



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA			GEOLOGIST S.Lehman								
SITE DESCRIPTION NORTH ANNA COL							GROUND WATER (ft)								
BORING NO. B-907		DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 28.1							
COLLAR ELEV. 322.7 ft (NAVD88)		NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)							
TOTAL DEPTH 200.5 ft		DRILL MACHINE CME 45 Trailer			DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto							
DATE STARTED 8/1/06		COMPLETED 8/9/06			CORE BARREL TYPE: HQ split inner barrel										
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		
322.7					Ground Surface							322.7	0.0		
321.2	1.5													CLAY (CL) sandy, silty, strong brown (7.5YR 5/6) dry to moist, stiff (Residual Soil)	
319.2	3.5	2	4	7							907-1			320.2	2.5
317.2	5.5	7	6	8							907-2			Silty, fine to coarse SAND (SM), strong brown (7.5YR 5/6), dry, medium dense (Residual Soil)	
314.2	8.5	3	5	5							907-3				
311.7	11.0	4	5	6							907-4				
309.2	13.5	2	3	5							907-5			Silty, fine to coarse SAND (SM), light yellowish brown (2.5Y 6/4), moist, loose to medium dense (Residual Soil)	
305.2	17.5	6	10	11							907-6			312.2	10.5
300.2	22.5	7	9	9							907-7			Silty, fine to coarse SAND (SM) light yellowish brown (2.5Y 6/4), dry to moist, medium dense (Residual Soil)	
295.2	27.5	3	4	5							907-8			306.7	16.0
290.2	32.5	3	8	9							907-9			Silty SAND (SM) yellowish brown (10YR 5/6), moist, loose to dense, micaceous, saprolitic (Residual Soil)	
285.2	37.5	6	11	21							907-10			301.7	21.0
280.2	42.5	41	50/0.3								907-11			286.7	36.0
		50/0.1									907-12			280.1	42.6
														Weathered Rock: Dark yellowish brown (10YR 4/6) and light olive brown (2.5Y 5/3), moist, very dense, severely weathered, QUARTZ-BIOTITE GNEISS	
														Hard Rock: Light to dark gray with orange Fe staining, moderately severe to moderately weathered, close to moderately close fracturing, medium to moderately hard, QUARTZ-BIOTITE GNEISS	
														252.2	70.5

NORTH ANNA COL \DJKE 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. Lehman							
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)					
BORING NO. B-907		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 28.1					
COLLAR ELEV. 322.7 ft (NAVD88)		NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)		24 HR. 28.4					
TOTAL DEPTH 200.5 ft		DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox				HAMMER TYPE 140 lbs Auto					
DATE STARTED 8/1/06				COMPLETED 8/9/06				CORE BARREL TYPE: HQ split inner barrel							
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					
173.1					Continued from previous page										
															Hard Rock: Light gray to dark gray and light pink, slightly weathered to fresh, close to wide fracturing, hard to very hard. QUARTZ-BIOTITE GNEISS (continued)
													122.2		Boring and coring terminated at 200.5 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS
													200.5		

