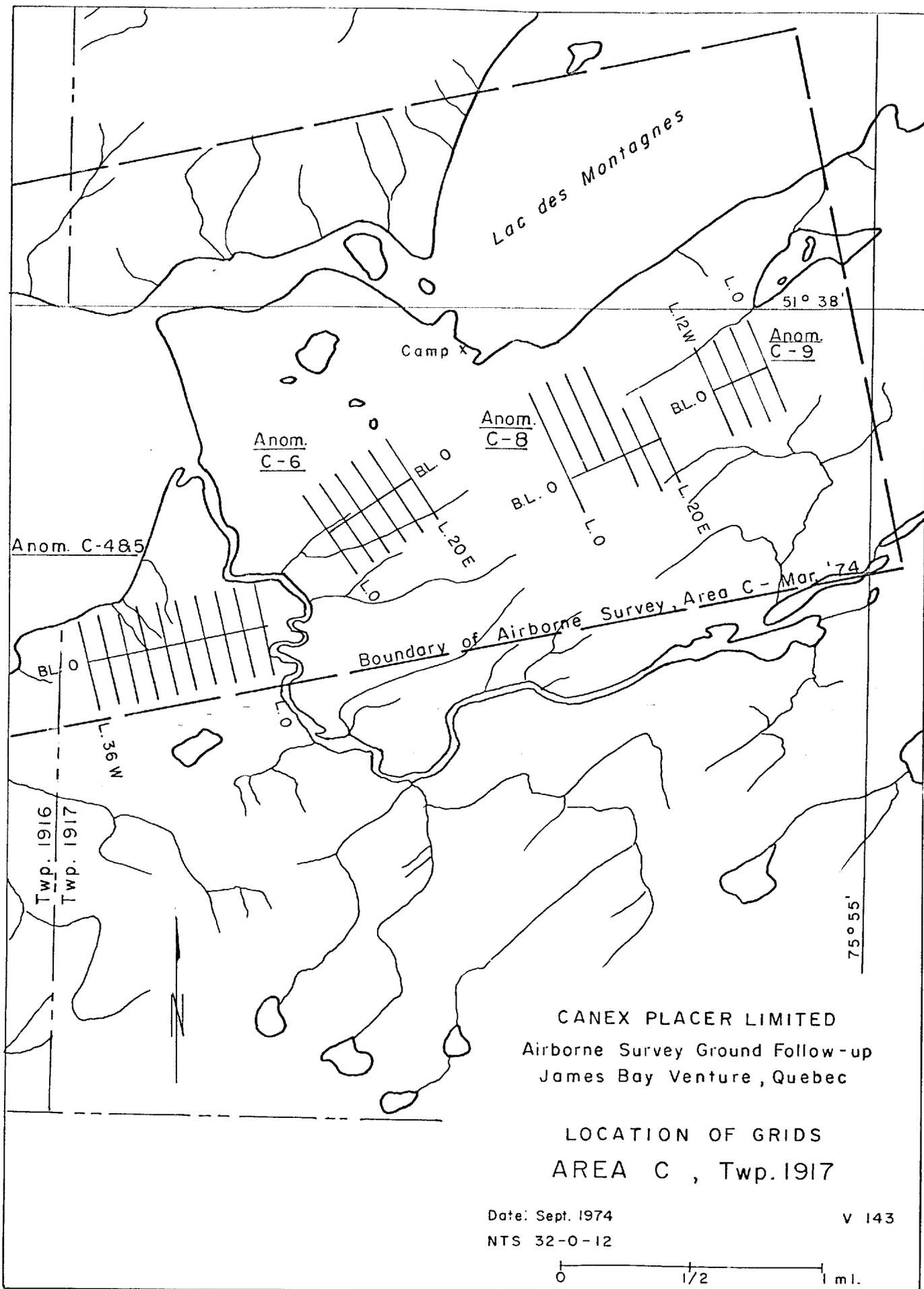


Fig. 3

Microfilm

PAGE DE DIMENSION HORS STANDARD

MICROFILMÉE SUR 35 MM ET

POSITIONNÉE À LA SUITE DES

PRÉSENTES PAGES STANDARDS

Numérique

PAGE DE DIMENSION HORS STANDARD

NUMÉRISÉE ET POSITIONNÉE À LA

SUITE DES PRÉSENTES PAGES STANDARDS

INTRODUCTION

During the winter 1974, three selected small areas in the James Bay Joint Venture reconnaissance region were flown by helicopter em. This work was contracted to Aerodat Limited of Toronto utilizing their high sensitivity coaxial in-phase, out-of-phase towed bird system operating at 915 Hz. The obtained data were of high quality and contained a number of anomaly systems. The latter were screened on the basis of known geology, their expressed magnetic content and their inherent electrical characteristics in that order. Displayed dimensions and degree of isolation were also factors.

As a result, thirteen airborne anomaly events emerged with heightened probabilities to become the immediate object of investigations on the ground conducted, as it turned out, from ten separate grids cut and picketed for the purpose. Results are reported individually for each grid as follows below. In the completed coverage, the totals involved are 31.3 miles of line cut and chained, 26.0 miles of line geophysically surveyed by one or more methods.

WORK UNDERTAKEN

Geophysical traversing was logically spearheaded by ground em. method with attendant magnetic measurement. For the first, a Geonics model EM-17 horizontal loop system was employed operating at a coil separation of 300' and an applied frequency of 1600 Hz. In support, magnetic readings were taken with a Scintrex model MF-1 vertical force fluxgate magnetometer with an accuracy of about 20 gamma on the lowest range. Results have been presented in profile and contour plans at a consistent scale of 1"=200'.

DISCUSSION OF RESULTS

GRID B-1

A singular response in in-phase em. has been resolved on line 12W of this grid. It can be interpreted to represent a 40' wide conductor source lying between 60' - 100' south of the BL where it closely correlates with a local 9000 gamma magnetic high. Sulphides associated with a peridotite intrusion can be presumed from outcrop evidence, and given the amount of copper returned from one gossan sample here (1.02%), a test drilling of the conduction appears warranted.

A very minor second axis appears in em. flanking to the south side. It generally follows the trend of the sediments mapped through this vicinity, albeit specifically with a gabbro contact, but is entirely non-magnetic throughout and is otherwise of little character.

