

CORD GROUP (Snakehead Property)  
GEOPHYSICS AND DIAMOND DRILLING

N.T.S. 106C13, D16

J.L. Hardy  
C.J. Campbell

October 1981



COSTS STATEMENT  
Y.T. CORD CLAIMS  
July 9 to August 11, 1981



DIAMOND DRILLING

E. Caron, Whitehorse

\$34,742.08  
38,669.77  
\$73,411.85

COSTS APPORTIONED TO CLAIMS\*

CORD 5	\$37,789.27
CORD 42	\$35,622.58

\* On the basis of invoiced costs with DDH 81.1 and 81.4 located on CORD 5 and DDH 81.2 and 81.3 on CORD 42.

Riocanex Inc.



February 25, 1982

Mr. R.G. Ronaghan  
Indian and Northern Affairs  
P.O. Box 10  
Mayo, Yukon

Dear Roland:

Enclosed are two copies of Cord Group: Geophysics and Diamond Drilling, an assessment report on the Snakehead Property for which work has already been filed.

Thank you for your consideration.

Yours truly,  
RIOCANEX INC.

*Jenna Hardy*  
Jenna Hardy

JLH/sp  
Encls.

090996

Western Canada Office:

A subsidiary of Rio Algom Limited

800 W. Pender Street, Suite 520, Vancouver, B.C. V6C 2V6 (604) 685-1295 Telex: 04-54341

Aug. 21/81 Inv# 1031 ... \$38669.77....

\* W5381

August 21 81

38,669.77

E. Caron Diamond Drilling Ltd.,  
7 Roundel Road  
Whitehorse, Yukon

RIO TINTO CANADIAN EXPLORATION LIMITED

GENERAL ACCOUNT

DISTRIBUTION

DR.		DR.		CR.	
ACCOUNT NUMBER		ACCOUNT NUMBER		ACCOUNT NUMBER	
1623-44	38669 77			131	38669 77

090996



July 31, 1981

Invoice #- 1031

IN ACCOUNT WITH:

Rio Tinto Exploration, Suite 520, 800 West Pender St., Vancouver, B.C.

Handwritten notes: 'ISP', '1623-44', and a signature.

Handwritten note: 'Cost of material list to follow.'

Drilling Charges July 16 to 30, 1981:

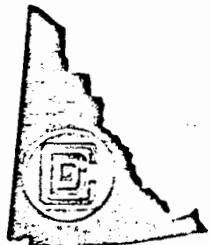
(Cord Claims)

Hole 81-1/90/NQ

Table with columns for description, rate, and total cost. Includes categories: Moving, Drilling, Mud Time, Cementing & Quik-Seal, Testing, Standby, and Coring.

Hole 81-2/90/HQ

Table with columns for description, rate, and total cost. Includes categories: Moving, Drilling, and Casing & Reducing.





Reaming Cave

4 man hrs. @ \$ 23.00 per hr. = \$ 92.00 ✓  
2 mach. hrs. @ \$ 13.50 per hr. = \$ 27.00 ✓ \$ 119.00 ✓

Waterline

18 man hrs. @ \$ 23.00 per hr. = \$ 414.00 ✓

Mud Time

42 man hrs. @ \$ 23.00 per hr. = \$ 966.00 ✓  
21 mach. hrs. @ \$ 13.50 per hr. = \$ 283.50 ✓ \$ 1,249.50 ✓

Testing

2 man hrs. @ \$ 23.00 per hr. = \$ 46.00 ✓  
1 mach. hr. @ \$ 13.50 per hr. = \$ 13.50 ✓ \$ 59.50 ✓

Standby

20 man hrs. @ \$ 23.00 per hr. = \$ 460.00 ✓  
10 mach. hrs. @ \$ 13.50 per hr. = \$ 135.00 ✓ \$ 595.00 ✓

Travelling Time

6 man hrs. @ \$ 23.00 per hr. = \$ 138.00 ✓

Casing

0 - 16.45 = 16.45 meters @ \$ 98.45 per meter = \$ 1,619.50 ✓

Coring

4.87 - 24.99 = 20.12 meters @ \$ 91.00 per meter = \$ 1,830.92 ✓  
24.99 - 32.61 = 7.62 meters @ \$ 82.00 per meter = \$ 624.84 ✓  
32.61 - 44.8 = 12.19 meters @ \$ 75.45 per meter = \$ 919.73 ✓ \$ 3,375.49 ✓ \$11,811.99 ✓

Hole 81-3/90/HQ

Moving

80 man hrs. @ \$ 23.00 per hr. = \$ 1,840.00 ✓

Drilling

8 man hrs. @ \$ 23.00 per hr. = \$ 184.00 ✓  
4 mach. hrs. @ \$ 13.50 per hr. = \$ 54.00 ✓ \$ 238.00 ✓

Mud Time

8 man hrs. @ \$ 23.00 per hr. = \$ 184.00 ✓  
4 mach. hrs. @ \$ 13.50 per hr. = \$ 54.00 ✓ \$ 238.00 ✓

Standby

4 man hrs. @ \$ 23.00 per hr. = \$ 92.00 ✓  
2 mach. hrs. @ \$ 13.50 per hr. = \$ 27.00 ✓ \$ 119.00 ✓

Casing

0 - 12.19 = 12.19 meters @ \$ 98.45 per meter = \$ 1,200.10 ✓ \$ 3,635.10 ✓

Items Consumed & Chargeable

✓ 110 bags mud @ \$ 12.75 each = \$ 1,402.50 ✓  
✓ 18 Boxes Quik-Trol @ \$ 96.00 each = \$ 1,728.00 ✓  
✓ 16 bags fondu cement @ \$ 36.00 each = \$ 576.00 ✓  
✓ 14 bags Quik-Seal @ \$ 44.75 each = \$ 626.50 ✓ \$ 4,333.00 ✓

Materials Consumed & Chargeable

+ 15% = \$ 649.95 ✓ \$ 4,982.95 ✓  
Hole 81-1/90/NQ  
✓ 2 NQ Bits @ \$450.00 each = \$ 900.00 ✓  
✓ 1 BQ Bit @ \$345.00 each = \$ 345.00 ✓  
✓ 1 NW Casing Shoe @ \$268.00 each = \$ 268.00 ✓  
✓ 20 pieces 2' Casing @ \$ 36.75 each = \$ 735.00 ✓





S t. 16/81 Inv# 1040

\$34742.08

\* W5582

September 16 81

34,742.08

E. Caron Diamond Drilling Ltd.,  
7 Roudel Road  
Whitehorse, Yukon

RIO TINTO CANADIAN EXPLORATION LIMITED

GENERAL ACCOUNT

DISTRIBUTION

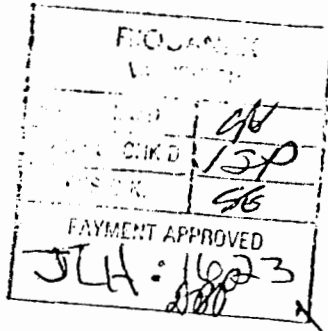
DR.			DR.			CR.		
ACCOUNT NUMBER			ACCOUNT NUMBER			ACCOUNT NUMBER		
1623-44	34742	08				131	34742	08



E. CARON DIAMOND DRILLING LTD.

7 Roundel Road Whitehorse, Yukon.

Phone (403) 668-2424 Telex 036-8-337



August 11, 1981  
Invoice #-1040

1623-44

IN ACCOUNT WITH:

Rio Tinto Exploration,  
Suite 520,  
800 West Pender Street,  
Vancouver, B. C.

Drilling Charges July 30 to August 11, 1981:

(Cord Claims)

Hole: 81-3/90/HQ

Drilling

8 man hrs. @ \$23.00 per hr. = \$ 184.00 ✓  
4 machine hrs. @ \$13.50 per hr. = \$ 54.00 ✓ \$ 238.00 ✓

Reaming Cave

28 man hrs. @ \$23.00 per hr. = \$ 644.00 ✓  
14 machine hrs. @ \$13.50 per hr. = \$ 189.00 ✓ \$ 833.00 ✓

Standby Time

16 man hrs. @ \$23.00 per hr. = \$ 368.00 ✓  
8 machine hrs. @ \$13.50 per hr. = \$ 108.00 ✓ \$ 476.00 ✓

Casing

12.19 - 30.17 = 17.98  
meters @ \$98.45 per meter = \$ 1,770.13 ✓

Coring

30.17 - 32.61 =  
2.44 meters @ \$91.00 per meter = \$ 222.04 ✓  
32.61 - 38.71 =  
6.10 meters @ \$82.00 per meter = \$ 500.20 ✓ \$ 722.24 ✓ \$ 4,039.37 ✓

Hole: 81-4/70/NQ

Moving

236 man hrs. @ \$23.00 per hr. = \$ 5,428.00 ✓

Casing

22 man hrs. @ \$23.00 per hr. = \$ 506.00 ✓  
11 machine hrs. @ \$13.50 per hr. = \$ 148.50 ✓ \$ 654.50 ✓

Reaming Cave

26 man hrs. @ \$23.00 per hr. = \$ 598.00 ✓  
13 machine hrs. @ \$13.50 per hr. = \$ 175.50 ✓ \$ 773.50 ✓

Mud Time

4 man hrs. @ \$23.00 per hr. = \$ 92.00 ✓  
2 machine hrs. @ \$13.50 per hr. = \$ 27.00 ✓ \$ 119.00 ✓

Quik Seal

4 man hrs. @ \$23.00 per hr. = \$ 92.00 ✓  
2 machine hrs. @ \$13.50 per hr. = \$ 27.00 ✓ \$ 119.00 ✓

.305





Testing

4 man hrs.	@ \$23.00 per hr.	= \$ 92.00	
2 machine hrs.	@ \$13.50 per hr.	= \$ 27.00	\$ 119.00 ✓

Travelling Time

20 man hrs.	@ \$23.00 per hr.	=	\$ 460.00 ✓
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Coring

0 - 26.82 = 26.82 meters	@ \$91.00 per meter	= \$2,440.62 ✓	
26.82 - 134.72 =			
107.90 meters	@ \$82.00 per meter	= \$8,847.80 ✓	\$11,288.42 ✓ \$18,961.42 ✓

Items Consumed & Chargeable

Hole: 81-3/90/HQ-NQ

1 HQ combination bit	@ \$660.74 each	= \$ 660.74 ✓	
1 HQ shell	@ \$378.00 each	= \$ 378.00 ✓	
1 NQ set bit	@ \$666.00 - 2	= \$ 333.00 ✓	
1 HW shoe	@ \$445.00 each	= \$ 445.00 ✓	
9 pieces HW casing	@ \$54.45/2' length	= \$ 490.05 ✓	
10 pieces HQ rods	@ \$150.55/10' length	= \$1,505.50 ✓	
1 HQ core barrel	@ \$401.70 each	= \$ 401.70 ✓	
1 NQ core barrel	@ \$300.65 each	= \$ 300.65 ✓	
1 NQ shell	@ \$278.00 each	= \$ 278.00 ✓	
1 NQ Imp bit	@ \$450.00 each	= \$ 450.00 ✓	
10 pieces NQ rods	@ \$106.05/10' length	= \$1,060.50 ✓	\$ 6,303.14 ✓

