THE ANSCHUTZ MINING CORPORATION

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REPORT ON DIAMOND DRILLING

ON THE

81-#891-9923

AZ-1 CLAIM GROUP

KAMLOOPS MINING DIVISION

N.T.S. 83D/6E

52°19'N 119°10'W

Owner and Operator of Claims

ANSCHUTZ (CANADA) MINING LTD.

Prepared by

Bent E. Aaquist
Project Geologist

October 12, 1981

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INTRODUCTION

This report is based on a study of diamond drill core obtained from four holes drilled during July, August and September, 1981. The drill holes were drilled to test the down dip potential of an outcrop of carbonatite which has anomalously high values of niobium and tantalum. Up to four units of beforsite carbonatite were encountered during the drilling.

All carbonatite encountered was split and sampled, a total of 200 samples were submitted for Nb, Ta, and P_2O_5 analyses. In addition, two samples of pyrrhotite-graphite bearing gneiss were split and submitted for gold, silver, copper and zinc analyses.

Because the drilling has just been completed and most analyses are still outstanding, no geological interpretation can be made, and, therefore, no sections or maps are submitted. /To be included in final report Feb. 1982/

LOCATION AND ACCESSIBILITY

The AZ-1 claim group is in the Kamloops Mining Division (N.T.S. 83D/6E), about 24 km north of Blue River.

The property is accessible by traveling 19 km north of Blue River on Highway 5, then turning off on the Bone Creek road, and then driving north on the B.C. hydro power line access for 6 km.

CLAIM NAME AND OWNER

The property consists of one 18 unit modified grid claim, record number 3105(11), expiry date November 6, 1981. The registered owner and operator of the AZ-1 claim is Anschutz (Canada) Mining Ltd.,#1470 - 700 - 4the Avenue S.W., Calgary, Alberta T2P 3J4, FMC No. 190441.

HISTORY OF DISCOVERY

The carbonatite outcrop that was being tested was discovered by Ms. Elizabeth French a couple of winters ago. Ms. French first discoverd carbonatite float by the Canadian National Railway while she was checking her trap line. She followed the float up hill to the outcrop.

The outcrop was exposed by a recent natural slide on the steep hillside, 65% grade. Chip samples of carbonatite from the slide area had values of Nb_2O_5 from 0.19% to 0.46% and Ta from 110 ppm to 390 ppm. Because of these values, it was decided to drill four holes above the outcrop at a site as close to the outcrop as possible.

SUMMARY OF WORK

Survey - On July 3, 1981 a survey using a theodalite and E.D.M. was run along the B.C. hydro powerline starting at survey control points established last year on claims BE-1 and 2. Data of last year's survey was reported by T. A. Ahroon in "Geologic Report on the Blue River Project, British Columbia, Canada" dated November 30, 1980. A control survey line was run almost due west from the powerline to the top of the outcrop of carbonatite. The top of the outcrop is at an elevation of 797 meters, and the relative coordinates for this location is 39,731 N, 48546 E. A drill site was chosen 136 meters due east of the outcrop, at an elevation of 880 meters.

Road Construction - A D7 Cat owned and operated by Corey Construction of Blue River, B.C. was used to make a road from the B.C. hydro powerline due west and down hill to the chosen site. Because of the steep hillside, 27 to 32% grade, the D7 Cat was also used to move the diamond drill up and down the road.

Diamond Drilling - Diamond drilling was done by Bortz Specialties from Delta, B.C. Drilling was done with NQ wire line equipment and all the core was placed in 1.5 meter long wooden core boxes, each box holding 6 meters of core. The core is stored in a building on the property of Ms. Elizabeth French, at mile 109 on the CNR, about 3.5 km south of Lempriere crossing. The azimuth, inclination, elevation and other data pertinent to each drill hole is noted on page one of the logs for each drill hole. Analytical results that have been received to date are noted on the logs. Sample intervals and numbers for outstanding samples are noted as well. Because of incomplete data at this time, no sections can be submitted. The four drill holes were drilled from the same set up.

Analytical Work - All drill core submitted for analysis was split and half the core submitted for analysis, the other half was left in the core box. Sample intervals were commonly one meter long. Shorter intervals were used to separate areas with different accessory mineral content or rock textures.

The samples were taken to Kamloops Research & Assay Laboratory Ltd. in Kamloops, B.C. where they were prepped and analysed for P_2O_5. Splits were made of the pulps and sent by them to Nuclear Activation Services in Hamilton, Ontario for Ta analyses, and to X-Ray Laboratories in Toronto for Nb_2O_5 analyses.

Geology - The carbonatite encountered in all four holes is beforsite. The beforsite is white, coarse crystalline, and has three texture types: breccia, porphyritic and massive. The breccia consist of tightly packed dolomite fragments and/or crystals in a gray finer crystalline dolomitic matrix. The porphyritic phase consists of ghost-like dolomitic crystals in a gray finer crystalline matrix. The massive beforsite is gray, fine crystalline with local banding of accessory minerals. The accessory minerals are: apatite, amphibole (probably tremolite)

nonmagnetic pyrrhotite, with locally minor biotite, magnetite and ilmenite. Both columbite and pyrochlore are present, although the two are not readily distinguishable, one from the other. The presence and variation in content of columbite and pyrochlore may account for the variation in Nb:Ta ratios as indicated by the analytical results.

Because there is no outcrop in the area, except for the discovery outcrop, no geologic map has been prepared.

In the country gneiss, both above and below the carbonatite, there are local bands with disseminated magnetic pyrrhotite and graphite. Two samples from separate bands were submitted for gold, silver, copper and zinc analyses. The samples are from hole BC-18, the results are noted on the drill log. The results are not of economic significance.

Petrographic and petrochemical work is in progress to determine the complete mineralogic nature of the carbonatite, and the economic potential of the accessory minerals.

CONCLUSION

Results of diamond drilling on the AZ-1 claim group has lead to the discovery of a number of columbite-pyrochlore bearing carbonatites in an area where only one carbonatite was known to exist.

The economic potential will not be known until all the analytical work is completed, and it has been plotted and interpreted.

More drilling will be required next year to better define the carbonatite structure and outline areas with high niobium and tantalum values.

ITEMIZED COST STATEMENT

Road & drill site construction 30.5 hr @ $75/hr	$2,287.50
Cat time for moving drill 28 hr @ $75/hr	2,100.00
Diamond Drill costs	
Drilling overburden - 19 meters @ $73.82/m	1,402.54
2.7 meters @ $104.99/m	283.46
Coring bedrock - 590.6 meters @ $73.83/m	43,596.91
219.1 meters @ $78.74/m	17,251.76
Cost plus: moving July 26-28, 1981	
32 man hours @ $22.00/man hr	704.00
16 rig hours @ $20.00/rig hr	320.00
Sept. 1- Sept. 3	
32 man hours @ $22.00/man hr	704.00
16 rig hours @ $20.00/rig hr	320.00
Casing left in ground 21.7 meters @ $26/meter	564.20
Accommodations and Meals	
July 3 - 2 man days @ $30/day	60.00
July 26 - August 10 - 63 man days @ $30/day	1,890.00
Sept. 1 - October 2 - 87 man days @ $30/day	2,750.00
Vehicle Rental	
July 26-August 10 and Sept. 1-Oct. 2	
1½ month @ $673/month	1,009.50
Gasoline for vehicle	280.00
Wages - Student ½ month @ $1,550/month	775.00
Geologist 1½ month @ $2,583/month	3,874.50
Analytical Costs	
69 core samples analysed for NB_2O_5, Ta, P_2O_5 @ $28.00/sample	1,932.00
2 core samples analysed for Au, Ag, Cu, Zn @ $23.50/sample	47.00
Survey equipment rental	
1 day @ $70/day	70.00
TOTAL	$82,292.37

STATEMENT OF QUALIFICATIONS

I, Bent E. Aaquist, do hereby certify that:

1. I am an employee of the Anschutz Minng Corporation with its office at 2400 Anaconda Tower, 555 - 17th Street, Denver, Colorado, U.S.A.

