

# CORPORATION FALCONBRIDGE COPPER

822233

093L/01  
Benamy

x METRIC UNITS  
IMPERIAL UNITS

## DRILL HOLE RECORD

HOLE NUMBER BEN 2	GRID CFC 1985	FIELD COORDS	LAT. 32+05S	DEP. 3+25W	ELEV.	COLLAR BRNG.	COLLAR DIP -90	HOLE SIZE NQ	FINAL DEPTH 209.4m
PROJECT Benamy	CLAIM # Lucky Ben 2	SURVEY COORDS				DATE STARTED: Mar 21/85 DATE COMPLETED: Mar 25/85	CONTRACTOR: J. T. Thomas CORE STORAGE: Equity Silver CASING: yes 12.2m		

PURPOSE  
To test DEEPEM anomaly B and to test the Goosly Sequence lower in the stratigraphy

Mine RQD LOG PULSE EM SURVEY  
COLLAR SURVEY MULTISHOT SURVEY

ACID TESTS				TROPARI TESTS			MULTISHOT DATA		
DEPTH ( m )	CORRECTED ANGLE	DEPTH ( )	CORRECTED ANGLE	DEPTH ( )	AZIMUTH	DIP	DEPTH ( )	AZIMUTH	DIP
12.9	90°								
61.0	89°								
139.3	89°								
194.2	88°								
209.4	88.5°								
		Note: Hole is lined with 1 1/2" PVC plastic pipe.							
		Core recovery for the hole averaged 94%.							

<u>From To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
0 to 12.2	Overburden					marked as 12.8 in core, mistake in recording footage by drillers
12.2 to 15.4	Feldspar Andesite Flow	Colour - purple Grain Size - aphan. - 1-3% irregularly shaped white amygdules (<4mm) - 10% plagioclase phenocrysts (<2.5mm) - larger phenocrysts are squarish, altered to a greenish colour; smaller phenocrysts are gray, lath-shaped - soft, poorly consolidated and altered to clay at 14.2 to 14.5 and 15.1 to 15.5 - basal contact ground		- some greenish feldspars are probably sausseritized	barren	
15.4 to 15.8	Andesite Dike	Colour - gray Grain Size - aphan. - 2% plagioclase laths (<3mm) - basal contact sharp, irregular with a weak chill zone over 2mm		- cut by small veinlets of white secondary minerals	barren	
15.8 to 18.5	Feldspar Andesite Flow	Colour - red and purple Grain Size - aphan. - same as 12.8 to 15.4 - upper contact weakly consolidated, clay-rich over 10cm - basal 25 cm of flow bleached a light gray - basal contact sharp, chill over 1mm, black		- minor white secondary minerals in veinlets	barren	

<u>From</u> <u>To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to</u> <u>Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
18.5 to 31.8	Andesite Flow	Colour - gray Grain Size - aphan. - upper part of flow altered to gray and red clays from 18.5 to 25m. - 5cm of alteration at contact - 5-7% white amygdules (<1cm) - 3% plagioclase laths (<6mm) - basal contact sharp, light gray colour over 5mm			barren	BCD 3215 26.9 - 29.9
31.8 to 47.0	Amygda- loidal Feldspar Andesite Porphyry Flow	Colour - purplish-red Grain Size - aphan. - 5-20% white amygdules up to 2 1/2cm - 15% plagioclase phenocrysts up to 4mm in length - a zone of autobreccia from 39.3 to 42.6 is possible contact between two flows of similar composition - 5cm of reddish alteration at base of flow		- many feldspar pheno- crysts altered a green colour	barren	
47.0 to 48.1	Feldspar Andesite Porphyry Dike(?)	Colour - gray Grain Size - aphan. - 2cm of ground core at top contact - 20% plagioclase laths (<6mm) - 5% amygdules up to 5mm - basal contact sharp with 4mm chill zone	30°		barren	

