



GEOTECHNICAL BORING LOG

Prepared By: MBL Date: 3/5/14

Checked By: JCM Date: 3/5/14

SHEET 1 OF 1

BECHTEL NO.: 25847			AMEC PROJECT NO.: 6468-13-1072				COUNTY: Roane, TN			GEOLOGIST: E. Shrum			
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee							DRILLER: B. Akins/J. Criss				Boring Orientation Inclination: Vertical Azimuth: NA		
BORING NO.: MP-414			DRILL METHOD: Mud Rotary/Core				DRILL MACHINE: D-120 (MW-1)						
GROUND ELEV.: 817.5 ft (NAVD88)			NORTHING: 572,070 US ft (NAD83)				EASTING: 2,447,565 US ft (NAD83)						
TOTAL DEPTH: 199.4 ft		SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08					ROD TYPE: AWJ		HAMMER (ID): 140-lb Auto (027)				
DATE STARTED: 8/14/13		COMPLETED: 8/17/13		HOLE DIA.: 4"		CASING DEPTH: 42.6 ft		CORE SIZE: HQ3		BITS USED: 4" Roller Cone			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft 0.5ft 0.5ft			BLOWS PER FOOT 0 20 40 60 80 100					SAMP. NO.	L O G	SOIL DESCRIPTION AND REMARKS	
817.5					Ground Surface							817.5 0.0	
817.5	0.0	2	11	18						SS-1		FILL: WELL GRADED GRAVEL with Clay (GW-GC), light gray (10YR 7/1) to brown (10YR 4/3), medium dense, dry, fine to coarse angular gravel, little moderate plasticity fines, few fine to coarse sand, trace organics, strong HCl reaction	815.0 2.5
814.8	2.7	4	10	10						SS-2		FILL: Sandy FAT CLAY with Gravel (CH), brown (7.5YR 4/4) and reddish gray (5YR 5/2), very stiff, moist, moderate to high plasticity fines, little fine to coarse sand, little fine to coarse angular gravel, strong HCl reaction	812.5 5.0
812.4	5.1	4	4	6						SS-3		FILL: FAT CLAY (CH), reddish brown (5YR 4/3), stiff, moist, low to moderate plasticity fines, few fine gravel, few fine to coarse sand, strong HCl reaction	810.5 7.0
810.0	7.5	10	9	12						SS-4		RESIDUAL SOIL: LEAN CLAY with Sand (CL), yellowish brown (10YR 5/4) to dark brown (7.5YR 3/3), very stiff, moist, low to moderate plasticity fines, little fine to coarse sand, trace fine angular gravel, no HCl reaction	805.5 12.0
807.4	10.1	6	8	12						SS-5			
805.0	12.5	5	9	9						SS-6		RESIDUAL SOIL: FAT CLAY (CH), reddish brown (5YR 5/4), very stiff to stiff, moist, low to moderate plasticity fines, trace to few fine to coarse sand, trace fine to coarse gravel, no HCl reaction	
802.4	15.1	5	7	9						SS-7			
797.7	19.8	2	3	6						SS-8			
792.5	25.0	WOH	WOH	4						SS-9		RESIDUAL SOIL: FAT CLAY (CH), reddish brown (5YR 4/3-5/4) to yellowish red (5YR 5/6) and brownish yellow (10YR 6/6), soft to very soft, wet, low to high plasticity fines, trace to few fine to coarse sand, trace fine to coarse gravel, no HCl reaction	794.5 23.0
787.6	29.9	WOH	2	WOH						SS-10			
782.3	35.2	WOH	WOH	WOH						SS-11			
780.4	37.1	1	1	1						SS-12		RESIDUAL SOIL: SILTY SAND (SM), brownish yellow (10YR 6/6), very loose, wet, fine sand, little to some non-plastic fines, no HCl reaction	780.5 37.0
778.2	39.3	WOH	WOH	12						SS-13		RESIDUAL SOIL: SILT with Sand (ML), brownish yellow (10YR 6/6), stiff, wet, non-plastic to low plasticity fines, little fine sands, trace fine gravel, no HCl reaction Very hard drilling/bit refusal at 42.3 feet; begin rock coring	778.5 39.0
												775.2 42.3	Soil drilling halted. Log continues on geotechnical coring log
Observed water levels: 27.7 ft bgs, AM 8/15/13 28.8 ft bgs, AM 8/16/13 28.2 ft bgs, AM 8/17/13													

