# PERCUSSION DRILLING ASSESSMENT REPORT

on the

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORTS

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Gold Commissioner's Office VANCOUVER, B.C.

RAIL CLAIM GROUP
LAC LA HACHE AREA

**CLINTON MINING DIVISION** 

by

MURRAY S. MORRISON, B.Sc.

**CLAIMS**:

Rail 1-23 (23 units).

**LOCATION:** 

The Rail property is situated 3 km southwest of Spout Lake, 18 km

northeast of Lac La Hache, B.C.

Lat. 51°58'; Long. 121°26';

N.T.S. Map 92-P-14W.

**OWNER:** 

Pandora Industries Inc.

<u>OPERATOR</u>:

Coronation Mines Ltd.

DATE STARTED:

February 24, 1996

**DATE COMPLETED:** 

February 29, 1996

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

Kelowna, B.C.



June 25, 1996

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#### **SUMMARY**

During February, 1996, a Percussion Drilling Program totalling 268 meters in seven drill holes was conducted on the Rail Claim Group situated near Spout Lake, 18 km northeast of Lac La Hache in the Clinton Mining Division of British Columbia.

The drilling program was financed by Coronation Mines Ltd. of Vancouver which entered into a Joint-Venture agreement with property owner, Pandora Industries Inc., also of Vancouver, immediately prior to the drilling program.

The Rail Claim Group, consisting of 23, 2-post mineral claims, was staked by the writer in September 1991 & 94 to cover a strong elongate airborne magnetic anomaly that is outlined on government aeromagnetic maps.

The staking of the airborne anomaly was inspired by the success achieved at the well-known Mount Polley deposit which is located within similar geology 64 km northwest of the Rail property. The Mount Polley geology consists of an alkaline laccolith that is intrusive into Nicola Group rocks. The geology features a late breccia phase and mineralization that is made up of magnetite with economic values of chalcopyrite and gold (i.e. mineable reserves of 81.5 million tons of 0.30% copper and 0.414 grams of gold). This deposit is currently being readied for production.

GWR Resources Inc. reported encouraging drill results from their Peach Lake property, 7 km east of the Rail property in May, 1993. Diamond drill hole 93-14 intersected 9.6 m of skarn mineralization grading 0.86% copper, 47% magnetite and 0.26 g/t gold.

Ground magnetometer surveys conducted by the writer in 1992 & 93 on the Rail property further defined the borders of the strong airborne anomaly. The property was subsequently purchased by Pandora Industries Inc. in 1994, which financed further detailed ground magnetometer surveys by the writer in 1995.

#### **SUMMARY** continued

In February this year, it was decided to test the magnetic anomaly by drilling several shallow, widely space, drill holes across the property.

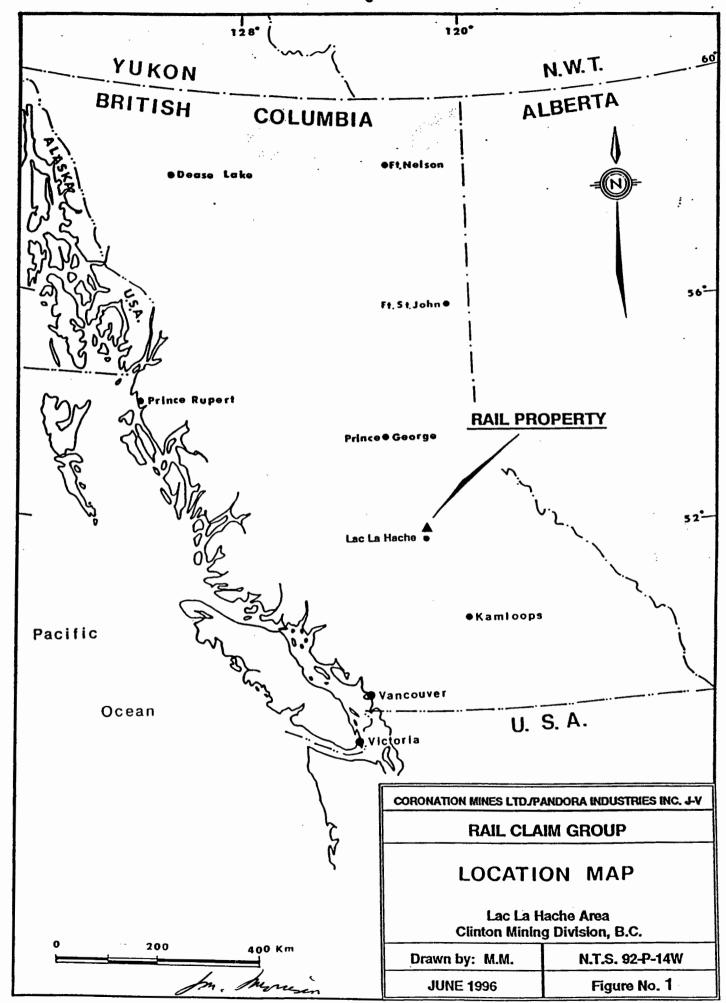
Deep overburden (up to 42 meters) was encountered in all drill holes and only 3 of 7 drill holes reached bedrock. Only 45.4 metres of the 268 metres program subsequently drilled into bedrock.

The three successful drill holes intercepted a magnetite-rich microgabbro intrusive. These drill holes, spaced up to 1100 metres apart, proved that the elongate magnetic anomaly does represent an intrusive. One of the three drill holes encountered anomalous copper values throughout (174 parts per million (ppm) over 4.9 metres and 258 ppm over 9.1 metres).

The anomalous copper values, along with other features (eg. good faulting) indicate that the intrusive does have the potential to host a copper deposit of economic grade.

This year's drilling program tested only a small portion of the intrusive and further exploration of the property is warranted.

A program involving deep penetration Induced Polarization surveying and/or further Percussion Drilling is recommended for the property.



#### INTRODUCTION

This report, written for government assessment work requirements, discusses the results of a 268 metre Percussion Drilling Program conducted on the Rail Claim Group during February, 1996. The work was financed by Coronation Mines Ltd. of Vancouver as part of the terms of a Joint-Venture Agreement with property owner, Pandora Industries Inc. also of Vancouver. The drilling was carried out by F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C. under the supervision of the writer, M. Morrison, also of Kelowna.

The Rail Claim Group is comprised of 23 contiguous 2-post mineral claims that were staked by the writer during September, 1991 & 94. The mineral claims, located midway between Rail and Spout Lakes, 18 km northeast of Lac La Hache, B.C., were staked to cover an elongate magnetic anomaly that is outlined on Government Aeromagnetic Map 5232G-Lac La Hache.

It was considered at the time of staking that the elongate magnetic anomaly might represent an alkaline body that could have been intrusive into the Upper Triassic Nicola Group rocks that were thought to underlie the property. It was hoped that such a feature might represent the potential for locating an "alkaline intrusive-hosted" copper-gold porphyry deposit on the Rail property like that at the well-known Mount Polley copper-gold porphyry mine located 64 km to the northwest where the geological setting is similar.

A series of ground magnetometer surveys conducted by the writer (Morrison, 1992, 93 & 95) yielded good definition of a strong magnetic anomaly averaging 500 metres in width and crossing the northwestern portion of the property for 2200 metres. This anomaly which coincides with the northwestern portion of the airborne magnetic anomaly was interpreted to represent a magnetite-rich intrusive.

This February's Percussion Drilling Program was designed to probe the magnetic anomaly at several sites in an attempt to determine the composition of the inferred intrusive and its potential to host economic minerals.

# **INTRODUCTION** continued

The information gathered during the drilling program is presented within the report with the support of Cross-Sectional Diagrams (Figures 3-9) Drill Logs (Appendix C) and Laboratory Analyses (Appendix D).

The drill hole locations are illustrated on Map R-96-1 which also accompanies this report.

#### **LOCATION AND ACCESS**

The Rail property is located midway between Rail Lake and Spout Lake, 18 km northeast of Lac La Hache, B.C. (Lat. 51°58'; Long. 121°26'; N.T.S. Map 92-P-14W).

Access to the property from Highway 97 at Lac La Hache is via the Spout Lake Road (23.6 km) and a series of logging roads extending east from the Spout Lake Road as illustrated on Figure 2.

#### PHYSICAL FEATURES AND CLIMATE

The Rail property covers an area of very subdued relief at the 1120 m elevation near the centre of the Fraser Plateau.

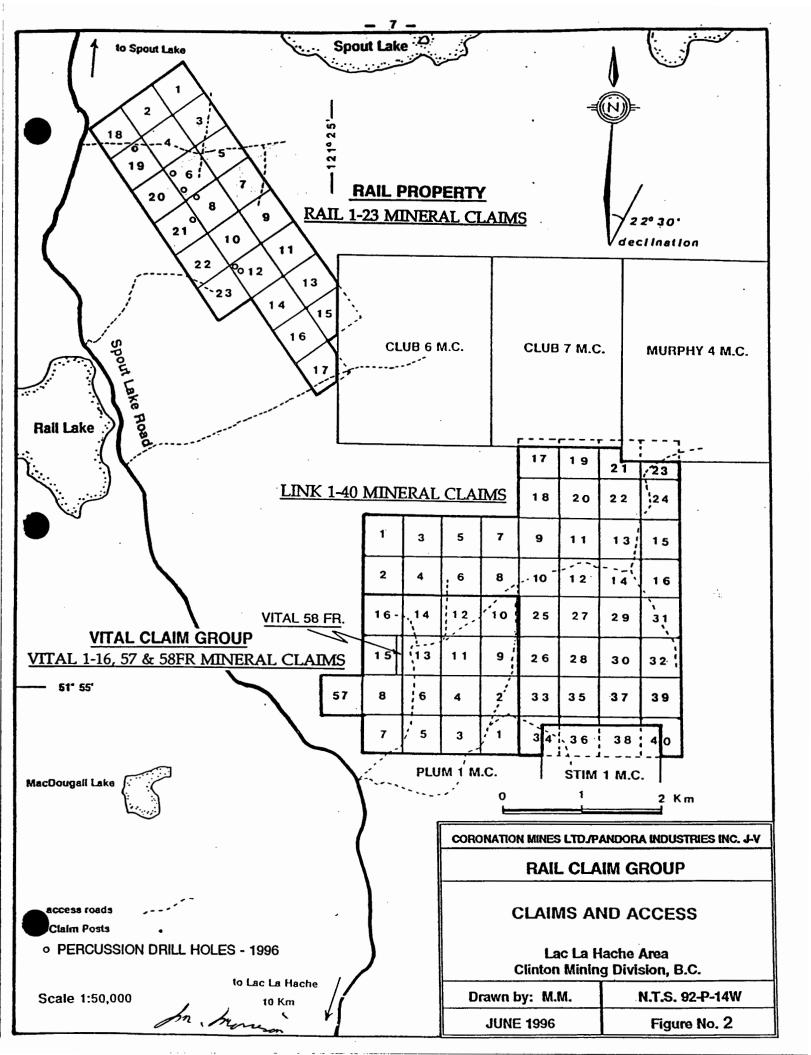
The property is located at the height of land midway between Rail Lake, 2 km to the southwest, and Spout Lake, 2 km to the northeast. Drainage on the property is internal and flows into large shallow marshes.