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. Lehman		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)	
BORING NO. B-907		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 28.1	
COLLAR ELEV. 322.7 ft (NAVD88)		NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)		24 HR. 28.4	
TOTAL DEPTH 200.5 ft		DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto		
DATE STARTED 8/1/06			COMPLETED 8/9/06			CORE BARREL TYPE: HQ split inner barrel					
CORE SIZE HQ			TOTAL RUN 157.4 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 @ 42.5 ft											
280.2	42.5	3.0	N=50/0.1 2:00	(2.7)	(1.4)	1				280.1	Weathered Rock: Dark yellowish brown (10YR 4/6) and light olive brown (2.5Y 5/3), moist, very dense, severely weathered, QUARTZ-BIOTITE GNEISS
277.2	45.5		2:26	90%	47%						(continued)
		5.0	2:12	(4.9)	(4.4)	2					(1 joint at 35° with clay, Fe stain; 1 joint at 10° with Fe stain)
			2:03	98%	88%						Hard Rock: Light to dark gray with orange Fe staining, moderately severe to moderately weathered, close to moderately close fracturing, medium to moderately hard, QUARTZ-BIOTITE GNEISS
272.2	50.5	5.0	2:19								(2 joints at 35°, 2 joints at 10-20°, 1 joint at 80-90°)
			2:35								(1 joint at 30°, 1 joint at 0-5°)
		5.0	2:32	(4.5)	(3.9)	UC-51.9'					
			2:26	90%	78%						
267.2	55.5	5.0	2:27								
			2:13	(5.0)	(4.1)	4					(1 joint at 35°, 2 joints at 0-5°)
		5.0	2:16	100%	82%						
			2:15								
262.2	60.5	5.0	2:12								(4 joints at 0-5°)
			2:04								
		5.0	1:26	(3.3)	(2.1)	5					(3 joints at 65° with trace clay)
			1:21	66%	42%						
		5.0	1:05								
257.2	65.5	5.0	1:10								
			1:30								
		5.0	1:22	(4.7)	(4.1)	6					(1 joint at 70° with Fe stain)
			1:32	94%	82%						-No Recovery
252.2	70.5	5.0	1:39								-No Recovery
			1:29								
		3.3	1:26	(0.2)	(0.0)	7					
			1:32	6%	0%						
248.9	73.8	3.3	1:04								
			1:07								
		1.7	1:44	(0.0)	(0.0)	8					
247.2	75.5	1.7	0:46/0.3	0%	0%						
			0:49/0.7	0%	0%	907-13					
246.8	75.9	4.6	0:52	(0.0)	(0.0)	9					
			N=50/0.4	0%	0%						
			0:56								
		80.5	0:53								
242.2	80.5	1.7	1:34								
			1:42								
242.0	80.7	1.9	1:14/0.6	(0.6)	(0.0)	907-14					(2 joints at 55° with trace clay and Fe stain)
240.1	82.6	2.9	N=50/0.2	32%	0%	10					
			4:15	(1.4)	(0.0)	11					(3 joints at 45° and 2 joints at 65° with Fe stain)
		85.5	4:04/0.9	48%	0%						
237.2	85.5	5.0	2:16/0.9								
			2:04	(3.5)	(2.3)	UC-90.0'					(4 joints at 10° with Fe stain; 2 joints at 65° with trace clay and Fe stain)
			1:19	70%	46%						
		90.5	2:27								
232.2	90.5	5.0	2:17								
			2:55								
		91.8	2:51								
230.9	91.8	1.3	2:06	(0.0)	(0.0)	13					-No Recovery
			4:20	0%	0%						
		3.7	1:16/0.3	(3.3)	(0.9)	14					(4 joints at 10° with Fe stain)
			2:28/0.7	89%	24%						
227.2	95.5	5.0	3:59								
			2:20								
		97.1	2:30	(1.4)	(0.5)	15					(3 joints at 35° with Fe stain)
225.6	97.1	1.6	4:12	88%	31%						
			3:08/0.6	(2.1)	(0.6)	16					(2 joints at 25°, 1 joint at 75°)
		3.4	3:34/0.4	62%	18%						
222.2	100.5	5.0	4:16								
			1:45								
221.2	101.5	1.0	3:19	(0.4)	(0.0)	17					
			8:31	40%	0%	18					
		3.0	5:43	(1.0)	(0.0)						
218.2	104.5	5.0	1:45	33%	0%						
			3:42								
217.2	105.5	1.0	4:34	(0.4)	(0.4)	19					
			6:10	40%	40%	20					
		3.3	4:31								
213.9	108.8	5.0	1:00	(0.0)	(0.0)						-No Recovery
			0:18/0.3	0%	0%						
		110.5	3:26/0.7	(0.6)	(0.0)	21					
212.2	110.5	1.7	6:58	35%	0%						
			8:17	(0.0)	(0.0)	22					
210.9	111.8	1.3	3:40/0.3	0%	0%						-No Recovery
			3:30/0.7	(0.0)	(0.0)	23					
		3.7	3:28	(3.3)	(1.7)						(2 joints at 10°, 1 joint at 25°, 2 joints at 45°)
			3:10	89%	46%						
207.2	115.5	5.0	4:19	(5.0)	(4.0)	UC-116.8'					
											(5 joints at 35-45° and 1 joint at 55° with Fe stain)


