42A01NE0263 63.5410 GRENFELL

010

REPORT ON THE 1988-89

DIAMOND DRILL PROGRAM

TECK-GRENFELL PROPERTY

of

FLINT ROCK MINES LIMITED

Toronto, Ontario
April 1989

Randy Crowley B.Sc.
Geologist

OM87-6-C-345

The "Teck-Grenfell Property" of Flint Rock Mines Ltd. consists of 12 19 unpatented mining claims located in the Townships of Teck and Grenfell. The property has previously been reported on. Reports by Bayne (1972) and George (1986) contain a summary of the known work history of the property and the regional geology. Reports by Crowley (1988) and Muloin (1988) describe the results of magnetic, electomagnetic (VLF-EM) and geological surveys completed on the property in 1988 by Flint Rock Mines Ltd.

This report describes the results of a diamond drilling program completed on the property in December 1988 and January 1989.

1988-89 DRILL PROGRAM

The 1988-89 drill program comprised the drill of four holes for a total footage of 1279'. Table 1 provides a summary of drill coordinates and depths.

Table 1

Ddh #	Latitude	Departure	Dip	Bearing	Length	Target	
FRM-1-88	800 N	150 W	-45°	330° Az	291'	#2 Shaft Zone	291
FRM-2-88	800 N	80 W	-45°	330° Az	336'	#2 Shaft Zone	336
FRM-3-88	560 N	130 W	-45°	330° Az	325'	#5 Vein Zone	325
FRM-4-88	560 N	130 W	-45°	150° Az	327'	#2 Vein Zone	327
							1279'

The drill contractor was Sparta Diamond Drilling, Kirkland Lake, Ontario. Core was logged by Randy Crowley (FRM 1 to FRM 3) and Toby Hughes, Matheson, Ontario (FRM 4). All core is stored at the Corona Corporation drill in Sesekinika. Diamond Drill Logs are appended to this report.

DISCUSSION

Drilling intersected a series of mafic volcanic tuffs and tuffaceous sediments, mafic volcanic flows, fine grained to medium grained gabbros and a porphyritic hornblende syenite. Contact relationships indicate that the gabbros intruded the volcanic sequence and were in turn intruded by the syenite.

The syenite was intersected in FRM-1-88 and FRM-2-88 and is correlated with the syenite encountered in the underground workings at Shaft #2.

A intensely carbonatized zone intersected in FRM-3-88 probably correlates with an alteration zone identified by Muloin (1988). Assays from this zone returned disappointing results (Appendix A).

A weak VLF-EM anomaly associated with Vein #2 may correlate with tuffaceous sediments intersected in FRM-4-89.

RECOMMENDATIONS

The "#2 Shaft Zone" has been well tested by surface trenching, sampling, geological mapping and diamond drilling. As a result of the discouraging results obtained from these surveys no further work is recommended on the zone.

REFERENCES

Bayne, A.S.,

1972 Report on Mining Claims held by the Orme Prospecting Syndicate, Townships of Teck and Grenfell, Kirkland Lake Gold Mining Area, Larder Lake Mining Division, Ontario; unpublished report, August 25, 1972, A.S. Bayne and Company, Consulting Engineers.

George, P.T.,

1986 Geological Report for Flint Rock Mines Ltd. Re: Teck-Grenfell Property, Larder Lake Mining Division, Ontario; unpublished report, July 15, 1985, P.T. George.P. Eng., Consulting Geologist

Crowley, R.B.,

1988 Recommended Exploration Program on the Teck-Grenfell Property of Flint Rock Mines Ltd ; unpublished report, February 25, 1988.

Crowley, R.B.,

1988 Magnetometer and VLF-EM 16 Survey for Flint Rock Mines Ltd. Townships of Teck and Grenfell, Larder Lake Mining Division; unpublished report, August 1988.

Muloin, B.T.,

1988 Teck-Grenfell Property, Flint Rock Mines Ltd., Kirkland Lake Ontario, Larder Lake Mining Division; unpublished report, October 1988.

CERTIFICATE OF QUALIFICATION

I RANDY BRIAN CROWLEY of the City of North York, Province of Ontario, do certify that :-

(1) I am an independent consulting geologist resident at 508-30 Fashion Roseway, City of North York, Ontario M2N 6B4, with offices at Suite 500, 67 Richmond Street West, in the City of Toronto.