The entire property is covered by 30 to 50 metres of Pleistocene drift. Geomorphic features include low glacial ridges and shallow meltwater channels.

Forest cover on the property is predominantly Lodgepole pine - some of which has been recently clear-cut logged. Other forest species include poplar and spruce which fringe the grassy marshes and generally grow in lower poorly drained regions on the property.

The property and surrounding countryside are used as summer rangeland for cattle.

The Fraser Plateau has a moderate climate with summer highs seldom exceeding 30°C and winter lows usually not dropping below -30°C. Precipitation equals approximately 40 cm annually and one-third of it occurs in the form of snow. The snow begins to accumulate around the first of November and generally lingers in the forested areas until early April.



# **CLAIM STATUS**

The Rail 1-23, 2-post mineral claims were staked during September, 1991 & 94, by the writer, M. Morrison, of Kelowna, B.C. They were recorded in the writer's name in the Clinton Mining Division. The following table lists the mineral claims comprising the Rail Group:

CLAIM NAME	<u>UNITS</u>	TENURE <u>NO.</u>	DATE OF RECORD	EXPIRY* <u>DATE</u>
Rail 1	1	304273	September 8, 1991	September 8, 1996
Rail 2	1	304274	September 8, 1991	September 8, 1996
Rail 3	1	304275	September 8, 1991	September 8, 1996
Rail 4	1	304276	September 8, 1991	September 8, 1996
Rail 5	1	304277	September 8, 1991	September 8, 1996
Rail 6	1	304278	September 8, 1991	September 8, 1997
Rail 7	1	304279	September 8, 1991	September 8, 1996
Rail 8	1	304280	September 8, 1991	September 8, 1997
Rail 9	1	304281	September 8, 1991	September 8, 1996
Rail 10	1	304282	September 8, 1991	September 8, 1997
Rail 11	1	304283	September 9, 1991	September 9, 1996
Rail 12	1	304284	September 9, 1991	September 9, 1997
Rail 13	1	304285	September 9, 1991	September 9, 1996
Rail 14	1	304286	September 9, 1991	September 9, 1996
Rail 15	1	304287	September 9, 1991	September 9, 1996
Rail 16	1	304288	September 9, 1991	September 9, 1996
Rail 17	1	304870	September 24, 1991	September 24, 1996
Rail 18	1	330642	September 7, 1994	September 7, 1996
Rail 19	1	330643	September 7, 1994	September 7, 1996
Rail 20	1	330644	September 7, 1994	September 7, 1996
Rail 21	1	330645	September 7, 1994	September 7, 1996
Rail 22	1	330646	September 8, 1994	September 8, 1996
Rail 23	1	330647	September 8, 1994	September 8, 1996

<sup>\*</sup> It is expected that some of the Assessment Work recorded in this report will be used to advance the expiry date of most of these mineral claims.

# **CLAIM STATUS** continued

The Rail Claim Group was purchased by Pandora Industries Inc. of Vancouver in August, 1994, subject to a 1% Net Smelter Royalty being retained by the writer. In February, 1996 a Joint-Venture Agreement was signed by Pandora Industries Inc. with Coronation Mines Ltd. of Vancouver. Coronation Mines Ltd. financed this year's drilling program as part of the terms of the Agreement.

It should be noted that portions of the Rail 15 & 17 mineral claims overlap the previously staked Club 6 mineral claim which is owned by another party (see Figure 2).

#### **HISTORY**

The Rail Property covers a portion of ground that was formerly covered by the WB mineral claims of Amax Exploration Inc. in 1972-73. The WB mineral claims comprised one of several properties that Amax had staked in the early '70's to surround their prime exploration target on the WC and Peach/Pit properties located south and east of Spout Lake, respectively (see Regional Mineralization).

In 1972 Amax conducted a helicopter magnetometer survey over several of their properties including the WB, and in 1973 followed-up the airborne survey with a ground magnetometer survey. Five kilometres of Induced Polarization survey were conducted on the WB property in 1973 and six percussion drill holes, totalling 381 metres, were drilled on the WB 24, 30, 41 and 45 mineral claims (G.E.M. 1972 & 73).

Some old roads have been located on the present Rail property that could date back to the early 1970's, and some pyroxenite sand that could represent percussion drill chips was noted at grid 21N, 4+25W on the Rail property.

There is no record of any work having been done on the property from 1974 until 1992. In 1992 the writer conducted a ground magnetometer survey over the Rail 5-10 mineral claims on a 25 by 200 metre grid. In 1993, the survey was expanded to cover the Rail 2, 4, 12, 14, 16 & 17 mineral claims on a grid spacing of 25 by 100 or 200 metres and in 1995 expanded further to cover portions of the new Rail 18-23 mineral claims at a grid spacing of 25 by 50 or 100 metres (Morrison 1992, 93 & 95).

#### **REGIONAL GEOLOGY**

The regional geology of the Lac La Hache area is illustrated on the Bonaparte Lake, 1"=4 mile, map sheet (#1278A) of the Geological Survey of Canada (Campbell and Tipper, 1971). Much of the Fraser Plateau to the west and south of Lac La Hache is mantled with thick Tertiary lava flows of Miocene and/or Pliocene age. However, a wide window in the Tertiary volcanics east of Lac La Hache exposes a 16 by 40 km belt of Upper Triassic Nicola Group volcanics and sediments. The western edge of the large Takomkane Batholith of Triassic or Jurassic age intrudes the Nicola Group rocks at Spout Lake, Mount Timothy, Timothy Lake and Spring Lake 17 km to the east of Lac La Hache. A 6.5 km wide dioritic and syenodioritic contact phase of the batholith extends 11 km from Mount Timothy to Spout Lake.

A late fault coincident with Timothy Creek cuts through the centre of the Nicola Group belt on the Bonaparte Map and crosses the countryside 2 km east of the Rail property.

Map 1278A indicates that the Rail property lies just to the north of the window in the Tertiary volcanic cover, but the results of the 1992, 93 & 95 magnetometer surveys and this year's drilling suggest that the Tertiary volcanics do not overlie much of the Triassic rocks on the property. The elongate airborne magnetic anomaly that is outlined on the Government Aeromagnetic Series Map 5232G-Lac La Hache, which is covered by the Rail Claim Group, is believed to represent a calcalkaline-rich body that is intrusive into the Nicola Group rocks which are believed to underlie the property. This year's drilling program confirmed that at least part of the anomaly is caused by a magnetite-rich microgabbro intrusive.

A very thick (30 to 50 metre) Pleistocene drift covers the entire property.

#### REGIONAL MINERALIZATION

Copper occurrences are common east of the Timothy Creek Fault within basaltic and andesitic volcanic rocks of the Nicola Group, particularly where they are intruded by micro-dioritic, syenodioritic or monzonitic intrusive bodies. Mineralization consists of chalcopyrite or bornite and ranges from low grade disseminations to higher grade veinlets associated with shearing. Skarn development has also been noted at intrusive-volcanic contacts on the old WC property of Amax Exploration Inc. located immediately south of Spout Lake. Chalcopyrite occurs with magnetite at the skarn occurrences.

Similar chalcopyrite-magnetite mineralization occurs at the contact of an alkalic intrusive complex emplaced into Nicola Group rocks on the old Peach Lake property of Amax Exploration Inc. located just 4 km east of Spout Lake.

The Spout Lake and Peach Lake properties, located 4 km and 8 km east of the Rail property respectively, are now owned by GWR Resources of Vancouver, and are currently optioned to Regional Resources of Toronto. A vigorous exploration effort has been conducted on these properties since December 1992 in an attempt to prove up an economic deposit of magnetite, copper and gold. As an example of success a news release in the May 7, 1993 Canada Stockwatch reported that diamond drill hole 93-14 had intersected 9.6 m of skarn mineralization grading 0.86% copper, 47% magnetite and 0.13 g/t gold.

Another development in recent years involved the discovery of native copper, chalcopyrite and chalcocite mineralization by Liberty Gold Corp. on their Tim property located near Mount Timothy, 12 km southeast of the Rail property. In 1990, drill hole 90-1 on the Tim property returned 41 metres of 0.40% copper, including 7.0 metres of 2.05% copper, and drill hole 90-10 returned 51.8 metres of 0.25% copper, including 5.2 metres of 1.02% copper (Vancouver Stockwatch, October 17, 1991, p. 39).

#### **REGIONAL MINERALIZATION** continued

As early as 1968, A. Sutherland Brown noted the "marked similarity of the Spout Lake geology with that of the Cariboo Bell area (now called Mount Polley area) located 65 km northwest of Spout Lake (Report of the Minister of Mines, 1968, pp. 155-159).

The main feature of the Mount Polley geology is an alkaline multiphase laccolith that is intrusive into (and coeval with) Nicola Group rocks. The phases range from syenodiorites to monzonites to pyroxenites, and include a very important semi-discordant breccia phase that has been mineralized with late magnetite and chalcopyrite. Native gold occurs within chalcopyrite grains. A pyrite "halo" extends east (or geologically above) 1000 metres from chalcopyrite-magnetite mineralization.

The current mineable reserves at the Mount Polley property have been calculated at 81.5 million tonnes grading 0.30% copper and 0.414 grams of gold (George Cross News Letter, Nov. 2, 1995) and the property is presently being prepared for production.

#### **PROPERTY GEOLOGY**

Most of what is currently known about the Rail property geology was discovered during this year's drilling program and it is described under several of the titles that follow within this report.

#### **DRILLING PROGRAM - 1996**

#### The Drill

A truck-mounted Percussion Drill was contracted from F.V.P.S. (Drilling Division) of Kelowna, B.C. for the Rail Property drilling program. The drill, with a capacity to drill an 8.3 cm bore hole to a depth of at least 100 meters, was considered suitable for the job which initially was to consist of short drill holes drilled at several widely scattered locations. The self-contained drill, built onto the back of a three ton Ford truck, was very mobile for some of the longer moves.

A one-ton 4 x 4 truck with diesel and water tanks, casing and spare drill rods accompanied the drill truck to each drill site.

#### Site Preparation

A total of 13 sites were prepared for the drill which was initially expected to hit bedrock at shallow depths. Eventually only 7 sites were drilled, because of the excessive overburden encountered across the entire property.