2. I reside at 9462 Sierra Drive, Arvada, Colorado, U.S.A.

3. I am a member of the Canadian Institute of Mining & Metallurgy, a member of the Geological Association of Canada.

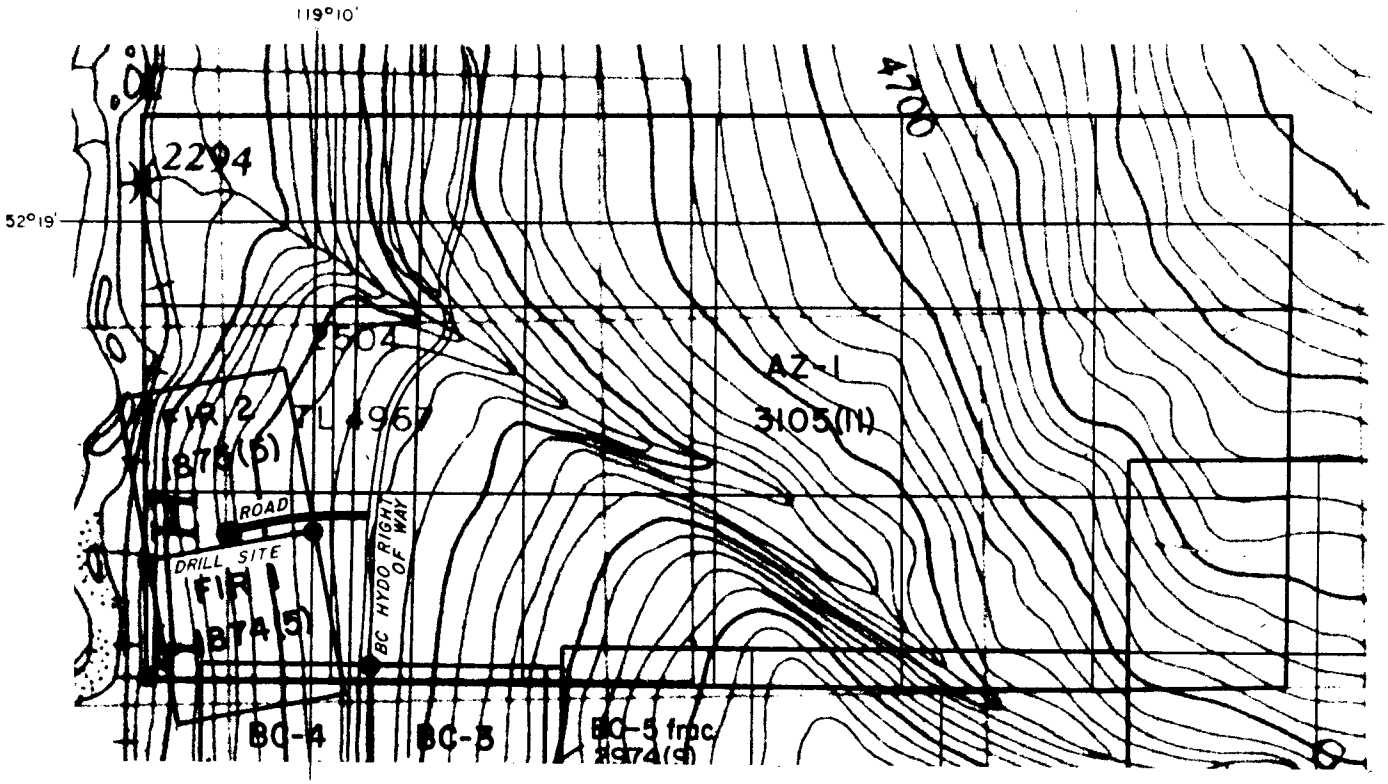
4. I am a graduate of the University of Alberta with a B.Sc. in Honours Geology, and a graduate of the University of Western Ontario with a M.Sc. in Geology.

5. I have practised continuously as a geologist since May, 1971.

6. This report is based on work carried out under my supervision in 1981.

Bent E. Aaquist
Project Geologist

Denver, Colorado, U.S.A.
October 12, 1981



CLAIM BLOCK AZ-1

BLUE RIVER AREA

British Columbia, Canada

eeb

A P P E N D I X

ANSCHUTZ MINING CORPORATION

BLUE RIVER CARBONATITES
BRITISH COLUMBIA

HOLE NO. BC-18 PAGE 1 OF 15

PROPERTY: F.R-Az 1 CLAIMS N.T.S. NO. 83D/6E

DEPTH: 218.8 AZIMUTH: 360 ANGLE: -65 ELEVATION: 880

NORTHING: 39,741 EASTING: 48,682

DATE STARTED 7/26/81 DATE COMPLETED: 8/01/81

LOGGED BY: BRADLEY BROWN & BENT AAQUIST

DRILL COMPANY: BORIS SPECIALTIES CORE SIZE: NQ

HOLE & SITE DESCRIPTION: CASING LEFT IN HOLE 4.3 METERS.

SAMPLE NUMBERS IN HOLE 4531 & 4532 FOR Au, Ag, Cu, Zn & 34 ELEMENT EMISSION SPEC. 3540-3602.

NOTE Nb VALUES ARE Nb_2O_5 IN %

ANSCHUTZ MINING CORP. HOLE NO. DC-18 PAGE 2 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/2/81

DEPTH METERS	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
2			0 - 4.3 - Overburden		4.3 - 11.9 - fractured - weathered - core loss											
4			4.3-27.9 Biotite - Muscovite Gneiss - grey, massive - no sulphides													
6				79												
8																
10 Box 1				90												
12																
14				55												
16				80												

ANSCHUTZ MINING CORP. HOLE NO. BC 18 PAGE 3 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/2/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
Box 2																
18			18.7 - 18.9 - Feldspar Dike		50											
20					75											
			20.8 - 21.2 Feldspar Dike													
Box 3 22																
24	CORE LOSS															
26					65											
Box 4 28			27.9 - 29.6 Amph - Gneiss - green - well banded - local pyrrhotite (magnetic) - local magnetite.		70											
30			29.6 - 32.0 Gneiss - grey, massive - local magnetic pyrrhotite		60											
32																

ANSCHUTZ MINING CORP. HOLE NO. B. C. 18 PAGE 4 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/3/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
												Au	Ag	Cu	Zn		
34	Box 5		32.0 - 32.3 Amph - Garnet Gneiss - local garnet (spotty) 32.3 - 33.6 Gneiss (As to 29.6) 33.6 - 33.8 - Feldspar Dike. 33.8 - 40.5 Amph - Biotite Schist - local, massive pyrrhotite		70 75												
36																	
38																	
40	Box 6		40.5 - 55.2 Gneiss light gray med xline quartz. feldspar biotite, massive to weakly banded at 40.85 - 15 cm. section of irregular pyrrhotite masses in a qtz - feldspar rich phase local biotite rich phases		50						T	<.001	.09	.04	.01	40.85 41.0	4532
42					70												
44																	
46	Box 7		46.6 - 47.3 quartz - feldspar minor pyrrhotite														
48																	

ANSCHUTZ MINING CORP. HOLE NO. BC-78 PAGE 5 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. E. Aaquist DATE 8/13/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
50	Box 8																		
52					35														
54			Basal contact sharp & irregular																
56	Box 9		55.2 - 55.5 Biotite Schist green, med. x/line, irregular foliation at 60°		60														
58			55.5 - 64.0 Gneiss as to 55.2		40														
60					60														
62	Box 10																		
			Basal contact sharp at 70°		70														
64																			