GRID B-2

From a fairly extensive grid thrown out to embrace a number of weak indications in airborne em. and magnetics, a rather promising and coherent picture has emerged. It focusses on the singular ground response in em. obtained at 1+25N on line 4W and its peripheral relationship to a large magnetic centre 500' wide encompassing the BL section 20W to 28W. The latter body is clearly intrusive and geologically is identified with a peridotite carrying minor sulphides. The conductor itself is distinctively and separately magnetic (in the amount of about 1000 gamma), and is manifestly wide (60') and of high quality. It is projected to lie in metavolcanics in near-contact with a gabbroic phase of the central intrusion. On all the odds, this is a premier drill target situation.

As prescribed by the air-data, the grid also reveals the long axes of conduction to the south side. These are formational horizons characteristic to the meta-sediments in which they lie. They are themselves essentially non-magnetic and are in each instance open along strike. It is quite possible the two axes present are en echelon members of the one horizon; in either event they or it are irrelevant to the intrusive and related mineral chances.

GRIDS C-4, C-5

Three very modest conductor expressions were resolved from this grid coverage but all obviously lie on strike with each other and are likely in consequence reappearing elements of the one geologic horizon. This probability is supported by magnetic and outcrop evidence which places the system in a metasedimentary setting flanking to a magnetite iron formation. The conducting horizon is itself non-magnetic.

Such outcome to the investigations here is a disappointment in that a known peridotite showing just off the north-west end of the grid along the lakeshore has found no developing extensions into this grid area as originally hinted at by the air-data. Two, perhaps three local magnetic anomalies along the north side of the grid might represent further occurrences of peridotite but the underlying sources nowhere outcrop, nor do they have, on present findings, related conductor effects.

GRID C-6

Some reasonably strong anomaly in em. has been recorded here. A number of peaks in fair amplitude and quality are shown to persist over at least 1000' of strike; however taken together these responses essentially form one dual axis system running with the geology and remaining open to the east. The

cause appears partly in outcrop: massive pyrite interlayered with quartz biotite schist and quartzite in a prevailing metasedimentary sequence. Minor magnetic lows (25 gamma) coincident with the em. axes from place to place are consistent with such pyrite incidence.

There is little interest inherent. A small peridotite body outlined on line 12E at 5+50S apparently has had no impact on this em. system; at the same time it possesses no em. expressions of its own.

GRID C-8

A strong fair quality single-line anomaly on line 12E dominates this grid area. Exhibiting a good 40' width and strike length of about 800', this pre-eminent feature occurs in the immediate context of an ultramafic intrusion or intrusions according to outcrop and magnetic evidence. Not so recognizable however is the intrinsic magnetic character of the underlying conduction. In its weak extensions to the adjacent lines 8E and 16E, the strike axis is seen to be faintly magnetic (circa 50 gamma) but on the central definitive line 12E the presence of interfering magnetic gradients mask any clearly ascribable relief. Notwithstanding, the conductor is too well located and in itself too attractive an event not to be tested for its contained mineral possibilities.

GRID C-9

A through-going, more than 1200' long conductor has been delineated in this grid coverage. Despite its better-than-average resolution and quality on line 8W, it remains a very linear system with strong formational overtones. Moreover it is mostly non-magnetic and remains open at both ends.

Yet for all that, the conductor can not be entirely dismissed. A magnetic feature identified with a serpentinite by outcrop noses into the system at line 8W, and it is at this very point as noted that conduction suddenly improves and perceptibly widens. Local magnetic activity also becomes quite intense suggesting that there could be a controlled incidence of transformed sulphides here. On this basis then there is some residual interest to the system; however what keeps this interest limited besides size is the fact that in somewhat similar circumstances a DDH has already been put down on the conductor on line 0 in a previous investigation of the region (by Inco and Noranda). The case for a further drill investigation is in consequence somewhat less than compelling.

GRID D-10

A weak but definite conductor has been established over a minimum 800' of strike extent in this grid area. Quite moderate, even mediocre in its indicated quality, this conductor nonetheless has a considerable innate appeal, not the least of which is its substantial width potential (up to 140') at its centre (line 12W). It lies immediately against a small outcrop of serpentized peridotite which on the magnetic evidence is in fact quite extensive. Indeed by all the odds this is a heavily intruded area with more than one ultramafic body present.

In this context the conductor is extremely well located, but because of its intimacy with the ultramafics its own magnetic character is hard to discern. For all that, it fulfills the requirements of a contact sulphide mineralization, particularly of a spotty disseminated mineralization that is often so typical of this kind of nickel occurrence. The conductor as it stands therefore constitutes a drill target and possibly a very good one.

GRIDS D-11, D-12, D-13

One large grid was used to cover the three target situations in this general area. The first of these, D-11, provided a classic magnetic conductor anomaly 40'-50' wide defined over approximately 1000' strike length. Magnetic correlations reached to 2000 gamma above background at the system centre. However no ultramafic body was found in this vicinity although a heavy sulphide gossan was sampled on the conductor north flank. It seems likely that massive pyrrhotite is involved as source, and it comes as no surprise therefore to find the conductor has been adequately explored by an old DDH between lines 52W and 56W.

In the central or D-12 sector of the grid, three individual conductor axes have been defined by the ground surveying. All three vary slightly in their characteristics but not so much as in their magnetic expression. This is important since it places their spatial relationships into a clearer perspective than does the em. alone. Contrary to first appearances, none of the three are directly related to each other, nor is the most westerly on line 40W strike-related to D-11. What the magnetics indicate instead is that the line 40W conductor lies on a horizon that ties in with a weak, narrow and isolated em. anomaly on line 72W well to the other side of the D-11 conductor.

The line 40W em. anomaly therefore provides a test point at another stratigraphic level from D-11. The conduction is of fair quality here but is most marked by 1000 gamma in local correlation. It is presumed to represent massive pyrrhotite mineralization in metavolcanics. The nearest known ultramafic outcrops 600' to the south-east.

