



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-939		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR.	17.8			
COLLAR ELEV. 254.0 ft (NAVD88)		NORTHING 3,911,318		US ft (NAD83)		EASTING 11,686,606		US ft (NAD83)		24 HR.	16.1			
TOTAL DEPTH 76.1 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto				
DATE STARTED 9/20/06		COMPLETED 9/21/06				CORE BARREL TYPE: HQ 3 triple tube-wireline								
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	
254.0					Ground Surface							254.0	0.0	
252.8	1.2	26	19	7										
250.2	3.8	4	6	9						939-1		250.5	3.5	
247.7	6.3	6	6	9						939-2		248.0	6.0	
245.2	8.8	4	3	7						939-3				
242.7	11.3	3	3	7						939-4				
240.2	13.8	4	7	8						939-5				
235.3	18.7	3	7	7						939-6				
230.2	23.8	7	11	9						939-7				
225.2	28.8	5	7	5						939-8		228.0	26.0	
220.2	33.8	3	3	5						939-9				
215.2	38.8	15	25	42						939-10		216.0	38.0	
210.2	43.8	27	48	50/0.3						939-11				
205.2	48.8	50/0.2								939-12		209.2	44.8	
202.8	51.2	50/0.1								939-13				
192.8	61.2	50/0.4								939-14				
187.9	66.1	50/0.4								939-15				
182.9	71.1	50/0.2								939-16				
		50/0.2								939-17				

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



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely							
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)					
BORING NO. B-939			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE			0 HR. 17.8					
COLLAR ELEV. 254.0 ft (NAVD88)			NORTHING 3,911,318		US ft (NAD83)		EASTING 11,686,606		US ft (NAD83)		24 HR. 16.1				
TOTAL DEPTH 76.1 ft			DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/20/06				COMPLETED 9/21/06				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	
179.2					Continued from previous page										
													177.9	76.1	Boring and coring terminated at 76.1 ft in Weathered Rock: Severely weathered, medium hard, BIOTITE-QUARTZ GNEISS

NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0 GP1 NORTH ANNA COL.GDT 1/19/07



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA		GEOLOGIST S. Nicely	
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)
BORING NO. B-939		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/CORE			0 HR. 17.8
COLLAR ELEV. 254.0 ft (NAVD88)		NORTHING 3,911,318		US ft (NAD83)	EASTING 11,686,606	US ft (NAD83)	24 HR. 16.1
TOTAL DEPTH 76.1 ft		DRILL MACHINE CME 55 Truck		DRILLER: H. Meyerson		HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/20/06			COMPLETED 9/21/06		CORE BARREL TYPE: HQ 3 triple tube-wireline		
CORE SIZE HQ3			TOTAL RUN 26.0 ft				

