



GEOTECHNICAL BORING LOG

Prepared By JSS Date 12/16/09Checked By NAN Date 12/16/09

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA				GEOLOGIST: C. Baldwin			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: P. Pitts/J. Tucker				FLUID LEVEL (ft)			
BORING NO.: M-7				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-55 Trailer (RAL)				0 HR.		NA	
GROUND ELEV.: 326.0 ft (NAVD88)				NORTHING: 3,909,504 US ft (NAD83)				EASTING: 11,685,836 US ft (NAD83)				24 HR.		35.3	
TOTAL DEPTH: 151.5 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-425)					
DATE STARTED: 9/8/09		COMPLETED: 9/11/09		HOLE DIA.: 3"		CASING DEPTH: 58.7 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100		
326.0					Ground Surface										
												326.0 325.5 ASPHALT (Parking Lot) to 0.5 ft. No sampling from 0.0 to 9.1 feet due to soft dig utility clearance by Dominion Personnel			
316.9	9.1											316.9 9.1 RESIDUAL SOIL: Silty SAND (SM), Reddish yellow (5YR 6/6), medium dense, moist, fine to coarse grained sand, little mica, relict rock fabric			
314.4	11.6	5	7	7						SS-1					
312.3	13.7	7	8	10						SS-2					
		8	13	15						SS-3		13.7 ft: Light gray (10YR 7/2)			
306.9	19.1														
		15	19	12						SS-4		19.1 ft: Light brown (7.5YR 6/3), dense			
302.0	24.0														
		23	32	46						SS-5		24.0 ft: Very dense			
296.9	29.1														
		70	30/0.2							SS-6		29.1 ft: WEATHERED ROCK: Severely weathered QUARTZ GNEISS (Sampled as Silty SAND (SM), Brownish yellow (10YR 6/6), very dense, moist, fine to coarse grained sand, little mica)			
291.9	34.1														
		50/0.4								SS-7					
287.0	39.0														
		50/0.4								SS-8					
281.9	44.1														
		50/0.2								SS-9		44.1 ft: No recovery			
277.0	49.0														
		50/0.2								SS-10					
271.9	54.1														
		50/0.1								SS-11		54.1 ft: No recovery			
266.9	59.1														
		50/0.1								SS-12		59.1 ft: No recovery			
												WEATHERED ROCK: Brown and gray, with orange staining, severely weathered, very close fracturing, soft, BIOTITE QUARTZ GNEISS			
												266.8 59.2			
												255.7 70.3 HARD ROCK: Gray and light gray, moderately severely to moderately weathered, very close to moderately close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS			

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/24/09



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25161			MACTEC PROJECT NO.: 6468-09-2473			COUNTY: Louisa, VA			GEOLOGIST: C. Baldwin			
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: P. Pitts/J. Tucker			FLUID LEVEL (ft)			
BORING NO.: M-7			DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-55 Trailer (RAL)			0 HR. NA			
GROUND ELEV.: 326.0 ft (NAVD88)			NORTHING: 3,909,504 US ft (NAD83)			EASTING: 11,685,836 US ft (NAD83)			24 HR. 35.3			
TOTAL DEPTH: 151.5 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-425)	
DATE STARTED: 9/8/09			COMPLETED: 9/11/09		HOLE DIA.: 3"		CASING DEPTH: 58.7 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
251.2					Continued from previous page								
													HARD ROCK: Gray and light gray, moderately severely to moderately weathered, very close to moderately close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS (<i>continued</i>) 80.0
													WEATHERED ROCK: Grayish brown with orange staining, severely weathered, very close to close fracturing, very soft, QUARTZ BIOTITE GNEISS 89.3
													HARD ROCK: Gray to grayish brown with orange staining, moderately severely to moderately weathered, very close to close fracturing, medium hard, QUARTZ BIOTITE GNEISS 99.0
													WEATHERED ROCK: Severely weathered, QUARTZ BIOTITE GNEISS (No Recovery) 104.0
													HARD ROCK: Orange brown to greenish gray with orange staining, moderately severely to moderately weathered, very close to close fracturing, medium hard to moderately hard, QUARTZ BIOTITE GNEISS (2 joints at 20°, open with clay; 2 joints at 40°, tight; 1 joint at 70°, open) 106.3
													HARD ROCK: Gray with trace orange staining, slightly weathered, very close to moderately close fracturing, moderately hard, QUARTZ BIOTITE GNEISS 116.3
													HARD ROCK: Gray to light gray and grayish brown, with orange staining, moderately to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS 141.3
													HARD ROCK: White, pink, and gray to light gray, very slightly weathered, close fracturing, hard, BIOTITE QUARTZ GNEISS and pegmatitic, graphic quartz + feldspar vein with trace garnet and magnetite

