



BECHTEL PROJECT NO.: 25161		MACTEC PROJECT NO.: 6468-09-2473		COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin									
SITE DESCRIPTION: North Anna Power Station, Unit 3				DRILLER: D. Rhodes		FLUID LEVEL (ft)									
BORING NO.: W-9		DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-45C Track (RAL)		0 HR. NA									
GROUND ELEV.: 320.2 ft (NAVD88)		NORTHING: 3,909,601 US ft (NAD83)		EASTING: 11,686,022 US ft (NAD83)		24 HR. 34.4									
TOTAL DEPTH: 151.0 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: 10/20/09		COMPLETED: 10/27/09		HOLE DIA.: 3"		CASING DEPTH: 63.3 ft									
CORE SIZE: NQ3		BITS USED: 2-7/8" Tri-Cone													
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100		
320.2					Ground Surface							320.2	0.0		
														No sampling from 0.0 to 8.6 feet due to soft dig utility clearance by Dominion Personnel	
311.6	8.6													311.6	8.6
309.7	10.5	7	7	8							SS-1				
306.7	13.5	5	5	8							SS-2			RESIDUAL SOIL: Silty SAND (SM), reddish yellow (7.5YR 6/6), medium dense, moist, fine to medium grained sand, little mica, relic rock fabric	
301.9	18.3	7	8	12							SS-3				
296.9	23.3	8	8	12							SS-4			18.3 ft: Brown (7.5YR 5/2)	
291.9	28.3	12	15	21							SS-5			23.3 ft: Dense	
286.9	33.3	26	28	42							SS-6			28.3 ft: Pinkish gray (7.5YR 6/2), very dense	
281.9	38.3	26	42	58							SS-7			33.3 ft: Brown (7.5YR 5/3)	
276.9	43.3	18	24	36							SS-8				
271.9	48.3	46	54/0.2								SS-9			279.2	41.0
266.9	53.3										SS-10			WEATHERED ROCK: Severely weathered QUARTZ BIOTITE GNEISS (Sample as Silty SAND (SM), light olive brown (2.5Y 5/4), very dense, moist, fine to medium grained sand, some mica)	
261.9	58.3	26	33	63							SS-11			274.2	46.0
256.9	63.3	46	54/0.2								SS-12			RESIDUAL SOIL: Silty SAND (SM), light olive brown (2.5Y 5/4), very dense, moist, fine to medium grained sand, some mica, relic rock fabric	
251.9	68.3	26	33	63							SS-13			268.2	52.0
246.9	73.3	33	66	34/0.2							SS-14			WEATHERED ROCK: Severely weathered QUARTZ BIOTITE GNEISS (Sample as Silty SAND (SM), dark yellowish brown (10YR 4/6) and dark grayish brown (2.5Y 4/2), very dense, moist, fine to medium grained sand, some mica)	
		50/0.4									SS-15			259.2	61.0
		21	28	43										RESIDUAL SOIL: Silty SAND (SM), dark grayish brown (2.5Y 4/2), very dense, moist, fine to medium grained sand, some mica, relic rock fabric	
		50/0.3												253.2	67.0
		50/0.2												WEATHERED ROCK: Severely weathered QUARTZ BIOTITE GNEISS (Sample as Silty SAND (SM), dark grayish brown (2.5Y 4/2) and very dark gray (2.5Y 3/1), very dense, moist, fine to medium grained sand, some mica)	

