



MACTEC PROJECT NO.: 6468-06-1472					COUNTY Louisa, VA					GEOLOGIST J. Howard				
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-906			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE					0 HR. 6.0			
COLLAR ELEV. 311.7 ft (NAVD88)			NORTHING 3,909,670		US ft (NAD83)		EASTING 11,685,795		US ft (NAD83)		24 HR. 28.8			
TOTAL DEPTH 150.5 ft			DRILL MACHINE CME 550 ATV			DRILLER: G. Akins					HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/13/06			COMPLETED 9/19/06			CORE BARREL TYPE: HQ 3 triple tube-wireline								
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	
311.7					Ground Surface							311.7 0.0		
310.2	1.5									906-1		308.7 3.0		
308.2	3.5	4	6	10						906-2				
305.7	6.0	7	11	13						906-3				
303.2	8.5	8	9	10						906-4				
300.7	11.0	6	8	10						906-5				
298.2	13.5	6	8	16						906-6				
		3	6	8										
292.8	18.9	5	7	8						906-7				
287.8	23.9	5	6	6						906-8				
282.8	28.9	16	20	37						906-9				
277.8	33.9	13	37	50/0.3	906-10		276.8 34.9							
272.8	38.9	50/0.1			906-11		272.7 39.0							
								Weathered Rock: Orange brown, BIOTITE GNEISS						
								Hard Rock: Tan gray, gray brown, and gray orange, moderately to slightly weathered, very close to moderately close fracturing, moderately hard to hard, BIOTITE GNEISS						

NORTH ANNA COL. JURE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



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TOTAL DEPTH 150.5 ft					DRILL MACHINE CME 550 ATV					DRILLER: G. Akins					HAMMER TYPE 140 lbs Auto				
DATE STARTED 9/13/06					COMPLETED 9/19/06					CORE BARREL TYPE: HQ 3 triple tube-wireline									
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									
236.9					Continued from previous page														
															Weathered Rock: Tan gray, severely weathered Quartz GNEISS (partial recovery) (continued) Hard Rock: Gray, moderately weathered, close fracturing, moderately hard, QUARTZ GNEISS Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)				
															234.4 77.3				
															227.0 84.7				
															225.7 86.0				
															222.9 88.8				
															Hard Rock: Gray, gray brown, blue gray, and pink, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE GNEISS				
															181.7 130.0				
															178.5 133.2				
															Weathered Rock: Severely weathered, BIOTITE GNEISS (partial recovery) Hard Rock: Blue gray, slightly weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE GNEISS				

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SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft) 0 HR. 6.0 24 HR. 28.8						
BORING NO. B-906		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE										
COLLAR ELEV. 311.7 ft (NAVD88)		NORTHING 3,909,670		US ft (NAD83)		EASTING 11,685,795		US ft (NAD83)								
TOTAL DEPTH 150.5 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto						
DATE STARTED 9/13/06				COMPLETED 9/19/06				CORE BARREL TYPE: HQ 3 triple tube-wireline								
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						
162.1					Continued from previous page											
														161.2	150.5	Boring and coring terminated at 150.5 ft in Hard Rock: Very hard, BIOTITE GNEISS

NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL GDT 1/19/07




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BORING NO. B-906			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 6.0	
COLLAR ELEV. 311.7 ft (NAVD88)			NORTHING 3,909,670		US ft (NAD83)		EASTING 11,685,795		US ft (NAD83)		24 HR. 28.8	
TOTAL DEPTH 150.5 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/13/06				COMPLETED 9/19/06			CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 111.5 ft								
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 @ 39.0 ft
272.7	39.0	1.5	4:30/1.5	(1.0)	(0.0)	1						272.7 Hard Rock: Tan gray, gray brown, and gray orange, moderately to slightly weathered, very close to moderately close fracturing, moderately hard to hard, BIOTITE GNEISS
271.2	40.5	5.0	1:30	(3.0)	(2.2)	2						-Weathered zones
			1:30	60%	44%							(2 joints at 70° with weathering)
266.2	45.5	5.0	2:15									(2 joints at 60°, 4 joints at 80-85° with weathering)
			2:00									
			1:45	(4.3)	(2.6)	3						
			2:00	86%	52%							
261.2	50.5	5.0	2:15									
			2:00									
			2:00	(4.7)	(3.6)	4						(4 joints at 50-60°, 4 joints at 70-80°)
			2:00	94%	72%							
256.2	55.5	5.0	2:00									
			1:45	(4.5)	(2.5)	5						(2 joints at 60-70°, 3 joints at 50°)
			2:00	90%	50%							
251.2	60.5	5.0	2:15									
			2:00									
			2:00	(5.0)	(4.8)	6						(8 joints at 30-40°)
			2:00	100%	96%							
246.2	65.5	3.3	3:15	(3.3)	(2.0)	7						
			4:15	100%	61%							
242.9	68.8	6.1	3:45									242.9 Hard Rock: Tan gray, moderately to slightly weathered, very close to close fracturing, moderately hard, QUARTZ GNEISS
			2:15/0.3	(4.6)	(2.0)	8						
			4:15/0.8	75%	33%							
			5:00									
			4:45									
			3:00									
			2:45									
236.8	74.9	5.8	8:45/1.3	(3.2)	(1.5)	9						236.8 Weathered Rock: Tan gray, severely weathered Quartz GNEISS (partial recovery)
			3:45	55%	26%							
			3:00									
			3:00									
			2:00									
			4:15/1.8									
231.0	80.7	5.0	2:45	(2.0)	(0.0)	10						231.0 Hard Rock: Gray, moderately weathered, close fracturing, moderately hard, QUARTZ GNEISS
			3:00	40%	0%							(6 joints at 40°, 1 joint at 80°)
			6:15									Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)
			4:30									
226.0	85.7	5.0	2:45	(2.3)	(1.2)	11						226.0 Hard Rock: Brown gray, moderately severe to moderately weathered, very close to close fracturing, medium hard, QUARTZ GNEISS
			2:45	46%	24%							(4 joints at 30°)
			3:15									
			3:00									
			4:15									
221.0	90.7	4.9	8:00	(4.3)	(3.8)	12						221.0 Weathered Rock: Brown gray, severely weathered, QUARTZ GNEISS (partial recovery)
			5:00	88%	78%							Hard Rock: Gray, gray brown, blue gray, and pink, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE GNEISS
			3:30									(5 joints at 30-40°)
			3:30									
216.1	95.6	4.4	3:15									
			4:11/0.9	(4.4)	(3.9)	13						(2 joints at 80°, 1 joint at 20°)
			4:15	100%	89%							
211.7	100.0	5.5	2:15									
			2:00									
			1:30/0.4	(5.5)	(4.7)	14						(4 joints at 30-40°, 2 joints at 50°)
			2:30	100%	85%							
			3:30									
206.2	105.5	5.0	3:15									
			3:00									
			4:00/1.5	(5.0)	(4.2)	15						(3 joints at 30-40°, 1 joint at 85°; trace epidote)
			2:30	100%	84%							
			2:15									
201.2	110.5	5.0	3:00	(4.9)	(4.1)	16						
			3:15	98%	82%							
			2:45									

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TOTAL DEPTH 150.5 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto		
DATE STARTED 9/13/06				COMPLETED 9/19/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 111.5 ft									
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	
196.2	115.5		3:00 4:00										Hard Rock: Gray, gray brown, blue gray, and pink, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE GNEISS (continued) (7 joints at 40°; trace epidote, quartz veins)
		5.0	2:30 3:15 3:15 3:30 5:00	(5.0) 100%	(4.5) 90%	17					(7 joints at 30-40°)		
191.2	120.5		3:00 3:45 4:30 4:00 6:30	(5.0) 100%	(4.1) 82%	18					(4 joints at 50°)		
		5.0	3:30 2:30 3:30 3:30 3:30	(4.5) 90%	(3.6) 72%	19							
186.2	125.5												181.7 130.0
		5.0	3:00 3:45 6:45 5:00 6:30	(4.6) 92%	(2.9) 58%	20							Weathered Rock: Severely weathered, BIOTITE GNEISS (partial recovery) (1 joint at 60°)
176.2	135.5												178.5 133.2
		5.0	10:15 9:30 8:45 7:00 10:30	(5.0) 100%	(5.0) 100%	21							Hard Rock: Blue gray, slightly weathered to fresh, close to moderately close fracturing, hard to very hard, BIOTITE GNEISS (4 joints at 60°)
		4.9	2:45 3:15 4:30 5:30 7:15	(4.9) 100%	(4.5) 92%	22							(5 joints at 60°, 1 joint at 40°; quartz+feldspar veins)
166.3	145.4												(4 joints at 40°, 1 joint at 20°)
		5.1	4:45 5:30 5:45 5:15 7:45/1.1	(5.1) 100%	(5.1) 100%	23						161.2 150.5	
161.2	150.5											Coring terminated at 150.5 ft in Hard Rock: Very hard, BIOTITE GNEISS	

