



SHEET 1 OF 1

MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S.Lehman					
SITE DESCRIPTION NORTH ANNA COL								GROUND WATER (ft)					
BORING NO. B-921		DRILL METHOD: Mud Rotary			SAMPLE METHODS: SPT			0 HR. ND					
COLLAR ELEV. 308.0 ft (NAVD88)		NORTHING 3,909,680		US ft (NAD83)		EASTING 11,686,163		US ft (NAD83)		24 HR. ND			
TOTAL DEPTH 73.9 ft		DRILL MACHINE CME 55LC Track			DRILLER: D. White			HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/8/06		COMPLETED 9/8/06			CORE BARREL TYPE: NA								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
308.0					Ground Surface								308.0 0.0
306.5	1.5	6	6	5	11						921-1		Silty, fine to coarse SAND (SM), olive brown (2.5Y 4/3) to light olive brown (2.5Y 5/3), dry to moist, medium dense to loose, clayey (Fill)
304.5	3.5	4	3	2	5						921-2		
302.0	6.0	2	4	5	9						921-3		Sandy CLAY (CL), olive (5Y 4/2), moist, medium stiff, contains organic debris (Residual Soil)
299.5	8.5	2	3	4	7						921-4		
297.0	11.0	3	4	5	9						921-5		Silty SAND (SM), olive yellow (5Y 6/6), light olive brown (2.5Y 5/4) to olive brown (2.5Y 4/4), moist to wet, loose to medium dense, micaceous, relict rock fabric (Residual Soil)
294.5	13.5	2	3	4	7						921-6		
289.2	18.8	3	3	4	7						921-7		
284.2	23.8	3	4	6	10						921-8		
279.2	28.8	9	9	10	19						921-9		
274.2	33.8	7	9	11	20						921-10		
269.2	38.8	8	12	23	35						921-11		Silty, fine SAND (SM), very dark grayish brown (2.5Y 3/2), moist, dense to very dense, strong rock fabric (Residual Soil)
264.2	43.8	22	24	35	59						921-12		
259.2	48.8	50/0.1									921-13		Weathered Rock: Very dark grayish brown (2.5Y 3/2), dry, very dense, severely weathered, soft, BIOTITE GNEISS
254.2	53.8	50/0.3									921-14		
249.2	58.8	41	50/0.4								921-15		
244.2	63.8	25	35	35	70						921-16		Silty, fine SAND (SM), black (2.5Y 2.5/1) to strong brown (7.5YR 5/6), moist, very dense, strong rock fabric (Residual Soil)
239.2	68.8	28	50/0.4								921-17		Weathered Rock: Strong brown (7.5YR 5/6) with black and white, moist, very dense, severely weathered, BIOTITE GNEISS
234.2	73.8	50/0.1									921-18		Hard Rock: Black to very dark gray, mod. severely weathered, hard, BIOTITE GNEISS

Boring terminated at 73.9 ft in Hard Rock:
Moderately hard, QUARTZ-BIOTITE GNEISS

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

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



SHEET 1 OF 1

MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST J. Howard/S. Lehman							
SITE DESCRIPTION NORTH ANNA COL								GROUND WATER (ft)							
BORING NO. B-922		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND					
COLLAR ELEV. 271.3 ft (NAVD88)		NORTHING 3,909,944		US ft (NAD83)		EASTING 11,686,233		US ft (NAD83)		24 HR. ND					
TOTAL DEPTH 26.5 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/29/06		COMPLETED 10/2/06				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					
271.3					Ground Surface								271.3	0.0	
269.8	1.5												Silty SAND (SM), pink (7.5YR 7/4) and reddish yellow (7.5YR 6/8), dry, medium dense to very dense, relict rock fabric (Residual Soil)		
267.5	3.8	3	2	15									922-1		
265.5	5.8	23	26	28									922-2		
262.5	8.8	25	50/0.3										922-3		
260.1	11.2	50/0.3											922-4		
		50/0.1					922-5						265.0	6.3	Weathered Rock: Orange gray, severely weathered, BIOTITE-QUARTZ GNEISS
													257.3	14.0	Hard Rock: Tan gray, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE-QUARTZ GNEISS
													244.8	26.5	Boring and coring terminated at 26.5 ft in Hard Rock: Hard, BIOTITE-QUARTZ GNEISS
															Boring abandoned at 26.5 ft due to rig in contact with underground electrical utility energizing rig.



