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.
789.4	10.8	5.0	2:08, 1:12, 1:29, 2:37, 1:19	(2.9) 58%	(1.1) 22%	Run 1
784.4	15.8	5.0	1:29, 4:49, 3:16, 4:19, 4:58	(3.6) 72%	(1.6) 32%	Run 2
779.4	20.8	5.0	2:29, 2:28, 2:00, 2:23, 2:41	(4.9) 98%	(2.6) 52%	Run 3
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
766.4	33.8	2.0	3:06, 2:41	(2.0) 100%	(1.5) 75%	Run 6
764.4	35.8	5.0	2:28, 2:05, 2:09, 2:58, 2:34	(5.0) 100%	(4.6) 92%	Run 7
759.4	40.8	5.0	2:36, 2:10, 2:07, 2:06, 1:54	(4.9) 98%	(4.3) 86%	Run 8
754.4	45.8	5.0	2:06, 2:42, 2:03, 2:25, 3:03	(4.8) 96%	(3.8) 76%	Run 9
749.4	50.8	5.0	3:03, 2:51, 1:54, 1:37, 2:20	(5.0) 100%	(4.9) 98%	Run 10
744.4	55.8	5.0	2:06, 1:46, 1:40, 1:52	(5.0) 100%	(4.7) 94%	Run 11

ROCK DESCRIPTION AND REMARKS

Begin Coring @ 10.8 ft

789.4 — 10.8

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)**

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

WEATHERED ROCK: LIMESTONE (MICRITE/WACKESTONE), no recovery
13.7-17.2ft: FZ, No Recovery-3.5' Core loss

783.0 — 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
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

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
33.0ft: BJ, 25°, SR, T, B, II
33.5,33.8ft: J, 60°, UR-PR, PO, B, II

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

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'

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

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

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)*
		5.0	2:23 2:10 2:35 2:16 2:05	(5.0) 100%	(5.0) 100%	Run 12		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
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) 100%	(0.0) 0%	Run 16		79.8ft: BJ, 25°, mechanical break
720.0	80.2	1.3	1:47/0.8 1:08/0.5	(1.3) 100%	(1.3) 100%	Run 17		
		5.0	2:21 2:23 2:03 2:11 2:07	(5.0) 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) 100%	(0.5) 100%	Run 19		
		5.0	2:25 2:32 2:33 2:26 2:41	(5.0) 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 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
709.5	90.7							
		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 704.6 — 95.6
704.5	95.7							
		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 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
694.5	105.7							
		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

Continued from previous page

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.
689.5	110.7		3:18, 3:45, 4:21			
684.5	115.7	5.0	3:24, 4:46, 3:54, 3:15, 4:13	(5.0) 100%	(5.0) 100%	Run 25
679.5	120.7	5.0	5:16, 4:36, 2:54, 2:45, 2:59	(5.0) 100%	(5.0) 100%	Run 26
674.5	125.7	5.0	3:45, 3:31, 3:40, 3:56, 3:47	(5.0) 100%	(5.0) 100%	Run 27
669.5	130.7	5.0	4:23, 4:07, 3:30, 3:10, 3:45	(5.0) 100%	(4.8) 96%	Run 28, L3-6
666.5	133.7	3.0	2:21, 3:59, 3:23	(2.9) 97%	(2.1) 70%	Run 29
665.8	134.4	0.7	12:07/0.7	(0.3) 43%	(0.0) 0%	Run 30
665.0	135.2	0.8	1:53/0.8	(0.8) 100%	(0.8) 100%	Run 31
660.0	140.2	5.0	2:42, 2:19, 2:13, 2:01, 2:03	(5.0) 100%	(5.0) 100%	Run 32, L3-7
655.0	145.2	5.0	1:31, 1:36, 1:34, 1:35, 1:40	(5.0) 100%	(4.9) 98%	Run 33
654.5	145.7	0.5	0:48/0.5	(0.5) 100%	(0.5) 100%	Run 34
649.5	150.7	5.0	2:20, 2:43, 2:53, 2:34, 3:01	(5.0) 100%	(4.7) 94%	Run 35
644.5	155.7	5.0	2:19, 2:18, 2:24, 2:21, 2:20	(4.9) 98%	(4.0) 80%	Run 36
		5.0	3:52	(5.0)	(4.9)	Run 37

ROCK DESCRIPTION AND REMARKS

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 *(continued)*
103.2ft: J, 10°, PR, PO, B, II
104.0ft: BJ, 30°, PL, PO, C, III, with calcite
114.7ft: BJ, 30°, US, T, C, III, with calcite

115.7ft: BJ, 20°, PS, T-PO, B, II, mechanical break
118.0ft: J, 70°, PR, PO, C, III, with calcite

