

Shag Claims  
Golden Mining Division  
N.T.S. 82J/11<sup>W</sup> & 12<sup>E</sup>

B.H. Whiting                      November 1979  
'80-#139-# 8091

Work Performed on the Shag Claims

<u>CLAIMS</u>	<u>RECORD NO.</u>	<u>RECORDED</u>
Shag 1-8	158 - 165	Aug. 29, 1977

Latitude: 50°38'N      Longitude: 115°30'W

Operator: Rio Tinto Canadian Exploration Limited



LIST OF ILLUSTRATIONS

<u>Drawing (DWG.) No.</u>	<u>Description</u>	<u>Location in Report</u>
L-6526	Location Map	after page 1
C-8687	Location of Claims and Drill Holes	in pocket
G-8688	Geology (amended from 1978)	" "
G-6577	Stratigraphic Section	after page 4
G-7529	Pad Showing	in pocket
D-6571	Section of Drill Hole 79-1	after page 10
D-6572	Section of Drill Hole 79-2	" " "
D-6573	Section of Drill Hole 79-3	" " "
D-6574	Section of Drill Hole 79-4	" " "
D-6575	Section of Drill Hole 79-5	" " "
D-6576	Section of Drill Hole 79-6	" " "
GC-8631	Soil Sample Results: Lead Isopleths	in pocket
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TABLES

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II	Sampled Section of DDH 79-4	" " "

Shag Claims  
Golden Mining Division  
N.T.S. 82J/11 & 12

B.H. Whiting                      November 1979

Summary

The 1979 fall field programme on the Shag Claims consisted of drilling six diamond drill holes and carrying out a minor amount of geological mapping and prospecting. The drilling was designed to test lead and zinc mineralization along two stratigraphic contacts known as the BM and C-4 horizons. Only two holes, one in each horizon, showed mineralization. The prospecting disclosed a small lead-zinc showing along the C-4 horizon and a float occurrence of galena attributed to the C-4 horizon.

A small programme of geological mapping, prospecting, and hand trenching is recommended for 1980.

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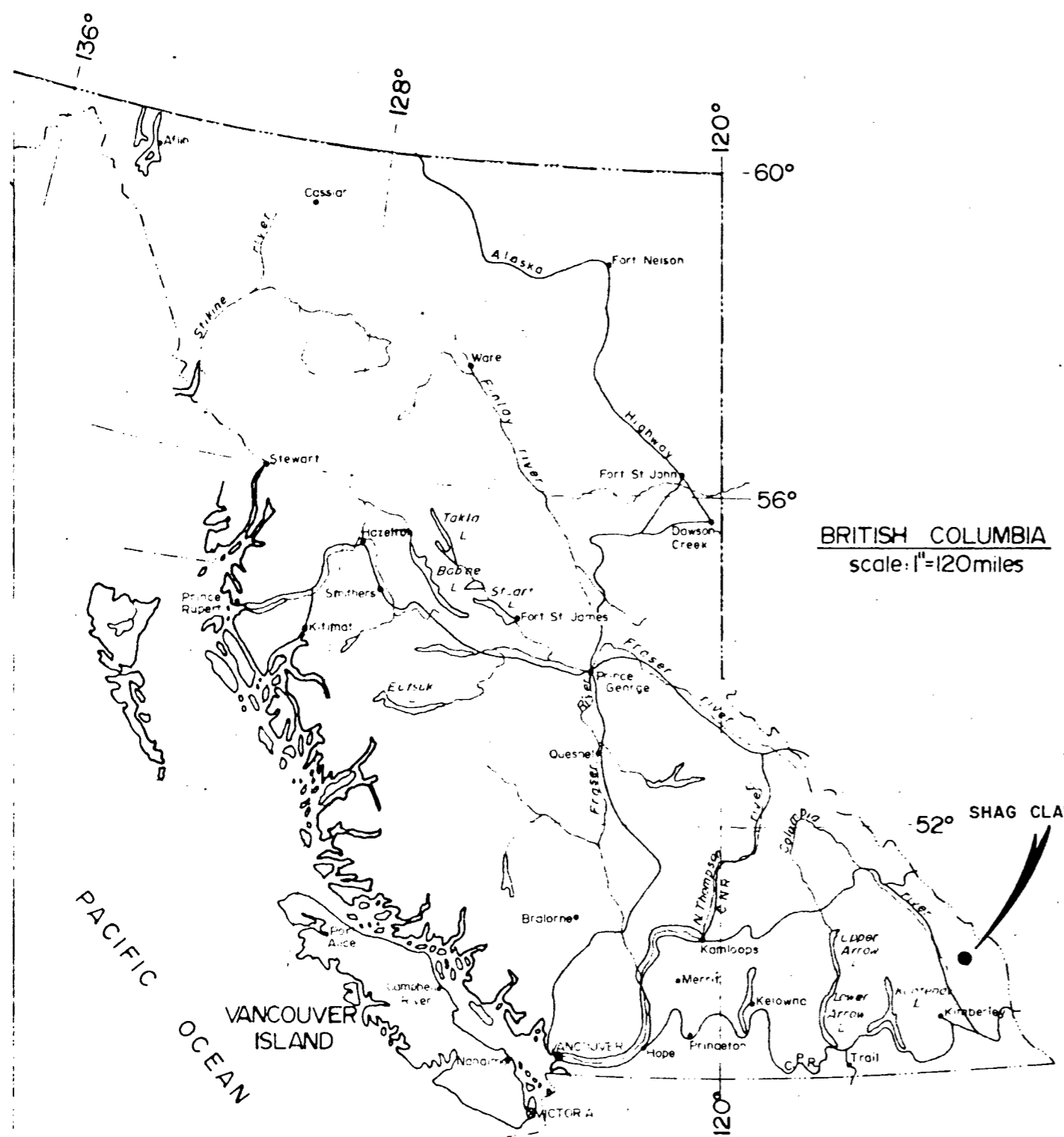
## 1. INTRODUCTION

In 1978, Rio Tinto Canadian Exploration Limited operated a geological programme on the Shag claim group in the Southern Rocky Mountains of British Columbia. This programme consisted of geological mapping, prospecting and soil sampling at 1:10,000 scale. One result of this work was the discovery that the lead-zinc mineralization lay along two favourable stratigraphic contacts, the C-4 and BM horizons. Part of the BM horizon was tested in the fall of 1978 with three short holes.

A recommendation to drill followed prospecting and examination in the summer of 1979. The 1979 fall programme, outlined in this report, consisted of six diamond drill holes, four in the C-4 horizon and two in the BM horizon. Minor geological mapping and prospecting accompanied the drilling.

## 2. LOCATION AND ACCESS (Dwg. L-6526)

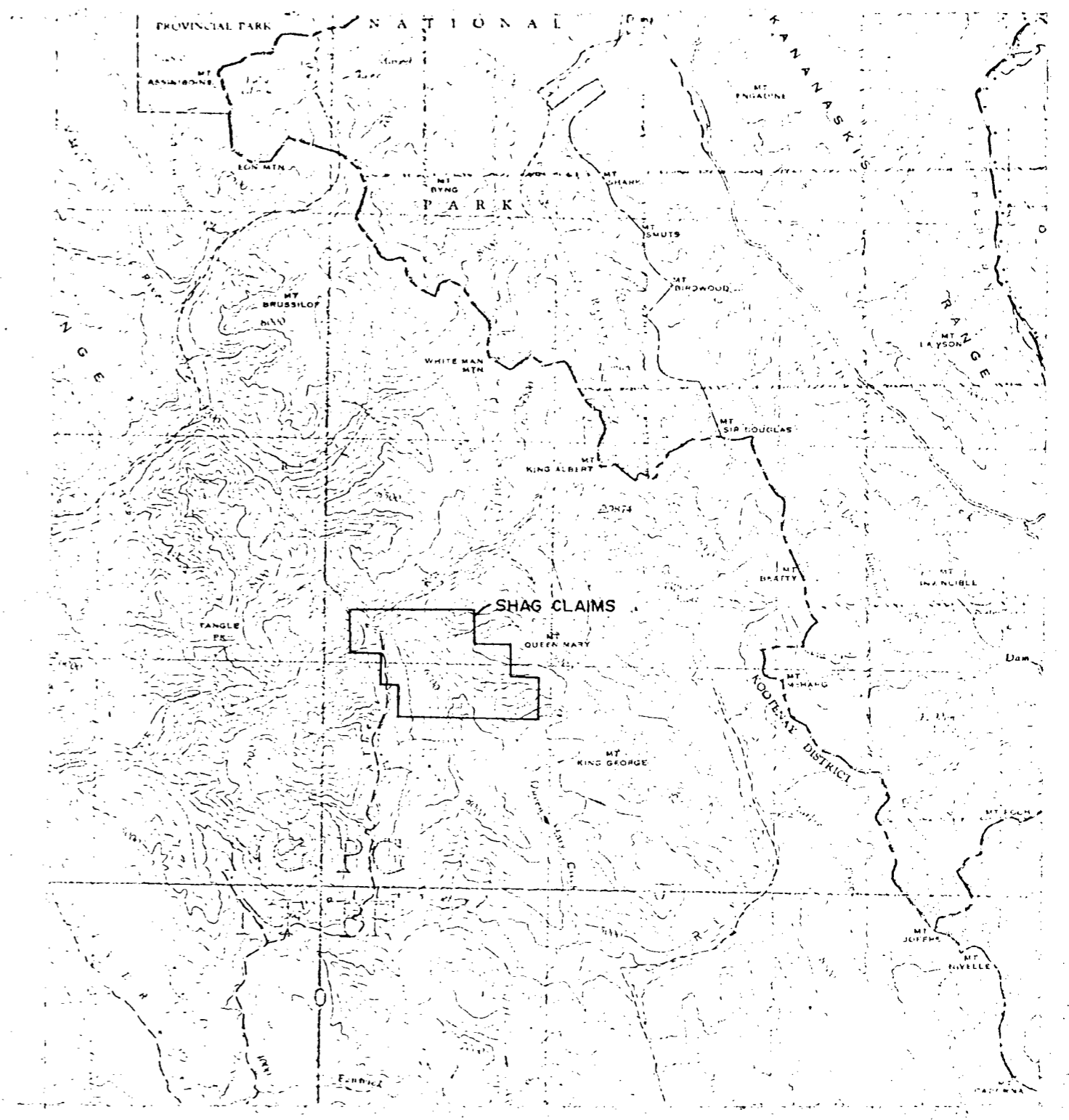
The claims are located near  $50^{\circ}38'N$ ,  $115^{\circ}30'W$ , in the Albert River drainage about 35 km east of Radium. The north end of the claims can be reached by logging roads, about 55 km from Canal Flats or 60 km from Radium. Higher elevations and the southern parts of the claim group are best approached by helicopter, available through Okanagan Helicopters in Cranbrook and Golden, or Bow Helicopters in Fairmont.



BRITISH COLUMBIA  
scale: 1"=120miles

52° SHAG CLAIMS

MINERAL DEVELOPMENT  
**8091**



SCALE 1: 250,000

RIO TINTO CANADIAN EXPLORATION LTD		
SHAG CLAIMS		
LOCATION MAP		
NOV. 1978	R.V.L.	DWG L-6526

### 3. PREVIOUS WORK

In 1977, a programme was conducted by C. Graf for Riocanex (report no. 526). Graf's programme provided a stratigraphic framework of Cambrian Formation boundaries in the vicinity of the Albert River at a scale of 1:50,000. The discovery of two lead-zinc showings led to the staking of the Shag Claims.

In 1978, D. Bending (Riocanex report no. 547) refined the Cambrian Formation boundaries and geologically mapped, prospected, and soil sampled the claims. The Cathedral Formation, host of the mineralization, was further subdivided into nine lithologic units and prospecting was conducted on two favourable mineral horizons. Eight new mineral occurrences were recorded.

A short drill programme in the fall of 1978 tested an occurrence of replacement mineralization (the BM Showing). These three holes totalling 159.5 metres, yielded only low zinc mineralization (Riocanex report no. 547).

The 1979 summer field programme (Riocanex report no. 561) consisted of a ten-day investigation of 1978 soil anomalies, detailed mapping of the C-4 showing, and remapping of sections of the C-4 horizon. Three new showings, "Stripes", "BM Fractures", and "Red Bed type float" were discovered.

Leech G.B. (1979), Geological Survey of Canada, released an open file map covering the area at a scale of 1:126,720.



4. DESCRIPTION OF CLAIMS

Eight claim blocks consisting of 127 claims were staked in 1977 (Dwg. C-8687).

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Recording Date</u>
Shag 1	20	158	Aug. 29, 1977
2	12	159	"
3	20	160	"
4	20	161	"
5	12	162	"
6	18	163	"
7	15	164	"
8	10	165	"

5. 1979 FALL FIELD PROGRAMME

The 1979 fall programme on the Shag Claims consisted of drilling the two mineralized horizons. The total length of drilling was 460.6 metres (1497 ft.). A minor amount of mapping and prospecting was conducted at the same time.

A Canadian Longyear drilling crew, to which the writer was representative for Riocanex, worked from a camp along the Shag Creek in the centre of the claim block. The programme was supervised by R. V. Longe.

## 6. GEOLOGY

The geology of the Shag Claims is displayed at 1:10,000 scale in Dwg. G-8688 and in idealized stratigraphic section in Dwg. G-6577.

### 6.1 Regional Geology

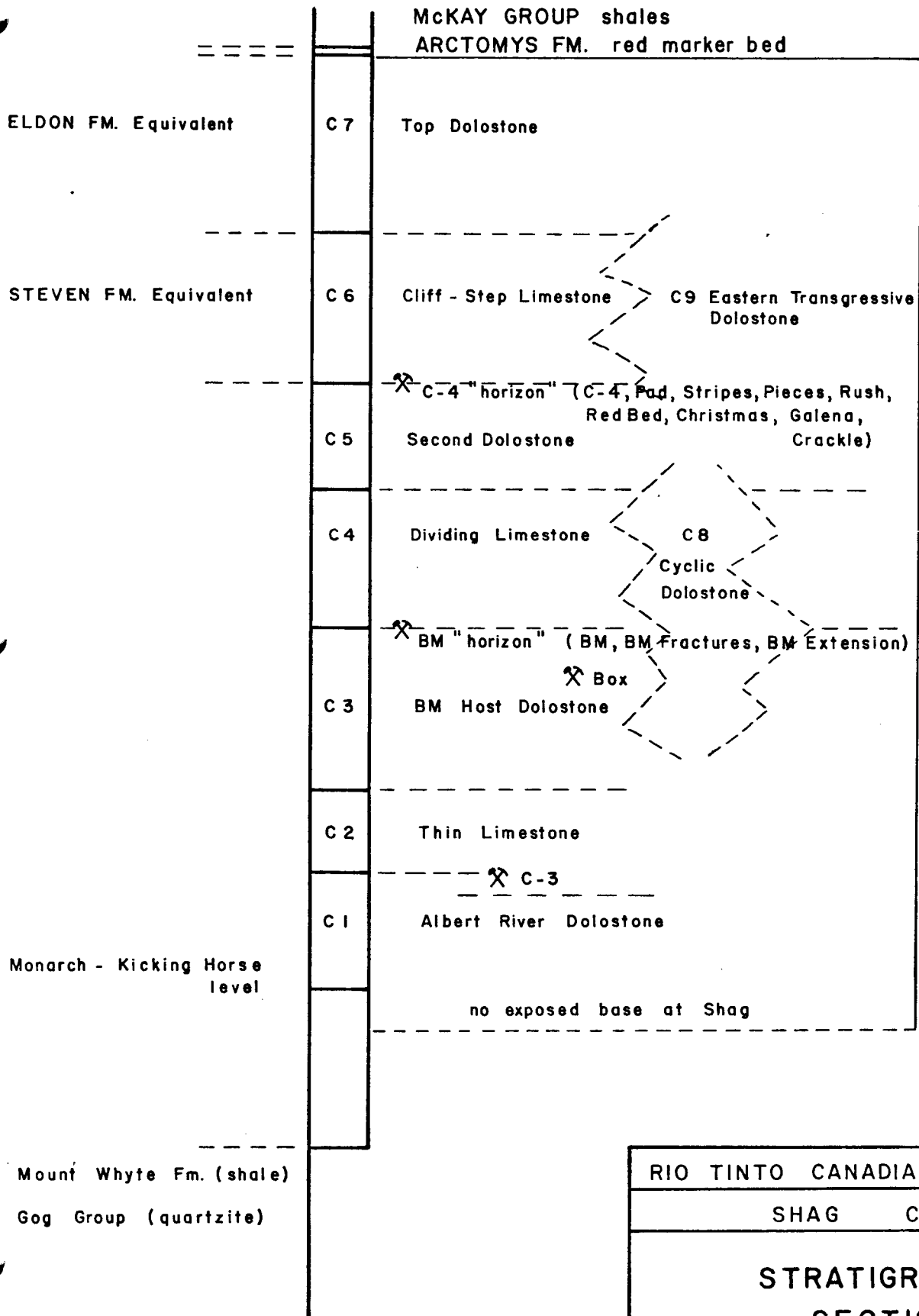
The major formations in the area of interest are the Middle Cambrian Cathedral carbonates, laterally equivalent Chancellor Group shales and limestones, and the Upper Cambrian McKay Group Shales. The showings are hosted by dolostones of the Cathedral Formation within one km of the northwest-southeast trending Chancellor facies front.

