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Depth	Interval From	Interval To	Lith	~~RQD~~ Recovery	Description
H ① 2	0	2	soil	.5ft	Brownish black Mud (5YR 2/1)
M 5 ②	2	7	soil	5	Brownish black (5YR 2/1), white & orange speckles.
H ③ 10	7	12		4'6"	silty olive gray, some coarser grains
M 15 ④	12	17	sandy	4'6"	sandy, light olive gray (5Y 5/2)
H ⑤ 20	17	22		4'7"	sandy, light olive gray (5Y 5/2)
M ⑥ 25	22	27		4'3"	less sand, clay-silt (shaly) Med.-medium dark gray
H ⑦ 30	27	32	shale	4'11"	shell (inoceramIS?), just below shell is a sandy layer about 1 inch thick (6.5 inches from top) shaly olive gray (5Y 3/2)
M ⑧ 35	32	37	shale	4'1"	Shale, olive gray (5Y3/2), composition has changed from sand to shale, @ 33.5ft fracture, shell fragments throughout, @ 36ft fracture ~10° from vertical
H ⑨ 40	37	42	shale	5'	Grayish black weakly consolidated shale, Oxidized features @ 39' (~45°) and 40'1" (~30°), Minor shell fragments visible throughout core, high concentration of shell fragments @ 40'8".

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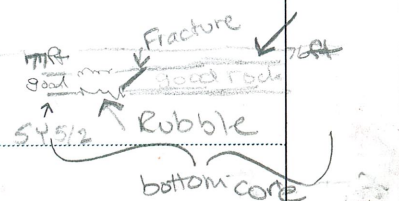
40					See last page.
42					
M (10)	42	47	shale	4'3.5"	zones of higher induration, varying in hardness Med. dark gray to dark gray in color @ 46' (non indurated zone, 1.5 inch thick, color yellowish gray (5Y 7/2) in color Weakly indurated to non indurated, but stronger than previous
47					
H (11)	47	52	shale	5'2"	More frequent zones of induration @ 50'8" Ammonite (1/2 inch thick) Med. dark gray to grayish black color
52					
52 (2) M	52	57	shale	4'9"	@ 51'6" shell fragments varies in induration, variation in hardness grayish black color 56' 2 inches shell fragment @ breaking point in core
57					
57 (13) H	57	62	shale	5'5"	shell fragments throughout @ ~~57ft~~ slight change in induration (weak to better) ~~grayish black to black~~ color
60					
62					
M (14)	62	67	shale	5'	grayish black to black color induration varied @ 66.5ft fracture ~45° 2 shell fragment @ 65ft
65					
67					
H (15)	67	72	shale	5'3"	grayish black to black color induration varied but hard few shell fragments
70					
72					
M (16)	72	77	shale	5'	grayish black to black color shell fragments
75					
77					*bottom 4ft was lost downhole and then recovered.
H (17)	77		shale	3'8"	grayish black to black, top 3 inches turbidite deposit? possible Ash layer (pinkish gray 5YR 8/1 to light brownish gray (5YR 6/1)
80					
82					No recovery from 81'6" to 82'



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Depth	Interval From	Interval To	Lith	RQD (Recovery)	Description
Not recovered					
82					
(18) M	82	86	shale	5' 2"	grayish black to Black color shell fragments throughout
86					
(19) H	86	91.5	shale	5' 3"	heavy mud cake from ~87' to 88' grayish black to black color indurated, ~~some weak areas~~
89					
90					
91.5					
(20) M	91.5	97	shale	5' 4"	heavy mud cak throughout grayish black to black color shell fragments indurated, some weaker areas ~96'6" (96' ? (Ash? Sand?) → grayish orange Pink (5YR 7/2))
97					
(21) H					shellfragments Moderately indurated
	97	102.5	shale	4' 8"	grayish black to black color high angle fracture @ 99'
102.5					very light gray to white (Ash?) 2inch thick @
(22) M	102.5	108	shale	4' 8½"	grayish black to black in color Shell fragments heavy caking and clay rich
108					
(23) H					shell fragments grayish black to black color Moderatrly indurated
	108	113.5	shale	5' 3"	
113.5					
(24) M	113.5	119	shale	5' 3"	4½ ft of continuous core. No longer grayish black to black color shell fragments
119					

Ruler switch → wrong side (above and bottom of core started @ 1 inch)