The sites chosen for drill testing of the large magnetic anomaly (inferred intrusive) were chosen for ease of access and geological merit. As a consequence many of the drill sites required very little site preparation. Logging roads, both old and recent, were used wherever possible to avoid disturbing the forest. Some of the drill holes were drilled in new clear-cut plots. No damage was done to the mature pine forests, and very few trees in the new plantations were destroyed.

The Rail Lake district had had a very wet autumn, followed by heavy early winter snows with several freeze-thaw cycles. The result (in February) was that 1 metre of very compact snow rested on a muddy soil surface that had not frozen. This weather combination resulted in problems for clearing roads and drill sites. A large "cat" was required for plowing the heavy

#### Site Preparation continued

snow, yet the muddy ground beneath the snow often did not support the weight of the "cat". In several local areas ruts made by the "cat" during snow clearing operations had to be filled with mud manually before freezing at night. In some cases, it required a couple of nights of heavy frost before the roads were accessible for the drill truck. Once the newly plowed roads froze they provided good access with no rutting or mudhole problems.

A total of 11 hours were required to snowplow 6 km of access road and clear drill sites by a Dresser TD-15C "cat" hired from Kingsgate Excavation of 100 Mile House.

Four man-days were required to mark out roads and drill sites and manually repair drill roads.

#### Reclamation

Very little reclamation was required on the property, because the drill sites were selected with care to avoid disturbance of the forests as much as possible, as earlier explained. In some areas where the top soil was scraped by the "cat" blade during snowplowing, it has been replaced and seeded with grass seed this spring. The gravel and sand piles generated by drilling through tens of metres of glacial drift at several sites have been spread out along roads where that was considered suitable, or alternately, levelled or contoured to blend in with the surrounding landscape and seeded with grass seed.

Drill sites PDH 96-1 & 7 are located in a recent clear-cut plot that is currently being reforested by the logging contractor.

Several young pine trees were uprooted during the snow clearing of drill site PDH 96-5, and it is intended that these will be replaced, although at the time of writing this report this has not yet been done.

#### The Program

The drilling program was carried out during a spell of cold weather at the end of February, 1996.

It was intended originally to drill up to 13 drill holes through shallow overburden to examine and sample the upper 10 to 20 metres of bedrock at each site. As it happened, the glacial drift covering the property was well in excess of the 3 to 10 metres predicted, and it dictated the course of the drilling program from the first drill hole onwards.

PDH 96-1 was drilled to 38.4 metres, well beyond the end of the casing which was put down with difficulty to only 13.1 metres. It was a great disappointment to discover that the overburden was so deep, and it was decided to abandon the drill hole in favor of another test elsewhere where the overburden might be less deep (at this point in the drilling program, there was no way of knowing just how deep the overburden was on the property).

PDH 96-2 was moved well away from PDH 96-1 (430 metres) in an effort to avoid the same overburden conditions. PDH 96-2 was located near the centre of the strong magnetic anomaly, and it was considered that the strength of the anomaly indicated less overburden. PDH 96-2 penetrated several metres of Pleistocene lake sand and gravels. Again, it was difficult to set the casing, and impossible after 13.7 metres. The drill made little headway beyond the casing and PDH 96-2 had to be abandoned at 19.8 metres due to continuous caving.

Once again, the drill was moved a good distance (540 metres) northwest to site PDH 96-3 to avoid the severe overburden problems, but once again several metres of Pleistocene beach sands and gravels were encountered. All of the available casing (24.4 metres) was set at this hole, again with difficulty. Another attempt was made to advance the drill hole beyond the

#### The Program continued

casing, but just as in drill hole PDH 96-2 the loose fine gravel at the bottom of PDH 96-3 kept caving into the hole and no progress was made beyond 25.9 metres.

Following the three failures to reach bedrock on the northern portion of the magnetic anomaly it was decided to move the drill to the southern end of the anomaly 2000 metres from PDH 96-3. PDH 96-4 managed to drill through 42.1 metres of overburden to reach bedrock. All of the available casing (26.8 metres) was put down in PDH 96-4, and as in the previous drill holes, it was decided to drill ahead of the casing in an attempt to reach bedrock. In PDH 96-4, the walls held up well beyond the casing and bedrock was reached. The drill hole was advanced to a total depth of 61.0 metres to obtain a good sample of the intrusive rock, which was the first rock intercepted on the property. The rock was a magnetite-rich microgabbro.

PDH 96-5 was drilled just 80 metres from PDH 96-4 to test another portion of the strong magnetic anomaly (there was now confidence that bedrock could be reached on the Rail property). PDH 96-5 was also drilled well beyond the length of available casing (25.3 metres) and intercepted the microgabbro intrusive at 31.7 metres. The drill hole was continued to 45.7 metres in the microgabbro.

A decision was made to return to the northwestern portion of the magnetic anomaly to make another attempt to reach bedrock now that the approximate depth of the Pleistocene drift had been determined. Like the two previous drill holes, PDH 96-6 was drilled beyond the length of available casing (26.8 metres) and intercepted the microgabbro intrusive at 32.6 metres. This drill hole was stopped at 45.1 metres in the intrusive.

#### The Program continued

The last drill hole of the program, PDH 96-7, was drilled 340 metres to the southeast of PDH 96-6 in another attempt to reach the intrusive. PDH 96-7 hit unconsolidated sand near the end of the available casing (26.8 metres). The sand caved into the hole continuously and the drill hole had to be abandoned at 32.0 metres.

A total of 268 metres were drilled in the seven drill holes. Only three of the seven holes reached bedrock and only 45.4 metres of total bedrock were tested by the drilling program.

A summary of the specifics of each drill hole is given in the Table that follows:

DRILL HOLE NUMBER	COORD! NORTH	INATES WEST	AZIMUTH	DIP	ELEVATION (metres)	LENGTH (metres)	BEDROCK (metres)
PDH 96-1	29+90N	3+75W	235°	-70°	1117	38.4	<b>0</b>
PDH 96-2	34+08N	4+47W	235°	-70°	1118	19.8	0
PDH 96-3	39+02N	6+21W	135°	-70°	1112	25.9	0
PDH 96-4	19+12N	4+56W	325°	-70°	1121	61.0	18.9
PDH 96-5	20+03N	4+66W	235°	-70°	1123	45.7	14.0
PDH 96-6	31+40N	4+62W	260°	-70°	1115	45.1	12.5
PDH 96-7	27+95N	5+40W	235°	-70°	1111	32.0	_0
					Totals	267.9	45.4

#### **Sampling**

Approximately 30 kg of rock powder and chips were produced from each 3 metre drill intercept. The 30 kg sample was poured evenly across a large sheet of plywood and a cement trowel was used to scoop a representative sample from several points of the pile until 2½ kg of material was collected in a plastic rock sample bag for shipment to the laboratory. A second sample was collected in the same manner for back-up purposes, and the excess material was then stored in marked green garbage bags for further tests if required.

The degree of mineralization (or lack of mineralization) was determined in the field after a quick logging of the drill ships, and a decision to combine two or more samples into single composite samples was made. The composite samples were then shipped to the laboratory resulting in lower costs for analyses. It was felt that if the composite samples proved to be anomalous in certain elements, then the individual samples making up the composite sample could be analyzed at a later date.

A total of 7 composite samples were delivered to the Eco-Tech Laboratory in Kamloops, and these represented the entire 45.4 metres of bedrock drilled. The samples were analyzed for 28 elements by standard ICP methods, and for gold by Atomic Absorption.

The samples were crushed to -10 mesh using jaw and cone crushers and then a 250 g split sample was ring pulverized to approximately -140 mesh. A measure of the -140 mesh material was digested by Aqua Regia and analyzed by ICP. Fire Assay and Atomic Absorption were used for the gold analysis.

The analytical results are listed in Appendix D.

#### Geological Studies

#### **Overburden**

The great depth of overburden influenced the direction of the entire drilling program, and a decision was made to record the make up of the material (as well as could be done with Percussion Drill samples). It was found that thick beds if Pleistocene lake sands and gravel lie beneath a cover of till on the property. It was hoped that a sequence of beds might be identified that could be traced to bedrock. Although no such sequence was recognized, the results of the study are recorded on the cross-sectional diagrams and in the drill logs that accompany this report.

#### **Bedrock Geology**

Approximately 200 grams of screened and washed drill chips (3 to 10 mm in size) were collected from each 1.5 or 3.0 m drill intercept for viewing and logging purposes. A quick logging was done on site to guide the drilling program, and a more thorough logging was done at a later date to properly appraise the drill program results.

The drill chips were of sufficient size to allow for the identification of mineral constituents and rock type. All of the data observed during the logging of the drill chips is recorded in the drill logs that accompany this report (see Appendix C).

#### **Drilling Results**

The problems created by the great depth of overburden encountered while drilling the property have already been discussed under other titles within this report. The silty-clay boulder till observed on the surface across the property extends to a depth of only a few metres in most drill holes. However, below the unsorted till lies several metres of well-sorted

#### **Drilling Results** continued

beach sand and gravels from a Pleistocene lake. These fine gravels, pea gravels and coarse sand are generally free of clay material and they did not hold up well in the walls of the drill holes. As mentioned earlier, four of the seven holes drilled had to be abandoned short of bedrock due to severe caving problems.

Drill holes PDH 96-4, 5 & 6 did reach bedrock at 42.1, 31.7 and 32.6 metres, respectively. In each case the bedrock was found to be a microgabbro intrusive.

A description of the microgabbro along with the values obtained for key economic elements is given in the drill logs (see Appendix C). In summary, the microgabbro exhibits some variation in composition, alteration and texture between the three drill holes. The microgabbro of PDH 96-4 contains a higher percentage of pyroxene than does the microgabbro of PDH's 96-5 & 6. There is also more replacement of the microgabbro by serpentine and talc at PDH 96-4 then at the other drill holes. Geochemically, PDH 96-4 yielded elevated values for cobalt, chromium and nickel (typical ultramafic elements) whereas the copper values were low. The microgabbro encountered in PDH's 96-5 & 6, on the other hand, yielded elevated copper values and low cobalt, chromium and nickel values.

The microgabbro of PDH 96-6 is noticeably gneissic in texture (tectonic) and slickenside surfaces are common on drill chips. A pink aplite dyke cuts the microgabbro of PDH 96-6, also suggesting late tectonic activity.

The magnetite content of the microgabbro from the three drill holes is considered enough to account for the strong magnetic anomaly. The content is estimated to be 10% for PDH 96-4 and 5% for PDH 96-5 & 6.