Hole: 81-4/70/HQ-NQ

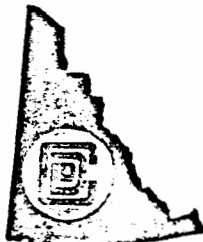
1 HQ comb bit	@ \$660.74 each	= \$ 660.74 ✓	
1 NQ set bit	@ \$666.00 - 2	= \$ 333.00 ✓	
4 pieces HQ rods	@ \$150.55/10' length	= \$ 602.20 ✓	
1 HQ corebarrel	@ \$401.70 each	= \$ 401.70 ✓	
1 HQ shell	@ \$378.00 each	= \$ 378.00 ✓	
1 HW casing shoe	@ \$445.00 each	= \$ 445.00 ✓	\$ 2,820.64 ✓

Mud

46 bags mud	@ \$12.74 per bag	= \$ 586.04 ✓	
5 boxes Quik Trol	@ \$100.00 per box	= \$ 500.00 ✓	\$ 1,086.04 ✓

	+ 15%	=	\$10,209.82 ✓
			\$ 1,531.47 ✓ \$11,741.29 ✓

Total Invoice	\$34,742.08 ✓
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CORD GROUP (Snakehead Property)  
GEOPHYSICS AND DIAMOND DRILLING

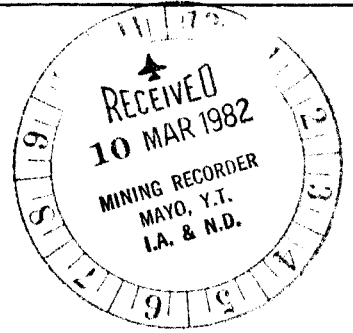


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## SUMMARY

In 1980 geological mapping determined that sulphide mineralization on the Cord Group is confined to a siliceous mudstone bed. This bed contains gradually increasing grades of Pb-Zn-Cu sulphides towards L450E and 600E near 150S, where the greatest EM response and a zone of high magnetics are coincident. These factors indicated the potential for significant down dip increases of grade and thickness.

In 1981 a short programme of detailed EM surveying was carried out prior to diamond drilling to define conductor patterns and axes more precisely. No significant new anomalies were identified and the interpretation of the 1980 data was not substantially changed.

To assess the down dip potential, a total of 365.7m of diamond drilling was completed in 4 holes, only one of which penetrated to the desired depth. Severe problems with topography and permafrost limited initial set-up locations and very difficult ground problems restricted the depths which could be reached using conventional drilling techniques.

Hole DDH 81-1 was collared at L600E, 3 + 37S to penetrate the best EM anomaly in the direction of projected grade increases. It intersected a sequence of siliceous mudstones and siltstones with syngenetic pyrite up to 1m in thickness and lesser thicknesses of disturbed recrystallized iron, lead, copper and zinc sulphides. Best grades obtained were: 0.05% Cu,

0.50% Pb, 0.63% Zn over 2.0m. Holes DDH 81-2 and 3 were abandoned. While DDH 81-4 did not reach the requisite depth, it penetrated a sequence of lithologies and mineralization similar to that in 81-1.

Economic grades and thicknesses of sulphides have not been proven to exist on the Cord Group. Helicopter-portable diamond drills are unable to penetrate to sufficient depth to permit a necessary down dip test of sub-economic sulphides encountered in DDH 81-1 and exposed on surface. While the presence of syngenetic sulphides may indicate proximity to an ore-generating environment on the property, no further work is recommended. Should drilling technology improve, or a reverse circulation drill be located in the vicinity of the claims, further attempts to test the down dip potential are recommended.

## 1. INTRODUCTION

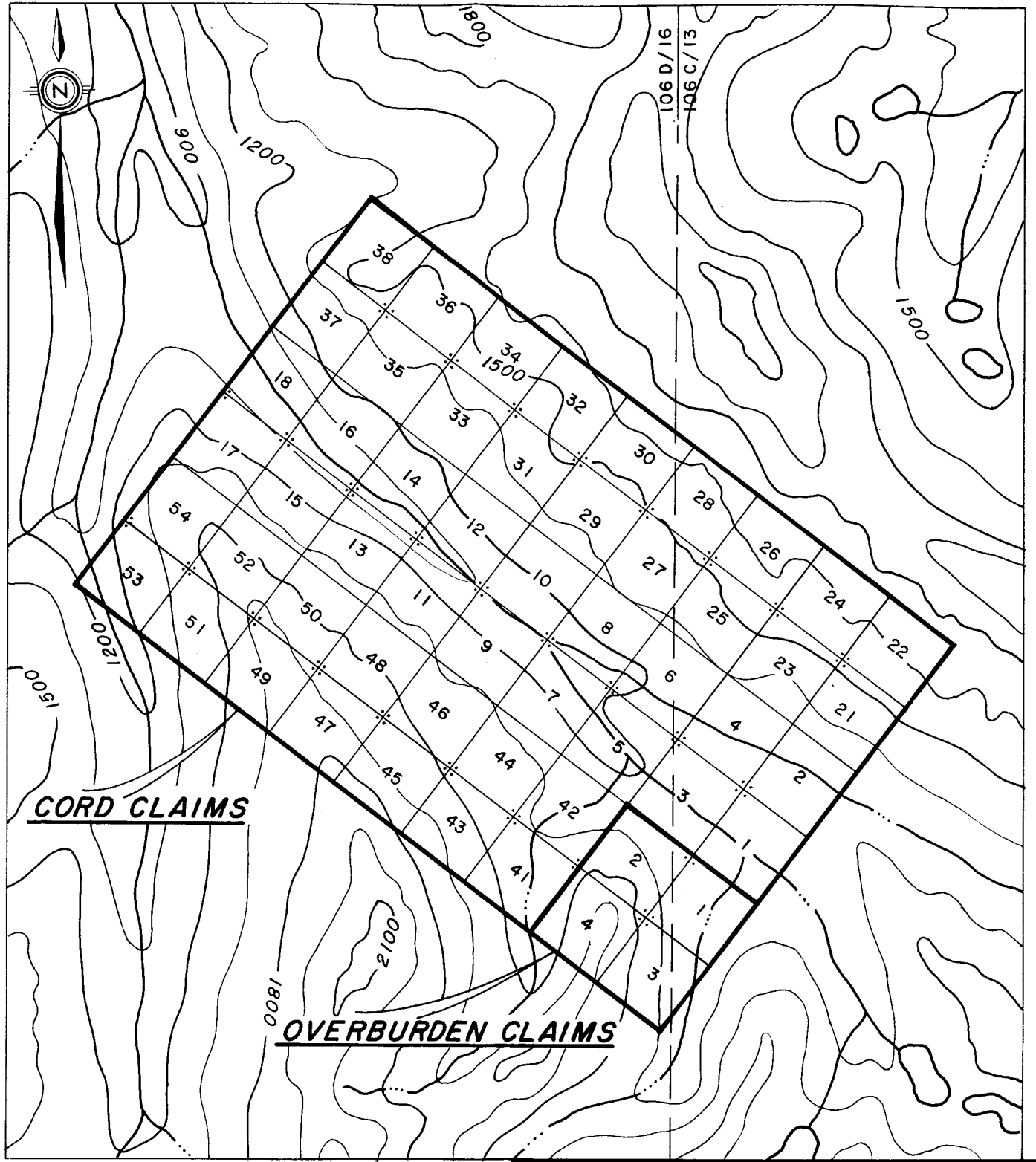
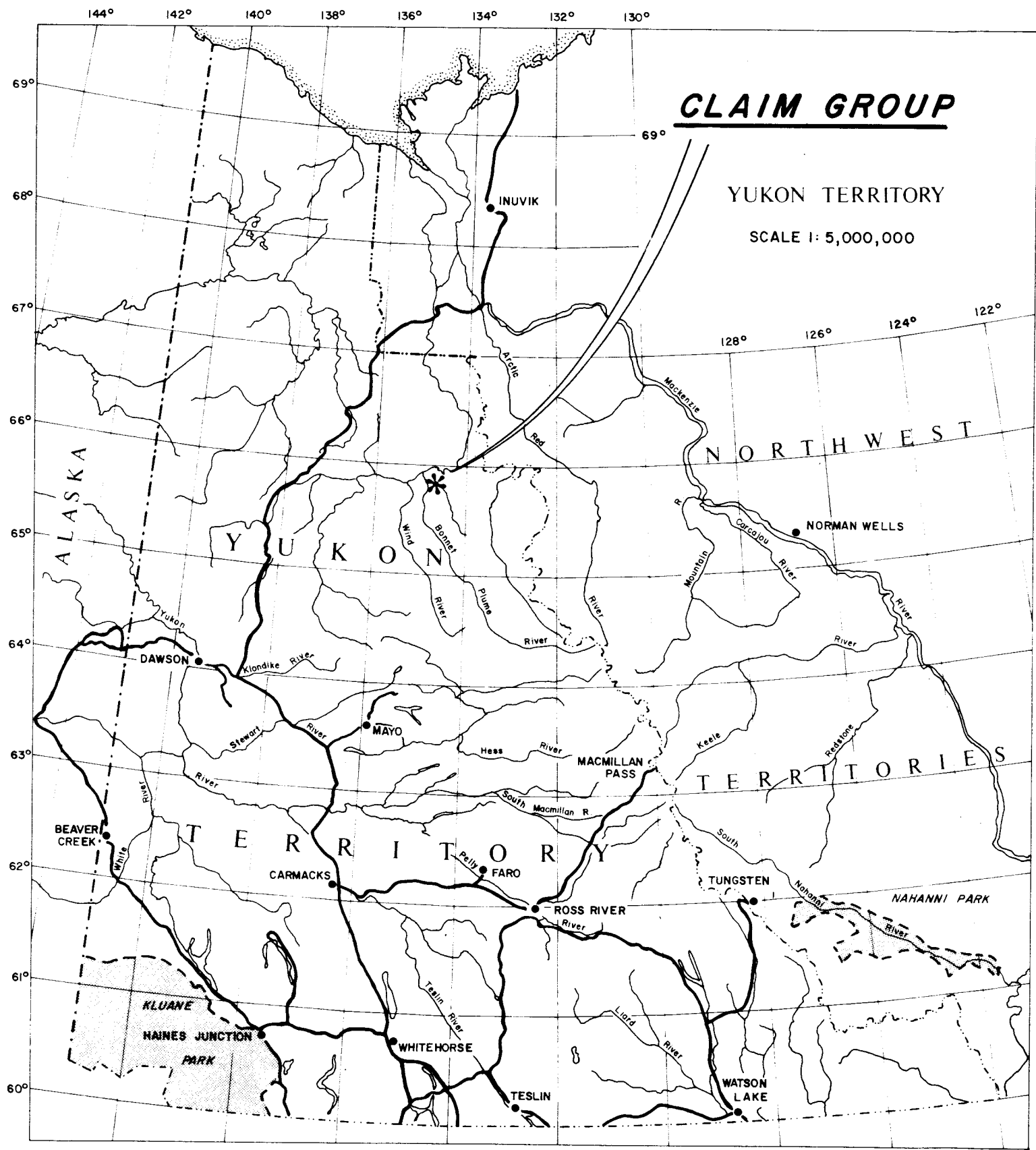
On the Cord claims stratabound lead-zinc sulphide mineralization is hosted in siliceous mudstone and siltstone of Proterozoic age. Rocks of the same stratigraphic package host massive sulphides at Hart River (577,000 tons: 1.45% Cu, 3.6% Zn, 9% Pb, 1.45 g/ton Ag and .041 oz/ton Au), where fringe zone sulphides closely resemble sub-economic sulphides observed on surface at the Cord.