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



MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S.Lehman			
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)	
BORING NO. B-907		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 28.1	
COLLAR ELEV. 322.7 ft (NAVD88)		NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)		24 HR. 28.4	
TOTAL DEPTH 200.5 ft		DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox				HAMMER TYPE 140 lbs Auto	
DATE STARTED 8/1/06				COMPLETED 8/9/06				CORE BARREL TYPE: HQ split inner barrel			
CORE SIZE HQ				TOTAL RUN 157.4 ft							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
				REC. (%)	RQD (%)		REC. (%)	RQD (%)			
										Continued from previous page	
202.2	120.5		3:27 2:54 2:58 2:47 3:22	100%	80%					Hard Rock: Light gray to dark gray and light pink, slightly weathered to fresh, close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS (continued)	
		5.0	3:59 3:46 3:34 3:37	100%	90%	25				(4 joints at 40°)	
197.2	125.5		3:21 3:35 2:45 2:33 2:19	(4.9)	(4.6)	26				(1 joint at 40°; 1 joint at 20° moderately weathered, Fe stain)	
		5.0	1:52	98%	92%						
192.2	130.5		2:09 2:09 2:18 2:19 2:26	(4.9)	(4.0)	UC-131.8'				(1 joint at 60°, 1 joint at 40°, 1 joint at 20°)	
		5.0	2:15 2:16 2:26 2:35 2:48	100%	80%	28				(4 joints at 60°, trace clay)	
182.2	140.5		2:32 2:04 2:07 2:42 2:40	(5.0)	(4.3)	29				(4 joints at 50° with clay to trace clay; 1 joint at 20° with trace clay)	
		5.0	2:35 2:22 3:24 4:07 4:25	100%	86%						
177.2	145.5		5:09 5:19 5:15 5:07 4:40	(4.9)	(4.6)	30				(3 joints at 45° with trace clay; 2 joints at 20°)	
		5.0	5:09 5:19 5:15 5:07 4:40	100%	96%	31				(2 joints at 45° with weathering; 1 joint at 20° with trace clay)	
167.2	155.5		3:23 2:47 3:19 3:54 3:50	(5.0)	(4.7)	32				(1 joint at 20° with moderate Fe staining)	
		5.0	3:39 3:12 2:46 3:39 4:06	100%	94%						
162.2	160.5		3:39 3:12 2:46 3:39 4:06	(4.9)	(4.9)	JCS-160.8'				(3 joints at 45° with Fe stain; 1 joint at 70° with trace clay and Fe stain)	
		5.0	4:45 5:06 4:39 4:58 5:53	98%	98%					(2 joints at 45° with trace clay, slightly weathered; 1 joint at 10° weathered)	
157.2	165.5		6:47 4:11 7:44 7:10 6:43	(5.1)	(5.1)	34				(2 joints at 45° with trace clay, slightly weathered; 1 joint at 10° weathered)	
		5.0	7:20 8:15 9:27 11:09 14:50	102%	102%						
152.2	170.5		13:24 14:35 4:35 4:12 4:52	(5.0)	(4.2)	35				(2 joints at 45° slightly weathered with Fe stain; quartz vein at 60° from 171.4-171.8 ft)	
		5.0	7:20 8:15 9:27 11:09 14:50	100%	84%						
147.2	175.5		7:20 8:15 9:27 11:09 14:50	(4.8)	(4.8)	36				(1 joint at 70° slightly weathered with Fe stain)	
		5.0	13:24 14:35 4:35 4:12 4:52	96%	96%						
142.2	180.5		3:12 2:43 3:31 3:46 3:22	(5.2)	(3.0)	37				(5 joints at 65° slightly weathered with Fe stain)	
		5.0	3:12 2:43 3:31 3:46 3:22	104%	60%						
137.2	185.5		3:12 2:43 3:31 3:46 3:22	(5.0)	(5.0)	38				(1 joint at 45° moderately weathered with Fe stain)	
		5.0	2:55	100%	100%						
132.2	190.5		2:55	(5.0)	(5.0)	39				-No Joints	