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/4/09



BECHTEL PROJECT NO.: 25161					MACTEC PROJECT NO.: 6468-09-2473					COUNTY: Louisa, VA					GEOLOGIST: C. Baldwin														
SITE DESCRIPTION: North Anna 3 Project Supplement 2										DRILLER: P. Pitts/J. Tucker					FLUID LEVEL (ft)														
BORING NO.: M-7					DRILL METHOD: Mud Rotary/Rock Core					DRILL MACHINE: CME-55 Trailer (RAL)					0 HR. NA														
GROUND ELEV.: 326.0 ft (NAVD88)					NORTHING: 3,909,504 US ft (NAD83)					EASTING: 11,685,836 US ft (NAD83)					24 HR. 35.3														
TOTAL DEPTH: 151.5 ft					SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08					ROD TYPE: AWJ					HAMMER (ID): 140-lb. Auto (MEC-425)														
DATE STARTED: 9/8/09					COMPLETED: 9/11/09					HOLE DIA.: 3"					CASING DEPTH: 58.7 ft					CORE SIZE: NQ3					BITS USED: 2-7/8" Tri-Cone				
ELEV. (ft)		DEPTH (ft)		BLOW COUNT			BLOWS PER FOOT					SAMP. NO.		MOI		LOG		SOIL AND ROCK DESCRIPTION											
				0.5ft 0.5ft 0.5ft			0 20 40 60 80 100																						
176.4							Continued from previous page																						
																		174.5 151.5											
																		Boring and coring terminated at 151.5 feet.											
																		Boring closed by tremie method with cement-bentonite grout.											
																		24 hour water level measured on 9/11/2009 prior to drilling. Borehole was at a depth of 136.3 feet.											



BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin		
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: P. Pitts/J. Tucker				FLUID LEVEL (ft) 0 HR. NA 24 HR. 35.3		
BORING NO.: M-7				DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-55 Trailer (RAL)						
GROUND ELEV.: 326.0 ft (NAVD88)				NORTHING: 3,909,504 US ft (NAD83)		EASTING: 11,685,836 US ft (NAD83)						
TOTAL DEPTH: 151.5 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb. Auto (MEC-425)				
DATE STARTED: 9/8/09		COMPLETED: 9/11/09		CASING DEPTH: 58.7 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit						
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %RQD (ft) %		SAMP. NO.	STRATA REC. (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS		
										Begin Coring @ 59.2 ft		
266.8	59.2	2.1	0:50/1.1	(0.4)	(0.0)	RUN 1	(0.4)	(0.0)		266.8	WEATHERED ROCK: Brown and gray, with orange staining, severely weathered, very close fracturing, soft, BIOTITE QUARTZ GNEISS (1 joint at 0°, open) (No Recovery) (No Recovery)	59.2
264.7	61.3		1:03	19%	0%		4%	0%				
264.2	61.8	0.5	0:23/0.5	(0.0)	(0.0)	RUN 2						
		5.0	1:35	0%	0%	RUN 3						
			1:57									
			2:14	(0.0)	(0.0)							
			2:00	0%	0%							
			2:15									
259.2	66.8											
		4.5	2:17	(1.0)	(0.0)	RUN 4						
			1:45	22%	0%							
			1:54									
			4:51									
254.7	71.3		4:00/0.5	(4.8)	(3.6)	RUN 5	(9.5)	(5.7)				
		5.0	3:53	96%	72%		98%	59%				
			3:44									
			3:15									
249.7	76.3		3:09									
		5.0	3:30	(3.7)	(2.1)	RUN 6						
			3:30	74%	42%							
			3:30									
			3:00									
244.7	81.3		3:58				(0.2)	(0.0)				
		5.0	2:40	(0.2)	(0.0)	RUN 7	2%	0%				
			2:10	4%	0%							
			2:07									
			2:00									
239.7	86.3		3:32									
		5.0	2:37	(2.0)	(0.8)	RUN 8						
			2:43	40%	16%							
			2:32									
			3:37				(8.2)	(2.4)				
			3:28				85%	25%				
234.7	91.3		3:09	(3.5)	(0.4)	RUN 9						
		5.0	3:30	70%	8%							
			4:20									
			3:53									
229.7	96.3		3:36									
		5.0	3:20	(2.7)	(1.2)	RUN 10						
			3:08	54%	24%							
			3:20									
			2:50				(0.0)	(0.0)				
			1:35				0%	0%				
224.7	101.3											
		5.0	2:55	(2.3)	(1.7)	RUN 11						
			2:14	46%	34%							
			4:30									
			3:17				(2.3)	(1.7)				
			3:28				100%	74%				
219.7	106.3		3:54	(4.8)	(4.4)	RUN 12	(9.8)	(9.1)				
		5.0	3:32	96%	88%		98%	91%				
			3:55									
			3:55									
			3:43									
214.7	111.3		4:26	(5.0)	(4.7)	RUN 13						
		5.0	4:14	100%	94%							
			3:57									
			4:16									
			4:30									
209.7	116.3											
		5.0	4:58	(4.7)	(3.4)	RUN 14	(24.7)	(18.5)				
			4:38	94%	68%		99%	74%				
			4:40									
			4:00									
			2:53									
204.7	121.3		2:40	(5.0)	(3.7)	RUN 15						
		5.0	2:22	100%	74%							
			2:15									
			2:19									
			2:27									
199.7	126.3		2:40	(5.0)	(3.4)	RUN 16						
		5.0	2:27	100%	68%							
			3:42									
			3:35									
			3:33									
194.7	131.3		3:37	(5.0)	(4.7)	RUN 17						
		5.0	3:34	100%	94%							