On line 28W an incomplete anomaly resolution implies a conductor located 400' south of the BL. Its width remains unestablished by reason of a small lake to the south side that limited coverage. This conductor as positioned correlates with a modest 200 gamma magnetic peaking. Even more pertinent is the presence of peridotite outcrop just 100' to the east, and the magnetic suggestion

of a contact continuity westwards to the lake-edge and another peridotite outcrop located at approximately 34W/5+50S. The conductor has not been fully explored in this direction either. In consequence there exists in this set of circumstances a certain potential that merits a drill-check.

Further eastwards some further weak conducting effects have been observed. The best of these is situated 250' north of the BL on line 24W. Displaying a possible width of 70' it is otherwise a modest electromagnetic event whose appeal substantially derives from its lively location on the flank of a strong magnetic feature whose chances of being due to a peridotite are good. The setting however is confused by a through-going magnetite iron formation, but this is considered to swing north of the conductor proper. A peridotite in outcrop at the north end of line 4W on the other hand could well relate to the shoulder of magnetic relief that noses into and in part underlies the present conductor locality on line 24W. This combination of evidence is quite suggestive of magnetic contact sulphides as cause, and such possibility is certainly worthy of further investigation.

The far east end of the grid area encompasses the D-13 anomaly occurrence. Just one conductor event has been ground detected and it virtually confined to its line of recording. It is nevertheless a very reasonable conductor very reasonably located with respect to known local ultramafics (400' to the east). What the conductor most suffers from are its narrow width and the lack of any evidence, vague or otherwise, that it is itself magnetic. If this then is a sulphide conductor, it is mostly pyritic and curtailed. While of passing interest, this is simply not beckoning enough a possibility to command first-round drilling attention.

GRID D-14

An exceedingly strong persistent conductive zone has been traced completely across this grid area to remain open at each end. Over the strike distance involved (3200') the zone maintains a typical width of 50'. Clearly it is a major formational feature. It is also modestly magnetic at times and one correlation of around 1000 gamma (on line 20W) has been noted. This in this instance does not favour pyrrhotite (although it remains a possibility) so much as it does magnetite in a weak iron formation incidence. Graphite is the probable overall conducting cause.

On the south side of the grid, two other conductors appear. One, far from fully defined, follows a mapped peridotite running 50' north of the BL and parallel to it. It is a conductor that already has been the target for two DDHs completed in a past exploration here and was presumably found wanting. The second conductor lies off the western nose of this ultramafic body and in some ways could be the most interesting. It exhibits a good width, 70' and upwards and is moderately magnetic, 400 - 700 gamma. On outcrop or float geology however it falls within the same metavolcanic unit as the major formational zone lying to the north, and since it remains open to the west and strengthens in that direction there is equal chance that it represents yet another such zone which in its eastward extent has been merely interrupted by the intrusion. The possibility weighs sufficiently heavy to exclude an immediate drilling recommendation.

GRID D-15

In a rather strange result, two conductor axes were picked up on opposite sides of this grid area but on strike with each other. They are joined over the intervening distance (1600') by an undistorted dyke-like magnetic ridge of considerable local relief (up to 10,000 gamma). This is shown by geologic mapping to be caused by a lenticular body of peridotite conformable with the metavolcanic-metasedimentary sequence in which it resides. The observed

conduction which is both of reasonable strength and quality tends to lie towards its southern flank, where sulphides in gossan have been repeatedly noted in the eastern part of the grid. Trenching and some minor drilling has been directed towards these sulphides in the past, again presumably without encouragement. Although on the face of it, the western side remains untouched, immediate probabilities in the circumstances are not compelling.

CONCLUSIONS AND RECOMMENDATIONS

To the extent it has been taken it can be concluded that the geophysical ground follow-up completed has effectively recovered and partially screened the vast majority of the airborne em. sources it sought to define. There were some slight departures from airborne expectations mostly in strike relationships and the quality or reality of the magnetic correlations. Occasionally too the airborne sampling and/or sensitivity was shown to be greater than that on the ground, but this merely served to provide a desirable discrimination against the very small conductor. No deeply buried conductors were encountered.

Final screening of the ground events in this programme was provided potently by a very significant geological mapping working with unusual amounts of outcrop. As a result certain highly attractive anomalies in geophysical terms could be discarded on geologic grounds including evidence of previous investigations, particularly drilling. The end-product is therefore a number of situations which are essentially geophysical in character but possess high geologic probabilities. Drilling is recommended for each of these as follows:

<u>GRID</u>	<u>DDH #</u>	<u>COLLAR LOCATION</u>	<u>BEARING</u>	<u>DIP</u>	<u>LENGTH</u>
B-1	B-1-1	L12W, 1N	Grid S	-45°	350'
B-2	B-2-1	L4W, 3N	Grid S	-45°	350'
C-8	C-8-1	L12E, 1+50N	Grid N	-45°	450'
D-10	D-10-1	L12W, 2N	Grid S	-45°	450'
D-11, 12 & 13	D-12-1	L40W, 0+50S	Grid S	-45°	300'
D-11, 12 & 13	D-12-2	L28W, 2+50S	Grid S	-45°	400'
D-11, 12 & 13	D-12-3	L24W, 4+50N	Grid S	-45°	450'

These seven holes provide a total drilling footage of 2750'. They are put forward as a minimum programme to be completed during the winter months in early 1975.



JBB:sm

December 13, 1974

J. B. Boniwell

Exploration Geophysical Consultant

PART II

GEOLOGICAL REPORT

ON THE

JAMES BAY JOINT VENTURE

V.143

BY

CANEX PLACER LIMITED

Toronto.
November 1974.

LIST OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
PREVIOUS WORK	1
PRESENT WORK	2
GENERAL GEOLOGY	3
ROCK DESCRIPTION	3
AREA B-1	7
AREA B-2	8
AREA C-4 & C-5	9
AREA C-6	9
AREA C-8	10
AREA C-9	10
AREA D-10.	10
AREAS D-11, D-12, D-13	11
AREA D-14.	12
AREA D-15.	12
PROSPECTING IN AREA D.	13
CONCLUSIONS & RECOMMENDATIONS.	14

INTRODUCTION

General:

This report deals with the geological mapping performed by Canex Placer Limited within its original Area 'C' of the 1973 reconnaissance program. (See Summary Report dated November 1973).

Area 'C' was broken down into 3 favourable areas on which grids were cut, namely Areas B, C and D. See Figure 1.