121.4ft: BJ, 35°, PS, PO, C, III, with calcite

671.6 — 128.6

LIMESTONE (WACKESTONE/GRAINSTONE/MICRITE), bluish gray (5PB 6/1), medium strong to strong, very thinly to thinly bedded, locally to moderately bedded and nodular, fresh, fossiliferous, interbedded with some to few, thinly bedded 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
129.2,130.3ft: BJ, 30°, PR, PO, B, II
129.3ft: J, 60°, PR, PO, C, III
132.2ft: BJ, 30°, PS, T, C, III, with calcite
132.3ft: BJ, 20°, PL, T, C, III, with calcite
132.5,132.7ft: SZ, 20°, PR, PO, F, III, moderately weathered
132.9ft: BJ, 30°, PR, T, C, II
136.0,136.9,138.0,138.8ft: BJ, 25°, PR, T, B, II

141.1-141.2ft: FZ, 30°, PR, T-PO, B, II
141.4,143.7ft: BJ, 30°, PS, T, B, II
142.7,144.3ft: BJ, 25°, PR, T-PO, B, II

146.4ft: J, 50°, PR, T-PO, B, II
146.6ft: J, 75°, PR, PO, C, III, with calcite
146.6ft: BJ, 25°, PR, PO, C, III, with calcite

651.9 — 148.3

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)**
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