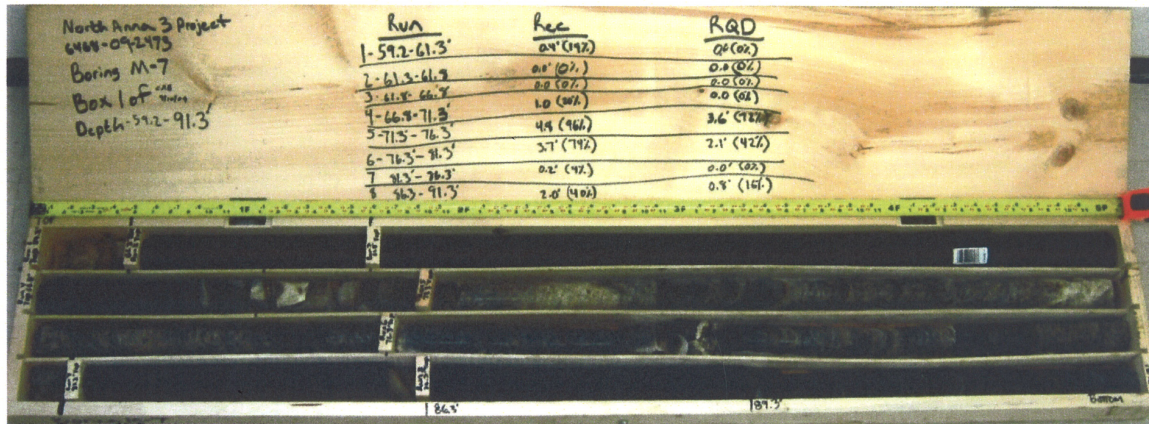
NORTH ANNA 3 CORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/4/09



