

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



MACTEC PROJECT NO.: 6468-06-1472						COUNTY Louisa, VA				GEOLOGIST J. Lachewitz					
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)					
BORING NO. B-911			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND				
COLLAR ELEV. 299.8 ft (NAVD88)			NORTHING 3,909,920		US ft (NAD83)		EASTING 11,685,993		US ft (NAD83)		24 HR. ND				
TOTAL DEPTH 101.0 ft			DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto				
DATE STARTED 8/8/06			COMPLETED 8/10/06				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					
225.0					Continued from previous page										
													Hard Rock: Gray to bluish gray, moderately weathered to fresh, close to wide fracturing, medium hard to hard, QUARTZ BIOTITE GNEISS (<i>continued</i>)		
													198.8		101.0
													Boring and coring terminated at 101.0 ft in Hard Rock: Medium to moderately hard, QUARTZ GNEISS		



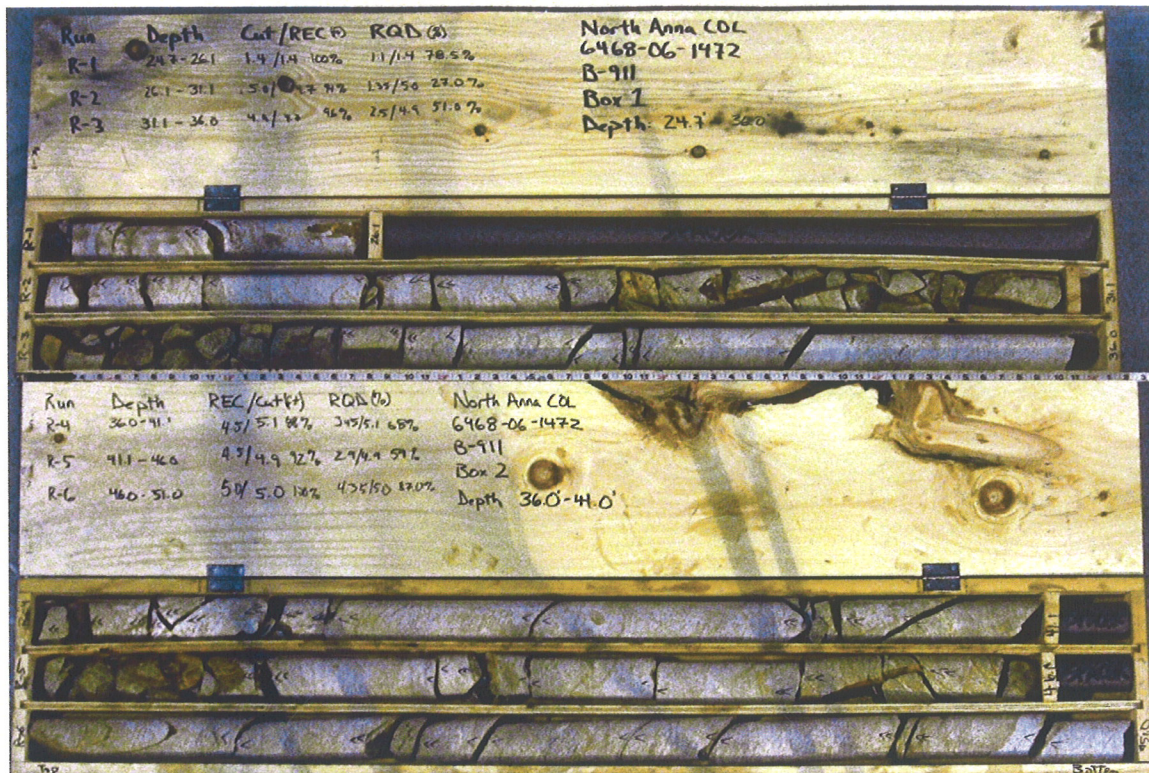
MACTEC PROJECT NO.: 6468-06-1472						COUNTY Louisa, VA			GEOLOGIST J. Lachewitz		
SITE DESCRIPTION NORTH ANNA COL									GROUND WATER (ft)		
BORING NO. B-911			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. ND		
COLLAR ELEV. 299.8 ft (NAVD88)			NORTHING 3,909,920		US ft (NAD83)		EASTING 11,685,993		US ft (NAD83)		24 HR. ND
TOTAL DEPTH 101.0 ft			DRILL MACHINE CME 550 ATV			DRILLER: G. Akins			HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/8/06			COMPLETED 8/10/06			CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 76.2 ft								
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	STRATA	L O G	DESCRIPTION AND REMARKS
											Begin Coring @ 24.8 ft
275.0	24.8	1.3	4:15	(1.3)	(1.1)	1					24.8 Hard Rock: White to gray, moderately severe to moderately weathered, close fracturing, soft to moderately hard, QUARTZ BIOTITE GNEISS (1 joint at 90°; 2 joints at 15-30° with trace clay and Fe stain) (6 joints at 5-20° with Fe stain)
273.7	26.1	5.0	1:58/0.3	100%	85%	2					
			3:01	(4.7)	(1.4)						
			3:04	94%	28%						
268.7	31.1		2:15								
		4.9	2:02	(4.7)	(2.5)	UCS-34.3'					(6 joints at 5-45° with Fe stain)
			2:14	96%	51%						
