drill hole: LWD-99-1 Grid Name: BAP HOLE - VIRGINIA HORN Page 1 Of 11

angle & Direction: VERT (FINISHED 7/24/99 Location: NE-NE SEC. 13, T. 57N., R. 18W. Logged by: M.J SEVERSON

Date: 3-2-04

footage From	to	ft	rec	rock type and description (PRETTY FILTHY CORE!)	%	% graph	% sulf.	FT	BDD S_0	CLEAV S_1	CLEAV S_2	fractures/ ETC.	alteration/ comments
0	129			OVERBURDEN (NO CORED MATERIAL)									
129	559			VIRGINIA FM									
				129-161 60/40 BLACK SLATE/GRAY SILTSTONE + MINOR GRAYWACKE					85° (80-90°)	—	—		
				w/ SOME LOAD-CAST BASES (DISTAL)									
				@ 140 3" "LIMESTONE" BED W/ A IRREG BRANCHING CALCITE VNLT									CONCRETION?
				@ 148 - 148.5 " " W/ CALCITE-FILLED "SEPTARIA CRACKS"									"
				161-187.5 85/15 BLACK SLATE/SLTST					85°				
				187.5-205 50/50 " " / " ± DISTAL GRAYWACKE (SHARP BASES)									
				@ 189 5" "LIMESTONE" BED W/ BLACK SLATE WISPS									CONCRETION!
				ON ONE SIDE OF CORE FACE (1/3 OF CORE SURFACE).									
				BEDDING ADJACENT TO THIS BED APPEARS TO									
				BEND AROUND IT (80° ABOVE +, A DISCORDANT 60° BELOW)									
				THESE FEATURES SUGGEST THE LIMY ZONE IS A CONCRETION.									
				205-273.7 85/15 BLACK SLATE/SLTST W/ SCATTERED					80°				
				THIN ZONES WHERE SLTST INCREASES TO 30%					75-85°				
				@ 211.6 - 212.4 $CaCO_3$ CONCRETION W/	TRACE PY/MARC BLEBS								CONCRETION! ; SULFIDE
				CS-GRN CALCITE FILLED "SEPTARIAN CRACKS",									
				ANGULAR-BLOCKY BLACK SLATE FRAGS (2 OF THEM)									
				+ A FEW PYRITE-MARCASITE BLEBS.									
				@ 69.83 - 70.09 M BHP SAMPLED: ENTIRE CORE									
				@ 243.5' 2 ELONGATE PY-MARC. BLEBS (BIGGEST IS 2 x 18 MM)									SULFIDE
				@ 249 - 254 BROKEN-UP FILTHY CORE!									
				@ 262 - 270 >95% BLACK SLATE W/ FAIRLY									
				COMMON THIN PY-MARC FILMS (< 1 CM "ROUND" ZONES W/ HAIRLINE THICKNESS) ALONG SOME BDD PLANES									TR. SULF. ALONG BDD
				@ 269 - 269.2 TWO CS-GRN CALCITE CONCRETIONS									
				W/ SUBVERT KTALINE-FABRIC + SUBVERT. WHITE CALCITE "TENSION GASHES"									CONCRETION!
				273.7 - 288.5 QTZ. VEINED (NETWORK OF VEINS + "CRACKLE BRECCIA" DOWN TO HAIRLINE THICKNESS)									
				MIXTURE OF BLACK SLATE + GRAY SILTSTONE. FILTHY CORE!									
				@ 282 3" CS-GRN CALCITE "VEIN" W/ CONE-IN-CONE TEXTURE									TR. LATE PYRITE
				@ 281.3 5MM PY-MARC. BAND (BED?)									SULFIDE (SYNGENETIC?)
				288.5 - 290 DOMINANTLY MED-BDD SLTST									

drill hole: LWD 99-1 Grid Name: _____ Page 2 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-2-04