SHEET 1 OF 1

MACTEC PROJECT NO.: 6468-06-1472										COUNTY Louisa, VA		GEOLOGIST J. Howard/S. Lehman	
SITE DESCRIPTION NORTH ANNA COL												GROUND WATER (ft)	
BORING NO. B-922		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. ND			
COLLAR ELEV. 271.3 ft (NAVD88)		NORTHING 3,909,944		US ft (NAD83)		EASTING 11,686,233		US ft (NAD83)		24 HR. ND			
TOTAL DEPTH 26.5 ft		DRILL MACHINE CME 55LC Track				DRILLER: D. White				HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/29/06				COMPLETED 10/2/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 15.2 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	LOG	DESCRIPTION AND REMARKS	
												Begin Coring @ 11.3 ft	
260.0	11.3	5.2	1:15 2:00 1:30 1:15 1:45/1.2	(2.5) 48%	(1.5) 29%		1					Weathered Rock: Orange gray, severely weathered, BIOTITE-QUARTZ GNEISS (continued) 14.0	
254.8	16.5											Hard Rock: Tan gray, moderately to very slightly weathered, close to moderately close fracturing, medium hard to hard, BIOTITE-QUARTZ GNEISS (1 joint at 60°, 2 joints at 20°, 1 joint at 5°)	
		5.0	2:00 2:00 2:15 1:45 3:00	(5.0) 100%	(4.0) 80%		2						
249.8	21.5											(6 joints at 10°, 4 joints at 70°)	
247.8	23.5	2.0	2:30 2:45	(4.7) 235%	(3.9) 195%		3					247.8 Coring terminated at 26.5 ft in Hard Rock: Hard, BIOTITE-QUARTZ GNEISS 23.5	
												Boring abandoned at 26.5 ft due to rig in contact with underground electrical utility energizing rig.	



B-922 - Box 1

NORTH ANNA COL DURE 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 B. Deobald						
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft) 0 HR. ND 24 HR. 3.0						
BORING NO. B-922A			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE									
COLLAR ELEV. 271.3 ft (NAVD88)			NORTHING 3,909,949		US ft (NAD83)		EASTING 11,686,244		US ft (NAD83)							
TOTAL DEPTH 76.5 ft			DRILL MACHINE CME 55LC Track				DRILLER: D. White			HAMMER TYPE 140 lbs Auto						
DATE STARTED 10/31/06			COMPLETED 11/1/06				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						
196.5					Continued from previous page											
														194.8	76.5	Boring and coring terminated at 76.5 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS

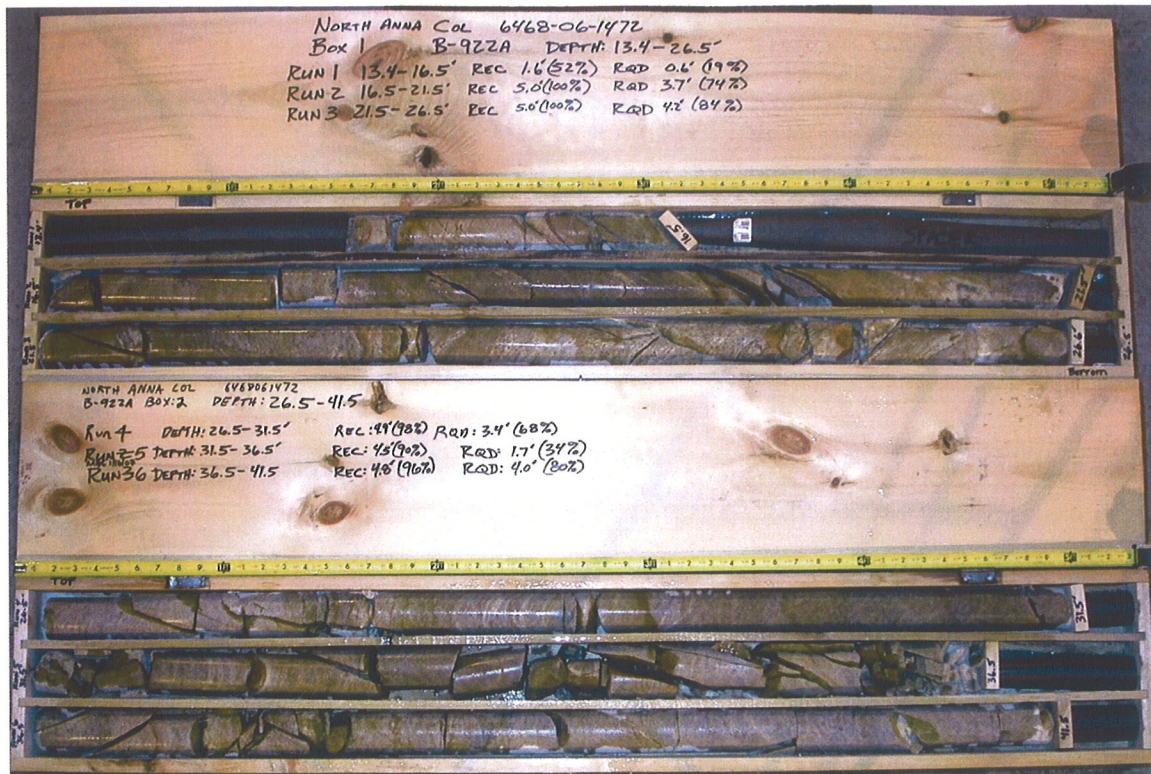
NORTH ANNA COL BURE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