			1:35								
			1:25								
263.8	36.0		1:15	(4.5)	(3.5)	4					(Multiple horizontal and vertical joints with Fe stain)
		5.1	1:23	88%	69%						
			1:41								
258.7	41.1		1:21								
			1:23/1.1								
		4.9	1:05	(4.5)	(2.9)	UC-44.3'					(4 joints at 0-20° with Fe stain)
			1:14	92%	59%						
			1:14								
253.8	46.0		1:18								
		5.0	1:21/0.9	(5.0)	(4.4)	6					(8 joints at 25-45° with Fe stain)
			0:50	100%	88%						
			0:58								
			0:57								
248.8	51.0		1:00								
			1:15								
		5.1	1:17	(3.0)	(1.0)	7					(1 joint at 45° with slight Fe stain; multiple horizontal and vertical joints)
			1:14	59%	20%						
			0:43								
			0:47								
243.7	56.1		1:08/1.1								
		5.0	0:54	(5.0)	(4.8)	8					(8 joints at 20-50° with Fe stain)
			0:56	100%	96%						
			0:52								
			0:48								
238.7	61.1		1:02								
		4.9	0:45	(4.9)	(3.7)	9					(7 joints at 0-45° with Fe stain)
			1:01	100%	76%						
			1:14								
			1:15								
233.8	66.0		2:27/0.9	(4.9)	(4.4)	UC-66.5'					66.5 Hard Rock: Gray to bluish gray, moderately weathered to fresh, close to wide fracturing, medium hard to hard, QUARTZ BIOTITE GNEISS (1 joint at 5° with slight Fe stain)
		4.9	2:18	100%	90%						
			1:47								
			2:36								
228.9	70.9		4:09								
		5.0	7:43/0.9	(5.0)	(4.9)	11					(1 joint at 10°)
			3:40	100%	98%						
			4:47								
			2:56								
223.9	75.9		2:53								
			5:09								
		5.1	4:31	(5.1)	(4.7)	12					(3 joints at 65-85° slightly weathered)
			4:32	100%	92%						
			4:47								
			5:39								
218.8	81.0		7:01/1.1								
		4.9	4:58	(4.9)	(4.6)	UCS-82.1'					(2 joints at 85°; 4 joints at 0-10°; slight Fe stain)
			6:14	100%	94%						
			6:01								
			5:15								
213.9	85.9		8:12/0.9								
		5.1	3:58	(5.1)	(4.6)	14					(4 joints at 45°)
			2:52	100%	90%						
			2:12								
			1:52								
208.8	91.0		2:57/1.1								
		5.0	2:28	(5.0)	(4.1)	15					(4 joints 0-10° with clay and Fe stain)
			2:11	100%	82%						
			2:22								
			2:44								
203.8	96.0		3:04								
		5.0	3:29	(5.0)	(4.6)	UC-97.6'					(4 joints at 5° and 1 joint at 45° with slight weathering)
			2:59	100%	92%						
			3:09								