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: C. Baldwin									
SITE DESCRIPTION: North Anna Power Station, Unit 3				DRILLER: D. Rhodes		FLUID LEVEL (ft)									
BORING NO.: W-9		DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-45C Track (RAL)		0 HR. NA									
GROUND ELEV.: 320.2 ft (NAVD88)		NORTHING: 3,909,601 US ft (NAD83)		EASTING: 11,686,022 US ft (NAD83)		24 HR. 34.4									
TOTAL DEPTH: 151.0 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: 10/20/09		COMPLETED: 10/27/09		HOLE DIA.: 3"		CASING DEPTH: 63.3 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	
245.4					Continued from previous page										
241.9	78.3													WEATHERED ROCK: Severely weathered QUARTZ BIOTITE GNEISS (Sample as Silty SAND (SM), dark grayish brown (2.5Y 4/2) and very dark gray (2.5Y 3/1), very dense, moist, fine to medium grained sand, some mica) (continued)	
236.9	83.3	50/0.1								50/0.1	SS-16				
231.9	88.3	50/0.1								50/0.1	SS-17				
227.9	92.3	50/0.2								50/0.2	SS-18				
227.9	92.3	50/0.0								50/0.0	SS-19				
													227.9	92.3	WEATHERED ROCK and HARD ROCK: Grayish brown and gray, with orange staining, severely to moderately severely weathered, very close to close fracturing, soft to moderately hard, QUARTZ BIOTITE GNEISS  99.5 ft: Complete loss of drill fluid circulation
													199.2	121.0	HARD ROCK: Gray to dark gray, with trace orange staining, moderately weathered, very close to moderately close fracturing, moderately hard, BIOTITE QUARTZ GNEISS
													187.2	133.0	HARD ROCK: Gray and dark gray with trace orange staining, moderately weathered, close to moderately close fracturing, moderately hard, QUARTZ BIOTITE GNEISS
													184.2	136.0	HARD ROCK: Gray, dark gray, and white, with trace orange staining, moderately to slightly weathered, very close to wide fracturing, moderately hard to hard, BIOTITE QUARTZ GNEISS with trace magnetite

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: C. Baldwin						
SITE DESCRIPTION: North Anna Power Station, Unit 3					DRILLER: D. Rhodes			FLUID LEVEL (ft)					
BORING NO.: W-9		DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-45C Track (RAL)			0 HR. NA					
GROUND ELEV.: 320.2 ft (NAVD88)		NORTHING: 3,909,601 US ft (NAD83)		EASTING: 11,686,022 US ft (NAD83)			24 HR. 34.4						
TOTAL DEPTH: 151.0 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: 10/20/09		COMPLETED: 10/27/09		HOLE DIA.: 3"		CASING DEPTH: 63.3 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
170.6					Continued from previous page								
												169.2	151.0
												Boring and coring terminated at 151.0 feet.  Boring closed by tremie method with cement-bentonite grout.  24 hour water level measured on 10/27/2009 prior to drilling. Borehole was at a depth of 146.0 feet.	