#### **DISCUSSION**

Although only three of the seven drill holes of the February drilling program reached bedrock all three intercepted a magnetite-rich microgabbro within the magnetic "high" outlined by airborne and ground magnetic surveys. Drill holes PDH 96-4 & 5 were located near the southern end of the large elongate anomaly, while PDH 96-6 was located 1100 metres to the northwest near the north-central portion of the anomaly. The results from the three drill holes suggest that the entire magnetic anomaly represents an intrusive, and that the initial interpretation of the magnetometer surveys was correct.

It was pointed out under the previous title (Results) that the microgabbro of PDH 96-4 contains more pyroxene, magnetite, cobalt, chromium and nickel than does that of PDH's 96-5 & 6. The data also shows a variation in alteration, texture evidence of faulting and copper content from drill hole to drill hole. Some of these differences suggest that the intrusive is comprised of more than one phase, and that late faulting also occurs within the intrusive.

Possibly somewhere within the intrusive there is a phase with economic concentrations of copper, or alternatively, a fault zone that has been enriched with economic minerals. The entire bedrock intercept of PDH 96-5 contains anomalous copper (174 ppm from 31.7 to 36.6 m and 258 ppm from 36.6 to the end of the drill hole at 45.7 m). This zone of elevated copper proves that the intrusive has potential for hosting a zone of economic copper mineralization.

In addition to further exploration of the elongate intrusive outlined by the magnetometer surveys there is another interesting feature on the property that was highlighted in the 1995 Assessment Report (Morrison, 1995). It was noted in 1995 that there is an apparent offset of the northern end of the intrusive by a late east-west cross fault. It appears that the magnetite within the intrusive has been destroyed by hydrothermal solutions related to faulting over a width of 100 metres. The possibility that porphyry-style copper mineralization might be

#### **DISCUSSION** continued

found associated with the cross fault was proposed in the 1995 report. This year, PDH 96-3 attempted to test the inferred cross fault, but the drill hole had to be abandoned in deep overburden short of its target.

Clearly, the deep drift has hampered all exploration efforts on the property to date. However, the property warrants further investigation. The outline of the intrusive has been well defined by the magnetometer surveys, but finding economic copper concentrations within the intrusive or in the surrounding country rock is going to be a challenge.

Two or three trial lines of deep penetrating Induced Polarization Survey are recommended across the width of the inferred intrusive. If the experimental program is successful than the survey should be expanded across the length of the intrusive.

Following the I.P. survey, or perhaps in place of it, two lines of drill holes should be systematically drilled across the width of the intrusive and into the immediate bordering country rock to test for phase changes within the intrusive, faulting and mineralization. The inferred east-west cross fault should also be tested with the drill.

A Percussion Drill with a capacity to put casing down through up to 50 metres of glacial drift is recommended for the drilling program.

#### **CONCLUSIONS AND RECOMMENDATIONS**

This year's Percussion Drilling Program conducted on the Rail Claim Group was hampered by unexpected deep drift that turned out to be widespread across the property. Only three of the seven holes drilled reached bedrock, and out of a total of 268 metres drilled only 45.4 metres penetrated bedrock.

The three drill holes that did reach bedrock confirmed that the elongate magnetic anomaly which crosses the property for 2200 meters from southeast to northwest does represent a magnetite-rich intrusive.

The intrusive encountered by all three drill holes is a microgabbro. The pyroxene content of the microgabbro is, however, variable between drill holes as is the degree of alteration, faulting, and the lithogeochemistry. It is considered that the copper content of PDH 96-5 is anomalous (see Discussion).

Based on regional geology the microgabbro is believed to be Late Triassic or Early Jurassic and intrusive into Upper Triassic Nicola Group rocks underlying the property.

The anomalous copper values of PDH 96-5 suggest that there is potential for finding economic copper mineralization within, or near, the intrusive on the Rail Claim Group. There may be phases within the intrusive that are copper-rich, or there may be concentrations of copper associated with late faulting (see Discussion).

The geological setting of the Rail property has many features in common with the well-known Mount Polley copper-gold porphyry deposit located 64 km to the northwest and these similarities should not be overlooked (see Regional Geology).

#### **CONCLUSIONS AND RECOMMENDATIONS** continued

An experimental deep penetrating Induced Polarization Survey is recommended for the Rail Claim Group. This survey should be followed by another Percussion Drilling program designed to systematically test the inferred intrusive and bordering rocks along two trial lines from northeast to southwest.

The samples obtained from the drilling program should be analyzed for 28 elements by the ICP method, plus gold by atomic absorption. The lithogeochemistry of the samples should be studied with emphasis on copper, gold and silver.

The property is readily accessible.

Muri

Murray Morrison, B.Sc.

June 25, 1996 Kelowna, B.C.

#### **REFERENCES**

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1974: Geology, Exploration and Mining in B.C. pp. 226-227 1973: Geology, Exploration and Mining in B.C. pp. 277-279. 1972: Geology, Exploration and Mining in B.C. pp. 322-325. 1971: Geology, Exploration and Mining in B.C. pp. 335-336. 1970: Geology, Exploration and Mining in B.C. p. 217. p. 183. 1969: Geology, Exploration and Mining in B.C. 1968: pp. 155-159. Lode Metals in British Columbia 1967: Lode Metals in British Columbia p. 126. 1966: pp. 126-131, p. 135. Lode Metals in British Columbia

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#### Morrison, M.S.

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Nikic, Z.T., Pesalj, R., Gorc, D.

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#### APPENDIX A

#### STATEMENT OF QUALIFICATIONS

- I, Murray Morrison, of the City of Kelowna, in the Province of British Columbia, do hereby state that:
- 1. I graduated from the University of British Columbia in 1969 with a B.Sc. Degree in Geology.
- I have been working in all phases of mining exploration in Canada for the past twenty-six years.
- 3. During the past twenty-six years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.
- 4. I have conducted several geological, geochemical, and geophysical surveys on mineral properties in Southern British Columbia during the past twenty-six years.
- 5. I supervised the Percussion Drilling Program outlined in this report.
- 6. I own a 1% Net Smelter Returns interest in the Rail 1-23 mineral claims.

June 25, 1996 Kelowna, B.C.

Murray Morrison - B.Sc.

# APPENDIX B

# STATEMENT OF EXPENDITURES - ON THE RAIL CLAIM GROUP

Statement of Expenditures in connection with a Percussion Drill Program carried out on the Rail Claim Group, located 18 km northeast of Lac La Hache, B.C. (N.T.S. Map 92-P-14W) for the year 1996.

#### **DRILL SITE PREPARATION**

Dresser TD-15C "cat", incl. operator Mobilization and demobilization from 100 (Kingsgate Excavation of 100 Mile Hou	Mile House (2 trips)	\$ 1,124 642
Supervision: M. Morrison, geologist (includes lay-out of sites before "cats" a saw clearing of dead fall, and manual r		1,284
Pick up truck, 4 x 4 (including gasoline and insurance)	4 days @ \$80.25/day	321
Meals and Lodging	4 days @ \$47.41/day	_190
	Sub-total:	\$ 3,561
DRILLING COSTS (267.9 metres)		
Percussion Drill (8.3 cm bore)	267.9 m @ \$39.80/m	10,662
Casing surcharge	85.3 m @ \$18.44/m	1,573
One-half of mobilization and demobilization of drill from Kelowna, B.C. Contractor: F.V.S.P. Ltd. (Drilling Division)		428
Supervision: M. Morrison, geologist (includes the handling of samples and logging drill holes)	10 days @ \$321.00/day	3,210
Pick-up truck, 4 x 4 (including gasoline and insurance)	10 days @ \$80.25/day	803
Meals and Lodging	10 days @ \$47.41	<u>474</u>
	Sub-total:	\$17,150

# APPENDIX B continued

# STATEMENT OF EXPENDITURES - ON THE RAIL CLAIM GROUP

# **ASSAYING COSTS**

ICP analysis for 28 elements plus gold geochem	7 samples @ \$19.80 each	<u>139</u>
	Sub-total:	\$ 139
DRILL SITE RECLAMATION		
M. Morrison, geologist (labour)	2 days @ \$107.00/day	\$ 214
Pick-up truck, 4 x 4 (including gasoline and insurance)	2 days @ \$80.25/day	160
Meals and Lodging	2 days @ \$47.41	95
Grass seed		40
	Sub-total:	\$ 509
REPORT PREPARATION COSTS		₹ <sub>n</sub>
M. Morrison, geologist	4 days @ \$321.00/day	\$ 1,284
Drafting		53
Typing		150
Copying reports		30
	Sub-total:	\$ 1,517
	GRAND TOTAL:	\$ <u>22,876</u>

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Percussion Program carried out during February, and the Reclamation of Drill Sites conducted during June, 1996.

June 25, 1996 Kelowna, B.C. Murray Morrison - Geologist

# APPENDIX C

Drill logs, Cross Sections & Drill Hole Locations Relative to Magnetometer Surveys.

CORONATION MINES LTD./PANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP DRILL HOLE 96-1 PAGE 1 of 1 PERCUSSION DRILL RECORD

LOCATION: on the Rail 8 Mineral Claim, 375 m at 233° from the Initial Post

LENGTH: 38.4 metres PROPERTY GRID: 29+90N 3+75W AZIMUTH: 235° DIP: -70°

DRILL DIAMETER: 8.3 cm

**DIP TESTS:** none

**ELEVATION: 1117 m** 

DATE: February 24, 1996

LOGGED BY: M. S. Morrison Jan. S. Morrison

DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C.

