



DIAMOND DRILL HOLE HEADER LOG

020209

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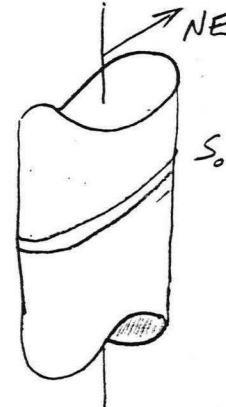
DATE SEPT 16/96

LOGGED BY: J.T. KELLNER

HOLE ID: 96 GRM-01

REFERENCE FABRIC ORIENTATION DIAGRAM

PROJECT: GRUM



CLAIM: _____

UTM CO-ORDS:

 N
E

ALL SYMMETRY DETERMINATIONS LOOKING

MINE GRID CO-ORDS:

 N
E

_____ WITH _____ DIPPING

ELEVATION: _____ (m)

_____ WITH DIP AZIMUTH _____

TOTAL DEPTH: _____ (m)

AZIMUTH: _____ INCLINATION: _____

PURPOSE: EXPAND RESERVES ON N. FACE.

REASON HOLE TERMINATED: _____

LOGGED BY: _____ DATE(S) LOGGED: _____

DRILLING CONTRACTOR: ADVANCE DRILLING

CORE SIZES

HOLE CEMENTED: _____

SIZE	FROM	TO
<u>NQ</u>	<u>1.5</u>	<u>19.78</u>
_____	_____	_____
_____	_____	_____

STEEL DOWN HOLE: 15' CASING LEFT

COLLAR CASED AND CAPPED: _____

STARTED: SEPT 15/96

COMPLETED: SEPT 19/96

LITHOLOGIC LOG

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Core Size: NQ

Date: SEPT 96

Logged By: J.T. Kellner

FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
0.0	1.5	0			CASING 1.5m (5') ; NO RECOVERY
1.5	4.1	2	1	30	CARBONACEOUS PHYLLITE; DRK GREY TO BLACK; 1-2% QTZ STRINGERS; TRACE TO <1% Py AS DISSEM. XTALS.
4.1	1.37	6	2	40	CALC. CHLOR. MUSCOVITE PHYLLITE; PALE GREY TO DRK GREEN; 2 TO 5% BARREN UHT. QTZ STRINGERS; TRACES OF DISSEM. Py. 8.5 - 8.7m BULL WHITE QTZ VEIN; W/C @ 78° TCA, L.C @ 52° TCA.
1.37	1.76	8	3	30	CARBONACEOUS PHYLLITE; DRK GREY TO BLACK; ≤1% QTZ STRINGERS T/O. <1% Py AS LOCAL DISS. XTALS. RARE CALCITE UNLETS (<1%).
1.76	2.84	9	4	40	CALC. CHLOR. MUSC. PHYLLITE; PALE GREY/GREEN, 1 + 2% BARREN QTZ STRINGERS, <1% CALCITE UNLETS; MINOR MICRO S-FOLDS, 0.5cm SCALE. NO Py SEEN.
2.84	3.63	9	5	5.2 P, ZGR (5.4)	MUSC > CHLOR. QTZ PHYLLITE; PALE GREEN TO WHITE w VIOLET BANDS (SPHAL). 1% SMALL BULL WHITE QTZ UNLETS; 5 TO 8% SPHAL, 1 TO 2% GALENA, 2 TO 10% Py BOTH AS DISSEM. XTALS & MASSIVE (32.6 - 33.0m) (5% CHLOR > MUSC. PHYLLITE. 54 OR 46?; FROM 31.3 TO 32.3, VERY BROKEN, FRIABLE). - MODERATE MICRO S-FOLDS WITHIN FABRIC. - LOWER CONTACT BOUNDED BY 12cm FAULT; W/C @ 56° TCA, L.C UNKNOWN
3.63	4.08	9	6	30	CARBONACEOUS PHYLLITE (CONT)

