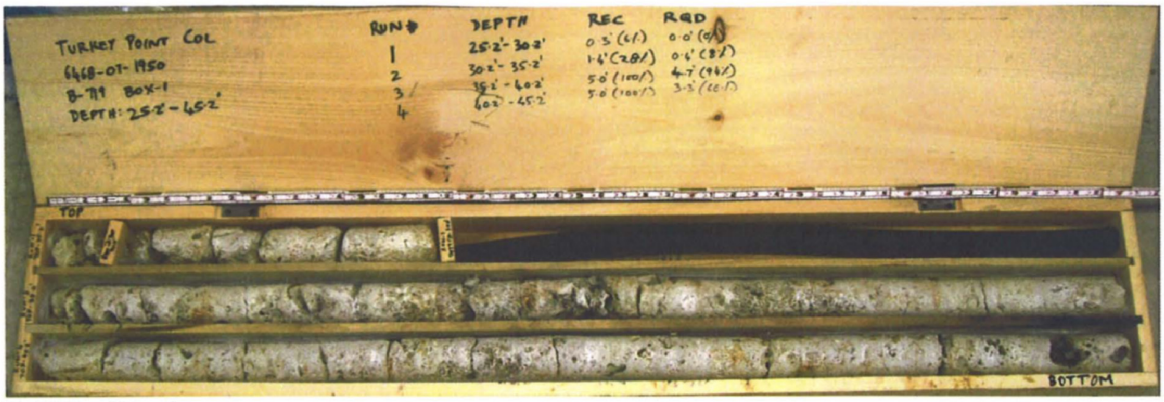
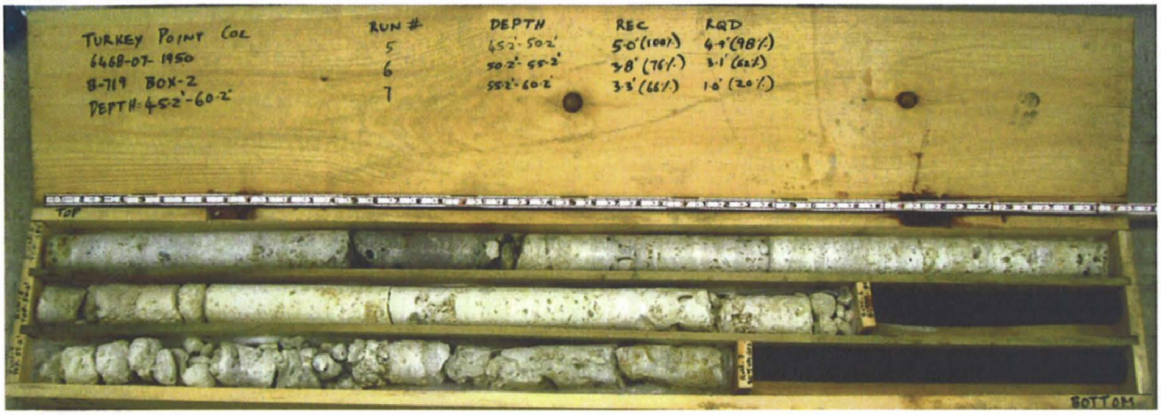
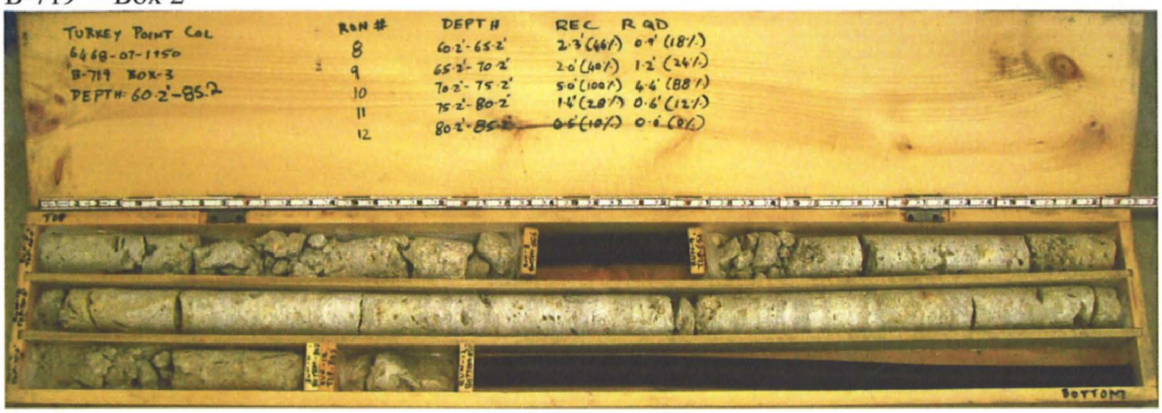