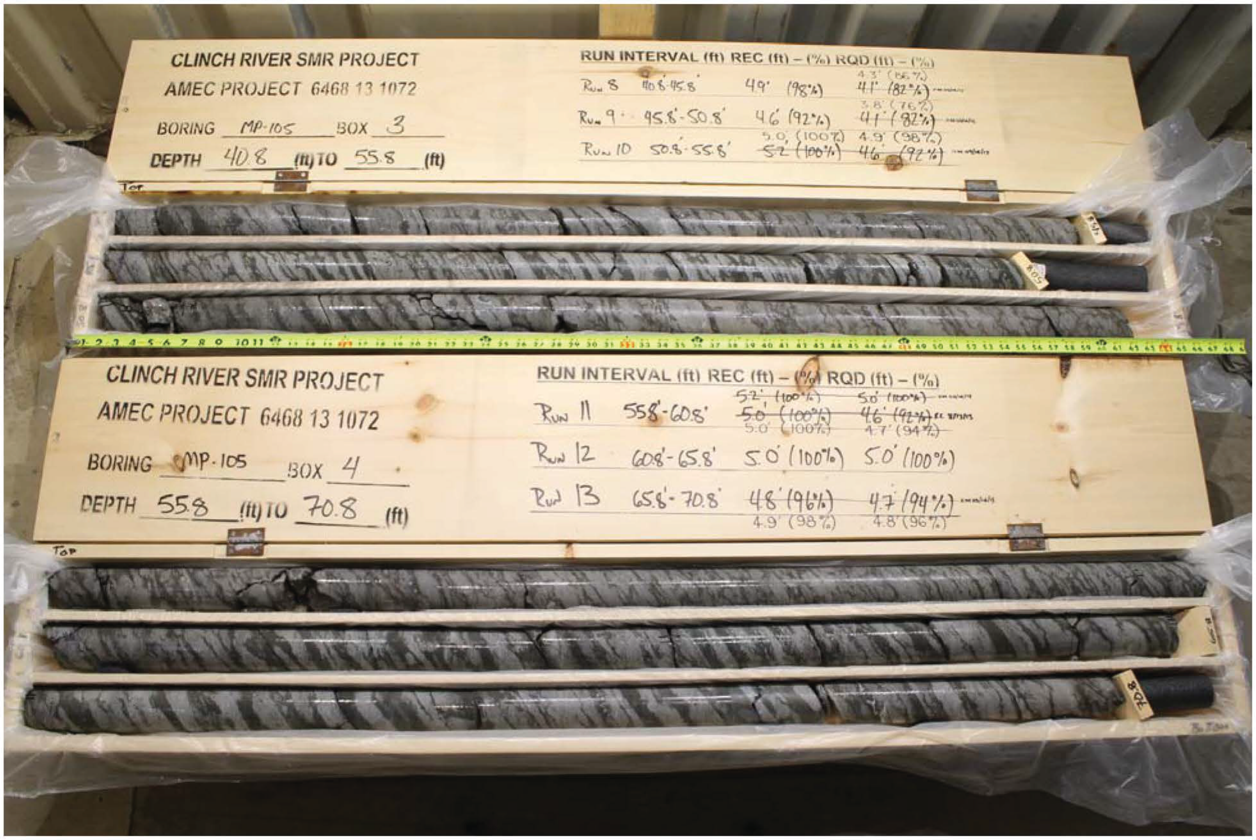
amec

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
639.5	160.7		3:39 2:21 3:04 2:44	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
634.5	165.7	5.0	3:18 2:12 2:31 3:06 4:26	(5.0) 100%	(4.1) 82%	Run 38 *L3-8*		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)*** 154.7-154.8ft: FZ, 30°, PS, F, B, II 156.5,157.3,159.6ft: BJ, 30°, PS-PR, PO, B, II 158.5ft: BJ, 45°, UL, T-PO, C, III, with calcite
629.5	170.7	5.0	2:28 2:42 1:58 2:12 2:07	(4.9) 98%	(4.5) 90%	Run 39		159.1ft: J, 75°, PS, A, VT, I, with calcite 161.6,161.9,163.1,163.3ft: BJ, 30°, PR, PO, B, II 162.2-162.7ft: FZ, 30° and 55°, PR, PO, B-C, II-III 166.3,167.2,167.5,169.8ft: BJ, 30°, PS, T, B, II 168.4ft: BJ, 30°, PL, T, C, III, with calcite 169.8ft: J, 70°, PR, PO, C, III, with calcite
624.5	175.7	5.0	1:49 1:38 1:52 1:54 1:50	(5.0) 100%	(4.5) 90%	Run 40		171.2,172.4,172.7,174.1ft: BJ, 30°, PS, T-PO, B, II 174.7-174.9ft: SZ/FZ, 30°, PL, PO-O, K, II, with calcite 175.1ft: BJ, 25°, PL, PO, C, II, with calcite
621.5	178.7	3.0	3:52 3:25 3:28	(3.0) 100%	(3.0) 100%	Run 41		175.5,176.3,177.1ft: BJ, 30°, PS, T-PO, B, II
620.0	180.2	1.5	2:29 1:32/0.5	(1.5) 100%	(1.3) 87%	Run 42		178.7ft: BJ, 30°, PR, PO, B, II
615.0	185.2	5.0	2:48 2:02 2:02 2:17 2:34	(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 183.4-183.5ft: FZ, 30°, PL, PO, F, II
610.0	190.2	5.0	2:14 2:14 2:31 2:41 2:59	(5.0) 100%	(3.7) 74%	Run 44 *L3-9*		185.0ft: FZ, 30°, PR, PO, F, II 185.7,187.0,187.1,189.4ft: BJ, 30, PS, T-PO, B, II 187.6,188.0ft: BJ, 30°, PL, T, C, III, with calcite 187.7ft: BJ, 20°, PS, T, C, III, with calcite 188.6ft: FZ, 30°, PR, PO, B, II 188.8ft: BJ, 30°, PR, PO, C, II 189.5ft: J, 60°, PR, T, C, II, with calcite
605.0	195.2	5.0	4:26 3:10 3:33 3:45 9:31	(4.2) 84%	(1.3) 26%	Run 45		189.7ft: BJ, 20°, PR, PO, B, II 190.3,190.6,191.0,191.8,193.0,194.2ft: BJ, 25°, PR, T, B, II 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 605.0 RUN 45: 0.8' Left in hole at termination of boring/coring 195.2
								Boring and coring terminated at 195.2 feet.

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 ~~190.2~~ 195.2 (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%) ~~4.6' (92%)~~ 1.3' (26%) ~~2.9' (58%)~~

GEOTECHNICAL BORING LOG

Prepared By: MBL Date: 3/5/14

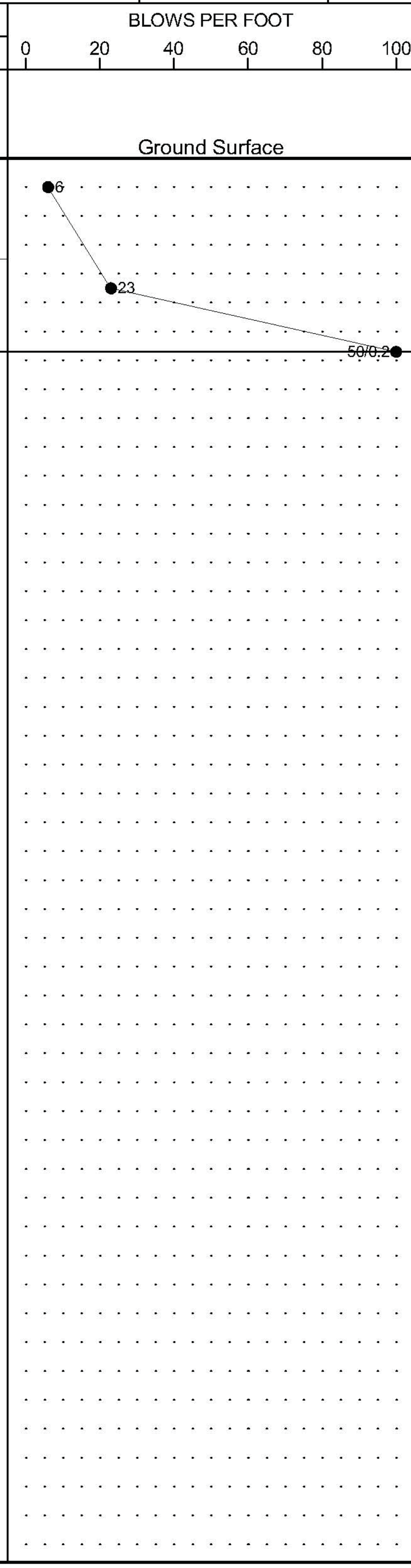
Checked By: JCM Date: 3/5/14

SHEET 1 OF 1

BECHTEL NO.: 25847	AMEC PROJECT NO.: 6468-13-1072	COUNTY: Roane, TN	GEOLOGIST: 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	SAMP. NO.	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