The rich Monarch-Kicking Horse deposits are hosted by the Cathedral Formation 50 km north in Yoho National Park, in a similar position with respect to the facies front but lower in the section. They represent a clearly different style of mineralization but demonstrate the availability of metals and potential for concentration in this belt.

### 6.2 Geology of the Shag Claims

The Cathedral Formation was subdivided into nine mappable units based on a combination of depositional and diagenetic features. A more detailed description is included in Riocanex report 547.

# STRATIGRAPHIC SECTION



mapped as  
CATHEDRAL FM.  
1978

RIO TINTO CANADIAN EXPLORATION
SHAG CLAIMS
<b>STRATIGRAPHIC SECTION</b>
NOV. 1979   B.H.W.   DWG. G - 6577

### 6.2.1 Stratigraphy

Formations on the claim block from youngest to oldest are:

McKay Group shales occurring on mountain peaks and higher ridges.

Arctomys Formation a thin red crinoidal marker bed underlying the McKay Group.

Cathedral Formation - an alternating series of carbonates with no exposed base at Shag.

"Top Dolostone" (C7). This appears to be equivalent to the Eldon Formation to the north.

"Cliff and Step Limestone" (C6). On the east side of the claims this becomes the "Eastern Transgressive Dolostone" (C9). To the north, the Steven Formation appears to be an equivalent.

"Second Dolostone" (C5). This is considered the top of the Cathedral Formation to the north. The C-4 horizon of mineralization lies at the top of this unit and contains the C-4, Pad, Stripes, Pieces, Rush, Redbed, Christmas, Galena, and Crackle Showings.

"Dividing Limestone" (C4). This is transgressive on the west side of the property with a "Cyclic Dolostone" (C8) which also transgresses the "BM Host Dolostone" (C3).

"BM Host Dolostone" (C3). This unit hosts the BM horizon, at its upper contact, which contains the BM, BM fractures, and BM Extension Showings. The Box Showing lies to the north of the claim block in this unit but lower than the contact.

"Thin Limestone" (C2). This unit possesses the C-3 Showing in a small dolomitic envelope.

"Albert River Dolostone" (C1). This is the lower-most exposed unit on the Shag Claims. It is believed that the Monarch-Kicking Horse deposits lie beneath this level.

Chancellor Formation - Shales and limestone lying to the west are a lateral equivalent to the Cathedral Formation.

#### 6.2.2 Structural Geology

Structural geology on the Shag Claims exhibits three response styles to compression and a large monoclinial flexure along the Chancellor-Cathedral facies front.

The shales are cleaved, isoclinally folded and internally thrust faulted, especially near contact with carbonates. The most prominent deformation is the large monoclinial flexure in the carbonates which runs parallel to the facies front. Rock type and position in the section relative to the McKay Group influence the styles of deformation in the carbonates. Small S-folds, overturned folds, and small thrusts are present in the upper portion. These indicate an east-west compressive force perpendicular to the facies front.

The influence of structural trends on mineralization is unclear although it seems that strigraphy plays a more important roll.

## 7. MINERALIZATION

### 7.1 Previously Reported Mineralization

The C-3 and C-4 Showings, discovered in 1977 and the Pieces, Red Bed, Rush, Christmas, Crackle, BM, BM Extension discovered in 1978 are described by D. Bending, Riocanex report 547, 1979. The BM Fractures, Stripes, and Red Bed type float showings, discovered in the summer of 1979 are described by D. Bending, Riocanex report 561, 1979. Note: Stripes was later ascertained to be displaced but it is thought to be near its source.

### 7.2 The "Pad" Showing

The "Pad" Showing occurs in the Second Dolostone (C5) between Shag Creek and C-4 Creek and is considered to be part of the C-4 horizon of mineralization. Due to the lack of sufficient outcrop, its position relative to the Second Dolostone (C5) - Cliff and Step Limestone (C6) contact is not known.

The host rock is a medium grey, finely crystalline dolostone which has been crackle brecciated. White, sparry dolomite appears to have preceeded the red sphalerite and galena and nodules of galena up to 5 cm across, have been found. Selected grab samples show up to 10% ZnS and 2% PbS although the overall grade of the showing is approximately 1% combined.

DWG. G-7529 illustrates the Pad Showing and immediate vicinity at a scale of 1:500.

### 7.3 The "Galena" Showing

The "Galena" Showing is a small float occurrence discovered when spotting the site for DDH 79-5 on the southwest side of Shag Creek.

The host rock is a pale grey, finely crystalline, uniform dolostone with no brecciation. Galena occurs as small nodules amounting to approximately 1% of the float. The underlying bedrock was the Dividing Limestone.

A small open-ended zinc anomaly lies directly up hill (southwest) of the site but is not accompanied by a lead anomaly. This was prospected and dolostone resembling the host rock was found in the Second Dolostone but no mineralization was observed.



Table I

Length and Attitude of Drill Holes - 1979

Hole	Length	Attitude
DDH 79-1	423' 128.8m	322° - 70°
-2	182' 56.0m	285° - 60°
-3	293' 89.2m	020° - 60°
-4	238' 73.2m	044° - 69°
-5	243' 74.8m	225° - 80°
-6	118' 36.3m	225° - 80°
Total Footage =	1497' 460.6m	

8. DRILL PROGRAMME*core is on site*

With the discovery of three new mineral occurrences in the summer of 1979 the second phase of drilling was decided on. Canadian Longyear was employed using a Hydro-wink drill to sink six holes which totalled 460.6 metres (1497 feet). The locations of drill sites and horizontal traces of the drill holes, which were drilled between 60° and 80°, are shown on DWG. C-8687. The generalized geology and distribution of mineralization in these holes are given on DWG. D-6571 to D-6576.

Holes one to four were designed to test the C-4 horizon mineralization. All sites had an associated showing and/or soil anomaly within 150 metres but only DDH 79-4 yielded mineralization. The remaining three holes passed through the stratigraphic contact without encountering sulphides.

The first two boxes of DDH 79-4 were sent for examination to Vancouver where it was concluded (memorandum Appendix III) that this type of mineralization was not encouraging.

Holes five and six were designed to test the BM horizon mineralization. Hole five passed through the zone of interest and exhibited the same birds eye texture that can be found in the BM Showing but no mineralization was seen. Hole six entered the zone of interest and showed minor sphalerite in dolostone but due to extreme freezing conditions the hole had to be abandoned with mineralization, albeit minor, still present. The casing was left in place for possible future drilling.

79-1

OVERBURDEN

Possible Transition Zone?

between Cliff and Step Limestone C6L  
and Eastern Transgressive  
Dolostone C9

3.3

Calc. Dst

Dol. Lst

Int. Lst + Dol. Lst

Dol. Lst

Calc. Dst.

21.3

Dst - Dolostone

Lst - Limestone

Calc. Dst Calcareous Dolostone

Int. Lst + Dol. Lst - Interbedded

Limestone and Dolomitic Limestone

CLIFF AND STEP LIMESTONE C6

38 alternating sections between

Limestone: finely crystalline, pale grey  
with irregular medium grey dolomitic  
limestone whisps and blebs - Pyrite < 1%

and

Interbedded Limestone and Dolomitic

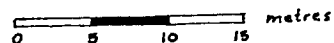
Limestone: pale and medium grey,  
finely crystalline, finely laminated,  
fairly uniform with minor boudinage  
structures.

No sulphides observed

No assays taken

minor brecciation

SCALE 1:500



Attitude of Hole 70° - 322° T

104.4

Calc. Dst.

Lst.

TRANSITION ZONE

Calc Dst.

112.8

SECOND DOLOSTONE C5

Dolostone: finely crystalline,  
pale to medium grey, sucrosic,  
porous, minor secondary white  
dolomite.

128.8 metres

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SHAG CLAIMS

DDH 79-1

NOV. 1979

B.H.W.

DWG. D - 6571

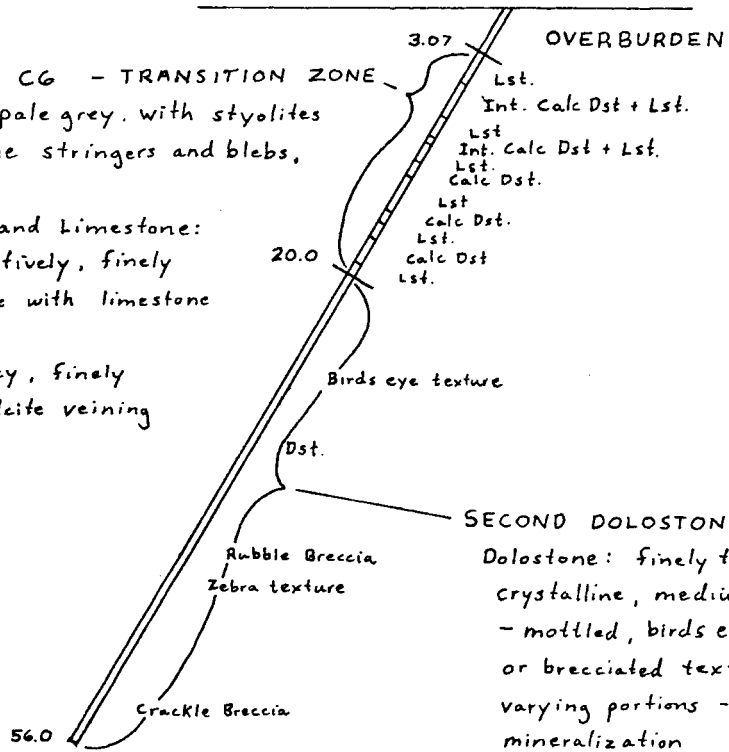
79-2

CLIFF AND STEP LIMESTONE CG - TRANSITION ZONE

Limestone: finely crystalline, pale grey, with stylolites and irregular dolomitic limestone stringers and blebs, Pyrite < 1%

Interbedded Calcareous Dolostone and Limestone: medium grey and pale grey respectively, finely crystalline, occasional boudinage with limestone as the boudins.

Calcareous Dolostone: medium grey, finely crystalline, uniform, minor calcite veining



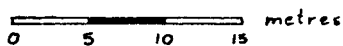
SECOND DOLOSTONE C5

Dolostone: finely to very finely crystalline, medium to pale grey - mottled, birds eyed, zebroid, or brecciated textures in varying portions - no mineralization

No sulphides observed

No assays taken

SCALE 1:500



Attitude of Hole 258° - 60°

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SHAG CLAIMS

DDH 79-2

NOV. 1979

B.H.W.

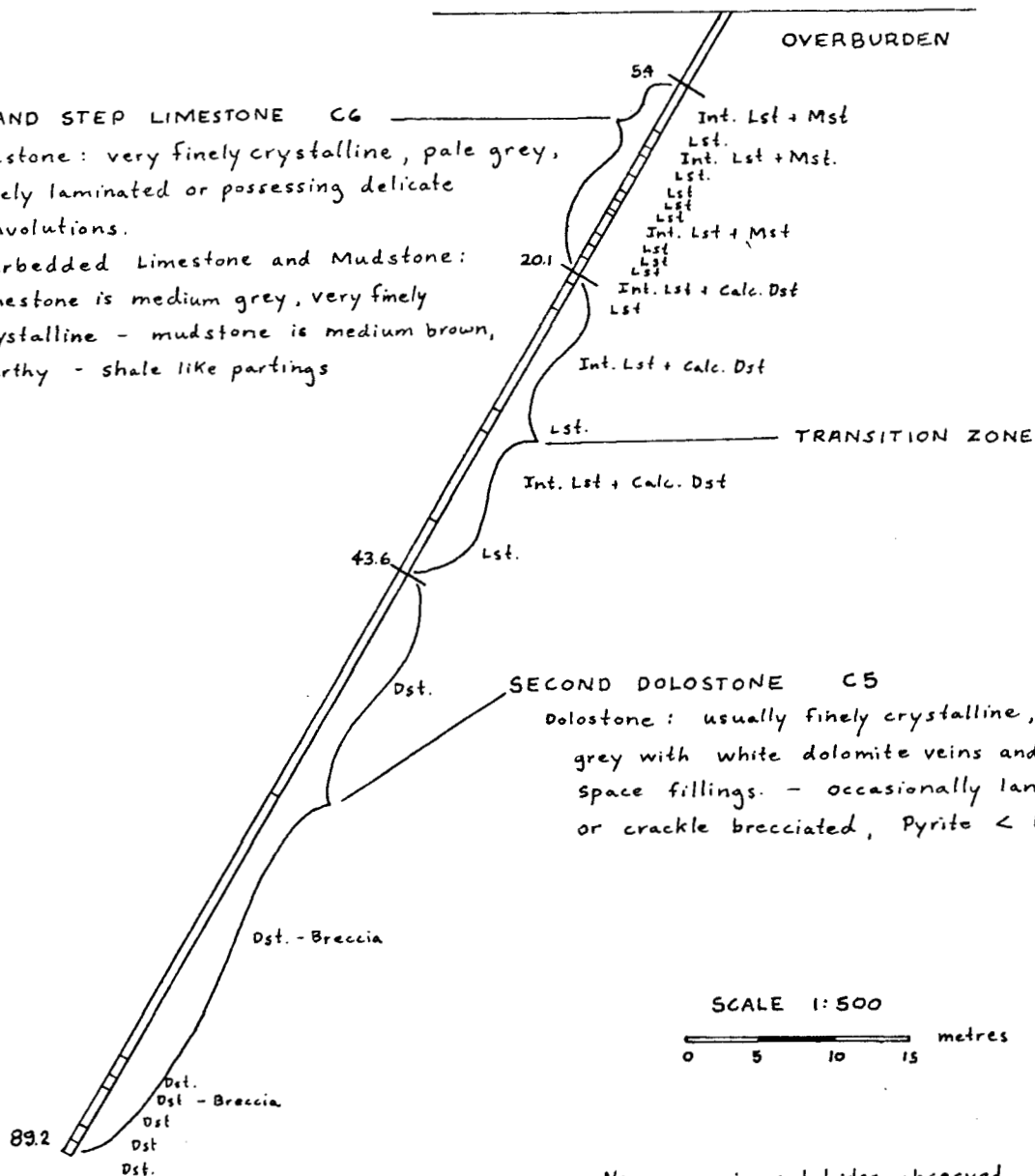
DWG. D-6572

79-3

CLIFF AND STEP LIMESTONE C6

Limestone: very finely crystalline, pale grey, finely laminated or possessing delicate convolutions.