LITHOLOGIC LOG

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FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
3.63	4.08	9	6	30P1Z1W	CARBONACEOUS PHYLLITE; BLACK ± DARK GREY, VERY FISSILE; ≤ 1% Py ALONG THIN QTZ UNLETS, < 1% SPHAL.
4.08	5.12	9	7	210P1Z1Wg	MUSC. > CHLOR. CARBONACEOUS PHYLLITE w ≤ 1% Py & < 1% SPHAL. NON-CALCAREOUS; WK TO MOD CARBON LAMINAE. - PALE MED GREY TO BLEACHED GREY w BLACK LAMINAE.
5.12	6.10	9	8	521P1Z1G W	CARBONACEOUS QTZ PHYLLITE w 1-3% Py & ≤ 1% SPHAL; BLK TO MED BLEACHED GREY w ≤ 1% CONTORTED QTZ UNLETS. - Py & SPHAL PRIMARILY ALONG LAMINAE, BUT SOME LOCAL DISSEM. ZONES - TRACES OF GALENA - VERY CARBON-RICH.
6.10	6.23	8	9	471I1S1	METABASITE w CHLORITE & SERICITE DEVELOPED; PALE GREEN w MINOR YELLOW. MOD CARBONATE (CALCITE IN UNLETS & W/IN FABRIC)
6.23	6.39	8	10	31P1Z1G L (521G1Z1P L)?	SERICITE-BANDED PYRITIC QTZITE; BLEACHED GREEN & WHITE w PURPLE METALLIC ZONES. ≤ 1% GALENA, ≤ 1% Py ALONG LAMINAE, 1 TO 3% SPHAL ALONG LAMINAE & LOCALLY DISSEM. - 2-3% BARREN WHITE QTZ VEINS UP TO 36mm WIDE. - BOUNDED D/H BY 2cm FAULT IN

LITHOLOGIC LOG

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FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
639	773	9	111	209P1	SILICIFIED NON-CALC MUSC/CHLORITE PHYLLITE; MED TO DRK GREY W BLACK BANDS; < 1% QTZ UNLETS // AND X-CUTTING FOL. < 1% Py, RARE SPECKS OF SPHAL. VERY FISSILE BUT GOOD RECOVERY.
773	814	5	123	P1GZL	RIBBON BANDED QTZITE; PALE WHITE W 8-10% Py, 3-5% SPHAL & < 1% GALENA BOTH IN BANDS & AS BLEBS. LOW CARBON CONTENT. POOR RECOVERY; 20% QTZ RUBBLE (BROKEN VEIN?)
814	876	9	113	209KIS	SERICITIC NON-CALC. MUSC/CHLOR. PHYLLITE; MED GREY TO DRK GREY W ↑ IN CARBON. TRACE AMOUNTS OF Py; < 1% QTZ & QTZ/ANK. VEINS UP TO 5cm.
876	1010	2	114	31QPS1	CARBONACEOUS PHYLLITE; BLACK W WHITE & GREY BANDS. < 1% QTZ UNLETS < 8mm; < 1% Py ALONG PHYLLITE/QTZ CONTACTS, OCCURRING AS BLEBS. UP TO 5mm LONG AND AS STRINGERS. - BULL WHITE QTZ VEIN FROM 91.1 TO 91.2m; CONTACTS @ 76° AND 77° TCA.
1010	1020	9	115	59GZW	MASSIVE PYRITE W 5-8% BARREN WHITE QTZ UNLETS & STRINGERS. FINE TO MED-FINE GRAINED; TRACE TO < 1% GALENA IN LOCAL POCKETS. 2cm CARB. PHYLL. BAND @ 101.6m LOCAL SERICITE BANDS; TRACES OF SPHALERITE.



Anvil Range
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107.1 - 107.2 }
107.5 - 107.7 } metab
113.6 - 113.7 }

117.1 - 117.3 sand.

