GEOTECHNICAL CORING LOG

Prepared By: MBL Date: 3/5/14

Checked By: JCM Date: 3/5/14

BECHTEL PROJECT NO.: 25847	AMEC PROJECT NO.: 6468-13-1072	COUNTY: Roane, TN	GEOLOGIST: K. Lloyd
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee		DRILLER: L. Carter/J. Rosser	Boring Orientation
BORING NO.: MP-105	DRILL METHOD: Mud Rotary/Core	DRILL MACHINE: CME-750X (P)	Inclination: Vertical
GROUND ELEV.: 800.2 ft (NAVD88)	NORTHING: 570,210 US ft (NAD83)	EASTING: 2,448,344 US ft (NAD83)	Azimuth: NA
TOTAL DEPTH: 195.2 ft	SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08		HAMMER (ID): 140-lb Auto (323438)
DATE STARTED: 8/7/13	COMPLETED: 8/17/13	CASING DEPTH: 19.5 ft	CORE BARREL TYPE: HQ3 & NQ3/Diamond Impregnated core bits

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	LOG	ROCK DESCRIPTION AND REMARKS
								Begin Coring @ 10.8 ft
789.4	10.8	5.0	2:08 1:12 1:29 2:37 1:19	(2.9) 58%	(1.1) 22%	Run 1		789.4 LIMESTONE (WACKESTONE/MICRITE), bluish gray (5PB 5/1) with dark grayish brown (10YR 4/2), weak to medium strong, very thinly to thinly bedded, locally nodular, moderately to slightly weathered, fossiliferous, interbedded with little to some, laminated to very thin Calcareous SILTSTONE, very dark gray (N 3/), wavy and irregular to diffuse bedding; strong HCl reaction **(Benbolt Formation-Unit E)** 10.8 786.5 13.7 11.1,11.3,12.0,12.1ft: BJ, 25-35°, UR, PO, C-H, III 12.1-13.7ft: FZ, 0-30°, PO-O, C-H, III, with clay
784.4	15.8	5.0	1:29 4:49 3:16 4:19 4:58	(3.6) 72%	(1.6) 32%	Run 2		WEATHERED ROCK: LIMESTONE (MICRITE/WACKESTONE), no recovery 783.0 13.7-17.2ft: FZ, No Recovery-3.5' Core loss 17.2 LIMESTONE (WACKESTONE/MICRITE), bluish gray (5PB 5/1) to light gray (2.5Y 7/1), medium strong to strong, very thinly to thinly bedded, locally nodular, slightly weathered to fresh, fossiliferous, interbedded with little to some, laminated to thin Calcareous SILTSTONE, very dark gray (N 3/), wavy and irregular to diffuse bedding; locally with few LIMESTONE (PACKSTONE/GRAINSTONE) beds, slight bioturbation, trace calcite filled pits and burrows, strong HCl reaction 17.2-20.7ft: FZ, 0-30°, PO-O, C-H, III, with clay 20.7,21.0,21.4,21.5,21.8,24.5,25.4ft: BJ, 30°, PR, PO, B-C, II 21.1-21.4ft: FZ, 10-30°, PO-O, B-C, III, with clay 22.1ft: BJ, 10°, PO, B, II 22.5,23.6ft: BJ, 30-35°, UR, PO, B, II 23.3ft: FZ, 30-40°, PR-UR, PO, B, II