- + Interbedded Limestone and Mudstone: limestone is medium grey, very finely crystalline - mudstone is medium brown, earthy - shale like partings



No economic sulphides observed

No assays taken

Attitude of Hole 020° - 60°

Abbreviations

- Mst - mudstone
- Dst - Dolostone
- Lst - Limestone
- Int. - Interbedded
- Calc. - Calcareous

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SHAG CLAIMS

DDH 79-3

NOV. 1979

B.H.W.

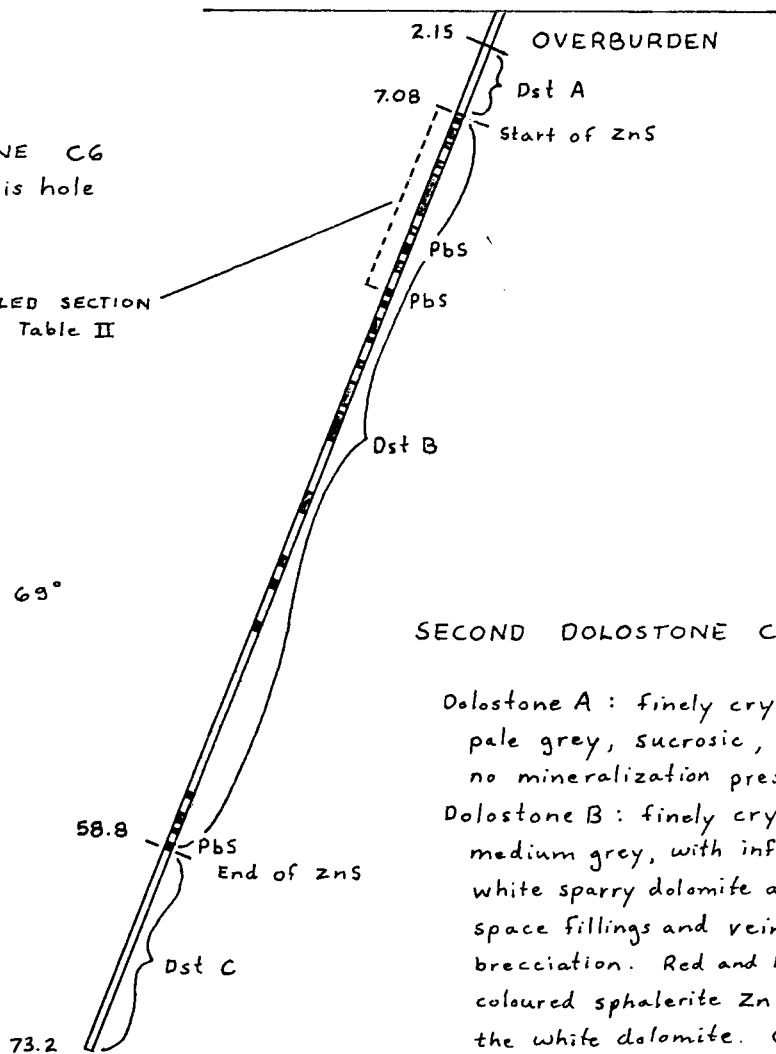
DWG. D-6573

79-4

CLIFF AND STEP LIMESTONE C6  
Was not encountered in this hole

SAMPLED SECTION  
see Table II

Attitude of Hole 044°-69°



SECOND DOLOSTONE C5

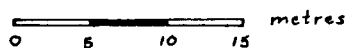
Dolostone A : finely crystalline, pale grey, sucrosic, uniform, no mineralization present.

Dolostone B : finely crystalline, medium grey, with influx of white sparry dolomite as open space fillings and veinlets - some brecciation. Red and honey coloured sphalerite ZnS followed the white dolomite. Galena is present in three locations. Mineralization generally does

not exceed 1% with the richest samples coming from the top of this section. Shaded areas possess sphalerite. The non mineralized gaps are generally dolostone with pale and medium grey wispy bands (bedding?). Minor amounts of barren breccia are present.

Dolostone C : finely crystalline, light and medium grey wispy bands and occasional minor laminations with shale like parting. Barren except for minor pyrite < 1%

SCALE 1:500



RIO TINTO CANADIAN EXPL. LTD.

SHAG CLAIMS

DDH 79-4

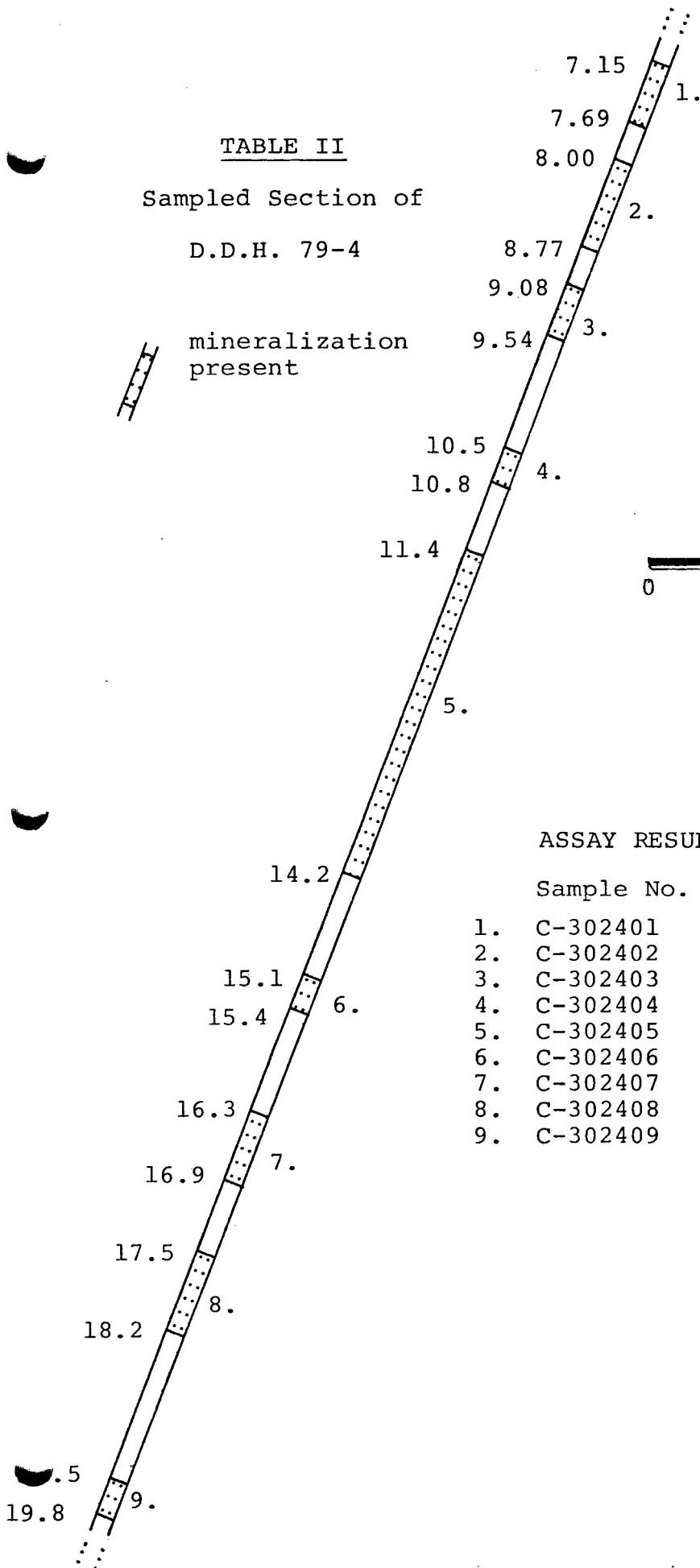
NOV. 1979 B.H.W. DWG. D - 6574

TABLE II

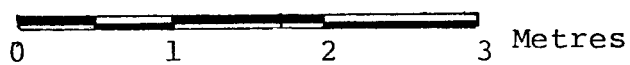
Sampled Section of

D.D.H. 79-4

mineralization  
present



Scale 1:50



ASSAY RESULTS

Sample No.	Ag	Cd	Pb	Zn
1. C-302401	8.57	LO.01	LO.01	1.02
2. C-302402	6.86	0.01	LO.01	2.32
3. C-302403	8.91	0.01	LO.01	4.50
4. C-302404	4.11	LO.01	LO.01	1.30
5. C-302405	3.77	LO.01	LO.01	1.22
6. C-302406	5.49	LO.01	0.01	2.31
7. C-302407	4.80	LO.01	0.01	1.75
8. C-302408	3.77	LO.01	LO.01	0.75
9. C-302409	8.57	0.01	1.47	4.60
	g/t	%	%	%

79-5

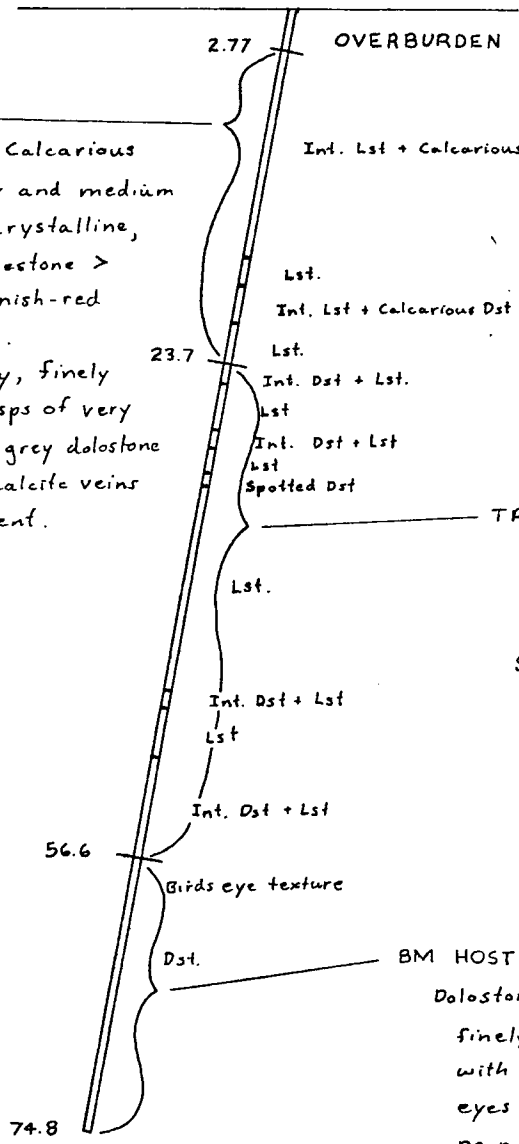
DIVIDING LIMESTONE C4

Interbedded Limestone and Calcareous Dolostone: medium-pale grey and medium grey respectively, finely crystalline, fine flow laminations - limestone > dolostone - wisps of brownish-red mudstone - minor stylolites.

Limestone: medium-pale grey, finely crystalline - irregular wisps of very finely crystalline, medium grey dolostone minor brecciation - white calcite veins up to 1.5 cm thick are present.

Abbreviations

- Lst. - Limestone
- Dst. - Dolostone
- Int. - Interbedded



TRANSITION ZONE - Dolostone replaces Limestone as the most abundant in the Interbedded sections.

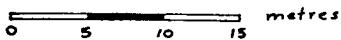
Spotted Dolostone has spheres and ovoids of limestone.

BM HOST DOLOSTONE C3

Dolostone: medium to pale grey, finely crystalline, sacrosic, with white dolostone as birds eyes and random veining. no mineralization

Attitude of Hole 225°-80°

SCALE 1:500



No sulphides observed

No assays taken

RIO TINTO CANADIAN EXPL. LTD.

SHAG CLAIMS

DDH 79-5

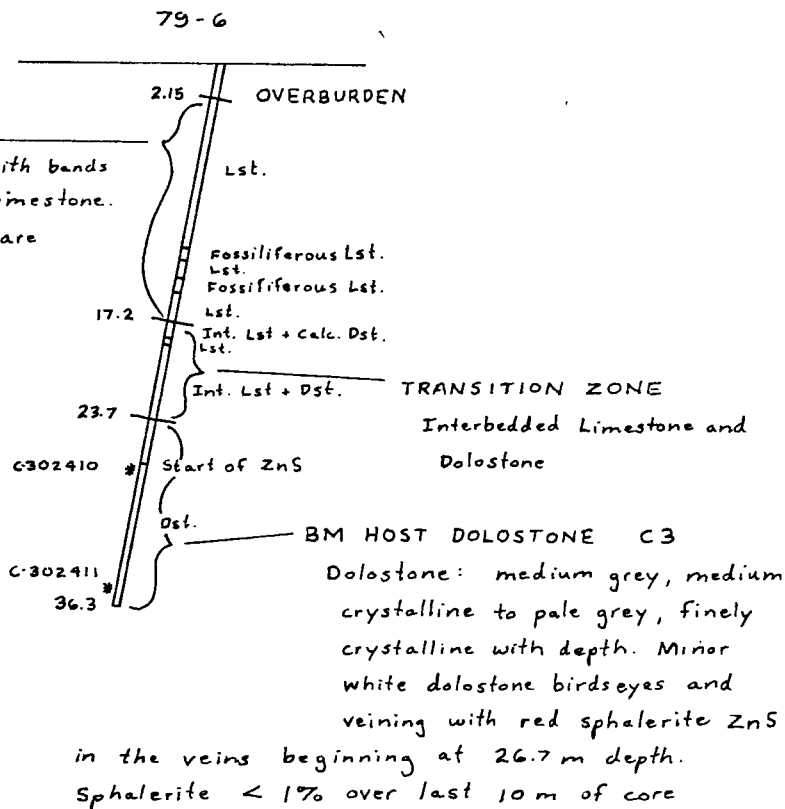
NOV. 1979 B.H.W. DWG. D - 6575



**DIVIDING LIMESTONE C4**

Limestone: pale grey, finely crystalline, with bands and whisps of medium grey dolomitic limestone. Minor whisps of brown, earthy mudstone are also present - Pyrite < 1%.

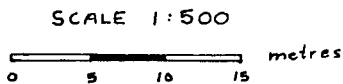
Fossiliferous Limestone: medium grey, medium crystalline, with black fossil fragments (trilobites) - Pyrite crystals exhibit cubes and iron cross twinning.