CLINCH RIVER SMR BORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



GEOTECHNICAL CORING LOG

Prepared By: MBL Date: 3/5/14Checked By: JCM Date: 3/5/14

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25847				AMEC PROJECT NO.: 6468-13-1072				COUNTY: Roane, TN		GEOLOGIST: E. Shrum		
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee								DRILLER: B. Akins/J. Criss		Boring Orientation		
BORING NO.: MP-414				DRILL METHOD: Mud Rotary/Core				DRILL MACHINE: D-120 (MW-1)		Inclination: Vertical		
GROUND ELEV.: 817.5 ft		(NAVD88)		NORTHING: 572,070		US ft (NAD83)		EASTING: 2,447,565		US ft (NAD83)		Azimuth: NA
TOTAL DEPTH: 199.4 ft		SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08								HAMMER (ID): 140-lb Auto (027)		
DATE STARTED: 8/14/13		COMPLETED: 8/17/13		CASING DEPTH: 42.6 ft		CORE BARREL TYPE: HQ3/Diamond Impregnated core bits						
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	L O G	ROCK DESCRIPTION AND REMARKS			
									Begin Coring @ 42.3 ft			
775.2	42.3	2.1	4:37	(2.1)	(1.4)	Run 1			775.2	CRYSTALLINE DOLOMITE, fine to coarse grained, reddish gray (10R 6/1) with trace very dusky red (10R 2.5/2) mottling, to weak red (2.5YR 5/2), light gray (10YR 7/1), olive gray (5Y 6/2), and dark gray (2.5Y 4/1) with dark reddish gray (2.5YR 3/1) mottling, medium strong to strong, very thinly to thinly bedded, locally laminated, fresh, trace very thin chert beds (reddish gray to red and black), locally with trace laminated to very thin, medium grained rounded to subangular, quartz sand lenses and scattered grains; locally with coarse dolomite crystal growth, trace stylolites, trace open pits and vugs (separate/non-touching), few healed fractures with calcite, weak/delayed to no HCl reaction (Knox Group-Newala Formation)		42.3
773.1	44.4	5.0	0:30/0.1	(5.0)	(4.6)	Run 2				42.7,43.2,43.7,44.1ft: J, 40°, PR, T-PO, C, III 45.4,45.8,46.8ft: J, 20-25°, UR-PR, T-PO, C, III 47.9,48.1,48.3ft: J, 25-35°, PR, PO, C, II-III 50.3ft: BJ, 40°, PR, PO, D, II 51.1ft: J, 60°, PR, PO, C II		
768.1	49.4	5.0	2:12 2:16 2:19 1:52 3:03	(5.0)	(4.6)	Run 3						
763.1	54.4	5.0	3:01 3:24 5:48 5:43 5:11	(5.0)	(5.0)	Run 3						
758.1	59.4	5.0	7:03 5:35 5:39 6:21 6:12	(5.0)	(4.5)	Run 4			758.3	54.4-59.4ft: J, 40-70°, VT, A, I, spaced at about 0.5' 55.2ft: J, 15°, PR, T-PO, A-B, I 54.5,55.3,57.1,58.5ft: BJ, 20-30°, PR, T-PO, C, II 58.7ft: BJ, 40°, PS, PO, D, III		59.2
753.1	64.4	5.0	6:32 6:28 6:19 5:45 4:58	(5.0)	(5.0)	Run 5			753.7	LIMESTONE (MICRITE), light gray (10YR 7/1) with dark gray (2.5Y 4/1) mottling, strong, very thinly bedded and nodular, fresh, trace very thin chert nodules (black and dark gray), partially dolomitized with coarse dolomite crystal growth along bedding; trace stylolites, trace calcite filled pits, few healed fractures with calcite, strong HCl reaction 59.4,60.0,63.7ft: BJ, 30-45°, PR, T-PO, D, II-III 61.4-62.9ft: J, 80°, VT, A, I, with calcite and spaced at about 0.8		63.8