PURPOSE: to test a magnetic "low" within a strong magnetic anomaly (inferred intrusive)

**DESCRIPTION:** 

0-1.0 metres

Collar

1.0-38.4 m

PLEISTOCENE DRIFT

1.0-27.4 m

pea gravel, sand, silt and occasional boulders

13.1 m end of casing (slow progress; difficult to extend casing any further)

27.4-35.0 m

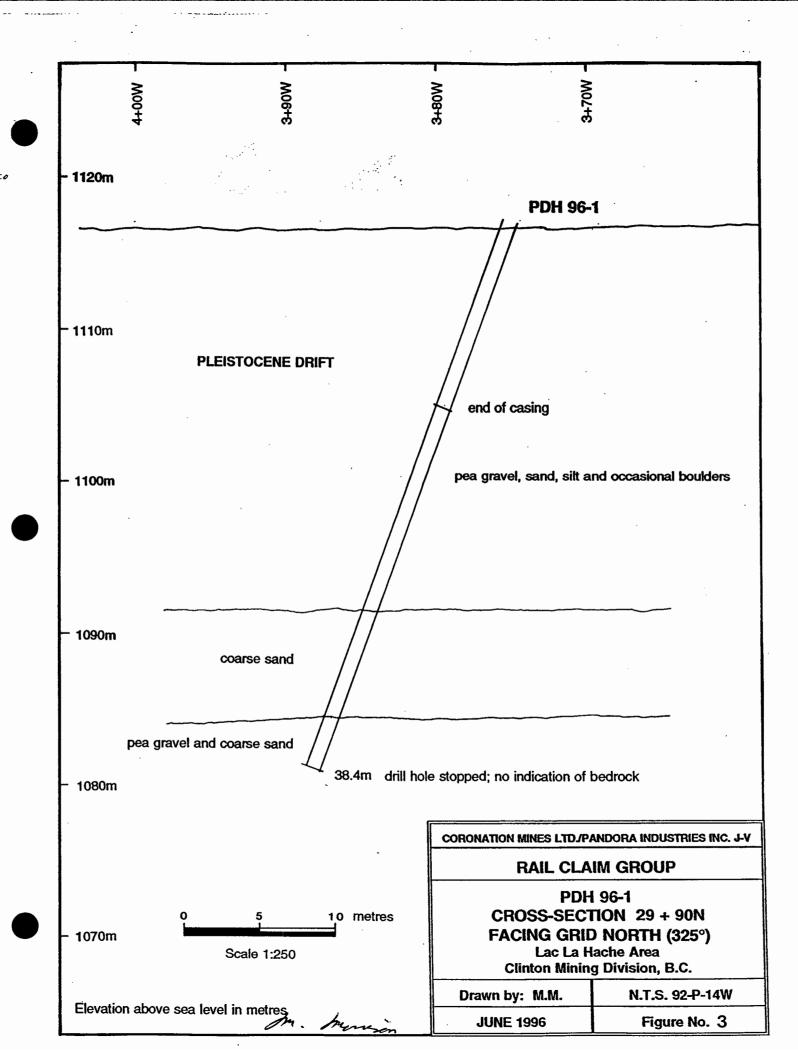
coarse sand

35.0-38.4 m

pea gravel and coarse sand

38.4 m

drill hole stopped; no indication of bedrock



CORONATION MINES LTD PANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP PERCUSSION DRILL RECORD DRILL HOLE 96-2 PAGE 1 of 1

LOCATION: on the Rail 6 Mineral Claim, 475 m at 227° from the Initial Post

LENGTH: 19.8 metres PROPERTY GRID: 34+08N 4+47W AZIMUTH: 235° DIP: -70°

DRILL DIAMETER: 8.3 cm

**DIP TESTS:** none

**ELEVATION: 1118 m** 

DATE: February 25, 1996

LOGGED BY: M. S. Morrison An. S. Marien

DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C. PURPOSE: to test the core area of a strong magnetic high (inferred intrusive)

**DESCRIPTION:** 

0-0.9 metres

Collar

0-9-19.8 m

PLEISTOCENE DRIFT

0.9-13.7 m

sand, gravel and occasional boulders 10.7-12.2 m medium grained sand

13.7 m

end of casing (slow progress; difficult to extend casing any

13.7-17.1 m

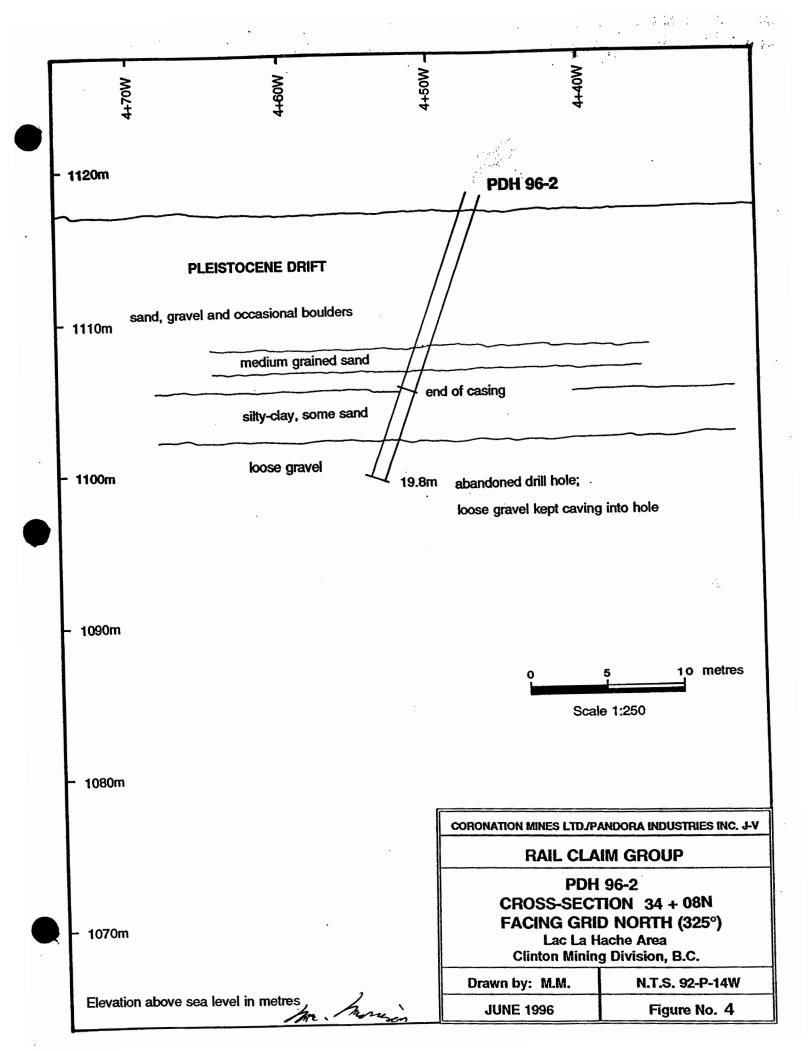
silty-clay, some sand

17.1-19.8 m

loose gravel

19.8m

abandoned drill hole; loose gravel kept caving into hole



CORONATION MINES LTD./PANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP
PERCUSSION DRILL RECORD

DRILL HOLE 96-3 PAGE 1 of 1

LOCATION: on the Rail 19 Mineral Claim, 150 m at 220° from the Initial Post

PROPERTY GRID: 39+02N 6+21W AZIMUTH: 135° DIP: -70° LENGTH: 25.9 metres

DRILL DIAMETER: 8.3 cm

DIP TESTS: none ELEVATION; 1112 m

DATE: February 25, 1996 LOGGED BY: M. S. Morrison In. S. Morrison DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C.

PURPOSE: to test the central area of an inferred cross fault

**DESCRIPTION:** 

0-0.5 metres Collar

0-5-25.9 m PLEISTOCENE DRIFT

0.5-3.1 m

silty-clay with boulders pea gravel, minor boulders

3.1-4.6 m 4.6-9.1 m

coarse sand, some boulders

7.0-7.6 m

bed of coarse sand

9.1-15.2 m 15.2-24.4 m fine gravel, some cobbles pea gravel and coarse sand

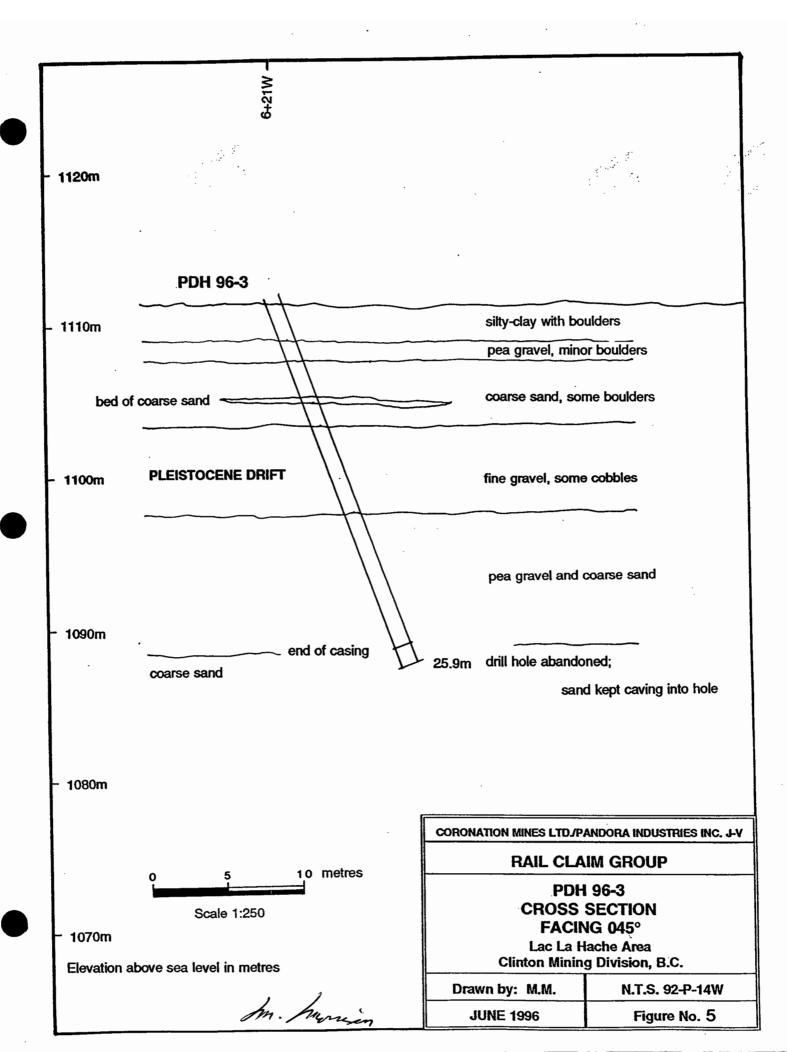
24.4 m end of available casing

24.4-25.9 m

coarse sand

25.9 m

drill hole abandoned; sand kept caving into hole



<u>CORONATION MINES LTD./PANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP</u>

PERCUSSION DRILL RECORD

DRILL HOLE 96-4 PAGE 1 of 1

LOCATION: on the Rail 12 Mineral Claim, 455 m at 220° from the Initial Post

**PROPERTY GRID:** 19+12N 4+56W

AZIMUTH: 325°

DIP: -70° **LENGTH:** 61.0 m

DRILL DIAMETER: 8.3 cm

**DIP TESTS:** none

**ELEVATION: 1121 m** 

DATE: February 26, 1996

LOGGED BY: M. S. Morrison for S. Municipal

DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C.