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



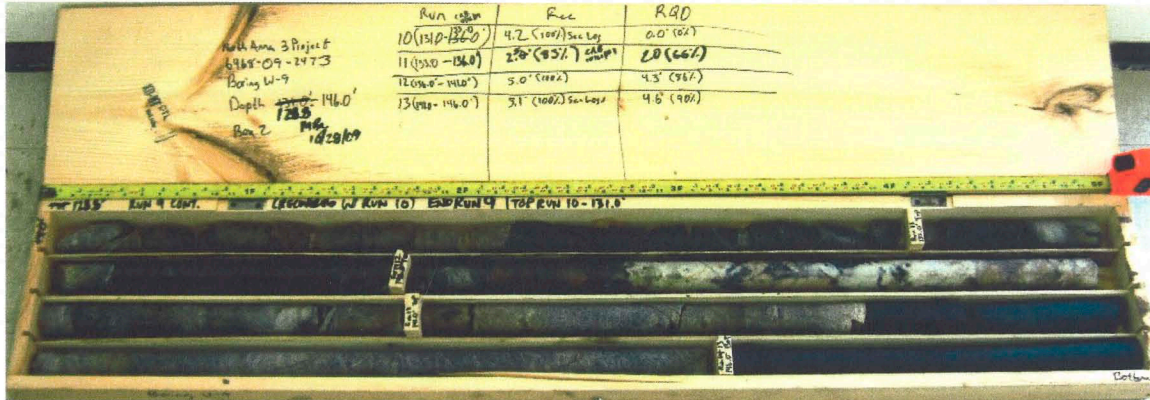
BECHTEL PROJECT NO.: 25161		MACTEC PROJECT NO.: 6468-09-2473		COUNTY: Louisa, VA		GEOLOGIST: C. Baldwin	
SITE DESCRIPTION: North Anna Power Station, Unit 3				DRILLER: D. Rhodes		FLUID LEVEL (ft)	
BORING NO.: W-9		DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-45C Track (RAL)		0 HR. NA	
GROUND ELEV.: 320.2 ft (NAVD88)		NORTHING: 3,909,601 US ft (NAD83)		EASTING: 11,686,022 US ft (NAD83)		24 HR. 34.4	
TOTAL DEPTH: 151.0 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08				HAMMER (ID): 140-lb. Auto (MEC-12)	
DATE STARTED: 10/20/09		COMPLETED: 10/27/09		CASING DEPTH: 63.3 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (%)	RQD (%)		REC. (ft)	RQD (ft)		
										Begin Coring @ 92.3 ft
227.9	92.3	3.7	N=50/0.0 1:28/0.7 1:58 2:00 1:49	(2.8) 76%	(1.0) 27%	RUN 1	(8.8) 31%	(2.3) 8%		WEATHERED ROCK and HARD ROCK: Grayish brown and gray, with orange staining, severely to moderately severely weathered, very close to close fracturing, soft to moderately hard, QUARTZ BIOTITE GNEISS (3 joints at 50-60°, open)
224.2	96.0	5.0	2:03 1:45 2:06 3:10 2:35	(0.4) 8%	(0.0) 0%	RUN 2				99.5 ft: Complete loss of drill fluid circulation
219.2	101.0	5.0	4:25 1:49 1:30 1:52 1:45	(0.2) 4%	(0.0) 0%	RUN 3				(1 joint at 10°, open)
214.2	106.0	5.0	1:55 2:19 1:22 1:26 1:30	(0.2) 4%	(0.0) 0%	RUN 4				
209.2	111.0	2.5	3:20 2:38	(2.0) 80%	(0.0) 0%	RUN 5				
206.7	113.5	2.5	3:13/0.5 1:05/0.5 4:09 3:22	(0.6) 24%	(0.0) 0%	RUN 6				(2 joints at 30°, open)
204.2	116.0	5.0	3:43 3:51 3:17 3:53 5:08	(2.6) 52%	(1.3) 26%	RUN 7				(2 joints at 10°, tight to open; 4 joints at 30°, tight to open; 1 joint at 80°, tight)
199.2	121.0	5.0	4:33 4:29 3:32 3:44 3:30	(5.0) 100%	(4.0) 80%	RUN 8	(10.3) 86%	(4.6) 38%		HARD ROCK: Gray to dark gray, with trace orange staining, moderately weathered, very close to moderately close fracturing, moderately hard, BIOTITE QUARTZ GNEISS (5 joints at 10°, tight; 1 joint at 50°, tight; 1 joint at 70°, tight)
194.2	126.0	5.0	3:44 3:04 2:35 3:01 3:16	(3.3) 66%	(0.6) 12%	RUN 9				(1 joint at 0°, open; 1 joint at 40°, tight; 1 joint at 70°, tight)
189.2	131.0	2.0	2:34 5:32	(2.0) 100%	(0.0) 0%	RUN 10				(1 joint at 70°, tight; many mechanical breaks)
187.2	133.0	3.0	3:22 4:56 3:08	(2.5) 83%	(2.0) 67%	RUN 11	(2.5) 83%	(2.0) 67%		HARD ROCK: Gray and dark gray with trace orange staining, moderately weathered, close to moderately close fracturing, moderately hard, QUARTZ BIOTITE GNEISS (6 joints at 0-10°, tight; 1 joint at 30°, tight)
184.2	136.0	5.0	5:14 4:36 8:16 7:05 5:41	(5.0) 100%	(4.3) 86%	RUN 12	(15.0) 100%	(12.6) 84%		HARD ROCK: Gray, dark gray, and white, with trace orange staining, moderately to slightly weathered, very close to wide fracturing, moderately hard to hard, BIOTITE QUARTZ GNEISS with trace magnetite (4 joints at 0-10°, tight; quartz + feldspar vein from 137.0-139.1 feet)
179.2	141.0	5.0	3:29 3:21 3:27 4:52 7:31	(5.0) 100%	(4.6) 92%	RUN 13				(4 joints at 0-10°, tight; 1 joint at 50°, tight)
174.2	146.0	5.0	5:39 4:24 5:20 5:07 8:09	(5.0) 100%	(3.7) 74%	RUN 14				(11 joints at 10°, tight; 1 joint at 70°, tight)
169.2	151.0									Boring and coring terminated at 151.0 feet.  Boring closed by tremie method with cement-bentonite grout.  24 hour water level measured on 10/27/2009 prior to drilling. Borehole was at a depth of 146.0 feet.