ANSCHUTZ MINING CORP. HOLE NO. BC-18 PAGE 6 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. E Aaquist DATE 8/13/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
66	Box 11		64.0 - 64.5 Amphibole Biotite Schist green & black, med-coarse xline, wavy foliation Basal contact lost in broken core 64.5 - 79.5 Gneiss as to 64.0	70												
68																
70				70												
72	Box 12			70												
74			biotite rich section													
76				70												
78	Box 13		Basal contact sharp, irregular at 70°													
80																

ANSCHUTZ MINING CORP. HOLE NO. BC-18 PAGE 7 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. E. Aaquist DATE 8/13/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
82	Box 14		79.5 - 82.3 Quartz & Feldspar white, coarse xline, massive locally minor biotite in books Basal contact lost in broken core 82.3 - 85.3 Gneiss, green amph-biotite med to coarse xline grading into gneiss as to 79.5 Basal contact lost in broken core		60											
84																
86	Box 15		85.3 - 87.3 Amphibolite Biotite Schist, as to 64.5 Basal contact sharp at 75° 87.3 - 87.5 Gneiss as to 79.5 Basal contact sharp at 55°		60 foliation crenulated locally.											
88			87.5 - 87.7 Amph-Biotite Schistes to 87.3, basal contact sharp at 40° 87.5 - 89.6 Gneiss as to 79.5 basal contact indistinct													
90	Box 15		89.6 - 95.1 Amph, Feldspar Garnet Schist, green & white med. xline, poor to moderate foliation garnets red, anhedral up to 1cm locally irregular masses of pyrrhotite Overall unit appears massive													
92					55											
94			95.1 - 96.0 Gneiss as to 79.5 Basal contact sharp at 60°													
96																

ANSCHUTZ MINING CORP. HOLE NO. BC-18 PAGE 8 OF 15

BLUE RIVER CARBONATITES LOGGED BY B.E. Aagaard DATE 8/13/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
98	Box 16		96.0 - 96.3 Amph-Biotite Schist as to 97.3, interfingering basal contact.													
			96.3 - 116.0 Gneiss as To 79.5													
100																
102	Box 17															
104			Between 104 & 107 are local thin bands of amph-biotite schist													
106	Box 18															
108																
110																
112																

ANSCHUTZ MINING CORP. HOLE NO. BC-18

BLUE RIVER CARBONATITES LOGGED BY Brent F. [illegible] DATE 8/29/91

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY
114 (Box 19)			feldspar biotite muscovite garnet schist [illegible] well foliated, garnets up to 2cm	60	114.5 - 114.6 [illegible] grains [illegible]
			Basal contact sharp & irregular biotite schist basal 10 cm.		
116			<u>116.0 - 128.2 Beforsite</u>		
			white, coarse xline, massive 4 mm long dark green amph. f.g. non-magnetic pyrrhotite 2 mm white apatite		local shears no broken core, breccia texture, fractures at 60°± throughout
118			119 - 119.5 - stressed [illegible] only minor accessory minerals biotite in shears.		
120 (Box 20)					120.8 - 122.4 amph., shears parallel core axis slickensides at 60° to axis
122					
124			apatite up to 5mm		
			below 125.4 xl size is med., coarse above., weakly banded		
126 (Box 21)					
128			Basal contact sharp.		

% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
											116.0	
2.5		2			.5		200	.069	3.65		117.0	3540
2.5		2			.5		190	.039	4.01		118.0	3541
3		2			.5		86	.017	3.85		119.0	3542
	2						63	.017	0.95		119.5	3543
3		2			.5		140	.028	3.70		120.2	3544
3		2			.5		210	.036	4.01		120.8	3545
		35					100	.032	2.33		122.4	3546
3		2			1		190	.16	2.49		123.4	3547
3		2			.5		270	.058	3.02		124.4	3548
4		2			.5		170	.160	3.09		125.4	3549
3		2		tr	.5		160	.100	2.76		126.4	3550
2.5		2			.5		150	.057	3.05		127.4	3551
2.5		2		tr	.5		170	.092	3.49		128.2	3552

ANSCHUTZ MINING CORP. HOLE NO. BC-18 PAGE 10 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. E. Aaquist DATE 8/08/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
130	Box 22		128.2 - 139.0 Amphibolite dark green, coarse xline massive to banded, beforsite locally interbanded & interxline minor, fig., diss pyrrhotite		55											
132																
134			134 - 137 has irregular patches of beforsite 1-2 cm.													
136	Box 23															
138			Basal contact gradational over 30 cm.													
			139.0 - 142.5 Schist as to 116													
140																
142	Box 24		Interfingering contact 142.5 - 145.4 Amphibolite Beforsite green & white, med. to coarse xline, weakly banded.		60 50 45											
144																

ANSCHUTZ MINING CORP. [redacted] HOLE NO. [redacted] PAGE [redacted] OF [redacted]

BLUE RIVER CARBONATITES LOGGED BY B. E. [illegible] DATE 8/[illegible]/81

ROCK TYPE & DESCRIPTIVE LITHOLOGY

local biotite rich bands,
basal 20 cm biotite, basal
contact steep at 90°
145.4 – 166.6 [illegible]
[illegible]
[illegible]
[illegible]

157.4 – 157.9 coarse [illegible]
amph with carb. x-cutting
beforsite

Graphic: 75

STRUCTURE & ROCK QUALITY

smooth [illegible]
[illegible]
[illegible]
[illegible]
texture [illegible]
[illegible]
pyrrhotite
common in
fractures

Depth	Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	Ta ppm	Nb ppm	P_2O_5 %	Sample Depth	Sample Number
										145.4	
146	1		2			1	[illegible]	[illegible]	3.44	146.4	3553
	<1		2		tr	1	30	[illegible]	3.80	147.4	3554
148	—		2			1	[illegible]	[illegible]	1.23	148.4	3555
	—		2			1	[illegible]	.051	2.03	149.4	3556
150	<1		2		tr	1	[illegible]	[illegible]	2.46	150.4	3557
	<1		2			1	180	[illegible]	3.13	151.4	3558
152	[illegible]		2		tr	1	220?	[illegible]	2.78?	152.0	3559
	-		2?				170?	[illegible]	2.21	153.0?	3560
154	[illegible]		2			1	[illegible]	.006?	3.74?	154.0	3561
	—		[illegible]				48?	[illegible]	4.09?	155.0	3562
156	—		2			1	73?	.020?	3.65?	156.0	3563
	—		1			1	74?	[illegible]	4.26	157.0	3564
158	—		40			.5	120	.020?	3.75	158.0	3565
	—		2			1.5	99	.010	3.75	159.0	3566
160	—		2			1.5	120	.011	3.05	160.0	3567

ANSCHUTZ MINING CORP. HOLE NO. BC-18 PAGE 12 OF 5

BLUE RIVER CARBONATITES LOGGED BY B. E. A[illegible] DATE 8/03/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY
162			amph [illegible]		
			[illegible] sulphides [illegible] be [illegible] laminated pyrite?		
164					
166			[illegible] 70%		
			166.5 – 169.7 [illegible] Carbonatite		
			Sovite [illegible] blue [illegible]		
			[illegible] to massive		[illegible] fold
168			~90% [illegible] & some amph.		
			[illegible] 45°		5
170			169.7 [illegible]		
			as above		[illegible] texture down to 171.5
172					
174					
176					

Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
1		2			.5		[illegible]	[illegible]	3.46		161.0	3568
1		2			1		[illegible]	.016	3.44		162.0	3569
		5			1		[illegible]	.076	2.14		163.0	3570
1		2			1		[illegible]	.20	2.22		164.0	3571
	.5	2		tr	1		[illegible]	[illegible]	3.49		165.0	3572
		2			.5		[illegible]	.069	2.31		166.0	3573
	.5	2			.5		[illegible]	.057	3.62		166.5	3574
											169.7	
		2		tr			[illegible]	.030	3.51		170.7	3575
.5		2		tr	1		[illegible]	[illegible]	3.26		171.7	3576
3		1.5			1		[illegible]	.020	4.48		172.7	3577
3		1.5		tr	1		170	.055	4.40		173.7	3578
4		2			.5		200	.056	4.59		174.7	3579
3		2		tr	.5		220	.100	3.90		175.7	3580

ANSCHUTZ MINING CORP. HOLE NO. BC - 18 PAGE 13 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. E. Aagnist DATE 8/08/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS						ANALYSES			SAMPLE DEPTH	SAMPLE NUMBER
						Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	Ta ppm	Nb ppm	P_2O_5 %		
178	Box 30		local very coarse xline sections amph locally is concentrated in bands.		breccia texture throughout apatite not present in breccia sections	–		2		tr	1	380	.170	4.19	176.7	3581
						–		2		tr	1	410	.170	4.19	177.7	3582
						–		2			1	140	.051	2.92	178.7	3583
180						–		2			1	150	.058	3.44	179.7	3584
						–	tr	2		tr	1	130	.041	3.01	180.7	3585
182	Box 31		Basal contact sharp at 55°			–		2			1	150	.052	3.18	181.7	3586
			183.3 - 186.2 Biotite Carbonate Amphibole Schist, black & white med to coarse xline. well foliated			–		3			1.5	110	.045	2.58	182.7	3587
						–		2			1	310	.160	3.90	183.3	3588
184																
			Basal contact shear at 45°		foliation parallel core axis											
186															186.2	
	Box 32		186.2 - 200.1 Beforsite as above local very coarse dolomite xls amph occurs locally in bands			–	.5	2			1	130	.120	2.68	187.2	3589
188			189.2 - 189.5 - coarse pyrrhotite favouring fractures		biotite shear parallel core axis	–	5.	5			1	52	.033	2.14	188.2	3590
						–		2			1.5	96	.041	1.88	189.2	3591
190						–		2			1	140	.066	3.59	190.2	3592
					breccia texture absent below 191.2	–		2		tr	1	120	.046	3.02	191.2	3593
192						3		2		tr	1	140	.051	3.40	192.2	3594

ANSCHUTZ MINING CORP. HOLE NO. BC-18 PAGE 14 OF 15

BLUE RIVER CARBONATITES LOGGED BY B.E. Raquist DATE 8/12/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
194	Box 33					4		2	tr	tr	1	210	.090	3.08	193.2	3595
						4		2	tr	tr	1	140	.048	3.26	194.2	3596
						4		2	tr		1	260	.110	3.74	195.2	3597
196						3.5		2		tr	.5	190	.059	4.44	196.2	3598
						3.5		2		tr	.5	190	.071	4.12	197.2	3599
198	Box 34				breccia texture below 198	3		2		.1	.5	180	.051	3.78	198.2	3600
			Basal contact sharp & irregular			.5		2			1	140	.040	3.22	199.2	3601
200			201.1 - 203.3 Biotite Carbonatite black & white, med. xline, weakly banded, basal contact a shear at 70°			4		2	tr		1	220	.30	3.36	200.1	3602
202																
204	Box 35		203.3 - 218.8 Gneiss light gray, med. xline, banded to massive. Green amph., biotite, quartz-feldspar locally low conc. of pyrrhotite garnets up to 1.5 cm, locally some skeletal.		70°											
206																
208												Au .001	Ag .08	Cu .01	Zn .01	207.5 / 207.9	4531

ANSCHUTZ MINING CORP.

BLUE RIVER CARBONATITES

HOLE NO. BC-18

LOGGED BY B.E. Aaquist

DATE 8/12/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
210			local muscovite rich sections.		75											
212 Box 36																
214					70											
216 Box 37																
218 Box 38					80											
218.8 T.D.																

ANSCHUTZ MINING CORPORATION

BLUE RIVER CARBONATITES
BRITISH COLUMBIA

HOLE NO. BC - 19 PAGE 1 OF 15

PROPERTY: FIR - AZ 1 CLAIMS N.T.S. NO. 83D/6E

DEPTH: 209.7 AZIMUTH: — ANGLE: -90 ELEVATION: 880

NORTHING: 39,741 EASTING: 48,682

DATE STARTED 8/06/81 DATE COMPLETED: 8/07/81

LOGGED BY: BRADLEY BROWN

DRILL COMPANY: BOART SPECIALTIES CORE SIZE: NQ

HOLE & SITE DESCRIPTION: CASING LEFT IN HOLE 4.9 METERS
SAMPLE NUMBERS IN HOLE 3603 - 3671.

NOTE Nb VALUES ARE Nb_2O_5 IN %

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 2 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/21/81

DEPTH Meters	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
2			0 - 4.9 Overburden													
4																
6			4.9 - 30.9 Gneiss - muscovite + biotite - local feldspar dikes - magnetic pyrrhotite located in feldspar dikes. - well banded - greyish color		Broken Core weathered)											
8																
10	90% Recovery															
12	Box				75											
14					55											
16																

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 3 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/21/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
18 Box 2					70 / 75											
20					85											
22 Box 3					75											
24					50 / 90											
26					fracture											
28 Box 4					75 / fractured											
30			30.9 - 31.7 Garnet Amph Gneiss - green, local red garnet		90 / 75											
32																

ANSCHUTZ MINING CORP. HOLE NO. BC - 19 PAGE 4 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/21/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
34	Box 5		31.7 - 35.4 Gneiss - muscovite + biotite (local bands) - massive pyrrhotite - local feldspar dikes - grey, well banded	55	fracture											
36			35.4 - 36.1 Biotite - Hornblende Schist - black - flaky, easily broken	50 50												
38			36.1 - 39.0 Amph - Biotite Schist - Sovite Carbonatite fractures throughout	75												
40	Box 6		39.0 - 45.6 Sovite - Gneiss - grey, well banded - sovite carbonatite fracture fillings, (very fine fractures)	70												
42				70												
44					fractures											
46	Box 7		45.6 - 46.0 Feldspar Dike - magnetic pyrrhotite, local 46.0 - 49.8 Biotite Schist - local feldspar dikes - sovite fractures very fine	80 65												
48				60												

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 5 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/21/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
50	Box 8		49.8 - 50.1 Amph - Biotite - Garnet Schist 50.1 - 52.2 Amph - Biotite - Schist - green color, massive amph - banding very poor, core is folding in parts. - a few small fractures filled with soulite.		75 / 85 folding in core 75											
52			52.2 - 58.0 Amph - Biotite gneiss - grey, well banded - local feldspar banding - magnetic pyrrhotite, local		65											
54																
56	Box 9		fractures		75 fractures are running opposite to core angles											
58			58.0 - 58.3 Amph - Biotite 58.3 - 69.4 Biotite Graphite Schist - blue-grey color - local banding - graphite is massive, however there are local bands in the sharp breaks in core - local magnetic pyrrhotite - some small fractures fizz under acid - possibly soulite carbonatite.		Broken core 70 Broken core 65 50											
60																
62	Box 10															
64																