779.4	20.8	5.0	2:29 2:28 2:00 2:23 2:41	(4.9) 98%	(2.6) 52%	Run 3		23.8-24.2ft: FZ, 20-50°, T-PO, B, II 24.5ft: J, 45°, PR, PO, B, II 26.1ft: J, 60°, PR, PO, B, II 26.3,27.0,27.4,27.6,28.2,28.3,29.2,30.2,30.3,30.4,30.5,30.7ft: BJ, 30°, SR-PR, T-PO, B, II 28.4,28.7,29.9ft: BJ, 10-15°, PR, PO, B, II 29.5ft: FZ, 30° and 50°, PR, PO, B, II
774.4	25.8	5.0	1:42 1:52 2:36 3:01 3:27	(5.0) 100%	(2.9) 58%	Run 4		
769.4	30.8	3.0	4:41 2:58 5:01	(2.8) 93%	(1.4) 47%	Run 5		30.9ft: J, 20°, UR, PO, B, II 31.2,31.9ft: J, 55°, PR, B, III, trace pyrite 31.3,31.5,31.8,32.0,33.2,33.9,34.9,35.5ft: BJ, 25-30°, PS-PR, T-PO, B, II 32.3-33.4ft: FZ, 30°, PR, PO-O, B, II, 0.2' Core loss
766.4	33.8	2.0	3:06 2:41	(2.0) 100%	(1.5) 75%	Run 6		33.0ft: BJ, 25°, SR, T, B, II 33.5,33.8ft: J, 60°, UR-PR, PO, B, II
764.4	35.8	5.0	2:28 2:05 2:09 2:58 2:34	(5.0) 100%	(4.6) 92%	Run 7		35.9,39.1,40.0ft: BJ, 45°, PR, PO, B, II 36.8ft: J, 50°, PR, PO, B, II 37.0,38.3ft: BJ, 20-25°, PR, T-PO, B, II 38.7ft: J, 20°, SR, T-PO, B, II
759.4	40.8	5.0	2:36 2:10 2:07 2:06 1:54	(4.9) 98%	(4.3) 86%	Run 8		41.6,41.9,42.3,43.0,43.3ft: BJ, 30-40°, PR-PS, PO, B, II, 0.1' Core loss at 43.0'
754.4	45.8	5.0	2:06 2:42 2:03 2:25 3:03	(4.8) 96%	(3.8) 76%	Run 9		46.0,49.6,50.3ft: BJ, 30°, PL, PO, C, III, with calcite 47.0,47.7ft: BJ, 30°, PS, T-PO, B, II 48.2ft: J, 10°, SR, PO, B, II 49.2ft: BJ, 30°, PS, O, B, II 49.7,49.9ft: BJ, 30°, PR, O, D, III
749.4	50.8	5.0	3:03 2:51 1:54 1:37 2:20	(5.0) 100%	(4.9) 98%	Run 10		50.3-50.8ft: FZ, 15-30°, PR, PO, B, II 51.5ft: BJ, 25°, PR, T, B, II 52.0-52.3,52.6-52.8ft: FZ, 15-60°, PS-US, T-PO, F, II 54.3,55.1ft: BJ, 30°, PR, T-PO, B, II
744.4	55.8	5.0	2:06 1:46 1:40 1:52	(5.0) 100%	(4.7) 94%	Run 11		55.7ft: BJ, 25°, PR, PO, B, II, mechanical break 56.5ft: J, 55°, PR, PO, C, III, with calcite 56.8ft: J, 40°, PR, O, B, II

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: K. Lloyd
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee		DRILLER: L. Carter/J. Rosser	Boring Orientation
BORING NO.: MP-105	DRILL METHOD: Mud Rotary/Core	DRILL MACHINE: CME-750X (P)	Inclination: Vertical
GROUND ELEV.: 800.2 ft (NAVD88)	NORTHING: 570,210 US ft (NAD83)	EASTING: 2,448,344 US ft (NAD83)	Azimuth: NA
TOTAL DEPTH: 195.2 ft	SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08		HAMMER (ID): 140-lb Auto (323438)
DATE STARTED: 8/7/13	COMPLETED: 8/17/13	CASING DEPTH: 19.5 ft	CORE BARREL TYPE: HQ3 & NQ3/Diamond Impregnated core bits