PURPOSE: to test the southeastern end of a strong magnetic anomaly (inferred intrusive)

**DESCRIPTION:** 

0-0.5 metres

Collar

0-5-42.1 m

PLEISTOCENE DRIFT

0.5-6.1 m

silty-clay, fine gravel, some cobbles

6.1-7.6 m

silty-clay with some boulders

7.6-21.3 m

brown silty-clay with minor gravel and cobbles

14.6-15.2m

bed of pea gravel

21.3 - 22.9 m

pea gravel and coarse sand silty-clay with some gravel

22.9-25.0 m 25.0-42.1 m

coarse sand with some silt

at 26.8 m end of available casing. Drilled into overburden ahead of casing

33.5-38.1 m loose, coarse sand

42.1-61.0 m

LATE TRIASSIC OR EARLY JURASSIC(?) INTRUSIVE

Microgabbro comprised of 20 to 75% fresh black augite and 0 to 30% fresh, colourless plagioclase crystals of 0.5 to 3 mm; 3 to 10% magnetite, 0 to 5% bronze biotite, 10 to 40% waxy green, talc and serpentine and 1-5% late white calcite veinlets. The composition of the microgabbro and the replacement by

serpentine and talc is quite variable and is recorded below:

42.1-48.8 m

emerald green altered and weathered microgabbro: 20% fresh black augite, 50% waxy green serpentine and talc, 20% agua green talc-calcite zones, 7-10% magnetite, and 3% late white calcite veinlets.

48-8-51.8 m

black microgabbro: 70% fresh black augite, 20% sausseritized plagioclase, 8-

10% light green waxy talc and calcite and 2% late white calcite veinlets.

51.8-54.9 m

microgabbro: 45% fresh black augite, 25% colourless plagioclase, 8%

magnetite, 12% light green waxy talc and calcite, 5% bronze secondary biotite

and 5% late white calcite veinlets.

54.9-61.0 m

microgabbro: 50% fresh black augite, 10% colourless plagioclase, 30% waxy, green altered (sausseritized?) plagioclase, 7% magnetite and 3% green, waxy

talc with some secondary biotite.

57.9-61.0 m

some slickenside surfaces.

61.0 m

end of drill hole.

**COMPOSITE SAMPLES** 

**RC-01** 

42.7-51.8 m = 9.1 m

25 ppm Cu, 60 ppm Co, 190 ppm Cr and 50 ppm Ni

RC-02

51.8-57.9 m = 6.1 m

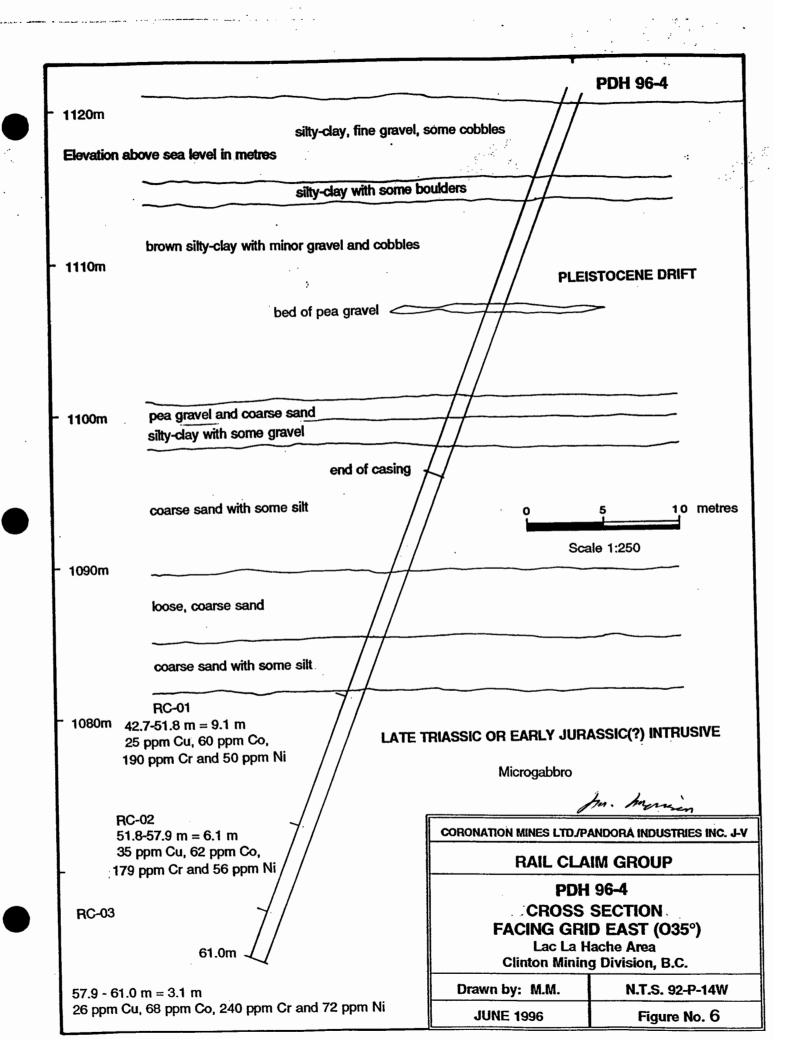
35 ppm Cu, 62 ppm Co, 179 ppm Cr and 56 ppm Ni

RC-03

57.9 - 61.0 m = 3.1 m

26 ppm Cu, 68 ppm Co, 240 ppm Cr and 72 ppm Ni

Please see Appendix D for other elements and further details.



CORONATION MINES LTD./PANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP
PERCUSSION DRILL RECORD

DRILL HOLE 96-5 PAGE 1 of 1

LOCATION: on the Rail 12 Mineral Claim, 450 m at 231° from the Initial Post

PROPERTY GRID: 20+03N 4+66W AZIMUTH: 235° DIP: -70° LENGTH: 45.7 metres

DRILL DIAMETER: 8.3 cm DATE: February 27, 1996 L

DIP TESTS: none ELEVATION: 1123 m LOGGED BY: M. S. Morrison M. S. Morrison

DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C.

PURPOSE: to test the southeastern core area of a strong magnetic high (inferred intrusive) DESCRIPTION:

0-0.5 metres

Collar

0-5-31.7 m

PLEISTOCENE DRIFT

0.5-8.2 m

brown silty-clay with 30% gravel brown silty-clay with 10% gravel

8.2-16.8 m

11.9-12.2 m bed of pea gravel

16.8-31.7 m

brown silty-clay with 10% coarse sand

25.3 m end of available casing (continued drilling into overburden beyond

casing)

31.7-45.7 m

LATE TRIASSIC OR EARLY JURASSIC(?) INTRUSIVE

Microgabbro comprised of 50 to 60% plagioclase and 20-30% fresh black augite crystals of 0.5-3 mm, 5-10% light, green waxy talc and calcite zones, 3-5% magnetite, and 2-10% bronze biotite. The plagioclase is weathered to a

chalky white locally, and 10% is also sausseritized to a waxy green.

Slickenside surfaces are common. Minor variations of the microgabbro are

recorded below:

31.7-33.5 m

moderately weathered, minor limonite staining, chalky, white plagioclase and a

trace of late quartz veining.

33.5-36.6 m

same chalky white plagioclase, otherwise generally fresh

36.6-39.6 m

faulting (some slickenside surfaces), weathered and some chalky white

plagioclase

39.6-42.7 m

10% of plagioclase is sausseritized to a waxy green, 5% bronze biotite

42.7-45.7 m

as above, but 10% bronze biotite; slickensides, some crystals smeared by

faulting

45.7 m

end of drill hole.

**COMPOSITE SAMPLES** 

**RC-04** 

31.7-36.6 m = 4.9 m

174 ppm Cu, 57 ppm Co, 65 ppm Cr and 39 ppm Ni

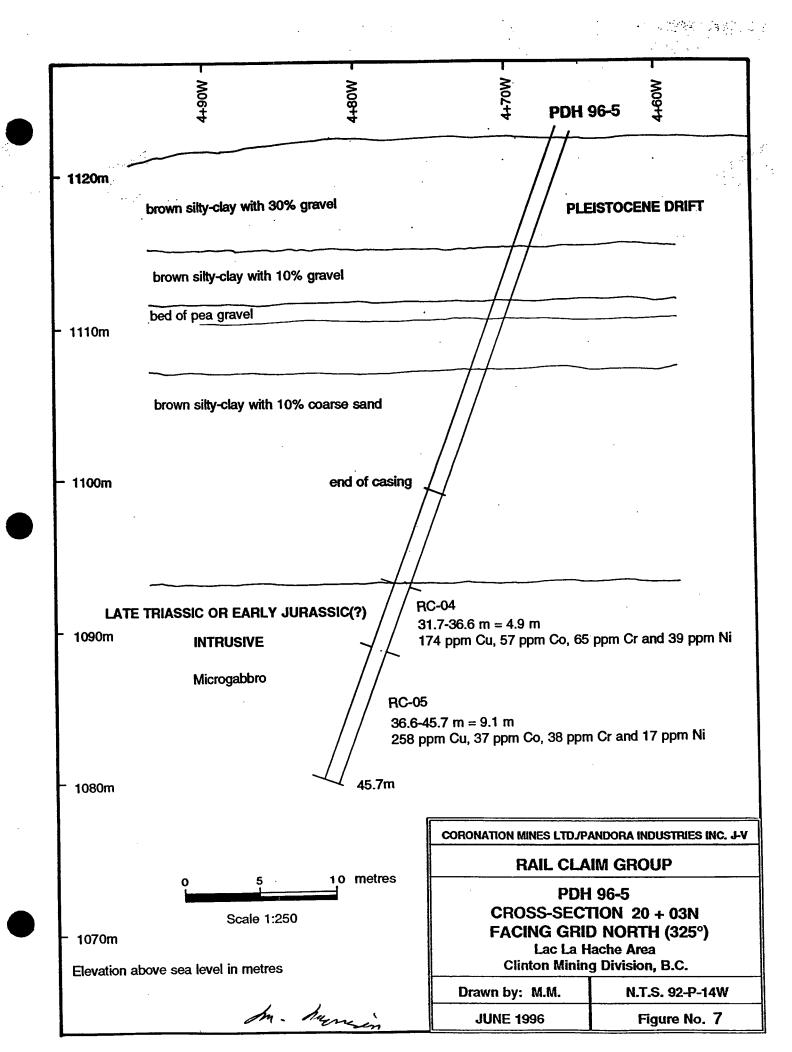
**RC-05** 

36.6-45.7 m = 9.1 m

258 ppm Cu, 37 ppm Co, 38 ppm Cr and 17 ppm Ni

Please see Appendix D for other elements and further details.

end



CORONATION MINES LTD JPANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP

PERCUSSION DRILL RECORD

DRILL HOLE 96-6 PAGE 1 of 1

LOCATION: on the Rail 6 Mineral Claim, 580 m at 197° from the Initial Post

PROPERTY GRID: 31+40N 4+62W AZIMUTH: 260° DIP: -70° LENGTH: 45.1 metres

DRILL DIAMETER: 8.3 cm

DIP TESTS: none

ELEVATION: 1115 m

DATE: February 28, 1996

LOGGED BY: M. S. Morrison

LEVATION: TITO III

DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C. PURPOSE: to test the core area of a strong magnetic high (inferred intrusive)

**DESCRIPTION:** 

0-0.5 metres

Collar

0-5-32.6 m 0.5-6.1 m PLEISTOCENE DRIFT

6.1-7.6 m

brown, silty-clay, minor gravel brown, silty-clay, 30% gravel

7.6-15.2 m

pea gravel, coarse sand and silty-clay

15.2-16.5 m

brown, hard-packed clay

16.5-19.8 m

pea gravel, coarse sand and silty-clay

19.8-25.9 m

medium and coarse grained sand, 10-20% pea gravel medium and coarse grained sand, 50% pea gravel

25.9-27.4 m medium 26.8 m

end of available casing (continued drilling into overburden

beyond casing)

27.4-32.6 m

medium and coarse grained sand, 20-30% pea gravel

32.6-45.1 m

LATE TRIASSIC OR EARLY JURASSIC(?) INTRUSIVE

Microgabbro comprised of 40-50% fresh black augite and 30-40% plagioclase crystals of 0.5 to 3 mm and 5% magnetite. Half of the plagioclase is altered to

a chalky white, while the remainder is attered to a dark waxy green

(sausseritized?). The microgabbro has a gneissic texture (tectonic) with local

crystal smearing. Slickenside surfaces are common.