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Depth	Interval From	Interval To	Lith	RQD	Description
119					
(25) H	119	124	shale	5' 3½"	grayish black color 45° fractures in 119-120ft (3 of them) @ 121 ft, ~ 4 inch color change grayish white(?) After color change heavy mud cake shell fragments * bottom ruler 64-65 in top of core 1"
124					
(26) M	124	129.5	shale	5' 6"	2 sets of parallel fractures throughout core Moderately indurated grayish black color difficult to remove from core barrel (created fractures?) Shell fragments
129.5					
(27) H	129.5	134.5	shale	5' 3"	Moderately indurated grayish black color Vertical fracture @ 2ft 5 inches long (product of coring?) behaving like rock More
134.5					
(28) M	134.5	140	shale	5' 2"	grayish black color fractures begin @ 139ft Vertical fractures? @ 135.5ft @ 136.5 ft (fissility) 3 & 5 inches thick (Mechanical or depositional?)
140					
(29) H	140	146	shale	5'	grayish black color zones of fissility below mud cake heavy mud cake from ~140-142 shell fragments @ 141' to 142' (carbonates?)
146					
(30) M	146	151	shale	5' 2"	grayish black color heavy mudcake throughout @ 149 ft whitish gray mottled up to 147ft (clay?) (contact?)
151					
(31) H	151	156.5	shale	4' 10"	heavy mudcake grayish black color shell fragments silty unit 156.5 ft ~ 5 inches thick
156.5					
(32) M	156.5	162	shale	5'	grayish black color fractures 161-162 ft
162					

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Depth	Interval From	Interval To	Lith	RQD	Description
162					
(33) H	162	167.5	shale	5'4"	Grayish black color Silty unit ~166.5ft ~1inch thick heavy mudcake above 166ft
167.5					
(34) M	167.5	172.5	shale	5'3"	Note: Slight sheen due to drillers lubrication (oil show?) Grayish black color Mudcake @ 171.5ft @170.5' gray white unit (Ash?)
172.5					
(35) H Broken core Some recovery lost to top	172.5	178	shale	5'3"	grayish black color @173.8ft (~1.5 inch) brown gray, sandy-silty Angular unit 6 inches after Angular unit 2 more parallel units @ ~10° fractured from 172.5 to 175ft Bag #3 Broken core @178ft shell fragment (ammonite?) in a baggie #2
178					
(36) M	178	183.5	shale	4'11"	grayish black color Indurated + massive @ bottom 3ft some stratification @178-179ft discordant? silt stringer ~185ft
183.5					
(37) H	183.5	188.5	shale	5' - 3ft lost (183.5-183.8) saved	Grayish black color 183.5 - 188.5 Broken core Shell fragment @ ~184 ft Baggie #4 Slight petroliferous odor 185.5-188.5ft broken segment
188.5					
(38) M	188.5	193.5	shale	5'3"	grayish black color @ 192.5 shell fragment fractures + shell @ 190.5ft Moderately indurated to indurated
193.5					
(39) H	193.5	199	shale	5'5"	greenish gray color, clay rich + massive shell fragments near 199ft heavy mud cake? throughout
199					
(40) M	199	204	shale	5'4"	irregular upper contact @ 202ft ~6 inches thick brown gray color, hard - indurated, just above grades to Ash. 202-204 Massive, grayish black color Shell fragments 2 vertical fractures in brown-gray unit and above irregular contact

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Recovery

Depth	Interval From	Interval To	Lith	~~RQD~~	Description
(40) M 204					see previous page
(41) H 209.5	204	209.5	shale	5' 1"	-oil show -potential disking Shell fragments @ 206 ft grayish black color
(42) M 214.5	209.5	214.5	shale	5 3	grayish black to black color @ ~215 (~45°) healed fracture another healed fracture @ same (~45°) Alternating frequent thin layers of grayish yellow (5Y8/4) shell fragments, moderately indurated
(43) H 219.5	214.5	219.5	shale	4 5	* difficulty retrieving core clay swelling? * lost top and bottom orientation during core recovery grayish black to black color Alternating frequent thin layers of grayish yellow (5Y8/4) Shell fragments, Moderately indurated
					* New unit (More clay rich)
					clay swelling?, Difficult retrieval
(44) M 224.5	219.5	224.5	shale	4' 11"	grayish black color Alternating frequent thin layers of grayish yellow (5Y8/4) Moderately indurated shell fragments vertical fracture @ 221.5 (product of recovery?)
(45) M 230	224.5	230	(A+B) * swelling shale limestone or marl	5' 7"	grayish black color with alternating layers of grayish yellow fractures frequent Limestone Marl @ 224.5 ft (~5 inches thick) Moderately indurated
(46) H 235	230	235	shale	4' 9"	grayish black color with alternating layers of grayish yellow shell fragments Moderately indurated very fissile * No shaving + fit in tube 1.5 inch Marl/Limestone layer
(47) M 240.5	235	240.5	shale * shaved to fit	5'	grayish black color with alternating layers of grayish yellow concretion @ ~239 ft Moderately indurated sections of expanding clays very fissile