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	LOG	ROCK DESCRIPTION AND REMARKS
								Continued from previous page
739.4	60.8		2:19					LIMESTONE (WACKESTONE/MICRITE), bluish gray (5PB 5/1) to light gray (2.5Y 7/1), medium strong to strong, very thinly to thinly bedded, locally nodular, slightly weathered to fresh, fossiliferous, interbedded with little to some, laminated to thin Calcareous SILTSTONE, very dark gray (N 3/), wavy and irregular to diffuse bedding; locally with few LIMESTONE (PACKSTONE/GRAINSTONE) beds, slight bioturbation, trace calcite filled pits and burrows, strong HCl reaction *(continued)* 60.8ft: J, 55°, PR, PO, C, III, with calcite, mechanical break 64.1,64.7,65.3ft: BJ, 20-35°, PS-PR, PO, B, II
		5.0	2:23 2:10 2:35 2:16 2:05	(5.0) 100%	(5.0) 100%	Run 12		
734.4	65.8	5.0	2:13 2:48 2:42 3:19 1:58	(4.9) 98%	(4.8) 96%	Run 13		67.2,69.3,70.1ft: BJ, 30°, PL-PR, T-PO-O, B-C, III, with calcite
729.4	70.8	5.0	2:20 2:05 1:45 2:06 2:39	(5.0) 100%	(5.0) 100%	Run 14		72.0,72.9,74.7ft: BJ, 30-40°, UR-PR, T-PO, B, II
724.4	75.8	3.0	2:05 1:32 1:24	(3.0) 100%	(3.0) 100%	Run 15		77.9ft: BJ, 20°, UR, T, B, II
721.4	78.8							
721.3	78.9	0.1	5:46/0.1	(0.1)	(0.0)	Run 16		79.8ft: BJ, 25°, mechanical break
720.0	80.2	1.3	1:47/0.8	100%	0%	Run 17		
		5.0	1:08/0.5 2:21 2:23 2:03 2:11 2:07	(1.3) 100% (5.0) 100%	(1.3) 100% (4.9) 98%	Run 18 L3-5		80.9,81.3ft: BJ, 30-40°, UR, PO, B, II 81.4,82.2,83.3,84.7ft: BJ, 30-45°, PS-PR, T-PO, B-D, II
715.0	85.2							
714.5	85.7	0.5	1:34/0.5	(0.5)	(0.5)	Run 19		
		5.0	2:25 2:32 2:33 2:26 2:41	100% (5.0) 100%	100% (4.6) 92%	Run 20		87.0,87.3ft: J, 50° and 75°, PR, PO, C, III, calcite 87.4ft: BJ, 45°, PS, T, B, II
709.5	90.7							712.7 — 87.5 CALCAREOUS SILTSTONE, dark gray (5Y 4/1), medium strong, laminated to very thinly bedded, fresh, interbedded with little to few, very thin to laminated LIMESTONE (MICRITE), gray (5Y 6/1), planar to amorphous and diffuse bedding; slight bioturbation, trace calcite filled pits and burrows, strong HCl reaction
		5.0	2:19 2:16 2:23 2:34 3:42	(5.0) 100%	(5.0) 100%	Run 21		94.6ft: BJ, 40°, PL, T, C, III, with calcite and trace pyrite
704.5	95.7							704.6 — 95.6
		5.0	2:13 2:02 1:57 1:53 2:04	(5.0) 100%	(5.0) 100%	Run 22		LIMESTONE (WACKESTONE/PACKSTONE/GRAINSTONE), gray (5Y 6/1), strong, very thinly to thinly bedded, fresh, fossiliferous, interbedded with little to few, very thin to laminated, Calcareous SILTSTONE, dark gray (5Y 4/1), wavy and irregular to diffuse bedding; slight bioturbation, trace calcite filled pits and burrows, strong HCl reaction 98.4ft: BJ, 30°, PS, T, B, II 99.7ft: BJ, 30°, SR, T, B, II
699.5	100.7	5.0	2:07 1:36 2:16 3:16 4:36	(5.0) 100%	(5.0) 100%	Run 23		101.6,102.6ft: BJ, 25°, PL, T, C, III, with calcite 102.2ft: BJ, 40°, PS, T, B, II
694.5	105.7							697.2 — 103.0 CALCAREOUS SILTSTONE, dark gray (5Y 4/1), medium strong, laminated to thinly bedded, locally with moderately bedded appearance, fresh, interbedded with few to some, laminated to thin LIMESTONE (MICRITE/WACKESTONE), gray (5Y 6/1), amorphous and diffuse to irregular and nodular bedding, locally fossiliferous; slight bioturbation, trace pyrite along bedding laminations, trace calcite filled pits and burrows, strong HCl reaction
		5.0	4:46 3:27	(5.0) 100%	(5.0) 100%	Run 24		