In 1980 VLF, magnetometer and HLEM surveying located several EM anomalies and one area of higher magnetics. The geophysical patterns were typical of those produced by thin sulphide sources. The best EM and highest intensity magnetics correspond with the best surface mineralization.

In 1981 additional geophysical surveying was carried out prior to diamond drilling to define conductor patterns more completely and to enable more precise drill hole location. The results of this work and the diamond drilling are discussed in the report which follows.

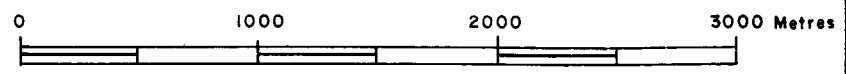
### 1.1 Location and Access

The Cord claims are located in the Wernecke Mountains, Y.T., at approximate co-ordinates: 134°00'N, 64°52'W in N.T.S. 106 C13, D16, as shown in DWG. C-6721. The group is about 165km NE of Mayo, Y.T. Access is by float plane to Fairchild Lake 18km NE of the property or the Bear River air strip 14km SW



NTS 106 C/13, 106 D/16

SCALE



RIO TINTO CANADIAN EXPLORATION LTD.		
SNAKEHEAD PROPERTY		
<b>CLAIM MAP</b>		
<b>CORD CLAIMS, OVERBURDEN CLAIMS</b>		
DATE	DRAWN BY	DWG.
SEPT. 1981	/dag	C 6721

of the property, then by helicopter to the property.

## 1.2 Property and Claim Status

<u>CLAIMS</u>	<u>GRANTS</u>	<u>EXPIRY DATE</u>
Cord 1-18	Y97639 - <del>Y</del> 97656	January 5, 1985
Cord 21-38	Y96659 - <del>Y</del> 96676	January 5, 1985
Cord 41-54	Y97679 - Y97692	January 5, 1985
Overburden 1-4	YA64040 - 043	January 19, 1982

The Overburden claims were staked during August 1981 and recorded at that time. Claim tags must be affixed as soon as "reasonably possible" after recording, in this case in the 1982 field season because of precipitous slopes and heavy snow conditions.

## 2. HISTORY AND PREVIOUS WORK BY RIOCANEX

In 1975 the Cord group was staked by Cordilleran Engineering on behalf of Riocanex, because of anomalous values of Pb (+500ppm) and Zn (+1000ppm) in a 1974 reconnaissance stream sediment survey. Follow-up led to discovery of outcrop exposures where random chip samples yielded values up to 13% Pb + Zn.

Riocanex work is summarized in Troup and Marsh (1976), Hardy and Marsh (1977) and McClintock and Campbell (1980). Work completed prior to 1981 includes: 1:5,000 scale geological mapping, talus slide fine sampling, geophysical surveying (VLF, magnetic, HLEM) and blasting and chip sampling over selected areas.

### 3. REGIONAL GEOLOGY

The Cord claims are underlain by Helikian regional map units 1 and 2 of Green (1972). Unit 1 consists of argillite, slate and phyllite with minor quartzite, conglomerate and dolostone. Unit 2, in conformable or fault contact with unit 1, consists of orange-weathering grey dolostone with minor quartzite and phyllite.

More recent and detailed mapping by Bell & Delaney (1977) has resulted in the relabeling of unit 1 as unit B. This consists of up to 4500m of pyritic, silty mudstone with mudstone-sandstone cycles. Unit 2 became unit C, 2000 metres of calcareous argillite, dolostone and dolomitic shale. Both units are considered part of the Gillespie Lake Group (Delaney, 1978).

All units underwent severe deformation in both Racklan and Columbian orogenies. Geological mapping by Riocanex in 1976, 1977 and 1980 confirms the existence of the units described on the claim block.

### 4. PROPERTY GEOLOGY

#### 4.1 Stratigraphy

The geology of the Cord Group has been described fully in Troup and Marsh (1976), Hardy and Marsh (1977) and McClintock and Campbell (1980), and is shown on DWG. G-8856.

The observed stratigraphic sequence consists of two major map units as follows:

1. thinly interbedded carbonaceous siltstone, mudstone and dolostone.
2. orange-weathering dolostone.

One or two diatremes are also present.

Initially Hardy (Hardy and Marsh, 1977) considered map units 1 and 2 to correlate with Green's (1972) unit 1 and 2. Additional mapping by McClintock suggested that Hardy's map units 1 and 2 fit more closely into Green's unit 2 at the transition to the underlying unit 1 for the following reasons:

1. map unit 1 is dominantly thinly bedded, black silty dolostone with lesser siltstone, mudstone and chloritic phyllite.
2. a similar looking, but thinner dolostone is found higher in the stratigraphic section.
3. the generally high dolostone component supports correlation of map unit 1 with dolostone of Green's unit 2.

It is therefore concluded that map unit 1 is one of several sections of thinly bedded mixed dolostone and mudstone in the transition zone from Green's unit 2 dolostone to unit 1 mudstone and chloritic phyllite.

## 4.2 Mineralization

Initial work had indicated that high grades of lead and zinc sulphides are present in several localities. Subsequent trenching yielded grades of 0.35% Pb, 0.87% Zn and 1.3 g/t Ag over 2.5m, 0.35% Pb, 0.33% Zn over 2.1m and 0.01% Pb, 1.45% Zn over 3m.

Significant mineralization appeared to be confined to a single bed of light grey siliceous mudstone of unit 2 near its contact with unit 1, and to consist of beds and laminations of massive pyrite, sphalerite, minor galena and pyrrhotite. Minor erratic discontinuous calcite veinlets also contain local sulphides. A complete description of the surface mineralization is given in Campbell and McClintock (1980) and Hardy and Marsh (1977).

Such mineralization resembles that at North Hart Resources' Hart River deposit, 90km southwest of the Cord Group. There, sulphides are localized in the transition zone between units 1 and 2. Reserves are 577,000 proven tons of 3.6% Zn, 1.45% Cu, 0.9% Pb, 1.45 oz/ton Ag and 0.041 oz/ton Au. Peripheral to the main sulphide zone, banded pyrite-sphalerite-galena occur within a chert horizon which is similar to that on the Cord. Because of extensive faulting it is not possible to predict how far down dip or in which direction improvements of grade might be expected.

The results of trenching on the Cord property in 1980 suggested improved grades towards L450E and

600E near 150S. In 1981, therefore, geophysical surveying concentrated on increasing anomaly definition in this area in preparation for drill testing of down dip potential.

## 5. GEOPHYSICS

A short programme of detailed EM work was undertaken prior to drilling commencement on the Cord claims. The work took place during one week at the end of June to beginning of July, 1981. Purpose of this survey was to further delineate conductor patterns and axes previously indicated by the 1980 geophysical programme. References are freely made throughout the following discussion to the report of last year's work by Campbell and McClintock (1980).

### 5.1 Geophysical Grid

Several in-fill lines were added to the previously-established grid. Control was achieved by means of compass and nylon-chain. A 2.85km baseline had been run along the valley centre at a bearing of  $131^{\circ}$ . Traverses departed perpendicularly ( $041^{\circ}$ ) from it at intervals of 50 to 150 metres and stations were marked by wooden lathes every 25 metres along slope. Chainage and clinometer data were reduced using a programmable calculator in order to arrive at adjusted station locations. All geophysical data has been plotted with these slope corrections taken into consideration.

## 5.2 Electromagnetics

2.48km of 50 metre coil-spaced as well as a further 0.73km of 100 metre coil-spaced horizontal-loop EM were run over a portion of the Cord grid.

An additional 4.33km of fixed-transmitter, vertical-loop EM was also run over three separate zones.

Instrumentation employed was the company-owned Apex Parametrics Limited MaxMin II utilizing three frequencies (444, 888 & 1777 HZ) in the horizontal mode and two frequencies (888 & 3555 HZ) in the vertical-loop mode.

Two lines (500E & 650E) of 100 metre coil-spaced HLEM were run alongside half of Line 600E, on either side of last season's Anomaly A. These lines confirmed the presence of this anomaly; however, the optimum conductor response remains that exhibited on Line 600E, 225S.

Six lines (400E, 450E, 500E, 600E, 650E & 700E) of 50 metre coil-spaced HLEM were run over this generally anomalous zone south of the baseline. The data is dominated by geologic noise, so indicated by the frequency and phase-dependent profiled responses. The survey in this instance does not appear to be penetrating to any significant conductor.

HLEM traverses run at 100 metre coil separation are clearly providing a more informative depth penetration in the search for recognizable, strong

conductivity contrasts such as those that would be expected from significant volumes of sulphide-enriched rocks.

Vertical-loop, fixed-transmitter EM was also run over this area (from Line 300E to 750E) in an effort to further delineate conductor axes. This procedure was successful in mapping out an arcuate conductor axis, convex to grid north. This conductor, of moderate strength, appears to be centred about Line 500E, 225S. It is also apparent that an overall conductive zone is, in fact, present as may be seen by the multiple responses, or shoulders, on almost all the profiles. Although VLEM and HLEM responses are coincident on Lines 500E, 225S and 600E, 225S, the anomalous trends depart from one another to the east and west with the HLEM trend approximately paralleling the creek.

Vertical-loop EM was run over the anomalous (based on 1980 HLEM work) region to the west, from Lines 750W to 1350W. While VLEM confirmed the presence of some minor conductive activity, nothing of significance was delineated.

## 6. DIAMOND DRILLING

### 6.1 Logistics

A total of 365.4m of diamond drilling was completed by E. Caron Diamond Drilling Ltd., of Whitehorse over the period July 9 to August 11, 1981 using a Longyear 38 and two 2-man crews. Four holes were drilled as shown below in Table I and on DWG. G-8856.

TABLE I  
DIAMOND DRILL HOLES, 1981, CORD GROUP

<u>Hole Number</u>	<u>Grid Co-ordinates</u>	<u>Depth(m)</u>	<u>Orientation</u>
DDH 81-1	600 E, 3 + 37S	147.2	Vertical
81-2	600 E, 6 + 70S	44.8	Vertical
81-3	574 E, 7 + 73S	38.7	Vertical
81-4	752 E, 3 + 44S	134.7	40°/70°S

TOTAL 365.4m

Extremely steep topography (+30° slopes) variably thick overburden, permafrost and unstable talus conditions contributed to difficulties with set-up locations. Blasting of set-up benches by McCrory Holdings Ltd., Whitehorse was abandoned after wall collapse due to permafrost melting. Hole locations were therefore limited to areas of natural glacial benches, or other relatively flat spots.

Diamond drilling was difficult despite the presence of experienced personnel and good equipment. The entire valley of Snakehead Creek has undergone multiple periods of alpine glaciation and extensive frost wedging, as well as severe tectonism. Bedrock typically has large open fractures and surface caves which extend to several tens of metres. Large amounts of mud were necessary though frequently unsuccessful in maintaining walls and water pressure. Cementing was in some cases impossible due to extreme porosities and lack of any return. Down hole sand shortened bit life, and rods

frequently stuck, forcing pulling and reaming. Supply and operating costs were thus substantially higher than anticipated.

Holes were started with HQ and NQ equipment but in all cases difficulties eventually necessitated reduction to BQ. Despite best efforts of Caron personnel only DDH 81-1 penetrated to the desired depth, and average footage per day was only 12.2m. Average invoiced costs per metre (i.e. including labour and supplies) approached \$242/metre and \$640/metre if exploration costs are included.