(2) THAT I am a graduate of the Memorial University of Newfoundland with the degree of Bachelor of Science in Geology, 1977.

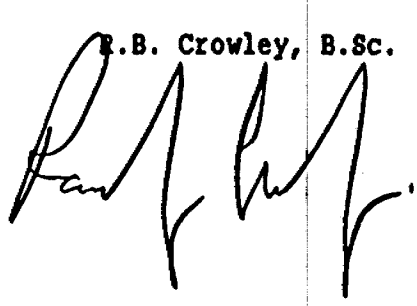
(3) THAT I have been practicing my profession since 1977.

(4) That my report dated April 1989 is based upon a personal examination of the drill core and and an examination of the available information.

(5) That I have no personal interest, direct or indirect, in the property or securities of Flint Rock Mines Ltd., nor do I expect to receive any such interest in the future.

April 1988
Toronto Ontario

R.B. Crowley, B.Sc.



TECK GRENFELL PROPERTY
LARDER LAKE MINING DIVISION
ONTARIO

GRID LOCATION MAP with GEOLOGICAL INTERPRETATION

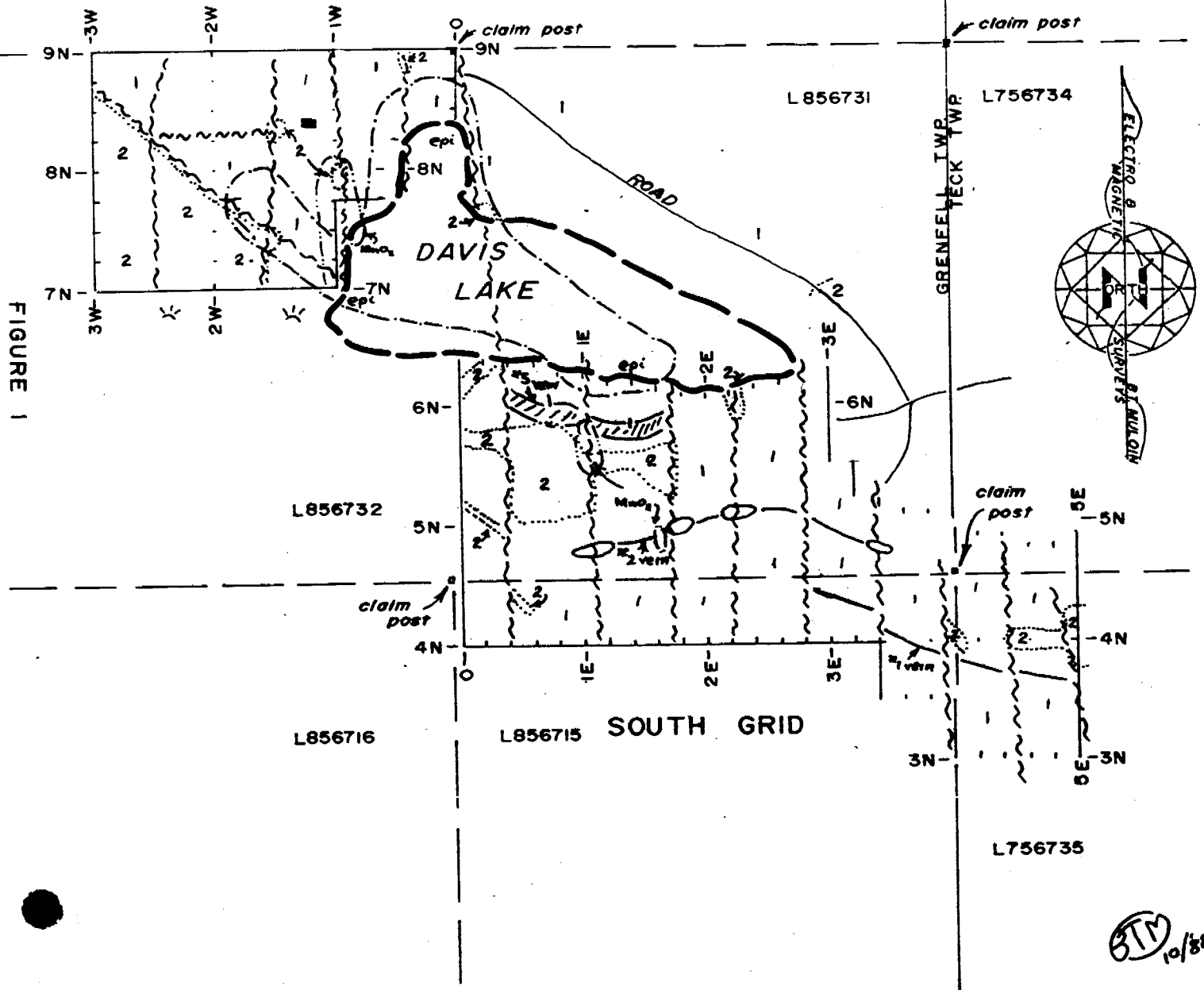


FIGURE 1

LEGEND

1 BASALT
2 INTRUSIVE
LITHOLOGIC CONTACT
FRACTURE & MINERALIZING CHANNEL
epi EPIDOTE ALTERATION HALO
MnO_2 MANGANESE OXIDES ALTERATION HALO

MAPPING and INTERPRETATION by
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SCALE 1: 5000

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BTM 10/88

APPENDIX A

DIAMOND DRILL RECORD

NAME OF PROPERTY : Teck-Grenfell
HOLE # : FRM-1-88
LOCATION :
LATITUDE : 800 N
DEPARTURE : 150 W
ELEVATION : 0.00
STARTED : December 24, 1988
FINISHED : December 27, 1988
LOGGED BY : Randy Crowley
NOTES : drill units in imperial measure. Grid co-ordinates in metric. Core is stored at the Corana Corp. core shack in Sesikenika.