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: K. Lloyd
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee			DRILLER: L. Carter/J. Rosser	Boring Orientation
BORING NO.: MP-105	DRILL METHOD: Mud Rotary/Core		DRILL MACHINE: CME-750X (P)	Inclination: Vertical
GROUND ELEV.: 800.2 ft (NAVD88)	NORTHING: 570,210 US ft (NAD83)		EASTING: 2,448,344 US ft (NAD83)	Azimuth: NA
TOTAL DEPTH: 195.2 ft	SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08			HAMMER (ID): 140-lb Auto (323438)
DATE STARTED: 8/7/13	COMPLETED: 8/17/13	CASING DEPTH: 19.5 ft	CORE BARREL TYPE: HQ3 & NQ3/Diamond Impregnated core bits	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	LOG	ROCK DESCRIPTION AND REMARKS
								Continued from previous page
			3:18					CALCAREOUS SILTSTONE, dark gray (5Y 4/1), medium strong, laminated to thinly bedded,
			3:45					locally with moderately bedded appearance, fresh, interbedded with few to some, laminated to
689.5	110.7		4:21					thin LIMESTONE (MICRITE/WACKESTONE), gray (5Y 6/1), amorphous and diffuse to
		5.0	3:24	(5.0)	(5.0)	Run 25		irregular and nodular bedding, locally fossiliferous; slight bioturbation, trace pyrite along
			4:46	100%	100%			bedding laminations, trace calcite filled pits and burrows, strong HCl reaction *(continued)*
			3:54					103.2ft: J, 10°, PR, PO, B, II
			3:15					104.0ft: BJ, 30°, PL, PO, C, III, with calcite
684.5	115.7		4:13					114.7ft: BJ, 30°, US, T, C, III, with calcite
		5.0	5:16	(5.0)	(5.0)	Run 26		115.7ft: BJ, 20°, PS, T-PO, B, II, mechanical break
			4:36	100%	100%			118.0ft: J, 70°, PR, PO, C, III, with calcite
			2:54					
			2:45					
679.5	120.7		2:59					
		5.0	3:45	(5.0)	(5.0)	Run 27		121.4ft: BJ, 35°, PS, PO, C, III, with calcite
			3:31	100%	100%			
			3:40					
			3:56					
674.5	125.7		3:47					
		5.0	4:23	(5.0)	(4.8)	Run 28		
			4:07	100%	96%			
			3:30			*L3-6*		
			3:10					671.6 128.6
669.5	130.7		3:45					LIMESTONE (WACKESTONE/GRAINSTONE/MICRITE), bluish gray (5PB 6/1), medium
		3.0	2:21	(2.9)	(2.1)	Run 29		strong to strong, very thinly to thinly bedded, locally to moderately bedded and nodular, fresh,
			3:59	97%	70%			fossiliferous, interbedded with some to few, thinly bedded to laminated, Calcareous
			3:23					SILTSTONE, dark gray (5Y 4/1), wavy and irregular to diffuse bedding; slight bioturbation,