748.1	69.4	5.0	3:47 4:19 4:54 5:05 4:12	(5.0)	(5.0)	Run 6				CRYSTALLINE DOLOMITE, fine grained, gray to dark gray (2.5Y 5/1-4/1) to light gray (10YR 7/1), locally with dark reddish gray (2.5YR 4/1) to weak red (2.5YR 4/2) and dusky red (2.5YR 3/2, 10R 3/2), locally mottled, strong, very thinly to thinly bedded, fresh, trace to few very thin to thin chert beds, lenses, and nodules (reddish brown to reddish gray), locally with trace very thin dolomite cemented medium grained, rounded to subangular quartz sand lenses and scattered grains; intensely fractured and slightly to moderately silicified at 74.4'-78.1', healed fractures with calcite/dolomite, trace calcite filled pits, weak/delayed to no HCl reaction 64.6ft: J, 40°, PR, T, A, I 65.8-68.3ft: J, 65-80°, VT, A, I, with calcite and spaced at about 0.6' 66.6,67.8,68.8ft: J, 30-40°, PR, PO, C, II-III 70.3-73.2ft: J, 30-70°, VT, A, I, perpendicular to bedding 70.5ft: BJ, 35°, PS, O, D, II 71.1-74.4ft: J, 20-35°, VT, A, I, parallel to bedding 72.2,72.5ft: J, 30°, PS, PO, C, II		
743.1	74.4	5.0	2:27 2:29 2:26 3:19 3:31	(5.0)	(4.6)	Run 7				74.4-79.4ft: FZ, 20-35°, VT, A, I 74.7ft: J, 20°, UR, PO, C, III 76.3-76.4ft: FZ, 40-60°, PR-SR, MO, G, III 76.6-77.5ft: FZ, 30-60°, VT, A, I, with dolomite and indurated silt/clay		
738.1	79.4	5.0	3:10 4:14 5:46 6:05 5:41	(5.0)	(4.6)	Run 8			739.4			78.1
733.1	84.4	5.0	5:38 4:44 3:48 3:59 3:51	(5.0)	(3.4)	Run 9			735.3	LIMESTONE (MICRITE), white (10R 8/1) to light gray (10YR 7/1), strong, very thinly bedded and nodular, fresh, partially dolomitized with little dark greenish gray to greenish gray (10YR 4/1-5/1) dolomitic interbeds, and some moderate beds of CRYSTALLINE DOLOMITE, fine grained, dusky red (10R 3/2) with pale green (5G 6/2) to light gray (10YR 7/1), very thinly to thinly bedded from 78.6'-81.5', trace chert nodules; trace calcite filled pits, few healed fractures with calcite/dolomite, weak to strong HCl reaction 78.1,81.4,81.8ft: BJ, 30-40°, PS-PR, T-PO, C-G, II 78.6ft: J, 10°, PR, PO, G, II 79.4-81.5ft: FZ, 20-60°, VT, A, I, spaced at about 0.1'		82.2
728.1	89.4	5.0	4:01 3:37 3:51 3:33 4:10	(5.0)	(5.0)	Run 10				CRYSTALLINE DOLOMITE, fine grained, dusky red (10R 3/2) to light gray (10YR 7/1), white (10YR 8/1), and gray (10YR 5/1), strong, very thinly to moderately bedded, fresh, with little very thin to moderate beds of LIMESTONE (MICRITE), gray (10YR 6/1-5/1), very thinly bedded, at 92.7'-93.8' and 97.4'-98.5', and trace very thin to thin chert beds, lenses, and nodules (dark gray); trace calcite and dolomite filled pits and vugs (separate/non-touching), healed fractures with calcite/dolomite through-out, weak to no HCl reaction 82.3,82.4,85.2,85.0,86.0,88.1,88.8ft: BJ/J, 30-40°, PS-PR, VT-PO, A-G, I-II 84.1ft: J, 60°, PS, PO, B, II		
		5.0	3:35	(5.0)	(5.0)	Run 11						