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Logged By: _____

FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
110.20	110.55	9	116	449	SILICIFIED METABASITE; BLEACHED, PALE GREEN W PORRIDGE-LIKE TEXTURE (RELICT IG. TEXT). FOL FOLLOWS RFE. 1-2% QZ UNLETS ≤ 3cm WIDE // RFE. NO SX. ↑ IN SERICITE NEAR SX / METABASITE CONTACTS. W/C @ 62° TCA, L/C @ 80° - MINOR FUCHSITE.
110.55	110.62	9	117	59.6Z	MASSIVE PYRITE AS BEFORE; ≤ 1% WHITE QZ UNLETS; TRACES OF GALENA & SPHALERITE. POSSIBLE CONTINUATION OF PREVIOUS ZONE BROKEN BY METABASITE.
110.62	111.71	9	118	2P, 2G, 1R (41615)	RIBBON BANDED QTZITE W ≤ 1% BULL WHITE QZ UNLETS, SOME W SPECCIATED APPEARANCE (POSSIBLE ANKERITE FRAGS?) DARK GREY TO BLACK W PURPLE & BRONZE BANDING; 10 TO 20% PYRITE, 2 TO 5% SPHAL, AND UP TO 1% GALENA ALONG BANDS // TO RFE. NO CARB; MOD CARBON CONTENT. → SX ARE PRIMARILY IN DISSEM FORM, BUT THERE ARE NARROW LOCAL MASSIVE ZONES (< 3cm WIDE). - 46s DYKELETS @ 107.1 - 107.2m, 107.4 - 107.6m, and 114.6 - 114.7m; BLEACHED GREEN, MOD HORNBLNDE CONTENT, MOD ALTD, VERY HARD.
111.71	111.73	8	119	8.6P	Pyritic SAND; UNCONSOLIDATED, WEATHERED; W MINOR Fe-oxide.
111.73	111.93	9	120	2P, 2G, 1L	RIBBON BANDED QTZITE AS ABOVE; DRK GREY W BLACK, BRONZE & PURPLE BANDING; < 1% QZ UNLETS // TO FOL. 3 TO 5% Py, 1 TO 3% SPHAL AND 1% GALENA. AS DISSEM BANDS AND AS MASSIVE TO SEMI-MASSIVE NEAR 118.6 AND 119.1 m.

LITHOLOGIC LOG

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Date: _____

Logged By: J.T. KELLNER

FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
111.93	112.44	9	21	44 [^] ki (46b)	METABASITE ; MED BLEACHED GREEN, MOD TO WELL-FOL; 2 TO 5% QTZ VULNETS UP TO 6cm WIDE, BULL WHITE; STRONG SER. DEVELOPMENT @ UN/WALLROCK CONTACTS. MINOR ANKERITE w/in VEINS.
112.44	113.13	9	22	ZP,ZG,R (4ZGHC)(46q)	RIBBON BANDED QTZITE w 30 TO 35% MASSIVE Py/SPHAL/GALENA SEGMENTS AND 3 METABASITE FINGERS. - QTZITE IS DARK GREY w BLACK, PURPLE {BRONZE BANDING AS BEFORE. (8 TO 10% Py, 3 TO 5% SPHAL, 1 TO 2% GALENA); ≤ 1% THIN QTZ STRINGERS. TRACES OF CHALCOPYRITE. - MASSIVE ORE FROM 126.7 TO 127.3, 127.8 TO 128.4, AND 130.3 TO 130.9m. APPEARS TO BE ~ 30% SPHAL, 40 TO 45% Py AND ≤ 10% GALENA. - METABASITE FROM 127.3 TO 127.8m, 130.9 TO 131.0m, AND 131.1 TO 131.3m. BLEACHED GREEN, WELL FOL; NO SX.
113.13	113.45	9	23	5ZG,H	MASSIVE PYRITE w MASSIVE F.G. SPHAL { GALENA, NO SILICIFICATION, NO CARBONATE OR GRAPHITE. DIRTY BRONZE TO PURPLE COLOUR. - 40 TO 50% Py, 30 TO 35% SPHALERITE, 5 TO 10% GALENA.
113.45	113.73	9	24	ZP,ZG,R (46S)(5ZH)	RIBBON BANDED QTZITE w MINOR METABASITE AND MASSIVE Py/SPHAL SEGMENTS (15% { 5% RESPECTIVELY). DARK GREY TO LIGHT GREY/WHITE. 10 TO 15% Py, 3 TO 5% SPHAL, ≤ 1% GALENA. STRONG SER. DEVELOPMENT @ Sx/46s CONTACTS.