666.5	133.7							trace calcite filled pits and burrows, strong HCl reaction
665.8	134.4	0.7	12:07/0.7	(0.3)	(0.0)	Run 30		129.2,130.3ft: BJ, 30°, PR, PO, B, II
665.0	135.2	0.8	1:53/0.8	43%	0%	Run 31		129.3ft: J, 60°, PR, PO, C, III
		5.0	2:42	(0.8)	(0.8)	Run 32		132.2ft: BJ, 30°, PS, T, C, III, with calcite
			2:19	100%	100%			132.3ft: BJ, 20°, PL, T, C, III, with calcite
			2:13	(5.0)	(5.0)			132.5,132.7ft: SZ, 20°, PR, PO, F, III, moderately weathered
			2:01	100%	100%	*L3-7*		132.9ft: BJ, 30°, PR, T, C, II
660.0	140.2		2:03					136.0,136.9,138.0,138.8ft: BJ, 25°, PR, T, B, II
		5.0	1:31	(5.0)	(4.9)	Run 33		141.1-141.2ft: FZ, 30°, PR, T-PO, B, II
			1:36	100%	98%			141.4,143.7ft: BJ, 30°, PS, T, B, II
			1:34					142.7,144.3ft: BJ, 25°, PR, T-PO, B, II
			1:35					
655.0	145.2		1:40					
654.5	145.7	0.5	0:48/0.5	(0.5)	(0.5)	Run 34		
		5.0	2:20	100%	100%	Run 35		146.4ft: J, 50°, PR, T-PO, B, II
			2:43	(5.0)	(4.7)			146.6ft: J, 75°, PR, PO, C, III, with calcite
			2:53	100%	94%			146.6ft: BJ, 25°, PR, PO, C, III, with calcite
			2:34					651.9 148.3
649.5	150.7		3:01					LIMESTONE (MICRITE/WACKESTONE) with few (GRAINSTONE), gray (N 6/-N 5/) to dark
		5.0	2:19	(4.9)	(4.0)	Run 36		gray (N 4/) and grayish brown to very dark grayish brown (10YR 5/2-4/2-3/2), strong,
			2:18	98%	80%			laminated to moderately bedded and nodular, fresh, fossiliferous, interbedded with few to
			2:24					some, laminated to very thin Calcareous SILTSTONE, dark gray to black (5Y 3/1-2.5/1),
			2:21					dark olive gray (5Y 3/2), and greenish black (10Y 2.5/1), planar to mostly wavy/wispy
644.5	155.7		2:20					irregular and diffuse, and few to little very thin to thin chert beds, lenses, and irregular
		5.0	3:52	(5.0)	(4.9)	Run 37		nodules (gray to dark gray and black, with calcite filled tensional fractures orthogonal to
								bedding); locally with slight bioturbation, trace calcite filled pits and burrows, trace pyrite,
								locally with sparry calcite "bird eyes", locally argillaceous, strong HCl reaction **(Rockdell Formation-Unit D)**
								148.3,149.4,150.3,151.2,151.3ft: BJ, 25-30°, PS-PR, T-PO, B-C, II-III, with calcite
								151.5,153.6,153.7,154.3,155.0ft: BJ, 30°, PL, T, C, III, with calcite

