GEOTECHNICAL BORING LOG

MACTEC

MACTEC PROJECT NO.: 6468-06-1472	COUNTY Louisa, VA	GEOLOGIST J. Lachewitz/ S. Lehman
SITE DESCRIPTION NORTH ANNA COL		GROUND WATER (ft)
BORING NO. B-916	DRILL METHOD: Rotary Wash/Core	SAMPLE METHODS: SPT/CORE
COLLAR ELEV. 276.2 ft (NAVD88)	NORTHING 3,910,050 US ft (NAD83)	EASTING 11,686,009 US ft (NAD83)
TOTAL DEPTH 100.3 ft	DRILL MACHINE CME 45 Trailer	DRILLER: F. Cox/D. Rhodes
DATE STARTED 9/28/06	COMPLETED 10/4/06	CORE BARREL TYPE: HQ 3 triple tube-wireline

GROUND WATER (ft)	
0 HR.	ND
24 HR.	ND

HAMMER TYPE 140 lbs Auto	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT (0 20 40 60 80 100)	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
276.2					Ground Surface				276.2 — 0.0
274.7	1.5								SILT (ML) strong brown (7.5YR 4/6), moist, medium stiff to very stiff, sandy, micaceous (Residual Soil)
272.7	3.5	1	2	3	5	916-1			
271.2	5.0	5	4	13	17	916-2			271.2 — 5.0
268.3	7.9	40	50/0.5			916-3			Fine to coarse SAND (SP) light brownish gray (2.5Y 6/2 and 10YR 6/2) and light yellowish brown (10YR 6/4), moist, very dense to dense, silty, micaceous, relict rock fabric (Residual Soil)
265.7	10.5	13	12	33	45	916-4			
263.3	12.9	19	12	12	24	916-5			
258.3	17.9	5	16	25	41	916-6			
253.3	22.9	11	17	16	33	916-7			
250.6	25.6	12	16	12	28	916-8			251.1 — 25.1
		50/0.0				916-9			250.6 — 25.6 Weathered Rock: BIOTITE-QUARTZ GNEISS Hard Rock: White, moderately weathered to fresh, close to wide fracturing, moderately hard to very hard, BIOTITE-QUARTZ GNEISS with trace magnetite
									225.9 — 50.3 Hard Rock: White, very slightly weathered to fresh, wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS with trace magnetite

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SITE DESCRIPTION NORTH ANNA COL			GROUND WATER (ft)
BORING NO. B-916	DRILL METHOD: Rotary Wash/Core	SAMPLE METHODS: SPT/CORE	0 HR. ND
COLLAR ELEV. 276.2 ft (NAVD88)	NORTHING 3,910,050 US ft (NAD83)	EASTING 11,686,009 US ft (NAD83)	24 HR. ND
TOTAL DEPTH 100.3 ft	DRILL MACHINE CME 45 Trailer	DRILLER: F. Cox/D. Rhodes	HAMMER TYPE 140 lbs Auto
DATE STARTED 9/28/06	COMPLETED 10/4/06	CORE BARREL TYPE: HQ 3 triple tube-wireline	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 20 40 60 80 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
201.4					Continued from previous page				
									Hard Rock: White, very slightly weathered to fresh, wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS with trace magnetite *(continued)*
									192.4 — 83.8
									Hard Rock: Light gray, fresh, close to wide fracturing, hard to very hard, QUARTZ GNEISS with biotite, trace magnetite and pyrite
									175.9 — 100.3
									Boring and coring terminated at 100.3 ft in Hard Rock: Hard, QUARTZ GNEISS with biotite

