

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



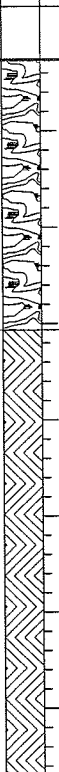
SHEET 2 OF 2

MACTEC PROJECT NO.: 6468-06-1472					COUNTY Louisa, VA					GEOLOGIST S. Nicely					
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft) 0 HR. 3.1 24 HR. 20.8					
BORING NO. B-919			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE									
COLLAR ELEV. 317.8 ft (NAVD88)			NORTHING 3,909,575		US ft (NAD83)		EASTING 11,685,765		US ft (NAD83)						
TOTAL DEPTH 76.2 ft			DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto					
DATE STARTED 9/13/06			COMPLETED 9/15/06			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					
243.0					Continued from previous page										
														241.6	76.2
														Boring and coring terminated at 76.2 ft in Hard Rock: Moderately hard to hard, BIOTITE-QUARTZ GNEISS	

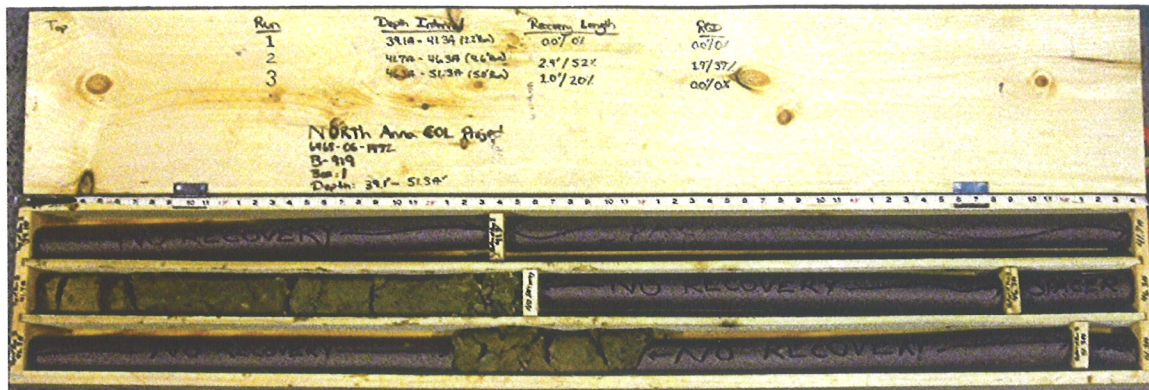
NORTH ANNA COL BORE NORTH ANNA COL DATA REPORT REV0.GPJ NORTH ANNA COL.GDT 1/19/07