SHEET 1 OF 1

MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST B. Deobald		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-922A			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE			0 HR. ND		
COLLAR ELEV. 271.3 ft (NAVD88)			NORTHING 3,909,949		US ft (NAD83)		EASTING 11,686,244		US ft (NAD83)		24 HR. 3.0	
TOTAL DEPTH 76.5 ft			DRILL MACHINE CME 55LC Track				DRILLER: D. White			HAMMER TYPE 140 lbs Auto		
DATE STARTED 10/31/06			COMPLETED 11/1/06				CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3			TOTAL RUN 63.1 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 @ 13.4 ft		
257.9	13.4	3.1	1:40	(1.6)	(0.6)	1				Hard Rock: Orange, pink, and light gray, moderately severely to slightly weathered, very close to moderately close fracturing, moderately hard to very hard, QUARTZ-BIOTITE GNEISS (<i>continued</i>) (3 joints at 10°, 2 joints at 30° with clay and Fe stain) (3 joints at 10°, 4 joints at 50° with Fe stain)		
254.8	16.5		1:50	52%	19%							
		5.0	2:30	(5.0)	(3.7)	2				(3 joints at 10°, 2 joints at 30° with clay and Fe stain) (3 joints at 10°, 4 joints at 50° with Fe stain)		
			2:15	100%	74%							
249.8	21.5		2:20							(3 joints at 10°, 6 joints at 50° with Fe stain)		
		5.0	1:55	(5.0)	(4.2)	3						
			1:40	100%	84%					(7 joints at 10°, 3 joints at 45°, 2 joints at 60°-all with Fe stain)		
244.8	26.5		2:00	(4.9)	(3.4)	4						
		5.0	2:10	98%	68%					(7 joints at 10°, 3 joints at 45°, 2 joints at 60°-all with Fe stain)		
			2:15	(4.9)	(3.4)	4						
239.8	31.5		2:20	(4.9)	(3.4)	4				(7 joints at 10°, 3 joints at 45°, 2 joints at 60°-all with Fe stain)		
		5.0	2:05	(4.9)	(3.4)	4						
			2:10	(4.5)	(1.7)	5				(7 joints at 50°, 4 joints at 45°, 2 joints at 80°-all with Fe stain; other joints not discernible)		
234.8	36.5		2:40	(4.5)	(1.7)	5						
		5.0	2:45	90%	34%					(7 joints at 0°, 1 joint at 45°, 3 joints at 70°-all with Fe stain)		
			4:40	(4.5)	(1.7)	5						
229.8	41.5		2:50	(4.8)	(4.0)	6				(7 joints at 0°, 1 joint at 45°, 3 joints at 70°-all with Fe stain)		
		5.0	2:05	(4.8)	(4.0)	6						
			3:20	(4.8)	(4.0)	6				(2 joints at 0°, 2 joints at 30°, 2 joints 45°-all with Fe stain)		
224.8	46.5		3:30	(4.7)	(4.0)	7						
		5.0	3:30	(4.7)	(4.0)	7				(2 joints at 0°, 2 joints at 30°, 2 joints 45°-all with Fe stain)		
			3:15	(4.7)	(4.0)	7						
219.8	51.5		2:40	(4.7)	(4.0)	7				(2 joints at 0°, 2 joints at 30°, 2 joints 45°-all with Fe stain)		
		5.0	2:46	(4.7)	(4.0)	7						
			3:05	(4.7)	(3.1)	8				(2 joints at 0°, 4 joints at 50°, 2 joints at 75°-all with Fe stain; other joints not discernible)		
214.8	56.5		2:59	(4.7)	(3.1)	8						
		5.0	2:40	(4.7)	(3.1)	8				(2 joints at 0°, 4 joints at 50°, 2 joints at 75°-all with Fe stain; other joints not discernible)		
			3:01	(4.7)	(3.1)	8						
209.8	61.5		3:24	(4.7)	(3.1)	8				(2 joints at 0°, 4 joints at 50°, 2 joints at 75°-all with Fe stain; other joints not discernible)		
		5.0	3:24	(4.7)	(3.1)	8						
			3:30	(4.7)	(3.1)	8				(2 joints at 0°, 4 joints at 50°, 2 joints at 75°-all with Fe stain; other joints not discernible)		
204.8	66.5		6:30	(4.7)	(3.1)	8						
		5.0	3:59	(2.2)	(0.0)	9				Weathered Rock: Severely weathered, QUARTZ-BIOTITE GNEISS with lense of Hard Rock: Light gray, moderately weathered, very close fracturing, hard, QUARTZ-BIOTITE GNEISS from 56.0-56.5 ft		
219.8	51.5		2:55	(2.2)	(0.0)	9						
		5.0	2:49	44%	0%					(3 joints at 45°, others not discernible)		
214.8	56.5		2:51	(2.2)	(0.0)	9						
			2:17	(2.2)	(0.0)	9				(3 joints at 45°, others not discernible)		
209.8	61.5		3:31	(3.3)	(2.3)	10						
		5.0	3:06	(3.3)	(2.3)	10				Hard Rock: Pink and gray, very slightly weathered to fresh, close to wide fracturing, very hard, QUARTZ-BIOTITE GNEISS		
			5:09	(3.3)	(2.3)	10						
204.8	66.5		3:30	(3.3)	(2.3)	10				(2 joints at 25°, 1 joint at 60°)		
		5.0	4:30	(3.3)	(2.3)	10						
			3:23	(5.0)	(5.0)	11				(2 joints at 25°, 1 joint at 60°)		
204.8	66.5		3:47	(5.0)	(5.0)	11						
		5.0	3:40	100%	100%					(2 joints at 20°, 2 joints at 45°, 1 joint at 60°)		
			3:52	(5.0)	(5.0)	11						
			3:35	(5.0)	(5.0)	11				(2 joints at 20°, 2 joints at 45°, 1 joint at 60°)		
199.8	71.5		4:11	(4.9)	(4.8)	12						
		5.0	5:05	(4.9)	(4.8)	12				(2 joints at 20°, 2 joints at 45°, 1 joint at 60°)		
			4:31	(4.9)	(4.8)	12						
194.8	76.5		4:17	(5.0)	(4.9)	13				(2 joints at 50°)		
		5.0	4:12	(5.0)	(4.9)	13						
			2:45	(5.0)	(4.9)	13				(2 joints at 50°)		
			3:01	(5.0)	(4.9)	13						
			2:12	100%	98%					Coring terminated at 76.5 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS		
194.8	76.5		2:11	100%	98%							
			2:06	100%	98%							

