



MACTEC PROJECT NO.: 6468-06-1472					COUNTY Louisa, VA					GEOLOGIST S. Lehman					
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)					
BORING NO. B-908		DRILL METHOD: Rotary Wash/Core			SAMPLE METHODS: SPT/CORE					0 HR. 16.0					
COLLAR ELEV. 307.7 ft (NAVD88)		NORTHING 3,909,717		US ft (NAD83)		EASTING 11,686,061		US ft (NAD83)		24 HR. 17.1					
TOTAL DEPTH 151.4 ft		DRILL MACHINE CME 55LC Track			DRILLER: F. Cox					HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/13/06			COMPLETED 9/18/06			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	
307.7					Ground Surface								307.7	0.0	
306.2	1.5														
304.2	3.5	11	11	12							908-1		304.2	3.5	Silty, fine to medium SAND (SM) olive yellow (2.5Y 6/6) dry, medium dense (Residual Soil)
301.7	6.0	28	13	9							908-2		302.7	5.0	GRAVEL (GM) boulder of Weathered Rock: Light brown, very severely weathered, very soft to hard, GNEISS
299.2	8.5	6	6	5							908-3				Silty, fine to medium SAND (SM) strong brown to light yellowish brown (2.5Y 6/4) dry to moist, medium dense, saprolitic (Residual Soil)
296.7	11.0	4	6	7							908-4				
294.2	13.5	3	4	8							908-5				
289.0	18.7	7	6	5							908-6		291.7	16.0	SILT (ML) yellowish brown (10YR 5/6) moist, stiff, sandy (Residual Soil)
284.0	23.7	2	5	5							908-7		286.7	21.0	Silty, fine SAND (SM) dark yellowish brown (10YR 4/6), moist, medium dense, (Residual Soil)
279.0	28.7	5	6	9							908-8		280.7	27.0	Weathered Rock: sampled as SAND (SW), brownish yellow (10YR 6/6) to strong brown (7.5YR 5/6), moist, very dense, fine to coarse grained, Fe stained (GNEISS)
274.1	33.6	49	50/0.5								908-9				
269.1	38.6	50/0.3									908-10				
264.1	43.6	48	50/0.3								908-11				
259.1	48.6	50/0.3									908-12		261.2	46.5	Silty, fine SAND (SM) olive brown (2.5Y 4/4), moist, very dense (Residual Soil)
254.1	53.6	15	28	32							908-13		256.2	51.5	Weathered Rock: sampled as silty SAND (SM) dark yellowish brown (10YR 4/6), light reddish brown to light gray, moist, very dense, severely weathered, soft to moderately hard, GNEISS
249.1	58.6	28	50/0.2								908-14				
		50/0.2									908-15		245.0	62.7	Hard Rock: Light gray with orange Fe staining, moderately severe to slightly weathered, close to moderately close fracturing, soft to moderately hard, QUARTZ GNEISS with biotite

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



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TOTAL DEPTH 151.4 ft		DRILL MACHINE CME 55LC Track				DRILLER: F. Cox				HAMMER TYPE 140 lbs Auto						
DATE STARTED 9/13/06			COMPLETED 9/18/06			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		
232.9														Continued from previous page		
														231.3	76.4	Hard Rock: Light gray, moderately weathered to fresh, close to wide fracturing, medium hard to hard, QUARTZ GNEISS with biotite
														206.3	101.4	Weathered Rock: Severely weathered, BIOTITE GNEISS (No recovery)
														204.0	103.7	Hard Rock: Dark gray, moderately severe to slightly weathered, close fracturing, soft to moderately hard, BIOTITE GNEISS
														201.3	106.4	Hard Rock: Light to dark gray, fresh, wide fracturing, hard, QUARTZ-BIOTITE GNEISS
														193.0	114.7	Weathered Rock: Severely weathered, BIOTITE GNEISS (No recovery)
														192.4	115.3	Hard Rock: Light to dark gray with pink, slightly weathered to fresh, close to wide fracturing, moderately hard to hard, QUARTZ-BIOTITE GNEISS with trace pyrite and magnetite