LITHOLOGIC LOG

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Date: SEPT/96

Logged By: J.T. Kellner

FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
11373	11387	6	25	20	FAULTED, VERY SOFT NON-CALCAREOUS PHYLLITE. BLEACHED WHITE TO BLEACHED, PALE GREENY. VERY POOR RECOVERY, NO MINERALS, NO BOTTOM CONTACT.
11387	11404	9	26	30P	CARBONACEOUS PHYLLITE W MINOR QTZ UNLETS & Py BLENDS/STRINGERS. DRK GREY W LIGHTER BANDING. WELL FOL; FAIRLY COMPETANT.
11404	11467	8	27	44(1516)	METABASITE W STRONGLY SHEARED SEGMENTS (ALMOST TALCOSE). BLEACHED GREEN TO PALE WHITE, VERY SOFT NEAR GONGES. TRACES OF Py IN BANDS TO FOL.
11467	11489	19	28	21PZ1W(46W)	RIBBON BANDED QTZITE W SEMI-MASSIVE PYRITE ZONES. DRK GREY TO BLACK W BRONZE SEAMS. ~10-20% PYRITE, 1-2% SPHAL AS F.G. BANDS AND POSS. DISSEM. IN SEMI-MASS PYRITE. WELL FOL. L.I. GALENA IN F.G. BANDS FOL.
11489	11508	8	29	44(1519)	METABASITE PALE GREEN, AND BLEACHED; SLIGHTLY SILICIFIED. TRACES OF PYRITE. STRONG SERICITE DEVEL. ALONG FOL. TURNS TO RUBBLE DOWNHOLE AS A FAULT CONTACT IS REACHED.
11508	11521	16	30	30MP	CARBONACEOUS PHYLLITE IN FAULT GONGE. SLACK TO DRK GREY, SOME COMPETANT PIECES, BUT 80% FAULT RUBBLE. TRACES OK Py.

LITHOLOGIC LOG

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Date: SEPT / 96

Logged By: JT Keller

FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
11512	11555	9	31	2P, Z, G, CR	RIBBON BANDED QTZITE; BLACK W BRONZE & PURPLE BANDS, WELL FOL. 10 TO 15% Py (FINE TO MED GRN'D), 2 TO 5% SPHAL AND ≤ 1% GALENA AS FINET. MED-FINE BANDS. TRACES OF CPY IN QTZ UNLETS & ALONG FOL.
11555	11576	9	32	5Z, G, H, (44)	MASSIVE PYRITE W 25 TO 30% SPHAL, 5% GALENA, AND ONE 20cm FINGER OF METABASITE. 2 EPISODES OF Py, ONE F.G, THE 2ND C.G UP TO 4mm XTALS. MINOR QTZ STRINGERS, NON-BARTIC. NO CARBONATE.
11576	11598	8	33	3, 0, (44)	CARBONACEOUS PHYLLITE W ONE 0.5m FINGER OF METABASITE (90%/10%). VERY BLACK & FRIABLE, QUITE BROKEN & "CHIPPY". WELL FOL & CONTORTED.
11598	11617	8	34	2, Z, G, L	RIBBON BANDED QTZITE W 5 TO 8% SPHAL, 1% GALENA & 1 TO 2% Py IN BANDS // TO FOL. VERY GRAPHITIC, VERY CONTORTED W SOME BUNDLED QTZ EYES.
11617	11662	16	35	3, 0, ~	FAULT GOUGE OF GRAPHITIC PHYLLITE. 30% COMPETANT PIECES, THE REST IS GRAVEL OR CHIPS (POOR RECOVERY). W/C POSSIBLY @ 66° TCA, L/C UNKNOWN.