GEOTECHNICAL CORING LOG

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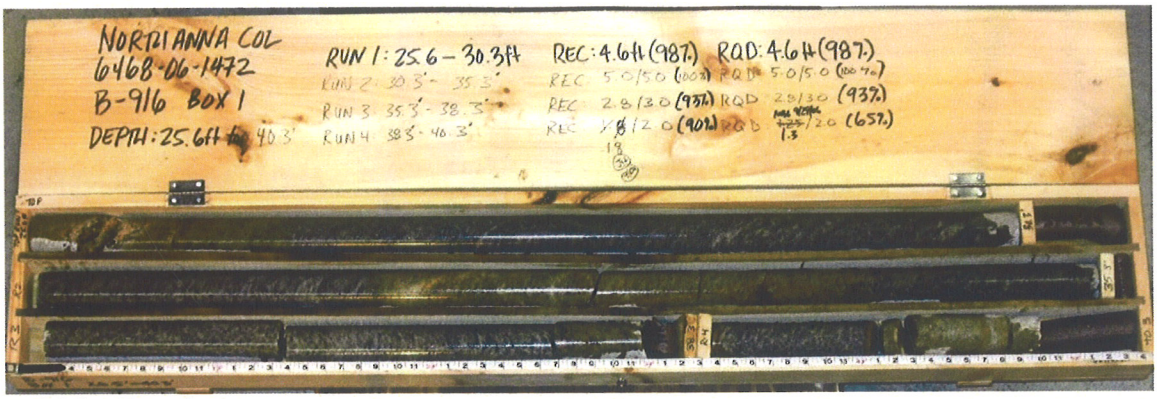
MACTEC PROJECT NO.: 6468-06-1472	**COUNTY** Louisa, VA	**GEOLOGIST** J. Lachewitz/ S. Lehman
SITE DESCRIPTION NORTH ANNA COL		**GROUND WATER (ft)**
BORING NO. B-916	**DRILL METHOD:** Rotary Wash/Core	**SAMPLE METHODS:** SPT/CORE — **0 HR.** ND
COLLAR ELEV. 276.2 ft (NAVD88)	**NORTHING** 3,910,050 US ft (NAD83)	**EASTING** 11,686,009 US ft (NAD83) — **24 HR.** ND
TOTAL DEPTH 100.3 ft	**DRILL MACHINE** CME 45 Trailer	**DRILLER:** F. Cox/D. Rhodes — **HAMMER TYPE** 140 lbs Auto
DATE STARTED 9/28/06	**COMPLETED** 10/4/06	**CORE BARREL TYPE:** HQ 3 triple tube-wireline
CORE SIZE HQ3	**TOTAL RUN** 74.7 ft	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Begin Coring @ 25.6 ft
250.6	25.6	4.7	N=50/0.0 5:28 7:28 7:45 9:20 10:27/0.7	(4.6) 98%	(4.6) 98%	1				250.6 — 25.6 Hard Rock: White, moderately weathered to fresh, close to wide fracturing, moderately hard to very hard, BIOTITE-QUARTZ GNEISS with trace magnetite (1 joint at 50° weathered with Fe stain)
245.9	30.3	5.0	7:39 7:23 4:58 4:56 8:23	(5.0) 100%	(5.0) 100%	2				(2 joints at 0-15° with Fe stain)
240.9	35.3	3.0	12:30 9:36 3:10	(2.8) 93%	(2.8) 93%	3				(2 joints at 5° with slight Fe stain)
237.9	38.3	2.0	3:29 2:43	(1.8) 90%	(1.3) 65%	4				(3 joints at 5-20° with Fe stain)
235.9	40.3	5.0	4:43 4:49 5:27 8:16 11:41	(5.0) 100%	(5.0) 100%	5				-No Joints
230.9	45.3	5.0	4:27 4:16 3:20 2:52 3:33	(4.8) 96%	(4.4) 88%	6				(4 joints at 0-45° weathered with Fe stain and trace clay)
225.9	50.3	5.0	3:25 4:47 3:31 3:50 4:44	(4.5) 90%	(4.5) 90%	7				225.9 — 50.3 Hard Rock: White, very slightly weathered to fresh, wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS with trace magnetite (2 joints at 25° with Fe stain)
220.9	55.3	5.0	7:10 9:48 8:05 3:47 5:01	(5.0) 100%	(5.0) 100%	8				-No Joints
215.9	60.3	5.0	10:12 5:34 3:54 4:17 4:31	(5.0) 100%	(5.0) 100%	9				-No Joints
210.9	65.3	2.1	11:22 12:13/1.1	(2.1) 100%	(2.0) 95%	10				-No Joints
208.8	67.4	2.9	5:05 2:56 2:37/0.9	(2.9) 100%	(2.9) 100%	11				-No Joints; 0.5 ft thick quartz vein+pyrite at 68.7 ft
205.9	70.3	5.0	2:45 2:20 1:52 3:08 4:37	(5.0) 100%	(5.0) 100%	12				(2 joints at 20-25° slightly weathered)
200.9	75.3	5.0	6:05 7:39 9:08 14:06 3:52	(5.0) 100%	(5.0) 100%	13				-No Joints
195.9	80.3	3.5	4:55 6:02 7:26 7:10/0.5	(3.5) 100%	(3.5) 100%	14				-No Joints
192.4	83.8	1.5	3:52 7:32/0.5	(1.4) 93%	(1.4) 93%	15				192.4 — 83.8 Hard Rock: Light gray, fresh, close to wide fracturing, hard to very hard, QUARTZ GNEISS with biotite, trace magnetite and pyrite
190.9	85.3	5.0	3:49 3:43 3:53 5:35 9:18	(5.0) 100%	(5.0) 100%	16				-No Joints -No Joints
185.9	90.3	5.0	4:20 4:50 5:40 8:12 12:42	(5.0) 100%	(5.0) 100%	17				-No Joints
180.9	95.3	5.0	4:22 3:39 2:24 2:00 3:24	(5.0) 100%	(4.0) 80%	18				(8 joints at 45° weathered with Fe stain; 1 joint at 20° slightly weathered; moderately weathered fracture zone from 98.0-99.0 ft)
175.9	100.3									175.9 — 100.3