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



SHEET 2 OF 2

MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Lachewitz			
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)	
BORING NO. B-911		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND	
COLLAR ELEV. 299.8 ft (NAVD88)		NORTHING 3,909,920		US ft (NAD83)		EASTING 11,685,993		US ft (NAD83)		24 HR. ND	
TOTAL DEPTH 101.0 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins			HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/8/06				COMPLETED 8/10/06		CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 76.2 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	
198.8	101.0		3:31 2:51							198.8 101.0 Coring terminated at 101.0 ft in Hard Rock: Medium to moderately hard, QUARTZ GNEISS	



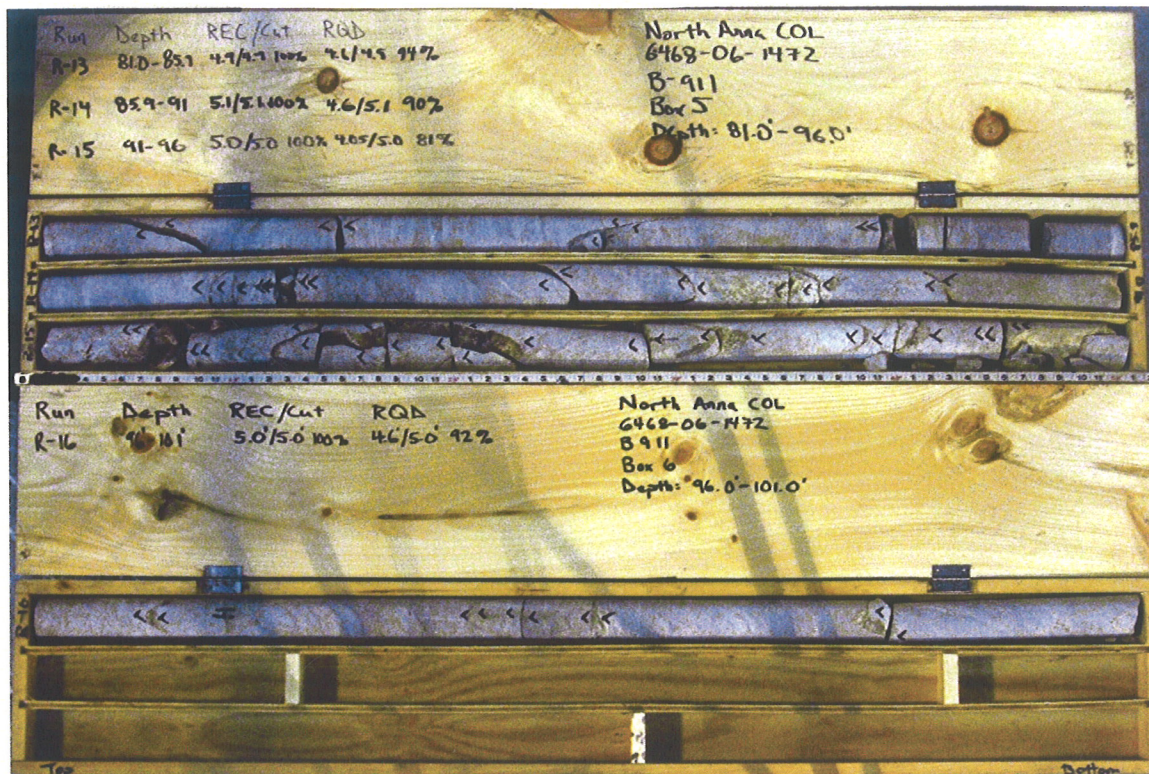
B-911 - Box 1

B-911 - Box 2



B-911 - Box 3

B-911 - Box 4



B-911 - Box 5

B-911 - Box 6



SHEET 1 OF 1

MACTEC PROJECT NO.: 6468-06-1472										COUNTY Louisa, VA					GEOLOGIST M. Lear/ J. Lachewitz														
SITE DESCRIPTION NORTH ANNA COL															GROUND WATER (ft)														
BORING NO. B-911A					DRILL METHOD: Mud Rotary					SAMPLE METHODS: UD/PITCHER BARREL					0 HR. ND														
COLLAR ELEV. 299.9 ft (NAVD88)					NORTHING 3,909,916					US ft (NAD83)					EASTING 11,686,001					US ft (NAD83)					24 HR. ND				
TOTAL DEPTH 21.7 ft					DRILL MACHINE CME 550 ATV					DRILLER: F. Cox					HAMMER TYPE NA														
DATE STARTED 10/24/06					COMPLETED 10/25/06					CORE BARREL TYPE: NA																			
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																			
299.9					Ground Surface									299.9	0.0														
															No samples due to utility clearance operations- soft dig/vac. truck excavation														
290.2	9.7										911A-UD-1			292.1	7.8														
285.2	14.7										911A-UD-2				Silty, fine to coarse SAND (SM), Tan, moist, micaceous, relict rock fabric (Residual Soil)														
280.2	19.7										911A-PB-1				911A-UD-1: Pushed from 9.7-11.7 ft; push pressure=1200-1500 psi; recovery=1.7 ft														
															911A-UD-2: Pushed from 14.7-15.5 ft; push pressure=1300 psi-weight of drill rig; recovery=0.6 ft														
															911A-PB-1: Advanced from 19.7-21.7 ft; recovery=0.9 ft														
															278.9 278.2	21.0 21.7													
															Weathered Rock: BIOTITE-QUARTZ GNEISS Boring terminated at 21.7 ft in Weathered Rock: BIOTITE-QUARTZ GNEISS														