GM 50827

PRELIMINARY REPORT ON RECONNAISSANCE GEOLOGICAL MAPPING AND PROSPECTING, EASTMAIN RIVER PROJECT

PRELIMINARY REPORT ON

RECONNAISSANCE GEOLOGICAL MAPPING AND PROSPECTING

OF THE EASTMAIN RIVER PROJECT AREA, 1991

LICENSES OF EXPLORATION 881 AND 882

EASTMAIN RIVER PROJECT

CHIBOUGAMAU MINING DISTRICT

QUEBEC

NTS 33/A

For:
Cochise Resources Inc.
Windy Mountain Explorations Ltd.

By:
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Norwin Geological Ltd.
October, 1991

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1. INTRODUCTION

1.1 LOCATION AND ACCESS

Licenses of Exploration 881 and 882 are located in north-central Quebec approximately 100 km north of Lac Mistassini and 275 km north-northeast of Chibougamau (figure 1). The licenses are roughly centred at latitude 52° 18' N and longitude 72° 50' W and lie within N.T.S. map areas 33A/1, 2, 3, 6, 7 and 8. The Eastmain River flows in a southwesterly direction through the project area. Exploration was performed out of camps situated on MacLeod Lake, Lac de la Corne and the Eastmain River. Access to the exploration camps was gained by float equipped aircraft of Waasheshkun Airways, out of Baie du Poste on Lac Mistassini.

1.2 LAND POSITION

The land position of Windy Mountain Explorations Ltd. in the Eastmain River area during the project period consisted of 263 contiguous mining claims, which form the Macleod Lake property, and three licenses of exploration within the Chibougamau Mining District, Quebec (Figure 2). At the time of writing this report the three licenses of exploration, P.E. 881, P.E. 882 and P.E. 893 cover an area of approximately 774 square kilometers. The Macleod Lake property lies within the central portion of the licence area and is surrounded by licence 881.

Cochise Resources Inc. has entered into a joint venture agreement with Windy Mountain Explorations Ltd. whereby Cochise can earn up to a 50% interest in licenses 0882, 0893 and part of 0881 (Winter, 1990). An 8 km by 14 km area centered on Macleod Lake within the southwestern part of licence 0881 has been reserved by Windy Mountain is excluded from the joint venture agreement.

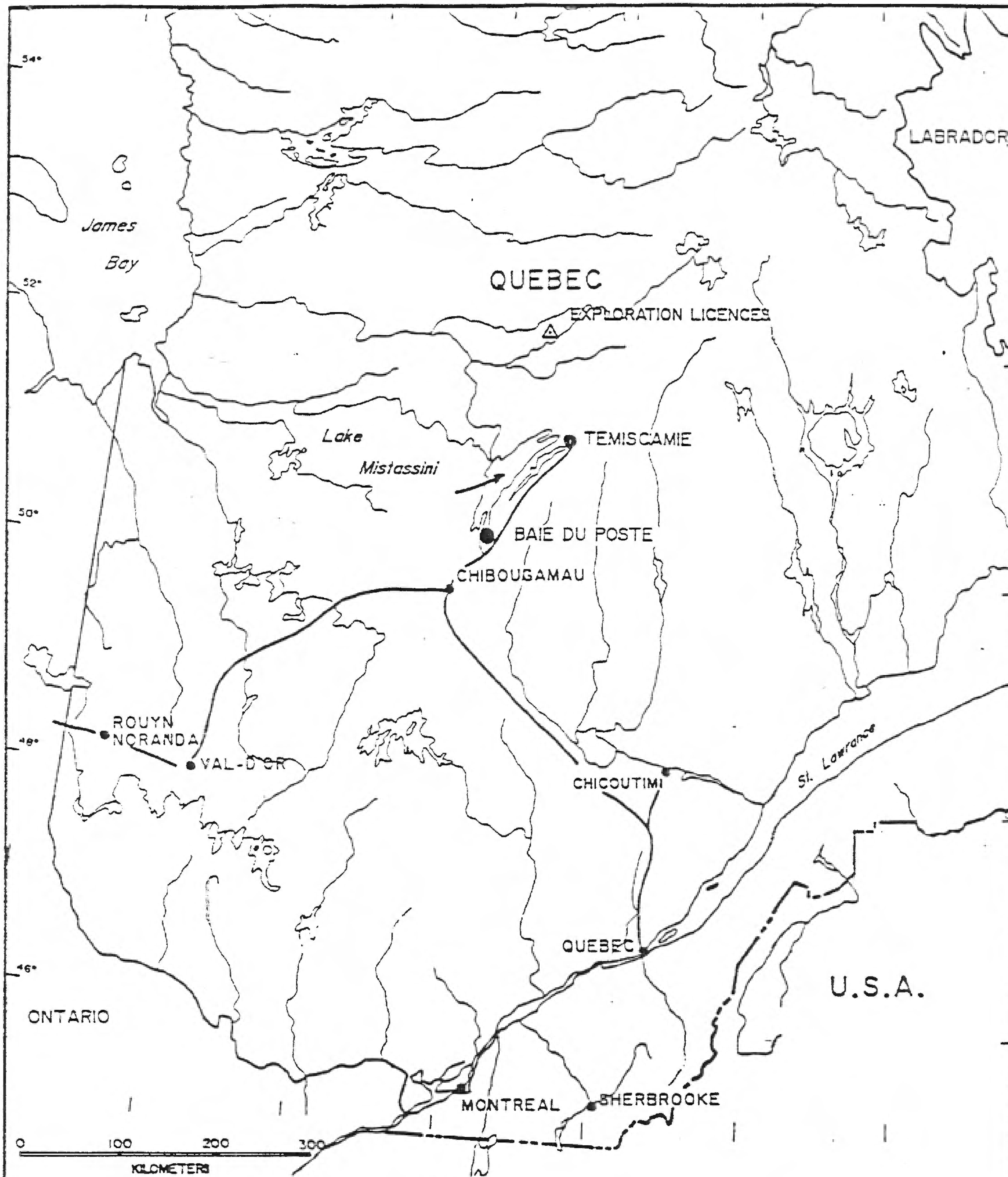
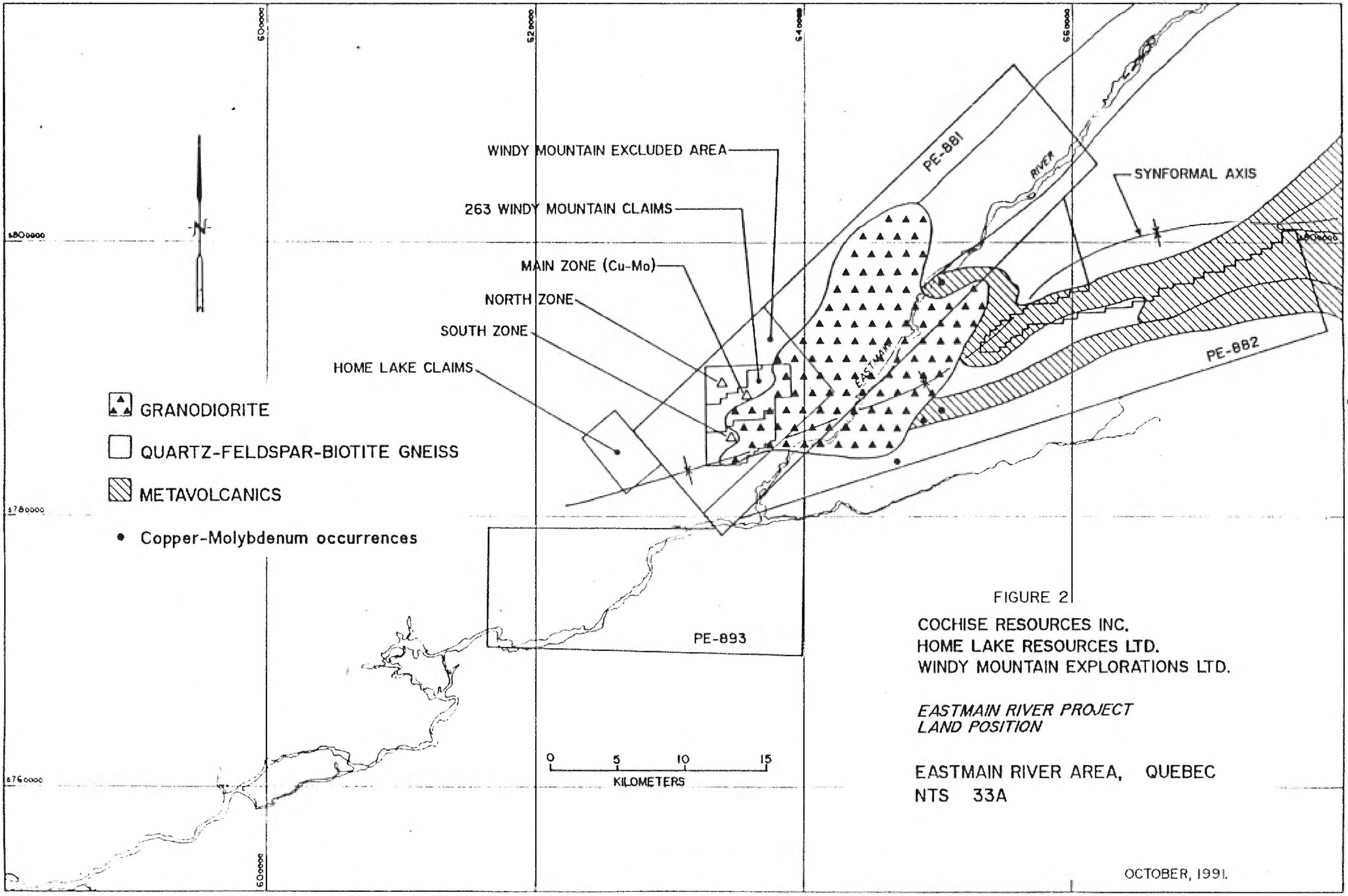


FIGURE I
COCHISE RESOURCES INC.
WINDY MOUNTAIN EXPLORATIONS LTD.
EASTMAIN RIVER PROJECT

LOCATION OF LICENCES OF EXPLORATION


WINDY MOUNTAIN EXCLUDED AREA
263 WINDY MOUNTAIN CLAIMS
MAIN ZONE (Cu-Mo)
NORTH ZONE
SOUTH ZONE
HOME LAKE CLAIMS
SYNFORMAL AXIS
PE-881
PE-882
PE-893
EASTMAIN
RIVER
GRANODIORITE
QUARTZ-FELDSPAR-BIOTITE GNEISS
METAVOLCANICS
Copper-Molybdenum occurrences
0
5
10
15
KILOMETERS
FIGURE 2
COCHISE RESOURCES INC.
HOME LAKE RESOURCES LTD.
WINDY MOUNTAIN EXPLORATIONS LTD.
EASTMAIN RIVER PROJECT
LAND POSITION
EASTMAIN RIVER AREA, QUEBEC
NTS 33A
OCTOBER, 1991.

1.3. WORK PREVIOUS TO 1989

Industry: In the mid 1960's, Fort George Mines Ltd. drilled two X-ray diamond drill holes for a total of 550 feet (167.7 m) on gossaneous ultramafic metavolcanics in an area along the northern border of licence 882. The drill logs indicate that pyrrhotite, pyrite and minor chalcopyrite were intersected (Ministere de l'Energie et des Ressources (MER) assessment files). There is no recorded work in the assessment files for the area underlain by licence 881 previous to that performed by Windy Mountain Explorations Ltd. in 1989 for the MacLeod Lake property (Winter, 1990). For details regarding 1989 to 1991 exploration on the MacLeod Lake property the reader is referred to Prior, 1991.

Government: The area of the licenses is covered by airborne magnetic maps published by the MER. Map 7115G, Lac Rossignol, covers the area at a scale of 1:250,000 while maps 2007G, 2008G, 2019G and 2020G cover NTS areas 33A/3, 33A/6, 33A/7 and 33A/2 respectively at a 1:63.360 scale.

Government geological maps of the area include those by Eade (1966), Avramtchev (1983) and Hocq (1985) and Couture (1987). This work is summarized within the regional geology section of this report.

1.4. SUMMARY OF 1989 AND 1990 EXPLORATION ON LICENSES 881 AND 882

During the winter of 1989/90, Aerodat Limited conducted a helicopter geophysical survey over Licenses of Exploration 881, 882 and 883 with a nominal line spacing of 125 meters (Licence 883 was subsequently dropped). The airborne system included EM, VLF, resistivity and total field magnetic surveys (Podolsky, 1990). Geophysical anomalies considered favourable indicators of possible disseminated Cu-Mo or massive sulphide mineralization were selected and prioritized for ground follow-up.

Field evaluations were performed during August and September of 1990 with access to target areas gained using a Hughes 500D helicopter operating out of MacLeod Lake. Ground follow-up, which included geologic mapping, prospecting, geophysical surveying (VLF and beep mat), blasting and soil sampling, was performed on 45 target areas. In addition to airborne geophysical anomalies, the 1990 helicopter supported program also included reconnaissance geologic mapping of the western portion of the licence area (reconnaissance mapping was initiated out of the MacLeod Lake camp earlier in the summer via canoe). Results of the 1990 program are presented in Prior (1991).

1.5 DESCRIPTION OF 1991 PROGRAM ON LICENSES 881 AND 882

The 1991 mapping and prospecting program on Licenses of Exploration 881 and 882, outside of the area reserved for Windy Mountain, was carried out in four phases. The primary focus of exploration was to evaluate the margin of the MacLeod granodiorite as mineralization at the MacLeod Lake property is located near the granodiorite - gneiss contact (Prior, 1991). Exploration of the contact generally consisted of one to two km long prospecting traverses (which included geologic mapping and soil sampling) across the contact spaced approximately 500 meters apart. Upper B horizon soil samples were collected along traverse lines at nominal spacing of 100 meters. Data from this work, which should be considered reconnaissance in nature, is recorded at 1:20,000 scale using the same topographic base maps as the Aerodat geophysical survey (Aerodat map sheets 1, 2, 4 and 5).

The first phase, undertaken in June, consisted of helicopter supported prospecting along the northwestern and southwestern margins of the MacLeod granodiorite. A Hughes 500D helicopter of Viking Helicopters was operated out of the MacLeod Lake camp and was shared with exploration programs on Licence 893 and the Home Lake property.

The second phase, performed in July, was based out of a fly camp on the Eastmain River in the central portion of Licence 881 in what is informally named the ten island area. A canoe on the river provided access to a large area and traverses were run north and south of the Eastmain.

Phase three operated out of a camp on Lac de la Corne in the western part of Licence 882 during August. The granodiorite contact was examined by prospecting traverses south and east of Lac de la Corne and four long traverses were completed between Lac de la Corne and the Eastmain River to investigate the interior of the granodiorite. In addition, a cut grid with a 2.5 km base line and cross lines at 100 m spacings was established east of Lac de la Corne. The grid area, which was mapped at a scale of 1:5,000, is underlain primarily by metavolcanics hosting pyrrhotite-(chalcopyrite) mineralization (discovered during the 1990 program) and granodiorite.

The fourth phase of exploration, undertaken in September, also operated out of the Lac de la Corne camp. A Hughes 500D helicopter of Viking Helicopters was utilized for five days, primarily to support prospecting of the northern portion of the granodiorite margin. The helicopter was also used for a limited amount of regional geologic mapping.

1.6 PERSONNEL AND ACKNOWLEDGEMENTS

Personnel involved in the exploration of Licenses 881 and 882 during June to September, 1991 are listed in appendix 1. The author wishes to acknowledge the geological contributions made by D. Pilkey, Y. Clement, and J. McAuley.

2. GEOLOGY

2.1 REGIONAL GEOLOGY

The Eastmain River project area is situated within the Superior Province of the Canadian Shield approximately 100 km northwest of the Grenville Province and 250 km north-northeast of the Abitibi Subprovince. The geology of the region encompassing the project area is dominated by medium to high grade Archean gneisses overlain to the east by the Archean Upper Eastmain River

Greenstone Belt. The Upper Eastmain River Greenstone Belt is in turn unconformably overlain the southeast by Proterozoic clastic rocks of the Otish Basin. Intrusions of Archean age, predominantly felsic to intermediate, occupy large areas within the gneissic terrain (figure 3). The gneisses are also cut by northwesterly to northerly trending Proterozoic diabase dykes. All of the Archean supracrustal lithologies have been subjected to regional amphibolite grade metamorphism (Couture and Guha, 1990; Hocq, 1985; Eade, 1966; Winter, 1990).

The basement gneissic complex is composed predominantly of biotite and hornblende gneisses which may contain hypersthene, cordierite and silliminanite. Within the gneisses small lenses of amphibolite, hornblendite, pyroxenite and peridotite occur locally. Major intrusions within the gneisses, predominantly granites, granodiorites and tonalites, commonly occupy areas of several 10's of square km's. Small bodies of pegmatite also intrude the gneisses. The dominant structural trend within the gneissic terrain near the Eastmain River are east to east-northeast (Couture, 1987; Hocq, 1985; Winter, 1990).

The Upper Eastmain River Greenstone Belt, which rests upon the basement gneissic complex, is composed of three elongate arms which together form a crude "T" shape (figure 3). The southwest and northeast arms, which form the top of the "T", have a combined length of approximately 100 km. The southeast arm, which forms the shaft of the "T", is approximately 40 km long and is discordantly overlain by Proterozoic clastic sediments of the Otish Basin at it's southeastern end. The greenstone belt is composed of two distinct lithologic groups of unknown thicknesses. "The Bohier sequence consists primarily of two aluminous metasedimentary units conformably resting upon a migmatitic biotite paragneiss sequence. The two metasedimentary units consist of a polymictic metaconglomerate and a sequence of fine-grained metapelites. The Renė sequence is composed of three metavolcanic units of ultramafic to felsic composition. The stratigraphic relationship between the two rock groups is not clear, as the Rene metavolcanics have been thrust over the Bohier metasediments" (Couture and Guha, 1990). The Eastmain River gold deposit of MSV Resources occurs within a high strain zone in Rene metavolcanics in the southeastern branch of the greenstone belt. Ore zones, consisting of highly deformed and laminated auriferous quartz-sulphide veins, are hosted by a distinctive package of mixed ultramafic, mafic and felsic volcanic rocks from 10 to 45 m wide known as the "mine series" within a sequence of predominantly mafic metavolcanics (Couture and Guha, 1990). Mineral reserves are estimated to be over 1 million tonnes at a grade of 15.3 g/t Au, 15.1 g/t Ag and 0.27% Cu over an average width of 2 m (Thiboutot and Keech, 1988, cited in Couture and Guha, 1990).

Mapping by Hocq (1985) indicates the presence of a regional synform plunging to the east-northeast, the synclinorium du Lac Lavallette, trending along the southwestern arm of the upper Eastmain River Greenstone Belt and extending in a west-southwest direction into the basement gneisses. However, this feature is not indicated on more recent mapping by Couture (1987). Air photo patterns (see frontispiece of Hocq, 1985) and field mapping and diamond drilling for Windy Mountain Explorations Ltd. and Cochise Resources Inc. in the gneisses west of the greenstones support the interpretation of a synformal structure (Prior, 1991, Pilkey, 1990).

Cu-Mo-(Au-Ag) mineralization occurs within the gneissic terrain of the MacLeod Lake area on the north limb of the synclinorium du Lac Lavallette approximately 20 km west-southwest of the Eastmain River Greenstone Belt. The mineral inventory for the MacLeod Lake main zone is currently estimated to be 37.1 million metric tonnes at an average grade of 0.44% Cu, 0.05% Mo, 0.04 g/t Au and 3.68 g/t Ag (Winter, 1990). The gneissic host rocks are structurally overlain by hornblende granofels of granodiorite composition, which is probably intrusive, and mineralization is spatially related to the contact (Prior, 1991). The unit was initially mapped as granodiorite fels and in this report in informally referred to as MacLeod granodiorite. This granodiorite, which includes both hornblende dominant granofels and biotite dominant foliate phases, is not shown on government maps of the area (government mapping efforts in the region have generally focused on the greenstones). Helicopter reconnaissance mapping undertaken during the Eastmain River project shows that the MacLeod granodiorite extends over an area approximately 20 km in length in an east-northeast direction by 15 km in width (Prior, 1991 and this report). Due to its potential economic significance the MacLeod granodiorite has been incorporated into the regional geology map (figure 3).

2.2 LITHOLOGIES

1. Fine Grained Quartz-Feldspar-Biotite Gneiss And Foliate

1a. Quartz-Feldspar-Biotite Gneiss

Subequigranular, fine to medium grained, light to medium gray, medium to dark gray to brownish gray weathering, non-magnetic rocks characterized by gneissic structure. Colour index generally ranges from 10 to 40. Average composition, based upon field observation and petrographic work, is 40-60% anhedral, white plagioclase, 15-40% anhedral quartz, 15-25% anhedral to subhedral biotite, nil-2% anhedral, white K-feldspar and nil-2% subhedral, weakly chloritic hornblende. The plagioclase is in the albite-oligioclase-low andesine range (Vancouver Petrographics, 1990). Trace amounts of anhedral to subhedral, very fine grained, pink to medium red garnets up to 2 mm across occur locally, generally within leucocratic bands. Gneissic structure varies from very weakly to moderately well developed. Boulders of biotite gneiss tend to be blocky rather than rounded because of the presence of gneissic structure. Whole rock geochemical data indicates that the quartz-feldspar-biotite gneisses and related foliates may be paragneisses with graywackes being possible protoliths (Prior, 1991).

1b. Quartz-Feldspar-Hornblende-Biotite Gneiss

Similar to 1a but mafic component includes significant hornblende with subordinate or subequal biotite.

1c. Quartz-Feldspar-Biotite Foliate

Light to dark gray, fine to medium grained, subequigranular, non magnetic, foliated rock which is similar to 1a but lacks gneissic structure. Foliation, imparted by alignment of individual biotite crystals, varies from very weak to moderate. With the development of gneissic structure, foliates grade into gneisses.

1m. Migmatitic Quartz-Feldspar-Biotite Gneiss

Migmatitic biotite gneiss is similar to 1a but contains from 5% to 25% leucosome (leucocratic, medium to coarse grained, quartz-feldspar rich, igneous appearing bands and lenses up to several cm's wide). Leucosome bands are generally parallel to the gneissic structure but cross-cutting relationships do occur. Pinching and swelling along leucosome bands is fairly common. Tight, small scale folds are also a common feature, especially as the percentage of leucosome increases. With an increase in the leucosome component to greater than 25%, migmatitic gneiss grades into migmatite.

2. Metavolcanics

2a. Amphibolite

Subequigranular, fine to coarse grained, dark green to greenish gray to black, amphibole dominated rock that weathers dark gray to dark greenish gray to medium brown (Fe stained). The unit may include some intrusives as well as volcanics. Colour index ranges from 60 to nearly 100. Petrographic descriptions of four very melanocratic amphibolite samples from the MacLeod Lake area indicate that the amphiboles are hornblende and cummingtonite with minor phases including olivine, orthopyroxene, serpentine and biotite (Vancouver Petrographics, 1990). The mafic phases are generally subhedral. Magnetism varies from nil to moderate. In general, the more melanocratic amphibolites tend to be massive whereas the more mesocratic examples tend to be weakly to moderately foliated or lineated and grade into hornblende gneisses. Major element geochemistry indicates that the massive amphibolites are chemically similar to basaltic komatiites and, less commonly, ultramafic komatiites (Prior, 1991).

2b. Hornblende Gneiss:

Fine to medium grained, dark green to dark gray, weakly to moderately well foliated, non to weakly magnetic rocks in which hornblende is a major component. Colour indexes vary from 35 to 70. Hornblende gneisses are similar to and gradational with amphibolites with which they are commonly associated. In some outcrops the foliation consists of regular, millimeter scale gneissic laminae that resemble tuffaceous layering. Descriptions of two thin sections indicate the presence of 35-40% hornblende, 35-40% plagioclase, <15-20% quartz and nil-10% biotite (Vancouver Petrographics, 1990). Locally chlorite forms a small proportion of the mafic assemblage. Plots of whole rock geochemical data indicates that protoliths for the hornblende gneisses were most likely magnesia-rich tholeiitic basalts, basalts, or basaltic komatiites (Prior, 1991).

2c. Mafic Volcanic

Subequigranular, fine to locally medium grained, medium to dark gray to greenish gray rocks. Weathered surfaces are greenish gray to brown to rusty orange and are locally strongly pitted with subround depressions commonly up to a few mm across (up to 15% of surface area). Due to the fine grain size the composition of the rock is difficult to determine from hand samples. Amphiboles and up to 5% biotite were noted in some of the outcrops. Disseminated magnetite is common and imparts a weak to moderate magnetism to the unit. Pillow volcanics are recognized locally with individual pillows up to 0.5 m in length.

2d. Intermediate Volcanic

Fine grained rocks having characteristics intermediate between those of mafic volcanics (2c) and felsic volcanics (2e).

2e. Felsic Volcanic

Generally fine grained, siliceous rocks that are white to light gray to light brown on both fresh and weathered surfaces. Rocks generally consists of quartz and feldspar with minor amounts (<5%) of foliation controlled biotite encountered as the mafic phase. Locally the unit is weakly to moderately laminated possibly reflecting primary tuffaceous layering. Felsic to intermediate metavolcanics were observed (1) as a relatively minor component occurring as narrow, possibly tuffaceous layers (generally less than 0.5 m wide) interbanded with more mafic rocks and (2) as the dominant lithology at an outcrop scale.

2f. Chemical Sediment

Silica and/or iron rich conformable zones within volcanic terrains interpreted as recrystallized chert and cherty iron formation. These rocks contain one or more of weakly to heavily disseminated (locally semi-massive) iron sulphide, quartz, graphite, garnet, and green amphibole. The quartz is clear to light gray and fine to coarse grained. Graphite is typically fine grained and varies from being a minor, disseminated component to locally being heavily disseminated. Garnets are generally a minor component, vary from fine to very coarse grained and are usually either reddish brown or amber. Hornblende is often present along with a medium to dark green amphibole, most likely an Fe-rich amphiboles such as grunerite. Pyrrhotite is the more common Fe-sulphide although pyrite is not uncommon. Locally the Fe-sulphide occurs in millimeter to centimeter wide massive bands separated by quartz-rich bands parallel to the surrounding structural trend. Trace amounts of chalcopyrite are relatively common within iron formation while sphalerite is a rare component.