DEPTH	DIP	AZ
Collar	-45°	330°
No Down-hole tests		

From	To	Description	Sample	From	To	Length	Au
0.0	2.0	Casing	NO	SAMPLES	TAKEN		
2.0	187.0	MAFIC VOLCANIC f.g., green, massive with fine (<5mm) veinlets of epidote, calcite and pyrite. Occasional bands of flow breccia. 108.5 - 109.5 pyritic quartz veins total 10% of zone. 111.1 - 112.5 flow breccia, rounded clasts of mafic volc. 152.5 - 153.0 zenolith of porphyritic syenite. 150.5 - 152.5 flow breccia containing two fragments of porphyritic syenite. < .5% py in breccia zone. 171.0 - 180.0 increased epidote alteration.					
187.0	236.0	SYENITE massive, pink, hornblende syenite. Upper contact sharp & irregular. Lower contact lost in ground core (@ begining of new run). Mainly equigranular and massive with several porphyritic zones. Minor quartz veinlets and disseminated pyrite.					
236.0	291.0 EOH	MAFIC VOLCANIC (same as from 0.00 to 187.0) f.g., green, massive with fine (<5mm) veinlets of epidote, calcite and pyrite. 276.0 - 280.0 Flow breccia					

DIAMOND DRILL RECORD

NAME OF PROPERTY : Teck-Grenfell
HOLE # : FRM-2-88
LOCATION :
LATITUDE : 800 N
DEPARTURE : 080 W
ELEVATION : 0.00
STARTED : December 14, 1988
FINISHED : December 16, 1988
LOGGED BY : Randy Crowley
NOTES : drill units in imperial measure. Grid co-ordinates in metric. Core is stored at the Corana Corp. core shack in Sesikenika.