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



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TOTAL DEPTH 151.4 ft		DRILL MACHINE CME 55LC Track				DRILLER: F. Cox				HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/13/06				COMPLETED 9/18/06				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	
158.1					Continued from previous page										
													156.3	151.4	Boring and coring terminated at 151.4 ft in Hard Rock: Hard, QUARTZ-BIOTITE GNEISS

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



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BORING NO. B-908			DRILL METHOD: Rotary Wash/Core			SAMPLE METHODS: SPT/CORE				0 HR. 16.0		
COLLAR ELEV. 307.7 ft (NAVD88)			NORTHING 3,909,717		US ft (NAD83)		EASTING 11,686,061		US ft (NAD83)		24 HR. 17.1	
TOTAL DEPTH 151.4 ft		DRILL MACHINE CME 55LC Track				DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto			
DATE STARTED 9/13/06			COMPLETED 9/18/06			CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 88.7 ft									
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS		
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %				
											Begin Coring @ 62.7 ft	
245.0	62.7	3.7	2:12 3:10 3:22	(3.2) 86%	(1.7) 46%	1					245.0 Hard Rock: Light gray with orange Fe staining, moderately severe to slightly weathered, close to moderately close fracturing, soft to moderately hard, QUARTZ GNEISS with biotite	
241.3	66.4	5.0	2:47/0.7 3:05 2:46 2:39 2:31 2:34	(5.0) 100%	(5.0) 100%	UC-67.5'					(2 joints at 20° with trace clay and Fe stain; 1 joint at 85° with Fe stain; 1 joint at 45° with trace clay and Fe stain) (1 joint at 40° and 2 joints at 20° with trace clay and Fe stain)	
236.3	71.4	5.0	2:15 1:40 3:38 4:38 5:03	(4.8) 96%	(3.7) 74%	3					(5 joints at 45° weathered with Fe stain; 1 joint at 30° weathered)	
231.3	76.4	5.0	3:50 2:50 2:20 2:50 2:21	(4.8) 96%	(4.8) 96%	UCS-79.4'					231.3 Hard Rock: Light gray, moderately weathered to fresh, close to wide fracturing, medium hard to hard, QUARTZ GNEISS with biotite (1 joint at 80° with Fe stain; 2 joints at 40° with trace clay and Fe stain)	
226.3	81.4	5.0	2:28 2:13 2:15 2:38 3:08	(5.0) 100%	(5.0) 100%	5					(1 joint at 45° weathered)	
221.3	86.4	5.0	2:04 1:52 2:16 2:04 1:50	(5.0) 100%	(5.0) 100%	6					(1 joint at 60°)	
216.3	91.4	5.0	2:22 1:52 2:02 2:25 2:36	(4.9) 98%	(4.9) 98%	UC-96.0'					-No Joints, slightly weathered in biotite rich zones at 91.6 ft and 93.1 ft	
211.3	96.4	5.0	2:07 2:18 3:00 2:30 2:40	(4.8) 96%	(3.9) 78%	8					(2 joints at 20° with Fe stain; 3 joints at 40° weathered)	
206.3	101.4	5.0	1:42 1:35 2:04 2:04 2:12	(2.5) 50%	(0.8) 16%	9					206.3 Weathered Rock: Severely weathered, BIOTITE GNEISS (No recovery)	
201.3	106.4	5.0	1:48 2:20 2:36 3:04 3:40	(5.0) 100%	(5.0) 100%	10					204.0 Hard Rock: Dark gray, moderately severe to slightly weathered, close fracturing, soft to moderately hard, BIOTITE GNEISS 201.3 Hard Rock: Light to dark gray, fresh, wide fracturing, hard, QUARTZ-BIOTITE GNEISS -No Joints	
196.3	111.4	3.3	3:40 3:03 3:04	(3.2) 97%	(3.2) 97%	UC-112.7'					(1 joint at 30° slightly weathered)	
193.0	114.7	0.6	1:21/0.3 4:54/0.7	(0.0) 0%	(0.0) 0%	12					193.0 Weathered Rock: Severely weathered, BIOTITE GNEISS (No recovery)	
192.4	115.3	1.1	3:45/1.1	(0.0) 0%	(0.0) 0%	13					192.4 -No recovery	
191.3	116.4	5.0	3:51 3:52 4:00 3:24 2:50	(1.1) 100%	(1.1) 100%	14					Hard Rock: Light to dark gray with pink, slightly weathered to fresh, close to wide fracturing, moderately hard to hard, QUARTZ-BIOTITE GNEISS with trace pyrite and magnetite (1 joint at 30° slightly weathered and Fe stained)	
186.3	121.4	5.0	3:01 2:34 2:49 3:25 2:25	(5.0) 100%	(5.0) 100%	15					-No Joints (1 joint at 45° slightly weathered)	
181.3	126.4	5.0	2:45 3:11 3:08 3:15 3:48	(5.0) 100%	(5.0) 100%	16					-No Joints	
176.3	131.4	5.0	5:13 3:17 2:28 2:42 2:35	(5.0) 100%	(5.0) 100%	UCS-135.7'					(1 joint at 45° and 1 joint at 80° both slightly weathered; quartz vein with pyrite and chlorite at 131.8 ft)	
171.3	136.4	5.0	2:56	(5.0)	(5.0)	18					-No Joints	