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Depth	Interval From	Interval To	Lith	~~RQD~~	Description
240.5					
(48) H 245.5	240.5	245.5	Shale *No shaving	3' 11"	zone of shell fragments Massive, grayish black color *good core length concretion @ 240.8 inches Moderately indurated *No Noticeable grayish yellow layers
(49) M 249.5	*1" Recovered from last Run 245.5	249.5	Shale *shaved core	6' (broke) actually ~5' total	large shells frequent grayish black color - Moderately indurated brownish gray layer ~4 inches thick @ 247ft ↳ less indurated than dark very fissile
(50) H 254.5	249.5	254.5	Shale *No shaving	5' 2"	Massive, grayish black color shell fragments - thin shell horizons very fissile light colored layer @ 254ft
(51) M 259.5	254.5	259.5	Shale	5' 2"	Massive, grayish black color Many large shell fragments throughout Moderately indurated, fissile
(52) H 264.5	259.5	264.5	Shale *good core, No shaving	4' 5"	Massive, grayish black color @260ft yellowish gray silty layer (Ash? Marl?) Shell Fragments @264ft (concretion?) brownish gray Baggie #5 @ yellowish gray layer Mudcake in middle - Middle portion shave
(53) M 269.5	264.5	269.5	Shale *good core	5' 6"	grayish black color Ammonite @ 269ft & 268.5ft - aragonite needles? yellowish gray layer, very hard, Marl?) @ 266 ft ~ 2 inches thick Shell Fragments
(54) H 275	269.5	274.5	Shale	5' 4"	Mudcake grayish black color @269.5 Bentonite layer? Seines with sh gray Marl? @ 270.5ft (pale yellowish brown
(55) M 280	274.5	280	Shale	5' 4"	Mudcake grayish black color Shell Fragments Marl? @ 275.5ft (pale yellowish brown)

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Recovery

*HCL is now being used.

Depth	Interval From	Interval To	Lith	~~RQD~~	Description
280					
(56) H	280	285	Shale	4'11"	grayish black color Massive Ammonites near 285ft, few shell fragments Mudcake
285					
(57) M	285	290	Shale	4'1"	Bentonite layer ~4 inches @ 285ft Shell fragments grayish black color, Massive fissile
290					
(58) H	290	293	*Shaved core Shale	1 foot from previous 4'1"	grayish black color Massive Mudcake contact @ 292ft (1ft above end of core section)
293					
(59) M	293	298	*No shaving, good core Shale	4'10"	grayish Black color, Massive Shell fragments throughout - Bentonite Ash layers (yellowish gray color) @ 298ft and @ 292ft, interbedded with black shale high angle contact at bottom
298					
(60) H	298	303	*recovery difficulty Shale	2'3"	indurated, Grayish black color - Bentonite layers @ 298ft & 299.5ft
303					
(61) M	303	306	*recovery difficulty Shale	1'6"	yellowish gray bentonite @ 303'6" Moderately indurated hindurated, Grayish black color
306					
(62) H	306	310	*Recovery difficulty Shale	1 from previous core 5'	grayish black color Moderately indurated, @ 307ft, 308ft, and 309ft bentonite layers bottom 2ft feet is nubble.
310					
(63) M	310	315	*lost spring in core last 4.5ft nubble Shale	4'10"	Moderately indurated to indurated, grayish black color Mudcake from 310ft to 311.5ft Massive in middle (good core) ~1.5ft
315					
(64) H	315	320	Shale	4'11"	Moderately indurated, grayish black color Massive, No bentonite or shells, fissile
320					

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Depth	Interval From	Interval To	Lith	RQD (Recovery)	Description
320					
(M) 65	320	325	Shale	5	Massive Shale - No discernable texture
325					
(M) 66	325	330	Shale	5	Transition from massive to fissile at 328.5; disks of ~1.5" thickness throughout core
330					
(M) 67	330	335	Shale	5	fissile grey/black Shale disks ~1.5" thickness; No shell material visible; appears to be organic-rich
~~335~~					
(M) 68	335	340	Shale	4.5	moderately indurated; grey black shale splits into 2" to 5" sections
340					
(M) ~~68~~ 69	340	345	Shale and bentonite	1.5	Poor recovery; 2" thick bentonite; bentonite well indurated; 3" piece of shale at bottom
345					
(M) 70			Shale	4	Poor core recovery; 3" bentonite at 350. massive moderately indurated shale above 349.75',
350					
(M) 71			Shale	5.5	moderately indurated, breaks into 2" to 5" pieces; Bentonite at 351.5 that is 1' thick.
355.5					