DEPTH	DIP	AZ
Collar	-45°	330°
No Down-hole tests		

From	To	Description	Sample	From	To	Length	Au
0.0	5.0	Casing	NO	SAMPLES	TAKEN		
5.0	81.5	MAFIC VOLCANIC f.g., massive, equigranular to micro-porphyritic mafic volcanic with extensive epidote-carbonate filled fractures (<4mm). Zones of intense epidote alter. occur @ : 14.0 - 16.0 (extensive pink calcite veining.) 18.0 - 23.5 blotchy epidote alt. 25.0 - 26.0 epidotized breccia zone Epidote increases in abundance onward from 72.0.					
81.5	92.0	GABBRO CHILL MARGIN ZONE					
92.0	180.0	GABBRO m.g., equigranular, grey-green Lower chill margin zone begins @ 165.0. From 165.0 to 180.0 the gabbro becomes increasingly fine grained and grades into a chilled margin zone.					
180.0	196.5	GABBRO CHILL MARGIN ZONE					
196.5	276.5	GABBRO similar to unit from 92.0 to 180.0. but slightly coarser grained with more calcite veining and increased epidote and saussurite alteration.					
276.5	294.0	POTASSIC ALTERATION ZONE anhedral zones of pink potassium alteration in a dark chloritic matrix. The zone contains Potassium -chlorite - epidote -					

DIAMOND DRILL RECORD

NAME OF PROPERTY : Teck-Grenfell

From	To	Description	Sample	From	To	Length	Au
276.5	294.0 cont.	calcite alteration with a trace of pyrite.					
294.0	310.5	PORPHYRITIC SYENITE Pink and green feldspar porphyritic, hornblende bearing syenite. Feldspar phenocrysts are euhedral and persist to the lower contact which is sharp & irregular. The upper contact is diffuse with the zone of potassic alteration. Trace py.					
310.5	336.0 EOH	SILICIFIED MAFIC VOLCANIC dark green, v.f.g silicified mafic volcanic. 314.5 - 317.0 hornblende-syenite					

DIAMOND DRILL RECORD

NAME OF PROPERTY : Teck-Grenfell
HOLE # : FRM-3-88
LOCATION :
LATITUDE : 560 N
DEPARTURE : 130 E
ELEVATION : 0.00
STARTED : January 04, 1989
FINISHED : January 07, 1989
LOGGED BY : Randy Crowley
NOTES : drill units in imperial measure. Grid co-ordinates in metric. Core is stored at the Corana Corp. core shack in Sesikenika.

DEPTH	DIP	AZ
Collar	-45°	330°
No Down-hole tests		

From	To	Description	Sample	From	To	Length	Au
0.0	5.0	Casing					
5.0	49.5	MAFIC VOLCANIC f.g. dark green, massive, equi-granular to micro-porphyritic. Minor disseminated pyrite (<2mm) Minor quartz filled fractures @ 30° to 70° to the core axis. 38.0 - 40.0 flow breccia.					
49.5	77.0	GABBRO m.g., grey. Gradational from upper contact to medium grained gabbro @ 65.0. Lower contact is gradational starting from 72.0. The upper contact is sharp and 40° to the core axis. The lower contact is diffuse.					
77.0	78.6	QUARTZ-CARBONATE ZONE grey, quartz rich with saussur-itized plaigioclase. The groun-mass is completly carbonatized.					
78.6	121.0	GABBRO (medium grained) m.g, becoming progressively coarser with depth. Color grades from a lighter grey to a darker grey with depth. The upper contact is not chilled.					
121.0	148.0	GABBRO (fine grained) f.g., grey, grading into dark grey to black gabbro. Gradational lower contact, diffuse upper contact.					
148.0	228.0	MAFIC VOLCANIC dark green to medium dark green					