Rock descriptions are given as well as a separate summary of the rock units found on each grid.

Some prospecting was also performed and a summary is included.

Location:

The areas of interest are found within 25 miles north of the Rupert River in northwestern Quebec and east of James Bay.

Access:

Float planes from Chibougamau provided access to the region.

Chibougamau to Lac du Montagnes (C) - 144 miles

Chibougamau to Lac Lemare (D) - 150 miles

PREVIOUS WORK

As mentioned in 1973 Summary Report, only a minor amount of detailed information is available. Mapping on a regional scale by the Quebec Department of Natural Resources and subsequent reports and maps provided some help to the geology.

contd. ...

Old claim posts and cut lines were present in every area. Evidence of diamond drilling was observed on the following grids: C-9, D-12, D-14 and D-15. Drilling may have been performed on B-1 but could not be substantiated. Trenching has been carried out on C-8, D-13 and D-15.

PRESENT WORK

Field work was performed between June 26 to August 8, 1974 and consisted of the cutting of approximately 35 miles of line on 10 separate grids in the 3 areas. (See Figures 2, 3, 4). Geological mapping as well as horizontal loop EM-17 and magnetometer surveys were performed.

A maximum of 9 Canex personnel made up the field party. Two rubber boats were used in Areas C and D where possible. An Allouette II helicopter of Lac St. Jean, Montreal, under contract to James Bay Hydro Electric Development, was on loan for a very limited time in order to complete work in Area D.

contd. ...

GENERAL GEOLOGY

The following is a Table of Formations relevant to the areas upon which work was performed.

	Pegmatite:	White to pink, containing muscovite and garnet
	Ultramafic Rocks:	(a) Serpentinized peridotite
P		(b) Green tremolite-rich rocks
R		(c) White weathering, asbestos-bearing rocks, locally micaceous
E	Mafic Rocks:	Meta gabbro
C	Amphibolite:	Plagioclase and hornblende gneisses. Probably metasedimentary
A		
M	Amphibolite:	Metavolcanic in origin. Locally interlayered with siliceous tuff
B		
	Fine grained Paragneiss:	Quartz-biotite schist
R		" " -garnet schist
I		" " -andalusite schist
		" " -cordierite schist
A		Iron Formation
N	Quartz-rich Paragneiss:	Quartzite Green quartzite
	Granitic Gneiss:	Porphyritic (?) possibly meta arkose

ROCK DESCRIPTIONGranitic Gneiss:

This rock-type was observed on grid C-6 in one locality, as a porphyritic rock containing coarse grained, pink feldspar. The rock probably is a meta arkose derivative but could be of granitic origin.

contd. ...

Quartz-rich Paragneiss:

This rock-type was observed only in Area 'C' where it was especially abundant in the vicinity of Lac du Montagnes. These are quartz-rich rocks locally approaching quartzite in composition and on C-4 and C-5 and C-6 were observed to contain a chromite-rich mica, fuchsite, which imparts a green colouration to the rock.

Fine grained Paragneiss:

A number of different mineral constituents occur in this group which reflect variations in the original rock's composition. The rocks are fine grained and form low-lying outcrops which weather brown to red brown. The most common rock-type is a quartz-biotite schist but schists containing red garnet, andalusite, cordierite and sillimanite were also recognized. Locally on Grids D-11, D-12 and D-13, some layers contain up to 80% garnets. Commonly, banded oxide iron formation is associated with the quartz-biotite schists. In the iron formation magnetite-rich layers from 1/4" to 1/2" thick alternate with a quartz-rich sediment. As observed the Iron Formation is up to 4 feet wide and follows the local schistosity direction which parallels the bedding. However, due to the low weathering nature of the rock, most of the Iron Formation on the maps was inferred from geophysical evidence.

Amphibolite (meta-basic volcanic):

Amphibolite representing meta volcanics, possibly basalt, are the second most abundant rock-type in the area. Although rare in Area 'C', this rock-type is very prevalent in Areas 'B' and 'D'.

contd. ...

The rocks weather dark grey, but are essentially dark green to black and range from fine to coarse grained. Hornblende is the major constituent, but plagioclase forms up to 50% of the rock volume in places. A schistosity is very well developed.

In Area 'D', a light grey, siliceous tuff is interlayered with the amphibolite. The layers, about 1-inch thick, are discontinuous and pinch and swell along strike.

Amphibolite (metasediment):

These rocks are possibly better described as plagioclase and hornblende gneisses and were mapped as being present in Area 'C'. In this area they are associated with the quartz-biotite schists and commonly interlayered with the schists.

Ultramafic rocks:

Two general types were mapped in the areas with several minor variations being present. The first type ranged from peridotite to dunite and usually occurred as high rounded weathered outcrops. This feature was especially prominent on grid B-1 where the ultramafics offset the metabasalts (amphibolites) locally. The peridotite varied from a rough red brown weathering rock to a white weathering, asbestos-bearing serpentite that was common only on grid D-15 and the adjacent area to the east. All peridotites are serpentized to some degree and are blue green on fresh surface. Magnetite varies from nil to as much as 15%. On grid B-2, small rusty zones occur, oriented perpendicular to the general strike of the peridotite.

contd. ...

The second major type of ultramafic rock is light green and contains intergrown tremolite crystals. It occurs within the metavolcanic amphibolites as a sill-like feature, up to 40 feet thick, as seen on L-16-W of grid D-13 in the vicinity of a trench previously blasted to examine a small gossan zone. However, in other areas this tremolite-rich rock forms masses as small as 2 feet in thickness within the metavolcanics.

Local variations included a rock-type made up entirely of a micaceous mineral, possibly chlorite. This is the same type as was observed in some Noranda core on grid C-5 as well as some Inco core on grid C-9. However the main outcrop was observed east of grid D-15. (See section on prospecting).

In general, these ultramafic bodies seem to be associated with the metavolcanics and locally offset the schistosity of the amphibolites.

Gabbro:

Gabbro is common on grids B-2 and B-1. It consists of plagioclase which forms up to 70% but usually about 50% of the rock volume. The bulk of the remainder is dark green amphibole, secondary after pyroxene. The amphibole on weathered surfaces stands out in relief. Some amphibole is altered to a lighter green mineral. Grain size is variable but is usually medium grained; a crude layering is common.

contd. ...