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Logged By: J.T. Kellner

FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
1662	1705	16	35	4ZGL	SEMI-MASSIVE PYRITE w 10 to 30% F-G SPHALERITE & 1 to 2% GALENA. POSSIBLE TRACES OF CPY. MINOR CARBONACEOUS PHYLLITE LAYERS, ±15cm WIDE. VERY BROKEN & RUBBLY, ONLY ABOUT 65% RECOVERY. (FRACTURED BY FAULT MOVEMENT ??).
				(3.0M)	
				80:20	
1705	1730	16	36	3.0	CARBONACEOUS PHYLLITE, VERY "CHIPPY" & BROKEN. VERY HIGH [C], POOR RECOVERY; OVERLIES FAULT @ 75° CONTACT.
1730	1735	19	37	3.0X	CARBONACEOUS FAULT BRX; 30% QTZ FRAG'S, VERY CONTORTED, NO SX.
1735	1857	18	38	4.5P	ALTERNATING CARBONACEOUS PHYLLITE & METABASITE UNITS.
				(3.0P)	METABASITE IS PALE GREEN ± YELLOW, ± CARBON BANDS, TRACES OF PY, WELL FOL. OCCASIONAL RELICT TEXTURE; RARE "FUCHSITE"-LIKE MINERAL,
				(4.6)	POSS. TALC - INTERVALS FROM 175.2 - 176.6m
				59:140:110	177.1 - 181.6m
					184.3 - 185.0m
					CARBONACEOUS PHYLLITE IS DRK GREY TO BLACK, VERY FRIABLE; VERY CONTORTED. TRACES (LIG) OF PYRITE, ±1% QTZ UNLETS // TO FOL.
					INTERVALS FROM 173.5 - 175.2m
					176.6 - 177.1m
					181.6 - 184.3m
					185.0 - 185.7m

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FROM (m)	TO (m)	REC.	NO.	UNIT	DESCRIPTION
118.57	118.67	7	38	416M	METABASITE FAULT GOUGE MATERIAL. VERY BRECCIATED, PASTY WHITE TO GREEN COLOUR, EXTREMELY SOFT. U/C @ 58° & 180° FROM RFE. L/C @ 37° // TO RFE. KINK BANDING IN PHYLLITES ON EITHER SIDE.
118.67	118.88	8	39	40PA19	CALC-PHYLLITE FAIRLY COMPETANT; PALL GREEN TO GREY (SILICIFIED); TRACES OF PYRITE; MINOR SERICITE.
118.88	119.16	7	40	410MC1	CALC. PHYLLITE FAULT GOUGE; VERY SHEARED, VERY SOFT, ALMOST TALCUSE. CARBONACEOUS ZONES THRU-OUT. NO READABLE TEXTURES/STRUCTURES.
119.16	119.78	9	41	410(4165)C 85:15	WELL-FOL. CALCAREOUS PHYLLITE W METABASITE FINGERS. PALE TO MED GREY COLOUR W 3 TO 5% CALCITE & QIZ/CALCITE UNLETS. BOTH X-CUTTING & PARALLEL TO FOL. -NO SX SEEN. -LAST 20cm BECOMING HIGHLY CARBONATEOUS. METABASITE IS BLEACHED YELLOW W MOD TO STRONG SERICITE DEVELOPMENT.
E.O.H					END OF HOLE!