2cr. Mafic Volcanic Breccia/Conglomerate

Mafic volcanic breccia, located west of Richard Point (southwest of Rooster Lake), was observed in outcrop and drill core in close proximity to amphibolites and hornblende gneisses. The rock is a matrix supported, light brown weathering breccia containing 10 to 30% angular to subround clasts. Clasts vary from a few centimeters to several centimeters in diameter and locally tend to be elongate with a preferred orientation of 165°. The dominant clast type is coarse grained, leucocratic, quartz-feldspar (granitoid) material which is light gray to white on fresh surfaces. Pegmatite and rare siliceous quartz-feldspar-biotite foliate form a small minority of the fragments. The matrix is a gray to green, mafic to intermediate, very fine grained assemblage of quartz, feldspar and mafic minerals. Weathered out amygdules up to a few mm in diameter are a common surface feature. Major element analyses of two essentially clast-free drill core samples of the mafic volcanic breccia indicates that a magnesia-rich tholeiitic basalt was the probable protolith (Prior, 1991).

The mafic volcanic breccia may represent a feeder dyke to the hornblende gneisses. Support for this hypothesis includes the similarity in major element geochemistry between the two lithologies (Prior, 1991), spatial relationships, and a decrease in clast size and angularity within surface outcrops of breccia from south to north (ie. toward the hornblende gneisses which represent the paleosurface). Problems with the hypothesis include the location of the dyke in the structural hanging wall of the hornblende gneisses, which would require that the sequence be overturned in order for the breccia to represent a feeder dyke, and the fine grained, non foliated nature of the matrix compared to the amphibolitized, foliated nature of the hornblende gneisses (J. Davies and R. Whitehead, pers. comm, Sept. 1991).

Outcrops containing subround granitic clasts in a mafic matrix, observed in the northeastern part of Licence 882 during the 1990 program, may be similar to the mafic breccia described above or they may represent sedimentary conglomerates (Prior, 1991).

3. Schist

3a. Amphibole-Biotite-Chlorite Schist

Amphibole-biotite-chlorite schists are medium grained, strongly foliated rocks that locally exhibit well developed, small scale chevron folds. The unit weathers rusty brown to gray with fresh surfaces being dark greenish gray. Subequigranular hornblende is the dominant amphibole with a medium green, vitreous, subequigranular amphibole (actinolite?) being subordinate to absent. The mafic assemblage, consisting of amphibole and biotite +/- chlorite forms 60 to 70% of the rock with the remainder composed of white feldspar and possibly minor quartz.

3b. Biotite Schist

Strongly foliated, biotite rich rocks that may show some chloritic alteration. An unusual outcrop of unit 3b occurs east of Lac de la Corne in which biotite schist contains approximately 50% strongly hematized feldspar in lenses up to 1 cm long lying parallel to the schistosity. This outcrop also contains trace amounts of chalcopyrite and malachite and is moderately to strongly magnetic.

3c. Chlorite Schist

Medium grained, dark green to black, non-magnetic rocks with a pronounced foliation. Chlorite is the dominant phase with biotite, quartz and feldspar being subordinate. Chlorite schist generally occurs in narrow bands from a few centimeters to approximately 1 meter in width with sharp to locally gradational contacts (McAuley, 1990; Pilkey, 1990).

3d. Sericite Schist

Sericite schist was noted in a single outcrop east of Lac de la Corne near the outcrop of unit 3b. The sericite schist is subequigranular, fine to medium grained, light yellowish brown and weathers light brown. The outcrop is moderately to strongly foliated, moderately folded on a small scale. Sericite is the dominant phase (up to 50% of rock) with feldspar, quartz and biotite being subordinate. Minor spotty chlorite and hematite and trace pyrite were also observed.

4. MacLeod Granodiorite (Granodiorite Fels)

Subequigranular, medium to coarse grained, light gray to light pink, white to light gray to light pink weathering, non magnetic to locally weakly magnetic rock with a colour index ranging from 15 to 30. Field evidence favours an igneous, intrusive origin for the MacLeod granodiorite (unofficial name). Felsic phases are white to clear, subhedral to anhedral feldspar (dominant) and anhedral, clear quartz (subordinate). The mafic phases consist of subhedral hornblende and subhedral biotite. Either hornblende or biotite may dominate or the two phases may be subequal. Hornblende dominant varieties tend to be more common, especially in the western and central parts of the body. Petrographic descriptions of six granodiorite samples from the MacLeod Lake area indicate that the plagioclase to K-feldspar ratio varies from 2:1 to 3:1, plagioclase compositions are in the albite-oligioclase-low andesine range and that accessories include sphene, apatite, zircon, magnetite and illmenite (Vancouver Petrographics, 1990). Trace amounts of disseminated, very fine grained, medium red to reddish brown, anhedral garnets also occur locally. Alteration products, which are generally minor to absent, include chlorite (chloritization of hornblende), epidote (spotty and fracture controlled) and hematite (spotty and fracture controlled). Xenoliths (inclusions) are common, particularly in hornblende dominant outcrops, and locally form up to 10% of the rock although outcrops containing less than 3% xenoliths are the norm. Xenoliths are generally less than 1 cm to 5 cm wide (locally to 30 cm in width), elongate, dark gray, medium grained and are more mafic than their host. Xenolith compositions vary from nearly pure hornblende for some of the small inclusions to 30-60% hornblende, 20-60% white feldspar and 5-20% quartz.

In hornblende dominant outcrops the unit is characterized by a weak to moderate hornblende lineation that is subhorizontal and generally trends from 040° to 070°. Biotite bearing outcrops tend to display a weak to strong foliation that have trends similar to the direction of the hornblende lineations. Hornblende-rich xenoliths, where present, generally lie parallel to the structural trend (lineation or foliation). When observed in three dimensions the xenoliths tend to be disk shaped to cylinder shaped.

The MacLeod granodiorite has been divided into five subunits based upon the hornblende to biotite ratio and the structure of the rock (see below). Hornblende rich varieties, which are lineated but lack foliation, are mapped as granofels' whereas biotite dominant rocks are foliated and are mapped as foliates.

4a. Hornblende Granofels

Rocks of the MacLeod granodiorite in which biotite forms less than 5% of the mafic component.

4b. Hornblende-(Biotite) Granofels

Rocks of the Macleod granodiorite in which biotite forms from 5% to 25% of the mafic component.

4c. Hornblende-Biotite Granofels/Foliate

Rocks of the MacLeod granodiorite in which biotite forms from 25% to 75% of the mafic component.

4d. Biotite-(Hornblende) Foliate

Rocks of the MacLeod granodiorite in which biotite forms from 75% to 95% of the mafic component.

4e. Biotite Foliate

Rocks of the MacLeod granodiorite in which biotite forms greater than 95% of the mafic component.

5. Granite

5a. Biotite Granite

Medium to coarse grained (typically medium grained), subequigranular to porphyritic, massive to weakly foliated rocks with colour indexes ranging from 5 to 20. Fresh surfaces vary from light pink to light gray while weathered surfaces are light pink to white. Magnetism ranges from nil to weak. The felsic component consists of from 50% to 75% white to light pink, anhedral to subhedral feldspar and 20 to 30% clear to light gray, anhedral quartz. The mafic component generally consists entirely of biotite with minor hornblende or muscovite present in a minority of outcrops. Outcrops vary from non foliated to weakly foliated with foliation more prevalent in rocks with relatively abundant biotite. Weak epidotization (spotty and along hairline fractures) and weak chloritization of the mafic phases occur locally.

5b. Porphyritic Biotite Granite

Similar to biotite granite described above but characterized by up to 25% feldspar phenocrysts, generally light pink and subhedral to anhedral, up to 2 cm long.

5c. Magnetic Hornblende Quartz Syenite

This lithology was only observed in the MacLeod Lake grid area west of Rooster Lake (Pilkey, 1990). Petrographic examination of two samples indicates the presence of 35-45% K-feldspar, 25-35% plagioclase (oligioclase), 10-15% quartz and 10-15% hornblende. Minor phases include augite, biotite, magnetite, hematite, apatite and sphene (Vancouver Petrographics, 1990). Whole rock geochemical classification indicates that these rocks fall into the alkali quartz syenite - quartz syenite - quartz monzonite fields (Prior, 1991).

5z. Xenolith Bearing Biotite Granite

Similar to biotite granite (unit 5a) described above but contains a small to moderate proportion (locally to 20%) of xenoliths composed of amphibolite or hornblende gneiss. Xenoliths vary in width from less than 1 cm to several meters in width and tend to be moderately to strongly elongate with long axes generally trending east -northeasterly (parallel to the regional foliation trend). The granite host rocks commonly contain hornblende, especially near contacts with xenoliths.

6. Leucogranite

6a. Pegmatite

White to light pink, moderately to strongly pegmatitic lithology lacking any linear or planar structures. Generally composed of 60-90% white to pink, anhedral to subhedral feldspar and 5 to 30% anhedral, white to clear to smoky quartz with minor to accessory amounts of biotite, muscovite, chlorite, garnet and magnetite. In a small minority of outcrops mica (either biotite or muscovite) occurs in coarse to very coarse grained books. The colour index varies from essentially 0 to 10 with colour indexes of less than 5 being common. Locally, large feldspars contain up to 20% wormy intergrowths of elongate, clear to light gray quartz commonly 2 to 10 mm long arranged in a subparallel fashion (weak graphic texture). Within localized zones very irregular pods up to 1 or 2 m across of coarse to very coarse grained quartz occur within pegmatite outcrops. Pegmatites are commonly porphyritic. Feldspars tend to be more coarse grained than quartz and can exceed 30 cm in length although lengths of 0.5 cm's to a few cm's are more typical. Generally non-magnetic. Trace amounts of medium grained specularite occur in a minority of outcrops.

6b. Granitoid (Alaskite)

Leucocratic, coarse grained to pegmatitic, subequigranular to weakly porphyritic, white to light gray to light pink (fresh and weathered surfaces), non foliated rock with nil to weak magnetism. Colour index varies from approximately 1 to 10 with most examples having colour indexes of less than 5. Dominant phases are white to clear to light pink, subhedral to anhedral feldspar and subordinate, anhedral, clear quartz. Biotite is the primary mafic phase. Fine grained garnets are an accessory phase in some outcrops. A minority of outcrops are weakly feldspar porphyritic. Granitoid intrudes biotite granite, MacLeod granodiorite, metavolcanics and biotite gneiss. Pegmatites are commonly associated with granitoids with contacts between the two units varying from sharp to gradational. Leucocratic zones within migmatites and migmatitic biotite gneisses are composed of granitoid.

Petrographic analyses of three granitoid samples from outcrops in the MacLeod Lake area indicates the presence of 25-50 % plagioclase (albite-oligioclase), 15-45% K-feldspar, 20-25% quartz, nil to minor quantities of hornblende, biotite and chlorite and nil to trace amounts of muscovite, augite, sericite, epidote, spheen and apatite. Some of the K-feldspar contains irregular partings of plagioclase (perthitic texture) (Vancouver Petrographics, 1990).

6c. Aplite

Similar to granitoid (alaskite) but is fine to medium grained with a somewhat sugary texture. Aplite generally occurs in narrow dykes associated with granitoid and contacts between aplite and granitoid are commonly gradational.

7. Migmatite

Migmatites are composite rocks composed of pre-migmatite rock (restite) and leucocratic, igneous-appearing rock (leucosome). The classification scheme adopted for the Eastmain River project requires that an outcrop contain a minimum of 25% leucosome to be considered a migmatite and in some outcrops leucosome dominates over restite. The leucosome tends to occur in bands parallel to gneissic structure along which pinch and swell features are common. However, leucosome also crosscuts restite locally. Average widths of leucosome bands vary from a few millimeters to a few meters. Small scale, locally isoclinal, folding is common within migmatites and migmatitic biotite gneisses, especially in outcrops in which the leucosome bands are of a millimeter to centimeter scale. In areas underlain by migmatites with wide leucosome bands, leucosome tends to form the majority of outcrop as it is more resistant to weathering than restite. In areas where gneissic structure dips at shallow angles the exposed portion of outcrops may consist entirely of leucosome. Leucosomes are generally subequigranular and medium to very coarse grained to locally pegmatitic. Dominant minerals composing leucosome are feldspar and subordinate quartz. Some leucosomes are virtually barren of mafic minerals while others commonly contain up to 5% (rarely up to 10%) biotite. Biotite gneisses and biotite foliates are the most common paleosome constituents and migmatites of this type grade into migmatitic biotite gneisses. In a minority of migmatite outcrops the paleosome consists of metavolcanics or hornblende granofels.

Three thin section descriptions are available in which the restite and leucosome are described separately. The restite contains from <40-50% plagioclase, 25% quartz, >10-30% biotite and nil to 5% hornblende whereas the leucosome contains 35-60% plagioclase (albite-oligioclase), nil-35% K-feldspar, 20-30% quartz and <10% biotite (Vancouver Petrographics, 1990). Fine grained, red to reddish brown garnets occur as an accessory phase in some leucosomes.

8. Diabase

Subequigranular, medium to fine grained, dark gray to dark green, dark gray to dark green weathering rocks. The colour index varies from 50 to 70 with dominant phases being subhedral pyroxene and subhedral, white feldspar (plagioclase). Outcrops display moderately well developed diabasic texture and are weakly to moderately magnetic.

2.3 FIELD RELATIONSHIPS

Large scale field relationships between the various lithologies within the Eastmain River project area are illustrated on the map sheets titled geology. These sheets include observations made during 1989 and 1990 in the area of the

MacLeod Lake property and data from the 1990 reconnaissance program on Licences 881 and 882 (Prior, 1991).

Diabase is the youngest rock type on the legend and has been observed cutting leucogranite, MacLeod granodiorite and gneiss.

Granitoid (alaskite), commonly associated with pegmatite, was observed intruding all rock types except diabase but generally do not form discreet mappable units at 1:20,000 scale.

Several metavolcanic terrains are present within the map area with the largest being the western extremity of the Upper Eastmain River Greenstone Belt. The metavolcanics generally exhibit an easterly to northeasterly trend and are bordered by biotite gneiss, MacLeod granodiorite and biotite granite.

Biotite granite is most prevalent in the eastern part of the map area where it appears to intrude metavolcanics of the Upper Eastmain River Greenstone Belt. Granite in this area, which includes both non porphyritic and feldspar porphyritic varieties, corresponds with that mapped as Lac Cadieux granite by Hocq (1985). However, non porphyritic biotite granite also occurs to the west of Hocq's Lac Cadieux granite. Field evidence suggests that biotite granite is intrusive into the MacLeod granodiorite.

MacLeod granodiorite is the dominant unit within the central portion of the map area. Outcrop and drill core observation indicates that it is in sharp contact with the surrounding biotite gneisses, biotite foliates and migmatitic gneisses. Outcrops of granodiorite may be either hornblende dominant, generally lineated, granofels or biotite dominant, foliated, foliates. The northwestern and central parts of the MacLeod granodiorite are generally hornblende rich whereas the southeastern part of the unit, in the Lac de la Corne area, tends to be biotite dominant.

Biotite gneisses, biotite foliates and migmatitic gneisses are the main lithologies to the north, west and south of the MacLeod granodiorite.

The dominant structural feature within the map area is the east-northeast trending synclinorium du Lac Lavallette which plunges at a shallow angle to the east.

2.4 ALTERATION

The intensity of alteration encountered within licence areas 881 and 882 outside of the MacLeod Lake area, with the exception of schistose lithologies, is generally weak. However, visible alteration at the MacLeod Lake main zone, as studied in drill core, is relatively restricted with the exception of the addition of disseminated sulphides (Prior, 1990). Surface observation in the main zone area detects little in the way of significant silicate, carbonate or oxide alteration outside of the exposures of the siliceous zone. The addition of disseminated sulphides in trace quantities can be observed in some outcrops of the main zone wallrock.

Alteration types encountered during mapping and prospecting in licence areas 881 and 882 outside of the MacLeod Lake area are outlined below:

Chlorite: Generally occurs as an alteration of mafic phases (hornblende and less commonly biotite). Occurs locally in all major lithologic types except diabase. Where present, intensity of chloritization is generally weak to less commonly moderate. Strong chloritization is restricted to the chlorite schists.

Sericite: Sericite is relatively uncommon and generally occurs as a weak pervasive alteration associated with felsic metavolcanics. One outcrop of sericite schist is located east of Lac de la Corne in which sericite is the major component.

Biotite: Biotite is a fairly ubiquitous phase within most lithologies of the Eastmain River project area (except diabase) and it is therefore difficult to distinguish alteration biotite from background (metamorphic) biotite. However, the abundant biotite present in biotite-rich schists must be in part metasomatic.

Epidote: Weak epidotization is a relatively common alteration within hornblende-bearing granofels and biotite granite. The epidote occurs along hairline fractures or as a spotty alteration.

Calcite: Calcite is locally a minor constituent of all the major lithologies except diabase. It occurs along hairline fractures, along foliation planes and as a spotty alteration.

Hematite: Hematite is most prevalent within rocks of the MacLeod granodiorite where it occurs in minor amounts along hairline fractures and as a spotty alteration.

Quartz: Unmineralized quartz veins and veinlets occur infrequently in most of the major lithologies except diabase. A small lens of coarse grained quartz with minor feldspar and trace chalcopyrite and molybdenite occurs south of Lac de la Corne.

Resistive Ridges: A small number of outcrops in the MacLeod Lake and Lac de la Corne areas contain subtle ridges up to a centimeter wide and a few millimeters high. The resistive ridges have a northerly trend and some can be observed to contain a central hairline veinlet of quartz and/or epidote. Presumably all of the resistive ridges are the result of silica and/or epidote addition to the immediate wallrock of northerly trending fractures.

2.5 MINERALIZATION

MINERALIZATION NEAR THE SOUTHERN MARGIN OF THE MACLEOD GRANODIORITE

Four minor occurrences of copper mineralization have been discovered in outcrop along the southern margin of the MacLeod granodiorite. Two also contain bornite and malachite and one contains molybdenite. Three of the occurrences are hosted by granofels and foliate of the MacLeod granodiorite while the fourth is situated within fine grained biotite foliate related to the biotite gneiss terrain. These occurrences, identified by their UTM coordinates, are described below.

UTM 640150E, 5785450N

Outcrop consist of medium grained, weakly foliated hornblende-biotite granofels (MacLeod granodiorite) with moderate pervasive chloritization (of mafics) and weak to moderate, spotty to pervasive hematite and spotty calcite. Locally the rock contains trace-3% chalcopyrite, trace-1% pyrite, trace bornite and trace malachite (analyses pending). The outcrop occurs near the margin of the MacLeod granodiorite. A boulder located approximately 2 km east-southeast of granodiorite containing from 0.5% to 5% chalcopyrite and local bornite returned values of up to 3.09% Cu (sample 1214).

UTM 647150E, 5785300N

Outcrop of hornblende-(biotite) foliate (MacLeod granodiorite) with minor chalcopyrite and bornite along with secondary copper minerals, malachite and possibly chrysocolla, lining vuggy cavities (analyses pending).

UTM 647300E, 5784500N

An alteratic zone up to 15 cm wide, probably due to shearing, of weak to moderate pervasive chloritization, weak to moderate spotty epidote and weak to moderate Fe-oxide alteration containing 1-3% pyrite, trace-0.25% chalcopyrite and trace molybdenite. A lens 30 cm long by 10 cm wide of predominantly coarse grained, light gray quartz with 5-10% anhedral white feldspar occurs within the shear (?) zone. The lens is moderately to strongly stained with Fe-oxide and contains 2-5% pyrite, trace-1% molybdenite and trace chalcopyrite. Host rocks are biotite-(hornblende) foliate (MacLeod granodiorite). The mineralization was discovered during the 1990 exploration program (area 4-3) and samples collected at that time returned values of up to 0.28% Cu, 386 ppm Mo, 342 ppm Au and 401 ppm Bi.

UTM 651000E, 5785700N

An outcrop of fine grained biotite foliate is cut by a 30 cm wide zone of amphibole-biotite-chlorite schist. The schist lacks visible sulphides but biotite foliate approximately 2 meters to the south contains locally trace, very fine to fine grained, disseminated chalcopyrite (analyses pending).

MINERALIZATION WITHIN THE METAVOLCANICS

Copper mineralization was encountered within metavolcanics in two areas during the 1991 program (for a discussion of mineralization examined during the 1990 Eastmain River program the reader is referred to Prior, 1991).

Lac de la Corne Metavolcanics: The Lac de la Corne metavolcanics (informal name), are located just east of Lac de la Corne. This area was initially investigated in 1990 by means of prospecting, reconnaissance ground geophysics (VLF and beep mat) and blasting (targets 4-1 and 4-2 in Prior, 1991). During August of 1991 a grid with 100 meter line spacing along a 2.5 km base line was cut and 1:5000 scale geologic mapping completed in this area (figure 4). The central grid area is underlain by metavolcanics, primarily amphibolite, hornblende gneiss and mafic volcanics. Within the metavolcanics zones up to 30 m wide containing disseminated iron sulphides are related to more restricted horizons of iron formation. The iron formation contains heavily disseminated to semi-massive Fe sulphide (predominantly pyrrhotite) and one or more of quartz, graphite, garnet and green amphibole. Minor amounts of chalcopyrite are not uncommon in association with the iron formation. Analyses of samples collected in 1990 returned values of up to 0.14% Cu, 0.11% Zn, 546 ppm Mo, 65 ppm Sb, 52 ppm Bi and 0.51% W. The mineralized zones correspond to two subparallel trends of airborne EM anomalies located near the northern and southern metavolcanic contacts with MacLeod granodiorite (Podolsky, 1990). These may be separate zones of mineralization but it is more probable that they represent a single zone folded about a northeast trending synform.

During the 1991 grid mapping a biotite schist containing 25-60% strongly hematized feldspar in narrow lenses up to 1 cm long lying parallel to schistosity was located in outcrop within the Lac de la Corne metavolcanics. The schist is weakly chloritic and contains trace to 1% disseminated pyrite, trace chalcopyrite and trace malachite (analyses pending). Also located during 1991 within the Lac de la Corne metavolcanic terrain was a small (10-20 cm wide) lens of quartz-rich pegmatitic granitoid (alaskite) containing a single visible bleb 5 to 10 mm across of molybdenite (no sample possible due to smooth surface of outcrop).

Upper Eastmain River Greenstone Belt: Helicopter supported reconnaissance mapping during 1990 indicated that the Upper Eastmain River Greenstone Belt extended to the Eastmain river in an area approximately 8 km southwest of Lac Cadieux. This part of the Eastmain River has been informally named the "ten island" area. Four target areas were prospected in this section of metavolcanics during 1990 (target areas 2-4, 2-5, 2-8 and 2-9 in Prior, 1991). During July of 1991 target area 2-8, which is associated with an extensive airborne EM anomaly, was reexamined. The showing consists pit blasted in very fine grained, light gray to light brown felsic volcanic rock with moderate pervasive sericitization, a weak coating of Fe-oxide, 2-5% pyrrhotite and trace to 1% chalcopyrite in small blebs. Locally pyrrhotite rich bands (up to 20% pyrrhotite) up to 3 cm wide separated by very fine grained, light gray, graphitic quartz occur within the felsic volcanics (narrow zones of graphitic, iron rich chert). Samples collected in 1990 returned values of up to 0.12% Cu, 0.33% Zn, 159 pm Mo and 493 ppm W.

3. GEOCHEMISTRY

3.1 LITHOGEOCHEMISTRY

A total of 131 rock samples were collected during prospecting and geologic mapping of Licenses of Exploration 881 and 882 during 1991. Sample preparation was performed at either Les Laboratories XRAL in Rouyn-Noranda, Quebec or at XRAL Assay Laboratories in Don Mills, Ontario. All sample pulps were analyzed at XRAL in Don Mills for (1) Au by fire assay with a DCP (direct current plasma) finish and (2) 31 trace and major elements using a multi-element ICP analyses with a multi-acid extraction process. Analytical methods are outlined in appendix 2, rock sample descriptions are presented in appendix 3, rock analytical results are given in appendix 4 and rock sample locations are shown on the map sheets titled Lithogeochemistry. Not all rock analyses were available at the time of writing this report and these results, along with statistical analyses of the data, will be presented in a final report at a later date.

3.2 SOIL GEOCHEMISTRY

A total of 1706 upper B horizon soil samples were collected from Licenses of Exploration 881 and 882 during 1991. Sample preparation was performed at either Les Laboratories XRAL in Rouyn-Noranda, Quebec or at XRAL Assay Laboratories in Don Mills, Ontario. Analyses were performed at XRAL for Co, Ni, Cu, Zn, Mo, Ag, Cd, Pb by direct current plasma (DCP). Analytical procedures are described in appendix 2, soil analyses are listed in appendix 5 and soil sample locations are shown on the map sheets titled Soil Geochemistry. At the time of writing this report analyses were available for 1227 of the 1706 soil samples collected (the remainder of the analytical results will be presented in a final report at a later date). Preliminary statistics for the soil analyses are presented in table 1.

Table 1. Preliminary Statistics For Eastmain River Project Soil Analyses (1991)

	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
NUMBER:	1227	1227	1227	1227
DETECTION LIMIT:	1	1	0.5	0.5
MEAN:	3.3	4.5	6.4	21.0
STANDARD DEVIATION:	1.6	3.3	5.3	10.6
MINIMUM:	<1	<1	<0.5	3.5
MAXIMUM:	14	34	54	96

	Mo (ppm)	Ag (ppm)	Cd (ppm)	Pb (ppm)
NUMBER:	1227	1227	1227	1227
DETECTION LIMIT:	1	0.5	1	2
MEAN:	2.0	<0.5	0.6	3.8
STANDARD DEVIATION:	1.4	-	0.9	3.26
MINIMUM:	<1	<0.5	<1	<2
MAXIMUM:	24	1.2	18	23

For comparison purposes, summary statistics for upper B horizon soil samples collected in 1989 and 1990 from the MacLeod Lake property are presented in table 2. The MacLeod Lake property, which contains the Cu and Mo mineralized MacLeod Lake main zone, is situated within the western portion of Licence 881 reserved for Windy Mountain. Analyses, for Cu and Mo only, were performed at Accurassay Laboratories Ltd. in Kirkland Lake, Ontario (Pilkey, 1989; Pilkey and Clement, 1990). The mean values for the MacLeod Lake data, especially for Mo, are strongly influenced by a relatively small number of strongly anomalous values. Note that the Cu mean is greater than the 70th percentile and the Mo mean is greater than the 90th percentile.

Table 2. Summary Statistics For MacLeod Lake Property Soil Analyses (1989 and 1990)

	Cu (ppm)	Mo (ppm)
NUMBER:	2436	2436
MEAN:	11.0	8.1
STANDARD DEVIATION:	41.1	1.4
MINIMUM:	<0.5	<0.5
MAXIMUM:	560	>10000
MEDIAN:	5	1
90TH PERCENTILE:	24	4
80TH PERCENTILE:	14	2
70TH PERCENTILE:	9	2

Respectfully submitted,

GEOLOGICAL ASSOCIATION OF CANADA
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October, 1991

REFERENCES

Avramtchev, L., 1983. Catalogue Desguite Mineraux, Region de la Baie James; DPV 940, Ministere de l'Energie et des Resources, Quebec, 30 p, 15 cartes (eschelles 1:250,000).