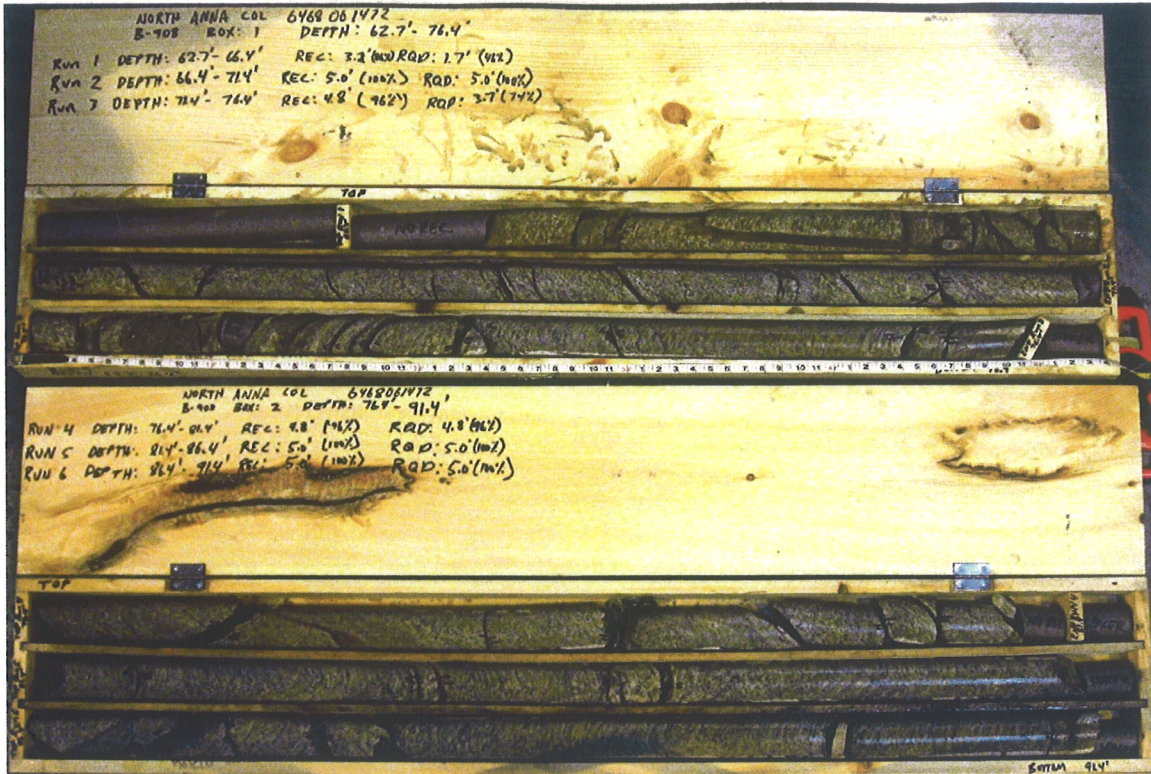
NORTH ANNA CO., SE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