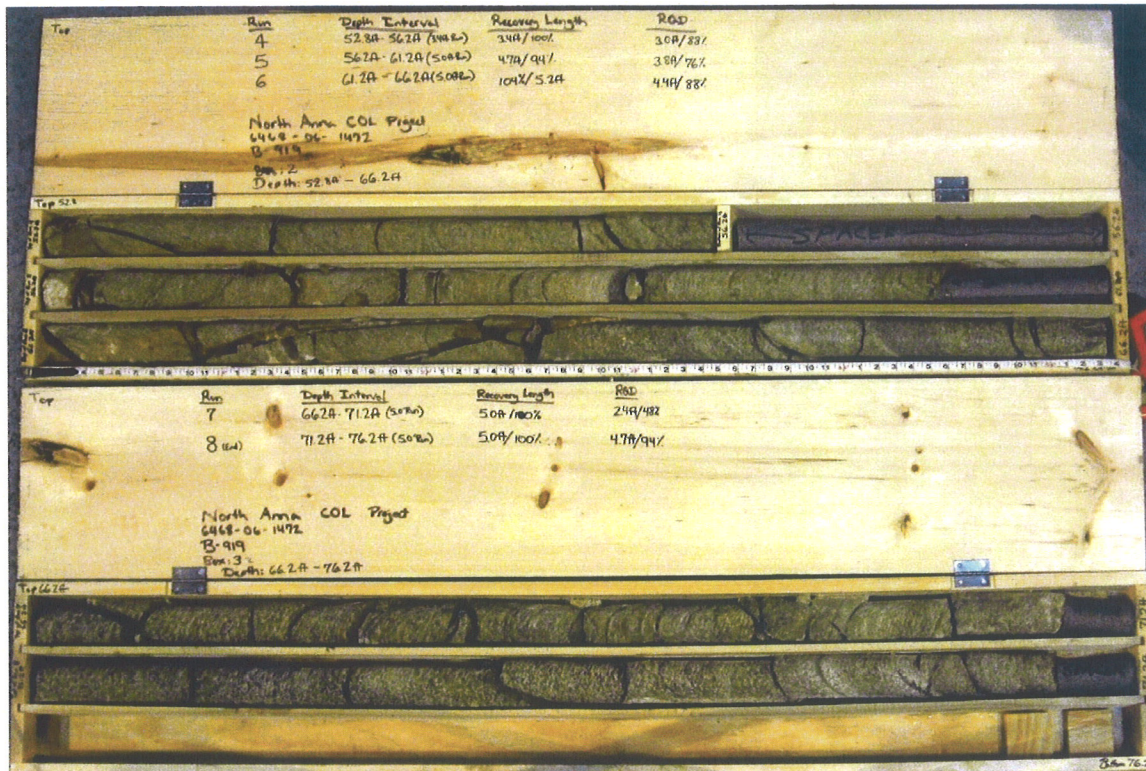
SHEET 1 OF 1

MACTEC PROJECT NO.: 6468-06-1472							COUNTY Louisa, VA			GEOLOGIST S. Nicely		
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)		
BORING NO. B-919			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE			0 HR. 3.1		
COLLAR ELEV. 317.8 ft (NAVD88)			NORTHING 3,909,575		US ft (NAD83)		EASTING 11,685,765		US ft (NAD83)		24 HR. 20.8	
TOTAL DEPTH 76.2 ft			DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto		
DATE STARTED 9/13/06				COMPLETED 9/15/06			CORE BARREL TYPE: HQ 3 triple tube-wireline					
CORE SIZE HQ3				TOTAL RUN 35.2 ft								
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	ROD (ft) %	SAMP. NO.	REC. (ft) %	ROD (ft) %	L O G	DESCRIPTION AND REMARKS		
										Begin Coring @ 39.1 ft		
278.7	39.1	2.2	2:49	(0.0)	(0.0)	1					Weathered Rock: Yellowish brown, very severely to severely weathered, very close to close fracturing, very soft to soft, BIOTITE-QUARTZ GNEISS (continued) -No Recovery -Poor Recovery -Poor Recovery	
276.5	41.3		2:54	0%	0%							
276.1	41.7	4.6	0:35/0.2 N=50/0.4	(2.4)	(1.7)	919-12 2						
			4:39	52%	37%							
			3:39									
271.5	46.3		3:32									
			2:19									
		5.0	0:48/0.6	(1.0)	(0.0)	3						
			1:09	20%	0%							
			1:36									
266.5	51.3		2:47									
			1:57									
			2:18			919-13						
			N=40									
265.0	52.8	3.4	1:48	(3.4)	(3.0)	4				264.7	(3 joints at 20-30° weathered; 2 joints at 10-20° with Fe stain; 1 joint at 75° weathered)	
261.6	56.2		2:17	100%	88%						Hard Rock: Brownish gray to gray, moderately severely to moderately weathered, very close to close fracturing, moderately hard to hard, BIOTITE-QUARTZ GNEISS (2 joints at 40-50° with Fe and Mn stain; 2 joints at 10° with Fe stain) (6 joints at 50-60° with Fe and Mn stain; 2 joints at 80-90° with Fe staining and clay; 2 joints at 10-20° with Fe stain; Quartz vein at 62.4 ft) (1 joint at 65° with Fe stain; 3 joints at 40-50° with Fe and Mn stain; 9 joints at 30-40° with Fe and Mn stain; 4 joints at 10-20° with Fe and Mn) (1 joint at 75° with Fe stain; 4 joints at 30-40° with Fe stain and clay; 4 joints at 10-20° with Fe stain)	
		5.0	3:13									
			1:00/0.4	(4.7)	(3.8)	5						
			2:32	94%	76%							
			2:43									
256.6	61.2		2:16									
			2:10									
		5.0	1:57	(5.2)	(4.4)	6						
			2:46	104%	88%							
			3:10									
251.6	66.2		2:58									
			3:20									
		5.0	2:43	(5.0)	(2.4)	7						
			2:28	100%	48%							
			2:55									
246.6	71.2		2:27									
			2:35									
		5.0	2:24	(5.0)	(4.7)	8						
			2:27	100%	94%							
			2:18									
241.6	76.2		2:09							241.6	76.2	
			2:12								Coring terminated at 76.2 ft in Hard Rock: Moderately hard to hard, BIOTITE-QUARTZ GNEISS	