Couture, J.F., 1987. Geologie de la partie occidentale de la bande volcanosedimentaire de la riviere Eastmain Superieure (rapport interimaire); Quebec Ministere de l'Energie et des Ressources, MB 87-51, 102 p.

Couture, J.F. and Guha, J., 1990. Relative timing of emplacement of an Archean lode-gold deposit in an amphibolite terrain: the Eastmain River deposit, northern Quebec; Canadian Journal of Earth Science, v.27, p.1621-1636.

Eade, K.E., 1966. Fort George River and Kaniapiskau River (West Half) Map-Areas, New Quebec; Geological Survey of Canada, Memoir 339, 84p.

[illegible], M., 1985. Geologie de la Region des Lacs Campan et Cadieux; Quebec Ministere de l'Energie et des Ressources, ET 83-05, 178 p.

McAuley, J.B., 1990. Report on phase 3 drilling at the MacLeod Lake Property; Report prepared for Windy Mountain Explorations Ltd., 44p. plus appendices.

Pilkey, D.M.E., 1989. Report on the geochemical soil survey, July, 1989, MacLeod Lake property; Report prepared for Windy Mountain Explorations Ltd.

Pilkey, D., 1990. Geological report on the MacLeod Lake Property (new claim block); Report prepared for Windy Mountain Explorations Ltd., 34 p.

Pilkey, D.M.E., and Clement, Y., 1990. Geochemical Soil Survey Report (June-October, 1990), MacLeod Lake Property; Report prepared for Windy Mountain Explorations Ltd., 18 p.

Podolsky, G., 1990. Report on combined helicopter-borne magnetic, electromagnetic and VLF-EM survey of the Eastmain River Area Property, Municipality of Baie James, north-central Quebec; Report and maps prepared for Windy Mountain Explorations Ltd. and Cochise Resources Inc.

Prior, G.J., 1991. Classification of rocks from the MacLeod Lake Property using major oxide geochemistry; Report prepared for Windy Mountain Explorations Ltd., 23 p plus appendices.

Prior, G.J., 1991. Report of phase 4 drilling at the MacLeod Lake Property (January-February, 1991); Report prepared for Windy Mountain Explorations Ltd., 48 p.

Prior, G.J., 1991. Final report on prospecting and geologic mapping of the Eastmain River Licenses of Exploration; Report prepared for Windy Mountain Explorations Ltd. and Cochise Resources Inc.

Thiboutot, H. and Keech, C., 1987. Drilling and geological report on 1987 winter program, Eastmain, Quebec, Venture 116. Placer/Ressources MSV joint venture. Placer Development internal report. Ministere de l'Energie et des Ressources du Quebec, dossier public d'exploration miniere, GM-46045.

Vancouver Petrographics Ltd., 1990. Petrographic descriptions of 31 specimens (from the MacLeod Lake property); Report prepared for Windy Mountain Explorations Ltd.

Winter, L.D.S., 1990. Geological Report on Licences of Exploration 881, 882 and 883, Eastmain River Area, Quebec; Report prepared for Cochise Resources Inc., 27 p.

Winter, L.D.S., 1990. Drill indicated mineral inventory report #2, MacLeod Lake Property; Report prepared for Windy Mountain Explorations Ltd., 9p.

Statement of Qualification

I, Glen James Prior do hereby certify:

1. that I am a geologist and reside at C412-1290 Bancroft Drive, Sudbury, Ontario P3B 4E1,
2. that I am a Fellow of the Geological Association of Canada,
3. that I graduated from Laurentian University, Sudbury, Ontario in 1982 with an Honours Bachelor of Science Degree in Geology and received a Master of Science Degree in Geology from the same institution in 1987,
4. that I have practiced my profession for the past nine years,
5. that this report is based upon geological mapping and prospecting of Licences of Exploration 881 and 882 in the Eastmain River area of Quebec during the summer of 1991 that I supervised,
6. that I have no direct or indirect personal interest in Licenses of Exploration 0881, 0882 and 0893, the MacLeod Lake Property, Windy Mountain Explorations Ltd. or Cochise Resources Inc.

GEOLOGICAL ASSOCIATION OF CANADA G. J. PRIOR FELLOW

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Norwin Geological Ltd.
October, 1991

APPENDIX 1

FIELD PERSONNEL

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K. Bryan (helper)	Baie du Poste (Mistassini), Quebec

APPENDIX 2
ANALYTICAL METHODS
XRAL LABORATORIES

SOILS

Preparation: Soil samples, collected in pleated kraft bags, were shipped to either Les Laboratories XRAL in Rouyn Noranda, Quebec, or X-Ray Assay Laboratories in Don Mills, Ontario, for drying and screening to minus 80 mesh.

Analyses: Analyses of the minus 80 mesh fraction of all soil samples for Cd, Co, Cu, Pb, Mo, Ni, Ag and Zn by direct current plasma emission spectrometry (DCP) was performed at X-Ray Assay Laboratories in Don Mills, Ontario (XRAL method code 1-0). A quarter gram sample is digested with 2 ml of nitric acid for one half hour in a water bath, then 1 ml of hydrochloric acid is added and the digestion continues for another 2 hours. Test tubes are shaken at regular intervals. Samples are then made up to volume with lithium buffer and run on the simultaneous direct current plasma emission spectrometer. In house standards and previously analyzed samples are run to monitor proper digestion procedures. Synthetic standards are used to calibrate the instrument. Detection limits are 0.5 ppm for Cu, Ag and Zn, 1 ppm for Cd, Co, Mo and Ni and 2 ppm for Pb.

ROCKS

Preparation: Rock samples were shipped to either Les Laboratories XRAL in Rouyn Noranda, Quebec, or X-Ray Assay Laboratories in Don Mills, Ontario, for preparation. Primary reduction is achieved by a two stage crushing facility which employs a 6" by 8" jaw crusher for the first stage followed by a 10" Gy-Roll cone crusher as a second stage. The product from this system is typically 45% minus 1/8" and 99% minus 1/4". A subsample is withdrawn from this crusher product by means of a 3/8" Jones sample splitter. The subsample will vary in size depending on the size of the original sample but will normally represent not less than 1/8 of the original. Samples of less than 1/2 pound are normally not split. Secondary reduction for geochemical applications is achieved by means of an oscillatory swing mill which produces a pulp of minus 200 mesh.

Au Determination: Au determinations were performed at X-Ray Assay Laboratories in Don Mills, Ontario by a fire assay with a direct current plasma (DCP) finish (XRAL method code 2-1, 1AT). The assay procedure follows the classical lines of the lead-silver collection. The flux used for this purpose is prepared using the normal proportions of litharge, soda-ash, borax and silica. Adjustments to the flux to compensate for abnormal sulphide or carbonate content of samples are made at the time of assay. The routine involves weighing of a 30 gram (1 assay ton) aliquot of sample on a top loader electronic balance to +/- 0.01 grams tolerance. This is added to an assay crucible which has been pre-charged with 85-90 grams of flux. A fixed amount of reducing agent is then added to ensure production of a 24-35 gram lead button during fusion. For gold assays 5 milligrams of silver is added and the sample and flux are mixed together. The fusion is carried out at an average temperature of about 980° celsius for about 45 minutes. Melts are poured and when the slag has cooled the lead buttons are recovered, deslagged, and placed in preheated cupels in the cupellation furnace. Cupellation takes about 30 minutes and is carried out at about 900° celsius. The silver bead recovered after cupellation is then digested with aqua regia followed by measurement of the Au content in solution by direct current plasma spectrometry (DCP). The detection limit of this procedure is 1 ppb Au.

Multi-element ICP: The elements Al, Sb, As, Ba, Be, Bi, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Sc, Na, Sr, Ag, Sn, Ti, W, V, Y, Zr and Zn (31 elements) were determined by ICP spectrometry using multi-acid extraction at X-Ray Assay

Laboratories in Don Mills, Ontario (XRAL method code 80-1). 0.5 grams of sample, weighed in a teflon dish, is treated with a mixture of 5 ml of water, 10 ml of HF and 10 ml of HCLO4. Evaporated to thick fumes - 20 ml distilled water added-solution reheated and finally transferred to 50 ml flasks. 5 ml HNO3 is added to samples with high organic matter. The elements are then determined using a JY-70 ICP spectrometer. Detection limits are 0.1 ppm for Ag and Y, 0.5 ppm for Be, Cu, Sc, Sr, Zr and Zn, 1 ppm for Ba, Cd, Cr, Co, Li, Mo and Ni, 2 ppm for Pb and V, 3 ppm for As and Bi, 5 ppm for Sb, 10 ppm for Sn and W, 0.01% for Al, Ca, Fe, Mg, Mn, P, K, Na and Ti.

APPENDIX 3

ROCK SAMPLE DESCRIPTIONS

NORWIN GEOLOGICAL LTD. - ROCK SAMPLE DESCRIPTIONS
EASTMAIN RIVER PROJECT (1991)

SAMPLE (AREA)	GRID LOC'N (UTM LOC'N)	DESCRIPTION
0621 (TEN ISL)	(650900E 5797800E)	O/c - blasted pit. Very fn gr lt gray to lt brown felsic to intermediate volcanic. Md pervasive sericite, wk coating Fe-oxide, 2-5% Po, tr-1% Cp (small blebs). Locally Po rich bands (sampled) up to 3 cm wide of up to 20% Po within vf gr, lt gray qz.
0622 (TEN ISL)	(651300E 5797100N)	20 cm subround bld. Cr gr, white to yellowish brown quartz with 3-5% Po (disseminated and along seams) and tr-2% disseminated graphite. (recrystallized chert (?).
0623 (TEN ISL)	(651800E 5802400N)	Outcrop. Irregular zone less than 1 m wide within amphibolite with wk-md Fe-oxide coating (parallel to fol'n). Wk-md spotty epidote, weak pervasive quartz (smoky), 1-4% Py+Po (disseminated and small blebs), very tr diss Cp. Apx 10 m E of 926.
0624 (TEN ISL)	(651900E 5802500N)	15 cm subang bld. White to lt gray, cr gr quartz. Wk hematization and very tr Py. Similar material in nearby boulders.
0625 (LIC.882)	5+90E 0+75S ( )	Pit rubble/subcrop. Mostly dark greenish-black, fn gr, non foliated, wk-cod mag rock dominanted by hb and lesser md green amph. Minor white fd (3-10%) and org-brn gt (1-5%). 5-10% Po, diss and in semi massive bands to 1 cm wide, tr Cp, weak-mod Fe stain.
0626 (LIC.882)	5+90E 0+75S ( )	Pit rubble/subcrop. Similar to 635 but contains 20-30% fn gr, smoky qz throughout. Po as in 635. Tr to locally 1% Cp in small blebs. Tr-2% very fn gr graphite.
0627 (LIC.882)	5+90E 0+75S ( )	Pit rubble/subcrop. Within the amphibolite-rich rocks (625,626) occur qz-rich lenses up to at least 10 cm wide. Primarily md-cr gr smoky to clear qz with 5-20% fn-very cr gr (up to 1 cm dia), brownish red gts. Tr-2% diss Po, tr diss Cp.
0628 (LIC.882)	6+60E 1+30S ( )	Pit rubble/subcrop. Fn grained, dark gray, qz-rich zone within amphibolite contains 5-15% med gray, cr to very cr (to 1 cm locally) subhedral, med green amphibole and nil to 5% orange-brown, fn to md gr gts. Tr-1% Po.
0629 (LIC.882)	(647500 5783900)	2 m subang bld. Md gr, bi(hb) granodiorite. Weakly to moderately lineated. Trace reddish-brown surface stain due to Fe oxide. Locally tr diss Cp. (sample selected for Cp).
0630 (LIC.882)	(647500 5783800)	Outcrop. Md gray, lt gray weathering, fn-md grained bi gneiss/foliate. Contains minor amount of discontinuous partings of md gr bi. Moderately foliated @ 065/45N. Tr very fn gr diss Py.
0631 (LIC.882)	(647400 5783800)	1 m subang bld. Fn gr, lt gray bi foliate. Tr, very fn gr diss Py. Very tr, verty fn gr Cp diss along weakly limonitic hairline fracture. Sample selected for Cp.
0632 (LIC.882)	(648100 5783500)	2 m subang bld. Med gray, fn grained bi gneiss. 0.5-1% very fine grained diss Py.

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0633 (LIC.882)	(650900 5785800)	3 m subang bld. Biotite-hornblende-actinolite(?)-chlorite schist. Mod schistosity, black, med grained, no sulphides.
0634 (LIC.882)	(650900 5785800)	1 m subround bld. Med grained migmatitic bi gneiss containing apx 5% leucocratic bands up to 1 cm wide. Tr-0.25% fn gr, diss Py, very weak hairline fracture controlled and spotty Fe oxide.
0635 (LIC.882)	(651000 5785700)	Outcrop. 30 cm wide zone of bi-hb-ac-chl schist. Black, fn to md grained. Parallel to foliation of 070/70N within host rock of fn grained bi foliate/gneiss. No sulphides in schist.
0636 (LIC.882)	(651000 5785700)	Outcrop. Fn grained bi foliate located apx 2 m south of 635. Locally contains trace, very fine to fine grained diss Cp.
0637 (LIC.882)	(651500 5788200)	2 m subround bld. Qz-rich breccia. Apx 50% white, md gr qz as very irregular stockwork. Angular breccia frags from <1 cm to a few cm's across are medium to dark green, very fn gr and mod to strongly chloritized +/- silicified. Tr-0.5% diss fn-md gr Cp.
0638 (LIC.882)	(650900 5788700)	Outcrop. Lt-md green, lt gray to white weathering, very fn gr, inter(?) volc. Wk-st perv chl, nil-wk perv ser, very wk hairline Fe-oxide, wk hairline and spotty cc and 5-10% irreg qz veinlets to 1 cm. 1-3% diss Py. Probably cataclastic.
0639 (LIC.882)	(650800 5788700)	Outcrop. Apx 25 m north of 638. Similar to 638 but less veining and less Py on average (Sample has 1-2% Py).
0714 (TEN ISL)	(651300E 5800300N)	Boulder. Rock consist of deep orange, very coarse pegmatite along granodiorite. Pegmatite has feldspars to 2 cm long and 10-15% biotite. Unit exhibits spotty cl alteration and contains trace cp along biotite rich sections.
0715 (TEN ISL)	(653850E 5802450N)	Outcrop. Rock consists of medium grained, medium-dark grey hornblende gneiss-amphibolite. Unit exhibits weak banding and local very weak ep alteration. Rock contains trace pyrite.
0716 (TEN ISL)	(655675E 5803225N)	Outcrop. Rock is moderately altered, medium grained pink to green granitoid with minor hb gneiss slivers. Unit exhibits moderate spotty to pervasive ep alteration with weaker hm and cl also noted. Trace pyrite present.
0717 (LDLC)	1+60E 4+15S ( )	Rounded boulder. Rock is medium grained, weak to moderately banded, strongly gossaneous amphibolite. Unit exhibits weak pervasive chloritization with 2-3% coarse blebby-subhedral pyrite.
0718 (LDLC)	1+60E 4+15S ( )	Subrounded boulder. Rock is strongly gossaneous, medium grained, weakly laminated intermediate felsic metavolcanic. Rock contains 2-5% black qtz eyes. Sample contains 2-3% pyrrhotite along the laminations.

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0719 (LDLC)	1+05E 5+95S ( )	Rounded boulder. Rock is moderately gossaneous, fine grained, light grey to greenish grey metavolcanics. The unit exhibits narrow banding and contains tr-1% finely disseminated chalcopyrite.
0720 (LDLC)	8+00E 0+25S ( )	Outcrop. Rock consists of gossaneous amphibolite locally slightly siliceous in character. Unit contains tr-1% pyrite and pyrrhotite. Rock locally appears weakly hematitic.
0721 (LDLC)	10+00E 4+35S ( )	Outcrop. Grab sample of amphibolite with felsic laminations. Unit exhibits weak pervasive chloritization and spotty calcite alteration and contains trace finely disseminated py within amphibolitic portion of the rock.
0722 (LDLC)	11+00E 4+70S ( )	Subangular boulder. Rock consists of orangy-red, gossaneous, medium grained amphibolite with minor interbanded cherty laminations. Sample contains tr-2% fine fracture controlled pyrite with tr local chalcopyrite.
0723 (LDLC)	10+95E 2+05S ( )	Subrounded boulder. Rock is finely grained, weakly banded felsic volcanic consisting of silica and feldspar. Unit exhibits spotty saussuritization. Tr-1% finely disseminated pyrite present along fractures.
0724 (LDLC)	19+25E 5+00S ( )	Outcrop. Rock consists of strongly altered, medium grained and weakly foliated granitoid. Alteration consists of moderate pervasive epidote, moderate pervasive foliation controlled cl and spotty hm and calcite. Unit contains tr py.
0725 (LDLC)	21+00E 5+55S ( )	Outcrop. Rock consists of medium grained, black, strongly folded biotite schist. Unit contains 25-60% strongly hematized feldspar. Unit exhibits weak local cl alteration and contains tr-1% finely disseminated py+/- cp and malachite.
0726 (LDLC)	21+00E 5+55S ( )	Outcrop. Rock consists of medium-fine grained, strongly foliated to schistose mafic volcanic grading to sericite and cl schist. Sample contains tr-1% finely disseminated py. Sample locally is strongly gossaneous in character.
0727 (LDLC)	20+90E 6+45S ( )	Outcrop. Rock consists of strongly gossaneous amphibolite. Rock is rusty orange and characterized by 2-3% narrow cherty qz-calcite veinlets. Unit is fine grained and exhibits moderately chloritic and carbonatized and contains tr py and cp.
0728 (LDLC)	21+00E 6+50S ( )	Rubble on outcrop. Rocks consist of rusty brown, subangular fragments of felsic volcanic? or strongly siliceous mafic volcanic. Unit contains tr-3% coarse blebby pyrite and spotty calcite. Sample taken of broken rubble on otc but no pit present.
0729 (LIC.881)	(640150E 5785450N)	Outcrop grab. Rock consists of medium grained, weakly foliated, hb-(bi) granodiorite. Unit is pinkish white and exhibits moderate pervasive chlorite alteration and spotty hm with calcite. Unit contains tr-3% cp, tr-1% py, tr bo and spotty malachite
0730 (LIC.881)	(640150E 5785450N)	Outcrop grab. Rock is medium grained, moderately foliated hornblende-biotite granodiorite. Rock exhibits weak to moderate pervasive hematite and local pervasive chlorite alteration of mafics. Unit contains tr-1% finely disseminated py.

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SAMPLE (AREA)	GRID LOC'N (UTM LOC'N)	DESCRIPTION
0731 (LIC.881)	(640150E 5785450N)	Outcrop grab. Rock is medium grained, pinkish red biotite hornblende granodiorite. Rock exhibits moderate to strong pervasive hm and moderate pervasive calcite alteration. Unit contains trace cp and py.
0732 (LIC.881)	(640200E 5785455N)	Outcrop grab. Rock is strongly altered granodiorite and is fine to medium grained, yellowish white in colour with 1-2% chloritic biotite. Rock exhibits spotty calcite alteration with weak fracture controlled hm and cl. Tr cp also present.
0733 (LIC.881)	(645990E 5800650N)	Outcrop grab. Rock consists of medium to coarse grained biotite gneiss-migmatitic biotite gneiss. Unit contains 15% biotite with 20-35% leucocratic bands. Tr pyrite present in sample.
0809 (TEN ISL)	(651475E 5800050N)	Md subangular bld. Sample consists of md-dk gn, md-coarse grained hb Gd?(Gtoid?) exhibiting moderate pervasive chloritization and epidotization. Rock also exhibits wk-moderate fracture controlled hematite and contains tr fg magnetite. No sulphides.
0810 (TEN ISL)	(655650E 5803200N)	Outcrop (chip). Trace fg-vfg py found within interbanded amphibolites/hb Gn (mesocratic-melanocratic and mesocratic -leucocratic bands). Rock moderately-well foliated and wk-moderate foliation controlled epidote present within darker material.
0811 (TEN ISL)	(656850E 5804125N)	Outcrop (grab). Dk gn-gy to gn-bk, md-fine grained, extremely well foliated (hb) chlorite-bi shcist with 10-20% thin(<1cm) pk concordant gtoid bands. Bands exhibit wk-moderate spotty hematite and wk-strong spotty calcite. No visible sulphides.
0812 (TEN ISL)	(643075E 5796300N)	Small subang bld. Sample appears to consist of qtz breccia?. Rock consists of lt gy, vfg siliceous material cross-cut by numerous(25-30%) thin((1-2mm) qtz/hematite/calcite stringers/bands. Rock exhibits a distinctive porous weathrerd surface. No sulph.
0813 (TEN ISL)	(651825E 5802425N)	Outcrop (chip). Sample consists of a 4cm band of fg, weakly foliated and chloritized int. material found within well foliated mesocratic amphibolite. Sample contains 7-10% fine-md grained, subhedral-euhedral foliation controlled py.
0814 (TEN ISL)	(651825E 5802325N)	Large subang bld. Sample consists of a 4-5 cm band of fg, weakly foliated/laminated, moderately pervasively chloritized inter. material within banded amphibolite. Rock exhibits moderate fol. controlled ep and contains 2-5%foliation controlled py.
0815 (LDLC)	12+60E 4+25S ( )	Outcrop Grab. Fg-md gd, narrowly(0.5-1.0 cm) banded, well foliated, bi foliate(tuff?/seds?) with tr-1% fg foliation controlled py. Common orangy-brown qtz slivers(upto 1m) and discontinuous contorted bands present within foliate.
0816 (LDLC)	13+00E 8+15N ( )	Small rounded bld. Sample consists of vfg to fg qtz/calcite material with weak, locallymoderate, patchy epidote and chlorite. Sample contains trace, locally 1-2%, md-coarse subhedral-euhedral diss. py. Rock exhibits a pitted to drusy weathered surface.
0817 (LDLC)	13+65E 1+00N ( )	Outcrop(Chip Sample) Sample consists of fg, massive to weakly foliated, light green felsic material with 15-20% irregular qtz slivers and tr-2% foliation controlled biotite. Rock contains tr-2% fg-mg subhedral disseminated py and tr-1% fg graphite.

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0818 (LDLC)	12+65E 3+50S ( )	Outcrop(Chip Sample) Rock very rusty(gossaneous) but sample appears to consists of fg felsic material containing tr-2% fg py. Felsic material appears to occur as narrow concordant bands within a banded amphibolite sequence.
0819 (LDLC)	13+20E 4+25S ( )	Outcrop(Chip Sample) Rusty, laminated, moderately foliated, light green, fg felsic material with 5-10% thin concordant qtz stringers/laminations and minor foliation controlled bi. Contains 2-3% fg foliation controlled py and tr graphite(?).
0820 (LDLC)	13+95E 4+30S ( )	Outcrop(Grab Sample) Fg, massive, light green, concordant, felsic band(4 cm) within well banded melanocratic-mesocratic md-coarse grained amphibolites. Sample contains tr-2% fg disseminated pyrrhotite and/or py.
0821 (LDLC)	15+30E 4+40S ( )	Outcrop(Grab Sample) Sample consists of vfg-fg, dk gn to gn-bk, massive, strongly magnetic, mafic-ultramafic rock containing trace fg po and/or py. Rock contains 2-5% bi aggregations(2-4mm) and appears to contain minor fracture controlled serpentine(?).
0822 (LDLC)	25+00E 9+70S ( )	Small Rounded Bld. Medium to fine grained migmatitic biotite gneiss with trace-2% fine grained foliation controlled pyrite.
0823 (LDLC)	21+97E 6+69S ( )	Md Subangular Bld. Fine to very fine grained, light green, massive, felsic material with 1-2% fine grained disseminated py. Felsic material appears to occur as narrow(2-5 cm) bands within a banded amphibolite sequence.
0824 (LDLC)	22+22E 6+95S ( )	Small Angular Bld. Md to fine grained, light green, massive to weakly foliated, felsic material with tr-2% fg disse. py (rare cp?) and tr-1% fg graphite. Felsic material appears to occur as narrow(2-5 cm) bands within banded migmatitic amphibolites.
0825 (LDLC)	22+51E 6+25S ( )	Outcrop(Grab Sample) Sample consists of md-fg, well foliated bi(hb?) foliate containing trace fg foliation controlled py. Biotite foliate material occurs as a band(10 cm) within a sequence of banded amphibolites.
0826 (LDLC)	22+50E 6+25S ( )	Outcrop(Chip Sample) Fg, md-dark green, amphibolite exhibiting mod.-strong perv. chloriteand wk-mod. semi-perv. and fracture calcite. Altered amphibolite contains tr fg py and occurs proximate to a 20 cm x-cutting qtz rich pegmatitic dyke?/vein?.
0827 (LDLC)	22+48E 6+25S ( )	Outcrop Chip. Fg, mod.-strongly foliated to locally schistosed, amphibolite(?) exhibiting mod-st perv chl and calcite. Contains rare-tr foliation cp, tr-2% py and minor fracture malachite. Altered mat'l occurs as band proximal to gtoid.
0828 (LDLC)	22+48E 6+25S ( )	Outcrop(Grab Sample) Sample consists of md-coarse grained, pinkish, granitoid material with 2-3% chloritized mafics(bi?/hb?) and rare-tr fg cp. Gtoid occurs as a narrow(15 cm) concordant sill within a banbed amphibolite sequence.
0829 (LDLC)	21+60E 6+25S ( )	Outcrop(Grab Sample) Fg-md grained, strongly foliated to weakly sheared, amphibolite(?) exhibiting strong perv. chlorite and mod.-strong foliation/stringer controlled calcite. Sample contains tr, locally 1-2%, md to coarse grained euhedral py.