DIAMOND DRILL RECORD

NAME OF PROPERTY : Teck-Grenfell

From	To	Description	Sample	From	To	Length	Au
148.0	228.0 cont	f.g. mafic volcanic.					ppb?
		151.0 - 154.0 a leached silicified zone with a stockwork of 1-2 mm calcite-epidote veins. Trace pyrite.	11501	151.0	154.0	3.0	nil
		199.5 - 200.0 quartz epidote vein 30° to the core axis. Minor chalcopyrite.	11502	199.5	200.0	0.5	30/40
			11503	200.0	204.0	4.0	nil
			11504	204.0	209.0	5.0	10
			11505	209.0	213.0	4.0	nil
		200.0 - 204.0 flow breccia with subrounded darker green clasts in a paler matrix. Clasts have alteration halos.	11506	213.0	218.0	5.0	nil
			11507	218.0	223.0	5.0	nil
			11508	223.0	228.0	5.0	10
			11509	228.0	231.5	3.5	nil
			11510	231.5	234.0	3.5	nil
		209.0 - 213.0 breccia zone. coarser fragment that previous breccias. Pyrite along fractures	11511	234.0	237.0	3.0	20
			11512	237.0	240.0	3.0	nil
			11513	240.0	244.0	4.0	nil
			11514	244.0	247.5	3.5	10
		209.0 - 209.1 pyrite band with minor chalcopyrite.	11515	247.5	251.25	3.75	nil
			11516	251.25	253.5	2.25	nil
		213.0 - 218.0 intercalated massive and brecciated zones. Minor pyrite.	11517	260.8	261.2	0.4	120/120
228.0	253.5	CARBONATE-QUARTZ ALTERATION ZONE					
		231.5 - 237.0 buff colored completely carbonat. zone with qtz-calcite stringers and minor pyrite.					
		236.0 - 237 pyritic zone					
		237.0 - 244.0 breccia, subrounded dark green clasts ≤ 3cm in a grey matrix.					
		244.0 - 251.25 f.g. dense mafic volcanic, mico-porphyritic, weakly brecciated.					
		251.25 -253.5 buff colored carbonate zone. Qtz vein @ 252.8					
		260.8 - 261.2 nearly-massive pyrrhotite.					
253.5	325.0 EOH	MAFIC VOLCANIC					
		carbonate zones occur to 278.3 c.g. disseminated pyrite to EOH *pyrrhotite occurs from 260.8 to EOH as veinlets and "clots"*					

JOURNAL DE SONDAGES

No F-4-89

Feuille No 1 de 4

De ____ à ____

Profondeur totale: 327 ft

Journal: T.N.J. Hughes

Date: ____

Ligne : ____ Ord. : ____ Profondeur : ____ Couronne

Section : ____ Ord. : ____ Plongée : ____ AX: EX:

Lat. : ____ Long. : ____ Azimut : ____ AQ:

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Azimut: ____ Terminé le : ____

Niveau: ____ Entrepreneur : ____

DE	A	GÉOLOGIE	ÉCHANTILLON No:	De	A	Long.	ANALYSES % Py est.	% po. est	Au. oz. T	Visif.
0	8.5	Casing								
8.5	485	Mafic Volcanics F-g., grey-green, relatively massive, non-magnetic. Wkly. chloritic. Contains 1-2%, scattered wkly. albitized, tr. carbonatized, mm-sub-mm plag. xls., (?-amygdules), 2-3% thread or stringer cte., 1-2% bleached, wkly. to tr. silicified, cm-dm wide zones, possibly representing selvedges or flow tops. Tr. py., & concentratedwithin late chl-epidote-saussurite+qtz fracture infill sets. Fracture sets @ 45-50, 60+, & 25-30 to CA. Blocky, from: 8.5-10.5, RQD 45%; 24-25, RQD nil; 59-64, RQD 35%. Chloritic S-planes. Often @ 20-35 to CA.								
8.5	569	Int. Ash Tuff. Pale grey, f-g., lepidoblastic to nr. massive. Tr. interstitial cte. Granoblastic in some sections. Non-magnetic. Abundant, sub-mm plag. clasts, well-sorted, near clast-supported, in a f-g., near aphanitic fel +wk. siliceous matrix hosting less than 5% chloritized mafic volcanic clasts of av. diam. 2 mm. Crudely chl. lineated in some sections, @ 45 to CA. Overall, tr. diss. py.								
569	1794	Mafic Volcanics As 8.5-485								

JOURNAL DE SONDAGES

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n :	Section :	Ord. :	Plongée :				AX: EX:	Feuille No 2 de 4			
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:	Azimut:		Terminé le :					Journal:			
S. :	Niveau:		Entrepreneur :					Date:			