It is unlikely that a conventional helicopter-portable diamond drill can complete a down dip test of surface mineralization and EM anomalies. Should a Becker reverse circulation drill or one with similar capabilities become available nearby, because of work by other companies in the area, and should a heavy-lift helicopter be available, a further test could become feasible.

## 6.2 Stratigraphy and Mineralization

### 6.2.1 Stratigraphy

The sequences penetrated in DDH 81-1 and 81-4 are broadly similar, and considered representative of lithologies described as part of the Gillespie Lake Group by Delaney (1978) in unit 2 at its transition to unit 1 of Green (1972). A dolomitic quartz wacke and a repetitive banded mudstone-siltstone sequence are distinctive markers allowing hole to hole correlation.

Detailed drill logs are contained in Appendix 3 and hole locations are shown in DWG. G-8856.

Predominant lithologies are variably silicified, dolomitic siltstone and mudstone with lesser dolostone as shown in Figure 1. Light grey chert bands and nodules are common; there are irregular limy intervals. Siderite is at least locally abundant (often to 2%, rarely to 15% - disseminated or localized in specific beds), especially in upper portions of the hole. The dolostone and quartz arenite (coarse siltstone) component tends to increase downward until carbonate dominates the sequence. The amount of sparry influx, shearing, recrystallization and brecciation may indicate a lower fault contact in both holes.

Soft sediment deformation is frequent as folds, microfaults, water escape channels, slumps, microbreccias and scours. Such features are present in a mm to cm scale and areas of rapid change of laminae orientation suggest that folding exists also on a metre scale.

#### 6.2.2 Mineralization

Pyrite is sporadically abundant ( 1% to 10%) in all lithologies as 1-10mm finely crystalline beds, in irregular dolomite veinlets, as fine disseminations and rarely as discrete 1-5mm cubes. Pyrrhotite is found as mm to cm-sized blebs elongate parallel to bedding and associated with pyrite in some of the pyrite-rich laminae. Iron sulphide abundance generally increases toward the mineralized interval but decreases markedly as dolostone begins to dominate.

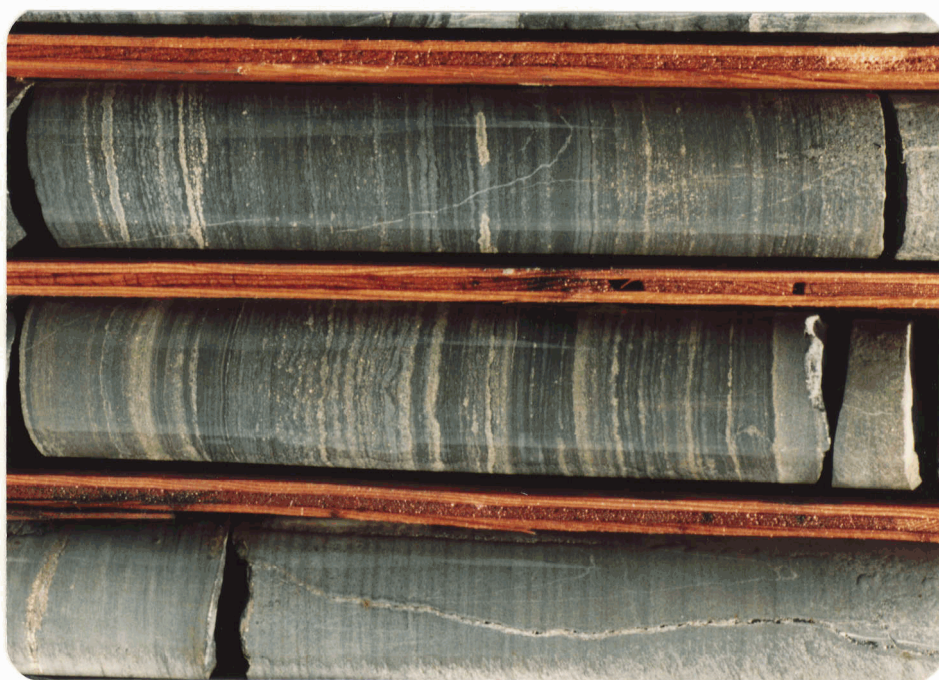


Figure 1. banded silicified mudstone and siltstone with chert, pyrite and pyrrhotite, hosting minor sphalerite galena and chalcopyrite, Cord claims, DDH 81-1.

Several intervals of banded magnetite-chert-siderite with pyrite, sphalerite and pyrrhotite occur within the upper 30m and rarely throughout both holes. Bands are on 1-5mm scale with very fine crenulations, and are in some places slightly wavy resembling algal laminates with possible gas escape structures. Magnetite and chert intervals tend to be somewhat thicker and more abundant than siderite. Very low values were obtained on a single sample assayed.

There are three modes of occurrence of Pb, Zn and Cu sulphides in diamond drill holes DDH 81-1 and 81-4 as follows:

1. within irregular, discontinuous calcite and/or quartz veinlets transecting all lithologies,
2. high grade fine-grained thinly laminated pyrite and/or pyrrhotite beds with lesser chalcopryite, sphalerite, galena within 0.5 to 4m beds of siliceous mudstone, as shown in Figure 2 and
3. zones of coarsely crystalline "disturbed sulphides" consisting of pyrite and/or pyrrhotite with lesser chalcopryite, sphalerite and galena, as shown in Figure 3.

Type 1 is too widespread and low a grade to be economically significant. Most veins are less than 5cm wide, are randomly oriented, and contain only local concentrations of sphalerite, chalcopryite and/or galena. Only types 2 and 3 will be considered in detail.



Figure 2. type 2 sulphides-finely crystalline laminated pyrite and pyrrhotite with minor sphalerite galena and chalcopryrite; note graded beds and minor folds, Cord claims, DDH 81-1.



Figure 3. type 3 sulphides coarsely crystalline "disturbed" sulphides consisting of pyrite and pyrrhotite with lesser chalcopryrite, sphalerite and galena Cord claims, DDH 81-1.

Type 2 sulphides are present mostly within silicified dolomitic mudstone and siltstone in both holes over about a 10m interval but mm to 20cm thick beds of finely crystalline, finely laminated pyrite with pyrrhotite totalling from +15% to +80% begin at about 10m above this and continue about 20m beyond. Proportions of pyrite to pyrrhotite vary from band to band but each may be restricted to individual bands; grades trail off into the surrounding sediments. Sparse anhedral finely crystalline sphalerite and chalcopyrite are often present with iron sulphides. Individual bands may conform with bedding, frequently show evidence of soft sediment deformation and rarely show ptigmatic folding. Typical are finely crystalline graded beds interspersed with coarser recrystallized beds sometimes with increased pyrrhotite, chalcopyrite and sphalerite. Dump textures (subrounded coalescing pyrite blebs, fragments of colloform crust, etc.) may be present in thicker beds.

Assay values are given in Appendix 2. Best values obtained are: 0.07% Pb, 0.03% Zn over 2m (D5410) in DDH 81-1 and .07% Pb and 0.12% Zn (D5435) in 81-4.

Below this 10m zone with finely crystalline pyrite, sulphide abundance decreases (<2% total sulphide) and there are no finely crystalline massive sulphide zones. Zones which are present, are lower in abundance and more coarsely crystalline. Sulphide-poor intervals are more common. There are 1-20mm bands of coarser pyrite associated with complex stylolites. Rarely pyrrhotite is present to 10% over a few mm.

Gradually to about 20m below the interval with finely crystalline (type 2) sulphides, dolostone increases with pyrite to 10% overall abundance. Type 3 sulphides occur in individual bands to 60cm with up to 25% banded pyrite and pyrrhotite, with sphalerite and galena. Best assay values over 2.0m are: 0.23% Pb and 0.49% Zn (D5416) and 0.62ppm Au, 0.16% Pb and 0.89% Zn (D5417).

There are sporadic 0.5 to 10cm continuous sections of "disturbed" sulphides (most 2-4cm) and discontinuous "disturbed" sequences to 0.9m associated with patchy silicification. These consist of coarsely crystalline iron sulphides showing a deformed fabric with irregular folds, microbreccias with black mudstone lithoplasts, slumps, faults and sulphide boudins. Sphalerite and chalcopyrite occur as medium to finely crystalline anhedral. Sparse medium to coarsely crystalline galena is also present. In places discrete sphalerite and pyrite laminae are present. Total sulphide abundance is highly variable from 10% to +40% but disturbed intervals are markedly less abundant in DDH 81-4 and sulphide bands tend to be somewhat thinner. Pyrrhotite tends to be less common in 81-4 also.

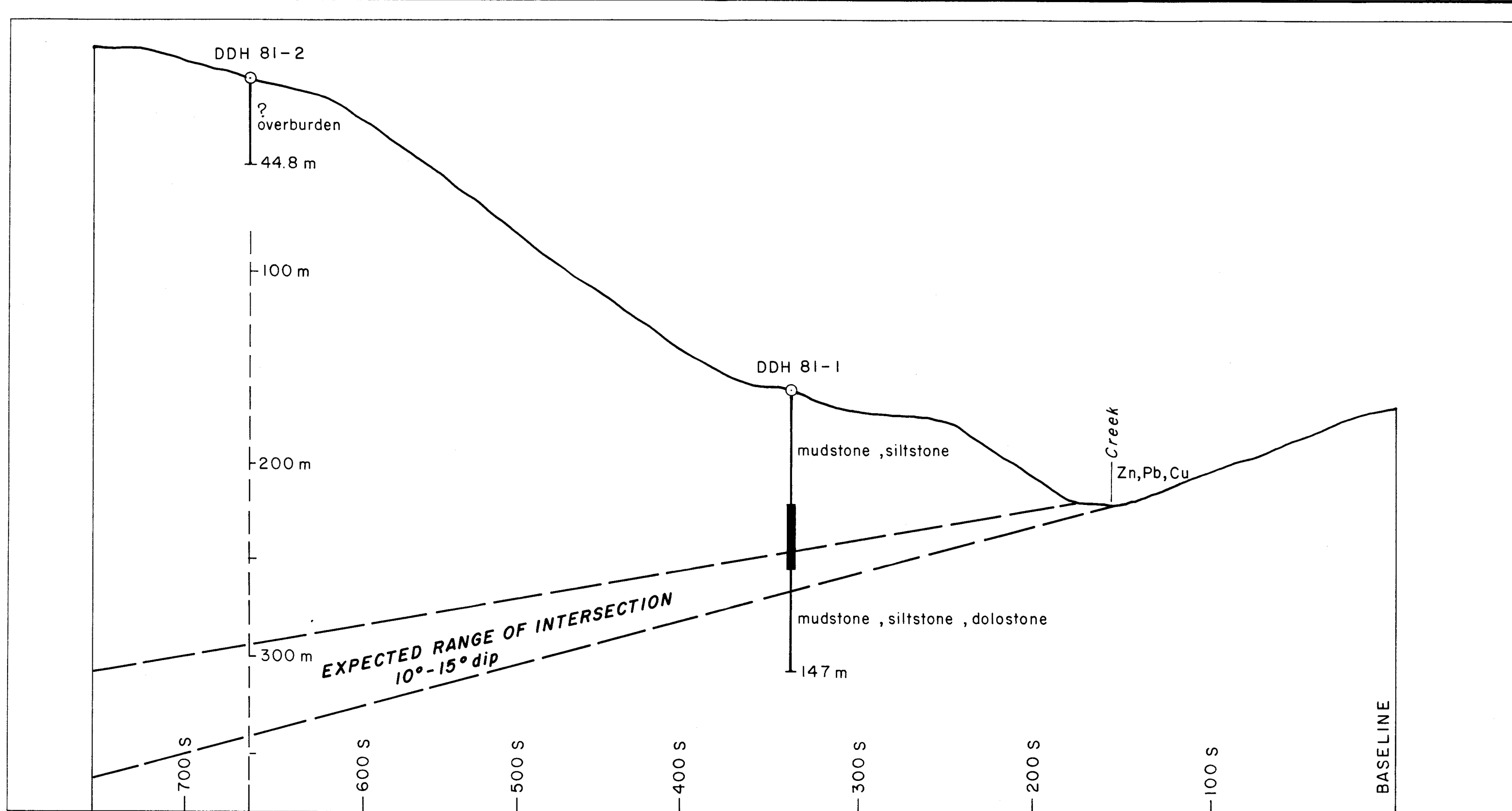
Sparse intervals to 90cm (most 10cm) occur to about 45m below the finely crystalline pyrite interval with best grades in 81-1 over 2.0m of 0.93ppm Au, 0.07% Pb and 1.11% Zn (D5426) and overall sulphide abundance is <2%. The disturbed zones have a more deformed, sheared appearance downward and microbreccia abundance increases.