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SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee								DRILLER: B. Akins/J. Criss			Boring Orientation	
BORING NO.: MP-414				DRILL METHOD: Mud Rotary/Core				DRILL MACHINE: D-120 (MW-1)			Inclination: Vertical	
GROUND ELEV.: 817.5 ft		(NAVD88)		NORTHING: 572,070		US ft (NAD83)		EASTING: 2,447,565		US ft (NAD83)		Azimuth: NA
TOTAL DEPTH: 199.4 ft		SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08							HAMMER (ID): 140-lb Auto (027)			
DATE STARTED: 8/14/13		COMPLETED: 8/17/13		CASING DEPTH: 42.6 ft			CORE BARREL TYPE: HQ3/Diamond Impregnated core bits					
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		ROD (ft) %	SAMP. NO.	L O G	ROCK DESCRIPTION AND REMARKS			
									Continued from previous page			
723.1	94.4	5.0	4:16 4:41 6:50 5:15				Run 12		CRYSTALLINE DOLOMITE, fine grained, dusky red (10R 3/2) to light gray (10YR 7/1), white (10YR 8/1), and gray (10YR 5/1), strong, very thinly to moderately bedded, fresh, with little very thin to moderate beds of LIMESTONE (MICRITE), gray (10YR 6/1-5/1), very thinly bedded, at 92.7'-93.8' and 97.4'-98.5', and trace very thin to thin chert beds, lenses, and nodules (dark gray); trace calcite and dolomite filled pits and vugs (separate/non-touching), healed fractures with calcite/dolomite through-out, weak to no HCl reaction (continued) 92.7ft: BJ, 30°, PR, PO, C, II, stylolite 93.6ft: J, 60°, PR, PO, C, III 93.0,93.3ft: J, 60°, VT, A, I 95.6,97.5,98.0ft: BJ, 25-30°, UR, T-PO, C, III 97.9,98.3,99.4,101.1ft: J, 20-30°, PR-UR, PO, G-D, II 98.4ft: J, 60°, VT, A, I 98.5ft: BJ, 30°, PR, PO, B, II, and J, 60°, PR, O, B, II 100.5ft: BJ, 30°, UR, VT, A, I, stylolite			
718.1	99.4	5.0	5:08 5:41 5:07 4:28 4:38	(5.0) 100%	(4.7) 94%		Run 13		716.2	CRYSTALLINE DOLOMITE, fine grained, dusky red (10R 3/2) with dark greenish gray (10Y 4/1), to light brownish gray to grayish brown (10YR 6/2-5/2), to dark grayish brown to very dark grayish brown (10YR 4/2-3/2), and gray to dark gray (10YR 6/1-4/1) with dark reddish gray (2.5YR 3/1), locally mottled, strong, very thinly to thinly bedded, fresh, with moderate bed of LIMESTONE (MICRITE), gray to dark gray (10YR 5/1-4/1) with dark reddish gray (2.5YR 3/1), very thinly bedded, at 119.1'-120.6', strong HCl reaction; trace calcite and dolomite filled pits and vugs (separate/non-touching, few open), trace to few stylolites, healed fractures with calcite/dolomite through-out, weak to no HCl reaction 102.1ft: J, 30°, UR, T, C, II 104.5,107.5,108.4ft: BJ, 30°, PR, T-PO, C, II		
713.1	104.4	5.0	4:36 4:00 4:06 4:24 4:36	(5.0) 100%	(5.0) 100%		Run 14			109.1-114.4ft: FZ, 60-80°, VT, A, I, with dolomite and spaced at about 0.5' 112.7ft: BJ, 30°, UR, T, C, III, stylolite		
708.1	109.4	5.0	4:20 5:24 4:57 4:38 4:47	(5.0) 100%	(5.0) 100%		Run 15			117.0ft: J, 60°, PR, VT, C, III 117.6,119.1ft: BJ, 30°, PR, T-PO, D, II 119.4ft: J, 30°, PR, T, D, III		
703.1	114.4	5.0	5:05 4:31 4:15 3:53 4:11	(5.0) 100%	(5.0) 100%		Run 16			120.4,121.0,122.8ft: BJ, 30-40°, PR, T, D, III 121.7,121.8ft: J, 60°, PS, VT, A, I		
698.1	119.4	5.0	3:57 3:33 3:09 3:40 3:45	(5.0) 100%	(5.0) 100%		Run 17		694.7	LIMESTONE (MICRITE), light gray (10YR 7/1), strong, very thinly to moderately bedded, fresh, with little laminated to very thin, medium grained, rounded to subrounded quartz sand lenses, and trace chert nodules, partially dolomitized with coarse dolomite crystals along bedding; trace to few stylolites, trace calcite filled pits, strong HCl reaction 124.0ft: BJ, 40°, PR, PO, D, III 125.8,126.1,126.7ft: BJ, 30°, PR, T, C, III 126.6ft: J, 60°, PR, T-PO, C, II 128.4,129.0,129.4,130.0,130.8ft: BJ, 30-40°, PR, PO, C-D, II		
693.1	124.4	5.0	3:43 3:36 3:41 3:36 4:32	(5.0) 100%	(5.0) 100%		Run 18			CRYSTALLINE DOLOMITE, coarse grained, light gray to gray (2.5Y 7/1-5/1), mottled, strong, very thinly to thinly bedded, slightly weathered, trace very thin chert bed (gray to white); few to little open pits and vugs (separate/non-touching) developed along bedding, weak to no HCl reaction		
688.1	129.4	5.0	5:46 4:44 4:35 6:19 5:29	(5.0) 100%	(4.4) 88%		Run 19		686.7	LIMESTONE (MICRITE), light gray (10YR 7/1), strong, very thinly to moderately bedded, fresh, with little laminated to very thin, medium grained, rounded to subrounded quartz sand lenses, and trace chert nodules, partially dolomitized with coarse dolomite crystals along bedding; trace to few stylolites, trace calcite filled pits, strong HCl reaction 133.5,133.7,134.1ft: BJ, 30-40°, PR, T-PO, C-G, II-III 134.6,135.3ft: J, 55°, VT, A, I, with calcite		
683.1	134.4	5.0	6:25 4:06 2:14 2:25 4:29	(4.9) 98%	(3.9) 78%		Run 20		684.0			
678.1	139.4		4:29 3:06 2:22 2:31 2:39	(5.0) 100%	(5.0) 100%				680.8			