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



W-9- Box 1



W-9- Box 2



W-9- Box 3





BECHTEL PROJECT NO.: 25161			MACTEC PROJECT NO.: 6468-09-2473			COUNTY: Louisa, VA			GEOLOGIST: R. Clark						
SITE DESCRIPTION: North Anna Power Station, Unit 3						DRILLER: R. Landeros			FLUID LEVEL (ft)						
BORING NO.: W-10			DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-550X (ATL)			0 HR. NA						
GROUND ELEV.: 319.1 ft (NAVD88)			NORTHING: 3,909,599 US ft (NAD83)			EASTING: 11,685,820 US ft (NAD83)			24 HR. 31.5						
TOTAL DEPTH: 153.0 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08				ROD TYPE: AWJ		HAMMER (ID):140-lb. Auto (MEC-05)							
DATE STARTED: 10/13/09		COMPLETED: 10/16/09		HOLE DIA.: 3"		CASING DEPTH: 43.0 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		
319.1					Ground Surface							319.1	0.0		
310.4	8.7	8	10	12											
307.9	11.2	7	11	16											
305.2	13.9	10	12	16											
301.1	18.0	15	12	14											
296.1	23.0	8	10	15											
291.1	28.0	2	14	56											
286.1	33.0	9	12	15											
281.1	38.0	10	12	19											
276.1	43.0	50/0.3													
271.1	48.0	50/0.0													

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

No sampling from 0.0 to 8.7 feet due to soft dig utility clearance by Dominion Personnel

310.4  
 RESIDUAL SOIL: Silty SAND (SM), light yellowish brown (10YR 6/4), medium dense, moist, fine to coarse grained sand, relic rock fabric

23.0 ft: Dark yellowish brown (10YR 4/4), some mica

28.0 ft: Dark yellowish brown (10YR 4/4) and pale yellow (5Y 8/2), very dense, trace gravel sized, angular quartz rock fragments

33.0 ft: Dark yellowish brown (10YR 4/4), medium dense, wet

38.0 ft: Yellowish brown (10YR 5/4), dense

278.1  
 WEATHERED ROCK: Severely weathered BIOTITE QUARTZ GNEISS (Sampled as Silty SAND (SM), brown (10YR 4/3), very dense, wet, few gravel sized, angular quartz and rock fragments)

275.8  
 WEATHERED ROCK and HARD ROCK: Light gray, brown, and light pinkish gray, with yellowish brown and reddish brown staining, severely to moderately weathered, close fracturing, soft to moderately hard, BIOTITE QUARTZ GNEISS with trace magnetite