footage From	to	ft	rec	rock type and description		%	% graph	% sulf.	FT	BDD S_0	CLEAV S_1	CLEAV S_2	fractures/ ETC.	alteration/ comments
				VIRG. FM (CONT)										
				290–334 60/40 TO 50/50 BLACK SLATE / SLTST;						85-90°				
				SLTST OCCURS IN THIN BDD SETS UP TO 5" THICK										
				@ 300–301.2 "LIMESTONE" BED (OR CONCRETION)										
				THAT DISPLAYS A SUBVERT. FABRIC (DUE TO										
				DIAGENESIS?) AND IS COARSE-GRAINED										
				AT THE TOP (W/ CONE-IN-CONE IN TOP 2")										
				+ GRADES DOWNWARD TO FN-GRN @ BASE										
				@ 311.4–312 "LIMESTONE"/CONCRETION, AS										
				ABOVE, BUT BOTTOM IS COARSE-GRAINED										
				W/ CONE-IN-CONE + TOP IS GRADATIONAL.										
				334–343.8 MASSIVE MOD. OLIVE-GREEN SERICITE-RICH CORE (TUFF?)										TUFF?
				W/ SCATTERED MINOR SERICITIC BLACK SLATE INTBDS (< 2 cm THICK W/ FAINTLY DEFINED CONTACTS) @ ~ 339–341.7'										
				343.8–347 MED-BDD SLTST + BLACK SLATE W/ ~~POORLY DEFINED BEDDING CONTACTS (ABRUPT BUT NOT SHARP)~~ ↓ GRADATIONAL						~~45°~~ DRILL BIT SCORED CORE ≠ BDD!!				
				347–347.3 XTAL TUFF (TO BE DESCRIBED BELOW)										
				↓ ABRUPT										
				347.3–347.5 INTBDD SLTST + BLACK SLATE (AS AT 343.8–347)						75°				
				347.5–349.5 XTAL LITHIC TUFF = SALT + PEPPER GRITTY										349.5 = BASE OF CALCAREOUS TUFF(?)
				TEXTURE CONSISTING OF WHITE XTAL SPECS (≤0.5 mm)										
				+ BLACK SLATE LITHIC FRAGS (BLOCKY (<1mm) TO ELONGATE (THIN)										
				IN A MOD.-GRAY MATRIX. CONTAINS DISCORDANT										
				CALCITE-FILLED WISPS & PATCHES. NOTE THAT										
				THIS TUFF UNIT IS THE ONLY ONE THAT IS										
				MOD. CALCAREOUS. ALSO CONTAINS										
				LENTICULAR BLACK SLATE WISPS UP TO 1.5" LONG @ ~348										
				↓ GRAD?										
				349.5–350 INTBDD BLACK SLATE + XTAL TUFF						85-90°				
				350–350.9 XTAL LITHIC TUFF (AS ABOVE) BUT										350.9 – BASE
				FNER-GRN + NOT CALCAREOUS										
				↓ SHARP! 90°										

drill hole: LWD 99-1 Grid Name: _____ Page 3 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-2-04

footage From	to	ft	rec	rock type and description	%	% graph	% sulf.	FT	BDD S_0	CLEAV S_1	CLEAV S_2	fractures/ ETC.	alteration/ comments
				VIRG. FM (CONT.)									
				350.9-353 INTBDD GRITTY MATERIAL (AS IN ABOVE XTAL TUFF BEDS) + BLACK SLATE (MOST DOMINANT @ TOP OF THIS INTERVAL); BDD IS HIGHLY FOLDED IN LAST 7".					SOFT-SED SLUMPED ?				
				353-354 XTAL TUFF (AS AT 350-350.9) BUT CONTAINS SHARPLY-DEFINED IRREGULAR BLACK SLATE INTBDS. NOT CALCAREOUS									
				354-354.6 BLACK SLATE W/ THIN CONTORTED (SLUMPED?) GRITTY XTAL TUFF? INTBDS.									
				354.6-356 MIXED 60/40 XTAL TUFF (GRITTY BEDS) + BLACK SLATE BEDS; BOTH HAVE WELL DEFINED BDD PLANES THAT ARE SHARP BUT HIGHLY IRREG. + BIFURCATE! = STRANGE BDD FEATURES									
				↓ COMPLEX CONTACT ZONE W/ FOLDED? BLACK SLATE BEDS/WISPS.									
				356-356.3 XTAL TUFF (NOT CALCAREOUS) W/ LENSOIDAL BLACK SLATE FRAGS UP TO 1.2 CM LONG.									
				↓ SHARP 87°									
				356.3-357 BLACK SLATE W/ THIN "FOLDED"/SLUMPED "GRITTY" (TUFF?) BEDS IN LAST 2"									
				357-357.2 DISTAL GRAYWACKE W/ SHARP BASE					87°				
				357.2-358.4 BLACK SLATE W/ SEVERAL THIN									
				↓ UNDULATING SHARP (~80°) CALCAREOUS BEDS (ONE W/ V. SHARP BASE) @ 357.9-358.2									
				358.4-359.5 WHITE LIMESTONE BED W/ 5% SMALL GRAY SLTST CLASTS(?) THAT ARE SUBROUNDED									TR. PYRITE
				↓ GRAD ONLAP ½"									
				359.5-360.5 XTAL TUFF W/ GRITTY SALT + PEPPER TEXTURE									360.5 BASE OF TUFF(?)
				↓ SHARP (85°)									
				360.5-360.6 BLACK SLATE									
				360.6-362 XTAL TUFF = FN-GRN GRITTY TEXTURE MIXED W/ BLACK SLATE LENSES + WISPS IN TOP 6".									
				↓ SHARP (90°)									