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14



BECHTEL PROJECT NO.: 25847			AMEC PROJECT NO.: 6468-13-1072			COUNTY: Roane, TN		GEOLOGIST: E. Shrum	
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee						DRILLER: B. Akins/J. Criss			Boring Orientation Inclination: Vertical Azimuth: NA
BORING NO.: MP-414			DRILL METHOD: Mud Rotary/Core			DRILL MACHINE: D-120 (MW-1)			
GROUND ELEV.: 817.5 ft (NAVD88)			NORTHING: 572,070 US ft (NAD83)			EASTING: 2,447,565 US ft (NAD83)			
TOTAL DEPTH: 199.4 ft		SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08					HAMMER (ID): 140-lb Auto (027)		
DATE STARTED: 8/14/13		COMPLETED: 8/17/13		CASING DEPTH: 42.6 ft		CORE BARREL TYPE: HQ3/Diamond Impregnated core bits			
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % ROD (ft) %		SAMP. NO.	L O G	ROCK DESCRIPTION AND REMARKS	
								Continued from previous page	
673.2	144.3	4.9	2:42 3:15 3:11 2:31 2:24/0.9	(4.9) 100%	(4.9) 100%	Run 21		CRYSTALLINE DOLOMITE, medium to coarse grained, light gray (10YR 7/1) to dark gray (2.5Y 4/1) mottled with white (2.5Y 8/1, N 8/), strong, very thinly to moderately bedded, slightly weathered to fresh, locally with little very thin, medium grained, rounded, quartz sand lenses and scattered grains; highly fractured (healed) and silicified at 142.8'-143.7', trace stylolites, trace calcite filled and open pits and vugs (separate/non-touching), weak to no HCl reaction (continued)	
668.1	149.4	5.1	3:04 3:10 4:33 5:23 7:57/1.1	(5.1) 100%	(5.1) 100%	Run 22	672.2	138.7ft: J, 65°, VT, A, I, with calcite 140.0, 143.7ft: J, 45°, PR, PO, C, II 142.8-143.7ft: FZ, 35-40° and 60°, VT, A, I LIMESTONE (MICRITE), light gray (N 7/) to dark gray (2.5YR 4/1), strong, very thinly to thinly bedded, fresh, locally weakly dolomitized with coarse dolomite crystals along bedding planes, and thin to moderately bedded CHERT with limestone clasts at 147.7'-150.8' (dark gray to gray) and 152.6'-152.8' (red), trace chert nodules; trace stylolites, trace calcite filled pits, strong HCl reaction	
663.1	154.4	5.0	6:43 6:28 6:14 6:14 6:29	(5.0) 100%	(5.0) 100%	Run 23		145.3ft: BJ, 30°, PR, T-PO, C, II 146.4, 147.7ft: J, 30°, PR, PO-O, C, II 151.9ft: J, 50°, PR, PO, C, II 155.7ft: BJ, 30°, PR, T, C, II 155.9ft: J, 20°, PR, T, C, II	
658.2	159.3	4.9	6:12 3:58 4:40 5:08 5:19/0.9	(4.9) 100%	(4.7) 96%	Run 24	661.4	CRYSTALLINE DOLOMITE, fine to coarse grained, gray to dark gray (2.5Y 5/1-4/1) with light gray (10YR 7/1) mottling, to gray (10YR 6/1-5/1) with weak red (10R 5/2) mottling, and light gray (10YR 7/1) to gray (10YR 6/1) and dark gray (2.5Y 4/1) with trace weak red (10R 5/2) mottling, strong, very thinly to moderately bedded, fresh, trace to few very thin to thin chert lenses and nodules (dark reddish brown to black); trace stylolites, trace to few calcite and dolomite filled pits and vugs (separate/non-touching, few open to partially filled), healed fractures with calcite/dolomite through-out, weak/delayed to no HCl reaction	
653.1	164.4	5.1	4:58 5:54 4:12 4:26 4:12/1.1	(5.1) 100%	(5.1) 100%	Run 25		156.3-158.5ft: FZ, 20-45°, VT, A, I, spaced at about 0.3' 161.3ft: J, 20°, PR, PO, D, II 162.2ft: J, 40°, PR, PO, C, II 163.1ft: BJ, 30°, UR, T, C, II, stylolite	
648.1	169.4	5.0	5:37 4:35 4:01 3:30 3:40	(5.0) 100%	(5.0) 100%	Run 26		167.1ft: J, 50°, UR, T-PO, C, III	
643.1	174.4	5.0	3:10 3:43 3:25 2:57 3:21	(5.0) 100%	(5.0) 100%	Run 27		170.1-170.4ft: J, subvertical, healed with calcite 170.4, 171.9ft: J, 30-60°, UR, VT, G, II	
638.1	179.4	5.0	3:27 3:26 3:41 5:44 5:27	(5.0) 100%	(5.0) 100%	Run 28		175.6ft: J, 30°, PR, T, G, II 176.9-178.5ft: Intensely fractured and healed with dolomite, silicified/cherty	
633.1	184.4	5.0	4:26 4:52 4:52 6:12 6:33	(5.0) 100%	(5.0) 100%	Run 29		179.7-181.7ft: J, 50-60°, VT, A, I, spaced at about 0.3'	
		5.0	5:43 4:42 3:23 5:02	(5.0) 100%	(4.5) 90%	Run 30	629.9	185.6ft: BJ, 30°, PR, PO, C, II 186.0ft: J, 60°, VT, A, I	
								187.6	