On grid C-8, a small body of gabbro was trenched. Here the gabbro is similar except for zones of fibrous amphiboles which host tourmaline crystals.

Pegmatite:

Pegmatite was most common in Area 'C' where it is white and is composed of quartz, orthoclase, muscovite and garnet. A pink variety was seen locally. The pegmatites intruded the meta-sediments and commonly are boudinaged. A minor amount of pegmatite was mapped in Area 'B' but was mainly observed in Area 'D', on the fringes of the mapped grid.

AREA B-1

A band of quartz-biotite schist (metasediments) underlie the southern portion of the grid. Magnetite iron formation was also recognized and appears to be present throughout this unit.

Amphibolite (metabasalt) forms a wide band through the northern section of the grid.

There is a gabbroic intrusion within the centre of the grid between the metasediments and metabasalts. It contains abundant plagioclase and appears to be similar to that found on grid B-2.

Serpentinized peridotite is common and occurs within the amphibolites. One large body follows the baseline for a length of about 600 feet and may be a differentiate of the gabbro located to the east and south. Smaller and irregular ultramafic bodies contained within amphibolite were observed along the northern part of L-16-W.

contd. ...

Small gossan areas were observed associated with pyrite. A small grab sample (No.44926) taken from Baseline at L-12-W containing approximately 3 percent visible sulphides assayed .03% Ni, 0.14% Cu; a second small grab sample (No.44898) of gossan assayed 0.01% Ni, 1.02% Cu.

Canex's baseline parallels an old drill road. Indications that a hole may have been drilled around 1+50N on L-12-W were observed. At this location a clearing off the drill road is present and some old core trays were observed. However, no sills, casing or other markings could be located.

AREA B-2

Swamp underlies a large portion of this grid. Serpentinized peridotite occurs along the baseline at L-24 and to the north. The peridotite weathers brown but occurs with only slight relief. Sections of tremolite along with small rusty zones are common. Some asbestos fibre and associated magnetite was observed. A small grab sample (No.44897) of peridotite near one of the rusty areas assayed 0.08% Ni, 0.14% Cu.

Gabbroic outcrops occur in the northeast. The gabbro consist of 50% to 70% plagioclase and a dark green amphibole that weathers a lighter colour.

It is believed that the peridotites are associated with amphibolite (metabasalts) although only one amphibolite outcrop was observed.

In the south, metasediments with some iron formation are inferred on the basis of geophysical data and the geology as mapped to the east of the grid.

AREAS C-4 and C-5

Due to the scarcity of outcrop it is difficult to outline the numerous rock units.

Outcrops of metasediments and quartzites are the most common and including the possibility of an E-W band of iron formation crossing the grid at about 3N, a dominant if not exclusive sedimentary setting appears likely.

To the north of the grid, metasedimentary amphibolites are present and form part of the sequence.

Pegmatite is prevalent within the area, intrusive into the metasediments.

Peridotite was recognized about 1000 feet to the west of the grid but was not observed within the grid area.

AREA C-6

Outcrops are numerous within Area C-6, especially in the north. The rocks range from quartz-rich paragneisses and/or quartzites to quartz-biotite-garnet schists as well as amphibolites of volcanic derivation.

A small ultramafic body was found on L-12-E.

Pegmatite is also common, especially in the north part of the grid.

Some extensive gossans of massive pyrite occur on or near the baseline but no economic minerals were observed. A sample (No.44927) from the baseline at L-12-E assayed 0.01% Cu and traces in Au and Ag. A small grab sample (No.44900) from a small rusty area near L0 and 4S of metasediment with minor chalcopyrite (less than 1%) assayed 0.01% Ni, 0.02% Cu.

contd. ...

AREA C-8

Metasediments underlie a large part of the grid area in the south and possibly in the north. A band of iron formation crosses the grid just south of the baseline.

In the south, metabasalt (amphibolite) occurs interlayered with quartz-biotite schists.

Pegmatite is prevalent in the southeast corner of the area.

An ultramafic intrusion consisting of serpentinized and partially serpentinized peridotite together with associated gabbro occurs to the north of the baseline. Possible tops are to the south.

Trenches occur in areas of gabbro where occurrences of tourmaline was observed.

AREA C-9

Very little outcrop is present on C-9. However what was observed suggests the grid area is underlain by metasediments, such as quartz-biotite schist and iron formation. Pegmatite is common.

Serpentinized peridotite was found on L-4-W and is inferred to be present to the east. It appears however that a portion of this body has been tested by diamond drilling with at least one and possibly two holes. Locations are on L-0 at approximately 1+00 south.

AREA D-10

Few outcrops occur within the grid and thus the outline for most of the peridotite is inferred from the ground magnetic data. The outcrops observed suggest the ultramafics may occur within a metasedimentary setting although no positive indication of the immediate setting could be obtained.

contd. ...

An old line, presumably an Inco baseline, crosses the north part of the grid. A drill road runs through the south portion but there was no evidence for previous drilling having taken place within the grid area.

AREAS D-11, D-12 and D-13

A large part of the grid is assumed to be underlain by metasediments, especially at the north and south margins of the grid. Iron formation was observed in the north and is interpreted as a possible fold structure from the geophysical data.

Amphibolites underlay the central part of the area, probably thickening to the east. They represent metamorphosed basic volcanics and occur interlayered with siliceous tuffs in places.

A number of ultramafic bodies which range from serpentinized peridotite to a tremolite-rich variety occur within this setting.

Minor amounts of pegmatite intrude the metasediments, especially in the south.

A fault has been projected across the northwestern edge of the grid, as inferred from magnetic evidence alone.

One diamond drill hole was found on the baseline at about 55W and was drilled 147° @ -55°.

A few gossan zones were mapped across the grid which contain minor amounts of pyrite. The one exception was at L-16-W and approximately 8S where a small old pit over a gossan area a few feet wide locally contained up to 40 percent sulphides. Small grab samples were collected at the Baseline at L-57-W (No.44895) and east of L-12-W near 8S (No.44896). The former sample which was ultramafic assayed 0.01% Ni, 0.01% Cu; the latter sample which was amphibolite assayed 0.01% Ni, 0.06% Cu.

contd. ...