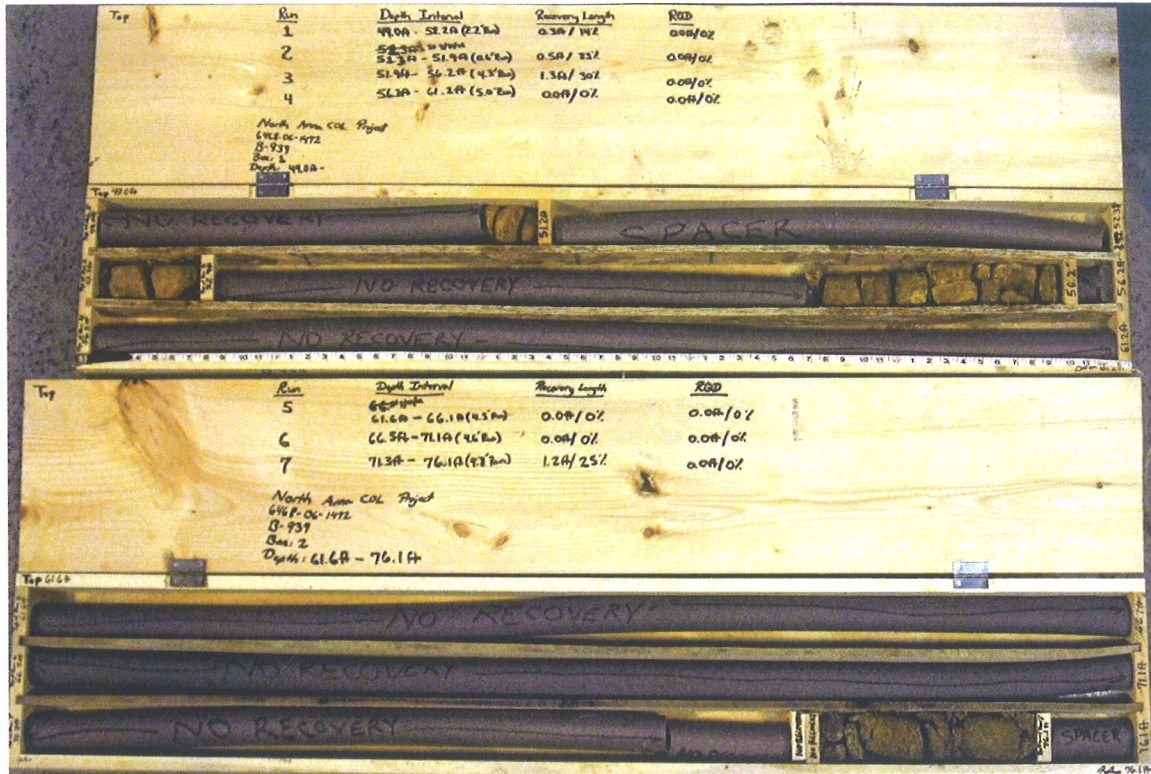
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 49.0 ft
205.0	49.0	2.2	2:02	(0.3)	(0.0)	1				Weathered Rock: Yellowish brown (10YR 5/8&5/6), light brownish red and reddish brown, severely weathered, very close to close fracturing, soft to medium hard, BIOTITE-QUARTZ GNEISS (continued) -Highly fractured and weathered throughout run -Lense of Hard Rock: Light gray with reddish brown, moderately weathered, very close to close fracturing, hard, BIOTITE-QUARTZ GNEISS from 51.3-51.8 ft -Highly fractured and weathered throughout run with vertical fractures -No Recovery -No Recovery -No Recovery -Highly fractured and weathered throughout run
202.8	51.2		2:30/1.2	14%	0%					
202.7	51.3	0.6	N=50/0.1	(0.5)	(0.0)	939-14				
202.1	51.9	4.3	17:13/0.6	83%	0%	2				
			3:17/1.3	(1.3)	(0.0)	3				
			5:43							
			4:31	30%	0%					
197.8	56.2		3:01							
		5.0	1:21	(0.0)	(0.0)	4				
			0:48	0%	0%					
			0:44							
192.8	61.2		0:56							
			0:52							
192.4	61.6	4.5	N=50/0.4	(0.0)	(0.0)	939-15				
			1:27	0%	0%	5				
			1:47							
187.9	66.1		1:56							
			2:26/1.5							
187.5	66.5	4.6	N=50/0.4	(0.0)	(0.0)	939-16				
			2:16	0%	0%	6				
			1:44							
182.9	71.1		0:49							
			2:31/1.6							
182.7	71.3	4.8	N=50/0.2	(1.2)	(0.0)	939-17				
			1:45	25%	0%	7				
			1:46							
			2:40							
177.9	76.1		2:27							
			3:00/0.8							

177.9

76.1

Coring terminated at 76.1 ft in Weathered Rock: Severely weathered, medium hard, BIOTITE-QUARTZ GNEISS

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



B-939 - Box 1
B-939 - Box 2



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely				
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-940		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 15.9		
COLLAR ELEV. 268.3 ft (NAVD88)		NORTHING 3,910,267		US ft (NAD83)		EASTING 11,688,901		US ft (NAD83)		24 HR. ND		
TOTAL DEPTH 76.1 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto		
DATE STARTED 11/2/06		COMPLETED 11/3/06				CORE BARREL TYPE: HQ 3 triple tube-wireline						
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			
268.3					Ground Surface							268.3 0.0
												No samples due to utility clearance operations- soft dig/vac. truck excavation
260.5	7.8											260.5 7.8
257.3	11.0	14	28	40						940-1		Silty, fine to coarse SAND (SM) olive brown (2.5Y 4/3) and light olive brown (2.5Y 5/4), dry to moist, dense and very dense (Residual Soil)
254.5	13.8	11	15	22						940-2		
249.8	18.5	15	19	30						940-3		
249.8	18.5	50/0.0										249.8 18.5
242.1	26.2	34	50	41						940-4		Hard Rock: dark gray, moderately weathered, very close to close fracturing, hard to soft, QUARTZ-BIOTITE GNEISS Weathered Rock: Dark brown and dark gray, severely weathered, very close to close fracturing, medium hard to very soft, QUARTZ-BIOTITE GNEISS
237.1	31.2	27	37	50/0.4						940-5		
												247.1 21.2
												234.7 33.6
												232.2 36.1
												228.2 40.1
												202.1 65.2
												Hard Rock: Dark brown to light gray, moderately severe to moderately weathered, very close to close fracturing, soft to medium hard, QUARTZ-BIOTITE GNEISS Weathered Rock: Dark gray, severely weathered, very close to close fracturing, very soft to medium hard, QUARTZ-BIOTITE GNEISS
												Hard Rock: Dark brown and dark to light gray, moderately severe to slightly weathered, very close to moderately close fracturing, soft to very hard, QUARTZ-BIOTITE GNEISS to 56.2 ft then BIOTITE-QUARTZ GNEISS
												Hard Rock: Light gray, very slightly weathered to fresh, very close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS

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



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely			
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)	
BORING NO. B-940			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE			0 HR. 15.9	
COLLAR ELEV. 268.3 ft (NAVD88)			NORTHING 3,910,267		US ft (NAD83)		EASTING 11,688,901		US ft (NAD83)		24 HR. ND
TOTAL DEPTH 76.1 ft			DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto	
DATE STARTED 11/2/06				COMPLETED 11/3/06				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	
193.5					Continued from previous page										

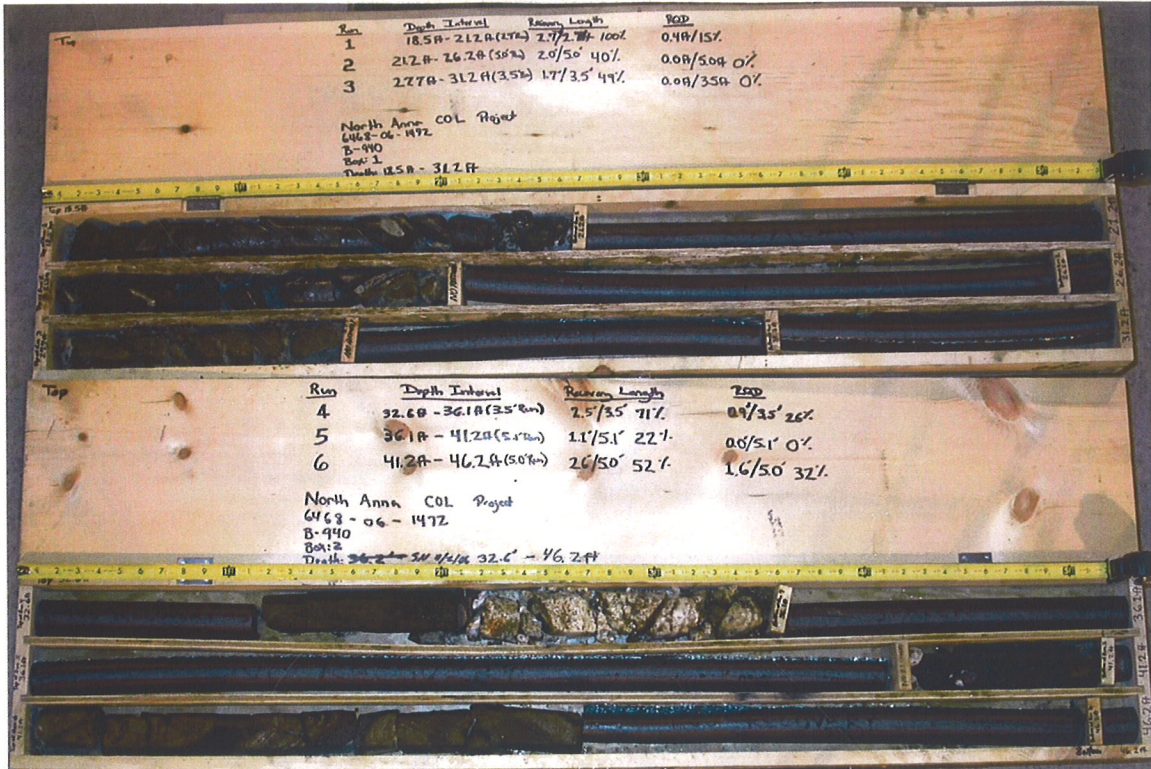
														192.2	76.1	Boring and coring terminated at 76.1 ft in Hard Rock: Hard to very hard, BIOTITE-QUARTZ GNEISS
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NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST S. Nicely		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-940			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE				0 HR. 15.9		
COLLAR ELEV. 268.3 ft (NAVD88)			NORTHING 3,910,267		US ft (NAD83)		EASTING 11,688,901		US ft (NAD83)		24 HR. ND	
TOTAL DEPTH 76.1 ft			DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto			
DATE STARTED 11/2/06			COMPLETED 11/3/06			CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 54.7 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS		
				REC. (%)	RQD (%)		REC. (%)	RQD (%)				
										Begin Coring @ 18.5 ft		
249.8	18.5	2.7	N=50/0.0 3:24	(2.7)	(0.4)	1				249.8	Hard Rock: dark gray, moderately weathered, very close to close fracturing, hard to soft, QUARTZ-BIOTITE GNEISS	
247.1	21.2		6:27	100%	15%					247.1	-Highly fractured with Fe and Mn staining, quartz vein at 20.3 ft	
		5.0	3:15/0.7 3:10 2:59 1:37 1:13 1:23 N=91	(2.0)	(0.0)	2					Weathered Rock: Dark brown and dark gray, severely weathered, very close to close fracturing, medium hard to very soft, QUARTZ-BIOTITE GNEISS -No recovery 23.2-26.2 ft	
242.1	26.2											
						940-5						