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 6 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/22/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
66					70 60 75 60 fine smooth slabs of graphite at each core break.											
68	Box 11															
70			69.4 - 71.6 Amph - Biotite Schist (As to 50.1)		65 Slick-in-side - long thin grooves of amph. Pyrrhotite in grooves.											
72			71.6 - 71.9 Amph Garnet Gneiss (As to 30.9)													
			71.9 - 74.3 Amph - Biotite Schist (As to 50.1)		65											
74	Box 12		74.3 - 75.7 Gneiss (As to 4.9)		Broken Core											
76			75.7 - 76.1 Amph - Garnet Gneiss (As to 30.9)		73 65 70											
			76.1 - 82.3 Biotite - Muscovite Schist - local feldspar dikes - local traces of pyrrhotite - greyish - silver color.		65											
78																
80																

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 1 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 8/22/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
82 Box 13			82.8 - 89.9 Amph - Gneiss - greenish - grey - poorly banded - massive pyrrhotite present		Core splits are at 60° etc. The mineral banding is at 60° with the opposite tilt.											
84																
86 Box 14																
88																
90			89.9 - 91.4 Amph - Biotite Schist - red + green colored mica - no banding, fractured into small pieces, very weak													
92 Box 15			91.4 - 92.9 Gneiss As to 31.7 92.9 - 93.4 Feldspar Dike													
94			93.9 - 94.6 Gneiss (As to 4.9) 94.6 - 95.7 Amph Garnet Gneiss (As to 30.9)													
96			95.7 - 96.4 Amph Biotite Gneiss (As to 52.8)													

ANSCHUTZ MINING CORP. HOLE NO. BC - 19 PAGE 8 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. BROWN DATE 8/12/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS						ANALYSES				SAMPLE DEPTH	SAMPLE NUMBER
						Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	Ta ppm	Nb ppm	P_2O_5 %			
98	Box 16		94.6 - 100.4 Amph - Biotite Gneiss (As to 52.2)		85												
					80												
100			100.4 - 105.8 Biotite - Muscovite Garnet Schist - well banded - garnet tends to be massive.		75 70 fracture												
102					65												
104	Box 17				Broken Core												
			105.8 - 106.3 Quartz - Feldspar, white coarse xline, massive		Core extremely fractured in all directions											106.3	
106			106.3 - 112.6 Beforesite Carbonatite - greyish - white - alternating brecciated & massive - apatite does not appear to be in the brecciated areas. - amphi (dark-green to black) - local calcite phenocrysts (≈1-2 mm) - amph & apatite med grain size. - local pyrrhotite & minor pyrite (non magnetic) - pyrrhotite appears to follow fractures		65	½	-	3	-	-	2	180	.150	2.59		107.3	3603
108	Box 18					2	-	2	-	-	1	190	.087	3.40		108.2	3604
						3	-	2	-	-	1	190	.086	3.49		109.2	3605
110					90	2	-	1	-	-	½	140	.015	3.27		109.8	3606
						tr	-	2	-	-	1	120	.033	2.26		110.8	3607
112						tr.		2			1	91	.023	2.59		111.8	3608

ANSCHUTZ MINING CORP. HOLE NO. DC-19 PAGE 9 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. Brown / B. Aaquist DATE 8/13/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY
114	Box 19		112.6 - 113.6 Sovite Carbonatite white, coarse xline, massive, local coarse amph. 113.6 - 121.5 Beforesite Carbonatite (Same as 106.3) mostly breccia Texture, locally massive breccia fragments 1-2 cm common.	40 75	
116					
118	Box 20			35	
120			black skeletal pyrochlore sovite - biotite dike cuts beforsite parallel to core axis Basal contact sharp & irregular	60 75	irregular fracture parrallel to core.
122			121.5 - 122.1 Biotite Schist black, med. xline, well foliated local irregular masses of qtz & feldspar, basal contact sharp & irregular 122.1 - 130.9 Amphibolite Gneiss	90	
124	Box 21		green & white, 2-4 mm xls, banded to massive local masses of magnetic pyrrhotite in fractures, 127.4 - 128 1cm garnets - 7% with a 1-2 mm white feldspar halo.	70	
126					
128				60	

% ACCESSORY MINERALS							ANALYSES			SAMPLE DEPTH	SAMPLE NUMBER
Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		Ta ppm	Nb ppm	P_2O_5 %		
1		2			1		160	.039	4.09	112.6	3609
		10					37	.013	1.34	113.6	3610
		10			1		210	.019	3.24	114.6	3611
-		3			2		170	.011	2.90	115.6	3612
-		3	-	-	1		160	.014	3.65	116.6	3613
2	tr	3	-	-	2		190	.024	2.26	117.6	3614
<1		2			1		110	.007	1.75	118.1	3615
3	-	3	-	-	1		260	.096	2.90	119.0	3616
1		1		1	1		1800	7.5	8.51	119.6	3617
1	<1	3			<1		210	.110	2.29	120.0	3618
1	3	3		tr	2		78	.059	2.46	120.5	3619
1		3		tr	1.5		220	.170	2.80	121.0	3620
3		3		tr	1		140	.091	2.90	121.5	3621

ANSCHUTZ MINING CORP. HOLE NO. BC - 19 PAGE 10 OF 15

BLUE RIVER CARBONATITES LOGGED BY B.E. Aaquist DATE 8/13/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
130			Basal contact gradational													
			130.9 - 140.5 Gneiss													
			gray, med x/line, mostly massive pink garnets diss. throughout 5 mm common, 25 mm max.													
132	Box 22		below 137 the garnets are reddish brown in color there is no apparent distortion of minerals around the garnets		65											
134																
136																
138	Box 23		Irregular veins of the underlying unit in basal 0.5 m.		65											
140			140.5 - 141.8 Quartz Feldspar white, coarse x/line, massive basal contact a shear at 35°		local irregular fractures											
142			141.8 - 143.2 Amphibolite dark green, coarse x/line, massive, basal contact gradational.													
144																

ANSCHUTZ MINING CORP. HOLE NO. BC - 19 PAGE 11 OF 15

BLUE RIVER CARBONATITES LOGGED BY B. E. Aagaard / B BROWN DATE 8/13/81

143.2 - 151.1 Amph Gneiss
as to 130.9

151.1 - 154.5 Transitional Zone
- Amph with local stringers of carbonatite + feldspar.
- local pyrite associated with amph.

154.5 - 172.3 Beforesite Carbonatite
(As to 106.3)

Box 25

Box 26

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
															154.5	
						-	1	2	-	<1	1.5	340	.140	3.63	155.0	3622
						-	-	2	-	<1	1.5	150	.065	2.93	155.5	3623
						-	-	2	-	<1	1.5	120	.055	2.59	156.1	3624
						-	-	2	-	tr	1	120	.061	2.56	156.7	3625
						-	-	3	-	tr	1.5	160	.072	2.76	157.2	3626
						-	-	3	-	tr	1	100	.048	2.59	157.7	3627
						-	-	5	-	tr	1				158.2	3628
						-	-	4	-	<1	1				158.7	3629
						-	-	+	-	tr	1				159.2	3630
						-	-	3	-	1	1				159.7	3631
						-	1	2	-	1	1.5				160.2	3632

No RAD.