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: K. Lloyd
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee		DRILLER: L. Carter/J. Rosser	Boring Orientation
BORING NO.: MP-105	DRILL METHOD: Mud Rotary/Core	DRILL MACHINE: CME-750X (P)	Inclination: Vertical
GROUND ELEV.: 800.2 ft (NAVD88)	NORTHING: 570,210 US ft (NAD83)	EASTING: 2,448,344 US ft (NAD83)	Azimuth: NA
TOTAL DEPTH: 195.2 ft	SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08		HAMMER (ID): 140-lb Auto (323438)
DATE STARTED: 8/7/13	COMPLETED: 8/17/13	CASING DEPTH: 19.5 ft	CORE BARREL TYPE: HQ3 & NQ3/Diamond Impregnated core bits

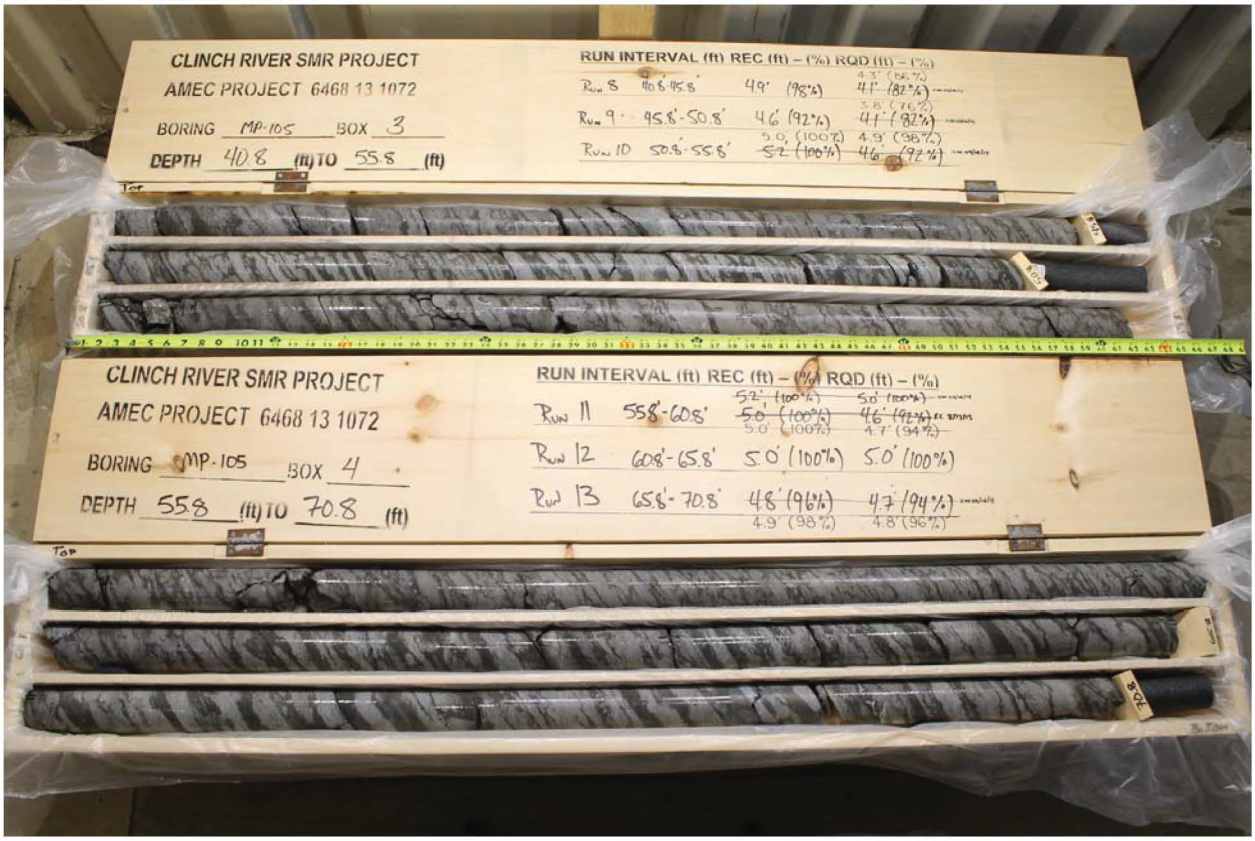
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	LOG	ROCK DESCRIPTION AND REMARKS
								Continued from previous page
			3:39	100%	98%			LIMESTONE (MICRITE/WACKESTONE) with few (GRAINSTONE), gray (N 6/-N 5/) to dark gray (N 4/) and grayish brown to very dark grayish brown (10YR 5/2-4/2-3/2), strong, laminated to moderately bedded and nodular, fresh, fossiliferous, interbedded with few to some, laminated to very thin Calcareous SILTSTONE, dark gray to black (5Y 3/1-2.5/1), dark olive gray (5Y 3/2), and greenish black (10Y 2.5/1), planar to mostly wavy/wispy irregular and diffuse, and few to little very thin to thin chert beds, lenses, and irregular nodules (gray to dark gray and black, with calcite filled tensional fractures orthogonal to bedding); locally with slight bioturbation, trace calcite filled pits and burrows, trace pyrite, locally with sparry calcite "bird eyes", locally argillaceous, strong HCl reaction **(Rockdell Formation-Unit D)** ***(continued)***
			2:21					154.7-154.8ft: FZ, 30°, PS, F, B, II
			3:04					156.5,157.3,159.6ft: BJ, 30°, PS-PR, PO, B, II
639.5	160.7		2:44					158.5ft: BJ, 45°, UL, T-PO, C, III, with calcite
		5.0	3:18	(5.0) 100%	(4.1) 82%	Run 38		159.1ft: J, 75°, PS, A, VT, I, with calcite
			2:12			*L3-8*		161.6,161.9,163.1,163.3ft: BJ, 30°, PR, PO, B, II