240.6	27.7	3.5	4:18 1:50 1:34	(1.7)	(0.0)	3					-Highly fractured, no recovery from 27.7-31.2 ft	
237.1	31.2			49%	0%							
			0:42/0.5 N=50/0.4			940-6						
235.7	32.6	3.5	3:31 1:53 2:17/1.5	(2.5)	(0.9)	4				234.7	-Highly fractured quartz vein from 34.7-36.1 ft	
232.2	36.1			71%	26%					232.2	Hard Rock: Dark brown to light gray, moderately severe to moderately weathered, very close to close fracturing, soft to medium hard, QUARTZ-BIOTITE GNEISS	
		5.1	1:57 4:31 2:30 3:30 3:33/1.1	(1.1)	(0.0)	5				228.2	Weathered Rock: Dark gray, severely weathered, very close to close fracturing, very soft to medium hard, QUART-BIOTITE GNEISS -Quartz vein from 36.1-36.2 ft, no recovery from 36.2-40.1 ft	
227.1	41.2			22%	0%						Hard Rock: Dark brown and dark to light gray, moderately severe to slightly weathered, very close to moderately close fracturing, soft to very hard, QUARTZ-BIOTITE GNEISS to 56.2 ft then BIOTITE-QUARTZ GNEISS -Highly fractured, no recovery from 43.8-46.2 ft	
		5.0	2:29 3:06 2:41 3:16 3:11	(2.6)	(1.6)	6						
222.1	46.2			52%	32%							
		5.0	3:24 3:09 1:59 2:44 1:51	(4.2)	(0.0)	7					-Highly fractured; quartz vein at 49.6 ft and from 48.6-49.4 ft	
217.1	51.2			84%	0%							
		5.0	1:23 1:48 2:11 2:02 2:29	(4.1)	(1.7)	8					-Highly fractured; quartz vein from 54.2-54.4 ft	
212.1	56.2			82%	34%							
		5.0	2:38 3:38 3:42 3:37 3:43	(4.8)	(4.1)	9					(5 joints at 60-65°)	
207.1	61.2			96%	82%							
		5.0	1:46 1:17 1:16 1:27 2:49	(2.7)	(1.9)	10					(2 joints at 10° with Fe staining; 1 joint at 50°; no recovery from 61.2-63.5 ft)	
202.1	66.2			54%	38%					202.1		
		4.9	2:34 3:42 3:38 4:17 3:58/0.9	(4.9)	(4.7)	11					Hard Rock: Light gray, very slightly weathered to fresh, very close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (2 joints at 40°; 1 joint at 70° with Fe staining and unknown radiating mineral)	
197.2	71.1			100%	96%							
		5.0	3:12 3:15 3:12 3:31 3:02	(5.0)	(4.2)	12					(1 joint at 45°, 1 joint at 75°)	
192.2	76.1			100%	84%					192.2	Coring terminated at 76.1 ft in Hard Rock: Hard to very hard, BIOTITE-QUARTZ GNEISS	