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0830 (LDLC)	21+62E 6+25S ( )	Md Angular Bld. Possibly frost heave mat'l?. Sample consists of banded(0.5-1.5 cm) fg-md grained calcite rich material(white, light green and purplish coloured calcite). Thin chlorite/epidote slips and rare-tr fg cp along calcite band margins.
0831 (LIC.882)	(639760E 5784390N)	Outcrop(Grab) Md to fine grained, moderately well foliated, locally thinly banded,bi foliate. Rock is weakly migmatitic and exhibits weak spotty to locally semi-pervasive epidotization. Sample contains rare to tr fine grained disseminated py.
0832 (LIC.882)	(639800E 5784400N)	Md Sub-Rounded Bld. Md-coarse grained, hb(bi) granodiorite exhibiting weak-nil spotty epidote. Sample contains rare, locally trace, fine to md grained disseminated cp. Rare to trace small(<1mm) rusty spots also present throughout the rock.
0833 (LIC.881)	(647570E 5799925N)	Outcrop(Grab) Sample consists of hb(bi) Gd exhibiting wk to moderate, locally strong, fracture to spotty to semi-pervasive epidote and hematite. Rock contains rare to tr md to fine grained py. Altered Gd proximate to narrow diabase dykes.
0834 (LIC.881)	(646980E 5803350N)	Large Angular Bld. Vfg, greyish-green, siliceous(cherty) material with 5% clear to smoky qtz eyes(1-3mm). Cherty material associated with qtz-serecite schist and bull qtz bands/zones. No visible sulphides.
0835 (LIC.881)	(646980E 5803350N)	Large Angular Bld. Qtz-serecite schist within an altered/qtz rich porph.(feld.) bi granite? and/or granitoid?.Schist consists of 20-30% thin(1-3mm) crenulated greenish qtz bands with remainder consisting of serecite. Minor qtz eyes present.No sulphides.
0836 (LIC.881)	(646980E 5803350N)	Large Angular Bld. Sample consists of altered bi granite and/or gtoid associated with qtz-serecite schist. Rock exhibits wk-moderate, locally strong, fracture and semi-pervasive hematite, epidote, chlorite and serecite. No visible sulphides.
0837 (LIC.882)	(653750E 5788950N)	Outcrop(chip) Rusty, banded amphibolite with rare, locally trace, fine grained disseminated py. Amphibolite relatively migmatitic in nature with 15-20%narrow contorted granitoid bands.
0921 (TEN ISL)	(652000E 5798300N)	2 m boulder. Sample of lim and hem stained qz with tr coarse gr py in an amphibolite boulder.
0922 (TEN ISL)	(652100E 5798200N)	2 m boulder. Fine to med gr granite composed of ~20% qz, 70% wh feldspar, 5-10% fine bi, tr fine diss py, very weak spty lim, weakly foliated. Rep.
0923 (TEN ISL)	(651800E 5797900N)	Outcrop. Sample of very limonitic crumbly granite in contact with hbde gneiss foliated 075/70N.
0924 (TEN ISL)	(651900E 5802400N)	100m o/c, east end. Fine gr fel-sil band in a hbde amphibolite with 2% fine diss py oriented along banding, tr graphite, bi on frac surf. Mod lim coat. O/c is hb amphibolite to hbde gneiss,trend 085-100/30-70N. Coarse gr - peg granitoid at E end of o/c.

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0925 (TEN ISL)	(651850E 5802400N)	100m o/c, central. Lim stained qz and fine gr felsic band approx 10cm wide ~085/30N with 1/2 - 2% fine - med gr py within amphibolite / hbde gneiss. Rep.
0926 (TEN ISL)	(651800E 5802400N)	100m o/c. west end. Sample of fine gr felsic band within amphibolite, with 5-8mm coarse gr qz veinlets and 4-5% fine - coarse diss py. Mod per epidote in felsic band. weak lim coating. Similar to sample 924.
0927 (TEN ISL)	(651500E 5798000N)	Blasted pit (1990). Amphibolite composed 95% of hbde crystals to c cm, 5% po in massive and semi-massive bands to 5mm. The po rich bands appear to contain felsic material.
0928 (TEN ISL)	(649700E 5797500N)	Outcrop. 1cm felsic vein trending 050/70N with 1/2 - 1% py in blebs and cubes to 2mm, tr graphite, in o/c of amphibolite. Possible narrow shear zone.
1014 (LIC.882)	(646800 5785650)	Outcrop grab. Medium grained hornblende (biotite) Foliate with lense-like foliation.
1015 (LIC.882)	(647300 5785500)	Boulder grab. Hornblende (biotite) Foliate with 10% mafics. medium grained with 10% mafics as lense-like foliation bands and minor epidote developed along fractures.
1016 (LIC.882)	(647150 5785300)	Outcrop grab. Hornblende biotite Foliate which is medium grained with slightly pinkish spots and lense-like foliation. Minor muscovite may be alteration of biotite.
1017 (LIC.882)	(647150 5785300)	Outcrop grab. Hornblende (biotite) Foliate which is medium grained and has accessory grains of epidote and some muscovite as alteration of biotite(?).
1018 (LIC.882)	(647150 5785300)	Outcrop grab. Hornblende (biotite) Foliate with minor chalcopyrite and bornite mineralization with noticeable copper oxide minerals-malachite and possibly chrysocolla as halos in vuggy cavities. Noted by red lichen.
1019 (LIC.882)	(647150 5785300)	Outcrop grab. Same description as sample 1018.
1020 (LIC.882)	(647150 5785300)	Outcrop grab. Same description as sample 1018.
1021 (LIC.882)	(647150 5785300)	Outcrop grab. Same description as sample 1018.

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1022 (LIC.882)	(649400 5784150)	Boulder grab. Fine grained, well indurated biotite Foliate (biotite Gneiss) with trace amounts of finely disseminated pyrite (similar to the biotite Foliate of the Main Zone).
1023 (LIC.882)	(650350 5788700)	Boulder grab. Banded possible metatuff with alternating green layers of amphibole and/or chlorite and 2-3% lensoid to disseminated pyrite.
1024 (LIC.882)	(650700 5788650)	Boulder grab. Medium grained, grey, massive equigranular granite cut by a network of quartz veins.
1025 (LIC.882)	(646980 5789300)	Boulder grab. Boulder from a boulder field which is subangular to angular. Medium grained, equigranular, massive (no prominent foliation) biotite Granite with approximately 5% biotite.
1032 (LIC.881)	(644525E 5801525N)	Outcrop grab. Fine grained and strongly altered (chloritized) biotite foliate (biotite gneiss) with a moderately well developed shear cleavage with numerous fine rusty spots along the foliation (shearing?). Trace to 1% rusty sulphides are present.
1101 (LIC.881)	(643085 5795900)	Boulder-grab. Pervasively hematized and moderately chloritized granodiorite with predominantly fracture controlled epidote. No sulphides were noted.
1102 (LIC.881)	(642990E 5796040N)	Boulder-grab. Altered granodiorite with fracture controlled epidote and moderate pervasive hematite alteration. No sulphides were noted.
1103 (LIC.881)	(642600E 5796485N)	Outcrop-grab. Well foliated migmatitic Biotite Gneiss with pervasive moderately chloritized biotite and 1-2% disseminated coarse blebby foliation parallel pyrite.
1104 (LIC.882)	(642665 5784940)	Boulder-grab. Slightly chloritized, coarse grained well foliated migmatitic Biotite Gneiss with some ptygmatic folding-moderately rusty, however, no sulphides were noted.
1105 (LIC.882)	(642700 5784280)	Boulder-grab. Ptygmatically folded migmatitic Biotite Gneiss with excellent folding and rusty alteration of the biotite. No sulphides were noted.
1106 (LIC.882)	(642700E 5785200N)	Boulder-grab. Slightly to moderately chloritized, coarse grained well foliated migmatitic Biotite Gneiss with a trace of finely disseminated pyrite.
1107 (LIC.882)	(645195E 5784650N)	Boulder-grab. Well foliated migmatitic Biotite Gneiss that is medium to coarse grained and has a trace of finely disseminated pyrite.

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1108 (LIC.882)	(641715 5793480)	Outcrop-grab. Hornblende Granodiorite with weak to moderate hematite and chlorite and bands of Pegmatite-the Granodiorite is moderately magnetic and has disseminated crystals of magnetite.
1109 (LIC.882)	2+00E 0+00N ( )	Boulder grab. A small 30cm x 15cm x15cm boulder of very rusty friable biotite Gneiss or biotite Foliate with traces of molybdenite and 0.5-1.0% of pyrite and possibly traces of chalcopyrite.
1110 (LIC.882)	2+10E 2+10S ( )	Boulder grab. Two small pieces of fine to medium grained siliceous material from several small siliceous boulders over a small area. The siliceous material is locally rusty and has small flakes of biotite and possibly a speck of molybdenite.
1111 (LIC.882)	3+00E 4+85S ( )	Boulder grab. Strongly pervasively chloritized biotite Amphibolite or biotite-chlorite Schist. Well developed crenulation cleavage with 0.5-1.0% foliation parallel to blebby pyrite-probably from the 4-1 showing to the east.
1112 (LIC.882)	3+00E 0+75N ( )	Boulder grab. Small rusty oxidized boulder from a boulder bed. Weakly chloritizedbiotite Gneiss (foliate) or biotite Foliate with 1-2% fine disseminated rusty pyrite.
1113 (LIC.892)	(652025E 5787600N)	Boulder grab. Strongly chloritized and strongly pyritized Amphibolite with 5-7% pyrite as medium to coarse subhedral to anhedral foliation parallel bands.
1114 (LIC.881)	(644000E 5801310N)	Outcrop grab. Fine grained biotite foliate (in handspecimen, migmatitic biotite gneiss in outcrop) with 0.5-1.0% pyrite and chalcopyrite (pyrite appears to dominate). The foliate is fresh and has tiny garnets in it.
1115 (LIC.882)	(652960E 5787000E)	Outcrop grab. Pervasively moderately chloritized migmatitic biotite gneiss with narrow granitoid leucosomes that in outcrop are highly contorted and migmatitic. Trace to 1% fine rusty sulphides are present and locally some specks of cp are noted.
1201 (LIC.881)	(639700E 5793480N)	Boulder-grab. Sample from one of two rusty boulders of Migmatite (Biotite Gneiss) with abundant rusty iron oxidation.
1202 (LIC.881)	(640000E 5793280N)	Boulder-grab. Sample of Granodiorite with spotty to pervasive hematite and chlorite alteration. Chlorite extensively alters the mafic minerals (hornblende) and hematite coats the feldspars.
1203 (LIC.881)	(640325E 5792900N)	Boulder-grab. Sample from a coarse-grained (3mm.) Granodiorite boulder with abundant spotty granules of epidote and brick-red hematitized feldspars.
1204 (LIC.881)	(639475E 5793175N)	Outcrop-grab. Sample of Granodiorite with strong fracture controlled, spotty to locally pervasive hematite and chlorite alteration. Chlorite alters the mafics and hematite locally has quartz veining associated in fractures.

NORWIN GEOLOGICAL LTD. - ROCK SAMPLE DESCRIPTIONS
EASTMAIN RIVER PROJECT (1991)

SAMPLE (AREA)	GRID LOC'N (UTM LOC'N)	DESCRIPTION
1205 (LIC.881)	(640400E 5793650N)	Boulder-grab. Sample of rusty iron oxidized Biotite Gneiss with possible weak silicification.
1206 (LIC.881)	(641725E 5794040N)	Boulder-grab. Sample of Granodiorite with fracture controlled and spotty hematite, chlorite and epidote alteration. Quartz stringers are also present.
1207 (LIC.881)	(642625E 5795300N)	Boulder-grab. Sample of strongly altered Granodiorite with fracture controlled and pervasive hematite, chlorite and calcite and a fine grained cherty appearing stringer.
1208 (LIC.881)	(644925E 5796775N)	Boulder-grab. Sample taken from a boulder in a boulder bed. Sample is of Granodiorite with epidote, chlorite, calcite and hematite alteration. Some fracture controlled pyrite is present in the sample.
1209 (LIC.881)	(644050E 5797220N)	Boulder-grab. Sample of magnetitic (magnetite-bearing) Granodiorite with a small amount of disseminated sulphides.
1211 (LIC.882)	(643545 5784560)	Outcrop-grab. Sample of Migmatite Biotite Gneiss with variably, weakly to moderately chloritized biotite and trace to 1% chalcopyrite and pyrite.
1212 (LIC.882)	(640795 5783790)	Outcrop-grab. Sample of migmatitic Biotite Gneiss with a trace to 1% of pyrite.
1213 (LIC.882)	(640795 5783720)	Boulder-grab. Sample of altered Granodiorite(?).
1214 (LIC.882)	(641070 5784280)	Boulder-grab. One of three samples (see also 1215, 1216) taken from a strongly mineralized Granodiorite (?) boulder with red lichen and malachite. Variable 0.5% to 5% total sulphides consisting of chalcopyrite and locally strong bornite.
1215 (LIC.882)	(641070 5784280)	Boulder-grab. One of three samples (see also 1214 and 1216) taken from a strongly mineralized Granodiorite (?) boulder with red lichen and malachite. Variable 0.5% to 5% total sulphides consisting of chalcopyrite and locally strong bornite.
1216 (LIC.882)	(641070 5784280)	Boulder-grab. One of three samples (see also 1214 and 1215) taken from a strongly mineralized Granodiorite (?) boulder with red lichen and malachite. Variable 0.5% to 5% total sulphides consisting of chalcopyrite and locally strong bornite.
1217 (LIC.882)	(641070 5784280)	Boulder-grab. Second of two mineralized boulders with red lichen (see also 1214, 1215 and 1216 for samples taken from the other, more mineralized boulder). This, the larger Granodiorite boulder, has disseminated trace to 0.5% chalcopyrite.

NORWIN GEOLOGICAL LTD. - ROCK SAMPLE DESCRIPTIONS
EASTMAIN RIVER PROJECT (1991)

SAMPLE (AREA)	GRID LOC'N (UTM LOC'N)	DESCRIPTION
1218 (LIC.882)	(641455 5785600)	Boulder-grab. Sample of leucocratic Biotite Granite (gneiss?). Disseminated trace to 1% chalcopyrite (with malachite) and possibly a trace of molybdenite.

APPENDIX 4

ROCK ANALYSES

XRAL

X-RAY ASSAY LABORATORIES
A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 16141

TO: NORWIN GEOLOGICAL LIMITED
ATTN: STEWART WINTER
560 NOTRE DAME AVENUE
SUDBURY, ONTARIO
P3C 5L2

CUSTOMER No. 1569

DATE SUBMITTED
27-Jun-91

REF. FILE 10290-D3

Total Pages 4

26 ROCKS Proj. EM 893

	METHOD	DETECTION LIMIT
AU-1AT PPB	FADCP	1.
LI PPM	ICP	1.
BE PPM	ICP	.5
NA %	ICP	.01
MG %	ICP	.01
AL %	ICP	.01
P %	ICP	.01
K %	ICP	.01
CA %	ICP	.01
SC PPM	ICP	.5
TI %	ICP	.01
V PPM	ICP	2.
CR PPM	ICP	1.
MN %	ICP	.01
FE %	ICP	.01
CO PPM	ICP	1.

	METHOD	DETECTION LIMIT
NI PPM	ICP	1.
CU PPM	ICP	.5
ZN PPM	ICP	.5
AS PPM	ICP	3.
SR PPM	ICP	.5
Y PPM	ICP	.1
ZR PPM	ICP	.5
MO PPM	ICP	1.
AG PPM	ICP	.1
CD PPM	ICP	1.
SN PPM	ICP	10.
SB PPM	ICP	5.
BA PPM	ICP	1.
W PPM	ICP	10.
PB PPM	ICP	2.
BI PPM	ICP	3.

DATE 08-OCT-91

CERTIFIED BY ....
Philip Boctor, Laboratory Manager

SAMPLE	AU-1AT PPB	LI PPM	BE PPM	NA %	MG %	AL %	P %	K %
1201	1	34	2.4	2.83	1.47	8.03	.03	2.11
1202	<1	34	2.3	3.50	1.43	7.86	.06	2.28
1203	<1	9	1.7	1.67	.65	9.52	.05	4.00
1204	2	30	1.7	3.20	1.35	5.97	.06	1.82
1205	<1	5	2.1	2.69	1.87	7.79	.04	1.31
1206	<1	34	2.4	4.91	1.35	9.21	.06	2.82
1207	<1	41	1.3	.31	1.34	5.93	.05	6.46
1208	<1	9	1.7	1.98	.40	5.53	.02	3.70
1209	<1	2	1.4	2.79	.09	7.04	<.01	2.70
1210	2	67	1.5	2.01	1.12	7.03	.03	1.20
1211	2	30	2.3	3.56	1.31	7.20	.05	2.40
1212	3	24	1.4	2.71	1.04	7.00	.13	1.71
1213	2	77	4.1	1.06	1.43	6.91	.06	3.81
1214	150	59	2.7	2.99	.97	6.57	.05	2.31
1215	28	65	2.5	2.50	1.35	7.17	.05	3.40
1216	64	69	2.5	3.11	1.38	7.65	.06	2.74
1217	15	28	2.5	3.55	1.10	8.41	.05	2.92
1218	63	54	2.5	3.33	.98	8.34	.04	2.62
1101	<1	8	2.3	2.76	.55	7.75	.03	4.85
1102	1	27	2.8	3.82	1.42	8.20	.08	1.88
1103	<1	32	2.9	3.32	1.43	6.60	<.01	1.63
1104	<1	44	3.0	2.84	1.65	7.51	.08	1.89
1105	4	57	3.3	2.47	1.48	7.45	.07	2.21
1106	2	31	3.2	2.04	1.40	7.15	.04	1.65
1107	2	25	10.3	3.25	.50	6.95	.02	1.30
1108	4	14	1.3	3.68	.99	7.18	.04	1.38
C SY-2	--	92	20.7	3.37	1.52	5.97	.18	3.87
D 1201	--	35	2.2	2.92	1.43	7.37	.02	2.15
D 1213	--	84	4.8	1.24	1.54	7.11	.06	4.99
D 1107	--	26	11.9	3.49	.54	7.41	.02	1.34

AU-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT
C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947
Member of the SGS Group (Société Générale de Surveillance)

SAMPLE	CA %	SC PPM	TI %	V PPM	CR PPM	MN %	FE %	CO PPM
1201	1.65	12.0	.32	89	474	.04	3.59	10
1202	2.00	6.9	.22	49	368	.04	2.29	11
1203	7.69	3.2	.18	82	207	.05	5.34	4
1204	3.43	6.8	.22	33	262	.03	1.98	10
1205	2.53	13.1	.32	90	473	.05	4.71	13
1206	2.78	7.3	.25	50	210	.04	2.45	9
1207	.31	6.4	.17	60	390	.02	2.39	9
1208	1.02	7.6	.06	36	520	.02	1.28	6
1209	1.51	.8	.03	13	316	<.01	2.00	3
1210	2.80	9.3	.31	77	458	.08	5.08	30
1211	1.03	9.6	.25	78	390	.04	3.29	17
1212	1.40	7.1	.22	68	407	.04	2.86	12
1213	.31	6.8	.20	76	400	.02	2.28	10
1214	2.06	3.1	.25	101	470	.02	4.04	12
1215	1.94	5.8	.27	74	316	.03	2.95	13
1216	2.37	5.6	.28	82	391	.03	3.28	14
1217	2.36	6.3	.20	64	383	.03	2.34	5
1218	2.00	4.9	.17	55	379	.02	2.00	3
1101	1.69	6.7	.06	47	299	.03	1.48	3
1102	2.83	7.6	.27	76	332	.05	2.92	8
1103	3.77	9.3	.25	85	360	.05	3.49	13
1104	1.26	11.7	.35	100	363	.07	4.08	15
1105	1.79	10.5	.31	89	542	.05	3.69	14
1106	1.50	10.0	.29	88	407	.06	3.55	14
1107	1.75	5.3	.10	15	291	.02	1.41	5
1108	1.92	5.4	.17	32	248	.03	1.99	7
C SY-2	5.75	5.9	.10	36	7	.20	4.03	9
D 1201	1.67	11.0	.32	90	400	.04	3.70	11
D 1213	.32	7.0	.23	71	347	.02	2.30	9
D 1107	2.04	5.9	.11	22	408	.03	1.61	6

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

SAMPLE	NI PPM	CU PPM	ZN PPM	AS PPM	SR PPM	Y PPM	ZR PPM	MO PPM
1201	29	39.3	64.9	<3	353.	6.0	98.3	<1
1202	34	5.3	54.5	<3	534.	7.6	65.0	<1
1203	11	4.9	29.4	<3	2140.	6.1	34.0	2
1204	34	3.4	44.9	8	161.	7.7	50.4	<1
1205	53	38.9	71.9	<3	383.	8.5	91.1	2
1206	34	3.8	58.0	<3	754.	9.4	83.3	2
1207	34	4.2	51.3	6	117.	8.4	38.7	1
1208	17	13.5	36.8	5	241.	3.5	32.6	<1
1209	5	6.4	17.2	<3	416.	1.1	35.2	<1
1210	93	131.	582.	6	185.	11.5	108.	2
1211	59	41.4	84.8	6	233.	10.0	87.7	<1
1212	42	15.4	51.6	10	421.	10.1	66.6	<1
1213	34	17.5	38.2	<3	173.	3.5	74.2	1
1214	44	30900.	255.	9	530.	4.1	79.4	2
1215	44	1680.	70.0	8	511.	6.4	79.7	<1
1216	47	9540.	120.	12	556.	6.0	77.0	1
1217	27	67.4	50.3	<3	585.	4.6	74.1	2
1218	27	1030.	50.5	5	518.	6.6	61.7	733
1101	13	2.1	27.7	<3	540.	7.4	56.7	2
1102	35	6.7	77.3	11	596.	7.0	78.2	<1
1103	61	25.9	151.	9	140.	4.3	81.5	2
1104	66	24.4	75.3	9	326.	8.3	83.2	5
1105	42	13.5	81.2	<3	389.	8.6	83.1	1
1106	52	12.1	64.2	25	421.	5.7	79.9	2
1107	15	14.6	31.4	<3	498.	4.0	45.6	5
1108	22	2.4	36.4	<3	477.	6.0	55.2	<1
C SY-2	6	4.1	233.	11	242.	104.	218.	<1
D 1201	28	34.0	64.1	<3	323.	6.2	94.8	<1
D 1213	33	15.5	37.2	12	178.	3.7	72.2	2
D 1107	16	15.7	39.8	9	539.	4.5	50.2	6

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947
Member of the SGS Group (Société Générale de Surveillance)

XRAL

SAMPLE	AG PPM	CD PPM	SN PPM	SB PPM	BA PPM	W PPM	PB PPM	BI PPM
1201	.2	<1	<10	<5	357	<10	<2	4
1202	<.1	<1	<10	<5	779	<10	<2	<3
1203	<.1	<1	<10	<5	339	<10	<2	4
1204	<.1	<1	<10	<5	624	<10	<2	<3
1205	<.1	<1	<10	<5	277	<10	3	4
1206	<.1	<1	<10	<5	898	<10	<2	<3
1207	<.1	<1	<10	<5	1010	<10	<2	<3
1208	<.1	<1	<10	<5	803	<10	<2	<3
1209	<.1	<1	<10	<5	756	<10	26	<3
1210	.1	<1	<10	<5	175	<10	<2	3
1211	<.1	<1	<10	<5	325	<10	<2	<3
1212	<.1	<1	<10	<5	483	<10	<2	<3
1213	<.1	<1	<10	<5	1190	<10	2	<3
1214	14.1	<1	<10	<5	580	<10	5	47
1215	3.6	<1	<10	<5	1180	<10	<2	<3
1216	6.6	<1	<10	<5	705	<10	<2	14
1217	.4	<1	<10	<5	1020	<10	<2	<3
1218	1.9	<1	<10	<5	890	80	36	62
1101	<.1	<1	<10	<5	1590	<10	<2	<3
1102	<.1	<1	<10	<5	411	<10	<2	<3
1103	.3	<1	<10	<5	162	<10	2	4
1104	.3	<1	<10	<5	634	<10	6	<3
1105	<.1	<1	<10	<5	392	<10	<2	4
1106	<.1	<1	<10	<5	729	<10	4	<3
1107	<.1	<1	<10	<5	507	<10	19	<3
1108	.1	<1	<10	<5	279	<10	<2	<3
C SY-2	1.7	<1	<10	5	396	<10	77	<3
D 1201	<.1	<1	<10	<5	351	<10	17	5
D 1213	<.1	<1	<10	<5	1040	<10	3	<3
D 1107	<.1	<1	<10	10	581	<10	21	<3

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

XRAL

X-RAY ASSAY LABORATORIES
A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 16343

TO: NORWIN GEOLOGICAL LIMITED
ATTN: GLEN PRIOR
560 NOTRE DAME AVENUE
SUDBURY, ONTARIO
P3C 5L2

CUSTOMER No. 1569

DATE SUBMITTED
12-Jul-91

REF. FILE 10382-H5

Total Pages 4

21 ROCKS Proj. EM-881

	METHOD	DETECTION LIMIT
AU-1AT PPB	FADCP	1.
LI PPM	ICP	1.
BE PPM	ICP	.5
NA %	ICP	.01
MG %	ICP	.01
AL %	ICP	.01
P %	ICP	.01
K %	ICP	.01
CA %	ICP	.01
SC PPM	ICP	.5
TI %	ICP	.01
V PPM	ICP	2.
CR PPM	ICP	1.
MN %	ICP	.01
FE %	ICP	.01
CO PPM	ICP	1.

	METHOD	DETECTION LIMIT
NI PPM	ICP	1.
CU PPM	ICP	.5
ZN PPM	ICP	.5
AS PPM	ICP	3.
SR PPM	ICP	.5
Y PPM	ICP	.1
ZR PPM	ICP	.5
MO PPM	ICP	1.
AG PPM	ICP	.1
CD PPM	ICP	1.
SN PPM	ICP	10.
SB PPM	ICP	5.
BA PPM	ICP	1.
W PPM	ICP	10.
PB PPM	ICP	2.
BI PPM	ICP	3.