DE	À	GÉOLOGIE	ÉCHANTILLON No:	De	À	Long.	ANALYSES % Py est.	% pa. est.	Au, oz. T	Visif.
		71.9-72.2 Ash Tuffaceous Interbed. Bleached, siliceous, autobrecciated.					Ag	Cu	Zn	
		Possibly hyaloclastic. Weak, v. fine fel.-silica-sericite-(saussurite) matrix					PPM	PPM	PPM	
		hosting sub-angular mm-cm fragments of same.								
		89.0-89.4 As 71.9-72.2 Initially, lamellar, (stratiform, wavy), locally		87.6	90.5	2.9	2	98	150	
		slumped, ± autobrecciated. F-g. Becomes pale buff grey, sericite-qtz-Ab-chl-								
		oritized, with wk. thread cte. Nil py.								
		Below 89.4, volcanics contain 1% thread/stringer (infill), or patchy,								
		recrystallized, or diss. sub-idioblastic to cubic, ± chloritized amygdules.								
		1% hairwidth cte±Ab±tr. epidote±qtz alteration.								
		Fractures @ 20-25, 75, 50-45 to CA. Overall, f-g., greenish-grey.								
		From 142-165, 3% cm wide mesh or patchy, anastomozing py, often within								
		siliceous, cherty ?-tuff interbed. In some sections, 1% Ab, tr. silica, tr.								
		haematite threads.								
		172.0-179.4 Becoming bleached, locally chloritic, lineated, then finely								
		laminated &/or slumped, with wk. brecciation. Possibly a hyaloclastic over								
		lower 0.7 ft. & containing tr. diss. py which often nucleates in ovoid mafic,								
		chloritized, mm size ?-clasts. CAL 47. Sub-section contains fine diss. py.								
		over cm-dm widths.								
9-4	191.2	Int. Ash Tuff.								
		Grye, non-magnetic, near massive. Extremely fine to f-g. Abundant sub-mm								

JOURNAL DE SONDAGES

No F-4-89

Feuille No 3 de 4

De ____ à ____

Profondeur totale: ____

Journal: ____

Date: ____

Ligne : ____ Ord. : ____ Profondeur : ____ Couronne

Section : ____ Ord. : ____ Plongée : ____ AX: EX:

Lat. : ____ Long. : ____ Azimut : ____ AQ:

Elévation Orifice: ____ Commencé le : ____

Azimut: ____ Terminé le : ____

Niveau: ____ Entrepreneur : ____

DE	A	GÉOLOGIE	ÉCHANTILLON No:	De	A	Long.	ANALYSES % Py est.	% po. est	Au. oz. T	Valf.
		well-sorted, sub-idioblastic, possibly abraded, patially ?-devitrified fel.								
		xls or shards within a nr. aphanitic matrix. (Rhyodacitic in composition).		186	191	5	1	100	340	
		Less than 5% very fine mafic clasts. 2% thread to mm wide cte. Mr. to v. wk.								
		matrix carbonate which occasionally blastizes & bleaches unit. ⅓% py.								
1-2	327.0	Tuffaceous Silt. Turbiditic.								
		V. f-g., grey, massive, locally with graphite/bte threads or slip planes.								
		Characterized by uniform feldspathic/silt matrix, with localized bleaching by								
		v. fine cte-saussurite anastomozing threads, & localized, wk. to moderate								
		silica+epidote rich brecciating fluids. Latter notably from 221.4-226.5.								
		Overall, 3% patchy, stringer or, rarely, diss. Po, tr. py. Texturally, grano-								
		blastic. Matrix is often v. finely bx'd with mesh fabric around clastic Po/Py.								
		208.4-212.0 Blocky or lost core.		206	212	6	1	110	100	
		264.0-267.1 Weakly silicic &/or brecciated, with localized, v. wk. thread		226	230	4	2	130	220	
		cte±silica. Still contains 'patchy' mm-cm ragged Po tr py & overprinting, thread		230	235	5	1	83	140	
		sulphides. (i.e., fine bx'n pre-dates rexln of sulphides).		250	255	5	1	100	160	
		269.0-272.8 Lithic Xl Ash Tuff. F-g., grey to buff brown grey. Abundant, f-g.		273	277	4	1	96	120	
		feldspathic xls. which locally, coalesce, otherwise are matrix supported, with		297	302	5	1	88	160	
		interstitial tr. silica, & 3-4% sub-mm, often carbonatized bte-chl. mafic		310	315	5	1	61	130	
		clasts. Texturally, grano-lepidoblastic. Gradational, 1-2in wide contacts.								
		Below 272.8, increasingly silty rather than tuffaceous, with 2% diss. or								