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 12 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 08/17/81

DEPTH	% REC.	ROCK TYPE & DESCRIPTIVE LITHOLOGY	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
				-	5	2	-	1	1				160.7	3633
				-	1	3	-	1	3				161.2	3634
				-	tr	3	1	1	1				161.9	3635
162				2	-	3	-	1	1.5				162.7	3636
				1	-	2	-	tr	1				163.2	3637
				<1	-	2	-	<1	1				163.7	3638
164				<1	-	2	-	tr	2				164.2	3639
				-	-	2	-	<1	1				164.7	3640
				-	-	1.5	-	tr	1				165.2	3641
				-	-	2	-	tr	2				165.7	3642
166				-	-	3	-	tr	2.5				166.2	3643
				tr	-	2	-	1	2				166.7	3644
Box 28				1	-	1.5	-	<1	1				167.2	3645
				1	-	1	-	-	1				167.7	3646
168				2	-	2	-	-	1				168.2	3647
			fractured core.	1	-	1	-	tr	1				168.7	3648
				<1	-	1	-	-	<1				169.2	3649
				2	-	2	-	-	1				169.7	3650
170				1	-	2	-	tr	1				170.2	3651
				-	-	2	-	tr	1.5				170.7	3652
			fracture parrallel to core axis.	-	-	2	-	tr	1				171.2	3653
				-	-	1	-	-	1				171.7	3654
172			90° Basal contact to tranzitional zone.	-	-	4	-	tr	1				172.3	3655
Box 29		172.3 - 184.4 Transitional Zone - Banded amph - gneiss - local bands of beforesite (small.)												
174														
176														

RAD NO

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 13 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 08/17/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
178	Box 30														184.4	
180																
182																
184	Box 31		184.4 - 192.6 Beforesite Carbonatite (As to 106.3)													
186																
188					fractured core											
190	Box 32															
192																

–	–	1	1	tr	1								185.0	3656
–	–	1	–	–	1								185.5	3657
.5	–	1.5	–	tr	1.5								186.0	3658
.5	–	1.5	–	tr	1								186.5	3659
2	–	2	–	tr	1								187.0	3660
1.5	–	2	–	tr	2								187.5	3661
2	–	2	–	tr	1								188.0	3662
.5	–	1	–	<.5	1								188.5	3663
1	–	2	–	<1	1								189.0	3664
1	–	1	–	.5	<1								189.5	3665
1	–	2	–	.5	1								190.0	3666
1	–	2	–	<1	1								190.5	3667
2	–	2	–	<1	1								191.0	3668
2	–	2	–	tr	1								191.5	3669
2	–	1	–	tr	1								192.0	3670

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 14 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN DATE 08/17/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
			192.6 - 197.8 Transitional Zone (As to 151.1)		Basal Contact	-	-	4	-	tr	?				192.6	3671
194																
	Box 33															
196																
					70											
198			197.8 - 202.7 Gneiss (As to 31.7)		60 fracture											
			- local bands of graphite		Broken core											
200	62% Recovered				80											
	Box 34															
202					90											
			202.7 - 206.1 Amph - Biotite Schist - green, well banded													
204					70											
206			206.1 - 209.7 Gneiss (As to 31.7)		50											
	Box 35															
208																

ANSCHUTZ MINING CORP. HOLE NO. BC-19 PAGE 15 OF 15

BLUE RIVER CARBONATITES LOGGED BY BRADLEY BROWN. DATE 8/22/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
210			209.7 END OF HOLE																

ANSCHUTZ MINING CORPORATION

BLUE RIVER CARBONATITES
BRITISH COLUMBIA

HOLE NO. BC 20 PAGE 1 OF 12

PROPERTY: Fir-Az 1 Claims N.T.S. NO. 83D/6E

DEPTH: 121.9 AZIMUTH: 180 ANGLE: -65° ELEVATION: 880

NORTHING: 39,741 EASTING: 42 682

DATE STARTED 9/03/81 DATE COMPLETED: 9/11/81

LOGGED BY: R.E. Taylor

DRILL COMPANY: Boart Specialties CORE SIZE: NQ

HOLE & SITE DESCRIPTION: Hole abandoned when driller twisted off bit & new reaming shell in bottom. Casing left in hole but the upper part was wanted when drill moved to BC-21.

Sample numbers in hole 3799 - 3811.

Note Nb values are Nb_2O_5 in %.

ANSCHUTZ MINING CORP. HOLE NO. B.C. 20 PAGE 2 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E. Anquist DATE 9/07/81

DEPTH METERS	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
2			0 - 4.9 Casing														
4																	
6			4.9 - 120.0 Schist - Gneiss light gray, med. grained, well foliated, quartz, feldspar muscovite ± biotite		60° core locally broken												
8 Box 1																	
10																	
12					55°												
14 Box 2																	
16					60°												

ANSCHUTZ MINING CORP. HOLE NO. B.C-20 PAGE 3 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E. Aaquist DATE 9/07/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
18			local thin qtz bands parallel to foliation													
20	Box 3				50											
22																
24					60											
26	Box 4															
28					70											
30			local red garnets 5-6 mm		65 core sandy 31.7-32.0											
32																

ANSCHUTZ MINING CORP. HOLE NO. B.C. -20 PAGE 4 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E Aaquist DATE 9/07/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
34	Box 6		34 - 39 · quartz bands up to 1 meter thick ; sharp to gradational contacts , locally boudinaged .		70 / 80 / 65											
36																
38																
40																
42	Box 7		42.6 - 43.0 Quartz band with minor pyrite, dics.													
44					55											
46			46.7 disseminated pyrite in schist , also graphite locally.													
48																

ANSCHUTZ MINING CORP. HOLE NO. B.C. 20 PAGE 5 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E. Daguist DATE 9/07/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
50			local diss graphite. muscovite content absent below 50m. rock becomes quartz, feldspar biotite gneiss													
52	Box 9				60											
54			below 54 local diss. graphite with trace of pyrrhotite		55											
56																
58	Box 10				60											
60			@ 61 irregular fractured quartz mass with pyrrhotite in fractures													
62					63.0-63.4 mica rich crumbled.											
64																

ANSCHUTZ MINING CORP. HOLE NO. B.C - 20 PAGE 6 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.S Raquist DATE 9/07/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
66 Box 11				60												
68																
70 Box 12			@ 71 5mm band of pyrrhotite in contact with a quartz band diss graphite in adjacent gneiss muscovite common below 72 m	55												
72																
74				55												
76 Box 13				55												
78				50	muscovite rich sections crumble to sand											
80																

ANSCHUTZ MINING CORP. HOLE NO. BC 20 PAGE 7 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E. Qaquist DATE 9/08/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
32	Box 14		32.0 - 32.5 biotite chlorite schist below 32.5 there are local bands with chlorite poorly developed banding due to varying muscovite content		60												
34																	
36	Box 15				65												
38																	
90					65												
92	Box 16		92.8 - 93.0 green garnet amph. schist.		60 slickensides present on foliation @ 93.2												
94					65												
96																	

ANSCHUTZ MINING CORP. HOLE NO. B.C 20 PAGE 8 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E Aagaard DATE 9/08/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
98	Box 17				58											
					60											
100			103-104 Biotite rich section locally crenulated foliation		below 101 local slickensides in foliation											
102	Box 18															
104					local clay gouge in foliation											
106			garnets 1-2 mm common, locally below 106		55											
108	Box 19				60											
110																
112																

ANSCHUTZ MINING CORP. HOLE NO. B.C 20

BLUE RIVER CARBONATITES LOGGED BY B.E. Aaquist DATE 9/09/81

DEPTH	% REC.	ROCK TYPE & DESCRIPTIVE LITHOLOGY	STRUCTURE & ROCK QUALITY
114 (Box 20)			50°
116			65°
		Basal contact gradational	
118		**120.0 - 120.7 Biotite Amphibolite** green, coarse xline, poorly banded with local crenulations	
120 (Box 21)			
		120.7 - 140.7 Beforsite white, coarse xline; as in holes B.C. 18 & 19 texture varies from breccia to massive. The massive phase carries apatite, the breccia has pyrrhotite (non-magnetic).	inner tube did not lock core was ground.
122	50		
124		124.6 - 124.9 vein of coarse xline amph cut beforsite	
126	35		
128			