BECHTEL PROJECT NO.: 25161		MACTEC PROJECT NO.: 6468-09-2473			COUNTY: Louisa, VA		GEOLOGIST: R. Clark							
SITE DESCRIPTION: North Anna Power Station, Unit 3					DRILLER: R. Landeros			FLUID LEVEL (ft)						
BORING NO.: W-10		DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-550X (ATL)				0 HR. NA					
GROUND ELEV.: 319.1 ft (NAVD88)		NORTHING: 3,909,599 US ft (NAD83)		EASTING: 11,685,820 US ft (NAD83)				24 HR. 31.5						
TOTAL DEPTH: 153.0 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08			ROD TYPE: AWJ		HAMMER (ID): 140-lb. Auto (MEC-05)							
DATE STARTED: 10/13/09		COMPLETED: 10/16/09		HOLE DIA.: 3"		CASING DEPTH: 43.0 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	
244.3					Continued from previous page									
												WEATHERED ROCK and HARD ROCK: Light gray, brown, and light pinkish gray, with yellowish brown and reddish brown staining, severely to moderately weathered, close fracturing, soft to moderately hard, BIOTITE QUARTZ GNEISS with trace magnetite (continued)		
												236.1	HARD ROCK: Light gray and light pinkish gray, with orange and reddish brown staining, moderately to slightly weathered, close to wide fracturing, moderately hard to very hard, BIOTITE QUARTZ GNEISS with trace magnetite	83.0

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: R. Clark							
SITE DESCRIPTION: North Anna Power Station, Unit 3					DRILLER: R. Landeros		FLUID LEVEL (ft)							
BORING NO.: W-10		DRILL METHOD: Mud Rotary/Rock Core			DRILL MACHINE: CME-550X (ATL)		0 HR. NA							
GROUND ELEV.: 319.1 ft (NAVD88)		NORTHING: 3,909,599 US ft (NAD83)		EASTING: 11,685,820 US ft (NAD83)		24 HR. 31.5								
TOTAL DEPTH: 153.0 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08			ROD TYPE: AWJ	HAMMER (ID):140-lb. Auto (MEC-05)								
DATE STARTED: 10/13/09		COMPLETED: 10/16/09	HOLE DIA.: 3"	CASING DEPTH: 43.0 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	
169.5					Continued from previous page									
												166.1	153.0	Boring and coring terminated at 153.0 feet. Boring closed by tremie method with cement-bentonite grout. 24 hour water level measured on 10/16/2009 prior to drilling. Borehole was at a depth of 128.0 feet.