JOURNAL DE SONDAGES

No F-4-89

Feuille No 4 de 4

De ____ à ____

Profondeur totale: ____

Journal: ____

Date: ____

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) : ____	Elévation Orifice: ____		Commencé le : ____							
: ____	Azimut: ____		Terminé le : ____							
S. : ____	Niveau: ____		Entrepreneur : ____							

...DE	A	GÉOLOGIE	ÉCHANTILLON No:	De	A	Long.	ANALYSES % Py est.	% po. est.	Au, oz. T	Visit.
		cm patchy to ragged Po/tr. py, & wk. cm-dm wide bleached carbonatized sections								
		partially tuffaceous in origin hosting skeletal crystallizing sphalerite +Po.								
		e.g., @ 305 ft. Sulphides often located within syn- to post-kinematic thread								
		overgrowths.								
		Texturally, massive, locally slumped/brecciated or simply fractured, & often								
		containing thread to anastomozing recrystallized bte. Some sections appear								
		fine tuffaceous or ?-cherty matrix 'contaminated'. Av sulphides below 300 ft.,								
		1% .								
		EOH 327 ft.								

42A01NE0263 63.5410 GRENFELL

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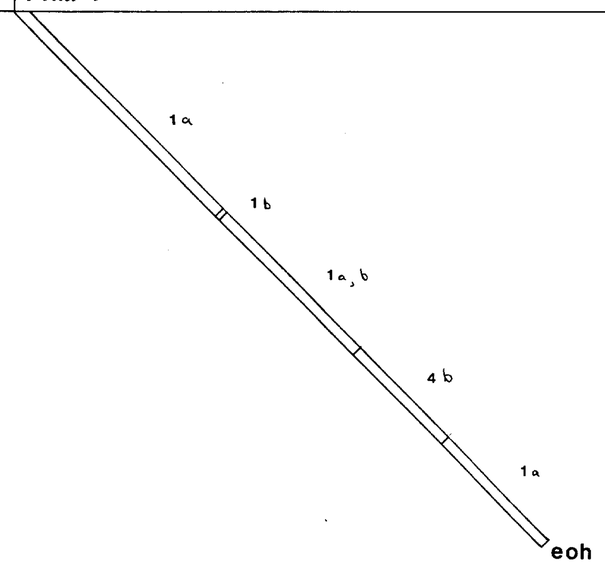
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OM 87-6-C-345

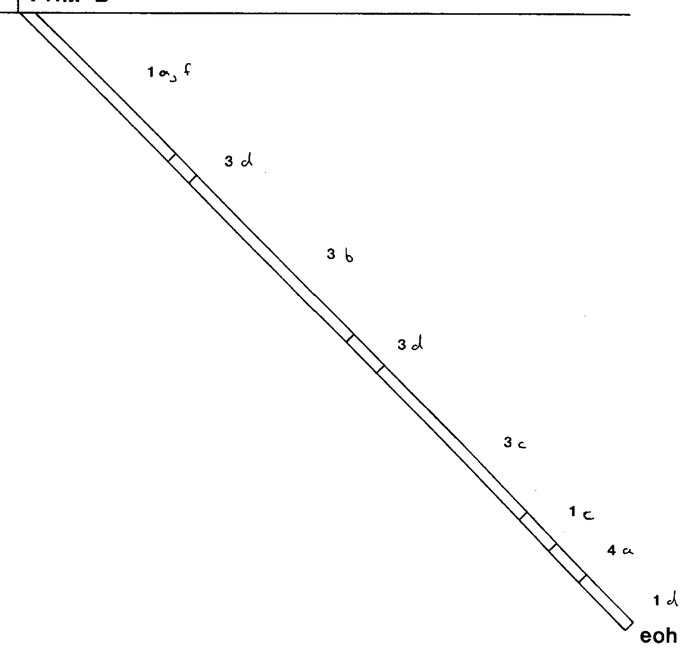
THIS SUBMITTAL CONSISTED OF VARIOUS REPORTS, SOME OF WHICH HAVE BEEN CULLED FROM THIS FILE. THE CULLED MATERIAL HAD BEEN PREVIOUSLY SUBMITTED UNDER THE FOLLOWING RECORD SERIES (THE DOCUMENTS CAN BE VIEWED IN THESE SERIES):

① Teck-Grenfell Property, Flint Rock ⇒ See File #2.12151, Report of Mines Ltd., Bryan T. Muloin, Oct. 1988. Work # W8908-012.