Attitude of Hole 225° - 80°

**ASSAY RESULTS**

Sample No.	Ag	Cd	Pb	Zn
C-302410	1.03	0.01	0.01	1.47
C-302411	2.40	0.03	0.02	10.76
	g/t	%	%	%



RIO TINTO CANADIAN EXPL. LTD.		
SHAG CLAIMS		
DDH 79-6		
NOV. 1979	B.H.W.	DWG. D - 6576

## 9. DISCUSSION

DDH 79-1 was calculated to hit the Cliff and Step Limestone (C6) - Second Dolostone (C5) contact at a depth of 50 metres using the bedding attitude of the C-4 Showing as a control. The transition zone between the two units was not encountered until 104.4 metres. This could indicate either a sharpening of the fold axis proposed to pass through this area or a faulting that may have displaced the unit. An increase in dip possibly indicative of drag folding or faulting was observed near the showing.

The contact between Second Dolostone (C5) and Cliff and Step Limestone (C6) was further refined in the region between the Stripes Showing and the Pad Showing. This was incorporated into the main geology map. (DWG G-8688)

## 10. CONCLUSIONS

The patchy nature of all of the showings along the C-4 horizon indicate that they are unlikely to produce significant tonnages. This is born out by the barren nature of DDH 79-1, 2 and 3 which had close proximity to either a showing or to a soil anomaly. Only hole 4 yielded mineralization.

The BM horizon, to which the BM, BM Fractures, and BM Extension Showings and the largest geochemical anomaly on the property are related, has not been sufficiently tested to rule it out as a possible large low grade ore body. DDH 79-6 possessed a minor quantity of sphalerite at the end of the hole. This sphalerite occupied all of the available fracture space but the fracture density was not high.

11. RECOMMENDATIONS

It is recommended that:

1. The attractive lead anomaly, at 1000S to 1300S and 550W to 750W (DWG. GC-8631), be examined closely using spot hand trenching to gain as much data as possible.
2. The major soil anomaly associated with the BM horizon is close to the Cyclic Dolostone facies boundary (DWG. GC-8632). A larger scale mapping (1:2,500 is suggested) of the area extending to the lead anomaly is recommended.
3. Examination of the zinc soil sample anomalies at 2200S - 550W and 2400S - 600W should be conducted (DWG. GC-8632).
4. The lowest unit on the property, Albert River Dolostone (C1), has not been tested to date. A crew operating from the Albert River could extend the soil sampling grid to cover land from the Box to C-3 Showings and down to the Albert River.
5. Further drilling of the Shag Claims is not recommended at this time. However, if favourable results develop from the recommended geology programme, then DDH 79-6 could be completed. Seven feet of BQ casing has been left in the hole.
6. An additional hole could be drilled 200 metres north-west of DDH 79-6 to test the BM horizon further along the large zinc soil sample anomaly.

12. REFERENCES

Graf, C. 1977

Graf Lead-Zinc Reconnaissance,  
Southern Rocky Mountains  
RioCanex Report 526

Bending, D. March 1979 (covers 1978 field work)

Shag Claims - Lead-Zinc  
RioCanex Report 547

Bending, D. August 1979 (covers summer 1979 field work)

Shag Claims  
RioCanex Report 561

APPENDIX I

Drill Logs

APPENDIX II  
Assay Results

To: Rio Tinto Canadian Exploration

REPORT NO. A29 - 1494

PAGE No. 1

BONDAR-CLEGG & COMPANY LTD.

DATE: November 23, 1979

520 - 800 West Pender Street  
 Vancouver, B.C.  
 V6C 2V6

Samples submitted: November 8, 1979  
 Results completed: November 23, 1979  
 PROJECT: 8652

CERTIFICATE OF ASSAY

I hereby certify that the following are the results of assays made by us upon the herein described core samples.

MARKED	GOLD		SILVER		Pb	Zn	Cd					
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
C - 302401				8.57	<0.01	1.02	<0.01					
302402				6.86	<0.01	2.32	0.01					
302403				8.91	0.01	4.50	0.01					
302404				4.11	<0.01	1.30	<0.01					
302405				3.77	<0.01	1.22	<0.01					
302406				5.49	0.01	2.31	<0.01					
302407				4.80	0.01	1.75	<0.01					
302408				3.77	<0.01	0.75	<0.01					
302409				8.57	1.47	4.60	0.01					
302410				1.03	<0.01	1.47	<0.01					
302411				2.40	0.02	10.70	0.03					

cc Mr. C. D. Spence

NOTE:  
 Rejects retained three weeks  
 Pulps retained three months  
 unless otherwise arranged.

  
 Registered Assayer, Province of British Columbia



APPENDIX IV

Statement of Qualifications

CERTIFICATE

I, Bernard Henry Whiting, with business address in Vancouver, British Columbia, and residential address in New Westminster, British Columbia, do hereby declare

1. I am a geologist employed by Rio Tinto Canadian Exploration Limited.
2. I graduated from the University of British Columbia in 1979 with a B.Sc. degree in Geology.
3. From 1975 to 1979 I have been employed on a temporary basis by the Pacific Science Congress, Welcome North Mines Limited, and Riocanex Limited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "B. H. Whiting".

B. H. Whiting

APPENDIX V  
Cost Statement

COST STATEMENT  
B.C. SHAG CLAIMS  
23 July to 21 October 1979

GENERAL COSTS  
23 July - 21 October 1979

SUPPLIES

130 man days @ \$4.08 \$ 530

FOOD & ACCOMMODATION

130 man days @ \$18 2,340

RENTAL EQUIPMENT

Traeger SSB50C radio, 31 Aug-21 Oct,  
52 days @ \$6 \$ 312  
Redhawk, 4WD Jimmy, 23 Jul-21 Oct,  
90 days @ \$22 1,980 2,292

FIXED WING

Universal Travel Agency, 6 Jul-2 Oct,  
6 trips, Van/Canal Flats, return 729

HELICOPTER

Crowsnest, CF AHH, 31 Jul,  
1.9 hrs @ \$323 \$ 629.50  
Okanagan, 206B, 18 Jul-24 Sep,  
18.4 hrs @ \$375 6,884.65 7,514

RIOCANEX EQUIPMENT

130 man days @ \$3 390

REPORT PREPARATION

2,886

TOTAL GENERAL COSTS

\$16,681

TRENCHING

SALARIES & WAGES

24 Sep-14 Oct, 3 men, 6 man days  
@ \$42/man day \$ 252

BENEFITS @ 20%

50

GENERAL COSTS

6/130 X \$16,681 769

TRENCHING TOTAL

\$ 1,071

GEOCHEMISTRY

SALARIES & WAGES

4 Aug, 1 man, 1 man day  
@ \$48 48

BENEFITS @ 20%

10

ANALYSIS

Riocanex Lab, 59 soils for Ag, Pb,  
Zn @ \$3.60 212

GENERAL COSTS

1/130 X \$16,681 128

GEOCHEMISTRY TOTAL \$ 398

GEOLOGY

SALARIES & WAGES

23 Jul-21 Oct, 7 men, 44 man days  
@ \$50/man day \$ 2,200

BENEFITS @ 20% 440

GENERAL COSTS

43/130 X \$16,681 5,518

GEOLOGY TOTAL \$ 8,158

DIAMOND DRILLING

SALARIES & WAGES

9 Sep-21 Oct, 7 men, 80 man days  
@ \$50/man day \$ 4,000

BENEFITS @ 20% 800

DIAMOND DRILLING CONTRACT

Longeyar Canada, 17 Sep-26 Oct,  
456.29 m @ \$111/m 50,856

HELICOPTER MDB, DEMOBILIZATION & MOVES

Bow, 206B, 15-21 Sep, 11 hrs @ \$360	\$ 4,072	
Okanagan, 206B, 27 Sep-22 Oct, 23 hrs @ \$375	<u>12,881</u>	16,953

ASSAYS

Bondar-Clegg Lab 11 core for Ag, Pb, Zn, Cd @ \$25		275
--	--	-----

GENERAL COSTS

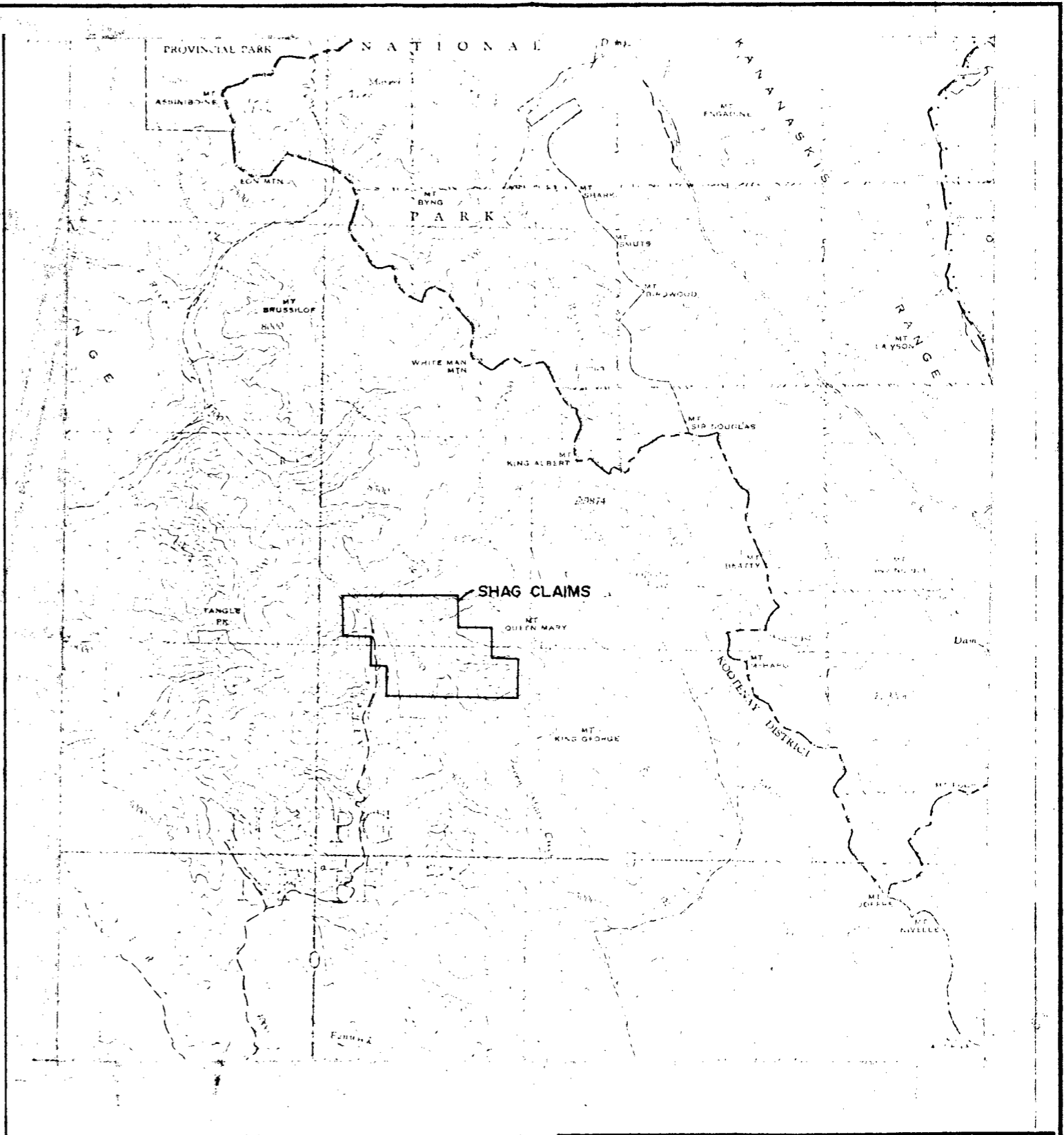
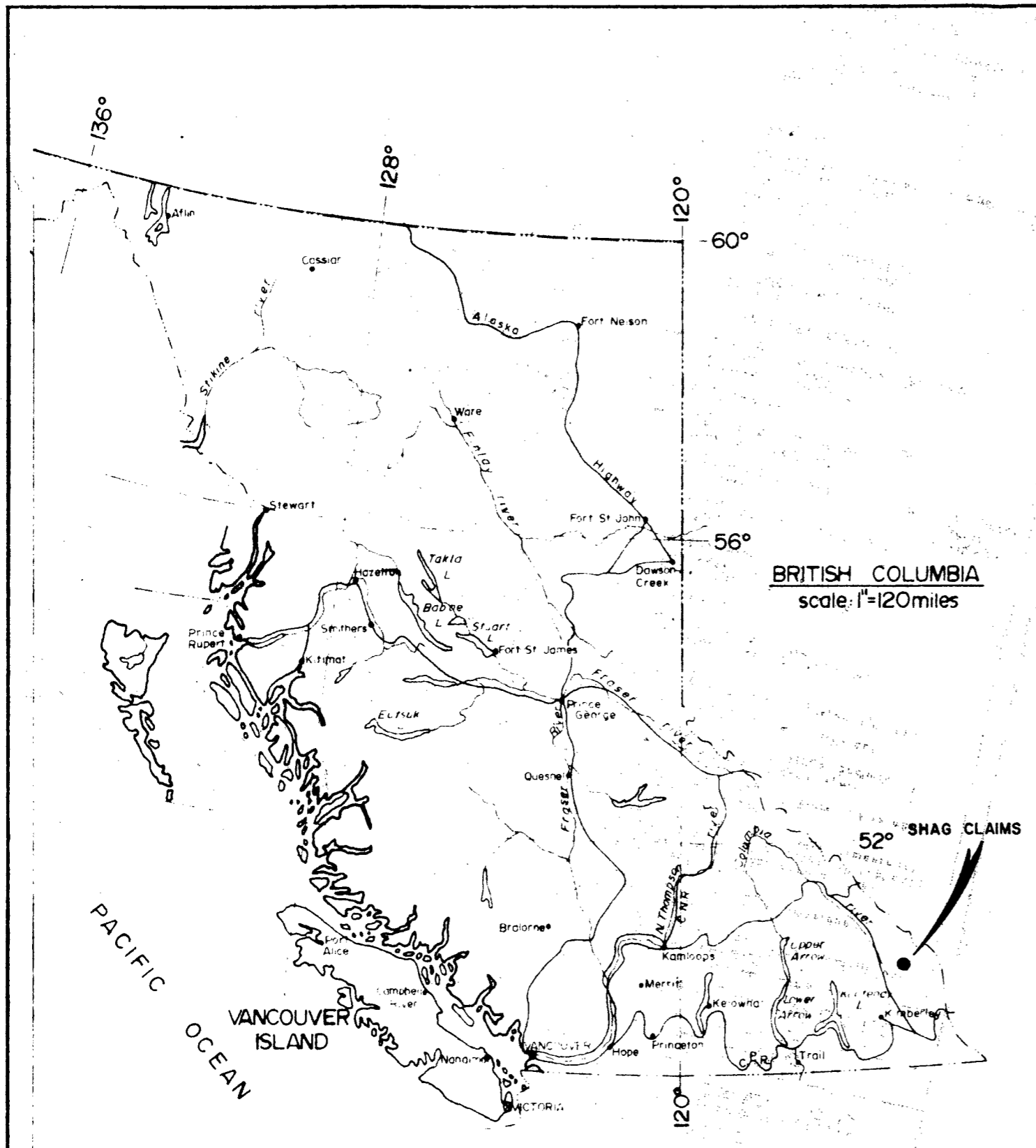
80/130 X \$16,681		<u>10,265</u>
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<u>DIAMOND DRILLING TOTAL</u>		\$ <u>83,149</u>
-------------------------------	--	------------------