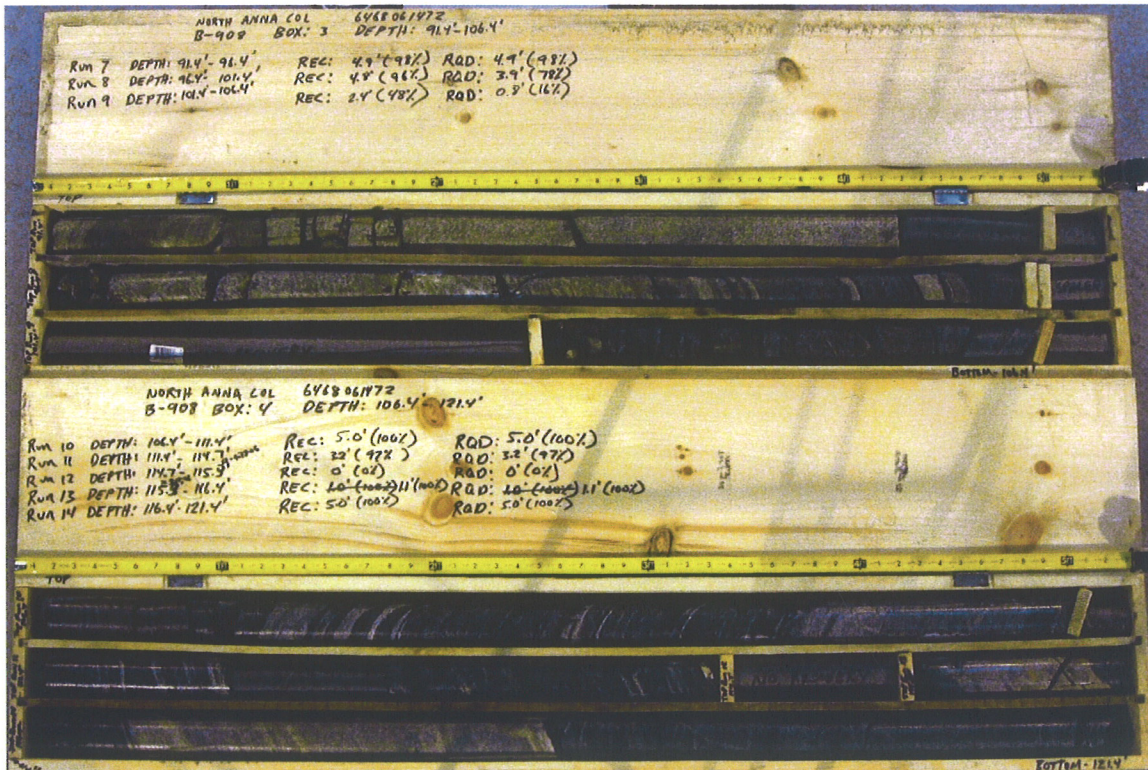
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COLLAR ELEV. 307.7 ft (NAVD88)		NORTHING 3,909,717		US ft (NAD83)		EASTING 11,686,061	24 HR. 17.1
TOTAL DEPTH 151.4 ft		DRILL MACHINE CME 55LC Track			DRILLER: F. Cox		HAMMER TYPE 140 lbs Auto
DATE STARTED 9/13/06			COMPLETED 9/18/06		CORE BARREL TYPE: HQ 3 triple tube-wireline		
CORE SIZE HQ3			TOTAL RUN 88.7 ft				