Apart from the intervals of most intense pyrite mineralization, sphalerite is found throughout both holes as coalescing pale red to yellow subhedra to euhedra (resembling siderite) within chert beds. In places sphalerite with minor galena euhedra discontinuously rims the chert. Sphalerite (1-2%) also occurs as an intergranular constituent in the dolomitic quartz wacke marker. Minor sphalerite, galena and chalcopyrite are found associated with complex high amplitude stylolites.

## 7. DISCUSSION

The 1981 programme on the Cord group was designed to drill test the down dip extension of stratiform sulphides outcropping at water level in Snakehead Creek. Surface measures suggested a dip of about 10-15° south. DWG. D-6748 is a cross section along L600E showing DDH 81-1 and 81-2, as well as the expected interval of intersection. While the mineralized zone within 81-1 begins somewhat above the level predicted, it is clear that hole 81-2 (and hole 81-3 - which is further upslope and not shown) was abandoned well above the anticipated intersection due to very difficult drilling. Hole DDH 81-4 was effectively along strike east of the mineralization encountered in 81-1. No test of the down dip potential has therefore been completed.

The mineralization discovered to date on the Cord claims on surface and in holes DDH 81-1 and DDH 81-4 is of relatively low grade and of limited stratigraphic extent. It is associated with intervals of siliceous mudstone and siltstone; pyrite with lesser pyrrhotite



L E G E N D

 Mineralized Zone

NTS 106 C 16, D13  
SCALE 1:2000



RIO TINTO CANADIAN EXPLORATION LTD.

CORD CLAIMS

SECTION  
ALONG LINE 600 E (041°)  
LOOKING WEST

DATE JAN. 1982	DRAWN BY JLH/dag	DWG. D 6748
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is the predominant sulphide. Textures such as fine laminations, graded beds, scours, and slumps within the pyrite indicate an initial early diagenetic origin. These, as well as possible dump textures suggest a sedimentary exhalative system dominated by iron sulphides with lesser amounts of zinc, copper and lead sulphides.

The pyritic siliceous mudstone/siltstone host rocks are locally carbonaceous and grade upward into silty dolostone. Such lithologies were laid down in depositional environments within a euxinic basin near the transition to platformal carbonate, a position regionally favourable for sulphide accumulation.

Syngenetic pyrite was locally recrystallized and/or metamorphosed to pyrrhotite by tectonism and possibly diatreme emplacement. Microbrecciation took place in some beds and folding was intense, however it is difficult to establish what proportion of sulphide deformation was in fact synsedimentary.

The limited area of outcrop of the host unit and shallow penetration in diamond drill holes make it difficult to assess in which direction improvements in grade might be expected.

Holes DDH 81-1 and 81-4 suggest a relatively constant grade and thickness along strike but no test has been made of down dip potential. As the Hart River analog is fault-bounded, comparisons are of little help in assessing distances over which fringe zone sulphides might be expected to improve towards a more massive core either along strike or down dip.

## 8. CONCLUSIONS

Stratabound low grade massive sulphides are present within siliceous mudstone and siltstone of Green's unit 2 transitional to unit 1 on the Cord claims. This mineralization resembles that at the Hart River deposit 90km to the southwest.

In 1981, geophysical work, in the form of in-fill traverses run with both horizontal and vertical-loop EM, assisted in further delineating the conductive responses established by the 1980 programme. However, no new anomalies of any significance were identified, nor was the interpretation of the 1980 work substantially altered.

Two diamond drill holes penetrated similar sequences of mudstone, siltstone and dolostone with intervals of bedded pyrite-pyrrhotite and lesser sphalerite, chalcopyrite and galena. Only DDH 81-1 penetrated to the desired depth to intersect a down dip projection of sub-economic sulphides exposed on surface. Holes 81-2 and 81-3 were abandoned. Along strike from 81-1, hole 81-4 intersected sulphides similar to those in 81-1 but tests down dip from each hole were not made due to drilling difficulties.

## 9. RECOMMENDATION

In view of the sub-economic grades and thicknesses of sulphides intersected, no further work is proposed

on the Cord claims. There is no indication of how far down dip to expect improvements of grade if a Hart River analog is valid; conventional drilling techniques will not penetrate the sequence present.

Claim tags must be placed on the four Overburden claims prior to August 19, 1982. It is recommended that this be done, and at that time sufficient prospecting be carried out to hold the claims until January 1985 when the rest of the Cord Group expires.

Ground should be held until that time with the hope that other companies working in the area prior to the expiry may be using a reverse circulation drill with suitable support helicopter. This would enable a test of potential further down dip and permit the ground to be geologically dismissed. Any further drilling plans should include provision for down hole transient EM - an exploratory technique which should lend itself admirably to searching down dip for stratabound sulphides.

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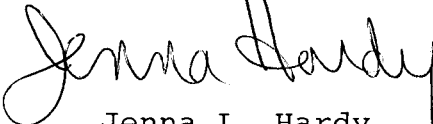
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STATEMENT OF QUALIFICATIONS

Jenna L. Hardy

1. I am a geologist residing at 535 E. 10th Street, North Vancouver, B.C. and am currently employed by Riocanex Inc. of 520-800 West Pender Street, Vancouver, B.C.
2. I graduated from the University of Toronto with a B.Sc. in 1974 and an M.Sc. in 1980. I have practised my profession since May 1978.
3. I am an active member in good standing of the Geological Association of Canada, Canadian Society of Petroleum Geologists, American Association of Petroleum Geologist and Society of Economic Paleontologists and Mineralogists.
4. I personally supervised all work carried out on the Cord property.

RIOCANEX INC.

  
Jenna L. Hardy

Appendix 1: Core Recovery

## DDH 81.1

<u>Depth</u>	<u>Core Length</u>	<u>Depth</u>	<u>Core Length</u>	<u>Depth</u>	<u>Core Length</u>
42 - 47	5.2	172 - 177	5.0	347 - 357	9.7
47 - 49	2.2	177 - 182	5.3	357 - 367	9.5
49 - 52	2.8	182 - 187	3.8	367 - 377	9.8
52 - 56	4.2	187 - 192	5.0	377 - 387	10.0
56 - 61	5.3	192 - 197	3.8	387 - 397	10.0
61 - 66	5.1	197 - 202	2.0		
				397 - 407	9.5
66 - 72	6.2	202 - 207	4.8	407 - 417	9.4
72 - 77	5.5	207 - 212	3.5	417 - 427	6.5
77 - 82	5.1	212 - 217	5.0	427 - 429	1.7
82 - 87	5.2	217 - 222	5.0	429 - 432	0.7
87 - 92	5.0	222 - 227	4.5		
				432 - 437	5.0
92 - 97	5.5	227 - 232	4.0	437 - 442	3.8
97 - 102	4.1	232 - 237	5.0	442 - 446	2.4
102 - 107	5.0	237 - 242	5.0	446 - 449	1.7
107 - 112	4.5	242 - 247	5.0	449 - 457	5.4
112 - 117	5.0	247 - 252	5.0		
				457 - 463	5.4
117 - 122	5.0	252 - 257	4.6	463 - 470	6.5
122 - 127	5.0	257 - 260	3.0	470 - 472	2.8
127 - 132	5.0	260 - 270	10.0	472 - 477	2.8
132 - 137	5.0	270 - 281	10.0	477 - 480	2.7
137 - 142	4.5	281 - 288	7.1		
				480 - 483	<u>1.7</u>
142 - 147	5.4	288 - 297	8.0		117.0
147 - 152	4.6	297 - 304	4.3		
152 - 157	5.2	304 - 310	6.0		
157 - 162	4.5	310 - 322	12.2		
162 - 167	5.0	322 - 337	9.0		
				TOTAL AVERAGE	91%
167 - 172	<u>4.7</u>	337 - 347	<u>9.7</u>	% RECOVERY	
	129.8		155.6		



Appendix 2: Assays

Appendix 3: Diamond Drill Logs



Rio Tinto Canadian Exploration Limited  
Diamond Drill Record

Hole No. 81-1

Page No. 3

From m	To m	Description	Sample No.	From m	To m									
		line galena.												
		18.1: soft sediment deformation in green mudstones with slump into underlying layer + microbreccia.												
		20.2: white to light grey chert bands $\frac{1}{2}$ c.a. with discontinuous, finely crystalline pyrite rims.												
		20.4: increased medium green with purple grey bands and medium light green sandy interbeds to 10mm.												
		21.5 - 21.9, 22.6 - 22.9, 24.2: irregular discontinuous dolomite veins to 5mm with sparse finely crystalline galena, trace finely crystalline chalcopryrite, sparse ? medium brown finely crystalline hematite, ? light brown sphalerite, finely disseminated in light grey chert host; pyrite in irregular discontinuous 1-2mm rims + finely disseminated in dolomite.												
		24.1 - 24.2: medium green siltstone/mudstone with darker oval to angular mm-size blebs dispersed in some layers (? lithic tuffs).												
		24.3 - 24.4: chert to siliceous siltstone, very finely banded + crenulated												

Page No. 4

From m	To m	Description	Sample No.	From m	To m	Length	Ag	Au	Cu	Pb	Zn		
		on mm scale, light to dark grey to medium grey to light yellow green to brown; in places slightly wavy, resembling algal laminate, with $\frac{1}{2}$ c.a. possible gas escape structures; pale yellow ? siderite as coalescing angular blebs; brown to dark grey, magnetite and/or pyrrhotite-rich; (banded oxide iron formation)											
		may be sphalerite in brown areas, but very finely crystalline; pyrite bands; trace chalcopryrite in cross-cutting veins, and finely crystalline in magnetite-rich laminae with pyrite; cut by abundant dolomite (mm) veins and very irregular 5cm wide Fe-rich dolomite vein.											
		24.4 - mm bands of medium brown finely crystalline sphalerite associated with light green mudstone with darker green fragments (? lithic tuff).											
24.9	25.7	dolomitic siltstone to mudstone; dark green, dark grey to green grey; finely and evenly laminated, slightly wavy on mm scale, clotted texture in some bands with mm size darker (? translucent) subangular fragments in fine matrix.	D5401	25.0	25.7	.7	<2.0	<0.05	<0.01	0.08	0.08		