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



B-919 - Box 1



B-919 - Box 2

B-919 - Box 3



SHEET 1 OF 3

MACTEC PROJECT NO.: 6468-06-1472

COUNTY Louisa, VA

GEOLOGIST S. Nicely

SITE DESCRIPTION NORTH ANNA COL

GROUND WATER (ft)

0 HR. 21.8

24 HR. 32.8

BORING NO. B-920

DRILL METHOD: Mud Rotary/Core

SAMPLE METHODS: SPT/CORE

COLLAR ELEV. 327.2 ft (NAVD88)

NORTHING 3,909,545

US ft (NAD83)

EASTING 11,685,980

US ft (NAD83)

TOTAL DEPTH 150.7 ft

DRILL MACHINE CME 55 Truck

DRILLER: H. Meyerson

HAMMER TYPE 140 lbs Auto

DATE STARTED 9/6/06

COMPLETED 9/12/06

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

327.2

Asphalt Parking Lot

327.2

0.0

Asphalt and base coarse gravel (Parking Lot)

325.2

2.0

3

5

5

920-1

324.8

2.4

Silty, fine to coarse SAND (SM), dark yellowish brown (10YR 3/6, 4/6, and 4/4), olive (5Y 4/4), and olive brown (2.5Y 4/4), moist, medium dense, trace clay (Residual Soil)

323.4

3.8

5

5

6

10

920-2

321.2

6.0

4

5

7

12

920-3

318.7

8.5

3

5

7

12

920-4

316.2

11.0

4

6

8

14

920-5

313.4

13.8

4

6

10

16

920-6

308.4

18.8

5

7

10

17

920-7

303.5

23.7

4

7

7

14

920-8

298.4

28.8

5

8

10

18

920-9

293.5

33.7

7

10

12

22

920-10

288.7

38.5

15

36

50/0.3

920-11

289.2

38.0

Weathered Rock: Strong brown (7.5YR 4/6), very dark grayish brown (10YR 3/2), and greenish black (GLEYS 2.5/1), moist, very dense, BIOTITE GNEISS

283.7

43.5

25

41

50/0.2

920-12

278.7

48.5

40

50/0.4

920-13

273.7

53.5

50/0.1

920-14

268.7

58.5

50/0.1

920-15

268.6

58.6

Hard Rock: Dark brown, moderately severely weathered, very close to close fracturing, soft, BIOTITE GNEISS

266.3

60.9

Weathered Rock: Dark brown to yellowish brown, severely weathered, very close to close fracturing, very soft to moderately hard, BIOTITE GNEISS

256.5

70.7

32

50/0.4

920-16

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

NORTH ANNA COL JURE 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) 0 HR. 21.8 24 HR. 32.8						
BORING NO. B-920		DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE										
COLLAR ELEV. 327.2 ft (NAVD88)		NORTHING 3,909,545		US ft (NAD83)		EASTING 11,685,980		US ft (NAD83)								
TOTAL DEPTH 150.7 ft		DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto						
DATE STARTED 9/6/06				COMPLETED 9/12/06				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						
177.6					Continued from previous page											
														176.5	150.7	Boring and coring terminated at 150.7 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS