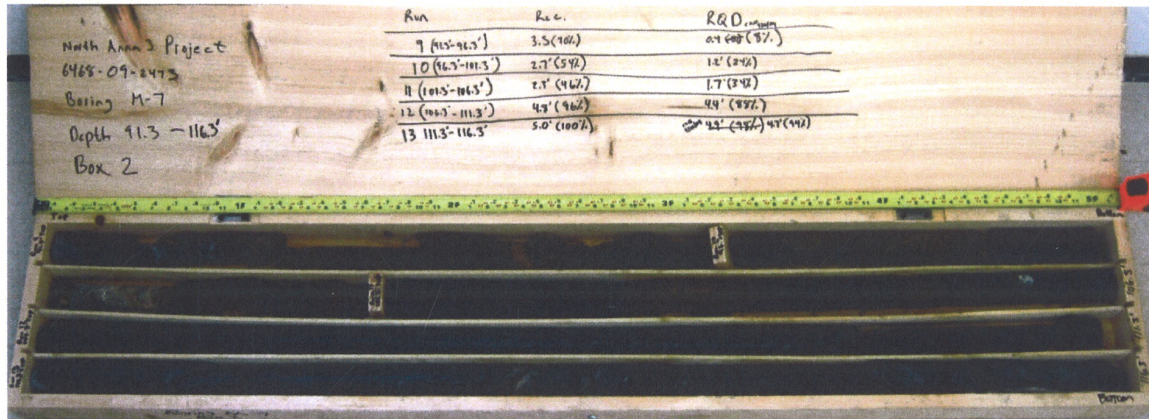
SHEET 2 OF 2

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: P. Pitts/J. Tucker			FLUID LEVEL (ft)		
BORING NO.: M-7				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-55 Trailer (RAL)			0 HR. NA		
GROUND ELEV.: 326.0 ft (NAVD88)				NORTHING: 3,909,504 US ft (NAD83)				EASTING: 11,685,836 US ft (NAD83)			24 HR. 35.3		
TOTAL DEPTH: 151.5 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb. Auto (MEC-425)				
DATE STARTED: 9/8/09			COMPLETED: 9/11/09		CASING DEPTH: 58.7 ft			CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit					
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Continued from previous page	
189.7	136.3	5.0	3:50 3:47 3:18	(5.0)	(3.3)	RUN 18							HARD ROCK: Gray to light gray and grayish brown, with orange staining, moderately to slightly weathered, very close to close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (continued) (7 joints at 10-20°, tight to open; 4 joints at 30-40°, tight; 1 joint at 70°, tight)
184.7	141.3	5.2	6:00 5:30 5:45 6:05 8:00	100%	66%							184.7	141.3
179.5	146.5	5.0	10:40 9:05 8:36 10:43 14:25/1.2	(5.2)	(4.6)	RUN 19	(10.2)	(9.2)	100%	90%			HARD ROCK: White, pink, and gray to light gray, very slightly weathered, close fracturing, hard, BIOTITE QUARTZ GNEISS and pegmatitic, graphic quartz + feldspar vein with trace garnet and magnetite (4 joints at 0-10°, tight; 4 joints at 20-30°, tight)
174.5	151.5	5.0	16:05 11:38 8:52 5:15 10:00	(5.0)	(4.6)	RUN 20						174.5	151.5
													Boring and coring terminated at 151.5 feet.
													Boring closed by tremie method with cement-bentonite grout.
													24 hour water level measured on 9/11/2009 prior to drilling. Borehole was at a depth of 136.3 feet.