SAMPLE DEPTH	Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	Ta ppm	Nb ppm	P_2O_5 %	SAMPLE NUMBER
120.7										
121.7	?	.5	3	-	.5	1				3799
123.2	1.5	-	3	-	.5	1				3800
124.4	2	-	3	-	.5	1.5				3801
125.9	?	-	3	-	.5	1.5				3802
127.4	?	-	3	-	.5	1.5				3803

ANSCHUTZ MINING CORP. HOLE NO. B.C 20 PAGE 10 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E Aagaard DATE 9/11/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
130	33					1	.5	3	–	.5	1.5				130.5	3804
			131.4 – 134.1 Amphibolite as to amph unit at 124.7.			?	–	3	–	tr	1.5				131.4	3805
132	40							90							134.1	3806
134			local amph stringers cut beforsite at all angles			?	–	3	–	.5	1.5				135.0	3807
						1		3		.5	1.5				136.0	3808
136						1		3		.5	1.5				137.0	3810
						1		3		.5	1.5				138.0	3811
138						1		3		.5	1.5				139.0	3812
			a skeletal (carbonate) pyrochlore X @ 140 1cm long		Flow folding above is shear @ 140			3		.5	1.5				139.6	3813
140			based contact lost in broken core.			1		3		.5	1.5				140.7	3814
			140.7 – 170.5 Gneiss amph, qtz, feldspar, carbonate white & green, coarse x fine moderate to poorly banded													
142																
144																

sample tag # 3809 lost

ANSCHUTZ MINING CORP. HOLE NO. BC-20 PAGE 11 OF 12

BLUE RIVER CARBONATITES LOGGED BY B.E Cooper DATE 9/12/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS							ANALYSES				SAMPLE DEPTH	SAMPLE NUMBER
							Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		Ta ppm	Nb ppm	P_2O_5 %			
50																			
60																			
70																			
80																			
90																			
100																			
110																			
120																			

ANSCHUTZ MINING CORP. HOLE NO. BC-20 PAGE 12 OF 12

BLUE RIVER CARBONATITES LOGGED BY B. S. [illegible] DATE 9/12/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
162			[illegible] quartz feldspar [illegible]		[illegible]														
164			161 – 167 [illegible] fine medium [illegible]		[illegible] parallel to core axis [illegible] cm displacement														
166																			
168			[illegible]																
170			170.5 - 171.9 Biotite Schist black, med. to coarse grained, local white blobs of feldspar	35															
171.9 T.D.																			

ANSCHUTZ MINING CORPORATION

BLUE RIVER CARBONATITES
BRITISH COLUMBIA

HOLE NO. BC-21 PAGE 1 OF 16

PROPERTY: FIR-AZ1 CLAIMS N.T.S. NO. 83D/6E

DEPTH: 228.3 AZIMUTH: 090 ANGLE: -65° ELEVATION: 880

NORTHING: 39,741 EASTING: 48 682

DATE STARTED 9/16/81 DATE COMPLETED: 10/01/81

LOGGED BY: B.E. Aaquist

DRILL COMPANY: BORTZ SPECIALTIES CORE SIZE: NQ

HOLE & SITE DESCRIPTION: CASING LEFT IN HOLE - COULD NOT BE PULLED. 7.6 METERS. ALL OTHER TOOLS PULLED.

SAMPLE NUMBERS IN HOLE ARE 3856 TO 3709.

NOTE Nb VALUES ARE Nb_2O_5 IN %.

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 2 OF 16

BLUE RIVER CARBONATITES LOGGED BY B.E. Aaquist DATE 9/29/91

DEPTH Meters	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
2			0 - 7.6 Coring													
4																
6																
8																
10	39		7.6 - 69.6 Gneiss gray, med. xline, poorly banded feldspar, biotite, quartz		55											
12	Rx															
14			13.7 - 14.3 muscovite rich unit		55											
16																

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 3 OF 16

BLUE RIVER CARBONATITES LOGGED BY B.E. Bagnist DATE 9/28/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
18			gneiss as above		65											
20	Box 3				55											
					55											
22																
24	Box 3		24.2 - 25.0 chlorite rich bands		61											
26					51											
28																
30	Box 4		31.7 - 32.0 garnet chlorite amph. gneiss, 1cm garnets @ 31.9 a band of qtz with magnetic pyrrhotite		mostly massive											
32																

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 4 OF 16

BLUE RIVER CARBONATITES LOGGED BY R E Anquist DATE 9/28/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
35			gneiss as above		60											
36					65											
37																
38 Box 5																
39																
40			40.2 - 44.3 local qtz bands some are green because of minor chlorite		45											
41																
42 Box 6																
43																
44					65											
45			@ 45.4 local chlorite rich bands		70											
46 Box 7																
47																

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 5 OF 16

BLUE RIVER CARBONATITES LOGGED BY B.E. Aaquist DATE 9/29/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
50 Box 7			gneiss as above		poorly banded & foliated											
52																
54 Box 8																
56																
58			below 58.5 local bands of green chlorite @ 58.8 irregular masses of pyrrhotite in gneiss & filling fractures in a 5 cm qtz vein.													
60 Box 9																
62																
64																

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 6 OF 16

BLUE RIVER CARBONATITES LOGGED BY R. E. Aagaard DATE 9/28/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
66	Box 10		67.4 - 67.7 bands of light green chlorite		25											
68			68.6 - 69.5 Chlorite Biotite Schist black & green, med. xline		locally crenulated foliation											
70			69.5 - 75.7 Gneiss as above		60											
72	Box 11		ta schist – 69.5 contact – gneiss		50											
74					60											
76	Box 12		75.7 - 79.1 Quartz Sericite Schist with local graphite also local chlorite & muscovite Graphite occurs locally as 1mm laminae on shears.		70 shears common at 70°											
78	Box 70		79.1 - 82.1 Gneiss as above													
80																

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 7 OF 16

BLUE RIVER CARBONATITES LOGGED BY B.E. Ragnist DATE 9/29/91

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
82	Box 13		80.2 - 80.3 biotite rich phase 82.1 - 94.1 Chlorite Biotite Schist as to 69.5 Basal contact gradational over 10 cm 94.1 - 87.2 Foliated Diorite green amphibole pyroxene & white feldspar, med. xline basal contact sharp @ 55°		83.2 - 83.5 broken core on foliation weakly developed foliation											
86	Box 14		87.2 - 75.4 Gneiss - Schist feldspar, qtz, biotite, muscovite, light gray, med. xline locally poorly developed banding local qtz bands with coarse muscovite		well foliated											
92	Box 15		below 93.6 - 4-5 mm garnet @ 94.6 schist occurs as discontinuous lenses in qtz 95.4 - 97.3 Chlorite Biotite Schist as to 69.5													
96																

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 8 OF 16

BLUE RIVER CARBONATITES LOGGED BY R.E. Aaquist DATE 9/29/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
98	Rec 15		Basal contact gradational over 20 cm. 97.8 - 104.9 Foliated Diorite as to 87.2													
100																
102	Rec 16		@ 101.9 qtz with masses of pyrrhotite.													
104			local red garnets in basal 0.3 m Basal contact sharp @ 65° 104.9 - 105.5 Chlorite Biotite Schist as to 69.5. Basal contact gradational over 20 cm													
106			105.5 - 129.1 Gneiss as above													
108	Rec 17															
110																
112																

ANSCHUTZ MINING CORP. HOLE NO. BC-21

BLUE RIVER CARBONATITES LOGGED BY R.E. [illegible] DATE [illegible]/29/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
				60															
114 Box 18																			
116				70															
118			gneiss mostly massive, well foliated [illegible]	30															
120 Box 19																			
122				20	[illegible] brecciation														
124				25															
Box 20			and like masses of qtz, locally below 125, qtz bands up to 1 cm common below 125.																
126																			
128																			