<u>From To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
48.1 to 51.4	Volcanic Conglomerate	Colour - red - hematite-rich matrix - 80% subrounded fragments from <1mm to 8cm, majority are less than 5cm - most fragments are andesite, some amygdaloidal and feldspar porphyritic - no exotic fragments - no grading - basal contact ground, obscured by alteration, appears sharp		- white secondary minerals from matrix for 20cm	barren	
51.4 to 61.6	Amygdaloidal Plagioclase Andesite Porphyry Flow	Colour - gray Grain Size - aphan. - 5% prominent oval white amygdules up to 2cm - 20% plagioclase laths up to 4mm long - 3 to 7mm light gray chilled border phase at basal contact	20°	- some greenish-white feldspars	barren	BCD 3216 55.6 - 58.7
61.6 to 63.1	Feldspar Andesite Porphyry Flow	Colour - black Grain Size - aphan. - 15% plagioclase laths up to 4mm long - basalt contact sharp	20°	- 1/2cm layer of hematite at top contact - hematite on fractures and some in feldspars - some feldspars are a green colour - clays developed at basal contact	barren	
63.1 to 64.4	Amygdaloidal Feldspar Andesite Flow	Colour - grey Grain Size - aphan. - 5-10% irregularly-shaped amygdules up to 1cm - 10% plagioclase laths up to 6mm		- plagioclase partially altered to hematite - white veinlets	barren	

<u>From To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
64.4 to 77.4	Feldspar Andesite Porphyry Flow	Colour - gray Grain Size - aphan. - 64.4 to 66.3 is reddish flow top breccia - 20% plagioclase laths (<6mm) - basal contact not preserved, must be relatively sharp		- top contact marked by alteration minerals - veinlet of clay and carbonate with included fragments of wallrock - some green feldspars	barren	
77.4 to 82.9	Trachy- andesite Dike	Colour - purple Grain Size - aphan. - 25% euhedral plagioclase pheno- crysts (<8mm) - 1-5% white amygdules (<7mm) - basal contact sharp	30°	- 1cm of hematitic clay at basal contact	barren	
82.9 to 98.8	Feldspar Andesite Porphyry Flow	Grain Size - aphan. - top of flow red and green with fragments of same composition as flow - 1-5% white amygdules (<4mm) particularly noticeable near contacts - 20% euhedral plagioclase (<10mm) form a weak fluidal texture - basal contact sharp with no chill zone	25°	- some greenish plagio- clase phenocrysts - clays developed at basal contact	barren	BCD 3217 90.7 - 93.6
98.8 to 106.6	Feldspar Andesite Porphyry Flow	Colour - gray Grain Size - aphan. - 20% plagioclase phenocrysts (<8mm) - scattered carbonate-filled amygdules - basal contact sharp, slightly irregular		- few greenish plagio- clase phenocrysts	barren	non-magnetic BCD 3218 119.5 - 122.9

<u>From To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
106.6 to 125.3	Amygdaloidal Feldspar Andesite Flow	Colour - gray and red Grain Size - aphan. - flow breccia from 106.6 to 110.9 and 115.0 to 125.3 - 10-25% white amygdules less than 3cm, some with open spaces in core - 10% plagioclase laths up to 3mm - basal contact sharp	40°	- some greenish feldspars - abundant hematite  - at basal contact 5mm of clay minerals	barren	
125.3 to 139.4	Pyroxene Feldspar Andesite Porphyry Flow Dike(?)	Colour - gray Grain Size - f.g. - 5% irregular white and gray amygdules up to 15mm - 20% plagioclase laths less than 15mm long - 5% anhedral dark green pyroxene phenocrysts up to 2mm - basal contact sharp with 5cm black basal border phase, no change in grain size	25°	- 1cm wide brown gray altered border - quartz veinlet at 131.3 to 131.35m - numerous quartz veinlets from 134.4 to 136.5m		- strongly magnetic
139.4 to 144.2	Pyroxene Feldspar Andesite Porphyry Dike	Colour - gray Grain Size - aphan. - 2mm chilled rim with quartz veinlet at contact - scarce small amygdules - 15% plagioclase up to 7mm - some gray laths and squarish greenish-white phenocrysts - 5% subhedral dark green pyroxene phenocrysts less than 2mm - basal contact sharp	0°	- some greenish feldspars - minor quartz veinlets	barren	moderately magnetic