			2:31					162.2-162.7ft: FZ, 30° and 55°, PR, PO, B-C, II-III
			3:06					166.3,167.2,167.5,169.8ft: BJ, 30°, PS, T, B, II
634.5	165.7		4:26					168.4ft: BJ, 30°, PL, T, C, III, with calcite
		5.0	2:28	(4.9) 98%	(4.5) 90%	Run 39		169.8ft: J, 70°, PR, PO, C, III, with calcite
			2:42					
			1:58					171.2,172.4,172.7,174.1ft: BJ, 30°, PS, T-PO, B, II
			2:12					174.7-174.9ft: SZ/FZ, 30°, PL, PO-O, K, II, with calcite
629.5	170.7		2:07					175.1ft: BJ, 25°, PL, PO, C, II, with calcite
		5.0	1:49	(5.0) 100%	(4.5) 90%	Run 40		
			1:38					
			1:52					
			1:54					
624.5	175.7		1:50					
		3.0	3:52	(3.0) 100%	(3.0) 100%	Run 41		175.5,176.3,177.1ft: BJ, 30°, PS, T-PO, B, II
			3:25					
621.5	178.7		3:28					
		1.5	2:29	(1.5) 100%	(1.3) 87%	Run 42		178.7ft: BJ, 30°, PR, PO, B, II
620.0	180.2		1:32/0.5					
		5.0	2:48	(5.0) 100%	(4.5) 90%	Run 43		180.0,180.9,181.4,182.5,184.1,183.6,183.7ft: BJ, 25-30°, PS-PR, T, B, II
			2:02					183.4-183.5ft: FZ, 30°, PL, PO, F, II
			2:02					
			2:17					
615.0	185.2		2:34					
		5.0	2:14	(5.0) 100%	(3.7) 74%	Run 44		185.0ft: FZ, 30°, PR, PO, F, II
			2:14			*L3-9*		185.7,187.0,187.1,189.4ft: BJ, 30, PS, T-PO, B, II
			2:31					187.6,188.0ft: BJ, 30°, PL, T, C, III, with calcite
			2:41					187.7ft: BJ, 20°, PS, T, C, III, with calcite
610.0	190.2		2:59					188.6ft: FZ, 30°, PR, PO, B, II
		5.0	4:26	(4.2) 84%	(1.3) 26%	Run 45		188.8ft: BJ, 30°, PR, PO, C, II
			3:10					189.5ft: J, 60°, PR, T, C, II, with calcite
			3:33					189.7ft: BJ, 20°, PR, PO, B, II
			3:45					190.3,190.6,191.0,191.8,193.0,194.2ft: BJ, 25°, PR, T, B, II
605.0	195.2		9:31					191.2,193.2,193.6ft: BJ, 25-30°, UR, T, B, II
								192.8,193.8-193.9ft: FZ, 30°, PR, PO-O, F-K, III
								193.1,193.4,193.7ft: J, 60°, PR, T-PO, C, III, with calcite
								194.3-194.4ft: FZ, 30°, PR, O, B, III
								RUN 45: 0.8' Left in hole at termination of boring/coring
							605.0	195.2
								Boring and coring terminated at 195.2 feet.