AREA D-14

Outcrop is plentiful along the baseline where serpentized peridotite has intruded metabasalts which are now amphibolite in composition. In places the metabasalt is interlayered with a light coloured siliceous tuff.

Some similar interlayered amphibolite and siliceous tuff was found in the north.

Geophysical evidence indicates a highly conductive formational unit, possibly graphite, extends across the grid at approximately 4 to 6 north.

Two, possibly Winkie, drill holes were located on L-8-W and L-16-W both at approximately 2 south.

AREA D-15

The northern most section as well as a portion along the baseline is underlain by metasediments. Geophysical evidence near the baseline suggests iron formation which is possibly faulted at both ends.

The central portion of the grid is underlain by metabasic volcanics and some minor interbanded siliceous tuffs.

Serpentinized peridotite occurs as a lens within the metavolcanics but at one locality is in contact with metasediments. The ultramafic contains asbestos fibre which imparts a streaky weathered surface to the rock.

A large gossan zone in contact with the peridotite and metavolcanics occurs at L-0 at 6N. It had been tested by trenching and some EX drilling. Minor chalcopyrite and pyrrhotite was observed in the trenches and core. A small grab sample (No.44899) assayed 0.03% Ni, 0.08% Cu.

contd. ...

A fault, striking north, possibly displaced the ultramafics on L-0 and the I.F. near L-8-W.

PROSPECTING IN AREA 'D'

At the time that linecutting and mapping was being carried out in Area 'D', prospecting of several airborne E.M. anomalies was also performed. The locations as numbered correspond to flight line designations as they appear on the Aerodat maps. Access to the areas was by helicopter.

L-8 and L-18 Systems:

In area L-8, old winter lines were observed oriented with the baseline running 060° and cut to a width of approximately 25 feet. Drill roads were also observed and one led to a diamond drill hole location as designated on Figure D-1. B-size casing identified the hole which was drilled at an angle of 46° at a bearing of 150° . The approximate location was established by hovering over the set up and orientating in respect to the 2 small lakes in the vicinity.

To check the L-18 system, the drill roads were followed by air and the locations of drill set ups and core racks were approximated. The drill roads led to an old Inco camp on Lac Voirdye as well as a possible drill camp on a lake as indicated on Figure D-1. Although the location of the drill holes did not appear to directly correspond to the location of the Aerodat anomalies, the area has certainly been looked at and further work does not seem to be warranted at this time.

contd. ...