<u>From</u> <u>To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to</u> <u>Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
144.2 to 153.9	Feldspar Andesite Dike	Colour - purple Grain Size - aphan. to f.g. - upper contact sharp - top 1 1/2m contains smaller phenocrysts and is aphanitic - 10% plagioclase laths up to 8mm long - 7% oval white amygdules (<6mm) - basal contact sharp, obscured by ground core	high angle		barren	moderately magnetic
153.9 to 162.6	Amygda- loidal Feldspar Andesite Flow	- flow breccia intermixed with fragments of units not seen higher in hole - same as 106.6 to 125.25m. - includes dacitic fragment with 3% pyrite and minor alteration - two thin lenses of sandstone with mixture of aphanitic red, brown and white tuffaceous fragments			barren	- base of flow incorporating underlying unit BCD 3219 154.3 - 157.1
162.6 to 162.7	Conglomer- ate	Colour - red - aphanitic tuffaceous fragments are red, white, gray and purple in colour - subrounded to angular			barren	
162.7 to 174.5	Volcanic Breccia	Colour - gray and purple - volcanic sandstone interstitial to fragments - some flow banded fragments of dacite - majority of fragments are andesitic with 3% white amygdules less than 1mm.		- some of the large fragments have bleached margins - basal 1/2 metre is reddish	barren	

<u>From</u> <u>To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to</u> <u>Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
174.5 to 178.2	Amygdaloidal Andesite Flow	Colour - gray Grain Size - aphan. - upper contact sharp and irregular - 3-7% white amygdules up to 6mm - scattered plagioclase laths (<6mm) - base and top of flow slightly more amygdaloidal - basal contact not sharp	25°	- numerous fractures filled with silica and hematite - some fractures with pinkish halo in wallrock - similar to 154.5 to 157.6m in Ben 1 but less well developed	barren	BCD 3220 175.1 - 177.9
178.2 to 178.5	Volcanic Breccia	Colour - red - andesitic fragments with clastic sandstone matrix - basal contact poorly defined			barren	
178.5 to 180	Volcanic Conglomerate and Sandstone	Colour - red and gray - interbedded sandstone, siltstone and conglomerate - tuffaceous and andesitic fragments - several graded beds indicating tops towards casing	75°		barren	
180 to 183.9	Feldspar Andesite Flow	Colour - gray - top 1 1/2m red, abundant microvesicles - 5% plagioclase laths less than 2mm - 2% reddish-black phenocrysts (< 1 1/2m) new hematite		- feldspars altered to soft secondary mineral	- trace pyrite	non-magnetic
183.9 to 184.9	Amygdaloidal Feldspar Andesite Dike	- top contact has light gray 3mm chill zone - 5% amygdules less than 5mm - 7% plagioclase laths up to 6mm - basal contact chilled for 5mm		- clay seam over 2mm at contact	barren	moderately magnetic



<u>From To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
184.9 to 187.6	Andesite Flow	- same as 180 to 183.9 - amygdaloidal base for 1/2m				barren
187.6 to 188.7	Amygdaloidal Feldspar Andesite Porphyry Flow	Colour - red Grain Size - aphan. - sharp contacts with 2mm chill zone - 10% white oval amygdules filled with carbonate up to 3 cm - amygdules grade to <5mm in size near dike		- carbonate veinlets		barren
188.7 to 195.4	Trachyandesite Dike	Colour - purple Grain Size - aphan. - sharp contacts with 2mm chill zone - 20% plagioclase laths <4cm - contains volcanic fragments from both adjacent flows and units elsewhere in stratigraphy - basal contact	45°	- carbonate-filled fractures with fragments of breccia included		barren
195.4 to 196.2	Amygdaloidal Andesite Flow	- same as 187.6 to 188.7m - sharp transition to underlying unit				barren
196.2 to 201.7	Volcanic Breccia	Colour - red - 5cm of banded siltstone at top - similar to 162.7 to 174.5m but contains more andesitic fragments and fewer dacitic ones - basal contact marked by gray sandstone				barren

<u>From To</u>	<u>Rock Type</u>	<u>Texture and Structure</u>	<u>Angle to Core Axis</u>	<u>Alteration</u>	<u>Sulphides</u>	<u>Remarks</u>
201.7 to 209.4	Altered Gray Andesite	Colour - gray Grain Size - aphan. to f.g. - 1-7% white carbonate amygdules less than 7mm - hematitic specks		- core fractured with hematite in fractures - one patch of pseudo breccia over 10cm at end of hole - minor carbonate veinlets		strongly magnetic BCD 3221 204.2 - 207.2
209.4	E.O.H.					