36.6-39.6 m

trace of very fine grained chalcopyrite

39.6-42.7 m

less gneissic in texture, grey glassy plagioclase, 10% of drill chips are

comprised of pink aplite dyke material.

42.7-45.1 m

slickenside surfaces and crystal smearing, 5% pink aplite dyke material

45.1 m

end of drill hole.

**COMPOSITE SAMPLES** 

**RC-06** 

33.5-39.6 m = 6.1 m

171 ppm Cu, 32 ppm Co, 29 ppm Cr and 12 ppm Ni

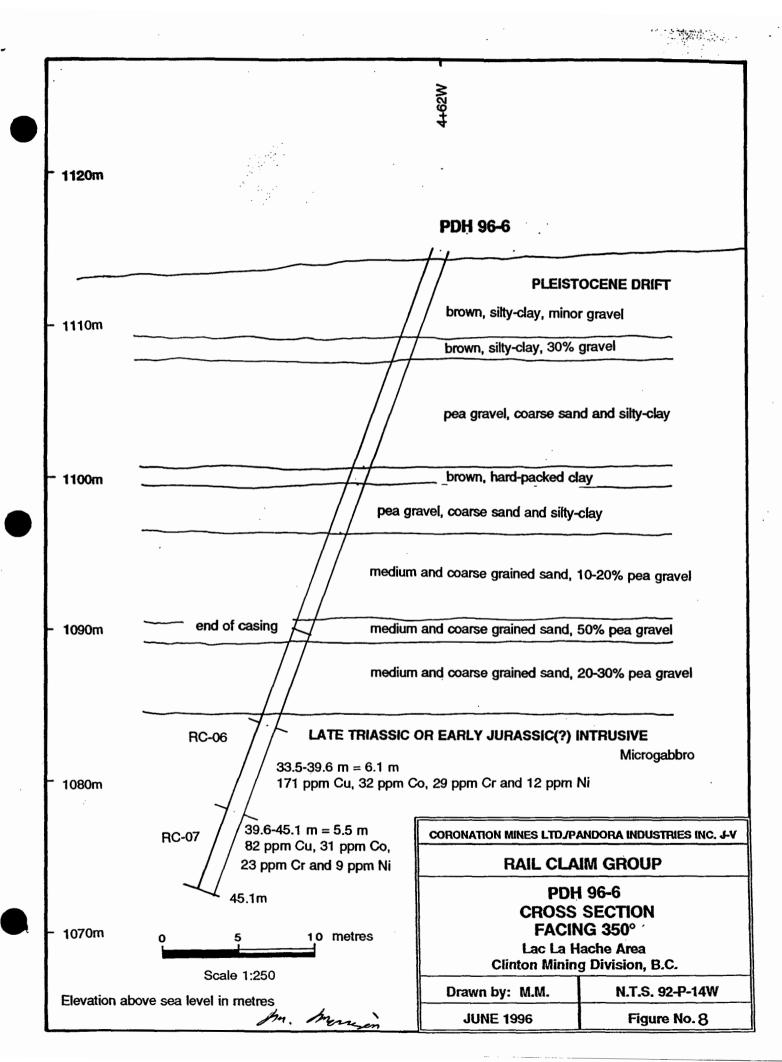
**RC-07** 

39.6-45.1 m = 5.5 m

82 ppm Cu, 31 ppm Co, 23 ppm Cr and 9 ppm Ni

Please see Appendix D for other elements and further details.

end



CORONATION MINES LTD PANDORA INDUSTRIES INC. JOINT VENTURE - RAIL CLAIM GROUP PERCUSSION DRILL RECORD DRILL HOLE 96-7 PAGE 1 of 1

LOCATION: on the Rail 21 Mineral Claim, 275 m at 162° from the Initial Post

PROPERTY GRID: 27+95N 5+40W AZIMUTH: 235° DIP: -70° LENGTH: 32.0 metres

**ELEVATION: 1111 m** DRILL DIAMETER: 8.3 cm **DIP TESTS: none** LOGGED BY: M. S. Morrison S. Angra! DATE: February 29, 1996

DRILLING CONTRACTOR: F.V.P.S. Ltd. (Drilling Division) of Kelowna, B.C. PURPOSE: to test the core area of a strong magnetic high (inferred intrusive)