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: R. Clark	
SITE DESCRIPTION: North Anna Power Station, Unit 3				DRILLER: R. Landeros		FLUID LEVEL (ft)	
BORING NO.: W-10		DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-550X (ATL)		0 HR. NA	
GROUND ELEV.: 319.1 ft (NAVD88)		NORTHING: 3,909,599 US ft (NAD83)		EASTING: 11,685,820 US ft (NAD83)		24 HR. 31.5	
TOTAL DEPTH: 153.0 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08				HAMMER (ID): 140-lb. Auto (MEC-05)	
DATE STARTED: 10/13/09		COMPLETED: 10/16/09		CASING DEPTH: 43.0 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 43.3 ft
275.8	43.3	4.7	3:25/0.7 3:39 3:28 3:31 2:20	(3.8) 81%	(2.7) 57%	RUN 1	(22.4) 56%	(12.0) 30%	275.8	WEATHERED ROCK and HARD ROCK: Light gray, brown, and light pinkish gray, with yellowish brown and reddish brown staining, severely to moderately weathered, close fracturing, soft to moderately hard, BIOTITE QUARTZ GNEISS with trace magnetite
271.1	48.0	5.0	N=50/0.0 1:47 2:25 2:52 2:28 2:31	(1.3) 26%	(0.3) 6%	RUN 2				(2 joints at 0°, tight; 2 joints at 45°, tight, 1 joint at 65°, tight; 1 joint at 90°, open) (2 joints at 35°, tight)
266.1	53.0	5.0	1:38 1:01 1:30 0:55 1:03	(3.8) 76%	(2.7) 54%	RUN 3				(3 joints at 35°, tight; 4 joints at 45-50°, tight; 1 joint at 90°, tight)
261.1	58.0	5.0	1:06 1:15 1:35 1:25 1:30	(3.5) 70%	(2.2) 44%	RUN 4				(5 joints at 30°, tight; 2 joints at 45°, tight)
256.1	63.0	5.0	0:45 1:31 1:52 1:55 1:56	(2.5) 50%	(1.3) 26%	RUN 5				(4 joints at 0-10°, tight; 2 joints at 45°, tight)
251.1	68.0	5.0	2:02 2:22 1:38 2:55 2:26	(3.1) 62%	(1.9) 38%	RUN 6				(4 joints at 35-45°, tight; 1 quartz vein <0.1 ft thick at 20°)
246.1	73.0	5.0	1:55 1:45 1:52 1:57 1:38	(2.2) 44%	(0.6) 12%	RUN 7				(2 joints at 45°, tight; 3 joints at 60°, tight)
241.1	78.0	5.0	1:28 1:35 1:38 1:50 1:21	(2.2) 44%	(0.3) 6%	RUN 8				(3 joints at 0°, tight; 2 joints at 45°, tight)
236.1	83.0	5.0	1:21 2:38 2:58 2:20 2:39	(4.1) 82%	(2.0) 40%	RUN 9	(59.4) 85%	(30.0) 43%	236.1	HARD ROCK: Light gray and light pinkish gray, with orange and reddish brown staining, moderately to slightly weathered, close to wide fracturing, moderately hard to very hard, BIOTITE QUARTZ GNEISS with trace magnetite
231.1	88.0	5.0	2:39 2:08 2:18 2:10 2:10	(4.4) 88%	(1.1) 22%	RUN 10				(11 joints at 0-10°, tight; 3 joints at 45°, tight)
226.1	93.0	5.0	1:22 1:29 1:02 1:03 1:22	(4.7) 94%	(2.5) 50%	RUN 11				(6 joints at 0-10°, tight; 2 joints at 45°, tight)
221.1	98.0	5.0	2:24 1:54 2:34 2:02 2:03	(4.7) 94%	(2.5) 50%	RUN 12				(4 joints at 0-10°, tight; 7 joints at 45°, tight)
216.1	103.0	5.0	2:34 2:45 2:33 2:46 2:50	(4.7) 94%	(2.5) 50%	RUN 13				(4 joints at 0-10°, tight; 3 joints at 45°, tight)
211.1	108.0	5.0	1:43 1:38 2:17 2:28 2:34	(4.2) 84%	(3.3) 66%	RUN 14				(4 joints at 10-20°, tight with trace iron staining; 1 joint at 65°, tight with trace iron staining)
206.1	113.0	5.0	2:02 2:20 1:53 2:24 2:11	(4.5) 90%	(1.4) 28%	RUN 15				(7 joints at 0-10°, tight with trace iron staining; 2 joints at 45°, tight; 1 joint at 65°, tight; 1 joint at 90°, tight)
201.1	118.0									

NORTH ANNA 3 CORE 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: R. Clark	
SITE DESCRIPTION: North Anna Power Station, Unit 3				DRILLER: R. Landeros		FLUID LEVEL (ft)	
BORING NO.: W-10		DRILL METHOD: Mud Rotary/Rock Core		DRILL MACHINE: CME-550X (ATL)		0 HR. NA	
GROUND ELEV.: 319.1 ft (NAVD88)		NORTHING: 3,909,599 US ft (NAD83)		EASTING: 11,685,820 US ft (NAD83)		24 HR. 31.5	
TOTAL DEPTH: 153.0 ft		SAMPLE METHODS: ASTM D 1586-08a; 2488-09a; 2113-08; 6032-08				HAMMER (ID): 140-lb. Auto (MEC-05)	
DATE STARTED: 10/13/09		COMPLETED: 10/16/09		CASING DEPTH: 43.0 ft		CORE BARREL TYPE: Wireline NQ3 Triple Tube, series 6 bit	