#### Conclusions

1. As with BEN 1, the geophysical anomaly (B) is undoubtedly due to clay-rich flow contacts in the Tertiary volcanic flows at the top of the hole.
2. The hole stopped in the Goosly Sequence in the basal part of the volcanic flow division as shown by the intercalated breccias, conglomerates and sandstones which belong to the volcanic-sedimentary division.
3. If the Equity Silver Mine geology can be extrapolated to the Benamy Property it is necessary to move hundreds of metres (750m?) to the east to find the ore horizon.

LITHOGEOCHEMISTRY

MAJOR OXIDES

TRACE ELEMENTS

B

SAMPLE NUMBER	FROM (m)	TO (m)	MAJOR OXIDES										TRACE ELEMENTS					Rock Type	Alt	Min	ppm Sr		
			SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	Na <sub>2</sub> O	K <sub>2</sub> O	FeO	MnO	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	ppm Cu	ppm Zn	ppm Pb	ppm Ag	ppm Ba						
BCD 3215	26.9	29.9	50.8					2.63	1.80			1.15		50	75	12	0.2	940				<del>ppm</del> 20	940
Tertiary andesite flow																							
3216	55.6	58.7	54.0					3.85	3.30			1.07		44	89	18	0.2	1380				20	1200
Tertiary plagioclase andesite porphyry flow																							
3217	90.7	93.6	54.3					3.83	3.22			1.02		43	82	12	0.2	1340				20	1220
Tertiary plagioclase andesite porphyry flow																							
3218	119.5	122.9	50.0					3.08	2.75			1.14		38	82	4	0.2	1170				20	1160
Tertiary plagioclase andesite porphyry flow																							
3219	154.3	157.1	54.8					3.10	3.21			1.14		40	97	16	0.4	1000				<20	1090
Tertiary plagioclase andesite porphyry flow																							
3220	175.1	177.9	53.5					4.77	3.65			1.37		43	117	24	7.8	1620				<20	1100
Goosly Sequence amygdaloidal andesite flow																							
3221	204.2	207.2	54.5					5.07	3.54			1.30		34	107	14	40.2	1320				<20	1270
Goosly Sequence massive andesite																							

Hole No. BEN 2

Entered by D. V. Lefebure

Logged by D. V. Lefebure

Page No. 11

SUMMARY LOG - BEN 2

0 - 12.8	overburden
12.8 - 18.5	feldspar andesite flow
18.5 - 31.8	andesite flow
31.8 - 47.0	amygdaloidal feldspar andesite porphyry flow
47.0 - 48.1	feldspar andesite porphyry dike
48.1 - 51.4	volcanic conglomerate - no exotic fragments
51.4 - 61.6	amygdaloidal plagioclase andesite porphyry flow
61.6 - 77.4	feldspar andesite porphyry flow
77.4 - 82.9	trachyandesite dike
82.9 - 106.6	feldspar andesite porphyry flow
106.6 - 125.3	amygdaloidal feldspar andesite flow
125.3 - 144.2	pyroxene feldspar andesite porphyry dike
144.2 - 153.9	feldspar andesite dike
153.9 - 162.6	amygdaloidal feldspar andesite flow - breccia - exotic fragments, one with 3% pyrite
	unconformity
162.6 - 162.7	red conglomerate
162.7 - 174.5	volcanic breccia with sandstone matrix
174.5 - 178.2	amygdaloidal andesite flow
178.2 - 180.1	sandstone, siltstone, conglomerate, weakly graded, bedded tuffaceous fragments
180.1 - 183.9	red andesite flow
183.9 - 184.9	feldspar andesite dike
184.9 - 187.7	andesite flow
187.7 - 195.4	trachyandesite dike
195.4 - 196.2	amygdaloidal andesite
196.2 - 201.7	volcanic bx
201.7 - 209.4	gray massive andesite
209.4	E.O.H.

Formations - BEN 2

0 - 12.8	overburden
12.8 - 162.6	Tertiary volcanic flows - Buck Creek, Goosly Lake
	unconformity
162.6 - 209.4	Middle Jurassic to Upper Cretaceous, Kasalka Group, Goosly Sequence, volcanic flow division