FAULT LOG

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Date: SEPT 196

Logged By: J.T. KELLNER

FROM (m)	TO (m)	FEATURE	R E C	UPPER		INTERNAL		LOWER		DESCRIPTION
				DIP	DIRECT	DIP	DIRECT	DIP	DIRECT	
15	82	BP3	3							CORED INTO 40, VERY FISSILE.
87	88	Q1	9	88				64		// TO RFE
110	154	B1	37							HIGHLY BROKEN
210	215	B1	28							MID BROKEN
308	326	B1	28							MID BROKEN
	363	FG3	7	53						ALONG RFE; 9cm WIDE
363	388	T1	28							CARB. PHYLLITE.
	423	FG3	8	81						ALONG RFE; 3cm WIDE
605	607	FG3	7	86						// TO RFE
607	625	B1	28							
	625	FG3	8	68						DEFORMED CARB PHYLLITE
625	667	B1	28							
	704	FG3	7	?						UNKNOWN DIP.
757	785	B1	28							
785	814	R1	25							BROKEN QTE & PHYLLITE
814	895	R1	26							
895	1002	T1	19							CARB. PHYLLITE.
	998	FG2	8	82						2cm FAULT
	1000	FG2	8	78						3cm FAULT.
1101	1014	B1	29							MASSIVE Py.
1106	1166	T1	9							QTZITE (BANDED)
1116	1171	B1	27							
1171	1173	G1	37							Pyritic SAND SEAM.
	1247	FG2	9							1cm FAULT GOUGE.
1124	1316	B1	19							QTZITE / MASSIVE Sx.
1137	1387	FG3	5	57	180					L/C UNKNOWN (RUBBLY)
1401	1426	B1	27							
1426	1445	B1	29							
1445	1502	B1	38							
1502	1521	R1	28							
1521	1571	B1	29							
1571	1582	R1	36							VERY CARBON., POSSIBLY FAULTED
1582	1617	B1	38							
1617	1662	FG3	5	?				?		SOFT; CARBONACEOUS PHYLLITE.
1662	1725	R1	35							VERY BROKEN MASS Py + 30P
1726	1731	T1	38							

SEE END PAGE ①
 SEE END PAGE ②
 SEE END PAGE ③



STRUCTURE LOG

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Date: SEPT 19/96

Logged By: J.T. KELLNER

FROM (m)	TO (m)	FEATURE	SYM	S ₀ Bedding		S ₁ Folds		S ₂ RFE		DESCRIPTION
				DIP	DIRECT	DIP	DIRECT	DIP	DIRECT	
	155							66		R.F.E. (WRT. CORE AXIS)
	1105		Z			316	180			QZ UNLET
	1158							78		
	1234							76		
	1235		Z			37	180			QZ UNLET
	1300							63		RFE DIP.
	1395		S			62	180			S.S. S-FOLDS IN PYRITE BANDS
	1493							68		RFE
	1504							54		RFE
	1520		m			76				QZ/S _x UNLET.
	1560					77				RFE
647	1648		m			49		52		QZ UNLET.
	1729					88				8cm QZ VEIN W TR. Py
	1772		m			84				QZ NOSE.
	1782							62		RFE W SPHAL. BANDING //
	1816		S			82	180			SS FOLDS
	1860		S			79	180			QZ UN. (5cm)
	1871							68		RFE
911	1912		S			74				11cm QZ VEIN.
	1943							82		RFE
	1948		S			72				SS. S FOLD
	1962		m			62				FOLD NOSE
	1995		m			82				FOLD NOSE // RFE.
	11016							87		RFE
	11026		m			84				S.S. FOLDS.
	11026		S			08	180			QZ UNLETS
	11063							76		RFE
	11119							77		RFE
	11152							74		RFE IN QTZITE
	11199							64		RFE IN METABASITE
	11251		m			43				SS. FOLDS.
	11254							38		RFE
	11293		m			52				FOLDED Py/SPHAL VEIN
	11328			41						
	11344		m			88				FOLD NOSE IN MASS. PY.
	11345			66						