drill hole: LWD 99-1 Grid Name: _____ Page 4 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-2-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGN-ETISM	ALT	TEXTURES	comments
				VIRGINIA FM (CONT.)									
				362-368.5 60/40 BLACK SLATE/GRAY SILTSTONE			90°						
				@ 362.7 1.5" GRAYWACKE BED (BOTH CONTACTS ARE SHARP) W/ 6 mm DARK GRITTY CALCITE-BEARING "VEIN".									
				368.5-374 MASSIVE-BDD CALCAREOUS (WK-MED) GRAYWACKE? W/ FN-GRN GRITTY TEXTURE. PSEUDO-BDD DUE TO DRILLING WHEREIN BLACK "BEDS" (MORE POLISHED ZONES) SPIRAL UP THE CORE SURFACE									
				↓ SHARP! 90°									
				374-~480 60/40 GRAY SLTST/BLACK SLATE			85-90°						
				@ 400-400.3 CONVOLUTED BDD = BOUMA C									
				@ 411-411.4 "LIMESTONE" - BOTH CONTACTS = ABRUPT BUT NOT SHARP									
				@ 416.7-417.5 " - " " " " "			"						
				@ 429.8-430 " W/ ≤1 mm ROUND BLACK SLATE SPECKS (3%) EVENLY-DISTRIB THRU-OUT; BOTH CONTACTS = SHARP									
				@ 435.4-436 DK. GREENISH GRAY SALT+PEPPER TEXTURED FN-GRN BED = SERICITIC TUFF? BOTH CONTACTS LOOK SHARP.									
				@ 438 2" ZONE OF LOAD-CASTED SLTST BEDS/LENSES IN BLACK SLATE									
				@ 441.3-442.8 DOMINANTLY BLACK SLATE									
				@ 459.6-460 WK-MOD CALCAREOUS BED									
				@ 475.5-476 DK. GREEN, SERICITE = TUFF?									
				@ 478 = 2" ZONE W/ CONVOLUTED BDD + X-BDD = BOUMA C									
				@ 482.5-483 "LIMESTONE" - SHARP CONTACTS									
				↓ GRAD (BLACK SLATE INCREASES)									
				~480-511 60/40 BLACK SLATE/GRAY SLTST			85-90°						
				511-512 CALCAREOUS GRAYWACKE W/ OVOID BLACK SLATE CLASTS BOTH CONTACTS = SHARP; BOTTOM ONE IS WKLY UNDULATORY									
				512-512.5 INTBDD SLATE + SLTST									
				512.5-514.1 MASSIVE-BDD (OR FAINTLY-BDD) FN-GRN	GRAYWACKE								