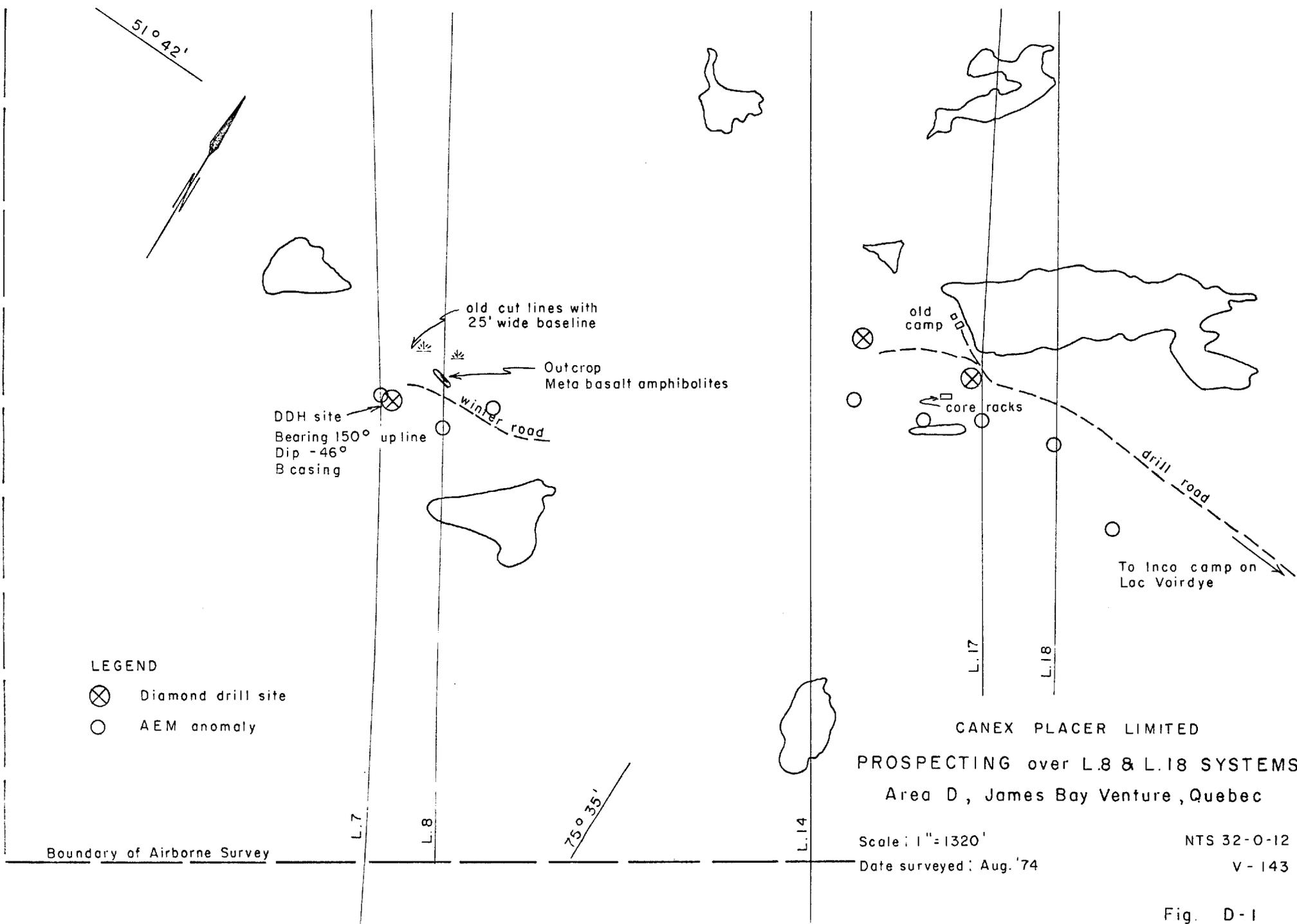


Fig. D-1

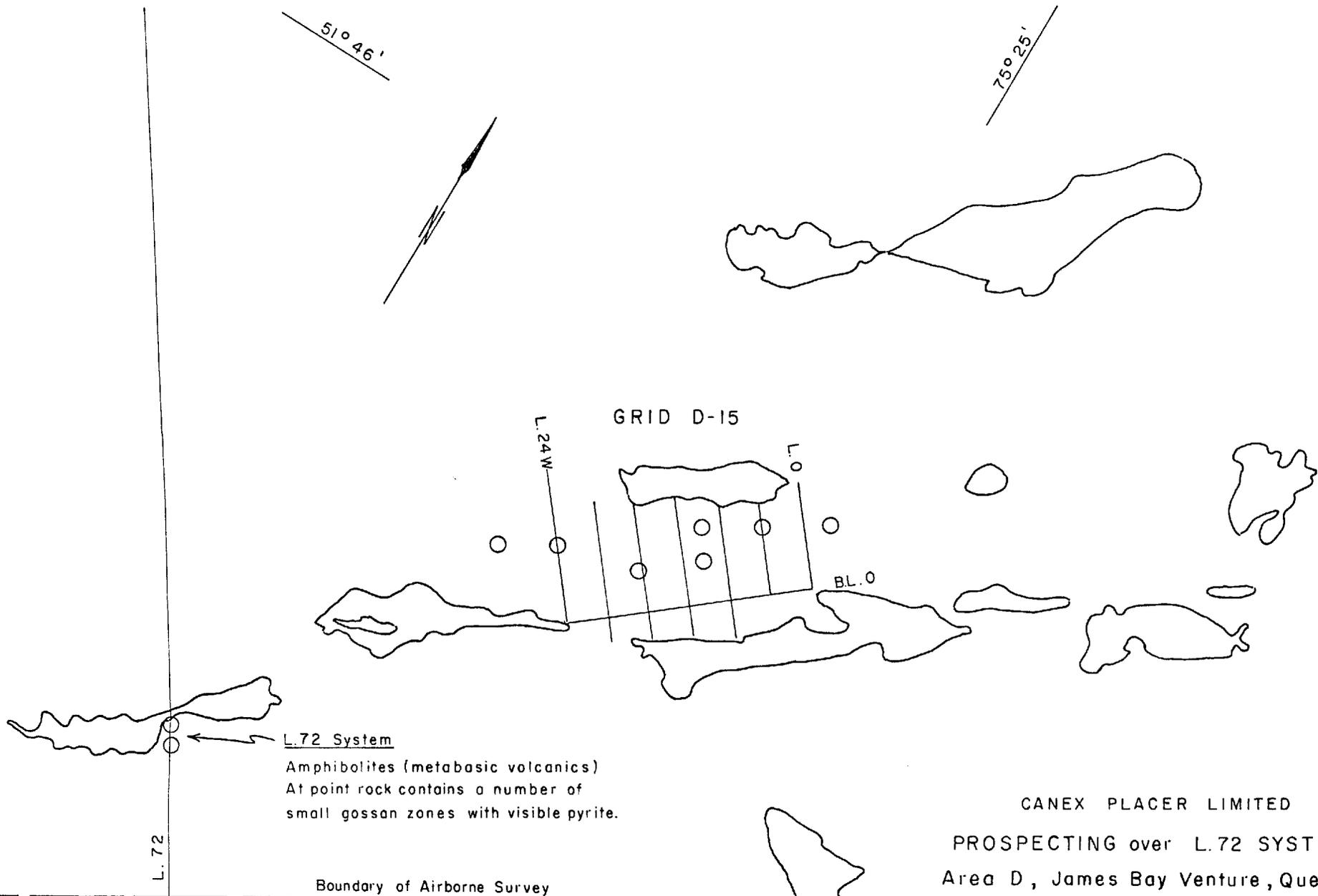
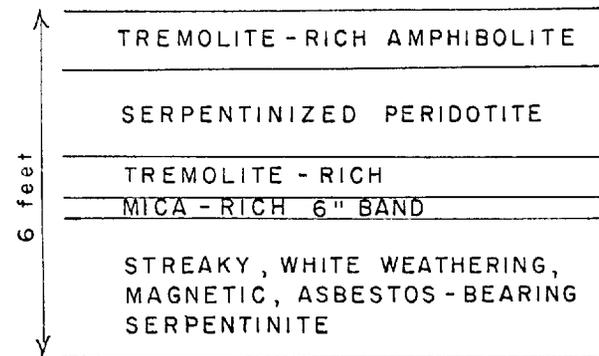