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



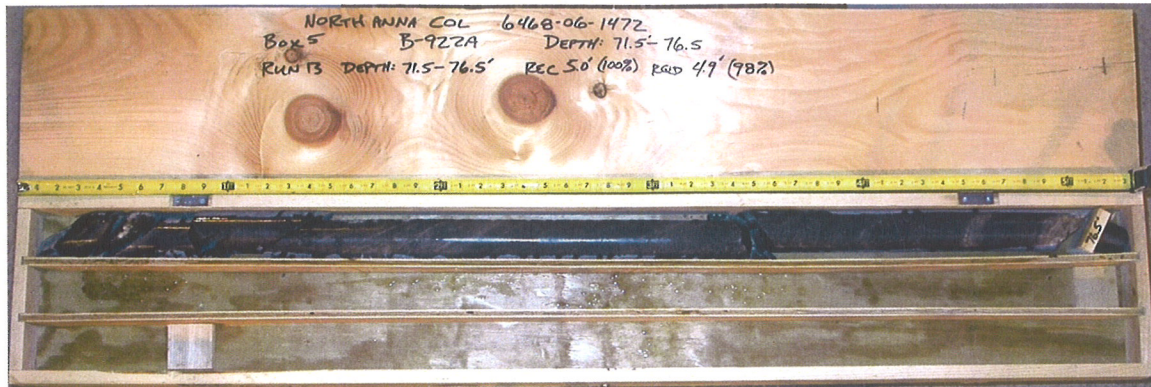
B-922A – Box 1

B-922A – Box 2



B-922A – Box 3

B-922A – Box 4



B-922A – Box 5