Rio Tinto Canadian Exploration Limited  
Diamond Drill Record

Hole No. 81-1

Page No. 9

From m	To m	Description	Sample No.	From m	To m										
		medium brown finely intercrystalline sphalerite with pyrite and pyrrhotite - chlorite along irregular discontinuous seams.													
		30.2 - 30.8: silicified mudstone to fine siltstone with minor light grey chert; finely interbedded 80° c.a., slightly wavy, in places crenulated with minor scours, microfaults, folds; light to dark green, variably chlorite rich with clotted texture; pale yellow siderite-rich (crystals may cross-cut individual laminae); black magnetite-rich, medium brown finely crystalline ?sphalerite-rich; no specific order to laminae but increased light green + yellow downward, decreased magnetite; some hematite with darker brown sphalerite - pyrite + pyrrhotite disseminated + increase in specific laminae; trace galena with dolomite in fracture.													
		30.7 - 30.8: darker green, coarser crystalline irregular 1-2mm clots in finer + lighter green matrix (?lithic tuff) (?coarser version of clotted texture)													

Page No. 10

From m	To m	Description	Sample No.	From m	To m	Length	Ag	Au	Cu	Pb	Zn				
		31.5 - 32.5: unbanded dolostone/dolomitic mudstone.													
		31.5: dolomite veins, irregular angles, with open fractures + oxidation, with trace dark brown ?sphalerite in 2mm fracture.													
		32.1: green clay seam with dolomite.													
		32.8 - 34.0: finely banded dolomitic silicified mudstone to siltstone + chert, pale yellow siderite bands >> light to medium green to light grey mudstone + chert; pyrite + pyrrhotite very finely throughout; no magnetite or sphalerite - in places layer boundaries diffuse; clotted texture most visible in light green + grey laminae; pale brown sphalerite increased + mixed with siderite in places in cherts; minor folds + scours.													
		34.2: dolomite vein with hematite + trace galena.													
		34.3: pyrite <10% of thin, light grey chert lens + laminae.													
34.4	44.3	dolomitic mudstone to dolostone to dolomitic siltstone, medium to dark green to dark grey with sparse pale yellow sid-	D5404	34.0	36.0	2.0	<2.0	<0.05	<0.01	0.06	0.23				









From m	To m	Description	Sample No.	From m	To m										
	/	light grey, finely (mm) but diffusely banded; pyrite/pyrrhotite rims + pale yellow siderite in transverse veins; medium brown finely crystalline mm laminae (?) sphalerite discontinuous in chert.													
		56.1: minor dark green mudstone in lighter green "spotted zone".													
		56.5: pyrite-rich band with minor chert + siderite.													
		56.8 - 57.0: chert, dark green to green grey to grey slightly wavy; darker showing, very fine clotted texture (?dump texture) some with very fine epitaxial rims; ?very finely crystalline pyrite with chert with lighter grey to grey-yellow coalescing siderite euhedra, minor very fine pyrite/pyrrhotite in specific bands + <mm blebs; sparse trace chalcopyrite with pyrite; all cross cut by siderite fractures confined to chert bands + complex stylolite; ?zones of lighter grey silicified bleached mudstone to 56.5.													
		57.0 - 58.2, 58.7, 58.8: intervals of subhedral pyrite 1-5mm blebs, preferentially along specific laminae, displacing													

From m	To m	Description	Sample No.	From m	To m	Length	Ag	Au	Cu	Pb	Zn
		surrounding bands and coalescing rarely to form laminae to 5mm thick; overall <5%.									
		57.2: pyrite band to 3cm with elongate white chert; coalescing pyrite sub to anhedral associated with iron-rich dolomite or siderite.									
		57.5, 58.2: less regular pyrite blebs to 2cm with light grey chert.									
		58.3: close-spaced chert 90° c.a., with pale yellow siderite, finely within; pyrite rims on one lens.									
		58.8, 59.2 - 59.4: dolostone, light grey to medium light grey, sometimes diffusely (mm), slightly wavy banded; resembles banded chert, but not cherty									
		56.7 - 57.0; sparse pyrite subhedra to 1-2mm + granular dolomite vein, high angle to c.a. 59.2 - 59.4.									
		59.4 - 59.5: elongate chert nodules with pyrite as previously.									
59.8	72.5	arbitrary contact, lithologies change little; first appearance of very finely crystalline syngenetic pyrite and pyrrhotite in mm bands in dolomitic mudstones +	D5406	59.8	63.0	3.2	<2.0	<0.05	<0.01	0.03	0.07
			D5407	63.0	63.3	.3	<2.0	<0.05	<0.01	0.10	0.05
			D5408	63.3	65.3	2.0	<2.0	<0.05	<0.01	0.04	0.02
			D5409	65.3	67.3	2.0	<2.0	<0.05	<0.01	0.04	0.04





Rio Tinto Canadian Exploration Limited  
Diamond Drill Record

Hole No.	81-1
Page No.	25

From m	To m	Description	Sample No.	From m	To m					
		tite; minor folds, ?slump or scour, possible fragment of colloform crust; ? dark brown finely crystalline laminae' may be sphalerite.								
		68.7 - 68.8: pyrite + 70% with well defined scours; laminae bend around chert; microfaults; pyrite disseminated in chert.								
		68.8 - 69.1, 70.0 - 70.1: irregular, broad dolomite veinlet, high angle c.a., with trace pyrite and pale orange finely crystalline sphalerite; stylolitic border.								
		70.2 - 70.3, 70.7 - 70.9, 72.3 - 72.5: gradual decrease in pyrite downward; finely laminated pyrite + pyrrhotite: (pyrite slightly coarser) + 70% as before; subrounded pyrite grains coalescing and apparently growing into more finely crystalline pyrite; minor chert lenses to bands within massive sulphides; +70.7: beautiful graded beds in pyrite with pyrrhotite in discrete bands to 2cm (each band itself finely laminated); fractures transect individual beds; sparse 2-3mm dolomitic interbeds.								

Page No. 26

From m	To m	Description	Sample No.	From m	To m	Length	Ag	Au	Cu	Pb	Zn
		70.5 - 73.0: increased dolomite veins, irregular, discontinuous, variable angles.									
		71.0, 71.6, 72.1: light grey chert with discontinuous pyrite rim.									
72.5	78.4	arbitrary contact, interval of decreased sulphides, lacking finely crystalline, finely laminated massive zones; sulphide- rich sections which follow lower grade, increased crystal size, increased inter- calated sediments; massive sulphides as before where noted - relatively barren interval - dolomitic mudstones and dolo- stones with lesser siltstones, dark grey, finely banded mm to cm scale, variable spacing and definition, 80-90° c.a.; dolostone, finely crystalline, conchoidal fracture; mudstone less limy, very rare silicification in patches; local dolo- stone, medium grey, medium crystalline, diffusely crenulated/laminated with bands of light medium grey, fine dolomitic silt- stone; pyrite <2% finely throughout, in specific laminae; and as discrete subhedra, in places coalescing to form layers as at	D5413	73.3	75.3	2.0	< 2.0	<0.05	<0.01	0.01	0.01
			D5414	75.3	77.3	2.0	< 2.0	<0.05	<0.01	0.01	0.02
			D5415	77.3	79.0	1.7	< 2.0	<0.05	<0.01	0.07	0.09











Rio Tinto Canadian Exploration Limited  
Diamond Drill Record

Hole No. 81-1

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From m	To m	Description	Sample No.	From m	To m								
		mite + quartz veins in various orientations.											
		- dolostone to dolomitic siltstone, medium grey, medium crystalline, in part silicified with light grey chert bands as at 92.7, 94.3 - 94.1, 94.7, 95.0, 95.9 - 96.0, 96.1, 96.2, 96.5, 96.8, 97.0: plus light medium grey mudstone; trace red brown (?) sphalerite in irregular veins throughout; <2% pyrite finely throughout; trace pyrrhotite, finely crystalline, in veins, and mm subhedra; irregular complex stylolite throughout; downward cherts increasingly granular and resemble silicified intrasparrudites with subrounded grains clearly visible; pale yellow grey subhedra (?) siderite coalesce at chert edges.											
		95.9 - 96.0: complex stylolite with pyrrhotite + pyrite.											
		93.7 - 94.3: minor chalcopyrite, anhedral 3mm diameter in dolomite vein.											
		94.0 - 94.4: chert, tectonic crackle breccia with close spaced, highly angular fragments; very irregular vein orientation; increased pyrite at dolostone edges.											

Page No. 38

From m	To m	Description	Sample No.	From m	To m	Length	Au	Au	Cu	Pb	Zn		
		95.3 - 95.4: complex stylolite with irregular dolomite vein; trace chalcopyrite.											
97.0	100.2	for most part distinctly darker and more finely crystalline than previous except for areas of silicified siltstone; generally more pyrite. -dolomitic mudstone to silicified siltstone, dark to medium grey, with chert bands 50-90° c.a.; bands of lighter grey pervasive silicification. -pyrite + pyrrhotite 5%, finely disseminated in specific laminae, and in blebs; minor dolomite veins 97.0 - 97.1, 98.5 - 98.6. 97.0 - 99.1: mudstone bands 50-60° c.a.; pyrite + pyrrhotite mostly in discrete bands, rarely intergrown; 2-3cm folds in silicified bands, lesser folds in minor chert, pyrite in places diffuses out into mudstone. 98.2 - 99.1: pyrite + pyrrhotite lenses, more diffuse, irregular; some slightly rusty, open porosity; locally + 70% sulphides but <15% over interval;	D5423	97.0	100.2	2.8	<2.0	<0.05	0.01	0.02	0.06		

















Rio Tinto Canadian Exploration Limited

Diamond Drill Record

Location: 7 + 52E, 3 + 449		Diamond Drill Record		Hole No. 81.4	
Azimuth: 41°		Dips - collar 70 °		Contractor: CARON	
Elevation: 1210m		76.3 <sup>m</sup> 62 °		Logged By: J. L. Hardy	
Length: 134.8m		134.2 <sup>m</sup> 63 °		Date: August 8-9, 1981	
Core Size: APL: HO: NO:		- m b		Started: August	
Purpose: to test along strike extent of mineralization on surface and in DDH 81.1				Completed: August 9, 1981.	

From m	To m	Description	Sample No.	From m	To m						
0	21.9	overburden or highly fractured bedrock with large open cracks; lithologies as in DDH 81.2 & 81.3, without abundant symsedimentary breccias, floatstone conglomerates; abundant sand, gravel; some grinding.									
21.9	25.7	dolomitic mudstones to fine siltstones; medium to dark green with possible yellow-green bleached intervals; silicified portions; sparse white finely crystalline chert bands to 5cm; several intervals, mm ovals to blebs of darker green ("translucent") in lighter, finer matrix suggesting lithic tuffs; generally finely banded on mm to cm scale 60-70° c.a., some slightly wavy suggesting scour; locally open fractures, irregular white sparry dolomite veins with trace sphalerite; pyrite and pyrrhotite finely disseminated throughout, occasional mm blebs, locally greater in specific laminae.									