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

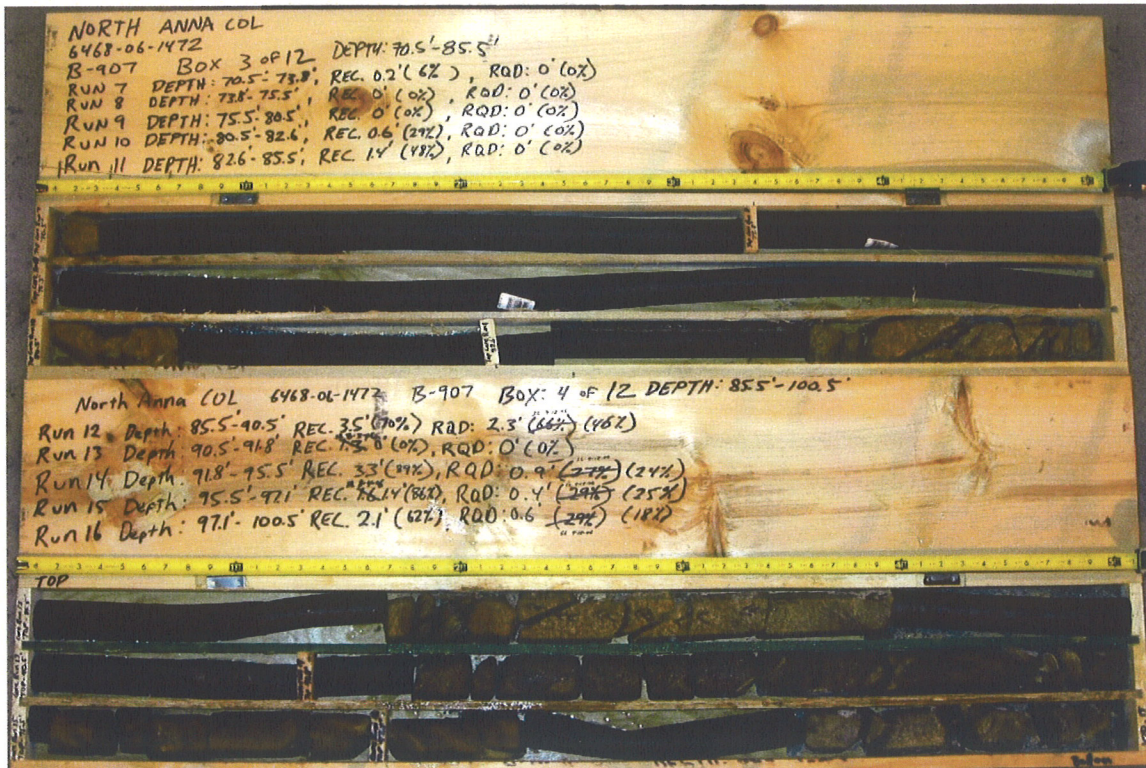


MACTEC PROJECT NO.: 6468-06-1472				COUNTY Louisa, VA				GEOLOGIST S.Lehman			
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)	
BORING NO. B-907			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 28.1
COLLAR ELEV. 322.7 ft (NAVD88)			NORTHING 3,909,608		US ft (NAD83)		EASTING 11,685,938		US ft (NAD83)		24 HR. 28.4
TOTAL DEPTH 200.5 ft			DRILL MACHINE CME 45 Trailer				DRILLER: F. Cox			HAMMER TYPE 140 lbs Auto	
DATE STARTED 8/1/06				COMPLETED 8/9/06				CORE BARREL TYPE: HQ split inner barrel			
CORE SIZE HQ				TOTAL RUN 157.4 ft							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS	
				REC. (ft) %	ROD (ft) %		REC. (ft) %	ROD (ft) %			
			2:54 3:02 2:20 2:05	100%	100%					Continued from previous page	
127.2	195.5									 Hard Rock: Light gray to dark gray and light pink, slightly weathered to fresh, close to wide fracturing, hard to very hard, QUARTZ-BIOTITE GNEISS (continued) -No Joints	
		5.0	3:01 2:02 2:34 2:40 2:52	(5.0) 100%	(5.0) 100%	UC-200.0'					
122.2	200.5									122.2 <span style="float: right;">200.5</span>	
Coring terminated at 200.5 ft in Hard Rock: Very hard, QUARTZ-BIOTITE GNEISS											