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (%)	RQD (%)		REC. (%)	RQD (%)		
			2:52 2:50 2:35 2:30	100%	100%					Continued from previous page
166.3	141.4	5.0	2:26 2:30 2:35 3:02 3:21	(5.0) 100%	(5.0) 100%	19				Hard Rock: Light to dark gray with pink, slightly weathered to fresh, close to wide fracturing, moderately hard to hard, QUARTZ-BIOTITE GNEISS with trace pyrite and magnetite (continued) (1 joint at 25° slightly weathered)
161.3	146.4	5.0	3:39 4:12 3:45 3:44 3:38	(5.0) 100%	(5.0) 100%	UC-146.8'				-No Joints
156.3	151.4									156.3 151.4 Coring terminated at 151.4 ft in Hard Rock: Hard, QUARTZ-BIOTITE GNEISS

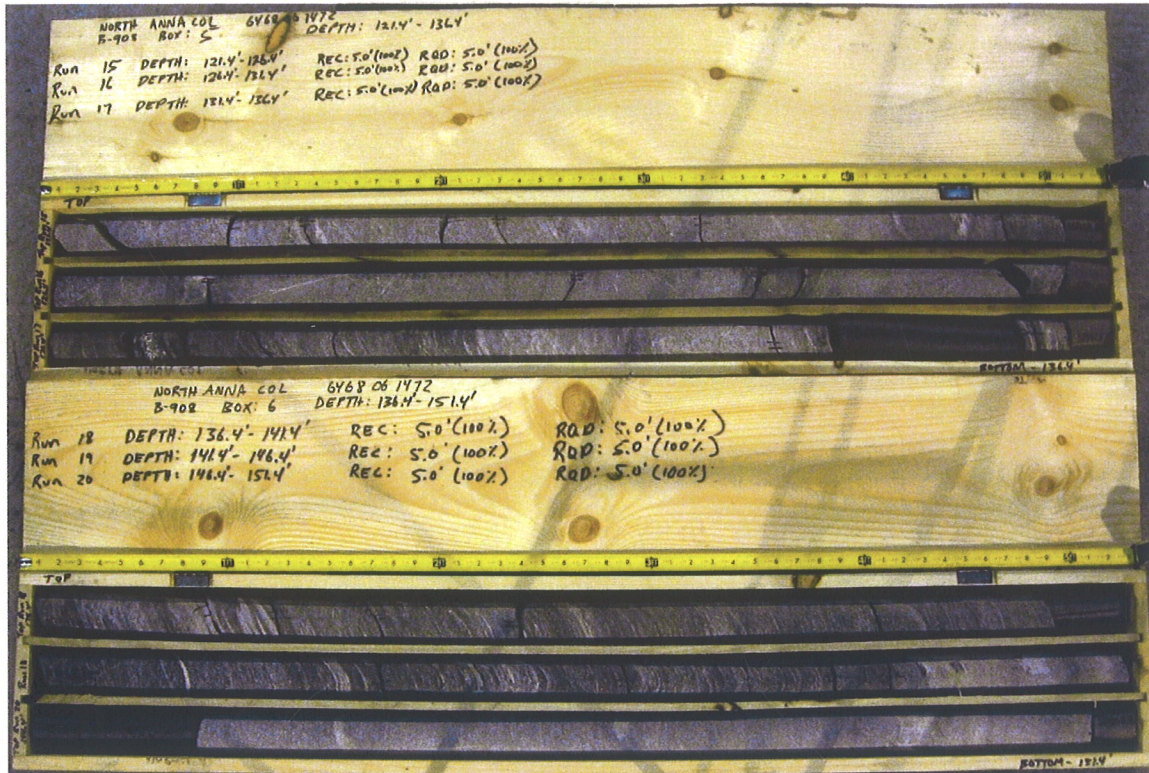
NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



B-908 - Box 1
B-908 - Box 2



B-908 - Box 3
B-908 - Box 4



B-908 - Box 5

B-908 - Box 6