<u>TOTAL COSTS</u>		\$ <u>92,776</u>
--------------------	--	------------------

COSTS APPORTIONED  
TO CLAIMS

<u>CLAIM</u>	<u>UNITS</u>	<u>GEOLOGY</u>	<u>TRENCHING</u>	<u>DRILLING</u>	<u>GEOCHEMISTRY</u>	<u>TOTAL</u>
SHAG 1	20	1,284.73				1,284.73
2	12	770.83				770.83
3	20	1,284.73		20,051.30		21,336.03
4	20	1,284.73	1,071.00	63,097.70	398.00	65,851.43
5	12	770.83				770.83
6	18	1,156.25				1,156.25
7	15	963.54				963.54
8	10	642.36				642.36
TOTALS	127	8,158.00	1,071.00	83,149.00	398.00	92,776.00

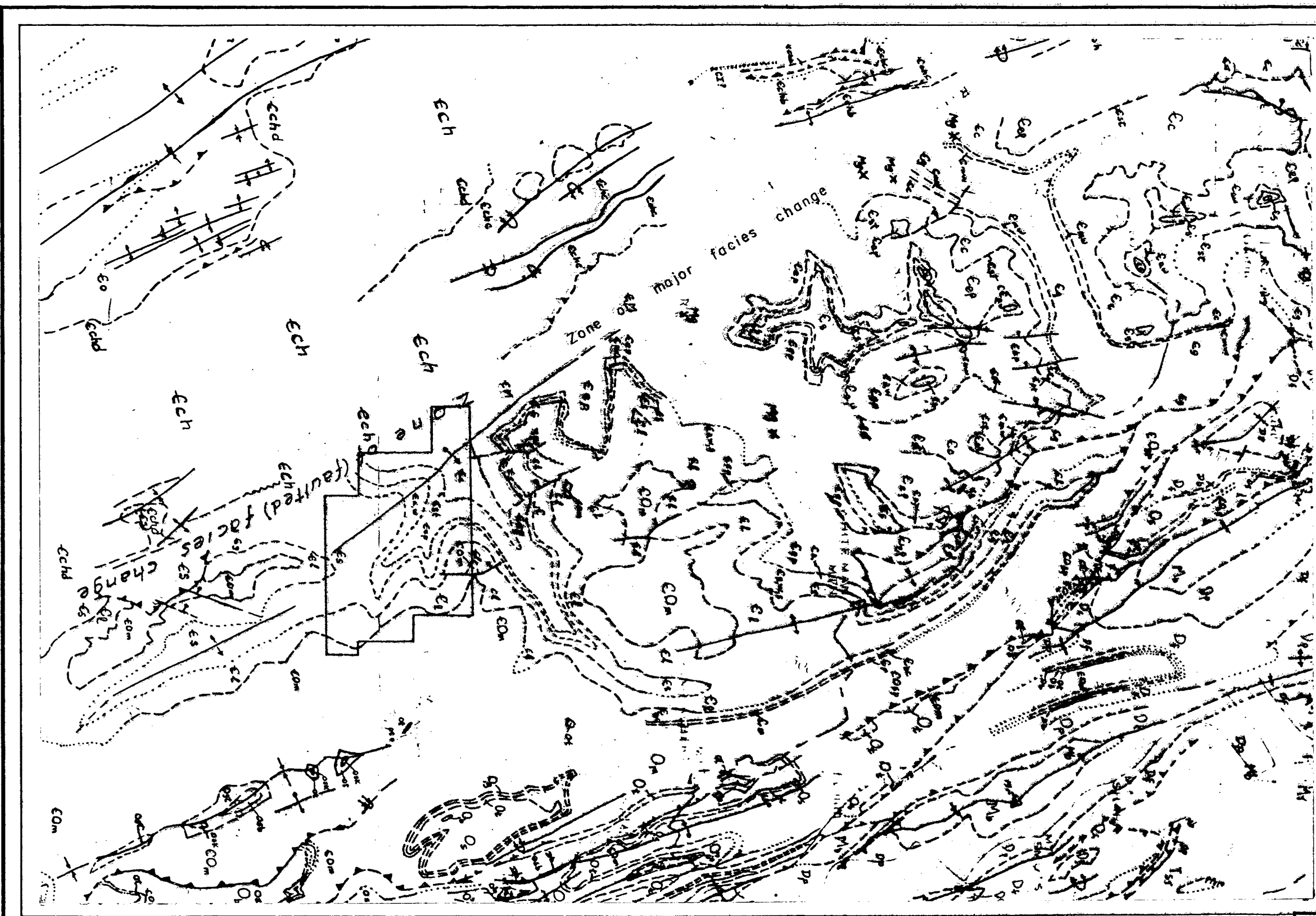


SCALE 1: 250,000

8091

RIO TINTO CANADIAN EXPLORATION LTD		
SHAG CLAIMS		
LOCATION MAP		
NOV. 1978	R.V.L.	DWG L-6526





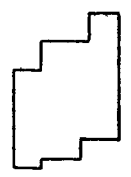
**LEGEND**

- (Eastern side of major facies change)
- CAMBRIAN AND ORDOVICIAN**
- UPPER CAMBRIAN - LOWER ORDOVICIAN**
- EOsp SURVEY PEAK FM.: shale, limestone (includes Outram Fm.)
- CAMBRIAN**
- UPPER CAMBRIAN**
- Em MISTAYA FM.: limestone, commonly stromatolitic
  - Ebc BISON CREEK FM.: shale, limestone
  - Ei LYELL FM.: limestone, dolomite, silty in part
  - Es SULLIVAN FM.: shale, limestone
- MIDDLE AND UPPER CAMBRIAN**
- Eew ARCTOMYS AND WATERFOWL FMS.: dolomite, siltstone, mudstone, limestone
- MIDDLE CAMBRIAN**
- Eep ELDON AND PIKA FMS.: limestone, dolomite
  - Eet STEPHEN FM.: shale, limestone
  - Ec CATHEDRAL FM.: limestone, dolomite
  - Enw MOUNT WHYTE FM.: (includes Neisset Fm.) shale, limestone, siltstone
- LOWER CAMBRIAN**
- Eg GOG GROUP: siliceous sandstone, quartzite, siltstone
- (Western side of major facies change)
- Com MCKAY GROUP: shale, limestone
  - Ee OTTERTAIL FM.: limestone, commonly dolomitic, silty or sandy; shale
  - Echd CHANCELLOR FM. "D": slate, limestone, pervasive cleavage
  - Echc CHANCELLOR FM. "C": slate, limestone, dolomite, silty in part; thinly interbedded; pervasive cleavage but bedding less distinct than in "D"
  - Echb CHANCELLOR FM. "B": limestone, dolomite, shale
  - Echa CHANCELLOR FM. "A": slate, argillaceous limestone and dolomite

Legend and map were adapted from G.B. Leech, G.S.C. open file map, 1979

See Addendum no. 1 of RioCanex report no. 561 by D. Bending, for a correlation between the mapping of the Shag claims and this regional interpretation.

- FAULT
- ▲ THRUST FAULT
- ∩ RECUMBENT FOLD
- ∪ SYNCLINE
- ∩ ANTICLINE



CLAIM BOUNDARIES

N.T.S. 82 J - W

MINERAL RESOURCES BRANCH

**8091**

NO.

SCALE 1: 26,700



RIO TINTO CANADIAN EXPLORATION LTD.

**SHAG CLAIMS**

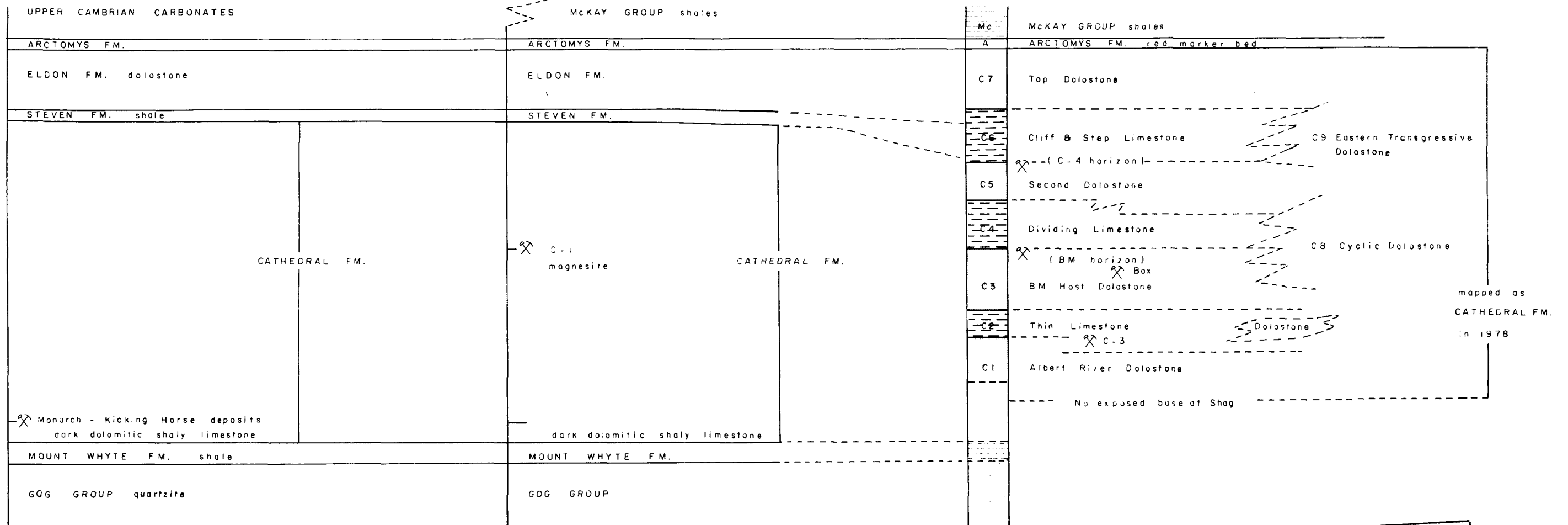
**REGIONAL GEOLOGIC SETTING**

B.H.W. DEC. 1979 DWG. G-6599

MONARCH - KICKING HORSE ( re Graf 1977 & 1978 followup )

MARVEL ( re Graf 1977 - report no. 526 & 1978 followup )

SHAG GEOLOGY ( as mapped in 1978 - report no. 547 )



MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**8091**

LEGEND



DOLOSTONE  
 LIMESTONE  
 SHALE  
 QUARTZITE

⊗ LEAD-ZINC MINERALIZATION

N.T.S. 82 J

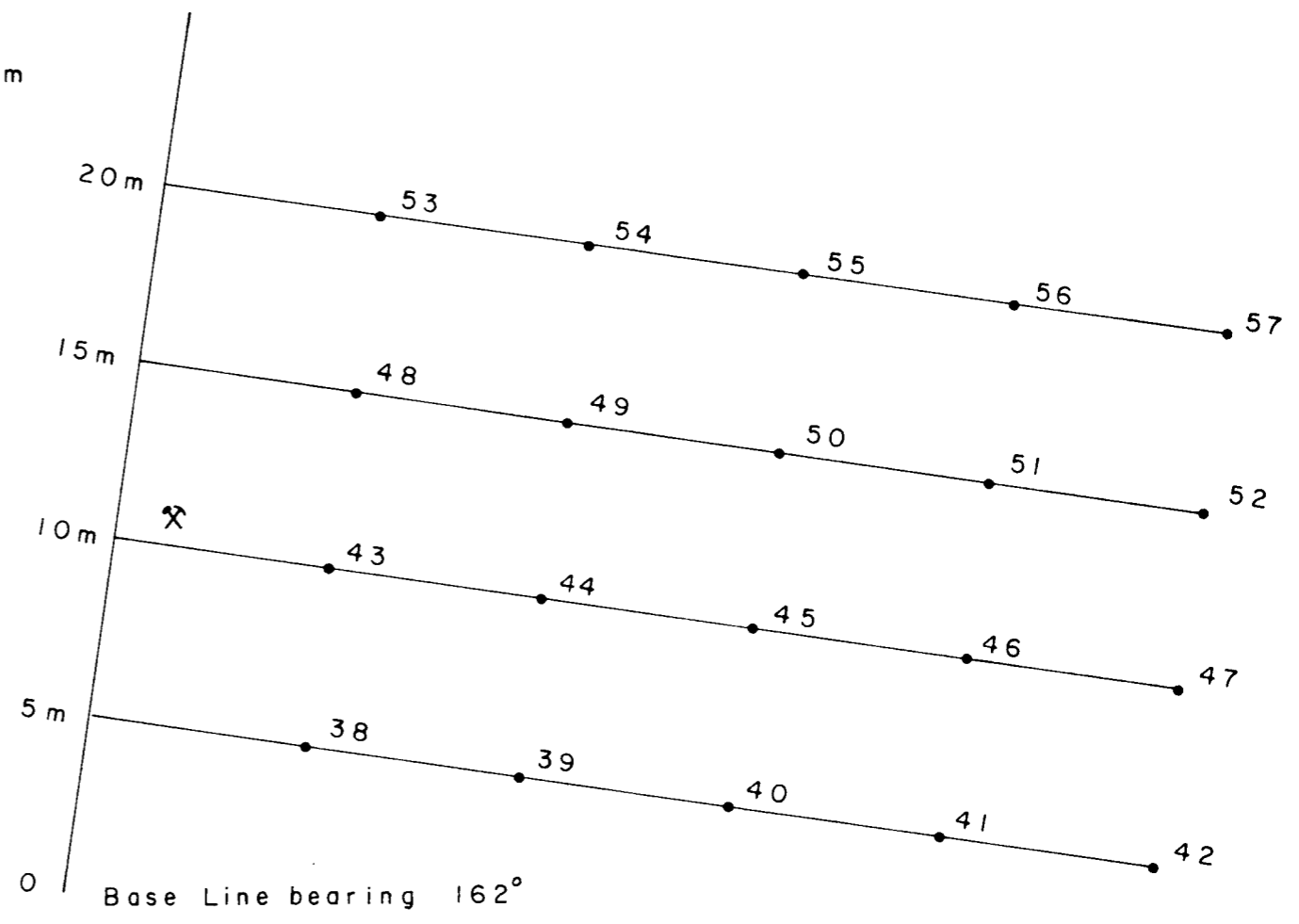
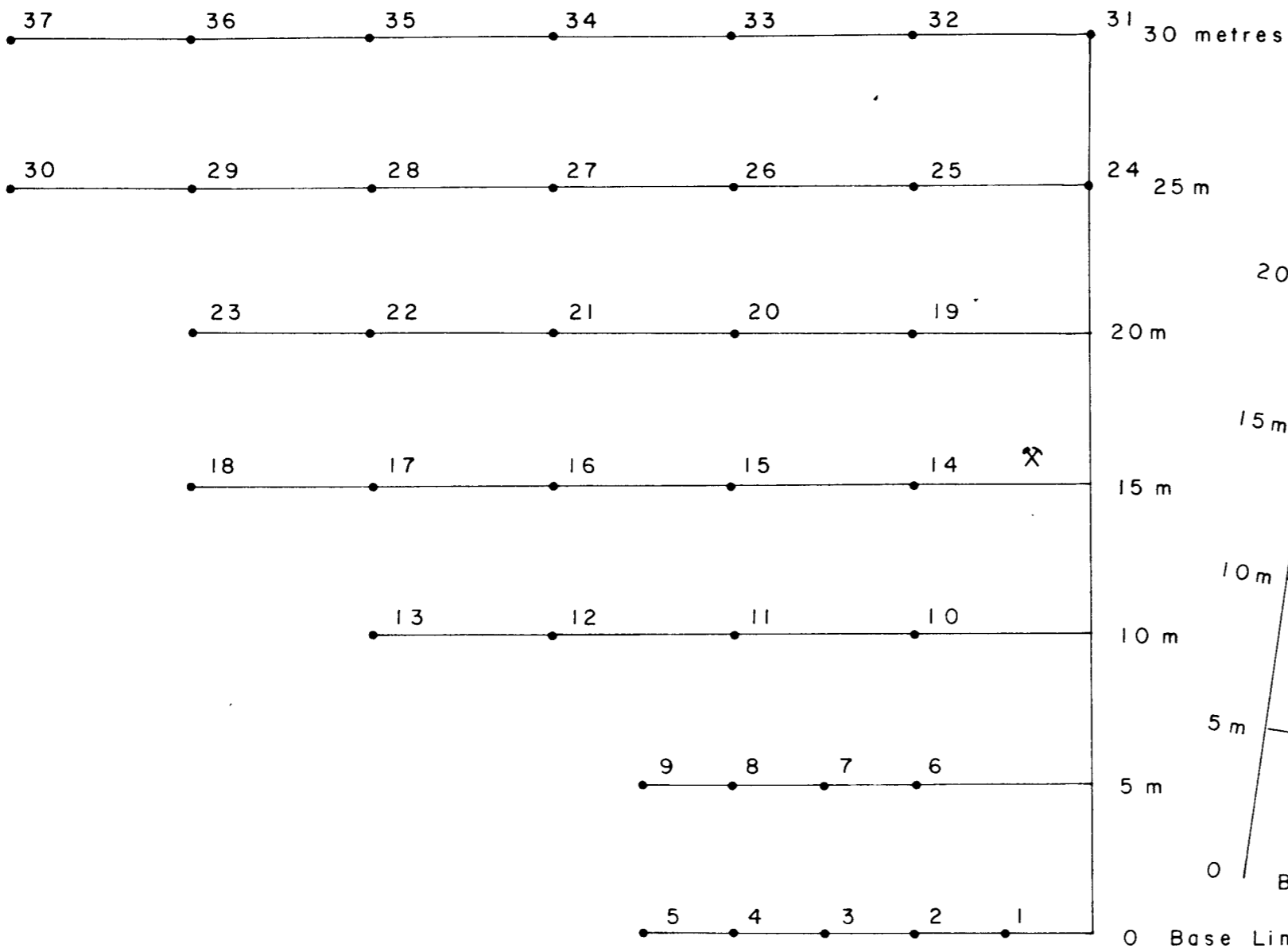
RIO TINTO CANADIAN EXPLORATION LTD.