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355,5					
(H) 72	355,5	361	Shale	5,5	Massive shale; grey black.
361					
(M) 73	361	366	Shale	5	Slightly fissile at 361.5; grey black shale
366					
(H) 74	366	371	Shale	5	~~Mass~~ fissile grey black shale; thin 0,5" bentonite at 370
371					
(M) 75	371	376	Shale	5	Fissile shale, grey black; No shell material visible; fissility appears to have undulations ≈ irregular layering (appears often)
376					
(H) 76	376	381	Shale	5,5	grey black shale; No shell material Breaks into 1,5" to 10" pieces; Thin (~0,25") bentonite at 376,5'.
381					
(M) 77	376	386,5	Shale	3,5	Core jumbled during extraction from core tube; Bentonite (~0,5") at 386,5' Grey black shale; Bentonite layer (~0,5") mixed with shale at 384,5.
386,5					
(H) 78	386,5	392	Shale	5,0	grey black shale; Disks into ~ 1" to 2" sections.
392					
(M) 79	392	397	Shale	5	Bentonite (~1 in) at 391. Bentonite (~~0~~ ~0,5 inch) at 390. Grey black shale
397					

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397					
(H) 80	397	402	Shale	5	grey black shale; no shell; no bentonite
402					
(M) 81	402	407	Shale	5	grey black shale; fissile; disking from 404.5 to 407 (thickness ~1 inch); massive 404.5 to 402
407					
(H) 82	407	412	Shale	5	grey black shale, Bentonite at 409.5 (1" thick) Bentonite (~0.3") at 411.7;
412					
(M) (83)	412	417	Shale	2.5	Poor recovery; grey-black Shale; no shell; no bentonite; fissile
417					
(H) 84	417	420.5	Shale		grey black shale; no shell, no bentonites (made trip after the day to change to different style bit).
420.5	disking				
(M) 85	420.5	426	Shale	5.5	grey black shale; bottom 3.5 ft may be more massive (less fissile) than top. Bottom does not have obvious partings. Pieces up to 1 ft in length. No shells; no bentonites. disking at top
426					
(H) 86	426	431	Shale	4	Dark grey Shale (note lighter color); Partings not as pronounced. ~~No shells. No bentonites.~~ Moderately fissile.; & thin shell layer at 426.25 Small portion of bentonite (half) at 429.5'.
431					
(M) 87	431	436	Shale	5	Not fissile; well indurated; No obvious Partings; no shells; No bentonites; dark grey Shale
436					

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436					
(H) 88	436	441	Shale	5	massive shale - grey shale No shells; no concretions
441					
M (89)	441	446	Shale	5	Dark grey shale; few partings; no shells; no bentonite
446					
(H) 90	446	451	Shale	5	Dark grey shale; moderately fissile; Bentonite layer at 449 that is 2" thick with mottling at the top (shale appears to be worked into top) ½" Bentonite at 446.25. Parting surface on bentonite has slight greenish color 5G 4/1. is N 7.
451					
(M) 91	451	456	shale + sand	5	Dark grey shale at bott 1". Bentonite fragment at 455.75'. sand 455.75' - 452 unconsolidated - medium grained sand. upper 1 ft dark grey shale.
456					sample 20 @ 452-453 sample 21 @ 453-454 pieces of shale incorporated sample 22 @ 454-455 sample 23 @ 455-455.75 (includes shale end
92 (H)					
461					some drilling issues from overlying sand unit - blow up?
(H)				2	DK. grey shale 2"-4" discs (possibly thin zones of organic rich?) shell frags @ 459.5 Blocky @ bottom

Crow Creek?

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461					
93	461	466		3.5	Top 14" dk gry claystone w/ organic-rich(?) partgs 2"-4" Rest more uniform claystone w/ several thin bentonite lyrs @ bottom shell frags throughout
466 (M) 94	466	471		4	Top 10" fissile organic-rich dk gry shale 3"-6" sections of claystone w/ organic-rich partgs some bentonite by bottom tr shell frags
471					
M 95	471	476		4.5	pretty uniform dk gry claystone 1" bent. @ 473'9" somewhat fissile possible slickensides near top
H 96	476	481		4	dk gry shale blocky, but fairly indurated @ top silty by 3 ft siltstone grading to @ 3½ ft, 5" bentonite ↓ sand & pepper fine sand
M 97	481	486		5	dk gry - lt gry shale tr shell frags, concretion organic zone @ 2', 5' fissile 2'6"-4'
H 98	486	491		5	dk gry - lt gry shale tr shell fragments concretion 10"
M 99	491	496		5	dk gry shale concretion @ 5'
H 100	496	501.5		5.5	dk gry shale, more uniform to 3' fissile below more shell frag throughout

slickensides @ 5'3"? siltstone seam just below greenish tint below 5'

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	Depth	Interval From	Interval To	Lith	RQD	Description 1-3"
M	101	501.5	507	~~501.5~~	5.5	dk gry shale seems to alternate between soft clayish & fissile (mostly broken 4) concretion @ 4'5" @ 501.5' white to silt & paper tr shells siltstone/vf sandstone tr green sand appears to grade into bentonite shell 90° to 8"
H	102	507	512		5	dk gry shale fissile partings every 1-6" tr shells throughout large concretion @ 4'
						Called the Hole