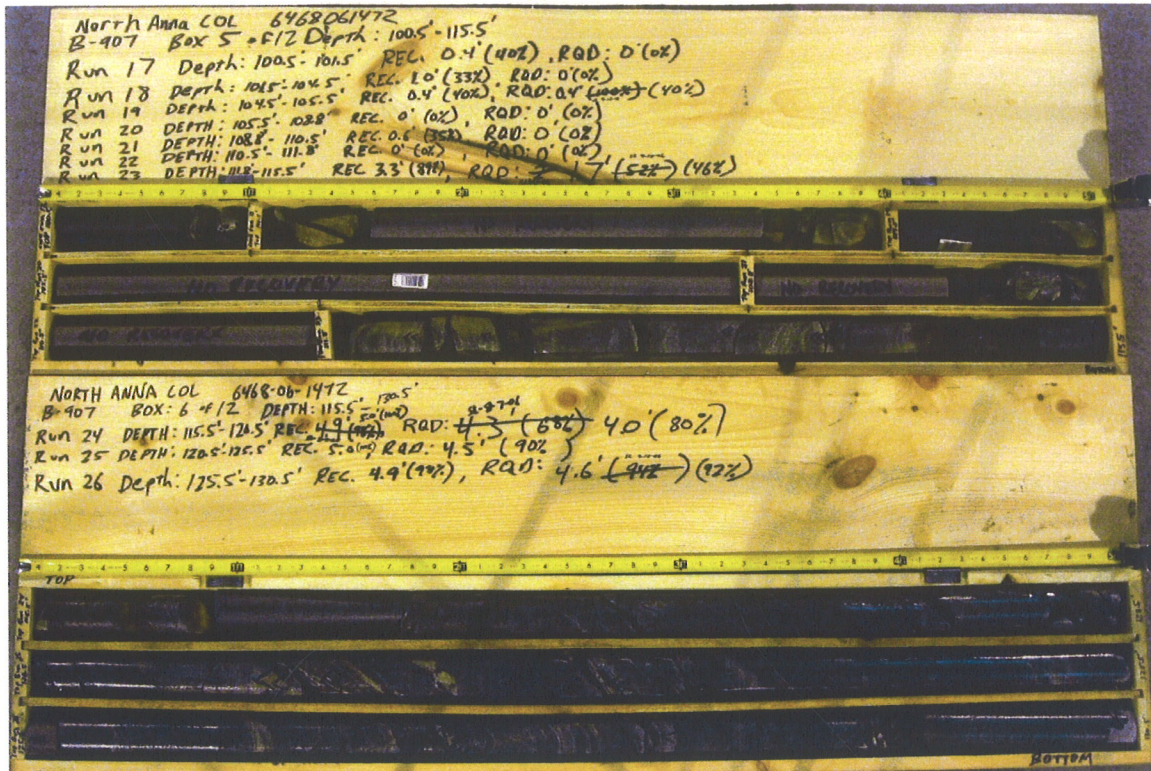
NORTH ANNA COL CORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