drill hole: LWD 99-1 Grid Name: _____ Page 5 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-5-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
				VIRG. FM (CONT.)									
				514.1-516.4 LIGHT GRAY "LIMESTONE" BED W/ ROUND TO OVOID BLACK SLATE CLASTS; CLASTS ARE LARGER + MORE ABUNDANT IN TOP 5". TOP CONTACT = @ 514-514.1 FOLDED VERY THIN "LIMESTONE" BEDS IN BLACK SLATE. BOTTOM CONTACT = SHARP (90°)									
				516.4-519 INTBDD SLTST, SLATE, + CALCAREOUS GRAYWACKE (SHARP BASES + GRAD TOPS).									
				519-554 DOMINANTLY DK. GRAY TO BLACK SLATE			85-90°						
				@ 162.09-162.25 M ENTIRE CORE SAMPLED BY BHP									
				@ 525.8-528 1.5" "LIMESTONE" BAND. SHARP CONTACTS W/ SUBTLE SUBVERTICAL FABRIC (DUE TO DIAGENESIS?)									
				@ 536.9 1.5" "LIMESTONE" BAND W/ SHARP CONTACTS									
				@ 537.5-538 "LIMESTONE" W/ MINOR BLACK SLATE CLASTS + SUBTLE SUBVERT. FABRIC. BOTH CONTACTS = SHARP									
				@ 543.4-544.5 "LIMESTONE" W/ BLACK SLATE CLASTS (SMALL OVOIDS), WISPS (IRREGULAR + OVOID), + LENSES (@ 543.8). BOTH CONTACTS = SHARP.									
				@ 550-550.5 TWO 2.5" GRAYWACKE BEDS									
				554-559 INTBDD GRAYWACKE (W/ BLACK SLATE LENSES + CASTS = RIP-UP FRAGS), GRAY SLTST + LESSER BLACK SLATE.									
559	1344			BIWABIK IRON FORMATION									
IRON	FORMATION	ELEV IN SHAFT	EXTRA										
US	US	A	US-2	559-577 LIMESTONE + CHERT W/ LIMESTONE AT 561-565, + 566-571. LIMESTONE + CHERT ARE BOTH THIN-BDD BUT LIMESTONE MOST OFTEN EXHIBITS BRECCIA/RIP-UP INTRAFORMATIONAL CONGL. ZONES (+/OR RELATED TO DIAGENESIS?)		LIMESTONE ALSO CONTAINS ANGULAR TO RND BLACK SLATE CLASTS	75-90°						
				@ 560---574 SAWN CORE (FOR SUDBURY ELECTA SEARCH BY ADDISON)									

@ 560.3-560.5 PALE GREEN CHERTY ZONE.
@ 172.21-172.50 M ENTIRE CORE SAMPLED BY BHP
@ 569-570 CONTAINS 5% DISTINCTIVE <1mm BLOCKY BLACK SLATE CLASTS. JUST BELOW THIS ARE 2 PINK RHODOCROSITE? VNS.

drill hole: LWD 99-1 Grid Name: _____ Page 6 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-5-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
IRON CLASS	NONMAG CLASS	LTY + NO SIDE CLASS	ETTAC CLASS										
				BIF (CONT.)									
US	US	B	US2	577–582 INTBDD CHERT + THIN-BDD SETS OF GREEN Fe-CARB IF UP TO 2' THICK	THIN	CHT ½"–1" SL= <1cm	85–90	WHITE + GREEN		—			CONTACTS BETWEEN CHERT + Fe-CARB BEDS IS IRREGULAR/UNDULATORY! (W/ LOCAL CHERT NODULES W/ BDD BENT AROUND NODULES)
		C		582–598 THIN-BDD Fe-CARB IF W/ WIDELY SCATTERED THIN CHERT BEDS @ 584.1–585.6 INT. BLACK CHERT, GRAY CHERT + BLACK SLATE	THIN (IRREG)		80–90°	GREEN TO LIGHT GRN		((V. WK))			
		C		598–618.2 THIN-BDD Fe-CARB IF AS ABOVE BUT CONTAINS COMMON V. THIN (<1cm TO 1mm) BLACK SLATE BEDS UNEVENLY DISTRIB. THRU-OUT AND CHERT BEDS ARE MORE GRANULAR + LOCALLY JASPERY	THIN		75–90°			((V. WK))			
		D		618.2–620 WAVY-BDD Fe-CARB IF + CHERT	WAVY					STRONG			
		D'		620–623 THIN-BDD RED HEM-Fe-CARB IF W/ THIN BLACK BANDS (<1 cm) THAT CONTAIN MICRO-RIP-UPS OF BLACK SLATE? CORE IS COATED BY WHITE PRECIPS (GYPSUM?) ALONG BDD PLANES BUT NO SULFIDES SEEN.	THIN					STRONG			SULFIDES??
		D	UC8	623–633.5 WAVY-BDD (AS AT 618.2–620) @ 628–630 W/ MOTTLED/JASPERY GRANULAR CHERT BEDS	WAVY					WK–STRONG MOD			@626.4–627 INTRAFORM. CONGL.
		E	UC8	633.5–639.2 MOTTLED CHERT W/ MGT-RICH 8" ZONES @ 636' ↖ BRN SIDERITIC MOTTLES	MOTT					WK–STRONG			
		E	UC8	639.2–647 GRAN CHERT W/ IRREG MGT-RICH/Fe-CARB BANDS	IRREG					STRONG			
		E	UC8	647–673.5 MOTTLED GRANULAR CHERT W/ IRREG MGT-RICH "BEDS" + ZONES COMMONLY SCATT. THRU-OUT. MOTTLES GENERALLY = BRN SIDERITE @ 665–668 THICK ZONES OF MOD–STRONG MAGNETISM.	MOTT					WK–STRONG ↖ MGT BANDS & IRREG ZONES			
		F	UC8	673.5–685 MED-BDD GRAN. JASP. CHERT (W/ COMMON INTRAFORM. CONGL.) W/ RED MGT-HEM THIN-BDD ZONES (UP TO 2' THICK TOWARD BASE) @678–680 WHITE PRECIPS ON CORE SURFACES	MED JASP		70–85°	REDS	MGT + HEM	MOD–STRONG			