SHEET 1 OF 2

MACTEC PROJECT NO.: 6468-06-1472						COUNTY Louisa, VA				GEOLOGIST S. Nicely			
SITE DESCRIPTION NORTH ANNA COL										GROUND WATER (ft)			
BORING NO. B-920			DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/CORE				0 HR. 21.8		
COLLAR ELEV. 327.2 ft (NAVD88)			NORTHING 3,909,545		US ft (NAD83)		EASTING 11,685,980		US ft (NAD83)		24 HR. 32.8		
TOTAL DEPTH 150.7 ft			DRILL MACHINE CME 55 Truck				DRILLER: H. Meyerson				HAMMER TYPE 140 lbs Auto		
DATE STARTED 9/6/06			COMPLETED 9/12/06				CORE BARREL TYPE: HQ 3 triple tube-wireline						
CORE SIZE HQ3			TOTAL RUN 150.7 ft										
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	ROD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 58.6 ft			
268.6	58.6	2.3	5:36	(2.0)	(0.0)	1				268.6	Hard Rock: Dark brown, moderately severely weathered, very close to close fracturing, soft, BIOTITE GNEISS		
266.3	60.9		4:08	87%	0%					266.3	-Highly fractured and weathered		
		4.8	0:53/0.3	(0.6)	(0.0)	2					Weathered Rock: Dark brown to yellowish brown, severely weathered, very close to close fracturing, very soft to moderately hard, BIOTITE GNEISS		
			2:00	13%	0%						-Very poor recovery, highly fractured and weathered		
261.5	65.7		2:03										
		5.0	3:56										
			3:16										
			1:36/0.8	(0.6)	(0.0)	3					-Very poor recovery, highly fractured and weathered		
			3:18	12%	0%								
			3:18										
			3:06										
256.5	70.7		3:11										
			3:43										
			N=50/0.4			920-16							
255.6	71.6	4.1	3:24	(0.7)	(0.0)	4					-Very poor recovery, highly fractured and weathered		
			2:10	17%	0%								
			2:04										
251.5	75.7		3:52/1.1										
251.4	75.8	4.9	N=50/0.1	(3.9)	(2.7)	5				251.4	Hard Rock-Weathered Rock: Reddish brown, gray, and blackish gray, very severely to moderately weathered, very close to close fracturing, very soft to hard, BIOTITE-QUARTZ GNEISS		
			4:53	80%	55%						(2 joints at 80° with Fe and Mn staining; 2 joints at 10-20°; 3 joints at 20-30°)		
			1:05										
			1:11										
246.5	80.7		1:12										
		5.0	0:51/0.9	(0.8)	(0.0)	6					-Very poor recovery, highly fractured and weathered		
			1:02	16%	0%								
			0:35										
			1:00										
			0:44										
241.5	85.7		0:30										
			N=50/0.4	(3.7)	(3.1)	7					(2 joints at 40-50° with Fe staining; 3 joints at 10-20° with Fe staining; highly fractured and severely weathered from 86.1-87.5 ft)		
		4.6	1:48	80%	67%	UC-90.2'							
			3:52										
			2:16										
236.5	90.7		2:16										
		5.0	2:00/0.6	(1.4)	(0.0)	8					-Poor recovery, highly fractured and weathered-no recovery from 92.1-95.7 ft		
			2:30	28%	0%								
			2:38										
			1:40										
			1:47										
231.5	95.7		1:48										
			N=50/0.3			920-19							
		3.7	2:38	(2.4)	(1.4)	9					-Highly fractured and weathered-no recovery from 97.0-98.2 ft; 2 joints at 50-60°		
			3:05	65%	38%								
			2:19										
226.5	100.7		1:12/0.7	(5.0)	(2.1)	10				226.5	Hard Rock: Light to dark gray with white, pink, and green, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS		
		5.0	2:51	100%	42%						-Highly fractured throughout entire run; Quartz+felsdpar vein from 101.7-105.7 ft		
			3:56										
			3:48										
221.5	105.7		6:10										
		5.0	5:38	(4.9)	(4.9)	UCS-107.7					-Quartz+felsdpar vein from 105.7-106.9 ft		
			4:59	98%	98%								
			5:18										
			5:30										
			5:01										
216.5	110.7		4:32										
		5.0	4:23	(5.0)	(5.0)	12					-No Joints		
			4:34	100%	100%								
			4:14										
			3:27										
211.5	115.7		3:52	(5.1)	(3.2)	UC-119.1'					-Highly fractured, severely weathered zones from 117.0-118.5 ft and 120.1-120.7 ft		
		5.0	3:14	102%	64%								
			2:59										
			2:48										
			2:59										
206.5	120.7		ND										
		5.0	1:38	(3.7)	(3.0)	14					-Highly fractured, severely weathered zone with no recovery from 120.7-122.0 ft; Quartz vein from 124.2-124.6 ft		
			2:06	74%	60%								
			3:56										
			3:38										
201.5	125.7		4:54										
		5.0	4:58	(5.1)	(5.1)	15					(2 joints at 30-40° with Fe and Mn staining)		
			5:37	102%	102%								
			5:02										
			5:04										
196.5	130.7		5:30										
		5.0	4:59	(5.0)	(4.8)	16					(3 joints at 10-20° with Fe stain; 1 joint at 40°)		
			6:35	100%	96%								