Rio Tinto Canadian Exploration Limited

Diamond Drill Record

Hole No. 81.4

Page No. 2

From m	To m	Description	Sample No.	From m	To m	Length	% Cu	% Pb	% Zn			
		25.3: core broken										
		23.9: light grey siltstone lens with minor red brown finely crystalline anhedral sphalerite, finely crystalline pyrrhotite.										
		24.8, 25.3: siltstone as above with bands to lenses to 70% oxidized pyrite; gas escape structures above; lenses have lighter green rims than surrounding sediments; below fine sub-rounded clots ? suggest lithic tuffs.										
25.7	27.8	dolomitic quartz wacke, similar to 25.8-27.8 in DDH 81.1; light grey to green grey with poor diffuse bands 80-90° c.a.; minor white silicified siltstone bands; pyrite <1% very finely dispersed throughout; rare pyrite euhedra to lmm; some intervals very finely crystalline magnetite; <1-2% sphalerite red brown, finely crystalline, anhedral; .25-1cm irregular areas of increased sphalerite to 60% with pyrite; sphalerite may increase locally in specific bands to lenses; lesser specular hematite also present; sparse light grey chert nodules with discontinuous pyrrhotite ± hematite rims, transverse dolomite veins confined to nod-	D5432	25.7	27.8	2.1	<0.01	0.39	0.40			











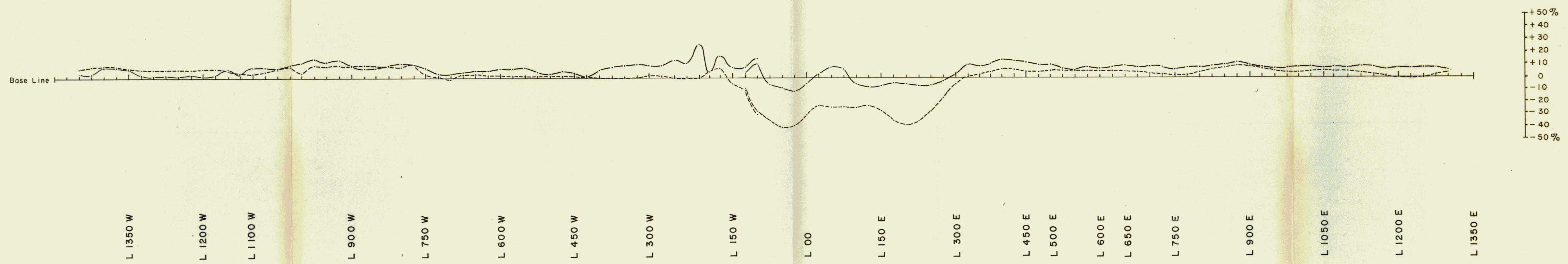
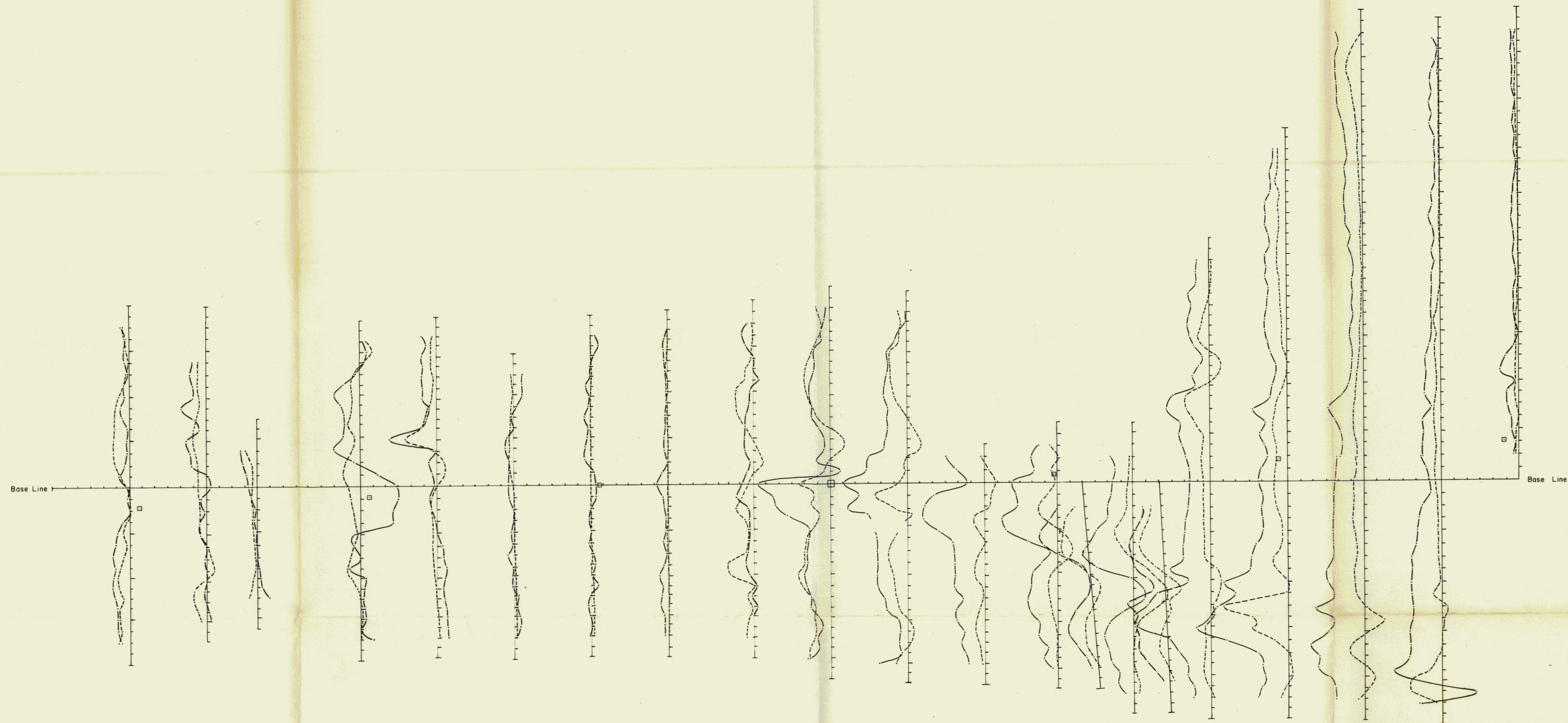








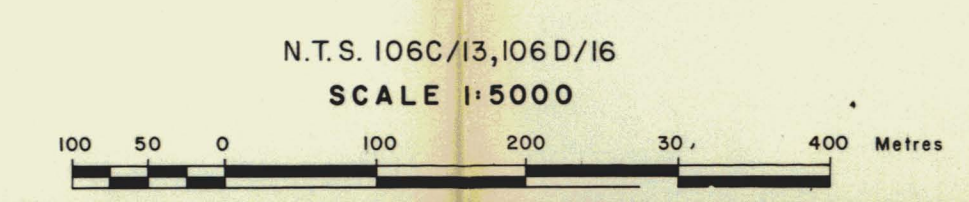




L 1350 W    L 1200 W    L 1100 W    L 900 W    L 750 W    L 600 W    L 450 W    L 300 W    L 150 W    L 00    L 150 E    L 300 E    L 450 E    L 500 E    L 600 E    L 650 E    L 750 E    L 900 E    L 1050 E    L 1200 E    L 1350 E

090996

**LEGEND**  
 HLEM Survey : MaxMin II  
 Coil Separation ... 100 metres  
 Vertical Scale ... 1cm = 20%  
 444 Hz    ——— In-Phase  
           - - - - - Quadrature



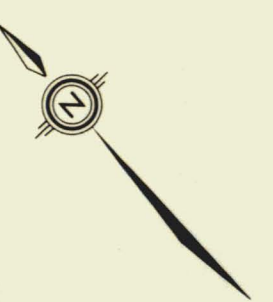
REVISED	BY	DATE
+L650E, 500 E	DA. G.	08/81

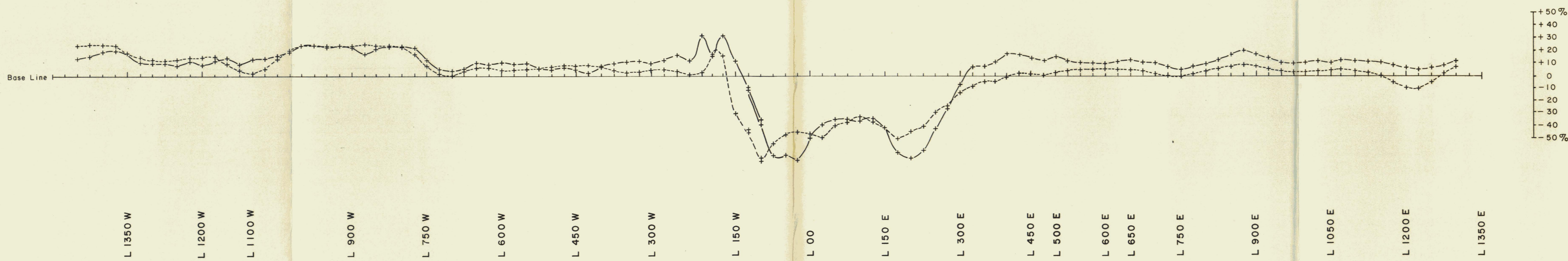
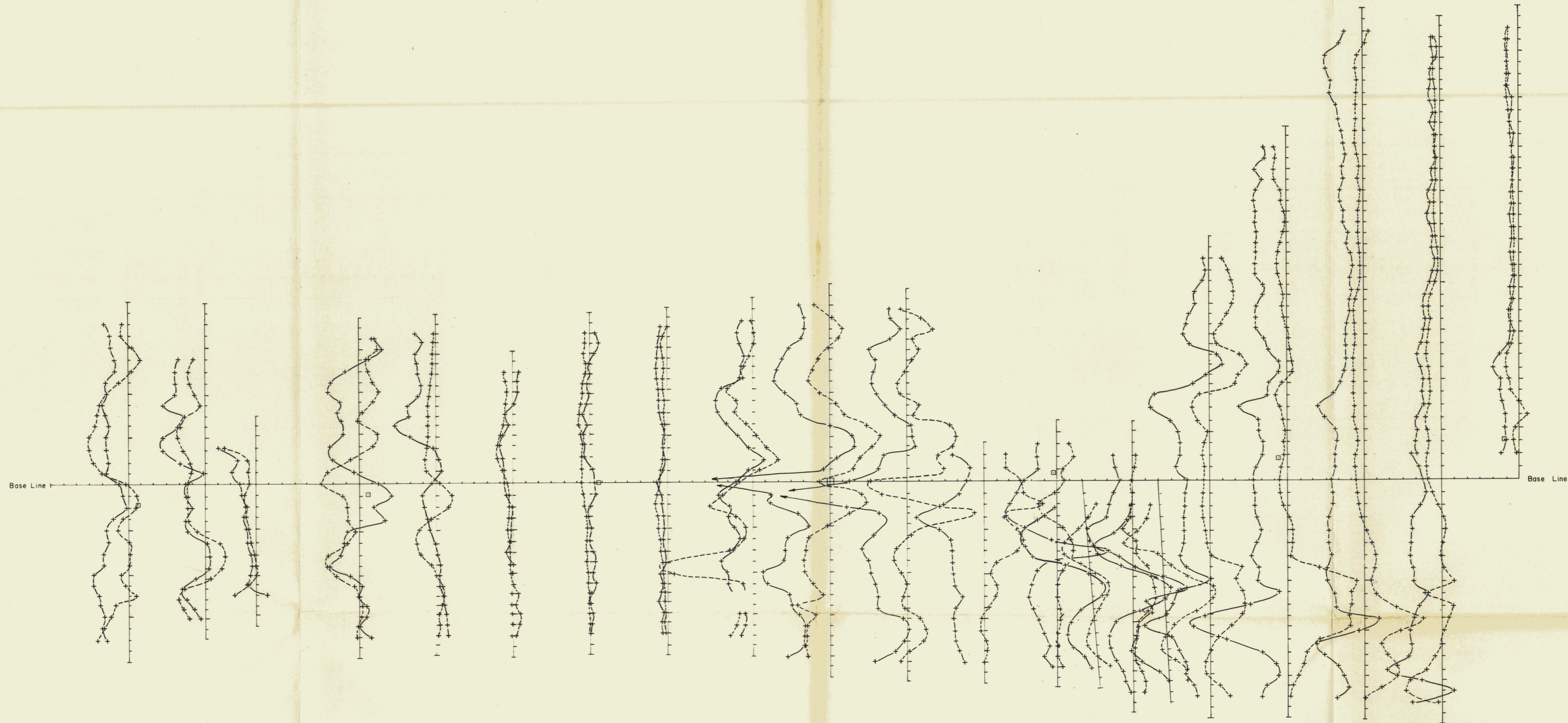
RIO TINTO CANADIAN EXPLORATION LTD.