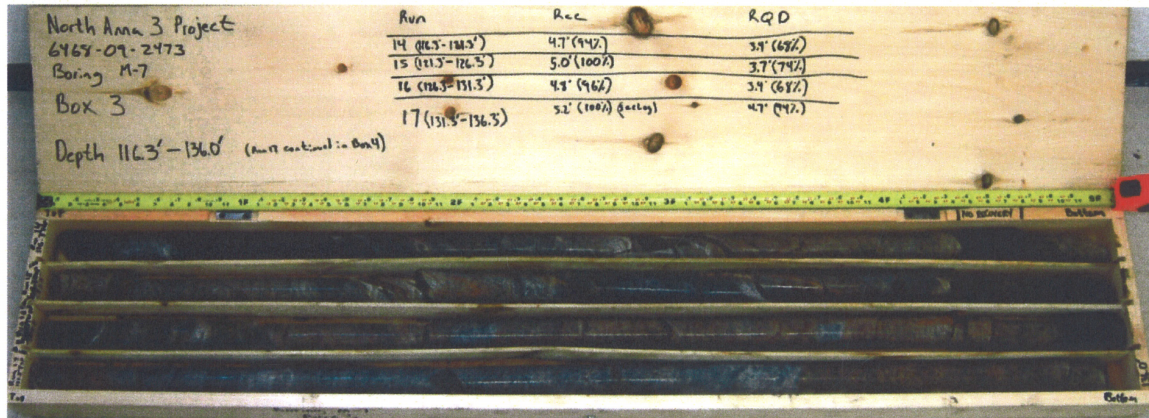
NORTH ANNA 3 CORE, NORTH ANNA 3 PROJECT-GPJ, NORTH ANNA 3.GDT, 12/4/09



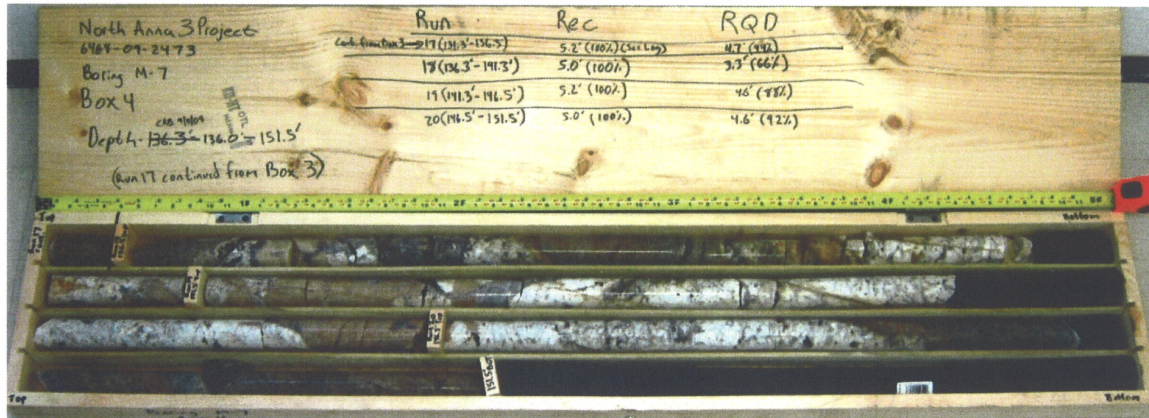
M-7 - Box 1



M-7 - Box 2



M-7 - Box 3



M-7 - Box 4



BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA				GEOLOGIST: B. Mabie			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: D. Rhodes/K. Guy				FLUID LEVEL (ft)			
BORING NO.: M-8				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-45C Track (RAL)				0 HR.		NA	
GROUND ELEV.: 329.3 ft (NAVD88)				NORTHING: 3,909,414 US ft (NAD83)				EASTING: 11,685,847 US ft (NAD83)				24 HR.		33.0	
TOTAL DEPTH: 150.6 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID): 140-lb. Auto (MEC-12)					
DATE STARTED: 9/1/09		COMPLETED: 9/9/09		HOLE DIA.: 3"		CASING DEPTH: 76.0 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
329.3					Ground Surface								329.3		0.0
													No sampling from 0.0 to 8.1 feet due to soft dig utility clearance by Dominion Personnel		
321.2	8.1												321.2		8.1
318.6	10.7	3	5	5						SS-1			319.3		10.0
		4	5	6						SS-2			RESIDUAL SOIL: Silty SAND (SM), red (2.5YR 5/8), loose, moist, fine to coarse grained sand, trace mica, relict rock fabric		
315.6	13.7									SS-3			316.3		13.0
		5	6	9									RESIDUAL SOIL: Clayey SAND (SC), reddish yellow (5YR 7/8), medium dense, moist, fine to coarse grained sand, trace mica, relict rock fabric		
310.6	18.7									SS-4			313.3		16.0
		14	15	16									RESIDUAL SOIL: Silty SAND (SM), reddish yellowish (5YR 7/6), medium dense, moist, fine to coarse grained sand, trace mica, relict rock fabric		
305.6	23.7	19	17	16						SS-5			RESIDUAL SOIL: Well graded SAND (SW), brownish yellow (10YR 6/6), dense, moist, fine to coarse grained sand, relict rock fabric		
300.6	28.7	4	6	11						SS-6			303.3		26.0
													RESIDUAL SOIL: Silty SAND (SM), yellowish brown (10YR 5/6), medium dense, moist, fine grained sand, some mica, green and black staining, relict rock fabric		
295.6	33.7	4	7	7						SS-7			33.7 ft: Dark yellowish brown (10YR 4/4)		
290.6	38.7	5	8	11						SS-8					
285.6	43.7	13	14	15						SS-9			43.7 ft: Dark greenish gray (10Y 4/1), trace mica		
280.6	48.7	14	21	25						SS-10			48.7 ft: Dense, fine to medium grained sand, some mica		
275.6	53.7	17	31	50						SS-11			53.7 ft: Very dense, little mica, black staining		
270.6	58.7	61	39/0.2							SS-12			273.3		56.0
													WEATHERED ROCK: Severely weathered BIOTITE GNEISS (Sampled as Silty SAND (SM), dark grayish brown (10YR 4/2), very dense, moist, fine to medium grained sand, little mica)		
265.6	63.7	16	22	50						SS-13			268.3		61.0
													RESIDUAL SOIL: Silty SAND (SM), dark grayish brown (10YR 4/2), very dense, moist, fine to medium grained sand, some mica, relict rock fabric		
260.6	68.7	37	31	41						SS-14			68.7 ft: Yellowish brown (10YR 5/8), fine grained sand		
255.6	73.7									SS-15			258.3		71.0
		50/0.4													