UPPER SLATY

UPPER CHERTY

drill hole: LWD 99-1 Grid Name: _____ Page 7 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-5-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
ISAMP	MAMMTH	LEV NO SAMP	UTAC	BIF (CONT.)									
US	US	F?	UC7	685-718 INTRICATELY INTBDD GRANULAR JASPEROIDAL CHERT ("OOLITIC" W/ V. COMMON INTRAFORMATIONAL CONGLOMERATE ZONES) AND THIN-BDD RED MGT-HEM "SLATY" IF. WHITE PRECIPS (GYPSUM?) GROWING ON SCATT CORE SURFACES THRU-OUT.	AVG= REG	CH=1cm-6" SL=<1cm		REDS	MGT + HEM	MOD-STRONG			
UC3	UC16	G/H	UC7	718-738 WAVY-BDD = MOTTLED GRAN. CHERT (<1' THICK) + COMMON WAVY-BDD SETS (MGT W/ BROWN FE-CARB; <1cm BDS IN SETS 1-6" THICK) MGT IN WAVY BEDS + DK GRAY DIFFUSE ZONES W/IN CHERT.	WAVY	VARIABLE	70-80°	VAR!	MGT W/ FE-CARB	STRONG			
?	?	?	UC6	738-743 MOTTLED JASPEROIDAL CHERT W/ SOME MGT-RICH WAVY BEDS	MOTT/JASP	"THICK"	—	REDS	MGT + HEM	STRONG			
?	UC15	I	UC6	743-771 GRANULAR JASPEROIDAL "OOLITIC" CHERT W/COMMON INTRAFORM. CONGL. ZONES (RIP-UPS) MIXED W/ V. MGT-RICH THIN-BDD ZONES UP TO 1' THICK; PROBABLY PRETTY RICH TACONITE ORE ZONE	JASP + CONGL			REDS	MGT + HEM	STRONG			
				@ 762-764 GOOD DEFORMED/SLUMPED ALGAL MATS + ONCOLITES (EP?)									
				@ 232.76-233.12 M ENTIRE CORE SAMPLED BY BHP	BHP								
				@ 766-768 GOOD ONCOLITES									
				@ 768-769.5 INTRAFORM CONGL.									
				@ 769.5-771 THIN-BDD MGT-HEM IF	(THIN)			REDS	MGT HEM	STRONG			
?	UC11?	J,K, L	UC5	771-791 WAVY-BDD = INTRICATELY INTBDD JASPERY CHERT (EXACTLY AS ABOVE) + GREEN-RED-BLACK MGT-RICH WAVY BEDS IN SETS UP TO 5" THICK	ALT								
LS	LS10	P	UC5	791-811 THIN-BDD IF W/COMMON GRANULAR CHERT BEDS (≤6" THICK) + COMMON WEAKLY-WAVY BDD ZONES. INTRAFORM. CONGL COMMON	ALT	THIN=<1cm CH=≤6"	80-98	FE-GW GREEN, BRN REDS, BLK	FE-CARB MGT	MOD-STRONG			