DATE 12-AUG-91

CERTIFIED BY ....
Philip Boctor, Laboratory Manager

SAMPLE	AU-1AT PPB	LI PPM	BE PPM	NA %	MG %	AL %	P %	K %
621	<1	34	1.5	3.44	1.69	5.93	.02	.52
622	<1	7	2.7	3.32	.07	5.22	<.01	1.33
623	2	11	2.8	1.18	2.03	6.36	.03	.13
624	<1	<1	<.5	.06	.02	.11	<.01	.01
714	12	34	1.9	2.53	.99	8.22	.24	5.61
715	<1	24	4.1	2.48	3.00	7.12	.06	.92
716	<1	14	1.5	3.68	.23	7.28	<.01	2.28
809	<1	43	3.2	3.18	.74	6.96	.04	1.93
810	<1	13	2.3	3.22	2.59	7.58	.04	.80
811	<1	72	1.7	1.66	6.32	5.79	<.01	1.93
812	<1	15	1.4	.04	.85	.75	<.01	.20
813	2	31	2.4	1.90	2.52	7.79	.01	.44
814	2	7	2.3	.43	1.80	5.01	.03	.19
921	<1	40	1.8	.89	.56	4.62	.01	.97
922	<1	17	1.8	2.32	.50	7.00	.04	3.21
923	1	22	5.3	2.31	2.76	6.53	.06	2.38
924	2	9	2.4	.97	1.05	4.44	.05	.22
925	1	<1	1.0	.38	.39	2.01	.02	.05
926	4	<1	2.1	.19	.29	2.62	.02	.04
927	2	13	1.8	.93	4.94	4.37	.01	.24
928	2	15	12.5	4.10	2.82	6.36	.04	.40
C SY-2	--	89	17.0	3.33	1.49	5.97	.14	3.02
D 621	--	32	1.6	3.36	1.66	5.76	.02	.50
D 814	--	10	2.9	.43	1.83	5.02	.02	.20

AU-1AT PPB - ASSAY PERFORMED ON 30 GRAM ALIQUOT
C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

SAMPLE	CA %	SC PPM	TI %	V PPM	CR PPM	MN %	FE %	CO PPM
621	2.61	18.6	.26	56	183	.03	17.7	210
622	.45	.9	.01	9	387	<.01	1.66	6
623	6.05	25.0	.42	197	387	.17	11.2	43
624	.05	<.5	<.01	5	732	<.01	.94	4
714	1.12	2.7	.27	64	291	.03	2.95	14
715	6.90	39.0	1.08	379	176	.15	10.1	34
716	1.34	.6	.12	21	239	.01	1.16	2
809	1.46	5.8	.12	40	224	.03	1.60	6
810	5.31	23.6	.49	174	315	.09	5.21	23
811	4.88	25.8	.27	143	881	.11	5.65	42
812	.60	<.5	<.01	6	561	.02	.63	2
813	5.92	25.8	.43	184	390	.21	8.91	40
814	5.70	23.4	.36	133	375	.18	10.1	22
921	2.53	8.5	.18	61	418	.03	2.67	6
922	2.71	4.8	.24	37	253	.03	2.30	2
923	4.91	36.8	1.03	211	121	.13	7.48	3
924	5.20	17.9	.24	116	412	.18	8.63	37
925	2.67	11.4	.10	61	557	.04	4.41	17
926	3.84	17.8	.15	63	435	.06	8.44	29
927	6.85	23.8	.25	171	696	.13	15.5	181
928	4.20	26.4	.43	173	231	.08	5.20	25
C SY-2	5.97	5.9	.10	43	7	.18	4.22	7
D 621	2.70	18.4	.26	56	174	.03	17.1	210
D 814	5.80	23.8	.37	126	355	.19	10.5	22

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

SAMPLE	NI PPM	CU PPM	ZN PPM	AS PPM	SR PPM	Y PPM	ZR PPM	MO PPM
621	409	1380.	1100.	4	141.	10.6	39.3	6
622	13	53.2	23.2	<3	54.0	2.2	33.0	43
623	76	572.	234.	4	125.	12.8	18.1	<1
624	5	51.5	10.5	4	3.0	.1	.7	1
714	29	170.	64.8	<3	755.	9.2	11.1	1
715	36	71.7	124.	<3	159.	34.3	31.0	<1
716	<1	6.2	17.6	7	307.	3.2	60.9	<1
809	14	5.1	39.4	7	124.	17.6	58.8	<1
810	51	35.3	70.5	<3	219.	15.0	29.5	<1
811	224	3.3	75.6	<3	181.	10.3	24.0	3
812	3	6.5	8.2	<3	17.8	.7	.9	<1
813	76	627.	626.	7	132.	12.2	14.2	1
814	52	235.	165.	10	132.	8.9	23.0	5
921	7	89.4	23.4	3	144.	5.6	7.6	1
922	6	18.7	21.5	13	211.	5.5	86.7	83
923	3	43.2	75.2	<3	157.	5.5	37.0	<1
924	44	579.	108.	<3	58.1	10.2	25.6	202
925	28	252.	35.7	<3	120.	5.1	15.5	9
926	55	159.	61.0	<3	138.	.8	26.2	14
927	492	169.	257.	<3	78.2	7.1	15.2	<1
928	58	239.	65.4	<3	77.6	15.1	13.9	208
C SY-2	6	2.0	237.	11	248.	103.	210.	<1
D 621	386	1330.	1150.	<3	137.	10.4	41.7	3
D 814	53	236.	159.	<3	132.	9.1	23.4	6

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

SAMPLE	AG PPM	CD PPM	SN PPM	SB PPM	BA PPM	W PPM	PB PPM	BI PPM
621	1.3	4	<10	12	116	<10	15	15
622	<.1	<1	<10	<5	321	<10	8	8
623	.5	<1	15	9	22	<10	8	9
624	<.1	<1	<10	<5	3	<10	7	<3
714	<.1	<1	10	<5	1880	<10	12	<3
715	<.1	<1	<10	5	92	<10	<2	11
716	<.1	<1	<10	<5	637	<10	<2	<3
809	<.1	<1	<10	<5	186	<10	<2	<3
810	<.1	<1	<10	5	92	<10	2	5
811	<.1	<1	<10	<5	553	<10	<2	<3
812	.1	<1	<10	<5	22	<10	<2	<3
813	.6	3	<10	6	88	<10	31	8
814	.9	<1	<10	<5	27	<10	144	9
921	<.1	<1	<10	<5	105	<10	<2	3
922	<.1	<1	<10	5	942	<10	6	6
923	.4	<1	<10	<5	249	<10	6	12
924	.9	<1	<10	<5	27	<10	652	10
925	<.1	<1	<10	5	9	<10	22	5
926	.8	<1	<10	<5	10	<10	121	8
927	.2	<1	<10	6	33	<10	6	16
928	.2	<1	<10	13	35	<10	<2	12
C SY-2	.5	<1	<10	<5	352	<10	76	<3
D 621	1.1	4	<10	16	116	<10	8	14
D 814	.8	<1	<10	6	28	<10	134	7

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

APPENDIX 5

SOIL ANALYSES

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 16163

TO: NORWIN GEOLOGICAL LIMITED
ATTN: STEWART WINTER
560 NOTRE DAME AVENUE
SUDBURY, ONTARIO
P3C 5L2

CUSTOMER No. 1569

DATE SUBMITTED
27-Jun-91

REF. FILE 10292-S2

Total Pages 8

323 S Proj. EM 893

	METHOD	DETECTION LIMIT
CO PPM	DCP	1.
NI PPM	DCP	1.
CU PPM	DCP	.5
ZN PPM	DCP	.5
MO PPM	DCP	1.
AG PPM	DCP	.5
CD PPM	DCP	1.
PB PPM	DCP	2.

DATE 08-OCT-91

CERTIFIED BY ....
Philip Boctor, Laboratory Manager

XRAL

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
EP01	3	5	18.0	33.3	2	<.5	<1	12
EP02	4	3	8.5	16.2	2	<.5	<1	10
EP03	3	5	8.3	16.6	1	<.5	<1	6
EP04	5	6	10.2	17.6	1	<.5	<1	8
EP05	3	5	5.5	13.6	1	<.5	<1	4
EP06	4	4	6.3	12.6	1	<.5	<1	7
EP07	3	3	4.7	9.7	2	<.5	<1	6
EP08	2	4	4.9	8.9	2	<.5	<1	4
EP09	3	5	9.8	10.4	2	<.5	<1	6
KB01	5	8	18.0	22.2	2	<.5	<1	5
KB02	3	5	8.4	14.1	2	<.5	<1	3
KB03	2	2	7.8	12.9	1	<.5	<1	7
KB04	5	6	11.4	20.3	2	<.5	<1	7
KB05	2	3	8.8	12.4	1	<.5	<1	8
KB06	6	13	11.8	24.8	1	<.5	<1	8
KB07	4	6	20.1	22.1	2	<.5	<1	9
KB08	3	7	10.9	14.3	2	<.5	<1	6
KB09	6	7	17.8	24.8	2	<.5	<1	9
KB10	2	4	8.8	13.0	2	<.5	<1	7
KB11	3	4	15.1	19.5	2	<.5	<1	9
KB12	3	4	8.7	12.6	2	<.5	<1	8
KB13	5	3	11.6	15.6	2	<.5	<1	8
KB14	3	2	8.7	12.2	2	<.5	<1	4
KB15	3	5	7.6	10.6	1	<.5	<1	5
KB16	3	5	11.1	13.0	3	<.5	<1	6
KB17	3	5	16.2	13.2	2	<.5	<1	6
KB18	2	2	10.5	10.9	1	<.5	<1	11
KB19	5	11	12.1	24.7	2	<.5	<1	9
KB20	3	3	7.5	6.8	2	<.5	<1	11
KB21	7	11	17.2	27.5	3	<.5	<1	10
KB22	2	3	8.4	11.2	<1	<.5	<1	9
KB23	5	6	11.1	20.1	1	<.5	<1	6
KB24	3	5	22.6	27.4	<1	<.5	<1	6
KB25	2	4	9.1	10.4	<1	<.5	<1	5
KB26	5	5	9.6	17.3	1	<.5	<1	6
KB27	3	3	6.4	11.1	2	<.5	<1	5
KB28	3	4	10.3	12.6	2	<.5	<1	9
KB29	2	3	9.7	10.9	2	<.5	<1	4
KB30	2	4	7.9	13.2	2	<.5	<1	4
KB31	6	15	54.0	40.7	2	<.5	<1	15
KB32	6	12	17.1	26.0	2	<.5	<1	8
KB33	2	2	6.5	9.0	<1	<.5	<1	8
KB34	5	8	19.2	24.6	1	<.5	<1	9
KB35	2	2	8.7	11.2	<1	<.5	<1	12
KB36	2	4	14.1	15.6	1	<.5	<1	5
KB37	2	4	9.4	14.8	1	<.5	<1	3
KB38	3	3	11.7	11.8	2	<.5	<1	8
KB39	5	4	8.4	13.2	2	<.5	<1	6
KB40	5	5	13.3	19.4	2	<.5	<1	9
KB41	2	2	13.1	13.3	2	<.5	<1	8

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
KB42	7	10	13.8	23.6	2	<.5	<1	10
KB43	3	5	6.6	13.0	1	<.5	<1	5
KB44	3	5	14.1	11.1	1	<.5	<1	7
KB45	2	2	11.7	21.1	2	<.5	<1	4
KB46	4	3	9.8	16.5	2	<.5	<1	6
KB47	3	4	7.6	14.0	1	<.5	<1	5
KB48	5	3	15.5	18.0	2	<.5	<1	7
KB49	4	4	20.9	18.4	2	<.5	<1	9
KB50	3	3	11.6	14.1	2	<.5	<1	10
KB51	3	3	9.1	14.9	2	<.5	<1	10
KB52	3	3	18.4	15.8	2	<.5	<1	11
KB53	2	2	13.0	22.0	<1	<.5	<1	13
KB54	1	1	5.7	8.3	<1	<.5	<1	11
KB55	2	2	12.4	12.9	2	<.5	<1	8
KB56	3	3	13.4	14.1	1	<.5	<1	9
KB57	3	3	12.7	17.9	2	<.5	<1	8
KB58	3	3	11.3	16.8	1	<.5	<1	6
KB59	4	7	15.5	26.8	5	<.5	<1	13
KB60	3	3	12.5	16.3	2	<.5	<1	11
KB61	4	3	13.9	25.7	3	<.5	<1	11
KB62	2	3	13.9	19.4	1	<.5	<1	6
KB63	4	4	8.9	16.6	2	<.5	<1	6
KB64	2	3	12.0	15.3	1	<.5	<1	15
KB65	1	1	8.6	7.8	<1	<.5	<1	6
KB66	3	5	16.0	12.6	2	<.5	<1	5
KB67	3	4	8.6	12.9	2	<.5	<1	7
KB68	4	4	10.7	11.4	2	<.5	<1	9
KB69	3	7	9.1	14.3	1	<.5	<1	5
KB70	4	6	24.1	27.7	2	<.5	<1	12
KB71	5	8	18.8	25.7	2	<.5	<1	8
KB72	2	2	8.1	8.8	<1	<.5	<1	10
KB73	2	3	13.9	18.1	<1	<.5	<1	10
KB74	3	4	16.1	24.3	2	<.5	<1	9
KB75	2	7	34.6	34.1	1	<.5	<1	9
KB76	3	4	13.5	21.6	2	<.5	<1	4
KB77	2	2	9.4	7.5	<1	<.5	<1	11
KB78	2	2	8.3	14.6	<1	<.5	<1	5
KB79	4	6	7.6	19.8	2	<.5	<1	4
KB80	3	4	2.5	12.8	1	<.5	<1	6
KB81	2	3	5.2	10.3	<1	<.5	<1	4
JM201	4	6	8.0	19.9	2	<.5	<1	3
JM202	2	4	4.9	12.3	<1	<.5	<1	4
JM203	2	5	9.5	10.6	2	<.5	<1	5
JM204	3	4	6.6	20.3	3	<.5	<1	8
JM205	6	14	8.0	23.3	3	<.5	<1	6
JM206	3	5	6.7	14.5	1	<.5	<1	2
JM207	3	3	5.3	14.5	2	<.5	<1	5
JM208	3	3	6.9	11.9	1	<.5	<1	4
JM209	3	4	5.6	19.7	1	<.5	<1	8
JM210	3	4	5.6	12.2	1	<.5	<1	6

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
JM211	3	6	7.2	20.2	2	<.5	<1	7
JM212	3	5	7.7	13.9	1	<.5	<1	5
JM213	3	6	5.8	11.5	<1	<.5	<1	3
JM214	4	5	8.0	18.8	1	<.5	<1	13
JM215	2	2	6.6	10.0	<1	<.5	<1	4
JM216	3	4	6.8	13.5	1	<.5	<1	6
JM217	3	4	3.6	12.4	1	<.5	<1	3
JM218	3	3	6.6	13.8	1	<.5	<1	2
JM219	2	2	2.8	9.6	<1	<.5	<1	6
JM220	4	6	8.3	15.8	2	<.5	<1	6
JM221	2	3	5.3	9.7	1	<.5	<1	8
JM222	2	6	9.0	10.1	1	<.5	<1	6
JM223	4	6	9.3	26.9	2	<.5	<1	8
JM224	1	1	7.8	5.4	<1	<.5	<1	7
JM225	6	13	15.8	22.9	2	.5	<1	5
JM226	2	5	6.0	15.7	1	<.5	<1	4
JM227	3	4	9.8	18.2	2	<.5	<1	10
JM228	2	4	4.9	11.7	<1	<.5	<1	2
JM229	3	4	8.6	19.6	1	<.5	<1	9
JM230	5	5	4.1	15.7	1	<.5	<1	7
JM231	3	4	6.0	18.4	2	<.5	<1	7
JM232	3	6	6.9	15.7	1	<.5	<1	4
JM233	3	4	7.2	12.4	1	<.5	<1	6
JM234	3	5	5.0	17.3	1	<.5	<1	5
JM235	4	6	8.4	20.1	1	<.5	<1	6
JM236	7	11	19.1	29.5	1	<.5	<1	8
JM237	8	19	20.0	42.8	3	.5	<1	10
JM238	2	4	3.9	10.5	<1	<.5	<1	5
JM239	3	3	6.6	16.9	1	<.5	<1	7
JM240	4	6	11.2	20.7	1	.5	<1	8
JM241	3	5	4.7	14.8	2	<.5	<1	6
JM242	5	7	5.7	17.3	1	<.5	<1	6
JM243	3	3	9.1	17.3	<1	<.5	<1	8
JM244	4	5	9.1	17.9	1	<.5	<1	7
JM245	2	5	7.1	11.3	<1	<.5	<1	5
JM246	3	3	12.5	14.7	1	<.5	<1	7
JM247	4	5	5.6	17.5	1	<.5	<1	6
JM248	3	3	7.0	12.4	1	<.5	<1	7
JM249	7	10	9.3	24.1	2	.5	<1	13
JM250	3	5	5.7	11.3	1	<.5	<1	4
JM251	3	3	6.2	11.4	<1	<.5	<1	7
JM252	5	8	10.2	23.2	1	<.5	<1	11
JM253	6	18	43.7	29.0	1	.5	<1	8
JM254	2	2	9.2	16.1	1	<.5	<1	6
JM255	3	3	10.4	21.6	2	<.5	<1	8
JM256	3	3	10.9	12.7	1	<.5	<1	5
JM257	4	7	11.0	16.4	<1	<.5	<1	5
JM258	3	5	8.5	18.4	2	<.5	<1	7
JM259	2	2	7.9	11.0	1	<.5	<1	5
JM260	2	2	8.7	11.7	<1	<.5	<1	7

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
JM261	4	6	9.3	22.4	2	<.5	<1	9
JM262	2	2	5.4	5.5	<1	<.5	<1	12
JM263	3	3	14.2	10.1	<1	<.5	<1	9
JM264	2	2	7.2	9.6	<1	<.5	<1	10
JM265	2	3	8.0	9.9	<1	<.5	<1	6
JM266	3	5	5.0	9.6	<1	<.5	1	3
JM267	5	6	16.9	36.6	2	.7	1	15
JM268	2	2	9.3	11.3	<1	<.5	<1	8
JM269	3	3	8.6	11.0	<1	<.5	<1	9
JM270	4	4	9.6	14.7	1	<.5	<1	13
JM271	4	4	20.6	26.3	2	.5	1	11
JM272	2	3	9.9	11.5	<1	<.5	<1	9
JM273	1	2	6.6	6.6	<1	<.5	<1	10
JM274	3	6	11.4	15.1	<1	<.5	1	13
JM275	4	4	15.4	18.8	2	.6	<1	9
JM276	6	8	37.9	37.8	4	.9	1	19
JM277	5	6	15.5	26.4	1	.5	1	11
JM278	2	4	12.4	11.0	<1	<.5	1	4
JM279	10	21	52.3	42.7	2	<.5	<1	6
JM280	5	10	26.5	28.1	2	<.5	<1	6
JM281	3	5	5.6	18.3	<1	<.5	<1	<2
JM282	2	3	8.0	13.7	<1	<.5	1	5
JM283	2	3	8.9	17.5	<1	<.5	<1	6
JM284	4	7	10.8	25.1	<1	<.5	<1	7
JM285	3	5	9.9	18.1	<1	<.5	<1	12
JM286	4	6	15.3	28.4	2	.5	<1	8
JM287	3	4	8.6	16.2	<1	<.5	<1	10
JM288	3	4	7.2	14.6	<1	<.5	<1	8
JM289	4	8	12.1	15.8	2	<.5	1	4
SW201	3	6	10.5	21.8	<1	<.5	<1	7
SW202	3	6	9.7	21.9	<1	<.5	1	3
SW203	5	6	10.9	35.5	<1	<.5	1	4
SW204	6	11	21.6	35.3	<1	<.5	1	6
SW205	3	6	8.7	25.5	<1	<.5	<1	3
SW206	1	3	9.6	12.9	2	<.5	<1	5
SW207	2	4	9.1	23.3	1	<.5	<1	4
SW208	3	4	9.7	23.2	1	<.5	<1	5
SW209	3	4	5.3	14.2	1	<.5	<1	8
SW210	3	6	7.3	17.5	<1	<.5	<1	3
SW211	4	4	8.4	23.2	1	<.5	<1	13
SW212	3	4	9.4	32.6	1	<.5	<1	8
SW213	3	4	15.0	22.1	2	<.5	<1	4
SW214	3	4	9.1	21.0	1	<.5	<1	7
SW215	4	5	13.8	29.3	2	<.5	<1	10
SW216	5	9	27.3	27.6	1	<.5	<1	4
SW217	4	4	12.6	21.0	2	<.5	<1	9
SW218	4	5	11.1	17.7	2	<.5	<1	7
SW219	3	5	12.0	16.0	2	<.5	<1	7
SW220	2	3	7.5	15.4	1	<.5	<1	5
SW221	3	4	8.3	12.6	1	<.5	<1	5

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
SW222	3	3	7.9	9.5	<1	<.5	<1	5
SW223	3	4	15.2	21.3	1	<.5	<1	6
SW224	6	8	12.4	30.7	2	<.5	<1	9
SW225	7	12	32.6	53.1	3	.6	<1	10
SW226	2	2	8.3	11.5	<1	<.5	<1	12
SW227	4	5	16.7	35.7	1	<.5	<1	8
SW228	3	5	9.1	21.1	1	<.5	<1	5
SW229	3	3	9.7	26.1	<1	<.5	<1	6
SW230	2	2	8.0	14.2	1	<.5	<1	11
SW231	2	5	8.1	13.8	<1	<.5	<1	2
SW232	3	3	12.8	16.6	1	<.5	<1	7
SW233	3	3	11.5	12.8	<1	<.5	<1	9
SW234	3	3	6.0	14.3	1	<.5	<1	12
SW235	3	5	8.1	13.9	1	<.5	<1	6
SW236	3	4	9.4	24.1	<1	<.5	<1	7
SW237	4	5	13.4	18.5	1	<.5	<1	7
SW238	2	2	14.2	19.1	1	<.5	<1	5
SW239	2	3	13.9	11.2	1	<.5	<1	8
SW240	3	4	8.6	20.7	<1	<.5	<1	5
SW241	2	2	8.7	16.6	<1	<.5	<1	9
SW242	3	4	14.1	33.1	1	.5	<1	7
SW243	3	5	10.3	17.3	1	<.5	<1	7
SW244	2	3	6.5	8.4	<1	<.5	<1	4
SW245	2	4	8.6	12.9	1	<.5	<1	3
SW246	1	<1	3.9	5.5	<1	<.5	<1	6
SW247	4	6	8.3	26.5	1	<.5	<1	6
SW248	3	4	6.0	22.5	1	<.5	<1	5
SW249	7	17	49.1	71.0	3	.6	<1	14
SW250	3	5	5.3	21.4	1	<.5	<1	4
SW251	3	4	8.1	22.3	1	<.5	<1	10
SW252	3	3	6.7	24.6	1	<.5	<1	11
SW253	2	1	15.2	23.9	<1	<.5	<1	9
SW254	3	3	6.8	24.1	1	<.5	<1	11
SW255	2	2	9.8	13.0	<1	<.5	<1	10
SW256	2	3	7.6	19.0	1	<.5	<1	8
SW257	3	4	7.7	17.1	<1	<.5	<1	4
SW258	3	4	7.7	14.3	<1	<.5	<1	4
SW259	3	3	8.0	16.1	<1	<.5	<1	7
SW260	3	4	6.1	14.1	1	<.5	<1	7
SW261	3	4	4.9	12.0	<1	<.5	<1	4
SW262	3	4	4.7	14.0	1	<.5	<1	4
SW263	4	7	8.1	20.2	<1	<.5	<1	5
SW264	3	4	5.8	12.3	1	<.5	<1	7
SW265	6	13	9.2	31.8	<1	<.5	<1	6
SW266	2	2	8.7	24.1	1	.5	<1	7
SW267	1	2	4.8	14.9	<1	<.5	<1	6
SW268	3	4	7.0	15.3	<1	<.5	<1	6
SW269	3	4	9.3	17.6	1	<.5	<1	6
SW270	3	4	8.1	14.9	1	<.5	<1	6
SW271	3	4	6.7	20.0	1	.5	<1	7

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
SW272	3	3	5.8	19.8	<1	<.5	<1	9
SW273	6	11	27.1	58.0	2	.8	<1	11
SW274	4	7	7.1	18.0	1	.5	<1	7
SW275	3	4	8.2	16.5	<1	<.5	<1	6
SW276	5	8	14.7	44.6	2	.6	<1	11
SW277	3	5	7.2	17.8	1	<.5	<1	4
SW278	1	2	4.3	17.2	<1	<.5	<1	4
SW279	3	3	7.5	24.9	<1	<.5	<1	3
SW280	2	3	6.4	24.3	2	<.5	<1	5
SW281	4	5	12.6	54.9	1	<.5	<1	8
SW282	2	2	4.5	23.6	<1	<.5	<1	8
SW283	<1	2	6.6	18.2	<1	<.5	<1	6
SW284	2	3	4.5	32.6	1	<.5	<1	7
SW285	2	3	14.3	23.7	1	<.5	<1	5
SW286	2	2	4.1	17.5	1	<.5	<1	8
SW287	2	3	8.1	18.7	<1	<.5	<1	6
SW288	3	3	6.6	28.4	1	<.5	<1	9
SW289	2	3	9.9	22.2	1	<.5	<1	6
SW290	2	3	25.6	27.3	2	<.5	<1	8
SW291	2	2	7.7	16.7	1	<.5	<1	6
SW292	4	6	7.1	15.0	2	<.5	<1	9
SW293	3	5	11.1	18.3	1	<.5	<1	6
SW294	3	4	6.2	25.1	1	<.5	<1	4
SW295	2	3	9.2	17.4	<1	<.5	<1	3
SW296	3	4	7.7	27.5	1	<.5	<1	8
SW297	3	2	8.1	14.1	<1	<.5	<1	6
SW298	3	6	6.3	25.7	1	<.5	<1	7
SW299	1	2	15.1	19.8	1	<.5	<1	10
SW300	<1	1	4.2	14.9	<1	<.5	<1	4
SW301	2	2	8.7	21.3	<1	<.5	<1	5
SW302	2	2	9.0	24.2	2	<.5	<1	6
SW303	1	2	6.8	15.3	<1	<.5	<1	3
SW304	2	3	7.9	22.0	1	<.5	<1	3
SW305	2	2	7.5	19.1	<1	<.5	<1	7
SW306	3	2	5.7	25.4	1	<.5	<1	7
SW307	1	1	8.6	27.4	<1	<.5	<1	9
SW308	1	1	5.4	15.9	<1	<.5	<1	8
SW309	3	5	12.9	27.9	1	<.5	<1	11
SW310	2	3	9.0	20.3	<1	<.5	<1	4
SW311	3	3	9.4	46.3	2	<.5	<1	3
SW312	3	2	8.7	25.1	1	<.5	<1	7
SW313	2	3	8.9	37.4	1	<.5	<1	4
SW314	2	3	7.4	22.0	1	<.5	<1	7
SW315	3	3	12.6	27.2	2	<.5	<1	7
SW316	1	3	5.7	16.6	<1	<.5	<1	5
SW317	1	1	12.7	21.5	1	<.5	<1	5
SW318	3	2	9.9	43.2	1	<.5	<1	8
SW319	<1	1	8.2	22.6	<1	<.5	<1	5
SW320	1	1	7.3	22.4	<1	<.5	<1	10
SW321	3	3	17.3	34.2	2	<.5	<1	11