SHAG CLAIMS  
 CORRELATION OF  
 MONARCH KICKING HORSE,  
 MARVEL & SHAG

D.B./b.w.

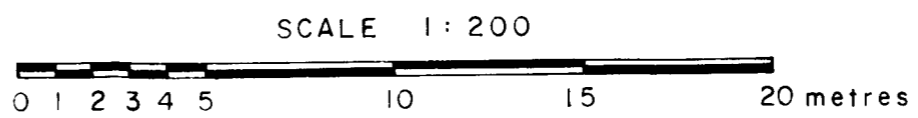
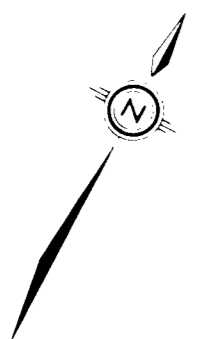
NOV. 1979

DWG.  
 G-6603

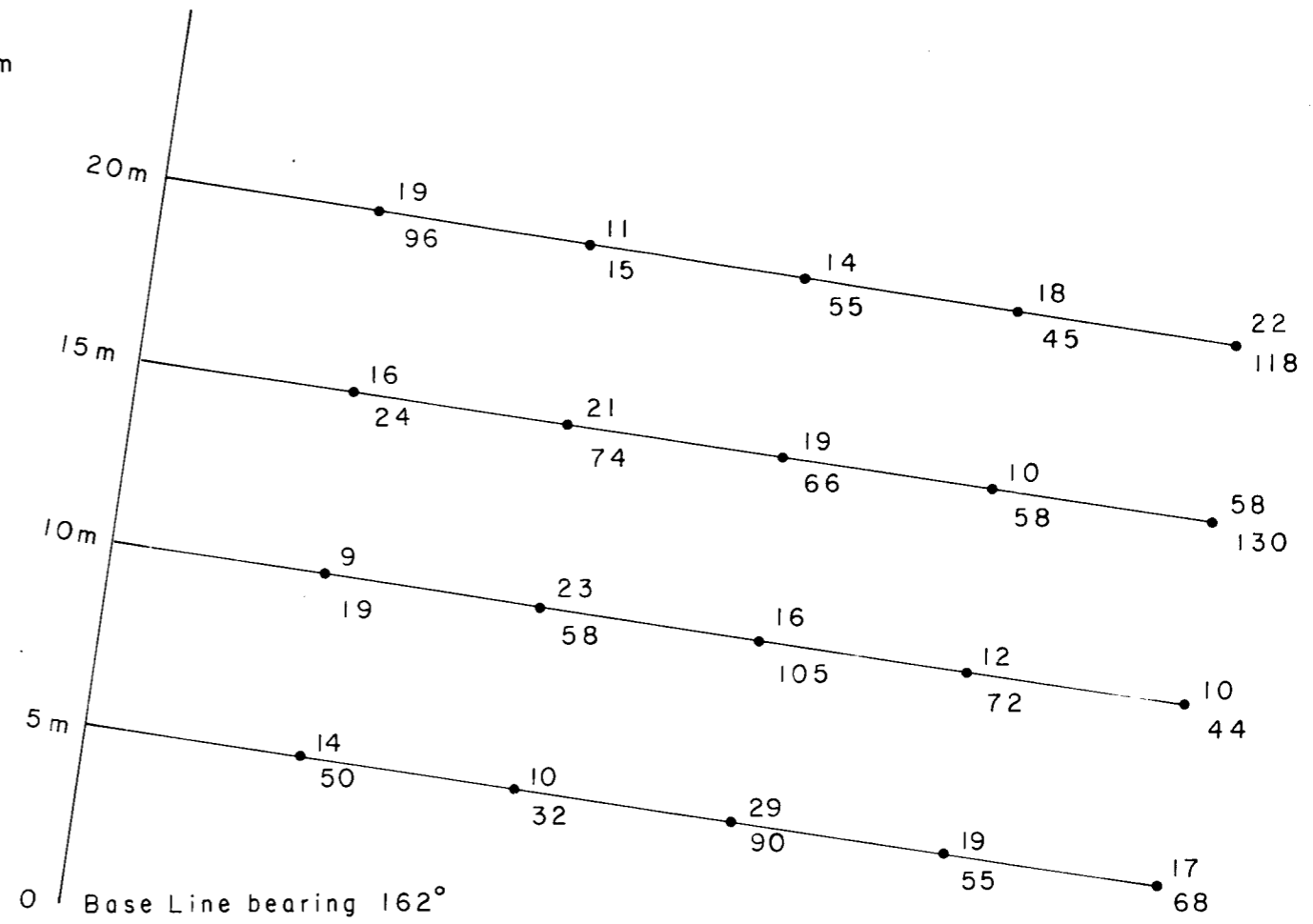
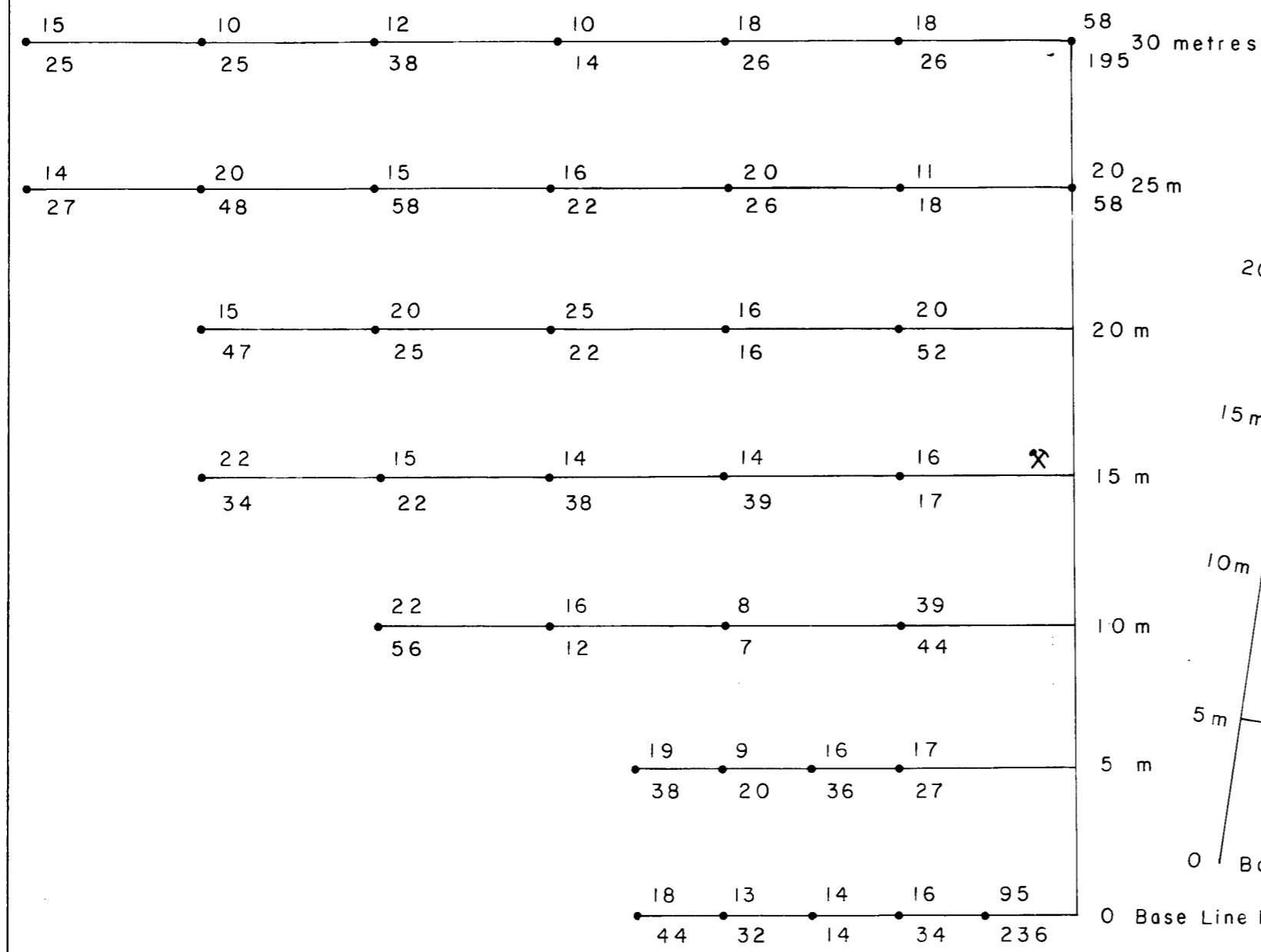


MINERAL RESOURCES BRANCH  
**8091**

• 15 Soil Sample Location - Numbers 7929101 to 7929157 N.T.S. 82 J / 12  
 X Location of most attractive mineralization



RIO TINTO CANADIAN EXPLORATION LTD.		
<b>SHAG CLAIMS</b>		
C-4 SHOWING <b>SOIL SURVEY LOCATIONS</b>		
NOV 1979	D.B / b.w	DWG. GC - 6600



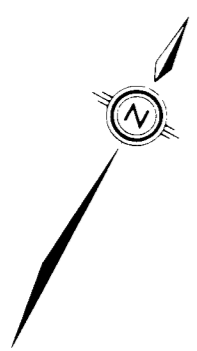
MINERAL RESOURCES BRANCH  
**8091**

RIO TINTO CANADIAN EXPLORATION LTD.

SHAG CLAIMS

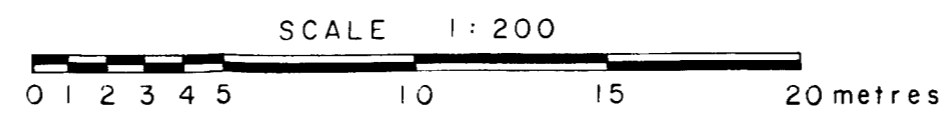
C-4 SHOWING  
 LEAD · ZINC  
 SOIL SURVEY RESULTS

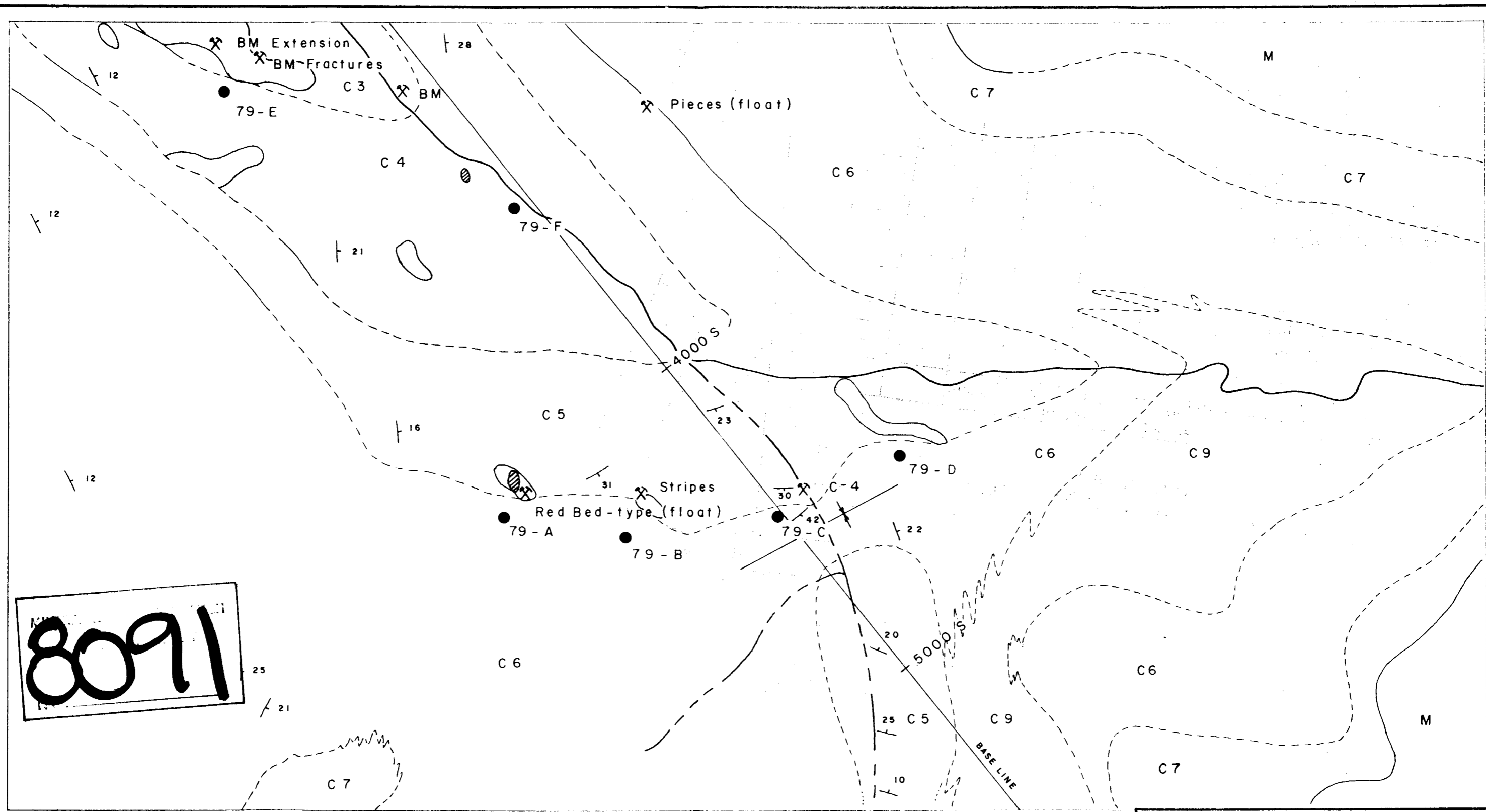
NOV. 1979      E.A. / b.w.      DWG. GC-6601