B-907 - Box 1  
B-907 - Box 2

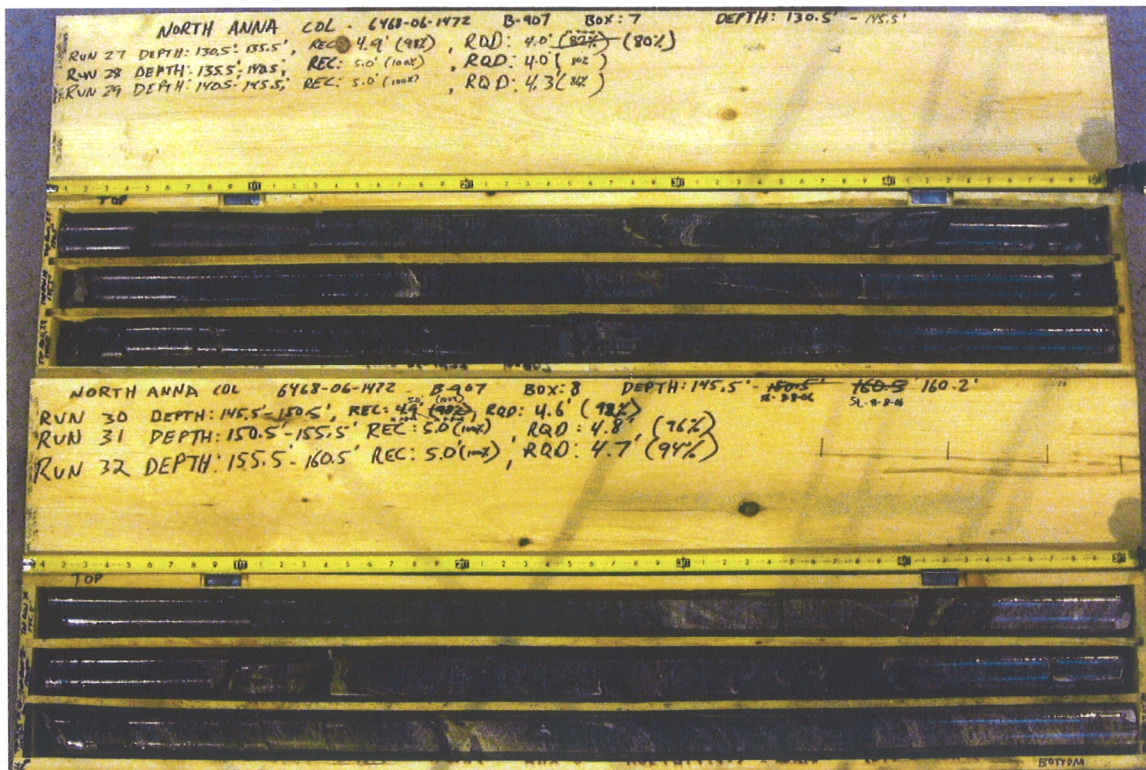


B-907 - Box 3  
B-907 - Box 4



B-907 – Box 5

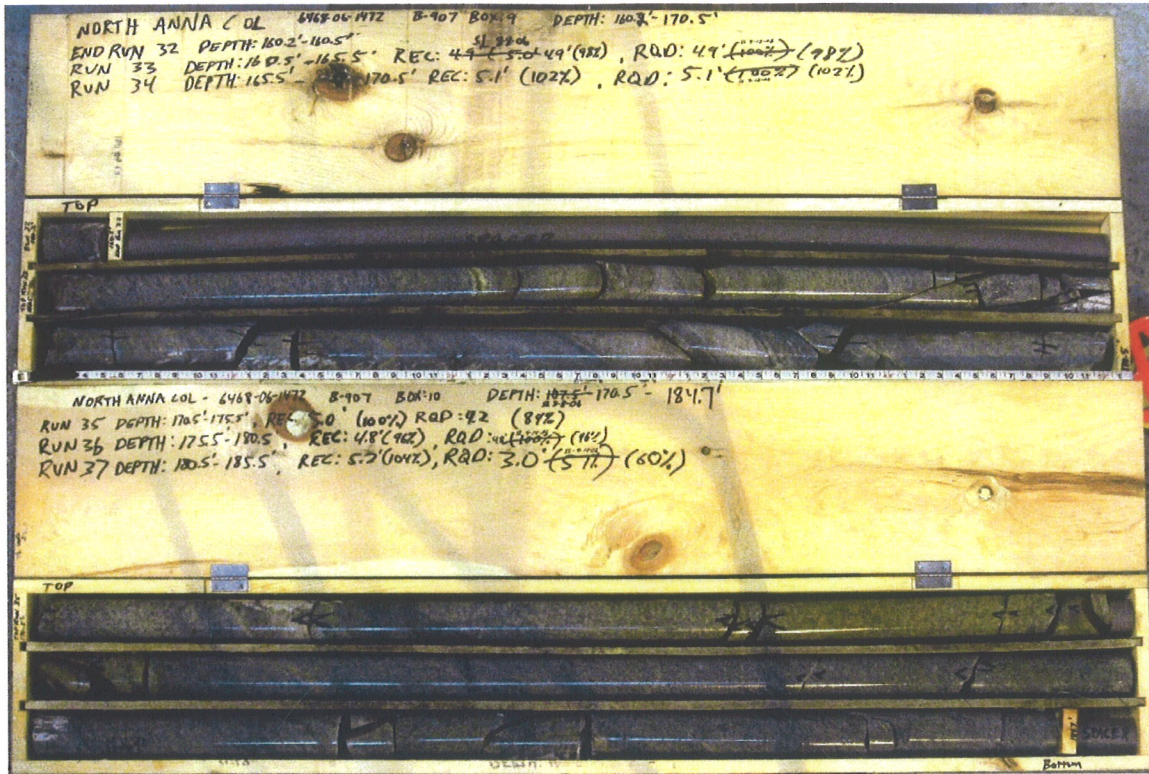