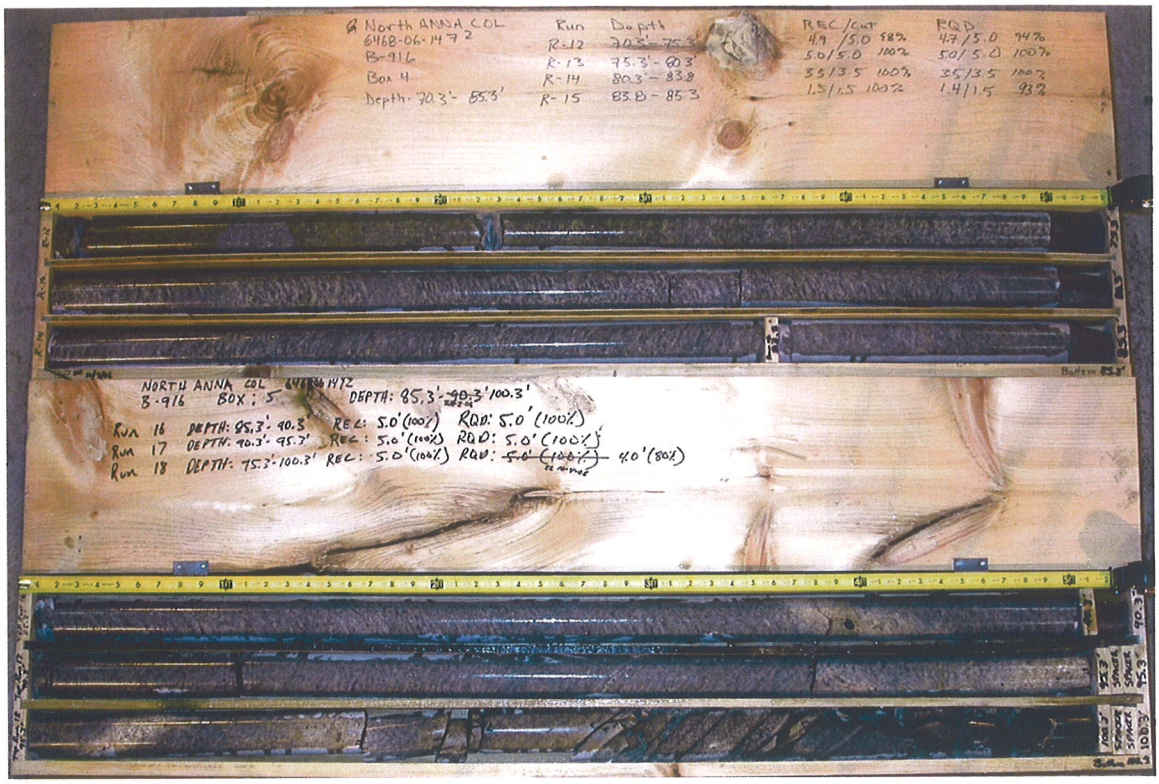
Coring terminated at 100.3 ft in Hard Rock: Hard, QUARTZ GNEISS with biotite

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



B-916 – Box 1

B-916 – Box 2
B-916 – Box 3



B-916 – Box 4
B-916 – Box 5