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA				GEOLOGIST: B. Mabie			
SITE DESCRIPTION: North Anna 3 Project Supplement 2								DRILLER: D. Rhodes/K. Guy				FLUID LEVEL (ft)			
BORING NO.: M-8				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-45C Track (RAL)				0 HR. NA			
GROUND ELEV.: 329.3 ft (NAVD88)				NORTHING: 3,909,414 US ft (NAD83)				EASTING: 11,685,847 US ft (NAD83)				24 HR. 33.0			
TOTAL DEPTH: 150.6 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-12)					
DATE STARTED: 9/1/09		COMPLETED: 9/9/09		HOLE DIA.: 3"		CASING DEPTH: 76.0 ft		CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION			
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					NO.
254.5					Continued from previous page										
250.6	78.7													WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (Sampled as Well Graded SAND (SW), pale brown (10YR 6/3), very dense, wet, fine to coarse grained sand, few to little rock fragments) (continued) 78.7 ft: Severely weathered BIOTITE QUARTZ GNEISS (Sampled as Silty SAND (SM), yellowish brown (10YR 5/4), moist, fine grained, some mica, little rock fragments (Hard drilling through entire run) 83.7 ft: No recovery 86.4 ft: No Recovery HARD ROCK: Light gray with orange staining, moderately severe to moderately weathered, close fracturing, medium hard, BIOTITE QUARTZ GNEISS 239.1 90.2 WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery) 236.1 93.2 HARD ROCK: Light gray, brown, tan, and light brown, with orange staining, moderately to slightly weathered, close fracturing, medium hard to moderately hard, BIOTITE QUARTZ GNEISS	
		50/0.2									SS-16				
245.6	83.7														
		50/0.0									SS-17				
242.9	86.4													242.9 86.4 239.1 90.2 236.1 93.2 216.3 113.0 213.1 116.2 206.6 122.7 203.1 126.2 HARD ROCK: Light brown to tan and gray, with orange staining, moderately to slightly weathered, close fracturing, moderately hard, BIOTITE QUARTZ GNEISS WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery) HARD ROCK: Light brown, gray, and light gray, with orange staining, moderately severe to moderately weathered, close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS	
		50/0.0									SS-18				

NORTH ANNA 3 BORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09

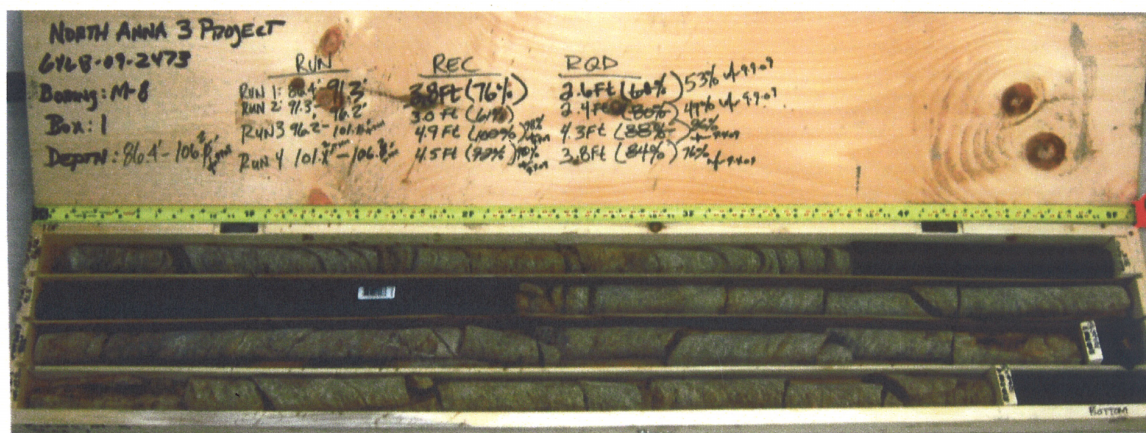
BECHTEL PROJECT NO.: 25161						MACTEC PROJECT NO.: 6468-09-2473						COUNTY: Louisa, VA						GEOLOGIST: B. Mabie																	
SITE DESCRIPTION: North Anna 3 Project Supplement 2												DRILLER: D. Rhodes/K. Guy						FLUID LEVEL (ft)																	
BORING NO.: M-8						DRILL METHOD: Mud Rotary/Rock Core						DRILL MACHINE: CME-45C Track (RAL)						0 HR. NA																	
GROUND ELEV.: 329.3 ft (NAVD88)						NORTHING: 3,909,414 US ft (NAD83)						EASTING: 11,685,847 US ft (NAD83)						24 HR. 33.0																	
TOTAL DEPTH: 150.6 ft						SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						ROD TYPE: AWJ						HAMMER (ID): 140-lb. Auto (MEC-12)																	
DATE STARTED: 9/1/09						COMPLETED: 9/9/09						HOLE DIA.: 3"						CASING DEPTH: 76.0 ft						CORE SIZE: NQ3						BITS USED: 2-7/8" Tri-Cone					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION																						
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100															NO.										
179.7					Continued from previous page																														
													178.7 150.6 Boring and coring terminated at 150.3 feet. Boring closed by tremie method with cement-bentonite grout. 24 hour water level measured on 9/09/2009 prior to drilling. Borehole was at a depth of 136.2 feet.																						