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

MP-105 – Boxes 1 and 2



MP-105 – Boxes 3 and 4



MP-105 – Boxes 5 and 6



MP-105 – Boxes 7 and 8



MP-105 – Boxes 9 and 10



MP-105 – Boxes 11 and 12



MP-105 – Box 13


CLINCH RIVER SMR PROJECT
AMEC PROJECT 6468 13 1072
BORING MP-105 BOX 13
DEPTH 185.2 (ft) TO 195.2 190.2 (ft)
RUN INTERVAL (ft) REC (ft) – (%) RQD (ft) – (%)
RUN 44 185.2'-190.2' 5.0' (100%) 3.7' (74%) 3.4' (68%)
RUN 45 190.2'-195.2' 4.2' (84%) 1.3' (26%) 4.6' (92%) 2.9' (58%)

GEOTECHNICAL BORING LOG

Prepared By: MBL Date: 3/5/14

Checked By: JCM Date: 3/5/14

BECHTEL NO.: 25847	AMEC PROJECT NO.: 6468-13-1072	COUNTY: Roane, TN	GEOLOGIST: M. Flanik
SITE DESCRIPTION: Clinch River SMR Project, Roane County, Tennessee		DRILLER: J. Landeros/N. Molinalara	Boring Orientation
BORING NO.: MP-106	DRILL METHOD: Mud Rotary/Core	DRILL MACHINE: CME-550X (P)	Inclination: Vertical
GROUND ELEV.: 798.7 ft (NAVD88)	NORTHING: 570,136 US ft (NAD83)	EASTING: 2,448,377 US ft (NAD83)	Azimuth: NA
TOTAL DEPTH: 174.2 ft	SAMPLE METHODS: ASTM D 1586-11; 2488-09a; 2113-08; 6032-08	ROD TYPE: AWJ	HAMMER (ID): 140-lb Auto (337153)
DATE STARTED: 7/9/13	COMPLETED: 7/17/13 / HOLE DIA.: 4" / CASING DEPTH: 6.7 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.	LOG	SOIL DESCRIPTION AND REMARKS
798.7					Ground Surface			798.7 0.0
798.7	0.0	3	2	4	6	SS-1		FILL: FAT CLAY (CH), yellowish red (5YR 5/8), medium stiff, moist, high plasticity fines, few fine sand and fine subrounded gravel, trace organics/roots, weak to strong HCl reaction
796.2								2.5
795.2	3.5	5	11	12	23	SS-2		FILL: Gravelly FAT CLAY (CH), brownish yellow (10YR 6/8), very stiff, moist to wet, moderate to high plasticity fines, some fine to coarse angular gravel, trace coarse sand, weak to strong HCl reaction
793.7								5.0
792.7	6.0	7	50/0.2		50/0.2	SS-3		RESIDUAL SOIL: FAT CLAY (CH), light red (2.5YR 6/8), hard, moist, moderate to high plasticity fines, few fine to coarse subangular gravel, strong HCl reaction
792.0								6.7

Soil drilling halted. Log continues on geotechnical coring log

Observed water levels:
4.3 ft bgs, AM 7/10/13
8.2 ft bgs, AM 7/16/13
8.9 ft bgs, AM 7/17/13

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