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
SW322	1	1	6.0	17.6	<1	<.5	<1	12
SW323	1	1	11.3	11.4	<1	<.5	<1	11
SW324	4	4	12.1	28.3	1	<.5	<1	8
SW325	3	2	8.2	14.4	1	<.5	<1	5
SW326	2	2	5.4	21.2	1	<.5	<1	8
SW327	2	4	7.7	18.0	<1	<.5	<1	5
SW328	2	2	7.7	26.9	2	<.5	<1	3
SW329	2	3	17.8	36.9	2	<.5	<1	6
SW330	<1	<1	9.7	20.6	1	<.5	<1	4
SW331	4	3	9.6	18.0	2	<.5	<1	9
SW332	2	3	7.0	54.1	<1	<.5	<1	6
SW333	3	4	10.6	24.8	1	<.5	<1	11
SW334	4	6	12.6	44.1	2	<.5	<1	8
SW335	5	8	13.3	27.3	1	<.5	<1	6
SW336	2	2	8.7	29.2	2	<.5	<1	5
SW337	4	8	31.0	45.2	1	<.5	<1	8
SW338	3	5	9.6	46.4	1	<.5	<1	8
SW339	3	5	8.3	27.8	1	<.5	<1	8
SW340	5	5	5.4	26.9	1	<.5	<1	9
SW341	<1	<1	10.0	24.4	<1	<.5	<1	7
SW342	3	4	8.6	20.0	2	<.5	<1	7
SW343	2	3	5.3	10.0	<1	<.5	<1	3
SW344	4	6	7.2	21.0	2	<.5	<1	4
C DCP CONTROL	6	12	11.8	19.0	3	<.5	<1	2
C DCP CONTROL	6	12	11.3	18.1	3	<.5	<1	4
C DCP CONTROL	6	13	11.9	18.2	3	<.5	<1	2
C DCP CONTROL	7	15	12.7	21.0	2	<.5	2	3
C DCP CONTROL	6	12	11.2	19.0	3	<.5	<1	4
C DCP CONTROL	6	13	11.9	20.1	3	<.5	<1	3
C DCP CONTROL	6	12	11.3	18.6	2	<.5	<1	3
C DCP CONTROL	6	12	11.4	19.0	2	<.5	<1	3
D EP01	3	6	18.7	36.6	<1	<.5	<1	12
D KB04	4	7	11.0	21.9	<1	<.5	<1	6
D KB16	3	6	12.6	15.1	2	<.5	<1	5
D KB28	3	4	7.7	10.0	<1	<.5	<1	6
D KB38	3	4	10.0	14.3	1	<.5	<1	6
D KB50	3	3	9.1	13.7	1	<.5	<1	7
D KB62	2	2	15.7	18.5	<1	<.5	<1	6
D KB74	2	4	15.1	25.9	2	<.5	<1	8
D JM203	3	7	10.4	15.2	2	<.5	<1	4
D JM215	1	1	6.4	11.2	<1	<.5	<1	4
D JM227	3	5	10.2	18.7	2	.5	<1	9
D JM239	3	4	7.7	17.2	<1	<.5	<1	7
D JM249	5	10	11.6	26.8	<1	<.5	<1	11
D JM261	3	5	8.5	22.3	1	<.5	<1	7
D JM273	<1	1	6.4	6.1	<1	<.5	<1	9
D JM285	2	4	9.6	15.8	<1	<.5	<1	9
D SW206	1	4	8.3	15.7	<1	<.5	<1	3
D SW218	3	5	10.2	18.4	1	<.5	<1	6
D SW230	2	3	7.8	16.8	<1	<.5	<1	11

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
D SW242	3	5	12.8	35.2	<1	<.5	<1	6
D SW252	2	4	4.7	18.5	<1	<.5	<1	7
D SW264	3	4	5.9	12.4	1	<.5	<1	5
D SW276	5	8	11.3	46.9	2	.6	<1	11
D SW288	3	4	6.3	29.2	<1	<.5	<1	8
D SW298	4	8	6.3	29.3	<1	<.5	<1	5
D SW310	2	4	8.8	20.9	<1	<.5	<1	5
D SW322	1	2	7.2	20.0	<1	<.5	<1	11
D SW334	4	6	11.3	43.8	2	<.5	<1	7
D SW344	4	6	6.6	20.1	2	.5	<1	4

D - QUALITY CONTROL DUPLICATE

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947
Member of the SGS Group (Société Générale de Surveillance)

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 16266

TO: NORWIN GEOLOGICAL LIMITED
ATTN: GLEN PRIOR
560 NOTRE DAME AVENUE
SUDBURY, ONTARIO
P3C 5L2

CUSTOMER No. 1569

DATE SUBMITTED
11-Jul-91

REF. FILE 10351-A5

Total Pages 4

157 SOILS Proj. EM-881

	METHOD	DETECTION LIMIT
CO PPM	DCP	1.
NI PPM	DCP	1.
CU PPM	DCP	.5
ZN PPM	DCP	.5
MO PPM	DCP	1.
AG PPM	DCP	.5
CD PPM	DCP	1.
PB PPM	DCP	2.

DATE 07-AUG-91

CERTIFIED BY ....
Philip Boctor, Laboratory Manager

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-G-501	3	4	5.8	11.0	1	<.5	<1	<2
91-G-502	4	3	4.7	17.4	2	<.5	<1	2
91-G-503	3	1	8.1	20.1	2	<.5	<1	2
91-G-504	2	1	3.0	12.2	<1	<.5	<1	<2
91-G-505	1	<1	3.9	5.6	<1	<.5	<1	<2
91-G-506	3	2	6.4	15.2	2	<.5	<1	<2
91-G-507	1	<1	3.5	7.5	<1	<.5	<1	<2
91-G-508	2	2	2.6	11.6	<1	<.5	<1	<2
91-G-509	2	14	9.0	15.7	<1	<.5	<1	<2
91-G-510	3	1	5.4	16.4	2	<.5	<1	<2
91-G-511	2	<1	4.7	10.6	2	<.5	<1	<2
91-G-512	2	<1	4.5	11.8	<1	<.5	<1	<2
91-G-513	2	<1	2.8	4.6	<1	<.5	<1	<2
91-G-514	2	1	1.8	7.0	<1	<.5	<1	<2
91-G-515	2	<1	3.7	8.6	<1	<.5	<1	<2
91-G-516	4	3	6.3	13.7	2	<.5	<1	16
91-G-517	2	<1	4.8	12.1	<1	<.5	<1	<2
91-G-518	2	<1	4.7	7.2	<1	<.5	<1	2
91-G-519	2	<1	4.6	9.2	<1	<.5	<1	6
91-G-520	3	3	3.8	12.4	1	<.5	<1	2
91-G-521	3	2	4.0	10.7	1	<.5	<1	<2
91-G-522	5	9	5.9	31.6	3	<.5	<1	<2
91-G-523	4	4	3.7	14.2	2	<.5	<1	<2
91-G-524	4	6	4.6	24.2	2	<.5	<1	<2
91-G-525	3	4	6.6	14.9	2	<.5	<1	<2
91-G-526	2	3	3.4	16.8	1	<.5	<1	<2
91-G-527	2	<1	3.6	14.8	2	<.5	<1	<2
91-G-528	2	<1	3.3	17.4	2	<.5	<1	<2
91-G-529	2	2	3.8	9.9	1	<.5	<1	<2
91-G-530	2	1	2.2	17.2	2	<.5	<1	<2
91-G-531	2	2	2.0	9.9	2	<.5	<1	<2
91-G-532	2	1	2.2	13.6	1	<.5	<1	<2
91-G-533	1	<1	4.6	13.5	<1	<.5	<1	<2
91-G-534	2	<1	4.2	16.6	1	<.5	<1	<2
91-G-535	2	<1	6.1	19.1	2	<.5	<1	<2
91-G-536	3	1	2.7	17.5	2	<.5	<1	<2
91-G-537	3	5	4.0	12.9	1	<.5	<1	<2
91-G-538	3	3	2.8	16.3	2	<.5	<1	<2
91-G-539	4	4	4.4	25.9	2	<.5	<1	<2
91-G-540	3	4	3.6	14.4	2	<.5	<1	<2
91-G-541	3	2	3.2	15.4	1	<.5	<1	<2
91-JM-501	3	<1	5.1	15.1	2	<.5	<1	8
91-JM-502	6	6	31.8	37.4	3	<.5	<1	<2
91-JM-503	1	<1	4.2	13.9	<1	<.5	<1	<2
91-JM-504	2	<1	4.9	15.9	2	<.5	<1	<2
91-JM-505	3	<1	3.7	16.3	2	<.5	<1	<2
91-JM-506	2	<1	6.4	18.9	1	<.5	<1	2
91-JM-507	4	2	6.0	39.0	3	<.5	<1	<2
91-JM-508	5	3	6.6	32.2	3	<.5	<1	<2
91-JM-509	2	2	5.4	17.3	2	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-JM-510	3	1	5.8	23.4	2	<.5	<1	<2
91-JM-511	3	<1	3.0	23.0	2	<.5	<1	<2
91-JM-512	2	<1	5.5	16.9	<1	<.5	<1	<2
91-JM-513	3	<1	5.9	26.4	2	<.5	<1	<2
91-JM-514	3	<1	17.9	31.7	3	<.5	<1	2
91-JM-515	2	<1	5.6	24.2	2	<.5	<1	<2
91-JM-516	4	<1	3.6	22.1	2	<.5	<1	<2
91-JM-517	2	<1	3.5	20.3	2	<.5	<1	<2
91-JM-518	2	<1	3.2	13.7	<1	<.5	<1	<2
91-JM-519	3	2	1.7	9.5	2	<.5	<1	<2
91-JM-520	4	2	6.0	15.3	2	<.5	<1	<2
91-JM-521	12	7	20.6	96.3	3	.6	<1	2
91-JM-522	2	<1	15.6	27.7	<1	<.5	<1	4
91-JM-523	2	<1	3.2	11.2	1	<.5	<1	<2
91-JM-524	2	1	3.9	15.8	<1	<.5	<1	<2
91-JM-525	3	1	4.3	22.1	2	<.5	<1	<2
91-JM-526	2	1	4.1	17.4	1	<.5	<1	<2
91-JM-527	1	<1	1.7	10.5	<1	<.5	<1	<2
91-JM-528	3	<1	3.0	18.8	2	<.5	<1	<2
91-JM-529	2	1	1.4	14.0	1	<.5	<1	<2
91-JM-530	2	2	4.0	18.4	2	<.5	<1	2
91-JM-531	2	2	2.7	13.6	2	<.5	<1	<2
91-JM-532	2	2	4.8	18.2	2	<.5	<1	<2
91-JM-533	2	3	3.8	16.7	1	<.5	<1	<2
91-JM-534	2	2	4.6	23.9	2	<.5	<1	<2
91-JM-535	3	3	7.6	20.8	4	<.5	<1	<2
91-JM-536	3	2	3.8	21.6	3	<.5	<1	<2
91-JM-537	2	<1	3.1	12.0	1	<.5	<1	<2
91-JM-538	<1	<1	1.5	9.5	<1	<.5	<1	<2
91-JM-539	3	3	1.8	12.9	3	<.5	<1	<2
91-JM-540	3	4	5.0	19.9	1	<.5	<1	<2
91-JM-541	3	5	2.6	16.1	2	<.5	<1	<2
91-JM-542	3	4	3.6	13.3	2	<.5	<1	<2
91-JM-543	3	6	3.5	20.7	2	<.5	<1	<2
91-E-501	4	7	3.8	25.1	3	<.5	<1	<2
91-E-502	5	8	4.0	32.6	3	<.5	<1	<2
91-E-503	4	7	3.7	18.7	2	<.5	<1	<2
91-E-504	5	8	3.5	29.5	3	<.5	<1	<2
91-E-505	4	4	5.5	31.2	3	<.5	<1	<2
91-E-506	4	7	4.0	18.8	2	<.5	<1	<2
91-E-507	4	10	4.6	26.1	2	<.5	<1	<2
91-E-508	4	7	2.9	24.0	2	<.5	<1	<2
91-E-509	3	4	3.9	15.8	2	<.5	<1	<2
91-E-510	3	5	4.2	15.2	1	<.5	<1	<2
91-E-511	4	5	4.2	22.4	2	<.5	<1	<2
91-E-512	3	3	1.9	15.9	1	<.5	<1	<2
91-E-513	3	5	3.7	18.8	1	<.5	<1	<2
91-E-514	4	7	6.7	38.1	1	<.5	<1	<2
91-E-515	4	5	6.3	27.5	1	<.5	<1	<2
91-E-516	4	5	4.0	18.6	2	<.5	<1	2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-E-517	4	8	5.4	18.0	1	<.5	<1	<2
91-E-518	4	6	2.8	26.4	1	<.5	<1	<2
91-E-519	6	9	9.8	36.9	2	<.5	<1	6
91-E-520	6	10	6.6	36.1	2	<.5	<1	4
91-E-521	4	7	14.1	31.1	1	<.5	<1	2
91-L-501	7	12	12.3	38.4	2	<.5	<1	6
91-L-502	8	12	21.8	43.0	3	<.5	<1	4
91-L-503	5	9	6.1	23.0	2	<.5	<1	<2
91-L-504	4	6	25.4	24.4	2	<.5	<1	2
91-L-505	4	3	11.0	26.7	2	<.5	<1	6
91-L-506	3	3	2.8	13.8	2	<.5	<1	2
91-L-507	6	9	5.8	34.8	2	<.5	<1	2
91-L-508	4	6	6.6	17.4	2	<.5	<1	<2
91-L-509	5	9	6.9	25.5	2	<.5	<1	<2
91-Y-501	7	8	7.4	44.1	3	.7	<1	8
91-Y-502	6	8	5.0	31.1	2	<.5	<1	4
91-Y-503	6	10	6.9	26.8	1	<.5	<1	<2
91-Y-504	4	5	22.4	19.1	4	<.5	<1	2
91-Y-505	3	3	6.0	15.3	2	<.5	<1	<2
91-Y-506	4	3	3.4	14.5	1	<.5	<1	2
91-Y-507	2	2	6.3	15.0	<1	<.5	<1	<2
91-Y-508	4	3	4.8	16.2	1	<.5	<1	2
91-Y-509	5	3	5.8	14.6	2	<.5	<1	2
91-Y-510	2	2	5.5	11.7	<1	<.5	<1	2
91-Y-511	2	3	7.7	12.9	1	<.5	<1	<2
91-Y-512	3	3	13.6	28.4	2	<.5	<1	2
91-Y-513	3	3	7.0	13.9	<1	<.5	<1	<2
91-Y-514	2	2	5.2	11.7	<1	<.5	<1	<2
91-Y-515	3	3	6.9	18.3	3	<.5	<1	<2
91-Y-516	3	3	5.4	21.1	2	<.5	<1	2
91-Y-517	2	2	7.1	20.6	1	<.5	<1	<2
91-Y-518	2	1	3.3	9.9	<1	<.5	<1	2
91-Y-519	3	3	3.2	14.5	2	<.5	<1	<2
91-Y-520	3	3	3.5	14.3	1	<.5	<1	<2
91-Y-521	3	6	3.8	13.5	1	<.5	<1	<2
91-Y-522	4	5	5.8	19.1	1	<.5	<1	<2
91-Y-523	5	5	9.1	35.2	2	<.5	<1	4
91-Y-524	7	11	7.9	33.1	1	<.5	<1	2
91-Y-525	5	7	7.0	28.8	2	<.5	<1	2
91-Y-526	4	4	5.9	20.7	3	<.5	<1	6
91-Y-527	6	10	9.1	29.5	2	<.5	<1	<2
91-Y-528	3	4	6.6	22.7	2	<.5	<1	4
91-Y-529	3	4	5.6	20.6	2	<.5	<1	4
91-Y-530	2	2	5.0	12.0	2	<.5	<1	<2
91-Y-531	2	2	3.2	12.8	1	<.5	<1	4
91-Y-532	3	3	4.4	15.9	1	<.5	<1	2
91-Y-533	4	4	5.4	22.8	2	<.5	<1	2
91-Y-534	<1	1	3.3	7.1	<1	<.5	<1	<2
91-Y-535	2	3	6.8	13.9	<1	<.5	<1	2
91-Y-536	3	2	4.3	11.7	1	<.5	<1	2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-Y-537	2	2	8.4	13.6	1	<.5	<1	<2
91-Y-538	1	1	6.7	11.8	<1	<.5	<1	4
91-Y-539	2	1	2.3	9.5	1	<.5	<1	2
91-Y-540	2	3	5.1	15.9	2	<.5	<1	<2
91-Y-541	4	6	5.2	14.3	2	<.5	<1	<2
91-Y-542	4	6	5.0	21.7	1	<.5	<1	<2
91-Y-543	5	9	6.6	24.3	2	<.5	<1	<2
C DCP CONTROL	6	10	8.9	17.6	3	<.5	<1	<2
C DCP CONTROL	7	13	9.1	20.4	4	<.5	<1	<2
C DCP CONTROL	6	12	11.5	19.7	3	<.5	<1	<2
C DCP CONTROL	6	12	12.0	19.4	3	<.5	<1	<2
D 91-G-501	3	4	7.7	14.3	<1	<.5	<1	<2
D 91-G-513	1	<1	4.4	5.5	<1	<.5	<1	<2
D 91-G-525	3	6	8.5	17.3	1	<.5	<1	<2
D 91-G-537	3	6	5.8	13.1	1	<.5	<1	<2
D 91-JM-506	3	2	8.4	21.7	1	<.5	<1	4
D 91-JM-518	2	3	4.0	14.9	1	<.5	<1	<2
D 91-JM-530	2	3	5.1	20.5	1	<.5	<1	2
D 91-JM-542	2	3	5.2	13.7	1	<.5	<1	<2
D 91-E-509	3	4	3.8	17.0	1	<.5	<1	<2
D 91-E-521	3	6	10.9	31.4	1	<.5	<1	<2
D 91-Y-503	6	9	8.1	26.2	2	<.5	<1	<2
D 91-Y-515	3	3	6.2	20.1	1	<.5	<1	<2
D 91-Y-525	5	7	7.0	27.3	2	<.5	<1	2
D 91-Y-537	2	2	7.8	14.2	1	<.5	<1	<2

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

XRAL

X-RAY ASSAY LABORATORIES
A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 16186

TO: NORWIN GEOLOGICAL LIMITED
ATTN: GLEN PRIOR
560 NOTRE DAME AVENUE
SUDBURY, ONTARIO
P3C 5L2

CUSTOMER No. 1569

DATE SUBMITTED
12-Jul-91

REF. FILE 10386-B5

Total Pages 6

250 SOILS Proj. EM-881

	METHOD	DETECTION LIMIT
CO PPM	DCP	1.
NI PPM	DCP	1.
CU PPM	DCP	.5
ZN PPM	DCP	.5
MO PPM	DCP	1.
AG PPM	DCP	.5
CD PPM	DCP	1.
PB PPM	DCP	2.

DATE 26-JUL-91

CERTIFIED BY ....
Philip Boctor, Laboratory Manager

XRAL

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-L-510	4	4	5.7	13.0	3	<.5	<1	8
91-L-511	6	8	7.7	22.5	6	<.5	<1	2
91-L-512	4	6	3.5	11.2	2	<.5	<1	3
91-L-513	6	9	5.2	21.8	3	<.5	<1	4
91-L-514	3	4	2.7	14.2	2	<.5	<1	5
91-L-515	2	3	2.9	10.8	2	<.5	<1	4
91-L-516	4	7	4.0	23.1	3	<.5	<1	3
91-L-517	6	20	11.8	18.7	4	<.5	<1	6
91-L-518	3	5	8.1	15.3	2	<.5	<1	2
91-L-519	3	3	4.2	15.0	3	<.5	<1	4
91-L-520	3	4	4.2	15.6	2	<.5	<1	2
91-L-521	3	4	3.8	20.1	3	<.5	<1	9
91-L-522	3	5	6.1	13.9	3	<.5	<1	7
91-L-523	3	4	3.9	13.2	3	<.5	<1	8
91-L-524	4	4	6.1	15.5	4	<.5	<1	7
91-L-525	2	4	5.7	10.2	2	<.5	<1	4
91-L-526	2	1	4.2	7.5	2	<.5	<1	5
91-L-527	2	2	6.6	11.7	2	<.5	<1	4
91-L-528	3	3	8.9	10.7	3	<.5	<1	5
91-L-529	4	5	3.7	16.9	3	<.5	<1	4
91-L-530	4	5	4.3	17.0	3	<.5	<1	6
91-L-531	6	10	8.3	32.5	4	<.5	<1	6
91-L-532	9	14	16.6	39.0	6	.6	<1	9
91-L-533	5	12	7.7	20.5	3	<.5	<1	<2
91-L-534	4	6	5.8	27.8	6	<.5	<1	2
91-L-535	5	8	5.7	29.4	4	<.5	<1	10
91-L-536	5	7	8.7	34.9	5	<.5	<1	11
91-L-537	5	7	5.5	29.9	5	<.5	<1	3
91-L-538	3	5	4.2	16.3	2	<.5	<1	3
91-L-539	4	6	5.0	23.4	3	<.5	<1	8
91-L-540	4	7	4.4	21.2	3	<.5	<1	3
91-L-541	3	4	3.2	15.6	2	<.5	<1	4
91-L-542	3	4	4.5	18.2	3	<.5	<1	5
91-L-543	3	4	4.0	20.8	3	<.5	<1	5
91-L-544	5	9	8.0	31.7	4	<.5	<1	4
91-Y-544	2	3	3.3	19.7	2	<.5	<1	4
91-Y-545	3	3	5.7	13.4	2	<.5	<1	9
91-Y-546	5	12	29.8	60.6	5	1.2	<1	23
91-Y-547	3	5	5.5	15.2	2	<.5	<1	6
91-Y-548	6	10	9.8	21.3	4	<.5	<1	7
91-Y-549	2	2	3.2	11.1	2	<.5	<1	3
91-Y-550	3	3	2.3	11.8	2	<.5	<1	2
91-Y-551	3	5	2.8	13.9	2	<.5	<1	3
91-Y-552	3	4	3.1	15.7	3	<.5	<1	8
91-Y-553	3	5	7.1	10.9	1	<.5	<1	3
91-Y-554	4	6	5.2	18.1	2	<.5	<1	3
91-Y-555	3	6	5.6	18.0	3	<.5	<1	3
91-Y-556	2	4	4.6	10.8	1	<.5	<1	4
91-Y-557	3	6	6.6	11.6	1	<.5	<1	2
91-Y-558	3	4	4.4	10.5	2	<.5	<1	3

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-Y-559	2	2	1.6	7.4	1	<.5	<1	6
91-Y-560	3	3	4.1	18.5	3	<.5	<1	5
91-Y-561	3	3	3.0	13.0	3	<.5	<1	6
91-Y-562	3	7	4.8	16.9	2	<.5	<1	2
91-Y-563	3	4	5.1	13.5	2	<.5	<1	2
91-Y-564	2	3	2.0	11.5	1	<.5	<1	4
91-Y-565	2	3	2.2	10.3	2	<.5	<1	5
91-Y-566	5	7	7.4	20.0	3	<.5	<1	6
91-Y-567	8	9	8.7	38.4	4	.7	<1	11
91-Y-568	4	6	14.2	25.7	4	<.5	<1	6
91-Y-569	3	6	7.0	19.7	2	<.5	<1	4
91-Y-570	7	7	8.2	32.2	4	.6	<1	11
91-Y-571	4	5	5.6	24.6	3	.7	<1	6
91-Y-572	2	5	2.1	11.8	1	<.5	<1	2
91-Y-573	2	3	4.0	12.8	2	<.5	<1	6
91-Y-574	2	4	7.8	15.1	2	<.5	<1	5
91-Y-575	3	4	7.0	16.6	3	<.5	<1	3
91-Y-576	2	3	4.8	13.7	3	<.5	<1	6
91-Y-577	3	3	4.2	13.5	3	<.5	<1	6
91-Y-578	3	4	4.7	20.1	3	<.5	<1	6
91-Y-579	2	2	3.5	15.2	3	<.5	<1	6
91-Y-580	2	3	4.0	10.4	2	<.5	<1	3
91-Y-581	3	3	9.0	14.4	3	<.5	<1	5
91-Y-582	3	4	5.0	12.8	3	<.5	<1	5
91-Y-583	3	2	3.5	10.8	2	<.5	<1	5
91-Y-584	3	4	4.9	13.2	2	<.5	<1	6
91-Y-585	2	4	3.7	12.1	2	<.5	<1	2
91-Y-586	2	4	4.7	11.8	2	<.5	<1	5
91-Y-587	3	4	1.9	10.9	2	<.5	<1	5
91-Y-588	9	17	14.1	52.9	4	.5	<1	4
91-Y-589	5	9	5.0	22.8	3	<.5	<1	3
91-Y-590	8	13	16.5	39.0	5	.5	<1	6
91-Y-591	4	5	5.1	18.3	3	<.5	<1	4
91-Y-592	4	8	7.7	22.2	3	<.5	<1	5
91-Y-593	5	7	7.5	28.9	3	<.5	<1	6
91-Y-594	3	3	5.0	19.5	2	<.5	<1	4
91-Y-595	4	6	5.9	13.3	3	<.5	<1	3
91-Y-596	3	3	5.9	11.0	2	<.5	<1	3
91-Y-597	3	3	8.1	9.5	3	<.5	<1	3
91-Y-598	2	<1	3.3	4.8	1	<.5	<1	5
91-Y-599	4	3	7.2	13.3	3	<.5	<1	5
91-Y-600	1	<1	1.8	4.3	<1	<.5	<1	3
91-Y-601	1	<1	2.4	7.4	1	<.5	<1	4
91-JM-544	3	3	8.3	15.7	3	<.5	<1	11
91-JM-545	4	6	8.8	27.9	3	<.5	<1	7
91-JM-546	6	10	6.8	30.2	3	<.5	<1	5
91-JM-547	3	3	6.7	14.0	2	<.5	<1	6
91-JM-548	3	6	5.2	17.9	2	<.5	<1	3
91-JM-549	3	3	5.7	21.2	2	<.5	<1	3
91-JM-550	3	1	7.6	17.6	2	<.5	<1	4