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25161				MACTEC PROJECT NO.: 6468-09-2473				COUNTY: Louisa, VA		GEOLOGIST: B. Mabie				
SITE DESCRIPTION: North Anna 3 Project Supplement 2						DRILLER: D. Rhodes/K. Guy				FLUID LEVEL (ft)				
BORING NO.: M-8				DRILL METHOD: Mud Rotary/Rock Core				DRILL MACHINE: CME-45C Track (RAL)				0 HR.	NA	
GROUND ELEV.: 329.3 ft (NAVD88)				NORTHING: 3,909,414 US ft (NAD83)				EASTING: 11,685,847 US ft (NAD83)		24 HR.		33.0		
TOTAL DEPTH: 150.6 ft			SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08						HAMMER (ID): 140-lb. Auto (MEC-12)					
DATE STARTED: 9/1/09			COMPLETED: 9/9/09		CASING DEPTH: 76.0 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS		
												Begin Coring @ 86.4 ft		
242.9	86.4	4.9	N=50/0.0 3:35 3:12 3:26 3:01 1:48/0.9	(3.8) 78%	(2.6) 53%		RUN 1	(3.8) 100%	(2.6) 68%			242.9	HARD ROCK: Light gray with orange staining, moderately severe to moderately weathered, close fracturing, medium hard, BIOTITE QUARTZ GNEISS (12 joints at 40-50°, open)	86.4
238.0	91.3	4.9	1:49 2:28 2:08 2:24 2:30/0.9	(3.0) 61%	(2.4) 49%		RUN 2	(0.0) 0%	(0.0) 0%			239.1	WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	90.2
		5.0	2:36 2:46 2:21 2:39 2:59	(4.9) 98%	(4.3) 86%		RUN 3	(19.1) 96%	(15.9) 80%			236.1	HARD ROCK: Light gray, brown, tan, and light brown, with orange staining, moderately to slightly weathered, close fracturing, medium hard to moderately hard, BIOTITE QUARTZ GNEISS (1 joint at 60°, open; 3 at 90°, open) (9 joints at 20-50°, tight)	93.2
		5.0	2:30 2:35 2:13 2:33 2:41	(4.5) 90%	(3.8) 76%		RUN 4						(7 joints at 20-30°, tight to open; 1 joint at 90°, tight)	
		5.0	2:38 2:46 2:15 2:26 2:29	(4.9) 98%	(4.0) 80%		RUN 5						(10 joints at 0-40°, open to tight)	
		5.0	2:37 2:18 1:50 2:12 2:35	(1.8) 36%	(1.4) 28%		RUN 6	(0.0) 0%	(0.0) 0%			216.3	(3 joints at 0-40°, open)	113.0
213.1	116.2	5.0	2:06 1:53 1:57 2:22 2:50	(4.8) 96%	(3.7) 74%		RUN 7	(0.0) 0%	(0.0) 0%			213.1	WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	116.2
		5.0	2:32 2:29 2:36 3:16 4:17	(1.5) 30%	(1.3) 26%		RUN 8	(6.3) 97%	(5.0) 77%			206.6	HARD ROCK: Light brown to tan and gray, with orange staining, moderately to slightly weathered, close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (several joints at 90°, open) (1 joint at 20°, open)	122.7
203.1	126.2	5.0						(0.0) 0%	(0.0) 0%			203.1	WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (No Recovery)	126.2
		3.2	3:40 4:01 3:01 1:48/0.2	(3.1) 97%	(1.8) 56%		RUN 9	(21.8) 89%	(17.0) 70%				HARD ROCK: Light brown, gray, and light gray, with orange staining, moderately severe to moderately weathered, close fracturing, medium hard to hard, BIOTITE QUARTZ GNEISS (11 joints at 0-90°, open; quartz vein from 126.2-127.8 ft) (4 joints at 0-30°, tight to open) (2 joints at 20-30°, tight; 3 joints at 80°, tight)	
		1.8	2:08/0.8 2:47	(1.7) 94%	(1.3) 72%		RUN 10							
		5.0	2:51 2:46 2:33 2:49 2:55	(5.0) 100%	(5.0) 100%		RUN 11							
		5.0	3:01 2:44 2:39 3:03 3:26	(4.8) 96%	(3.8) 76%		RUN 12						(6 joints at 20-30°, open; 2 joints at 80-90°, open)	
		3.4	2:43 2:46 2:33 1:28/0.4	(2.8) 82%	(2.1) 62%		RUN 13						(2 joints at 0-20°, open; 2 joints at 80°, open)	
		1.6	2:02/0.6 2:13	(1.6) 100%	(1.4) 88%		RUN 14						(4 joints at 20-40°, tight to open)	
		4.4	2:42 2:54 3:26 4:12 1:33/0.4	(2.8) 64%	(1.6) 36%		RUN 15						(7 joints at 20-60°, open)	
178.7	150.6											178.7	Boring and coring terminated at 150.3 feet.	150.6
Boring closed by tremie method with cement-bentonite grout.														
24 hour water level measured on 9/09/2009 prior to drilling. Borehole was at a depth of 136.2 feet.														