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



B-940 - Box 1
B-940 - Box 2



B-940 - Box 3
B-940 - Box 4



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Lachewitz / J. Wallen							
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)					
BORING NO. B-941		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND					
COLLAR ELEV. 267.2 ft (NAVD88)		NORTHING 3,910,404		US ft (NAD83)		EASTING 11,688,913		US ft (NAD83)		24 HR. 11.0					
TOTAL DEPTH 75.8 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins				HAMMER TYPE 140 lbs Auto					
DATE STARTED 11/1/06			COMPLETED 11/2/06			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	
267.2					Ground Surface								267.2	0.0	
258.7	8.5												258.7	8.5	No samples due to utility clearance operations-soft dig/ vac. truck excavation
256.2	11.0	16	33	40						941-1					Silty, fine to medium SAND (SM) light olive brown (2.5Y 5/4) and yellowish brown (10YR 5/6), moist, dense to very dense, relic rock fabric (Residual Soil)
252.8	14.4	17	42	50						941-2					
247.8	19.4	22	20	21						941-3					
242.8	24.4	33	32	50						941-4					
237.8	29.4	16	50/0.3							941-5					
233.7	33.5	26	50/0.2							941-6					
226.1	41.1	50/0.2								941-7					
220.8	46.4	21	50/0.4							941-8					
		11	15	33						941-9					
													244.2	23.0	Weathered Rock: Very dark gray (10YR 3/1) to gray and yellowish brown (yellowish brown (10YR5/6), moist, very dense, severely weathered, very soft to medium hard, BIOTITE-QUARTZ GNEISS
													222.2	45.0	Silty, fine to medium SAND (SM) very dark brown (10YR 2/2), moist, dense (Residual Soil)
													217.7	49.5	Hard Rock: Dark gray, moderately severe to moderately weathered, very close to close fracturing, soft to moderately hard, BIOTITE-QUARTZ GNEISS
													205.8	61.4	Hard Rock: Gray, slightly to very slightly weathered, close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS

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 / J. Wallen		
SITE DESCRIPTION NORTH ANNA COL						GROUND WATER (ft)		
BORING NO. B-941		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/CORE			0 HR. ND	
COLLAR ELEV. 267.2 ft (NAVD88)		NORTHING 3,910,404 US ft (NAD83)		EASTING 11,688,913 US ft (NAD83)		24 HR. 11.0		
TOTAL DEPTH 75.8 ft		DRILL MACHINE CME 550 ATV		DRILLER: G. Akins		HAMMER TYPE 140 lbs Auto		
DATE STARTED 11/1/06		COMPLETED 11/2/06		CORE BARREL TYPE: HQ 3 triple tube-wireline				

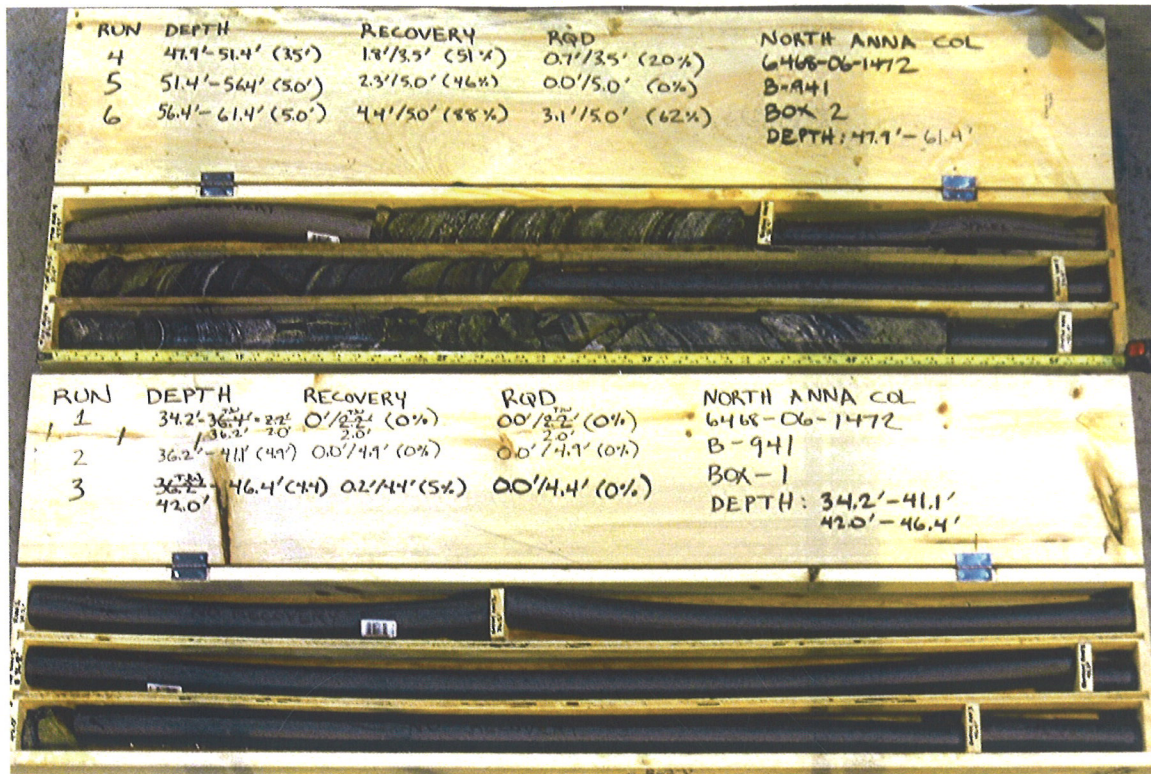
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
192.4															Continued from previous page	
															191.4	Boring and coring terminated at 75.8 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS
															75.8	