B-907 – Box 6



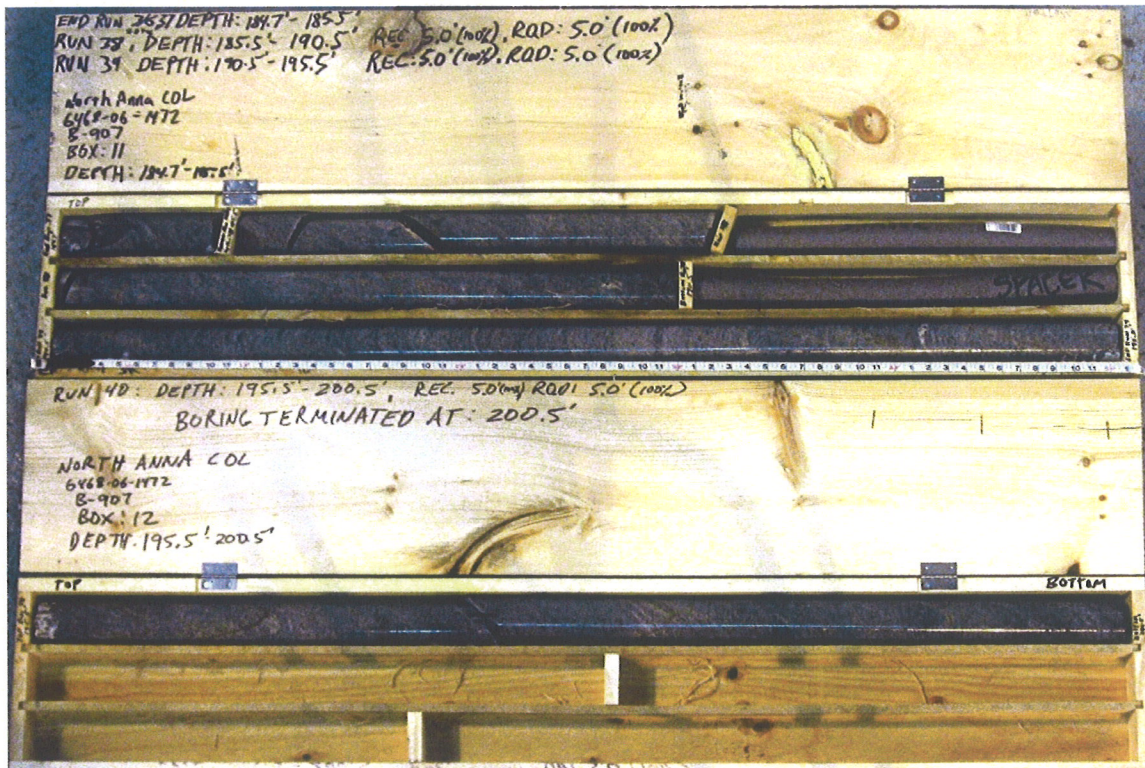
B-907 – Box 7

B-907 – Box 8





B-907 - Box 9  
B-907 - Box 10



B-907 - Box 11  
B-907 - Box 12