IN CHERT BANDS = CONTAINS BOTH GRAY CHERT CLASTS + RED JASPER CLASTS (JASP. CLASTS @ 799--→811)

drill hole: LWD 99-1 Grid Name: _____ Page 8 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-9-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
ISPKT	MINERAL CLASS	LITH NODULE CLASS	UTAC CLASS										
				BIF (CONT)									
LS	LS10	P	UC4	811-825 THIN-BDD IF - MUCH THE SAME AS ABOVE BUT CHERT BANDS ARE LESS COMMON (AVG ~ 1" THICK w/ MAX < 3" THICK; INTRAFORM. CONGL. COMMON).	THIN	< 5mm	85-90°	GRNS, GRAYS, REDS, + BROWNS	MGT → HEM	MOD-STRONG	PART. OX		
				@ 817.5 2 cm X-BDD/CONVOLUTED-BEDDED ZONE	ZONE								
				@ 822-827 HEM RED BEDS ARE DOMINANT									
LS	LS10	P	UC4	825-852 THIN-BDD Fe-Sil + Fe-Carb. IF w/ RARE CHERT (MOSTLY AS INTRAFORM. CONGL. CLASTS). INTRAFORM. CONGL ZONES (< 3") ARE COMMONLY SCATTERED THRU-OUT + CONSIST MAINLY OF ELONGATED ELLIPTICAL THIN-BDD IF CLASTS (RIP-UP FRAGMENTS)	THIN	<1-3mm	85-90°	GREENS w/ REDS + BANS	MGT → HEM	MOD-STRONG (WK)			
			UC3	852-858.5 THIN-BDD IF (AS ABOVE) BUT w/ COMMON GRANULAR, MOTTLED CHERT BEDS (≤6") w/ INTERNAL RIP-UP CONGL ZONES (w/ JASP FRAGS + GRANULES TOO) + LOCAL WAVY-BDD ZONES. THIS INTERVAL IS SIMILAR TO 791-811.	ALT	THIN ≤ 1 cm CH = ≤6"	80-90°	MG	MGT (HEM)	MOD-STRONG			
				@ 857-858 COARSE INTRAFORM. CONGL									
LS	?	P	?	858.5-875.5 THIN-BDD IF w/ SCATTERED (BUT COMMON) THIN-BDD CHERTY ZONES (≤6"; LOCAL CONGL) + OCCASSIONAL VERY THIN (<1mm) BLACK SLATE BEDS IN SETS VARYING FROM 2"-6"	THIN		80-90°	REDS + GREENS PLUS BLACK!	MGT (HEM)	MOD-STRONG			RARE PYRITE
				@ 873.7-875.5 DOMINANTLY BLACK SLATES w/ RED BEDS						(STRONG)			
LS	?	P	UC3	875.5-883.5 INTIMATELY INTBDD GRANULAR CHERT (1-8" THICK) + THIN-BDD (± WAVY BDD) ZONES (1-3" THICK). CONTACTS BETWEEN CHERT BNDS + THIN-BDD ZONES ARE IRREG.!	ALT THIN	VAR.	65-90°	VAR	MGT? HEM	MOD-STRONG			