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



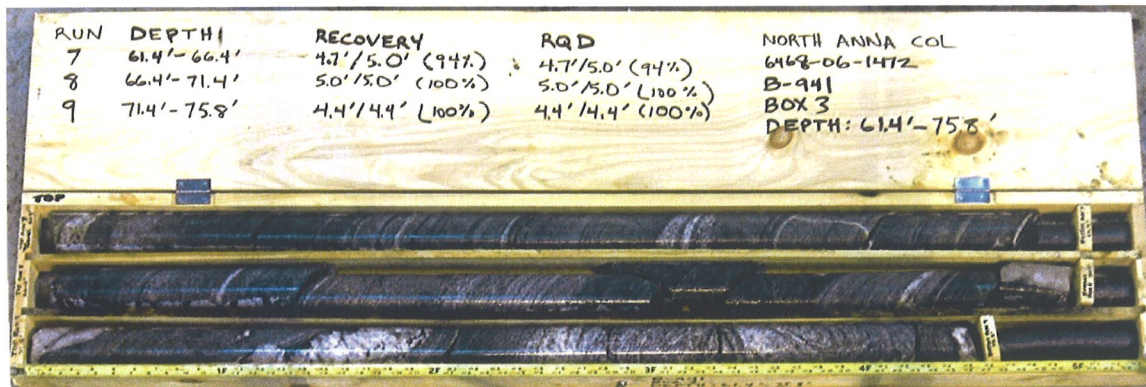
MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST J. Lachewitz / J. Wallen		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-941		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND		
COLLAR ELEV. 267.2 ft (NAVD88)		NORTHING 3,910,404		US ft (NAD83)		EASTING 11,688,913		US ft (NAD83)		24 HR. 11.0		
TOTAL DEPTH 75.8 ft		DRILL MACHINE CME 550 ATV				DRILLER: G. Akins			HAMMER TYPE 140 lbs Auto			
DATE STARTED 11/1/06			COMPLETED 11/2/06			CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 39.2 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (%)	RQD (%)	SAMP. NO.	REC. (%)	RQD (%)	LOG	DESCRIPTION AND REMARKS		
										Begin Coring @ 34.2 ft		
233.0	34.2	2.0	1:08	(0.0)	(0.0)	1				Weathered Rock: Very dark gray (10YR 3/1) to gray and yellowish brown (yellowish brown (10YR5/6), moist, very dense, severely weathered, very soft to medium hard, BIOTITE-QUARTZ GNEISS (continued) -No Recovery -No Recovery		
231.0	36.2	4.9	1:19	0%	0%	2						
			0:56	(0.0)	(0.0)							
			1:05	0%	0%							
			1:16									
226.1	41.1		1:32									
			1:07/0.9									
			N=50/0.4			941-8						
225.2	42.0	4.4	2:43/1.1	(0.2)	(0.0)	3						
			2:37	5%	0%					222.2 ----- 45.0 Silty, fine to medium SAND (SM) very dark brown (10YR 2/2), moist, dense (Residual Soil)		
220.8	46.4		2:42									
			1:48/1.3							217.7 ----- 49.5 (10 joints at 30°)		
219.3	47.9	3.5	2:16	(1.8)	(0.7)	4						
			1:40	51%	20%							
			1:32							Hard Rock: Dark gray, moderately severe to moderately weathered, very close to close fracturing, soft to moderately hard, BIOTITE-QUARTZ GNEISS (11 joints at 30°)		
215.8	51.4	5.0	0:30/0.5	(2.3)	(0.0)	5						
			1:56	46%	0%							
			1:58									
210.8	56.4	5.0	2:16	(4.4)	(3.1)	6				(5 joints at 20-30°, 2 joints at 50°, 1 joint at 70°)		
			2:23	88%	62%							
			3:40									
			3:02									
205.8	61.4	5.0	3:36							205.8 ----- 61.4 Hard Rock: Gray, slightly to very slightly weathered, close to moderately close fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (5 joints at 30°)		
			2:41	(4.7)	(4.7)	7						
			2:37	94%	94%							
200.8	66.4	5.0	3:07							(3 joints at 40°, 1 joint at 70°, Quartz vein at 80° from 71.1-71.4 ft)		
			1:21	(5.0)	(5.0)	8						
			1:42	100%	100%							
			1:46									
195.8	71.4	4.4	2:37	(4.4)	(4.4)	9				(1 joint at 40°; Quartz veins at 80° from 71.4-71.7 ft and at 50° from 72.4-73.2 ft, trace garnet in and around veins)		
			4:19	100%	100%							
			4:06									
			3:17									
191.4	75.8		4:58							75.8 ----- Coring terminated at 75.8 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS		
			3:08/0.4									