Fig. D-2

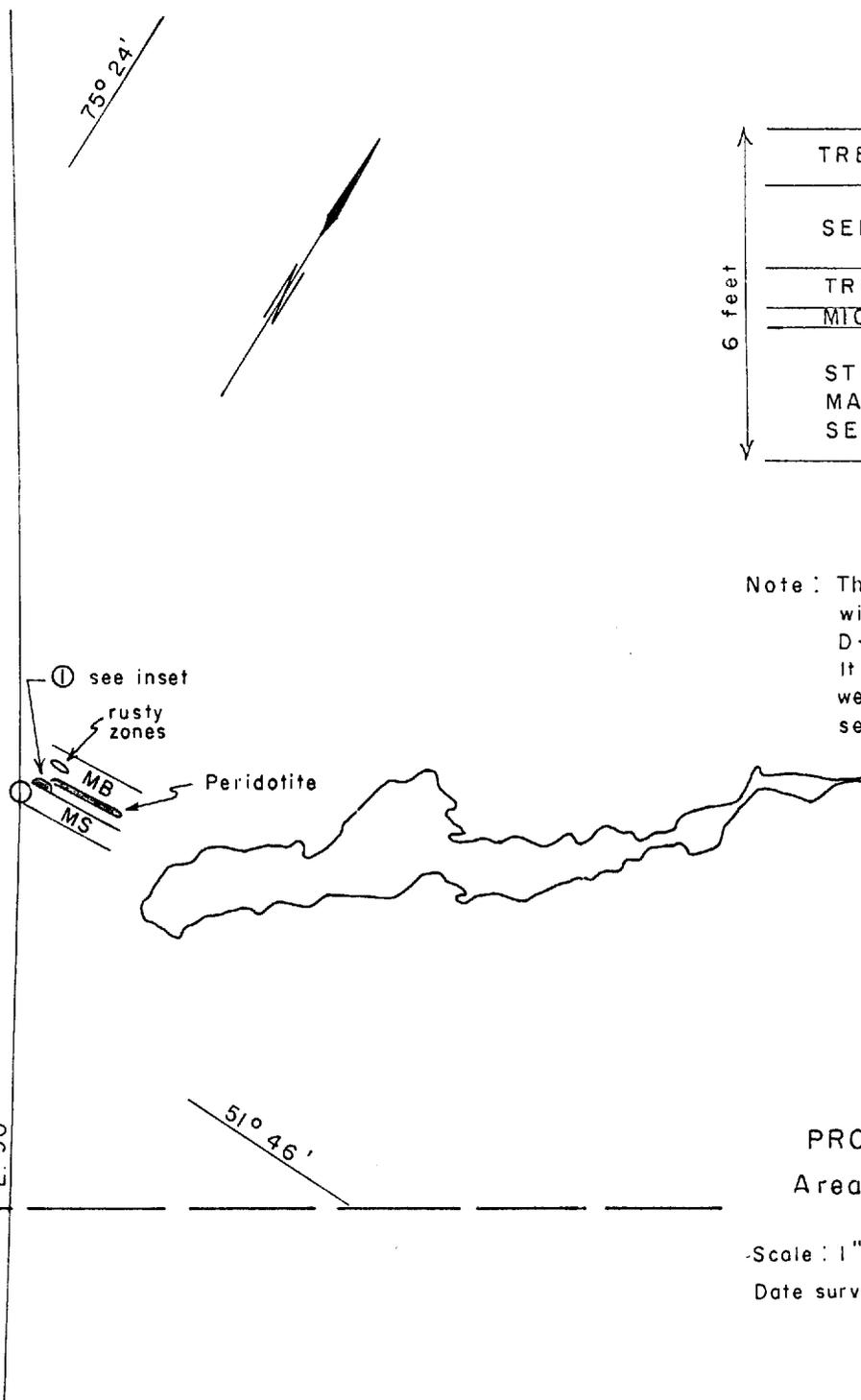
LEGEND

- MS Metasediments
- MB Meta basalt
- AEM anomaly



OUTCROP ①

Note: This section seems to be on strike with the peridotite mapped on Grid D-15 approximately 1 mile to the west. It also contains the same type of white weathering, streaky, asbestos-bearing serpentinite.



Boundary of Airborne Survey

CANEX PLACER LIMITED
 PROSPECTING over L 90 SYSTEM
 Area D, James Bay Venture, Quebec

Scale: 1" = 1320'
 Date surveyed: Aug. '74

NTS 32-0-14
 V-143

Fig. D-3

L-72 System:

The isolated response on L-72 corresponds to an area of amphibolites (metabasic volcanics). Much of the outcrop areas contained small gossan zones within which pyrite was observed (See Figure D-2).

L-90 System:

Prospecting in the vicinity of the L-90 system established the presence of an ultramafic body associated with amphibolite (metabasalt) and quartz-biotite schists (See Figure D-3).

Two outcrop areas were observed. The northern outcrop is of low relief and is composed of peridotite; the southern outcrop suggests a differentiated body. Here, as observed over a width of 6 feet, white weathering, streaky, asbestos-bearing magnetic serpentinite in the south is in contact with a 6-inch mica-rich band which in turn is in contact with a tremolite-rich variety proceeding northward. This is followed by a typical serpentinitized peridotite with tremolite-rich amphibolite at the northern edge of the outcrop.

In the metabasalts to the north of the ultramafics, small rusty zones are common.

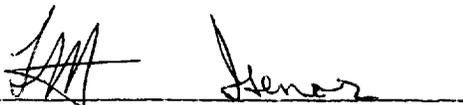
CONCLUSIONS AND RECOMMENDATIONS

The geological mapping undertaken established the geological setting in the vicinity of geophysical conductors throughout the grid areas as well as indications as to where previous work was undertaken. As such a basis is provided for further evaluation of known geophysical anomalies.

contd. ...

Furthermore, prospecting of areas in the vicinity of Area 'D' suggest that airborne conductor systems L-72 and L-90 should be followed up as additional potential targets.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'F.M. Isenor', written over a horizontal line.

F.M. Isenor.
Geologist

FMI/of

APPENDIX

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 858

PAGE

TO. Canex Placer Limited,
Ste.2600, 401 Bay St.,
P.O. Box 66,
Toronto, Ont. M5H 2Y4.

RECEIVED Nov.8/74

INVOICE NO. 858

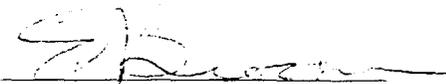
SAMPLE(S) OF 2 Rocks

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

<u>Sample</u>	<u>% Ni</u>	<u>% Cu</u>	<u>Au.oz/ton</u>	<u>Ag.oz/ton</u>
44926	0.03	0.14	Trace	Nil
27		0.01	Trace	Trace

X-RAY ASSAY LABORATORIES LIMITED

DATE Nov. 12/74

CERTIFIED BY 

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS

X-RAY ASSAY LABORATORIES

LIMITED

45 LESMILL ROAD

DON MILLS ONTARIO M3B 2T8

445-5755

Certificate of Analysis

NO. 940 PAGE

TO. Canex Placer Limited,
Ste.2600, 401 Bay St.,
Toronto, Ont.
Attention: F.M. Isenor

RECEIVED Dec. 5/74

INVOICE NO. 940

SAMPLE(S) OF 6 Rock

SUBMITTED TO US SHOW RESULTS AS FOLLOWS:

<u>Sample</u>	<u>% Ni</u>	<u>% Cu</u>
44895	0.01	0.01
96	0.01	0.06
97	0.08	0.14
98	0.01	1.02
99	0.03	0.08
44900	0.01	0.02

X-RAY ASSAY LABORATORIES LIMITED

DATE

Dec.6/74

CERTIFIED BY

ASSAYERS - ANALYTICAL CHEMISTS - SPECTROGRAPHERS