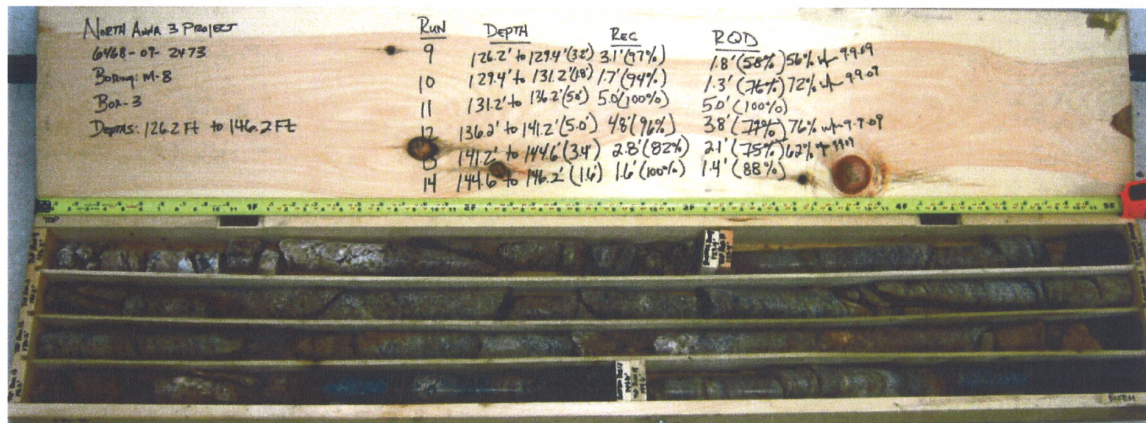
NORTH ANNA 3 CORE NORTH ANNA 3 PROJECT.GPJ NORTH ANNA 3.GDT 12/3/09



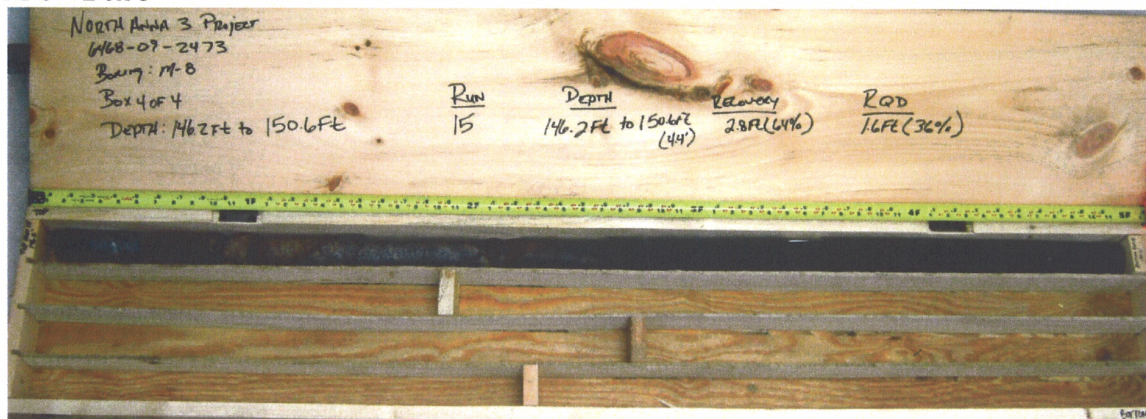
M-8 - Box 1



M-8 - Box 2



M-8 - Box 3



M-8 - Box 4