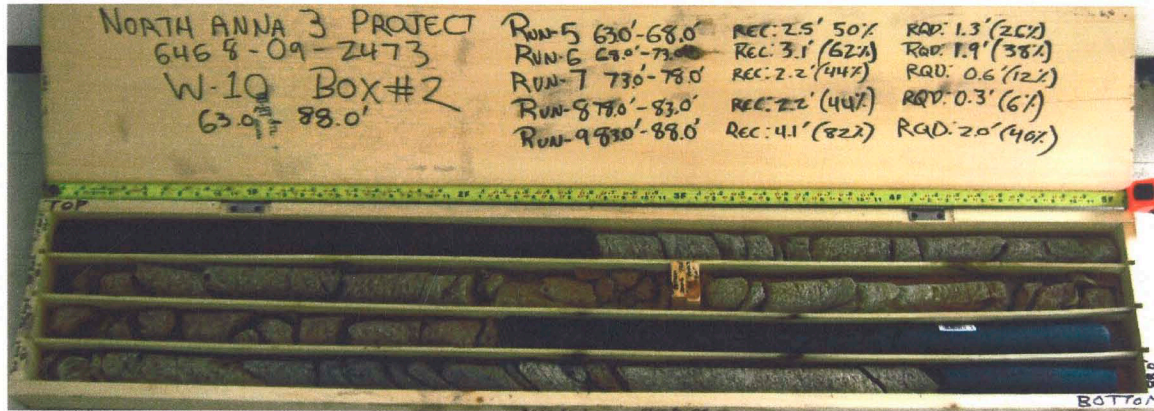
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS		
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %				
										Continued from previous page		
196.1	123.0	5.0	2:48 2:25 2:33 2:44 2:52	(2.8) 56%	(1.1) 22%	RUN 16				(5 joints at 0-10°, tight; 3 joints at 45°, tight) HARD ROCK: Light gray and light pinkish gray, with orange and reddish brown staining, moderately to slightly weathered, close to wide fracturing, moderately hard to very hard, BIOTITE QUARTZ GNEISS with trace magnetite ( <i>continued</i> )		
191.1	128.0	5.0	1:55 2:06 2:05 2:08 2:11	(4.6) 92%	(2.0) 40%	RUN 17				(4 joints at 0-10°, tight; 2 joints at 65°, tight)		
186.1	133.0	5.0	2:31 2:49 2:42 2:41 2:47	(4.4) 88%	(3.2) 64%	RUN 18				(2 joints at 0°, tight; 1 joint at 20°, tight; 1 joint at 35°, tight; 1 joint at 65°, tight)		
181.1	138.0	5.0	2:31 2:28 2:41 2:36 2:28	(5.0) 100%	(1.4) 28%	RUN 19				(6 joints at 0-10°, tight; 1 joint at 45°, tight; 1 joint at 65°, tight; 1 joint at 90°, tight)		
176.1	143.0	5.0	1:57 2:08 2:10 2:05 3:41	(4.5) 90%	(3.2) 64%	RUN 20				(6 joints at 40°, tight; 3 joints at 60°, tight; 1 joint at 90°, tight; quartz vein from 142.3-143.0 ft)		
171.1	148.0	5.0	2:11 2:18 3:27 3:21 3:05	(2.2) 44%	(0.0) 0%	RUN 21				(quartz vein from 143.0-144.2 ft; 1 joint at 45°, tight, 1 joint at 90°, tight)		
166.1	153.0	5.0	4:45 3:07 2:25 3:01 3:08	(4.6) 92%	(3.8) 76%	RUN 22				(5 joints at 45°, tight to open)		
										166.1	153.0	Boring and coring terminated at 153.0 feet.  Boring closed by tremie method with cement-bentonite grout.  24 hour water level measured on 10/16/2009 prior to drilling. Borehole was at a depth of 128.0 feet.

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





W-10- Box 1



W-10- Box 2



W-10- Box 3



W-10- Box 4





W-10 - Box 5