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SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee				DRILLER: B. Akins/J. Criss		Boring Orientation Inclination: Vertical Azimuth: NA	
BORING NO.: MP-414		DRILL METHOD: Mud Rotary/Core		DRILL MACHINE: D-120 (MW-1)			
GROUND ELEV.: 817.5 ft (NAVD88)		NORTHING: 572,070 US ft (NAD83)		EASTING: 2,447,565 US ft (NAD83)		HAMMER (ID): 140-lb Auto (027)	
TOTAL DEPTH: 199.4 ft		SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08				CORE BARREL TYPE: HQ3/Diamond Impregnated core bits	
DATE STARTED: 8/14/13		COMPLETED: 8/17/13		CASING DEPTH: 42.6 ft			

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	LOG	ROCK DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %			
								Continued from previous page
628.1	189.4	5.0	4:52			Run 31		CRYSTALLINE DOLOMITE, fine grained, light gray (10YR 7/1) to weak red (10R 5/2) mottled with gray (10YR 6/1), strong, very thinly to thinly bedded, fresh, trace very thin chert lenses and nodules (grayish brown); trace stylolites, trace dolomite filled pits and vugs (separate/non-touching), weak/delayed to no HCl reaction (continued) 187.7-189.8ft: FZ, 30-90°, VT, A, I, spaced at 0.1-0.2' 191.7ft: J, 40°, PR, PO, D, II 193.2ft: J, 40°, UR, VT, A, I
			4:20	(5.0)	(5.0)			
			3:14	100%	100%			
			3:58					
			3:58					
623.1	194.4	5.0	4:38			Run 32		196.0ft: J, 50°, PR, PO, C, III 199.0, 199.2ft: J, 40°, PR, T, B, III
			5:00	(4.9)	(4.6)			
			4:14	98%	92%			
			3:13					
			3:52					
618.1	199.4		4:05					
Boring and coring terminated at 199.4 feet.								

CLINCH RIVER SMR CORE FINAL CLINCH FINAL LOGS.GPJ CLINCH BORING DATA TEMPLATE.GDT 3/5/14

MP-414 – Boxes 1 and 2



MP-414 – Boxes 3 and 4



MP-414 – Boxes 5 and 6



MP-414 – Boxes 7 and 8



MP-414 – Boxes 9 and 10



MP-414 – Box 11