ANSCHUTZ MINING CORP. HOLE NO. B.C. -21 PAGE 10 OF 16

BLUE RIVER CARBONATITES LOGGED BY B. D'Arcy DATE 9/20/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
			Basal contact sharp & irregular appears to terminate gneissic foliation												129.1	
			129 - 130.8 Beforsite : white, coarse		general trend of breccia fractures	?	.	3	1	.1	1.5				130.0	3355
130			no breccia texture, non magnetic pyrrhotite Columbite vis are diss. in beforsite & also in later x-cutting amph veins. Basal contact sharp & irregular			?	-	3	-	tr	1.5				130.8	3356
															131.6	3358
132			132.2 - 138.9 Feldspar : white, coarse xline, massive, local masses of chlorite, dark green. Chlorite give feldspar a spotty dark interval color locally. Chlorite must be after amph or pyrox.													
134																
			Basal contact sharp & irregular chlorite - amph in basal 0.3 m.													
															138.9	
															139.0	357
			138.9 - 142.2 Beforsite as above local very massive blocky material which forms matrix to breccia			?	-	3	-	tr	1.5				139.8	3360
						?	-	3	-	tr	1				140.4	
			pyrrhotite occurs mostly as a cement. Amph is green to black biotite - chlorite occurs in local bands Basal contact sharp.			?	-	3	-	.1	1				141.6	3362
142	Box RR					1%	1	3	-	tr	1				142.0	363
			142.2 - 144.6 Feldspar core with biotite - chlorite at top & bottom feldspar as above			?	1	2	-	.1	1.5				142.9	364
144																

ANSCHUTZ MINING CORP. HOLE NO. BC-21 PAGE 11 OF 16

BLUE RIVER CARBONATITES LOGGED BY B. E. [illegible] DATE 9/29/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
146 (Box 23)			<u>146.6 – 150.2 Diorite Gneiss</u> green & white, coarse xline, massive to poorly banded: [illegible] coarse [illegible] amph & white feldspar, trace [illegible]																
148 (Box 24)			Basal contact sharp & irregular	30°															
150 (Box 24)			<u>150.2 – 151.5 Feldspar</u> [illegible] to 138.9 Basal contact gradational.																
152			<u>151.5 – 152.2 Diorite Gneiss</u> [illegible] 150.2, Basal contact sharp @ 45°																
154 (Box 25)			<u>152.2 – 162.2 Feldspar</u> a.a. to 138.9 local amph xls 2–4 cm.																
156 (Box 25)																			
158 (Box 26)																			

ANSCHUTZ MINING CORP. HOLE NO. BC 21 PAGE 12 OF 16

BLUE RIVER CARBONATITES LOGGED BY R.E. Aaquist DATE 9/30/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
162	Box 26		Basal contact sharp & irregular 162.2 - 163.3 Beforsite white, coarse x'line, breccia texture 5cm of chlorite-amph at upper contact, grades into beforsite. pyrochlore, +/- columbite		a fracture near parallel core axis amph occurs in fracture & grows away from fracture.										162.2	
						2		3		tr	1				163.0	[illegible]
164						2		3		tr	1				163.8	[illegible]
			163.8 - 164.6 Feldspar ac above			-	-	-	-	-	-				164.6	[illegible]
			164.6 - 165.8 Beforsite breccia ac above			3		4			1				164.9	[illegible]
						-	-	-	-	-	-				165.3	[illegible]
166	Box 27		164.9 - 165.3 has only minor mafic minerals.			3		3			1				165.8	[illegible]
			165.8 - ~~170.1~~ Beforsite Porphyry 1 cm dolomite x/s. in a gray f.g. matrix, x/s decrease towards base @168.2 1 cm zircon x/l with 1mm pyrochlore x/l +/-			3		3		tr					166.7	[illegible]
						3		3		tr	1				167.5	[illegible]
168						3	tr	3	tr	tr					168.4	[illegible]
							tr	2		tr					169.3	[illegible]
170						3	tr	2			1				170.1	[illegible]
	75		170.1 - 176.3 Beforsite, gray fine grained, massive		171.3 - 171.8 shear zone	3		3		tr	1				171.3	3876
172	Box 28					2		2			2				171.8	[illegible]
						3		2			1				172.8	[illegible]
						3		2		tr	1				173.8	[illegible]
174						3		2	1	.5	1				174.8	3880
						3		2			1				175.5	3881
176						3		2			1				176.3	3882

ANSCHUTZ MINING CORP. HOLE NO. BC-21 PAGE 13 OF 16

BLUE RIVER CARBONATITES LOGGED BY B. E. Dagquist DATE 9/30/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
178	Box 29		176.3 - 180.7 Beforsite breccia as above from 178.3 down are local amph veins with 5mm chilled contacts 50°-60° common non magnetic pyrrhotite & calcite a screen at 179.2		local chlorite slips @ 70°	2	tr	2	tr		1				177.4	3893
180	Box 30		180.7 - 182.0 Amph as veins above, dark green, med xline			2	1	70							182.0	3897
182	Box 30		182.0 - 185.5 Beforsite breccia as above													
186			185.5 - 189.9 Beforsite massive as to 176.3; local porphyritic phases			3		92			1				187.3	3899
188	Box 31					3	1	2.5			1				189.1	3895
190			basal contact gradational over 10 cm 189.9 - 194.0 Beforsite breccia as above.			3		3			1				191.0	3897
192						3		2			1				192.9	3898

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BLUE RIVER CARBONATITES LOGGED BY B.E. Aaquist DATE 10/01/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY	% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyrochlore	Sulfide	ANALYSES: Ta ppm	Nb ppm	P_2O_5 %	SAMPLE DEPTH	SAMPLE NUMBER
194	Box 32		chlorite-amph in basal cm. 194.0-195.0 Feldspar as above basal contact sharp @ 55° 195.0-196.6 Beforsite breccia as above		local fractures along core axis	3		2.5		tr	1				193.0 194.0 195.0	3899 3900
196	Box		196.6-201.8 Beforsite massive as to 176.3												195.8 196.6	3902 3903
198			local phenocrysts below 198.1												197.6	3904
200	Box 33														199.7	3906
202	Box		201.8-203.0 Beforsite breccia as above												200.7 201.8	
204	Box 34		203.0-216.3 Gabbro-Diorite as above massive to weakly banded, black to green amph or pyrox. & white feldspar												203.0	
206																
209																

ANSCHUTZ MINING CORP. HOLE NO. B.C.21

BLUE RIVER CARBONATITES LOGGED BY B. [illegible] DATE 10/04/81

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS: Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		ANALYSES: Ta ppm	Nb ppm	P_2O_5 %		SAMPLE DEPTH	SAMPLE NUMBER
			Basal contact gradational																
210			210.[illegible]-226.3 Gneiss gray [illegible], well banded to massive																
212 (Box 35)			2[illegible].3-220 local diss. magnetite, pyrrhotite & trace [illegible]	40															
214					Shears parallel to core axis [illegible] with movement [illegible] core [illegible] because [illegible]														
216																			
218 (Box 36)																			
220																			
222			irregular, discontinuous q-3-feldspar bands.																
224				35															

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BLUE RIVER CARBONATITES LOGGED BY R. Agnew DATE 10/20/82

DEPTH	% REC.	GRAPHIC	ROCK TYPE & DESCRIPTIVE LITHOLOGY	GRAPHIC	STRUCTURE & ROCK QUALITY		% ACCESSORY MINERALS							ANALYSES				SAMPLE DEPTH	SAMPLE NUMBER
							Apatite	Biotite	Amph.	Mag.	Pyro-chlore	Sulfide		Ta ppm	Nb ppm	P_2O_5 %			
0																			
356.3 T.D																			