NORTH ANNA COL

Core

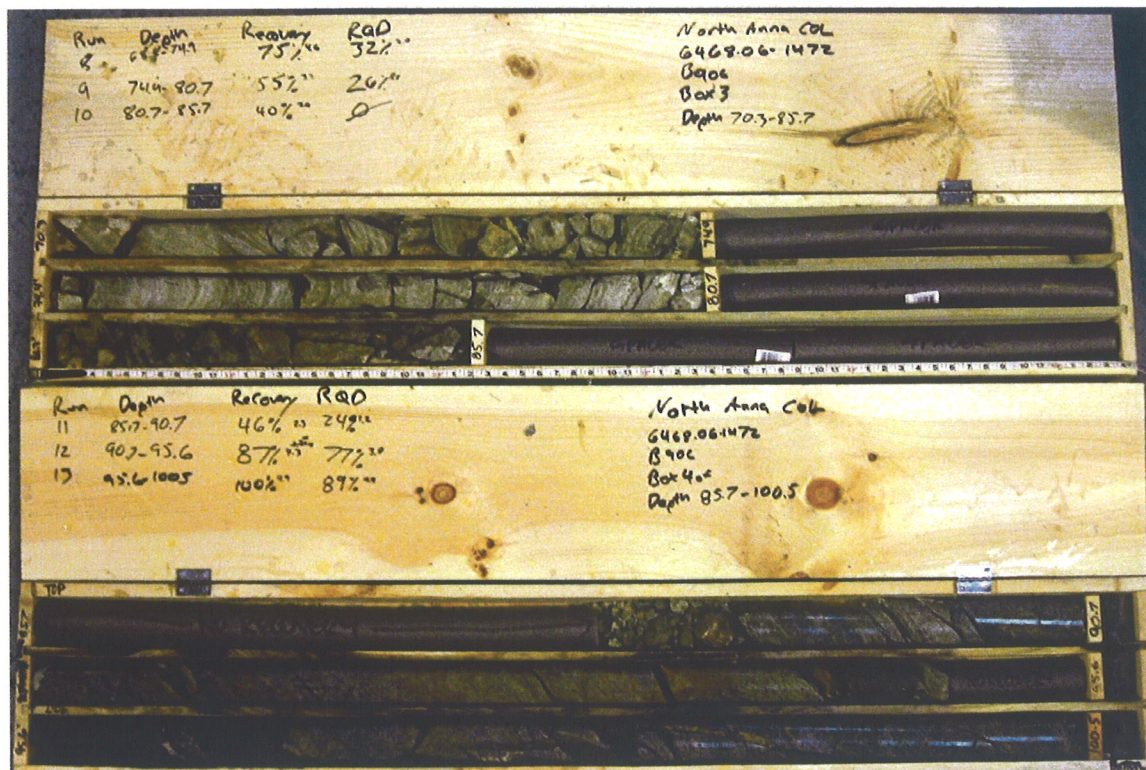
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NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL GDT 1/19/07



B-906 – Box 1

B-906 – Box 2



B-906 – Box 3

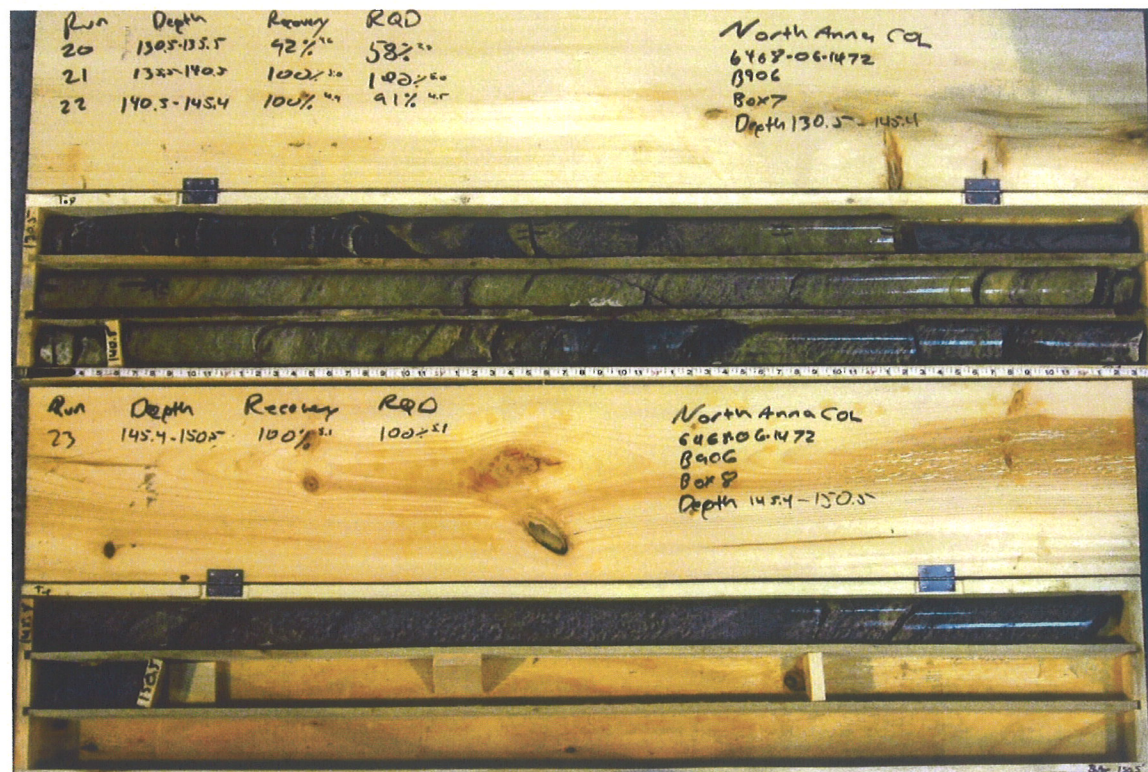
B-906 – Box 4





B-906 - Box 5

B-906 - Box 6



B-906 - Box 7

B-906 - Box 8