NORTH ANNA COL CORE 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 S. Nicely		
SITE DESCRIPTION NORTH ANNA COL									GROUND WATER (ft)	
BORING NO. B-920			DRILL METHOD: Mud Rotary/Core			SAMPLE METHODS: SPT/CORE			0 HR. 21.8	
COLLAR ELEV. 327.2 ft (NAVD88)			NORTHING 3,909,545		US ft (NAD83)		EASTING 11,685,980		US ft (NAD83)	
TOTAL DEPTH 150.7 ft			DRILL MACHINE CME 55 Truck			DRILLER: H. Meyerson			HAMMER TYPE 140 lbs Auto	
DATE STARTED 9/6/06			COMPLETED 9/12/06			CORE BARREL TYPE: HQ 3 triple tube-wireline				
CORE SIZE HQ3			TOTAL RUN 150.7 ft							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
191.5	135.7	5.0	7:29 9:03 6:45	(5.0) 100%	(3.6) 72%	17				 Hard Rock: Light to dark gray with white, pink, and green, very slightly weathered to fresh, very close to wide fracturing, hard to very hard, BIOTITE-QUARTZ GNEISS (continued) (4 joints at 40-50° highly weathered with Fe and Mn stain; 3 joints at 30-40° with Fe stain; severely weathered zone from 136.9-137.4 ft) (2 joints at 10-20° with Fe staining) -No Joints
186.5	140.7	5.0	5:17 4:29 3:30 3:07 3:04	(5.0) 100%	(4.8) 96%	UCS-141.1				
181.5	145.7	5.0	1:34 2:53 2:54 3:21 3:43	(5.0) 100%	(5.0) 100%	19				
176.5	150.7		3:44 3:46 4:07 4:50 4:13							
										Coring terminated at 150.7 ft in Hard Rock: Very hard, BIOTITE-QUARTZ GNEISS