UPPER CHERTY

drill hole: LWD 99-1 Grid Name: _____ Page 9 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-9-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (TO C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
ISBFT	MINETTE	LTN	UTAC	BIF (CONT.)									
LS	LS-10?	P	L?	883.5–892 THIN-BDD GREEN IF (w/ SCATT BLACK (ORGANIC?) BEDS) INTRBDD w/ THIN GRANULAR GRAY CHERT BNDS (< 2"). CONTACTS OF THIN-TO-CHERT = IRREG! @ 890–891.5 GRANULAR CHERT/CONGL.	THIN	<1cm	80–90°	GREENS w/ GRAY + BLACK	MGT	MOD–STRONG			CHERT CONTACTS = IRREG
LS	LS-9	P	UC3	892–~906 GRANULAR (± MOTTLED) CHERT (2–8" THICK) INTRBDD w/ WAVY-BDD (+ THIN-BDD) ZONES (AVG = 2–3" THICK). INTRAFORM. CONGL. (SOMES w/ JASP FRAGS) ARE COMMON. CONTACTS BETWEEN DIVERSE ROCK TYPES IS ALWAYS IRREG! ↓ GRAD	REG (OVERALL)	VAR!	VAR!			WK–STRONG			" " "
LS	LS-8	P	UC2 LS2	~906–944 THIN-BDD RED-GRN IF w/ COMMON BLACK (ORGANIC-RICH?) BEDS + EVENLY-DISPURSED THIN-BDD CHERT BNDS (< 6" THICK OVERALL) @ 909–925 CONTAINS A FEW SCATT. ZONES (UP TO 1' THICK) WHERE WHITE GYPSUM PRECIPS. COAT THE CORE @ 920–920.5 100% BLACK SLATE. @ 919–920 MASSIVE CHALCEDONIC CHERT. @ 934–944 >95% THIN-BDD MAGNETIC IF @ 940–940.8 V. CS-GRN CHERTY INTRAFORM. CONGL. (Fe-SIL CLASTS)	THIN	<1cm	40) 80–90°	GRAYS, GREENS REDS + BLACK	MGT HEM	WK–MOD	PART. OX BUT WK		CHERT CONTACTS = IRREG GYPSUM ON CORE SURFACE BUT NO SULFIDES SEEN (PROBABLY TOO FINE-GRN).
LS	LS-7	P	?	944–974 WAVY-BDD = INTRBDD WAVY-THIN-BDD (WORMY) MGT-RICH SETS (1–6") + THIN-BDD GREEN CHERTY ZONES (3"–1.5' THICK); BOTH CONTAIN INTRAFORM. CONGL.	WAVY/THIN	SEE DISCRIPT.	65–90°	GREEN & DK GRAY + BROWNS + Fe-CARB	MGT	STRONG! w/ MOD IN CHERTY ZONES.			
			LS2	974–979 VEINED THIN-BDD Fe-CARB + Fe-SIL IF VEINS = SERIES OF QTZ-SERICITE VEINS @ 15° TO CORE AXIS; VEINS THEMSELVES DISPLAY A SUBVERT. FOLIATION!	THIN							
LS	LS-6	P!	LS2	979–1000 THIN-BDD = ALTERNATING THIN-BDD Fe-CARB-RICH ZONES (IN SETS 1"–12" THICK) + THIN-BDD (1–2" BEDS) Fe-SIL-RICH GRANULAR CHERTY ZONES (IN SETS 2–12" THICK)	THIN	<1cm	75–90°	GREENS + BROWNS	MGT	NIL TO WEAK (EXCEPT @ 980–987 NIL–MOD (↑STRONG))			

UPPER CHERTY

LOWER SLATY

drill hole: LWD 99-1 Grid Name: _____ Page 10 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-9-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
ISPAT	MAGNETITE	LIM	UTAC	BIF (CONT)									
LS	LS6	P	LS2	1000–1029 THIN-BDD BROWN (Fe-CARB) + GREEN (Fe-SILICATES) IF. BDD IS V. WKLY UNDULATORY.	THIN	<1.5cm	85-90°	GREENS W/ BROWNS + GRAYS	Fe-SIL + Fe-CARB	NIL-(WK)			
				@ 1009.5–1014 ROCK IS LOCALLY MAGNETIC + CONTAINS THIN QTZ ± PY VNLETS DOWN CORE AXIS.						((MOD))			LATE PY
				@ 1020–1029 CONTAINS BLACK SLATE INTBDS THAT INCREASE DOWN-HOLE									
INT. SLATE	CARB IF	Q	LS1	1029–1046 "INTERMEDIATE SLATE" = DOMINANTLY BLACK "ORGANIC-RICH" SLATE W/ COMMON INTBDS OF THIN-BDD Fe-SIL IF THAT DECREASE W/ DEPTH	THIN	<2m	85-90°	BLACK W/ GREEN	—	—			
				@ 1035–1037.6 CONTAINS FLATTENED RIP-UP CLASTS (ROUNDED) OF Fe-SIL. IF AND CHERT (IRREG.); BOTH CONTAIN PY CUBES (GENERALLY ON PERIPHERY OF CLAST)									PYRITE
				@ 1037.2–1037.6 V. CS CONGL.									
				@ 1043.7–1044 V. CS CONGL (AS ABOVE)									Py
				@ 1044.5–1046 " " " " " W/ IMBRICATED CLASTS									Py
LCSA	LCSA	R	LC8	1046–1064 MED-BDD GRANULAR GREEN CHERT SETS W/ THIN-BDD Fe-CARB-RICH SETS (<2" THICK)	MED	CH = 1-8' THIN = <5 MM	75-90°	GREENS BROWNS	((MGT))	NIL-(WK)			THIN-BDD/CHERT CONTACTS USUALLY UNDULATORY & LOC. IRREG.
				@ 1058–1064 MAGNETISM INCREASES					MGT	MOD			
				@ 1046.3 3" BLACK SLATE									
				@ 1051–1052 INTRAFORM. CONGL.									
LC4	LC4	S	LC5	1064–1134 WAVY-BDD = WAVY-BDD SETS (1-6" THICK) THAT ALTERNATE W/ GRANULAR CHERT SETS (1-2" THICK) THAT IS LOCALLY MOTTLED (Fe-CARB)	WAVY	CH = <4" WAVY = ¼-6"	80-90	GRAY W/ RED & BROWN GRAY TO BLACK		MOD-STRONG STRONG			
				↓ Fe-SILICATES INCREASE (MORE GREENISH COLOR)									