**DESCRIPTION:** 

0-0.6 metres

Collar

0-6-32.0 m

PLEISTOCENE DRIFT

0.6-15.2 m

brown silty clay with 30-50% sand and fine gravel

10.7-11.0 m 80% fine gravel

14.9-15.2 m

90% red-brown silty-clay

15.2-26.8 m

50 to 90% pea gravel, medium and coarse grained sand

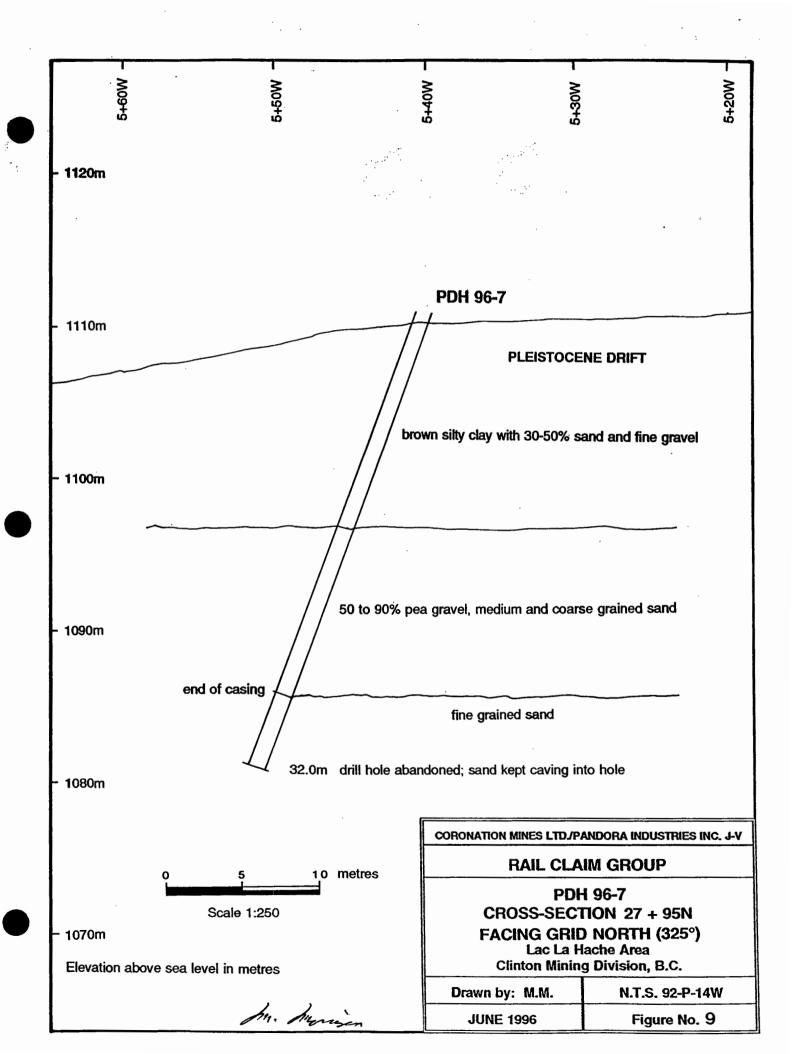
26.8 - 32.0 m

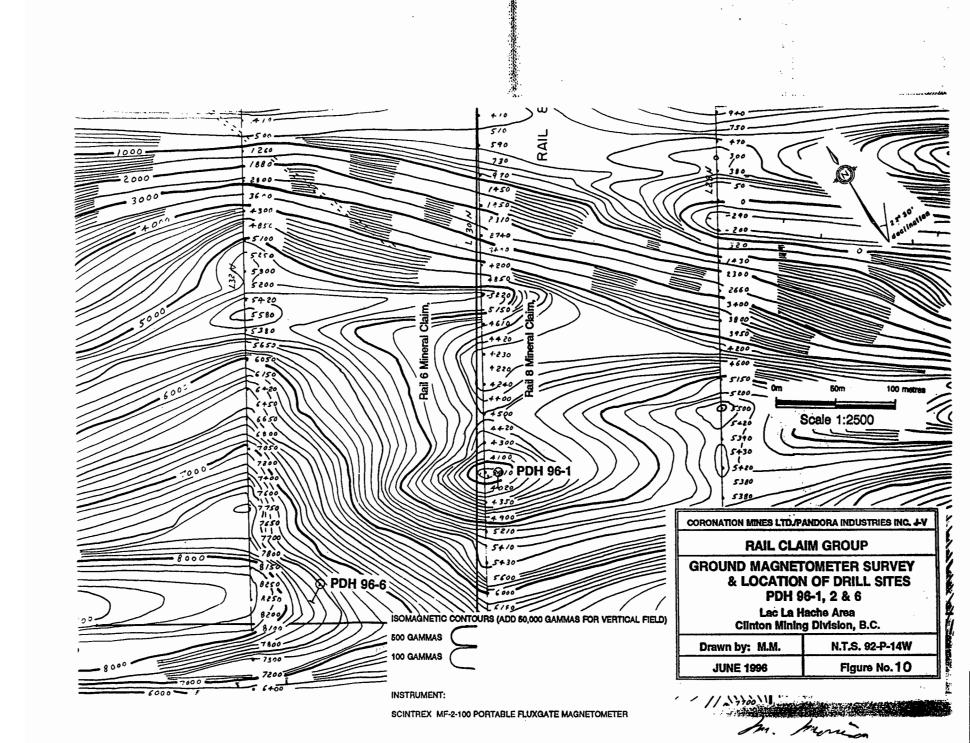
fine grained sand

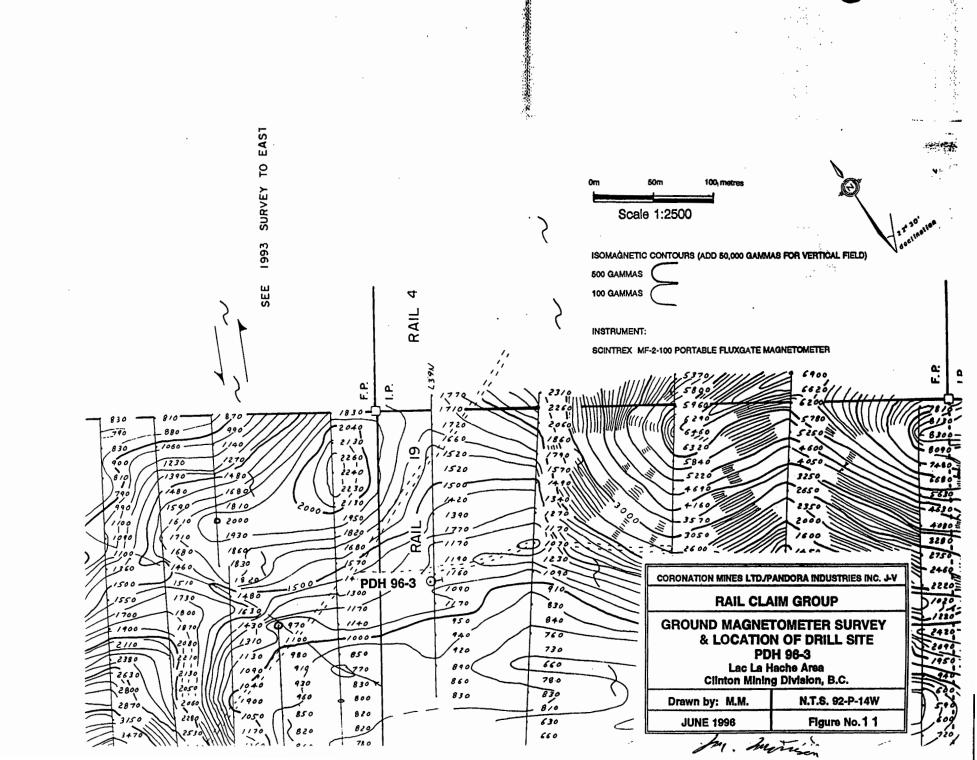
26.8 m end of available casing

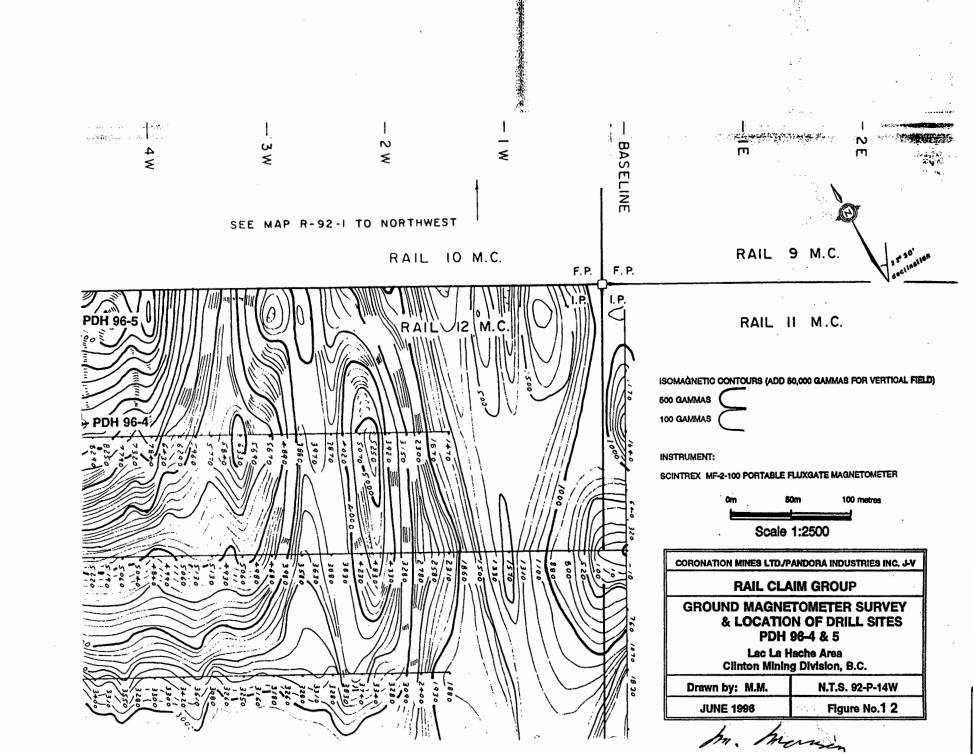
32.0 m

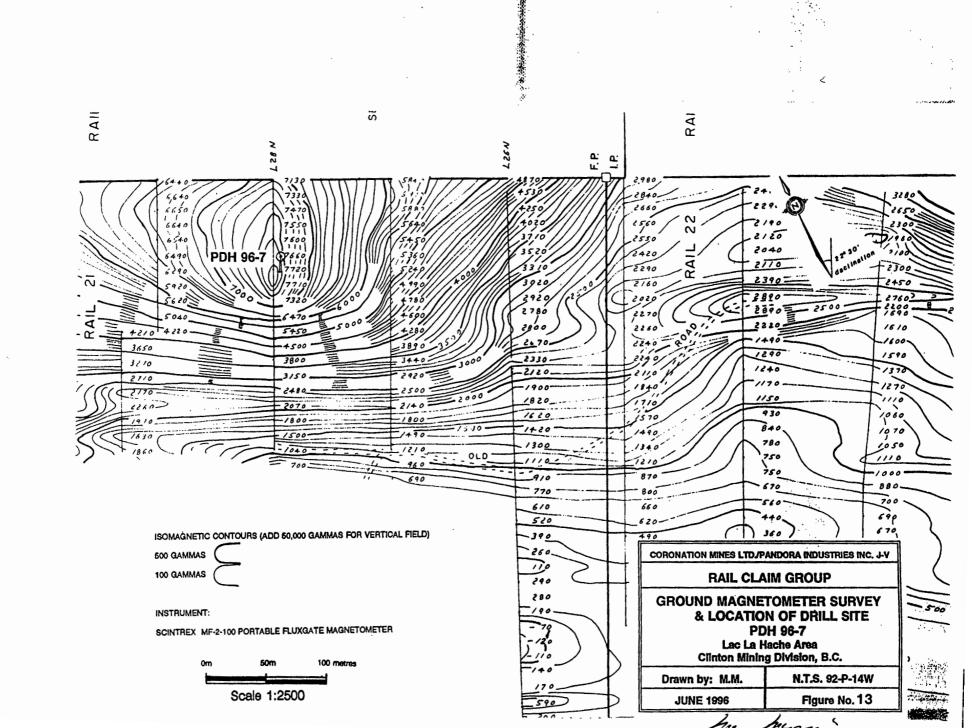
drill hole abandoned; sand kept caving into hole











## APPENDIX D

Certificate of Analyses

ECO-TECH LABORATORIES LTD. 10041 East Trans Canada Highway KAMLOOPS, B.C. V2C 6T4

Phone: 604-573-5700 Fax : 604-573-4557

CORONATION MINES I 1060-1050 WEST PEND VANCOUVER, B.C. V6E 3S7

ATTENTION: LLOYD A

No. of samples received. Sample type: Rock Chi, PROJECT #: None giv SHIPMENT #: None giv

Values in ppm unless otherwise reported

Drill In metres Hole Tag # (Au(ppb))		AI %	As	Ва	Bi	Ca %	Cd	Со	Cr	Cu	Fe %	La	Mg %	Mn	Мо	Na %	Ni	Р	Pb	Sb	Sn	Sr	Ti %	U
PDH 96-4 RC01 427-518 54	<.2	1.11	<5	80	30	2.52	1	60	190	25	12.50	<10	2.45	890	<1	0.01	50	<10	<2	<5	<20	33	0 32	<10
96-4 RC02 51.8-57.9 5	<.2	1.29	<5	175	20	1.05	2	62	179	35	13.30	<10	3.52	948	<1	0.02	56	<10	<2	<5	<20	38	0.33	<10
96-+ RC03 579-61-0 5	<.2	1.07	<5	110	30	9.70	2	68	240	26	14.00	<10	3.64	991	<1	0.01	72	<10	<2	<5	<20	24	0.31	<10
96-5 RC04 31.7-36.6 5			_	115	5	4.96	<1	57	65		11.00		3.28		3	0.07	39	1690	<2	<5	<20	198	0.17	<10
96-5 RC05 36-6-45.7 5	<.2	3.88	<5	205	<5	4.00	<1	37	38	258	8.48	<10	2 35	812	<1	0.05	17	2040	<2	<5	·20	134	0.17	<10
96-6 RC06 33.5-39.6 5 96-6 RC07 386-45.1 5			<5 <5	115 95	<5 10	3.79 4.11	<1 <1	32 31	29 23		8.47 8.19		1.00 0.85	512 434	2 1	0.22 0.20	12 9	910 280	<2 <2	<b>&lt;5</b> <b>&lt;</b> 5	< <b>20</b>	-	0.16 0.15	

CORONATION MINES LTD. AK 96-144 ECO-TECH LABORA'

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ва	Bi (	Ca %	Cd	Со	Cr	Cu	Fe %	La	Mg %	Mn	Мо	Na %	Ni	Р	Pb	Sb	Sn	Sr	TI %	U
QC DAT. Resplit: R/S 1	<b>A:</b> RC01	5	<.2	1.09	<5	80	25	2.40	2	63	211	25	13.30	<10	2.48	917	<1	0.02	53	<10	<2	<5	<20	34	0.36	<10
Repeat:	RC01	5	<.2	1.07	<5	80	35	2.44	2	58	185	24	12.10	<10	2.36	865	<1	0.01	50	<10	<2	<5	<20	33	0.31	<10
Standard GEO 96	<b>d</b> :	150	1.4	1.57	65	145	<5	1,62	<1	17	57	74	3.75	<10	0.88	649	<1	0.02	24	690	18	<5	<b>⊹20</b>	50	0.10	-:10

ECO-TECH LABORATORII
Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