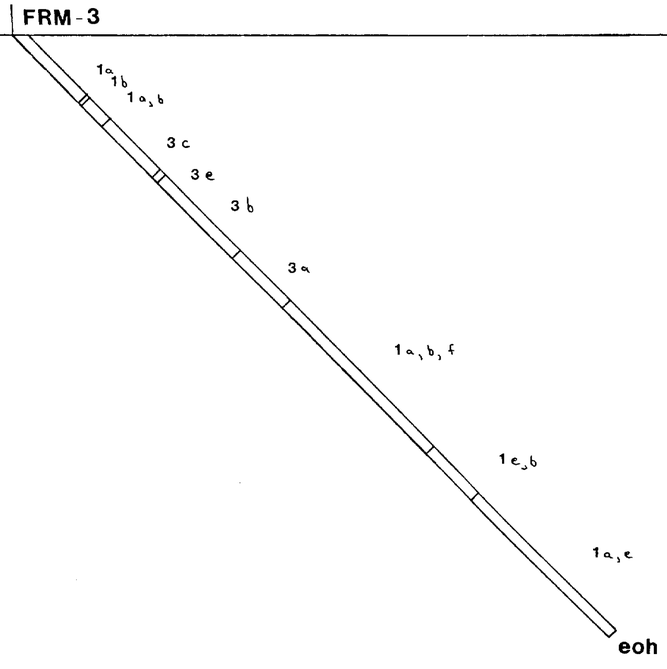
FRM-1



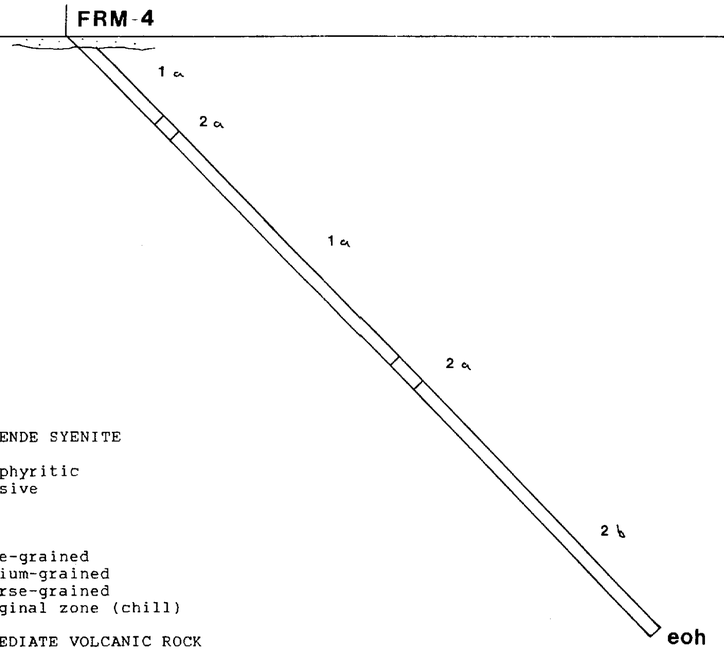
FRM-2



FRM-3



FRM-4



LEGEND

4 HORNBLENDE SYENITE

4a porphyritic
4b massive

3 GABBRO

3a fine-grained
3b medium-grained
3c coarse-grained
3d marginal zone (chill)

2 INTERMEDIATE VOLCANIC ROCK

2a ash-tuff
2b tuffaceous siltstone (turbiditic)

1 MAFIC VOLCANIC ROCK

1a fine-grained, massive micro-porphyritic, flow
1b flow breccia
1c potassium alteration zone
1d silicified
1e carbonate-quartz alteration zone
1f epidote alteration

Flint Rock Mines Ltd.

SCALE: 1" = 40'	APPROVED BY:	DRAWN BY RC
DATE: June 1989		REVISED

Teck - Grenfell Project

sections 1 to 4

DRAWING NUMBER

OM 87-345 63.5410

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