CORD CLAIMS

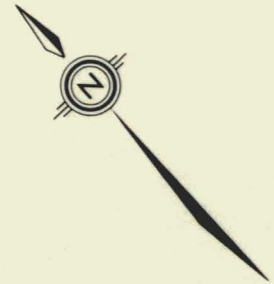
**HORIZONTAL-LOOP EM PROFILES**  
 - 444 Hz -

DATE	DRAWN BY	DWG.
SEPT. 1981	CJC/dag	GP 7579

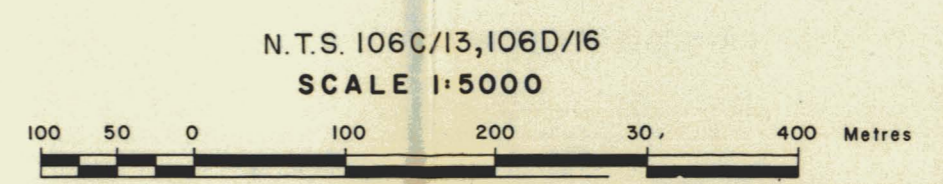




090996

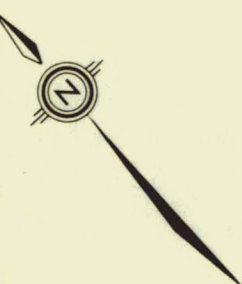
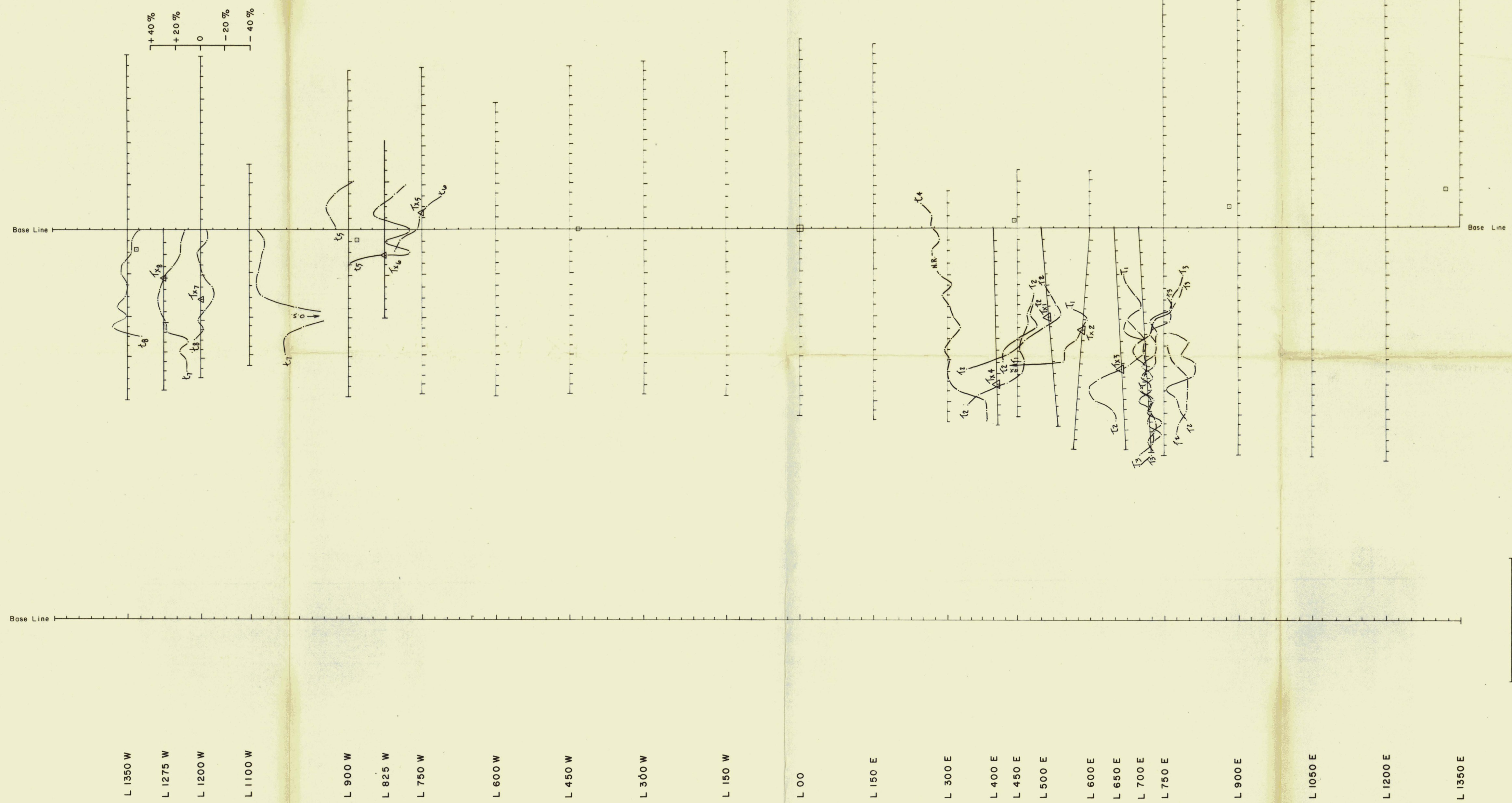


**LEGEND**  
 HLEM Survey : MaxMin II  
 Coil Separation ... 100 metres  
 Vertical Scale ... 1cm = 20 %  
 + — In-Phase  
 - - - - Quadrature

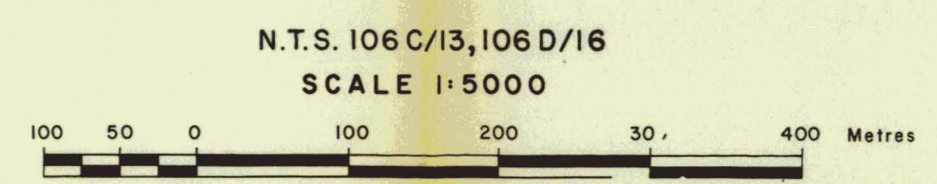


REVISED	BY	DATE
+ L650E, 500E	DA.G.	09/81

**RIO TINTO CANADIAN EXPLORATION LTD.**  
 CORD CLAIMS  
**HORIZONTAL-LOOP EM PROFILES**  
 - 1777 Hz -  
 DATE: SEPT. 1981 | DRAWN BY: CJC/dag | DWG. GP 7580



**LEGEND**  
 VLEM: MaxMin II,  
 Fixed - Transmitter  
 Vertical Scale... 1cm = 20 %



N.T.S. 106C/13,106D/16  
 SCALE 1:5000

REVISED	BY	DATE

RIO TINTO CANADIAN EXPLORATION LTD.

CORD CLAIMS

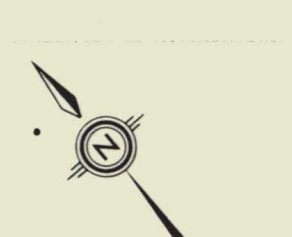
**VERTICAL-LOOP EM PROFILES**  
 FIXED TRANSMITTER  
 888 Hz

DATE: OCTOBER 1981 | DRAWN BY: CJC/dag | DWG. GP 7594

090996



090996



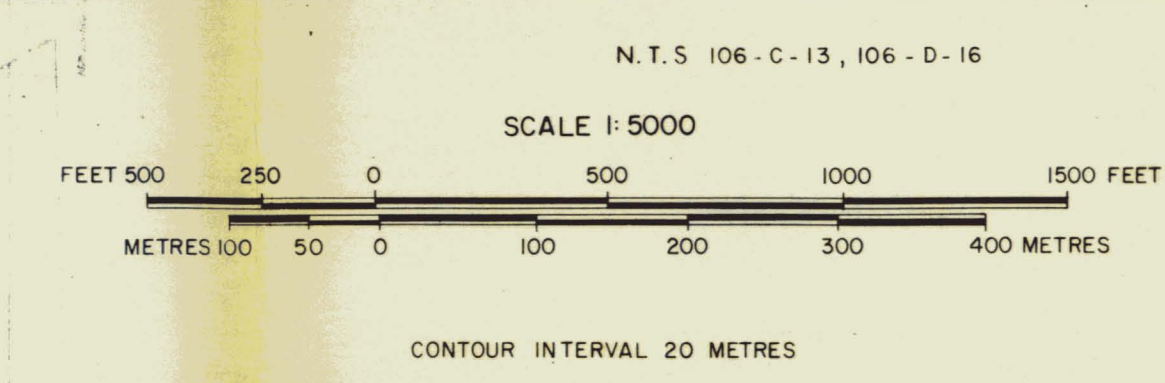
LEGEND

**PROTEROZOIC**  
**3** DIATREME: Discordant heterolithic rubble breccia, surrounded by zones of silicification and/or carbonatization.  
**2** UNIT 2: Gray dolostones, well bedded to massive. Local chert lenses.  
 2(a) Siltstones and mudstones, black, locally pyritic and highly carbonaceous.

**HELIKIAN**  
**1** UNIT 1: Black mudst'ne and siltstones, commonly carbonaceous, locally siliceous.  
 (a) Pyrite/pyrrhotite-rich mudstones and siltstones  
 (b) Dark green-grey phyllites, locally pyritic or chlorite rich  
 (c) Black dolostones, locally stromatolitic, rare white to pink dolostone  
 (d) Black limestones  
 (e) Silica-rich lithologies, possibly of metamorphic origin. Includes "siliceous mudstone", "banded cherts", "bleached siliceous dolostones" and "siltstones".

Outcrop  
 Float  
 Geological contact (observed, inferred)  
 Fault (definite, approximate, assumed)  
 Cu, Pb, Zn (2) Copper, Lead, Zinc (Showing No)  
 Chlorite, more than 5%, present on slip and bedding plane surfaces  
 Stromatolitic, b iostrome

Strike and dip of bedding, cleavage  
 Strike and dip of Axial plane (minor fold)  
 Shear zone  
 Trench and No.  
 1981 Claim Post  
 1981 Diamond Drill Hole



RIO TINTO CANADIAN EXPLORATION LIMITED  
 CORD CLAIMS  
**GEOLOGY**  
 JAN. 1981 JAM./d.a.g DWG. G 8856