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



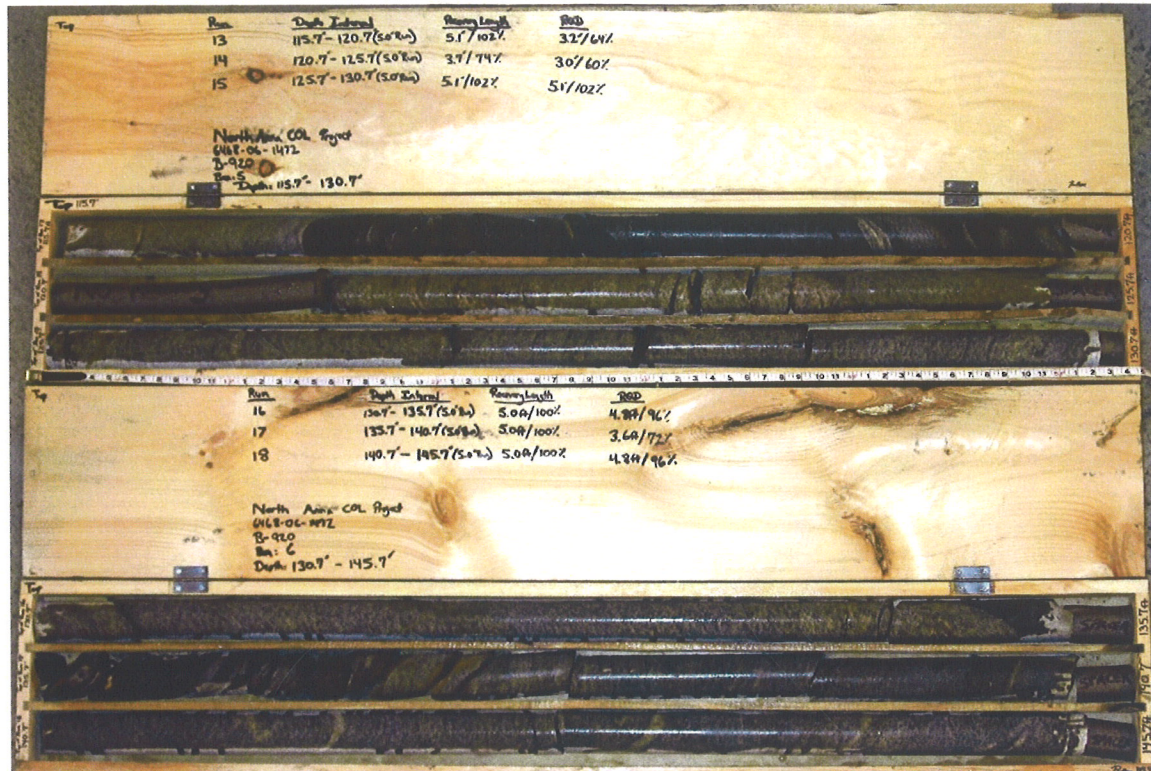
B-920 - Box 1

B-920 - Box 2



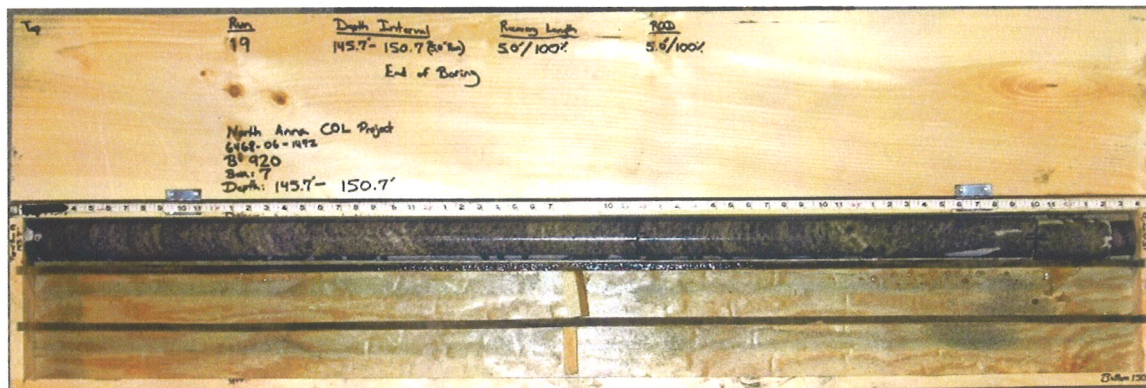
B-920 - Box 3

B-920 - Box 4



B-920 - Box 5

B-920 - Box 6



B-920 - Box 7