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-JM-551	3	3	8.2	17.7	2	<.5	<1	6
91-JM-552	3	3	5.1	16.3	2	<.5	<1	7
91-JM-553	3	3	8.9	12.7	2	<.5	<1	6
91-JM-554	4	3	4.8	8.5	2	<.5	<1	5
91-JM-555	3	2	6.8	19.1	2	<.5	<1	8
91-JM-556	4	2	4.7	10.0	2	<.5	<1	4
91-JM-557	7	7	30.5	30.8	3	<.5	<1	9
91-JM-558	3	2	6.4	17.1	2	<.5	<1	8
91-JM-559	3	5	3.5	16.4	2	<.5	<1	3
91-JM-560	3	4	4.7	19.1	3	<.5	<1	6
91-JM-561	4	5	8.3	19.6	3	<.5	<1	3
91-JM-562	5	7	5.4	17.3	3	<.5	<1	7
91-JM-563	5	8	6.9	30.2	3	<.5	<1	5
91-JM-564	4	4	4.1	18.8	2	<.5	<1	5
91-JM-565	4	8	4.8	14.9	2	<.5	<1	<2
91-JM-566	3	4	3.2	13.0	2	<.5	<1	3
91-JM-567	4	8	6.9	24.5	2	<.5	<1	5
91-JM-568	5	9	7.2	35.4	4	<.5	<1	9
91-JM-569	3	3	4.7	18.2	2	<.5	<1	3
91-JM-570	3	5	6.1	12.9	2	<.5	<1	3
91-JM-571	3	3	4.1	19.9	3	<.5	<1	5
91-JM-572	4	5	5.0	19.3	3	<.5	<1	6
91-JM-573	3	4	4.8	17.0	3	<.5	<1	6
91-JM-574	3	3	4.9	17.2	2	<.5	<1	6
91-JM-575	3	3	7.0	33.5	3	<.5	<1	7
91-JM-576	2	3	2.3	15.0	2	<.5	<1	4
91-JM-577	3	4	3.4	15.6	2	<.5	<1	3
91-JM-578	3	4	6.0	34.5	3	<.5	<1	5
91-JM-579	3	3	4.2	23.8	3	<.5	<1	6
91-JM-580	3	4	12.5	36.8	3	<.5	<1	11
91-JM-581	2	3	6.8	20.5	2	<.5	<1	7
91-JM-582	4	7	6.8	21.0	2	<.5	<1	3
91-JM-583	4	6	5.5	24.9	3	<.5	<1	8
91-JM-584	4	7	5.6	21.7	2	<.5	<1	6
91-JM-585	5	6	8.6	25.2	4	<.5	<1	7
91-JM-586	5	8	8.3	33.4	2	<.5	<1	5
91-JM-587	4	7	6.7	32.3	2	<.5	<1	11
91-JM-588	7	12	11.2	55.3	4	<.5	<1	8
91-JM-589	3	5	5.9	13.4	2	<.5	<1	<2
91-JM-590	2	2	2.7	10.4	1	<.5	<1	5
91-JM-591	3	3	3.4	14.4	2	<.5	<1	6
91-JM-592	3	4	6.2	14.9	2	<.5	<1	3
91-JM-593	3	2	2.8	12.1	2	<.5	<1	5
91-JM-594	3	5	3.0	13.9	1	<.5	<1	<2
91-E-522	5	8	6.4	27.8	4	<.5	<1	2
91-E-523	9	14	25.6	66.6	5	.6	<1	13
91-E-524	6	10	7.5	43.4	4	<.5	<1	11
91-E-525	6	8	11.1	41.7	5	.9	<1	10
91-E-526	3	3	3.5	11.5	3	<.5	<1	4
91-E-527	6	5	6.6	21.9	3	<.5	<1	6

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-E-528	5	5	6.4	19.0	2	<.5	<1	6
91-E-529	2	3	3.4	13.9	1	<.5	<1	2
91-E-530	4	3	4.1	13.5	3	<.5	<1	11
91-E-531	2	2	4.0	10.9	1	<.5	<1	7
91-E-532	1	1	3.9	8.7	<1	<.5	<1	3
91-E-533	4	2	3.2	10.0	2	<.5	<1	4
91-E-534	4	3	6.5	14.4	2	<.5	<1	3
91-E-535	3	2	3.3	13.2	3	<.5	<1	7
91-E-536	2	2	3.7	10.0	1	<.5	<1	7
91-E-537	<1	<1	3.9	10.9	1	<.5	<1	4
91-E-538	2	2	4.0	13.7	2	<.5	<1	4
91-E-539	3	2	4.2	16.5	2	<.5	<1	7
91-E-540	4	3	5.6	21.7	3	<.5	<1	8
91-E-541	4	2	4.4	14.5	3	<.5	<1	4
91-E-542	2	3	1.7	5.8	1	<.5	<1	3
91-E-543	4	6	4.7	21.2	3	<.5	<1	6
91-E-544	4	6	4.7	15.9	2	<.5	<1	5
91-E-545	2	3	2.2	10.7	1	<.5	<1	2
91-E-546	6	8	14.2	37.8	7	.7	<1	6
91-E-547	8	14	6.7	35.0	6	<.5	<1	2
91-E-548	7	7	5.8	30.4	8	<.5	<1	7
91-E-549	9	13	7.2	41.5	8	<.5	<1	4
91-E-550	5	7	7.3	25.5	3	<.5	<1	7
91-E-551	2	4	5.6	20.0	2	<.5	<1	4
91-E-552	3	5	5.8	22.2	3	<.5	<1	6
91-E-553	4	9	6.0	36.5	3	.7	<1	4
91-E-554	3	5	2.9	16.8	2	<.5	<1	4
91-E-555	3	5	5.2	25.9	2	<.5	<1	<2
91-E-556	3	5	6.0	20.4	2	<.5	<1	5
91-E-557	3	4	3.0	23.2	3	<.5	<1	5
91-E-558	3	3	3.9	10.5	1	<.5	<1	8
91-E-559	3	3	6.2	24.4	3	<.5	<1	2
91-E-560	2	4	2.2	13.9	<1	<.5	<1	3
91-E-561	3	4	3.0	13.4	1	<.5	<1	4
91-E-562	2	2	3.9	12.8	2	<.5	<1	3
91-E-563	<1	<1	3.0	9.3	<1	<.5	<1	4
91-E-564	2	4	3.1	12.7	<1	<.5	<1	4
91-E-565	3	5	4.8	18.7	2	<.5	<1	6
91-E-566	3	4	6.0	21.3	3	<.5	<1	7
91-E-567	3	5	3.4	18.8	1	<.5	<1	3
91-E-568	3	3	5.5	21.5	2	<.5	<1	7
91-E-569	3	5	4.3	20.6	2	<.5	<1	5
91-E-570	4	6	6.3	24.9	3	<.5	<1	9
91-E-571	1	2	3.4	9.9	<1	<.5	<1	2
91-E-572	2	1	2.3	8.7	<1	<.5	<1	6
91-E-573	<1	<1	3.2	13.1	<1	<.5	<1	3
91-E-574	3	5	7.8	19.3	1	<.5	<1	4
91-E-575	3	2	13.2	16.5	3	<.5	<1	7
91-E-576	<1	<1	5.6	10.2	<1	<.5	<1	7
91-E-577	2	2	5.8	12.5	1	<.5	<1	5

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-E-578	1	2	6.1	13.4	<1	<.5	<1	4
91-E-579	<1	<1	6.9	10.0	<1	<.5	<1	5
91-E-580	3	4	14.0	28.3	3	<.5	<1	10
91-E-581	2	4	3.7	14.0	1	<.5	<1	4
91-E-582	2	3	6.7	16.7	2	<.5	<1	5
91-E-583	4	6	8.8	26.6	2	<.5	<1	8
91-E-584	3	5	5.0	18.1	3	<.5	<1	6
91-E-585	3	5	6.7	14.4	1	<.5	<1	3
91-E-586	4	9	10.0	21.9	2	<.5	<1	8
91-E-587	2	1	2.9	10.6	<1	<.5	<1	5
91-E-588	2	2	4.0	11.0	1	<.5	<1	7
91-E-589	2	3	6.8	17.6	1	<.5	<1	8
91-E-590	<1	<1	5.8	6.9	<1	<.5	<1	8
91-E-591	4	4	4.9	20.3	2	<.5	<1	7
91-E-592	4	7	2.8	20.0	3	<.5	<1	6
91-E-593	4	6	5.8	25.0	3	<.5	<1	6
91-E-594	6	9	7.1	33.0	3	<.5	<1	6
91-E-595	3	5	4.1	14.3	2	<.5	<1	3
91-E-596	4	7	4.4	19.0	2	<.5	<1	3
91-E-597	3	6	4.5	18.7	2	<.5	<1	4
91-E-598	3	5	2.5	16.0	2	<.5	<1	2
91-E-599	3	3	6.0	16.6	3	<.5	<1	8
91-E-600	2	2	2.8	8.1	1	<.5	<1	4
91-E-601	3	2	4.2	13.8	2	<.5	<1	4
91-G-542	4	3	7.4	15.4	2	<.5	<1	6
91-G-543	2	1	3.3	8.8	1	<.5	<1	8
91-G-544	2	<1	2.7	6.1	<1	<.5	<1	8
91-G-545	3	2	6.2	16.3	2	<.5	<1	4
91-G-546	2	2	3.3	11.2	<1	<.5	<1	8
91-G-547	3	2	6.3	17.8	2	<.5	<1	6
91-G-548	3	3	6.5	15.0	3	<.5	<1	7
91-G-549	2	2	3.2	8.5	<1	<.5	<1	4
91-G-550	3	3	6.5	18.1	2	<.5	<1	5
91-G-551	3	4	3.2	8.6	1	<.5	<1	5
91-G-552	3	2	6.3	18.4	3	<.5	<1	6
91-G-553	7	34	13.8	31.7	4	<.5	<1	9
91-G-554	3	4	5.3	16.5	3	<.5	<1	4
91-G-555	4	6	4.3	16.0	2	<.5	<1	4
91-G-556	1	1	1.6	6.7	<1	<.5	<1	2
91-G-558	5	7	6.3	36.8	3	<.5	<1	10
91-G-559	7	11	9.3	55.1	4	<.5	<1	9
91-G-560	6	6	9.0	43.1	4	.5	<1	13
91-G-561	7	8	10.8	39.1	3	<.5	<1	10
91-G-562	6	7	6.1	37.5	3	<.5	<1	7
91-G-563	6	10	6.5	36.8	3	<.5	<1	6
91-G-564	3	4	3.9	16.8	3	<.5	<1	6
91-G-565	3	3	5.2	12.9	2	<.5	<1	4
91-G-566	2	3	3.0	12.7	2	<.5	<1	<2
91-G-567	3	4	3.8	19.1	3	<.5	<1	4
91-G-568	3	4	3.5	18.2	3	<.5	<1	4

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
C DCP CONTROL	6	12	12.3	19.4	4	<.5	<1	<2
C DCP CONTROL	7	13	12.7	19.0	4	<.5	<1	3
C DCP CONTROL	6	13	12.5	19.0	4	<.5	<1	2
C DCP CONTROL	7	13	11.5	19.9	4	<.5	<1	<2
C DCP CONTROL	7	13	11.8	20.6	4	<.5	<1	3
C DCP CONTROL	7	13	12.0	20.2	4	<.5	<1	3
D 91-L-510	4	4	5.1	14.0	3	<.5	<1	7
D 91-L-522	3	5	5.8	15.0	3	<.5	<1	6
D 91-L-534	5	7	5.2	29.9	5	<.5	<1	3
D 91-Y-545	3	3	4.5	10.4	2	<.5	<1	9
D 91-Y-555	3	6	5.7	17.5	3	<.5	<1	2
D 91-Y-567	8	9	8.1	38.1	5	.5	<1	10
D 91-Y-579	3	3	3.7	16.8	3	<.5	<1	8
D 91-Y-591	4	5	4.5	19.6	3	<.5	<1	5
D 91-Y-601	2	2	2.7	8.6	1	<.5	<1	6
D 91-JM-555	3	3	6.1	19.2	3	<.5	<1	9
D 91-JM-567	4	8	6.1	22.0	2	<.5	<1	4
D 91-JM-579	3	4	3.7	23.9	3	<.5	<1	6
D 91-JM-589	3	6	5.3	14.9	1	<.5	<1	<2
D 91-E-528	4	5	6.1	17.6	3	<.5	<1	6
D 91-E-540	4	2	6.4	20.7	3	<.5	<1	7
D 91-E-552	3	4	6.2	21.3	3	<.5	<1	5
D 91-E-562	2	2	3.3	14.9	2	<.5	<1	3
D 91-E-574	3	5	7.6	21.3	2	<.5	<1	5
D 91-E-586	4	9	9.8	21.5	3	<.5	<1	6
D 91-E-598	3	5	3.2	17.4	2	<.5	<1	3
D 91-G-548	3	3	6.4	17.2	3	<.5	<1	7
D 91-G-561	7	8	10.2	43.7	4	<.5	<1	11

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 16751

TO: NORWIN GEOLOGICAL LIMITED
ATTN: GLEN PRIOR
560 NOTRE DAME AVENUE
SUDBURY, ONTARIO
P3C 5L2

CUSTOMER No. 1569

DATE SUBMITTED
9-Sep-91

REF. FILE 10783-FL

Total Pages 12

497 SOILS Proj. EM-882

	METHOD	DETECTION LIMIT
CO PPM	DCP	1.
NI PPM	DCP	1.
CU PPM	DCP	.5
ZN PPM	DCP	.5
MO PPM	DCP	1.
AG PPM	DCP	.5
CD PPM	DCP	1.
PB PPM	DCP	2.

DATE 21-SEP-91

CERTIFIED BY ....
Philip Boctor, Laboratory Manager

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-S-701	2	2	6.4	18.8	4	<.5	<1	<2
91-S-702	4	4	6.4	18.4	4	<.5	<1	<2
91-S-703	<1	<1	1.2	10.6	<1	<.5	<1	<2
91-S-704	4	4	3.4	18.4	2	<.5	<1	<2
91-S-705	2	<1	2.2	28.6	<1	<.5	<1	<2
91-S-706	<1	<1	1.6	18.4	<1	<.5	<1	<2
91-S-707	<1	2	1.4	15.2	6	<.5	<1	<2
91-S-708	4	8	7.2	38.6	4	<.5	<1	<2
91-S-709	4	6	6.6	28.2	4	<.5	<1	<2
91-S-710	4	6	5.2	32.6	4	<.5	<1	<2
91-S-711	4	4	6.2	32.4	6	<.5	<1	<2
91-S-712	<1	<1	3.2	14.4	2	<.5	<1	<2
91-S-713	2	<1	3.0	22.3	4	<.5	<1	<2
91-S-714	<1	<1	<.5	22.8	<1	<.5	<1	<2
91-S-715	<1	<1	2.6	19.2	<1	<.5	<1	<2
91-S-716	<1	<1	<.5	12.8	<1	<.5	<1	<2
91-S-717	2	<1	3.6	11.4	2	<.5	<1	<2
91-S-718	2	<1	3.2	16.4	4	<.5	<1	<2
91-S-719	<1	<1	4.2	18.8	<1	<.5	<1	<2
91-S-720	4	2	5.8	28.6	6	<.5	<1	2
91-S-721	<1	<1	2.4	11.2	<1	<.5	<1	<2
91-S-722	4	6	7.4	36.6	2	<.5	<1	<2
91-S-723	<1	<1	<.5	8.8	<1	<.5	<1	<2
91-S-724	4	4	5.4	28.2	4	<.5	<1	<2
91-S-725	<1	<1	1.4	13.0	<1	<.5	<1	<2
91-S-726	2	2	3.6	15.6	<1	<.5	<1	<2
91-S-727	2	<1	1.8	14.8	2	<.5	<1	<2
91-S-728	<1	<1	2.2	20.2	2	<.5	<1	<2
91-S-729	<1	<1	<.5	12.4	<1	<.5	<1	<2
91-S-730	<1	<1	5.4	7.4	<1	<.5	<1	<2
91-S-731	4	<1	1.8	18.4	4	<.5	<1	<2
91-S-732	4	4	2.0	11.8	<1	<.5	<1	<2
91-S-733	4	<1	2.6	13.4	4	<.5	2	3
91-S-734	4	4	2.8	20.8	4	<.5	<1	2
91-S-735	4	4	2.2	19.0	2	<.5	<1	<2
91-S-736	4	4	2.8	21.0	2	<.5	<1	<2
91-S-737	2	<1	1.8	14.4	2	<.5	<1	<2
91-S-738	4	8	2.8	22.0	4	<.5	<1	2
91-S-739	6	8	4.6	30.8	4	<.5	<1	<2
91-S-740	6	10	4.2	22.0	4	<.5	<1	<2
91-S-741	6	10	4.6	30.4	4	<.5	<1	2
91-S-742	10	20	11.8	38.4	4	<.5	<1	4
91-S-743	6	6	5.8	31.0	4	<.5	<1	2
91-S-744	4	4	1.8	16.0	4	<.5	<1	2
91-S-745	4	4	2.0	18.0	4	<.5	<1	2
91-S-746	6	6	2.8	31.4	4	<.5	<1	4
91-S-747	7	14	9.6	24.8	4	<.5	<1	<2
91-S-748	4	4	7.0	16.8	4	<.5	<1	<2
91-S-749	6	10	5.6	17.0	4	<.5	<1	<2
91-S-750	2	4	1.6	12.6	2	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-S-751	4	4	3.0	13.8	2	<.5	<1	<2
91-S-752	4	4	1.8	13.2	<1	<.5	<1	<2
91-S-753	4	6	4.8	21.6	4	<.5	<1	2
91-S-754	2	2	2.8	12.6	2	<.5	<1	2
91-S-755	4	4	2.8	23.0	4	<.5	<1	4
91-S-756	4	4	2.0	10.4	2	<.5	<1	4
91-S-757	6	6	3.6	23.0	6	<.5	<1	<2
91-S-758	4	6	1.8	20.0	<1	<.5	<1	<2
91-S-759	<1	<1	2.0	12.0	2	<.5	<1	3
91-S-760	<1	<1	2.8	8.8	2	<.5	<1	<2
91-S-761	<1	<1	3.4	14.2	2	<.5	<1	2
91-S-762	<1	<1	2.4	16.0	2	<.5	<1	<2
91-S-763	2	<1	3.2	30.4	4	<.5	<1	<2
91-S-764	8	18	15.6	44.0	4	<.5	<1	2
91-S-765	<1	<1	2.8	15.2	2	<.5	<1	<2
91-S-766	<1	<1	3.2	20.2	4	<.5	<1	2
91-S-767	<1	<1	7.8	24.8	4	<.5	<1	2
91-S-768	<1	<1	2.2	14.2	2	<.5	<1	<2
91-S-769	4	4	8.4	34.2	2	<.5	<1	<2
91-S-770	<1	<1	3.4	27.6	<1	<.5	14	<2
91-S-771	2	2	3.8	19.8	2	<.5	12	<2
91-S-772	4	2	4.0	32.2	2	<.5	<1	2
91-S-773	8	10	10.2	45.2	4	<.5	12	2
91-S-774	8	12	6.0	50.6	4	<.5	8	4
91-S-775	10	12	11.0	78.6	6	1.2	2	4
91-S-776	6	8	14.0	69.2	6	<.5	<1	6
91-S-777	4	8	4.0	53.2	<1	<.5	6	2
91-S-778	6	8	3.0	41.6	2	<.5	6	4
91-S-779	8	10	6.8	40.8	4	<.5	<1	2
91-S-780	6	10	7.2	62.0	4	<.5	<1	4
91-S-781	4	4	4.8	40.4	2	<.5	<1	4
91-S-782	4	4	2.6	21.0	4	<.5	4	4
91-S-783	<1	<1	<.5	14.2	<1	<.5	<1	<2
91-S-784	6	8	4.8	67.8	4	<.5	<1	8
91-S-785	8	14	14.6	78.0	4	<.5	<1	2
91-S-786	8	16	6.4	47.6	2	<.5	<1	2
91-S-787	8	10	8.8	50.6	4	<.5	6	6
91-S-788	6	6	3.8	41.2	4	<.5	<1	6
91-S-789	4	4	3.0	26.8	2	<.5	18	2
91-S-790	8	8	3.4	38.2	4	<.5	<1	2
91-S-791	10	18	26.8	62.4	6	<.5	<1	2
91-S-792	10	10	11.0	58.2	6	<.5	2	4
91-S-793	4	2	3.0	30.3	4	<.5	<1	<2
91-S-794	6	4	6.4	38.8	4	<.5	<1	2
91-S-795	4	4	6.0	17.4	<1	<.5	<1	<2
91-S-796	2	4	7.6	31.4	2	<.5	<1	2
91-S-797	4	8	21.4	41.4	4	<.5	<1	2
91-S-798	1	1	2.4	16.4	1	<.5	<1	2
91-S-799	2	2	2.0	16.2	1	<.5	<1	2
91-S-800	2	2	2.3	17.5	<1	<.5	<1	4

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-S-801	2	2	4.6	26.2	1	<.5	<1	<2
91-S-802	4	2	3.6	24.6	4	<.5	<1	2
91-S-803	2	2	5.4	25.0	<1	<.5	<1	<2
91-S-804	4	4	4.2	33.8	4	<.5	2	2
91-S-805	4	4	8.8	44.7	2	<.5	<1	<2
91-S-806	2	2	5.4	37.2	<1	<.5	<1	<2
91-S-807	4	6	2.4	20.0	<1	<.5	<1	2
91-S-808	4	6	6.4	35.0	2	<.5	<1	2
91-S-809	8	14	7.0	44.4	4	<.5	<1	2
91-S-810	2	4	10.2	24.6	<1	<.5	<1	2
91-S-811	4	6	10.2	35.6	4	<.5	<1	<2
91-S-812	4	4	1.8	24.4	4	<.5	<1	2
91-S-813	4	6	5.8	37.4	4	<.5	<1	4
91-S-814	4	2	2.6	14.4	<1	<.5	<1	4
91-S-815	2	2	2.0	34.4	<1	<.5	<1	<2
91-S-816	6	6	6.4	36.4	6	<.5	<1	2
91-S-817	<1	<1	1.4	21.0	<1	<.5	<1	<2
91-S-818	2	<1	3.2	26.6	<1	<.5	<1	<2
91-S-819	2	4	3.2	32.8	2	<.5	<1	<2
91-S-820	2	4	3.2	23.2	2	<.5	<1	<2
91-S-821	4	6	3.6	24.0	2	<.5	<1	2
91-S-822	4	6	3.6	28.6	4	<.5	<1	<2
91-S-823	14	<1	12.4	75.6	24	<.5	<1	<2
91-S-824	4	6	3.8	31.8	4	<.5	<1	<2
91-S-825	4	8	11.6	39.0	4	<.5	<1	<2
91-S-826	2	4	2.0	34.8	2	<.5	<1	<2
91-S-827	4	6	2.4	24.0	4	<.5	<1	<2
91-S-828	2	<1	3.6	31.0	4	<.5	<1	<2
91-S-829	4	4	3.2	24.8	2	<.5	<1	<2
91-S-830	2	4	1.8	18.8	<1	<.5	<1	<2
91-S-831	4	6	4.6	45.2	2	<.5	<1	<2
91-S-832	<1	<1	1.2	36.6	<1	<.5	<1	2
91-S-833	4	4	6.8	32.2	4	<.5	<1	<2
91-S-834	4	4	9.4	38.4	4	<.5	6	2
91-S-835	4	6	6.4	43.0	4	<.5	<1	4
91-S-836	6	8	9.2	52.4	4	<.5	<1	4
91-S-837	6	10	5.2	29.4	4	<.5	<1	<2
91-S-838	4	4	3.2	24.0	4	<.5	<1	4
91-S-839	4	6	3.4	29.2	3	<.5	<1	2
91-S-840	2	3	2.2	22.1	1	<.5	<1	4
91-S-841	2	4	2.6	28.2	1	<.5	<1	2
91-S-842	2	3	1.5	19.3	<1	<.5	<1	<2
91-S-843	4	4	1.6	38.3	3	<.5	<1	2
91-S-844	4	5	2.0	27.3	2	<.5	<1	6
91-S-845	2	3	1.1	21.2	<1	<.5	<1	<2
91-S-846	1	2	.7	20.4	<1	<.5	<1	<2
91-S-847	2	2	2.7	20.5	3	<.5	<1	<2
91-S-848	3	4	6.9	43.3	3	.5	1	2
91-S-849	5	7	5.1	29.6	2	<.5	2	2
91-S-850	2	3	2.5	25.6	2	<.5	2	2