• 20 Lead ppm Soil Sample Results  
 • 52 Zinc ppm Soil Sample Results  
 X Location of most attractive mineralization

N.T.S. 82 J / 12





8091

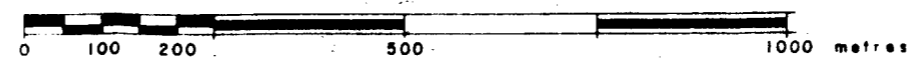
LEGEND Same as the main geology map (DWG. G-8688)

- |   |                     |    |                                 |
|---|---------------------|----|---------------------------------|
| M | McKay Group Shales  | C3 | BM Host Dolostone               |
| A | Arctomys Formation  | C9 | Eastern Transgressive Dolostone |
| C | Cathedral Formation |    | Anomalous B Horizon Soil Areas  |
|   | C7                  |    | Top Dolostone                   |
|   | C6                  |    | Cliff & Step Limestone          |
|   | C5                  |    | Second Dolostone                |
|   | C4                  |    | Dividing Limestone              |
|   |                     |    | > 1,000 ppm Zinc                |
|   |                     |    | > 150 ppm Lead                  |
|   |                     |    | Lithologic Contact              |

N.T.S. 82 J / 12

- / 21 Bedding Attitude
- X Mineralized Showing
- ~ Creek
- 79-A Proposed Drilling Site

SCALE 1:10,000



RIO TINTO CANADIAN EXPLORATION LTD.		
<b>SHAG CLAIMS</b>		
<b>C-4 SHOWING</b>		
REVISED GEOLOGY, SOIL ANOMALIES, & PROPOSED DRILLING		
NOV. 1979	D.B. / b.w.	DWG G-6602

RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

LOCATION : 2730S - 530W

HOLE NO : 79-6

AZIMUTH : 225°

PROPERTY : Shag 8652

DIP : 80°      LENGTH : 118'-36.3m      ELEVATION : 1,938 m      Claim No.: Shag 3

STARTED : 13 Oct 79      CORE SIZE : BQ      DATE LOGGED : 20 Oct 79      SECTION :

COMPLETED : 20 Oct 79      DIP TESTS :      LOGGED BY : B.H. Whiting

PURPOSE : Testing BM-horizon Mineralization      CONTRACTOR: Canadian Longyear

FOOTAGE		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH							
from	to			from	to								
0	2.15	Overburden											
2.15	12.3	Limestone: pale grey, finely crystalline, with bands and whisps of medium grey dolomitic limestone. Minor whisps of mudstone occur in the first 10' (3 m) of core. Pyrite 1%.											
12.3	12.9	Fossiliferous Limestone: medium crystalline medium grey with black fossil fragments, fossils are possibly trilobites. Pyrite crystals exhibiting cubes and iron cross twinning are also present - Pyrite = 1%.											
12.9	14.2	Banded Limestone: pale grey, finely crystalline limestone with distinct fine bands of dolomitic limestone - Bedding 85° to the core axis. Dolomitic limestone amounts to 20%. At 45' (13,8 m) there is a 3 mm thick layer of light brown mud-											

MINERAL RESOURCES BRANCH  
8091

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No:	79-6
PAGE No:	2

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH												
from	to			from	to													
		stone.																
14.2	15.1	Fossiliferous Limestone: same as above but with less pyrite.																
5.1	17.2	Limestone: pale grey, finely crystalline with bands and whisps of calcarious dolostone. Some minor bands of medium crystalline limestone and light brown, earthy mudstone are also present.																
17.2	18.2	Interbedded Limestone and Calcarious Dolostone: transitional from above, bedding plane is 85° to the core axis. Limestone is pale grey, dolostone is medium grey, and the bedding is very thin.																
18.2	18.5	Limestone: medium crystalline, medium grey, uniform, no fossil fragments seen.																
18.5	23.7	Finely Interbedded Limestone and Dolostone: a uniform delicately laminated, finely crystalline section with minor bands of medium crystalline Limestone. Bedding ~ 85° to the core axis.																
23.7	26.2	Dolostone: medium grey, medium crystalline, sucrosic and fairly uniform.																

MINERAL SURVEY BRANCH

8091

No.





**RIO TINTO CANADIAN EXPLORATION LIMITED**  
**DIAMOND DRILL RECORD**

LOCATION : 2960S - 380 W		HOLE NO : 79-5
AZIMUTH : 225°		PROPERTY : Shag 8652
DIP : 80°	LENGTH : 243'-74.8m	ELEVATION : 1,858 m Claim No.: Shag 3
STARTED : Oct 14/79	CORE SIZE : BQ	DATE LOGGED : Oct 20/79 SECTION :
COMPLETED : Oct 16/79	DIP TESTS :	LOGGED BY : B.H. Whiting
PURPOSE : Testing BM-horizon Mineralization		CONTRACTOR: Canadian Longyear

FOOTAGE		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH						
from	to			from	to							
0	2.77	Overburden										
2.77	16.5	Delicately Interbedded Limestone and Calcareous Dolostone: fine flow laminations 85° to the core axis. Limestone in greater abundance than dolostone - medium grey, finely crystalline dolostone with a shade lighter grey limestone. Brownish red mudstone occurs as whisps within the core - minor stylolites.										
16.5	18.5	Limestone: finely crystalline, medium-pale grey with minor irregular whisps of very finely crystalline medium grey dolostone. Some portions of core appear almost mottled. White calcite veins up to 1.5 cm thick are present.										
18.5	20.9	Delicately Interbedded Limestone and Calcareous Dolostone: similar to above except the mudstone whisps are pale brown										

8091

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE NO: 79-5

PAGE NO: 2

FOOTAGE		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH						
from	to			from	to							
		and no stylolites are present.										
20.9	23.7	Limestone: finely crystalline, medium pale grey with irregular wisps of dolostone. Minor brecciation with calcarious dolostone forming the matrix and limestone forming the fragments and calcite veins up to 2.0 cm thick are also present.										
23.7	24.9	Finely Interbedded Dolostone, and Limestone: delicate laminations 88° to the core axis. Medium grey dolostone is more plentiful than the pale grey limestone - uniform.										
24.9	28.0	Limestone: transitional from above, fine crystalline, medium pale grey, calcarious dolostone appears as bands, wisps, and irregular patches varying the texture through the section.										
28.0	29.2	Finely Interbedded Dolostone and limestone: Transitional from above. Limestone appears to be more spotty and occurs in thicker bands than above. Minor calcite veining.										
29.2	30.8	Limestone: pale grey, finely crystalline, with minor dolostone wisps, bands and stringers throughout.										

MINERAL RESOURCES BRANCH  
8091

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE NO: 79-5
PAGE NO: 3

FOOTAGE		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH											
from	to			from	to												
30.8	31.7	Spotted Dolostone: medium grey, finely crystalline dolostone with pale grey blebs of limestone, many almost spherical, most ovoid.															
31.7	45.5	Limestone: Primarily a medium pale grey limestone with whisps and bands of medium grey calcarious dolostone. The amounts of dolostone varies irregularly through the section but does not exceed 30% in any portion. Minor laminations ~80° to the core axis, Pyrite 1%, and minor calcite veining are also present.															
45.5	46.5	Finely Interbedded Dolostone and Limestone: bedding planes ~80° to the core axis. medium grey, finely crystalline dolostone ~60% - pale grey, finely crystalline Limestone ~40% - Pyrite 1%.															
46.5	49.8	Limestone: medium pale grey, finely crystalline, with whisps and bands of dolostone in irregular patterns, -minor stylolites, Pyrite L 1%.															
49.8	56.6	Finely Interbedded Dolostone and Limestone: bedding planes ~85° to the core axis. Medium grey, finely crystalline dolostone ~70%-pale grey, finely crystalline limestone ~30%, Pyrite L 1%.															

GENERAL RECORD BOOK

80911



RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

LOCATION : 4610S - 325E

HOLE NO : 79-4

AZIMUTH : 044°

PROPERTY : Shag 8652

DIP : 69°

LENGTH : 238' 73.2 m

ELEVATION : 1896 m

Claim No.: Shag 4

STARTED : 10 Oct 79

CORE SIZE : BQ

DATE LOGGED : 14 Oct 79

SECTION :

COMPLETED : 13 Oct 79

DIP TESTS :

LOGGED BY : B.H. Whiting

PURPOSE : Testing C-4 horizon Mineralization

CONTRACTOR: Canadian Longyear

FOOTAGE		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH						
from	to			from	to							
0	2.15	Overburden										
2.15	7.08	Dolostone: finely crystalline, pale grey sucrosic, uniform, no mineralization present.										
7.08	58.8	Dolostone: medium grey with crackle breccia (perhaps tectonic?) white sparry dolomite as open space filling and veinlets.										
		The following intervals are brecciated with red and honey coloured sphalerite entering the system after the white sparry dolomite. Some pieces indicate possible collapse. Samples possessing Galena are noted. Pyrite 1%. The remaining portion is dolostone with light and medium grey wispy bands. (bedding?) ~60° to the axis of the drill core.										
		Minor amounts of barren breccia, and										

MINERAL DEPARTMENT  
8091

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-4
PAGE No: 2

FOOTAGE m from	to	DESCRIPTION	SAMPLE No	FOOTAGE from	to	LENGTH m	Ag g/tonne	Pb %	Zn %	Cd %
		calcite veining are present.								
		Intervals with Sphalerite Mineralization occasionally up to 2%								
	7.15 - 7.69		C-302041	7.15	7.69	0.54	8.57	0.01	1.02	0.01
	8.00 - 8.77		2	8.00	8.77	0.77	6.86	0.01	2.32	0.01
	9.08 - 9.54		3	9.08	9.54	0.46	8.91	0.01	4.50	0.01
	10.5 - 10.8		4	10.5	10.8	0.3	4.11	0.01	1.30	0.01
	11.4 - 14.2		5	11.4	14.2	2.8	3.77	0.01	1.22	0.01
	15.1 - 15.4		6	15.1	15.4	0.3	5.49	0.01	2.31	0.01
	16.3 - 16.9	Galena	7	16.3	16.9	0.6	4.80	0.01	1.75	0.01
	17.5 - 18.2		8	17.5	18.2	0.7	3.77	0.01	0.75	0.01
	19.5 - 19.8	Galena	9	19.5	19.8	0.3	8.57	1.47	4.60	0.01
		Remaining intervals do not exceed 1% Sphalerite.								
	20.3 - 20.6									
	21.5 - 22.5									
	22.8 - 22.9									
	24.5 - 24.9									
	26.0 - 27.7									
	28.0 - 30.2									
		non mineralized portion shows minor laminations and shaly partings. ~ 20° to axis of core.								
	33.8 - 35.1									
	38.3 - 38.9									
	40.4 - 40.3									
	43.1 - 43.4									
		Non mineralized portion shows minor laminations and shaley parting.								

MINERAL RESOURCES BRANCH

8091

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No:	79-4
PAGE No:	3

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH								
from	to			from	to									
		55.1 - 55.2												
		56.6 - 57.1												
		57.7 - 57.8												
		58.6 - 5858 Galena												
		End of Sphalerite Mineralization												
58.8	73.2	Dolostone: finely crystalline, light and medium grey wispy bands and occasional minor laminations with shaley parting. Barren except for minor Pyrite L 1%.												
		End of Hole												
		Casing Left in Hole												

8091

**RIO TINTO CANADIAN EXPLORATION LIMITED**  
**DIAMOND DRILL RECORD**

LOCATION : 4600S - 90E

HOLE NO : 79-1

AZIMUTH : 322°

PROPERTY : Shag - 8652

DIP : 70°

LENGTH : 423' - 128.8m

ELEVATION : 1,826 m

Claim No.: Shag 4

STARTED : Sept 22/79

CORE SIZE : BQ

DATE LOGGED : Oct 11/79

SECTION :

COMPLETED : Sept 26/79

DIP TESTS :

LOGGED BY : B.H. Whiting

PURPOSE : Testing C4-horizon Mineralization

CONTRACTOR: Cdn. Longyear

FOOTAGE m		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH						
from	to			from	to							
0	3.3	Overburden										
3.3	8.5	Calcareous Dolostone: finely crystalline, medium grey, minor vugs infilled with sparry white dolomite, occasional stylolites, Pyrite in blebs 1%, some minor shears have a clay like mineral- Kaolinite (?)										
8.5	9.7	Dolomitic Limestone: very finely crystalline, medium grey, faint mottled texture; stylolites, Pyrite 1%.										
9.7	13.7	Interbedded Limestone and Dolomitic Limestone: transitional from above, dolomitic limestone is medium grey, limestone is pale with limestone forming the boudins. Pyrite = 1%										
13.7	15.5	Dolomitic Limestone: medium grey, finely crystalline, very high porosity, open vugs lined with calcite crystals, occasional calcite veining up to 1cm thick.										