SLATY ↓ LOWER CHERTY

drill hole: LWD 99-1 Grid Name: _____ Page 11 Of 11

angle & Direction: _____ Location: _____ Logged by: MJS

Date: 3-9-04

footage From	to	ft	UNIT	rock type and description	BDD TYPE	BDD THICKNESS	BDD ∠ (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
JSPR	MGNT MGBC	LTV	ULTMC	BIF (CONT.)									↑ INTO UNIT NEXT UPWARD PAGE (PREV.)
LC4	LC3	T	LC4	1134–1202 WAVY-BDD (AS ABOVE) BUT SOME OF THE CHERTY BEDS (50%–65% w/ DEPTH) HAVE A MORE GREENISH COLOR INDICATING AN OVERALL INCREASE IN Fe-SILICATES ↓ GRAD	WAVY	← AS	ABOVE	→		→			MGT IN WAVY BEDS + DIFFUSE DISSEMINATED THRU-OUT CHERTY BEDS
LC4	LC3	T	LC4	1202–1219 WAVY-BDD (AS ABOVE) BUT GREEN COLOR (Fe-SILICATES) IS ABSENT + WAVY BEDS ARE THINNER (SOMETIMES AS A SINGLE 1mm THICK BED) + MORE WIDELY-SPACED.	WAVY					STRONG			
LC3	LC2	U	LC3 LC2 LC3	1219–1257 REG-BDD = ALTERNATING GRANULAR CHERT BEDS + SETS (¼–6") AND THIN-BDD (±WAVY; <1cm) SETS (1mm–2" THICK) ↓ GRAD (THIN-BDD SETS INCREASE IN VOLUME)	REG	SEE DESCRIPT	80–90°	GRAYS w/ BROWN	MGT	MOD–STRONG		
LC2	LC1	V	FW	1257–1314.8 THIN-BDD Fe-Si/Fe-CARB IF w/ EVENLY-DISPERSED CHERTY BANDS (¼"–2" THICK) @ 1307–1314.8 UNOX.	THIN	<2mm	85–90°	GRAY + GREEN ± REDS	MGT + HEM	MOD–STRONG / MOD	WK OX. / UNOX		
LC2	LC1	V	FW	1314.8–1319.5 GRANULAR "OOLITIC" JASPEROIDAL CHERT w/ SOME INTERNAL THIN-BDD ZONES (<3"); LOCALLY MOTTLED	JASP	>1'?	85°	RED	HEM	—	OX		
LC2	LC1	V	FW	1319.5–1323 "BASAL RED" = THIN-BDD HEM IF w/ SCATT. THIN JASP. CHERT BEDS + LENSES (<1" THICK). HEM IF CONTAINS ≈ 60% V. FN GRN SUBANGULAR (?) QTZ GRAINS IN A RED TO GRAY HEMATITIC MATRIX	THIN	<2mm	85–90°	RED	HEM	—	OX		HEMATITIC MATRIX
LC1	BOMB?	?	FW	1323–1344 AS ABOVE BUT THICK TO REG-BDD w/ " " " " " " " " " " " " " " GRAY HEMATITIC MATRIX THAT BECOMES MORE GREENISH-GRAY COLORED w/ DEPTH. NOT QUITE POKEGAMA QTZITE YET! @ 1337.5 2 cm JASP. BED			90°						
				1344 = E.O.H.									