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-S-851	4	3	1.6	15.0	3	<.5	<1	<2
91-S-852	3	4	3.0	27.0	2	<.5	<1	<2
91-S-853	2	3	1.4	20.1	1	<.5	<1	<2
91-S-854	2	3	1.1	19.4	1	<.5	2	<2
91-S-855	3	5	1.5	13.6	1	<.5	<1	<2
91-S-856	4	6	4.0	29.4	2	<.5	<1	<2
91-S-857	6	8	6.4	66.7	3	<.5	<1	8
91-S-858	6	8	12.8	37.4	5	<.5	<1	2
91-S-859	6	9	3.8	35.3	3	<.5	<1	4
91-S-860	3	4	2.1	21.9	2	<.5	<1	<2
91-S-861	2	4	2.2	14.0	<1	<.5	<1	<2
91-S-862	3	3	5.2	28.3	3	<.5	<1	4
91-S-863	7	7	3.5	40.0	3	.5	<1	7
91-S-864	3	3	6.9	24.2	2	<.5	<1	6
91-S-865	4	4	7.0	32.0	5	<.5	<1	14
91-S-866	5	6	4.6	36.5	4	<.5	<1	<2
91-S-867	2	2	1.2	14.1	<1	<.5	<1	6
91-S-868	4	5	3.9	27.1	1	<.5	<1	4
91-S-869	3	6	11.1	36.5	3	<.5	<1	4
91-S-870	3	3	2.5	21.3	1	<.5	<1	<2
91-S-871	6	12	7.5	31.1	6	<.5	<1	<2
91-S-872	3	6	3.3	35.6	<1	<.5	<1	<2
91-S-873	5	8	5.5	28.6	2	<.5	<1	2
91-S-874	3	4	2.6	20.3	2	<.5	<1	<2
91-S-875	3	5	4.2	22.3	<1	<.5	<1	<2
91-S-876	4	4	2.3	27.3	2	<.5	<1	<2
91-S-877	2	2	.5	16.3	<1	<.5	<1	<2
91-S-878	7	11	7.5	42.1	3	<.5	<1	<2
91-S-879	3	6	5.7	25.7	<1	<.5	<1	2
91-S-880	4	6	4.4	28.7	2	<.5	<1	<2
91-S-881	<1	<1	1.4	10.8	<1	<.5	<1	2
91-S-882	3	4	6.3	27.2	3	<.5	<1	<2
91-S-883	<1	<1	1.1	14.7	<1	<.5	<1	<2
91-S-884	4	3	2.5	34.8	<1	<.5	<1	4
91-S-885	3	1	1.3	17.4	3	<.5	<1	5
91-S-886	4	2	1.1	11.6	2	<.5	<1	<2
91-S-887	3	3	3.0	40.7	3	<.5	<1	<2
91-S-888	4	3	4.1	38.8	3	<.5	<1	4
91-S-889	2	1	.9	9.8	<1	<.5	<1	<2
91-S-890	2	1	2.0	12.6	1	<.5	<1	2
91-S-891	2	2	1.8	31.8	3	<.5	<1	4
91-S-892	3	2	1.6	22.4	3	<.5	<1	2
91-S-893	3	3	2.7	27.2	2	<.5	<1	<2
91-S-894	1	2	1.6	21.7	1	<.5	<1	<2
91-S-895	3	4	1.8	22.3	1	<.5	<1	<2
91-S-896	2	3	2.5	34.5	1	<.5	<1	2
91-S-897	3	2	2.2	30.8	2	<.5	<1	5
91-S-898	3	<1	1.1	16.4	2	<.5	<1	4
91-S-899	3	2	1.5	23.6	1	<.5	<1	6
91-S-900	3	2	1.4	24.8	2	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-S-901	3	3	2.6	24.7	4	<.5	2	8
91-S-902	3	2	3.5	20.6	5	<.5	<1	<2
91-S-903	2	2	.9	15.2	1	<.5	<1	<2
91-S-904	3	2	3.8	21.7	2	<.5	<1	<2
91-S-905	5	5	8.0	37.9	3	<.5	<1	2
91-S-906	1	<1	1.2	16.4	<1	<.5	<1	<2
91-S-907	4	5	6.2	30.7	2	<.5	<1	<2
91-S-908	5	11	7.7	33.1	2	<.5	1	<2
91-S-909	5	9	4.2	33.0	2	<.5	<1	<2
91-S-910	6	14	12.1	40.0	3	<.5	<1	<2
91-S-911	2	2	3.8	28.5	2	<.5	<1	<2
91-S-912	3	5	2.0	21.2	2	<.5	<1	<2
91-S-913	4	11	8.0	27.0	2	<.5	<1	<2
91-S-914	3	6	3.5	22.5	2	<.5	<1	<2
91-S-915	5	8	2.7	29.5	2	<.5	<1	<2
91-S-916	2	2	1.9	19.1	2	<.5	<1	<2
91-S-917	4	5	3.5	40.0	3	<.5	<1	<2
91-S-918	4	8	7.7	32.5	3	<.5	<1	<2
91-S-919	3	6	5.5	23.2	3	<.5	<1	<2
91-S-920	5	9	8.9	26.4	2	<.5	<1	<2
91-S-921	3	3	3.2	12.7	2	<.5	<1	<2
91-S-922	5	7	6.6	33.7	4	<.5	<1	<2
91-S-923	5	22	9.6	32.4	3	<.5	<1	<2
91-S-924	2	4	2.5	20.8	2	<.5	<1	4
91-S-925	3	4	2.2	18.3	3	<.5	<1	<2
91-S-926	5	8	9.0	47.6	7	.6	<1	4
91-S-927	4	6	2.4	24.9	3	<.5	<1	<2
91-S-928	6	11	3.8	44.8	2	<.5	<1	<2
91-S-929	2	3	.9	18.4	1	<.5	<1	<2
91-S-930	3	3	1.7	15.0	2	<.5	<1	<2
91-S-931	3	4	3.0	22.2	2	<.5	<1	<2
91-S-932	2	3	1.7	17.1	2	<.5	5	2
91-S-933	3	6	4.2	22.3	2	<.5	<1	<2
91-S-934	2	3	3.4	20.1	2	<.5	<1	<2
91-S-935	<1	1	.8	31.1	<1	<.5	<1	<2
91-S-936	2	2	1.6	18.4	1	<.5	<1	<2
91-S-937	2	2	1.5	15.1	1	<.5	<1	<2
91-S-938	3	7	8.2	26.0	1	<.5	<1	<2
91-S-939	2	6	4.1	11.2	<1	<.5	<1	<2
91-S-940	3	5	5.4	16.4	2	<.5	<1	<2
91-S-941	10	21	8.4	62.1	4	.6	<1	2
91-S-942	2	3	1.3	15.6	1	<.5	<1	<2
91-S-943	4	7	4.9	22.8	3	<.5	<1	<2
91-S-944	7	17	27.4	38.9	2	<.5	1	<2
91-S-945	1	3	.9	9.0	<1	<.5	<1	<2
91-S-946	4	5	5.9	33.1	3	.6	<1	<2
91-S-947	2	4	1.6	20.4	<1	<.5	<1	<2
91-G-701	2	3	4.8	8.2	1	<.5	<1	<2
91-G-702	2	3	4.2	12.3	1	<.5	<1	<2
91-G-703	2	5	9.6	12.8	2	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-G-704	2	4	10.3	9.7	1	<.5	<1	<2
91-G-705	2	4	11.2	13.9	2	<.5	<1	<2
91-G-706	<1	1	8.0	10.3	1	<.5	<1	<2
91-G-707	2	4	11.7	10.1	1	<.5	<1	<2
91-G-708	2	3	5.5	11.4	1	<.5	<1	<2
91-G-709	2	5	9.8	13.9	<1	<.5	<1	<2
91-G-710	3	6	7.8	25.5	2	<.5	<1	2
91-G-711	2	4	2.9	18.5	9	<.5	<1	6
91-G-712	3	4	3.8	12.9	1	<.5	<1	<2
91-G-713	2	3	2.9	18.6	2	<.5	<1	<2
91-G-714	2	4	1.7	11.0	<1	<.5	<1	2
91-G-715	2	3	3.0	12.0	<1	<.5	<1	<2
91-G-716	2	4	5.8	22.4	2	<.5	<1	<2
91-G-717	2	3	3.6	6.2	1	<.5	<1	<2
91-G-718	3	3	9.1	9.5	2	<.5	<1	<2
91-G-719	1	2	2.2	6.1	<1	<.5	<1	<2
91-G-720	2	3	2.6	8.4	1	<.5	1	<2
91-G-721	3	5	2.6	12.4	2	<.5	<1	<2
91-G-722	2	4	2.4	10.4	<1	<.5	<1	<2
91-G-723	2	3	1.2	9.1	<1	<.5	<1	2
91-G-724	2	4	4.5	9.8	<1	<.5	<1	<2
91-G-725	2	3	3.7	19.3	1	<.5	<1	2
91-G-726	2	2	3.8	21.8	1	<.5	<1	<2
91-G-727	2	2	2.8	17.4	1	<.5	<1	<2
91-G-728	3	5	4.8	31.0	2	<.5	<1	<2
91-G-729	3	4	8.9	12.9	2	<.5	<1	2
91-G-730	1	3	4.1	8.9	1	<.5	<1	<2
91-G-731	3	3	2.5	14.2	2	<.5	<1	<2
91-G-732	<1	<1	.7	3.5	<1	<.5	<1	<2
91-G-733	3	2	1.4	11.3	1	<.5	<1	<2
91-G-734	3	4	2.8	12.7	1	<.5	<1	<2
91-G-735	3	9	9.6	20.9	2	<.5	<1	<2
91-G-736	5	7	3.9	16.4	2	<.5	<1	<2
91-G-737	2	2	2.3	11.5	2	<.5	1	<2
91-G-738	2	3	1.9	10.3	<1	<.5	<1	<2
91-G-739	2	3	2.7	8.0	1	<.5	<1	<2
91-G-740	1	<1	4.9	7.0	<1	<.5	<1	<2
91-G-741	3	2	2.5	19.6	2	<.5	<1	<2
91-G-742	3	3	2.5	16.7	2	<.5	<1	<2
91-G-743	2	2	4.0	12.1	2	<.5	<1	2
91-G-744	2	3	3.7	18.2	2	<.5	<1	<2
91-G-745	3	4	5.3	27.2	3	<.5	<1	6
91-G-746	3	2	2.4	18.0	2	<.5	<1	<2
91-G-747	2	1	1.5	18.9	1	<.5	<1	<2
91-G-748	5	6	4.9	21.8	4	<.5	1	<2
91-G-749	6	8	13.2	47.3	4	<.5	1	<2
91-G-750	4	6	2.5	21.6	3	<.5	1	2
91-G-751	4	5	2.1	18.7	3	<.5	2	<2
91-G-752	3	4	1.3	15.9	2	<.5	1	<2
91-G-753	5	7	5.1	36.8	3	<.5	2	2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-G-754	4	4	2.1	22.3	2	<.5	1	<2
91-G-755	4	5	3.0	20.4	3	<.5	2	<2
91-G-756	4	5	2.0	19.3	3	<.5	1	<2
91-G-757	5	7	3.5	36.4	3	<.5	1	<2
91-G-758	5	5	8.3	27.0	3	<.5	1	<2
91-G-759	4	6	3.6	22.6	2	<.5	1	<2
91-G-760	4	5	1.8	20.0	3	<.5	1	<2
91-G-761	4	5	4.3	19.6	3	<.5	1	<2
91-G-762	4	5	3.2	21.9	3	<.5	1	<2
91-G-763	4	6	2.5	16.7	2	<.5	1	<2
91-G-764	4	6	3.4	22.1	3	<.5	1	<2
91-G-765	4	7	2.8	19.9	2	<.5	1	<2
91-G-766	7	9	5.5	50.2	5	<.5	1	<2
91-G-767	6	8	3.1	26.0	4	<.5	1	<2
91-G-768	5	9	3.5	23.5	3	<.5	1	<2
91-G-769	4	7	1.8	17.6	2	<.5	2	<2
91-G-770	4	5	1.4	17.8	3	<.5	1	<2
91-G-771	4	6	2.4	24.2	3	<.5	1	2
91-G-772	5	7	1.6	19.3	3	<.5	1	<2
91-G-773	4	5	4.3	21.3	3	<.5	1	<2
91-G-774	4	5	2.0	20.7	3	<.5	1	<2
91-G-775	3	5	1.4	13.4	2	<.5	<1	<2
91-G-776	3	4	2.8	12.7	1	<.5	<1	<2
91-G-777	4	6	1.7	17.7	2	<.5	<1	<2
91-G-778	3	4	1.8	11.3	2	<.5	<1	<2
91-G-779	3	4	2.0	18.9	2	<.5	1	<2
91-G-780	3	4	1.5	16.3	3	<.5	<1	<2
91-G-781	3	4	1.8	13.7	2	<.5	<1	<2
91-G-782	4	4	2.5	22.5	3	<.5	1	<2
91-G-783	4	6	2.0	20.9	3	<.5	1	<2
91-G-784	3	4	.5	7.2	1	<.5	<1	2
91-G-785	4	5	1.8	19.5	3	<.5	<1	2
91-G-786	3	4	1.7	9.4	2	<.5	<1	<2
91-G-787	4	4	2.1	13.1	3	<.5	<1	<2
91-G-788	1	3	3.7	16.6	2	<.5	2	<2
91-G-789	4	3	4.9	19.4	3	<.5	<1	4
91-G-790	3	3	1.8	9.3	2	<.5	<1	6
91-G-791	4	7	5.0	13.8	2	<.5	<1	<2
91-G-792	4	5	2.6	14.3	2	<.5	<1	<2
91-G-793	3	5	1.5	15.2	2	<.5	<1	<2
91-G-794	4	5	3.1	13.0	2	<.5	<1	2
91-G-795	4	5	2.0	16.2	3	<.5	<1	2
91-G-796	3	4	1.0	10.2	1	<.5	<1	<2
91-G-797	9	15	7.0	51.6	4	.7	<1	6
91-G-798	5	9	3.6	16.6	3	<.5	<1	<2
91-G-799	3	5	3.2	14.2	2	<.5	<1	<2
91-G-800	3	4	2.4	14.1	4	<.5	<1	<2
91-G-801	3	5	8.2	19.1	3	<.5	<1	<2
91-G-802	4	5	2.6	14.0	2	<.5	<1	2
91-G-803	5	7	3.3	18.9	3	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-G-804	4	5	2.8	15.1	2	<.5	3	<2
91-G-805	3	4	4.6	13.1	2	<.5	<1	<2
91-G-806	3	6	4.4	15.7	2	<.5	<1	<2
91-G-807	4	9	7.4	22.1	2	<.5	<1	<2
91-G-808	3	6	3.7	15.1	2	<.5	<1	<2
91-G-809	4	6	16.6	22.8	3	<.5	<1	<2
91-G-810	6	14	.8	28.5	2	<.5	<1	2
91-G-811	3	6	2.7	18.1	2	<.5	<1	<2
91-G-812	5	4	1.8	20.1	3	<.5	<1	<2
91-G-813	5	8	2.0	18.2	2	<.5	<1	<2
91-G-814	4	6	3.0	15.9	3	<.5	<1	<2
91-G-815	6	7	1.6	25.5	3	<.5	<1	<2
91-G-816	2	4	.6	6.5	1	<.5	1	<2
91-G-817	4	7	4.8	28.1	3	<.5	<1	<2
91-G-818	3	5	3.7	24.2	2	<.5	<1	<2
91-G-819	4	6	5.2	16.7	3	<.5	<1	<2
91-G-820	4	4	.9	10.3	2	.5	<1	<2
91-G-821	5	7	6.7	20.2	3	<.5	<1	<2
91-G-822	3	8	2.7	16.0	1	<.5	<1	<2
91-G-823	3	3	2.7	18.8	2	<.5	<1	<2
91-G-824	4	4	2.9	18.8	2	<.5	<1	<2
91-G-825	7	14	10.4	42.8	3	<.5	<1	<2
91-JM-701	4	5	2.3	18.7	2	<.5	<1	<2
91-JM-702	3	2	4.2	21.4	2	<.5	<1	<2
91-JM-703	2	2	1.6	9.4	<1	<.5	<1	<2
91-JM-704	7	12	5.5	28.1	3	<.5	<1	<2
91-JM-705	3	4	7.9	20.9	3	<.5	1	<2
91-JM-706	3	5	1.8	18.8	2	<.5	1	<2
91-JM-707	3	3	1.6	11.8	<1	<.5	<1	<2
91-JM-708	3	4	2.7	16.9	2	<.5	<1	<2
91-JM-709	<1	<1	1.3	7.8	<1	<.5	<1	<2
91-JM-710	5	6	8.2	23.3	2	<.5	1	<2
91-JM-711	3	5	3.6	21.7	2	<.5	<1	<2
91-JM-712	6	7	1.7	15.7	2	<.5	<1	4
91-JM-713	3	5	2.7	23.5	2	<.5	<1	<2
91-JM-714	4	9	5.1	23.5	2	<.5	<1	<2
91-JM-715	4	8	8.3	22.0	1	<.5	<1	<2
91-JM-716	2	3	3.2	16.5	1	<.5	<1	<2
91-JM-717	2	1	1.0	13.8	<1	<.5	<1	<2
91-JM-718	2	2	1.8	16.0	<1	<.5	<1	<2
91-JM-719	3	3	1.8	17.8	2	<.5	<1	<2
91-JM-720	4	4	9.0	25.0	3	<.5	<1	<2
91-JM-721	5	5	2.8	20.8	2	<.5	<1	2
91-JM-722	2	2	2.1	19.6	2	<.5	<1	<2
91-JM-723	3	3	3.5	25.0	3	<.5	<1	<2
91-JM-724	3	3	4.2	24.9	3	<.5	<1	<2
91-JM-725	2	2	1.9	18.4	2	<.5	<1	4
91-JM-726	5	12	11.9	24.8	2	<.5	<1	<2
91-JM-727	5	6	5.6	27.9	4	<.5	<1	<2
91-JM-728	2	2	3.2	18.2	3	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-JM-729	3	3	4.0	15.3	2	<.5	<1	<2
91-JM-730	8	19	10.2	58.0	4	<.5	<1	<2
91-JM-731	1	2	3.0	9.1	<1	<.5	<1	<2
91-JM-732	6	8	14.3	20.7	3	<.5	<1	<2
91-JM-733	2	4	2.2	9.9	<1	<.5	<1	<2
91-JM-734	3	3	3.2	25.6	2	<.5	<1	4
91-JM-735	2	2	3.2	16.9	3	<.5	<1	<2
91-JM-736	2	3	4.5	13.1	2	<.5	<1	<2
91-JM-737	2	3	3.1	12.7	1	<.5	<1	<2
91-JM-738	3	2	1.9	12.4	2	<.5	<1	<2
91-JM-739	4	11	1.1	20.5	1	<.5	<1	<2
91-JM-740	2	2	1.8	11.6	1	<.5	<1	<2
91-JM-741	4	5	6.8	20.8	3	<.5	<1	<2
91-JM-742	2	2	2.4	12.8	2	<.5	<1	<2
91-JM-743	3	3	1.5	17.5	3	<.5	1	<2
91-JM-744	3	3	1.9	21.6	2	<.5	1	2
91-JM-745	3	4	2.7	19.4	3	<.5	<1	2
91-JM-746	2	2	2.2	22.3	2	<.5	<1	<2
91-JM-747	2	3	1.5	11.3	2	<.5	<1	<2
91-JM-748	2	3	1.6	20.3	3	<.5	<1	<2
91-JM-749	3	5	2.4	15.6	3	<.5	<1	<2
91-JM-750	2	5	5.5	14.7	1	<.5	<1	<2
91-JM-751	3	4	1.7	26.1	2	<.5	1	<2
91-JM-752	3	6	9.3	33.9	3	<.5	<1	<2
91-JM-753	6	10	5.4	55.7	4	<.5	1	<2
91-JM-754	4	6	2.3	31.2	2	<.5	1	<2
91-JM-755	1	1	<.5	7.3	1	<.5	<1	<2
91-JM-756	3	4	1.5	21.8	2	<.5	1	<2
91-JM-757	5	8	4.3	27.8	4	<.5	1	<2
91-JM-758	7	11	5.7	39.9	4	<.5	1	<2
91-JM-759	5	7	3.2	18.3	3	<.5	1	<2
91-JM-760	4	5	4.1	31.9	4	<.5	2	<2
91-JM-761	7	10	6.3	30.5	4	<.5	1	<2
91-JM-762	3	6	3.5	17.7	2	<.5	<1	<2
91-JM-763	2	3	1.8	13.2	2	<.5	<1	<2
91-JM-764	4	5	3.1	23.7	3	<.5	<1	<2
91-JM-765	3	6	10.9	20.6	3	<.5	1	<2
91-JM-766	2	3	2.3	18.6	1	<.5	<1	<2
91-JM-767	4	5	2.8	25.0	3	<.5	1	<2
91-JM-768	3	5	1.5	30.4	2	<.5	<1	2
91-JM-769	4	5	1.8	21.9	3	<.5	<1	4
91-JM-770	2	3	.5	19.4	<1	<.5	<1	<2
91-JM-771	4	5	4.0	15.6	4	<.5	1	<2
91-JM-772	3	4	1.4	19.0	2	<.5	<1	<2
91-JM-773	1	1	.6	13.0	<1	<.5	<1	2
91-JM-774	<1	<1	<.5	9.6	<1	<.5	<1	<2
91-JM-775	2	3	5.1	14.9	3	<.5	<1	2
91-JM-776	1	2	1.3	12.1	<1	<.5	<1	<2
91-JM-777	3	5	1.6	18.0	3	<.5	<1	<2
91-JM-778	3	3	.9	18.0	3	<.5	<1	<2

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
91-JM-779	3	4	1.6	16.5	2	<.5	<1	<2
91-JM-780	3	6	4.8	29.3	2	<.5	<1	<2
91-JM-781	4	6	4.7	16.8	2	<.5	<1	<2
91-JM-782	5	11	7.6	37.8	3	<.5	<1	<2
91-JM-783	4	5	8.6	29.1	4	<.5	1	<2
91-JM-784	4	6	3.5	29.1	3	<.5	<1	<2
91-JM-785	3	4	2.1	18.8	2	<.5	<1	<2
91-JM-786	2	3	2.5	18.1	2	<.5	<1	<2
91-JM-787	3	5	2.6	23.3	1	<.5	<1	<2
91-JM-788	2	3	3.8	16.4	1	<.5	<1	<2
91-JM-789	2	<1	1.2	18.8	2	<.5	<1	<2
91-JM-790	3	3	4.0	19.5	2	<.5	<1	4
91-JM-791	2	2	1.0	22.8	1	<.5	<1	<2
91-JM-792	2	1	2.1	22.4	3	<.5	<1	<2
91-JM-793	2	2	1.0	21.4	2	<.5	<1	<2
91-JM-794	<1	<1	.6	10.3	<1	<.5	<1	<2
91-JM-795	3	3	2.1	11.8	3	<.5	<1	2
91-JM-796	3	5	2.1	24.7	2	<.5	<1	2
91-JM-797	2	4	2.6	17.2	2	<.5	<1	<2
91-JM-798	3	3	1.4	14.2	2	<.5	<1	<2
91-JM-799	3	4	5.3	18.9	3	<.5	<1	<2
91-JM-800	4	4	1.6	22.8	3	<.5	<1	<2
91-JM-801	2	3	1.3	15.0	2	<.5	<1	<2
91-JM-802	1	2	1.1	12.4	1	<.5	<1	2
91-JM-803	3	4	1.3	18.3	2	<.5	<1	<2
91-JM-804	<1	1	1.1	13.1	<1	<.5	<1	<2
91-JM-805	2	3	16.9	18.3	2	<.5	<1	<2
91-JM-806	3	5	1.5	18.7	2	<.5	<1	<2
91-JM-807	<1	<1	<.5	9.9	<1	<.5	<1	<2
91-JM-808	3	5	1.6	19.2	1	<.5	<1	8
91-JM-809	2	3	1.1	16.0	<1	<.5	1	<2
91-JM-810	10	23	6.5	51.8	3	<.5	<1	4
91-JM-811	5	12	4.8	24.7	2	<.5	<1	2
91-JM-812	4	5	4.4	21.8	4	<.5	<1	<2
91-JM-813	4	4	3.4	22.0	2	<.5	<1	<2
91-JM-814	3	7	6.6	15.3	2	<.5	<1	<2
91-JM-815	2	4	3.0	14.4	1	<.5	<1	<2
91-JM-816	4	5	8.9	30.4	4	<.5	<1	2
91-JM-817	1	2	1.8	9.0	1	<.5	<1	<2
91-JM-818	2	4	5.0	20.6	2	<.5	<1	<2
91-JM-819	1	3	5.6	12.0	<1	<.5	<1	<2
91-JM-820	3	5	9.3	18.6	3	<.5	<1	<2
91-JM-821	3	4	6.7	21.7	3	<.5	<1	2
91-JM-822	2	3	5.1	17.6	2	<.5	<1	<2
91-JM-823	3	3	1.9	23.5	2	<.5	<1	<2
91-JM-824	4	6	7.7	30.0	4	<.5	<1	4
91-JM-825	4	4	3.3	18.9	3	<.5	<1	<2
C DCP CONTROL	8	7	7.0	15.0	2	<.5	<1	5
C DCP CONTROL	8	8	7.0	10.3	2	<.5	<1	5
C DCP CONTROL	6	6	6.8	9.9	2	<.5	<1	5

C - QUALITY CONTROL STANDARD

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947
Member of the SGS Group (Société Générale de Surveillance)

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
C DCP CONTROL	6	13	11.1	19.4	3	<.5	1	6
C DCP CONTROL	7	14	11.1	21.5	4	<.5	<1	8
C DCP CONTROL	6	12	11.2	18.5	3	<.5	<1	6
C DCP CONTROL	7	14	11.0	21.8	4	.5	<1	10
C DCP CONTROL	7	13	10.6	18.7	3	.5	<1	7
C DCP CONTROL	6	12	11.9	19.5	3	<.5	<1	5
C DCP CONTROL	6	11	11.9	19.5	3	<.5	<1	6
C DCP CONTROL	6	12	12.1	21.4	4	<.5	<1	6
C DCP CONTROL	6	11	11.9	19.1	3	<.5	1	5
D 91-S-701	2	4	6.9	21.1	3	<.5	<1	9
D 91-S-713	3	3	2.8	24.2	4	<.5	<1	11
D 91-S-725	2	2	1.3	14.7	2	<.5	<1	10
D 91-S-737	2	2	1.7	17.0	2	<.5	<1	6
D 91-S-747	6	12	7.6	24.5	3	<.5	<1	7
D 91-S-759	3	3	1.6	14.9	2	<.5	<1	13
D 91-S-771	3	4	3.6	20.1	3	<.5	<1	7
D 91-S-783	<1	<1	.7	12.8	<1	<.5	<1	5
D 91-S-793	3	4	4.9	32.8	2	<.5	1	10
D 91-S-805	2	2	7.2	40.2	2	<.5	<1	5
D 91-S-817	<1	<1	.9	19.5	<1	<.5	<1	9
D 91-S-829	2	2	2.5	23.6	2	<.5	<1	7
D 91-S-839	4	5	3.1	29.9	3	<.5	<1	9
D 91-S-851	3	2	1.4	14.7	2	<.5	<1	10
D 91-S-863	7	6	2.8	38.6	3	<.5	<1	14
D 91-S-875	3	4	4.0	20.2	1	<.5	<1	6
D 91-S-885	3	1	1.3	19.6	2	<.5	1	15
D 91-S-897	3	3	2.2	32.0	3	<.5	1	16
D 91-S-909	5	8	3.9	32.2	2	<.5	<1	7
D 91-S-921	2	2	2.6	10.8	1	<.5	<1	3
D 91-S-931	3	4	2.7	23.5	2	<.5	<1	8
D 91-S-943	4	5	4.4	21.3	3	<.5	<1	9
D 91-G-708	3	4	5.4	12.6	2	<.5	1	10
D 91-G-720	2	2	2.1	7.4	1	<.5	<1	6
D 91-G-730	2	4	4.4	11.0	2	<.5	<1	5
D 91-G-742	3	2	2.2	15.2	2	<.5	<1	8
D 91-G-754	3	2	1.8	18.3	4	<.5	<1	7
D 91-G-766	5	7	5.2	44.2	4	<.5	<1	11
D 91-G-776	2	2	2.8	13.3	<1	<.5	<1	5
D 91-G-788	2	1	3.2	14.9	1	<.5	<1	8
D 91-G-800	2	2	2.0	12.7	1	<.5	<1	6
D 91-G-812	3	2	1.5	18.7	2	<.5	<1	8
D 91-G-822	3	8	2.6	16.9	<1	<.5	<1	3
D 91-JM-709	<1	<1	1.2	8.5	<1	<.5	<1	3
D 91-JM-721	4	4	2.2	18.0	2	<.5	<1	11
D 91-JM-733	2	3	1.9	8.3	1	<.5	<1	4
D 91-JM-743	2	2	1.3	16.3	2	<.5	<1	8
D 91-JM-755	<1	<1	<.5	4.4	<1	<.5	<1	2
D 91-JM-767	3	4	2.2	21.5	2	<.5	<1	7
D 91-JM-779	2	3	1.5	14.6	2	<.5	<1	6
D 91-JM-789	3	2	1.1	17.7	2	<.5	<1	7

C - QUALITY CONTROL STANDARD
D - QUALITY CONTROL DUPLICATE

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM	AG PPM	CD PPM	PB PPM
D 91-JM-801	1	<1	1.1	12.2	<1	<.5	<1	9
D 91-JM-813	3	3	3.0	20.6	2	<.5	<1	9
D 91-JM-825	4	2	3.0	16.1	3	<.5	<1	11

D - QUALITY CONTROL DUPLICATE