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



B-941 - Box 2

B-941 - Box 1



B-941 - Box 3



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely					
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)			
BORING NO. B-942		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 3.2			
COLLAR ELEV. 291.9 ft (NAVD88)		NORTHING 3,909,615		US ft (NAD83)		EASTING 11,684,326		US ft (NAD83)		24 HR. 3.8			
TOTAL DEPTH 100.8 ft		DRILL MACHINE CME 550 ATV				DRILLER: F. Cox (Knoxville 550)				HAMMER TYPE 140 lbs Auto			
DATE STARTED 10/16/06		COMPLETED 10/18/06				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
291.9					Ground Surface							291.9	0.0
291.9	0.0	5	3	5							942-1		Clayey SILT (MH) dark brown (7.5YR 3/4), moist, medium stiff, contains root fragments
288.9	3.0	10	13	13							942-2		(Residual Soil) Silty, fine to coarse SAND (SM) strong brown (7.5YR 4/6), moist, medium dense to very dense (Residual Soil)
283.8	8.1										942-3		
282.3	9.6	28	44	44							942-4		
279.9	12.0	36	50/0.5								942-5		
278.9	13.0	12	50/0.5								942-6		
273.4	18.5	39	50/0.2								942-7		Weathered Rock: Strong brown (7.5YR 4/6), dark yellowish brown (10YR 4/4), and very dark grayish brown (10YR 3/2), moist, very dense, severely weathered, QUARTZ-BIOTITE GNEISS
268.2	23.7	25	46	50/0.3							942-8		
264.1	27.8										942-9		
263.2	28.7	50/0.4									942-10		Hard Rock: Dark gray, slightly weathered, close fracturing, very hard, QUARTZ-BIOTITE GNEISS
		50/0.2											Hard Rock: Dark gray, fresh, wide to very wide fracturing, very hard, QUARTZ-BIOTITE GNEISS with trace pyrite

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



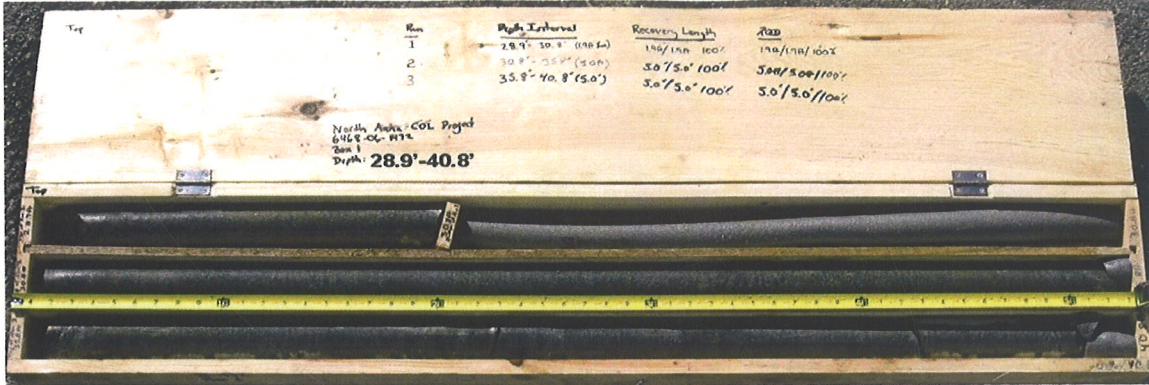
MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S. Nicely						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)				
BORING NO. B-942		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 3.2				
COLLAR ELEV. 291.9 ft (NAVD88)		NORTHING 3,909,615		US ft (NAD83)		EASTING 11,684,326		US ft (NAD83)		24 HR. 3.8				
TOTAL DEPTH 100.8 ft		DRILL MACHINE CME 550 ATV				DRILLER: F. Cox (Knoxville 550)				HAMMER TYPE 140 lbs Auto				
DATE STARTED 10/16/06			COMPLETED 10/18/06			CORE BARREL TYPE: HQ 3 triple tube-wireline								
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	
217.0					Continued from previous page									
												Hard Rock: Dark gray, fresh, wide to very wide fracturing, very hard, QUARTZ-BIOTITE GNEISS with trace pyrite (continued)		
												191.1		Boring and coring terminated at 100.8 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS
													100.8	