MINERAL RESOURCES BRANCH  
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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-1
PAGE No: 2

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH									
from	to			from	to										
15.5	21.3	Calcareous Dolostone: pale grey transitional to a medium grey, faint mottled texture, minor birdseyes, some open vugs.													
21.3	23.1	Limestone: finely crystalline, pale grey with irregular medium grey dolomitic limestone stringers and blebs, Pyrite 11%.													
23.1	24.4	Interbedded Limestone and Dolomitic Limestone: dolomitic limestone is medium grey, limestone is pale grey, finely laminated, boudinage with limestone as the boudins, Pyrite = 1%													
24.4	25.9	Limestone: finely crystalline, pale grey with irregular medium grey dolomitic limestone stringers and blebs high velocity environment - almost a breccia appearance, Pyrite 11%.													
25.9	29.2	Limestone and Dolomitic Limestone: Transitional from above, finely crystalline, occasionally interbedded but often disturbed, finely laminated.													
29.2	32.3	Interbedded Limestone and Dolomitic Limestone: finely crystalline, well bedded in intervals 2 cm, finely laminated. Pyrite 11%.													
32.3	34.4	Limestone: finely crystalline, pale grey with dolomitic limestone stringers and blebs, one 10 cm interval of inter-													

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RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE No: 79-1

PAGE No: 3

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
		bedding at 32.9 m, Pyrite Ll%.											
34.4	36.7	Interbedded Limestone and Dolomitic Limestone: dolomitic, limestone is medium grey, limestone is pale grey, finely uniform with minor boudinage structures, Pyrite Ll%.											
36.7	41.2	Limestone: finely crystalline, medium grey with dolomitic limestone stringers - some appear almost stylolitic.											
41.2	43.9	Interbedded Limestone and Dolomitic Limestone: dolomitic limestone is medium grey, limestone is pale grey, finely crystalline, finely laminated, fairly uniform with minor boudinage structures, Pyrite Ll%.											
43.9	45.1	Limestone: finely crystalline, medium grey, with dolomitic limestone stringers - some appear almost stylolitic, minor recrystallized calcite.											
45.1	47.2	Interbedded Limestone and Dolomitic Limestone: dolomitic limestone is medium grey, limestone is pale grey, finely crystalline, fairly uniform, finely laminated, minor load casts, Pyrite Ll%.											
47.2	48.7	Limestone: finely crystalline, medium grey, with dolomitic limestone stringers and blebs, Pyrite Ll%.											
48.7	50.2	Interbedded Limestone and Dolomitic											

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-1
PAGE No: 4

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH								
from	to			from	to									
		Limestone: dolomitic limestone is medium grey, finely crystalline, laminated & fairly uniform with minor boudinage structures, Pyrite Ll%.												
50.2	50.5	Limestone: finely crystalline, medium grey with dolomitic limestone stringers and blebs, Pyrite Ll%.												
50.5	55.2	Interbedded Limestone and Dolomitic Limestone: dolomitic limestone is medium grey, limestone is pale grey, transitional from above, finely crystalline, laminated, fairly uniform with minor boudinage structures, Pyrite Ll%.												
55.2	56.4	Limestone: finely crystalline, medium grey with dolomitic limestone stringers and blebs, Pyrite Ll%.												
6.4	57.0	Interbedded Limestone and Dolomitic Limestone: dolomitic limestone medium grey, limestone is pale grey, finely crystalline, fine laminations, fairly uniform with minor boudinage structures, Pyrite Ll%.												
57.0	61.5	Limestone: finely crystalline, medium grey with dolomitic limestone stringers - some appearing almost stylolitic, minor recrystallized calcite.												
61.5	62.7	Interbedded Limestone and Dolomitic Limestone: transitional from above, dolomitic limestone is medium grey,												

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE NO:	79-1
PAGE NO:	5

FOOTAGE m		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH										
from	to			from	to											
		limestone is pale grey, finely crystalline, laminated, minor boudinage structures.														
62.7	63.9	Limestone: finely crystalline, medium grey with dolomitic Limestone stringers and blebs, Pyrite 1%.														
3.9	64.8	Interbedded Limestone and Dolomitic Limestone, transitional from above, dolomitic limestone is medium grey, limestone is pale grey, finely crystalline, laminated, minor boudinage structures.														
64.8	65.7	Limestone: finely crystalline, medium grey, with dolomitic limestone stringers and blebs, Pyrite 1%.														
65.7	67.9	Interbedded Limestone and Dolomitic Limestone: dolomitic limestone is medium grey, limestone is pale grey, finely crystalline, laminated, fairly uniform with minor boudinage structures, Pyrite 1%.														
67.9	68.8	Limestone: finely crystalline, pale grey, fairly uniform massive, Pyrite = 2%.														
68.8	79.4	Limestone: finely crystalline, pale grey with occasional dolomitic limestone beds, sutures, and blebs.														
79.4	80.9	Limestone Breccia: finely crystalline, pale grey limestone as fragments in a medium grey dolomitic limestone matrix. Style of brecciation varies between														

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-1  
PAGE No: 6

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH								
from	to			from	to									
		crackle and Rubble (collapse?) Pyrite 11%.												
80.9	81.7	Interbedded Limestone and Dolomitic Limestone: transitional from above, dolomitic limestone is medium grey, limestone is pale grey, finely laminated, minor boudinage structures. A minor left slip fault cuts this section with a displacement of 2 mm - vertical to core.												
81.7	83.4	Limestone and Limestone Breccia: finely crystalline, pale grey with dolomitic limestone stringers and blebs, some portions are transitional into limestone breccia - collapse?												
83.4	85.6	Interbedded Limestone and Dolomitic Limestone: as above (no fault)												
85.6	91.8	Limestone: finely crystalline, medium grey with dolomitic limestone stringers and blebs, Pyrite 11%.												
91.8	93.0	Interbedded Limestone and Dolomitic Limestone: as above, Pyrite 11%.												
93.0	93.9	Limestone: finely crystalline, pale grey, fairly uniform massive, PY = 1%												
93.9	94.6	Interbedded Limestone and Dolomitic Limestone: finely crystalline, medium and pale grey, finely laminated, minor boudinage structures, Pyrite 11%.												
94.6	95.7	Limestone: finely crystalline, medium												

MINERAL RESERVE  
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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-1

PAGE No: 7

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
		grey with dolomitic limestone stringers and blebs, Pyrite L1%.											
95.7	97.6	Interbedded Limestone and Dolomitic Limestone: finely crystalline, well bedded in intervals 2 cm, finely laminated, Pyrite LL 1%.											
97.6	101.5	Limestone: finely crystalline, pale grey, fairly uniform massive, minor crenulations, Pyrite = 1%.											
101.5	102.4	Interbedded Limestone and Dolomitic Limestone: finely crystalline, pale and medium grey, finely laminated, minor boudinage structures, Pyrite L 1%.											
102.4	104.4	Limestone: finely crystalline, medium grey with dolomitic limestone stringers and blebs, Pyrite L 1%.											
104.4	105.5	Calcareous Dolostone: medium crystalline, medium grey, sucrosic, massive, minor stylolites, Pyrite L 1%.											
105.5	109.8	Limestone: finely crystalline, pale grey, partly massive, partly dolomitic limestone forming a mottled texture, Pyrite L 1%.											
109.8	112.8	Calcareous Dolostone: medium crystalline, medium grey, high permeability, some vugs lined with calcite - no mineralization present.											

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-1  
PAGE No: 8

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
112.8	119.7	Dolostone: medium crystalline, medium grey, sucrosic, massive, occasional calcite veining and vugs, Pyrite L 1%.											
119.7	121.9	Dolostone: finely crystalline, medium grey, sucrosic, massive, minor white dolostone, Pyrite L 1%.											
121.9	122.0	Dolostone: finely crystalline, medium grey, sucrosic, porous, one large vug contains sparry dolomite crystals.											
122.0	128.8	Dolostone: finely crystalline, pale grey, sucrosic, massive, minor calcite and vugs, Pyrite L 1%.											
		END OF HOLE											

80911

**RIO TINTO CANADIAN EXPLORATION LIMITED**  
**DIAMOND DRILL RECORD**

LOCATION : 4370S - 270W

HOLE NO : 79-2

AZIMUTH : 285°

PROPERTY : Shag 8652

DIP : 60°

LENGTH : 182' - 56 m

ELEVATION : 1956 m

Claim No.: Shag 4

STARTED : Sept 28/79

CORE SIZE : BQ

DATE LOGGED : Oct 11/79

SECTION :

COMPLETED : Sept 29/79

DIP TESTS :

LOGGED BY : B.H. Whiting

PURPOSE : Testing C4-horizon Mineralization

CONTRACTOR: Canadian Longyear

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
0	3.07	Overburden											
3.07	5.54	Loose Rock and Debris: primarily Lime- stone.											
5.54	8.00	Interbedded Calcareous Dolostone and Limestone: calcareous dolostone is medium grey, limestone is light grey, finely crystalline, soft sediment deforma- tion, occasional boudinage with limestone as the boudins, fine laminae.											
8.00	9.54	Limestone: finely crystalline, pale grey with stylolites and irregular dolomitic limestone stringers and blebs.											
9.54	9.85	Interbedded calcareous Dolostone and Limestone: similar to above but without boudinage. Laminations are ~ perpendicular to the core axis..											

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-2
PAGE No: 2

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH									
from	to			from	to										
9.85	11.4	Limestone: finely crystalline, pale grey with minor stylolites and calcite veining.													
11.4	12.5	Calcareous Dolostone: finely crystalline medium grey, uniform, possessing minor calcite veining.													
12.5	15.1	Limestone: finely crystalline, pale grey with stylolites and irregular dolomitic limestone stringers and blebs approaching an interbedded texture in places, Pyrite L 1%.													
15.1	16.0	Calcareous Dolostone: finely crystalline, medium grey, uniform, possessing minor calcite veining.													
16.0	17.2	Limestone: finely crystalline, pale grey with stylolites and dolomitic limestone stringers and blebs.													
17.2	19.2	Calcareous Dolostone: finely crystalline, medium grey, possessing minor veins and birds eye texture with white calcite.													
19.2	20.0	Limestone: finely crystalline, pale grey with stylolites and irregular dolomitic limestone stringers and blebs approaching an interbedded texture in places, Pyrite L 1%.													

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-2  
PAGE No: 3

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
20.0	28.6	Dolostone: finely crystalline, medium grey, uniform, minor birds eye texture in top portion.											
28.6	34.2	Dolostone: transitional from above with an increase in calcite veining and general porosity. Some portions verge on crackle breccia.											
34.2	35.4	Dolostone: very finely crystalline, pale cream white (appears almost like chert), uniform, irregularly fractured core.											
35.4	36.0	Dolostone: transitional from above but showing a pale grey mottling.											
36.0	36.9	Dolostone: finely crystalline, dark grey, with white dolostone fracture and vug fillings.											
36.9	39.1	Dolostone: very finely crystalline, pale cream white with a pale grey mottled appearance.											
39.1	40.9	Dolostone: transitional from above, very finely crystalline, pale cream white, uniform, irregularly fractured.											

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No:	79-2
PAGE No:	4

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
40.9	41.2	Dolostone Breccia: medium grey dolostone fragments 1 cm size supported by a white dolostone matrix. Rubble breccia.											
41.2	43.1	Dolostone: very finely crystalline, pale cream, uniform dolostone which gradually becomes more greyish with depth until it is a medium grey, finely crystalline dolostone.											
43.1	45.8	Minorly Brecciated - Zebroid dolostone: medium grey pale grey and white dolostone showing a poorly developed zebra texture. Some large calcite vug fillings are present.											
45.8	54.5	Dolostone: very finely crystalline, pale grey, relatively uniform with minor vugs and calcite. Irregularly fractured Core for the upper portion.											
54.5	56.0	Dolostone: transitional from above, medium grey, finely crystalline, partly crackle brecciated. Calcite is the primary open space filling.											
		END OF HOLE.											

8071

NO.

**RIO TINTO CANADIAN EXPLORATION LIMITED**  
**DIAMOND DRILL RECORD**

LOCATION : 4150S - 600W		HOLE NO : 79-3
AZIMUTH : 020°		PROPERTY : Shag - 8652
DIP : 60°	LENGTH : 293'-89.2 m	ELEVATION : 2,060 m
STARTED : 3 Oct 79	CORE SIZE : BQ	DATE LOGGED : 15 Oct 79
COMPLETED : 5 Oct 79	DIP TESTS :	SECTION :
PURPOSE : Testing C4-horizon Mineralization		LOGGED BY : B.H. Whiting
		CONTRACTOR: Canadian Longyear

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH						
from	to			from	to							
0	5.4	Overburden										
5.4	9.1	Interbedded Limestone and Mudstone: bedding angle ~20° to core axis. Limestone is medium grey, very finely crystalline, mudstone is medium brown earthy, shale like parting occurs parallel to the laminations. Minor calcite veining.										
9.1	10.3	Limestone: very finely crystalline, pale grey, exhibiting delicate convolutions (?) and lamellae, minor brownish red mudstone as whisps.										
10.3	11.0	Interbedded Limestone and Mudstone: as above.										
11.0	12.5	Limestone: very finely crystalline, medium grey, finely laminated with shale like										

MINERAL EXPLORATION

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE NO: 79-3  
PAGE NO: 2

FOOTAGE m		DESCRIPTION	SAMPLE NO	FOOTAGE		LENGTH							
from	to			from	to								
		parting yielding shiny surfaces.											
12.5	13.7	Limestone: very finely crystalline, pale grey, delicate convolutions and lamellae, minor brownish red mudstone as whisps.											
13.7	14.4	Limestone Transitional to Interbedded Limestone and Mudstone: very finely crystalline, medium grey limestone with shale like partings, mudstone is a medium brown and earthy.											
14.4	15.2	Limestone: very finely crystalline, medium grey, delicate convolutions and lamellae, minor brownish red mudstone as whisps.											
15.2	15.5	Interbedded Limestone and Mudstone: Limestone is medium grey and very finely crystalline, mudstone is medium brown and earthy, shale like partings occur parallel to the laminations, minor crackle veining.											
15.5	17.0	Limestone: transitional from above very finely crystalline, medium grey, finely laminated with shale like partings yielding shiny surfaces.											

MINERAL RESOURCES BRANCH  
**8091**

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-3  
PAGE No: 3

FOOTAGE		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH							
from	to			from	to								
17.0	17.9	Limestone: transitional from above, very finely crystalline, pale grey, delicate convolutions and lamellae, minor brownish red mudstone, as whisps.											
7.9	18.9	Limestone: very finely crystalline, medium grey, laminated with shale like partings yielding shiny surfaces.											
18.9	20.1	Limestone: transitional from above, very finely crystalline, pale grey, delicate convolutions and lamellae, minor white calcite veining.											
20.1	20.8	Interbedded (?) Limestone and Calcarious Dolostone: pale grey limestone with medium grey calcarious dolostone, laminated, deformation of the layering is present ~20° to core axis, Pyrite L 1%.											
20.8	22.8	Limestone: transitional from above, very finely crystalline, pale grey exhibiting delicate convolutions and lamellae.											
22.8	30.8	Interbedded (?) Limestone and Calcarious Dolostone: as above but with a more mottled appearance.											

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RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-3

PAGE No: 4

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH						
from	to			from	to							
30.8	32.6	Limestone: very finely crystalline, pale grey, delicate convolutions and lamellae, minor sparry calcite, a small shear has some black gouge material, traces of pyrite.										
2.6	39.6	Interbedded (?) Limestone and Calcareous Dolostone: as above - minor brecciation at 37.8 m, Limestone forms the fragments with a calcareous dolostone matrix, Pyrite L 1%.										
39.6	43.6	Limestone: finely crystalline, pale grey, fine convolutions and lamellae leading to an increase in Calcareous dolostone, portions appearing almost brecciated, Pyrite L 1%.										
43.6	61.2	Dolostone: slightly calcareous, finely crystalline, medium grey, uniform, wispy laminations and random calcite veining are also present, Pyrite L 1%.										
61.2	81.6	Dolostone: finely crystalline, medium grey with white dolostone veins and open space fillings approaching crackle breccia in places, increase in porosity transitional from above. Where vugs are not completely filled there is a calcite coating on the white dolostone. Pyrite L 1%.										

CAMERA  
**8091**  
NO

RIO TINTO CANADIAN EXPLORATION LIMITED  
DIAMOND DRILL RECORD

HOLE No: 79-3  
PAGE No: 5

FOOTAGE m		DESCRIPTION	SAMPLE No	FOOTAGE		LENGTH													
from	to			from	to														
81.6	83.1	Dolostone: finely crystalline, medium grey, uniform, delicately laminated at ~70° to core axis, Pyrite L 1%.																	
83.1	84.0	Dolostone: finely crystalline, medium grey with white dolostone veins and open space fillings approaching crackle breccia. Pyrite L 1%.																	
84.0	87.1	Dolostone: finely crystalline, medium grey, uniform, delicately laminated at ~70° to the core axis. Minor white dolostone parallel to the laminations.																	
87.1	88.3	Dolostone: finely crystalline medium grey with white dolomite veins and open space fillings, transitional from above. Pyrite L 1%.																	
88.3	89.2	Dolostone: finely crystalline, medium grey, uniform, delicately laminated at ~70° to core axis, Pyrite L 1%																	
		END OF HOLE																	