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



MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST S. Nicely		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-942			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 3.2	
COLLAR ELEV. 291.9 ft (NAVD88)			NORTHING 3,909,615		US ft (NAD83)		EASTING 11,684,326		US ft (NAD83)		24 HR. 3.8	
TOTAL DEPTH 100.8 ft			DRILL MACHINE CME 550 ATV				DRILLER: F. Cox (Knoxville 550)			HAMMER TYPE 140 lbs Auto		
DATE STARTED 10/16/06			COMPLETED 10/18/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 71.9 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS		
				REC. (%)	RQD (%)		REC. (%)	RQD (%)				
Begin Coring @ 28.9 ft										28.9		
263.0	28.9	1.9	2:58	(1.9)	(1.9)	1				263.0	Hard Rock: Dark gray, slightly weathered, close fracturing, very hard, QUARTZ-BIOTITE GNEISS	28.9
261.1	30.8	5.0	7:11/0.9	100%	100%	2				261.1	Hard Rock: Dark gray, fresh, wide to very wide fracturing, very hard, QUARTZ-BIOTITE GNEISS with trace pyrite	30.8
			4:48	(5.0)	(5.0)						-No Joints	
			3:08	100%	100%							
			3:25									
256.1	35.8	5.0	3:06			3					-No Joints	
			3:16									
			3:02	(5.0)	(5.0)							
			3:12	100%	100%							
			2:52									
251.1	40.8	5.0	3:00			4					-No Joints	
			2:59									
			2:57	(5.0)	(5.0)							
			2:58	100%	100%							
			2:25									
246.1	45.8	5.0	2:55			5					-No Joints	
			2:52									
			2:11	(5.0)	(5.0)							
			2:37	100%	100%							
			2:43									
241.1	50.8	5.0	2:06			6					-No Joints	
			2:37									
			2:40	(5.0)	(5.0)							
			2:50	100%	100%							
			2:47									
236.1	55.8	5.0	2:15			7					-No Joints	
			2:54									
			2:57	(5.0)	(5.0)							
			3:17	100%	100%							
			2:41									
231.1	60.8	5.1	2:34			8					-No Joints	
			2:50									
			2:53	(5.1)	(5.1)							
			2:45	100%	100%							
			2:58									
226.0	65.9	4.8	3:02			9					-No Joints	
			2:53/1.1									
			2:52	(4.8)	(4.8)							
			3:23	100%	100%							
			3:27									
221.2	70.7	5.0	2:37			10					(1 joint at 25°)	
			2:44/0.8									
			3:28	(5.0)	(5.0)							
			2:59	100%	100%							
			3:29									
216.2	75.7	5.0	2:58			11					-No Joints	
			3:26									
			2:39	(5.0)	(5.0)							
			2:53	100%	100%							
			2:42									
211.2	80.7	5.1	2:40			12					-No Joints	
			2:53									
			2:26	(5.1)	(5.1)							
			2:29	100%	100%							
			2:27									
206.1	85.8	5.0	2:46			13					(1 joint at 20°)	
			2:50/1.1									
			2:28	(5.0)	(5.0)							
			2:24	100%	100%							
			2:56									
201.1	90.8	5.0	2:44			14					-No Joints	
			1:57									
			2:18	(5.0)	(5.0)							
			2:11	100%	100%							
			2:04									
196.1	95.8	5.0	2:27			15					-No Joints	
			2:32									
			2:20	(5.0)	(5.0)							
			2:27	100%	100%							
			2:24									
191.1	100.8		2:47							191.1	Coring terminated at 100.8 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS	100.8
			2:37									

NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV.0.GPJ NORTH ANNA COL.GDT 1/19/07



B-942 - Box 1



B-942 - Box 2

B-942 - Box 3



B-942 - Box 4
B-942 - Box 5