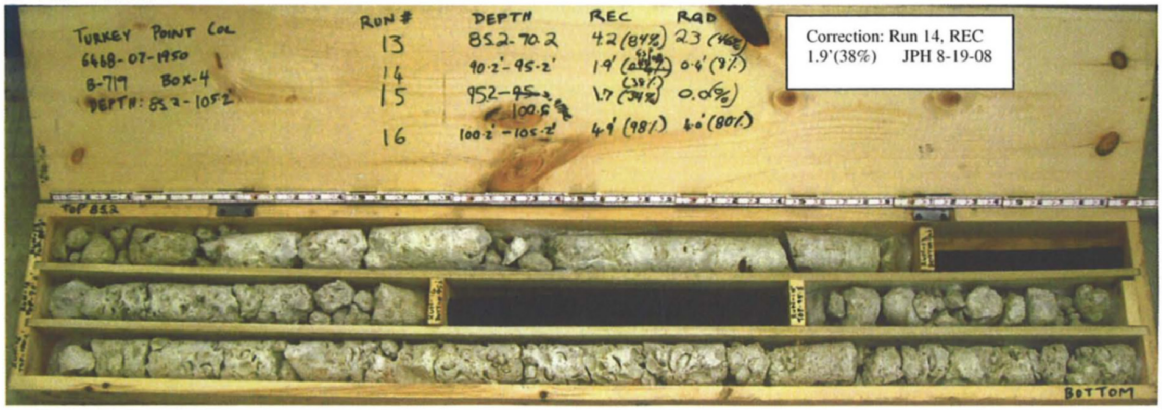
B-719 – Box 1



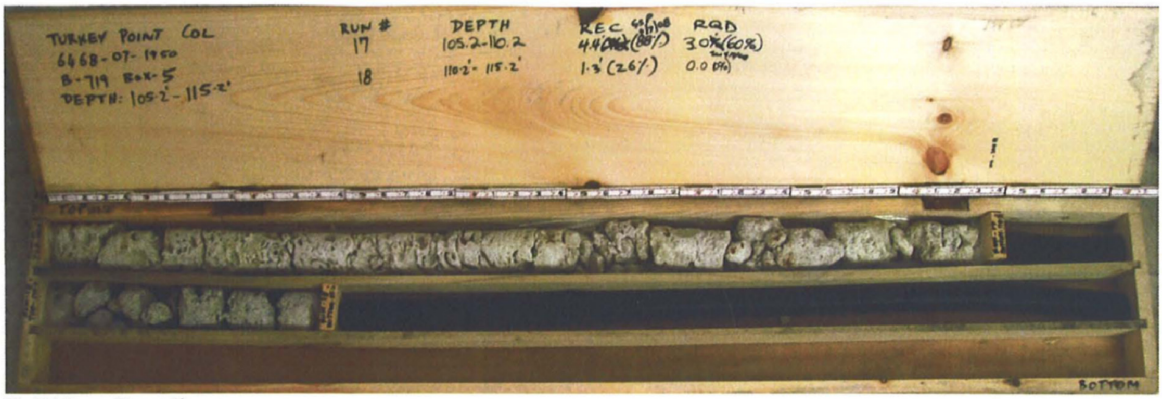
B-719 – Box 2



B-719 – Box 3



B-719 – Box 4


TURKEY POINT COL
6468-07-1950
B-719 BOX-5
DEPTH: 105.2'-115.2'
RUN #
17
18
DEPTH
105.2-110.2
110.2'-115.2'
REC
1.3' (26%)
RQD
0.0 (0%)
BOTTOM

B-719 – Box 5

MACTEC

GEOTECHNICAL BORING LOG

Prepared By: [signature] Date: 8-19-08

Checked By: [signature] Date: 8/19/08

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-720(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,397 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 204.9 ft	BORING DIAMETER: 4" to 204.9'	CASING DEPTH: 4" to 118.4'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 4/5/08	COMPLETED: 4/8/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Tricone

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
-0.9					Ground Surface				
-0.9	0.0	WOH	WOH	WOH	WOH 0	720(DH)-1			MUCK, gray (10YR5/1), very soft, moist, organics, trace roots, strong HCl reaction
-4.4	3.5	12	16	14	30	720(DH)-2			-3.9 3.0 LIMESTONE, boundstone, very pale brown (10YR8/2), soft, moist, strong HCl reaction, oolitic (Miami Formation)
-6.9	6.0	6	7	6	13	720(DH)-3			6.0ft: white (10YR8/1), very soft
-9.4	8.5	3	4	2	6	720(DH)-4			
-11.9	11.0	3	4	4	8	720(DH)-5			
-14.4	13.5	7	8	38	46	720(DH)-6			13.5ft: moderately hard, vugs
-19.4	18.5	5	5	7	12	720(DH)-7			18.5ft: very soft, trace interbedded sand
-24.4	23.5	9	9	22	31	720(DH)-8			23.5ft: medium hard
-29.4	28.5								-26.9 26.0
-30.7	29.8	24	48	50/0.3	98/0.8	720(DH)-9			LIMESTONE, boundstone, white (10YR8/1), hard, moist, strong HCl reaction, oolitic (Upper Fort Thompson Formation)
-34.3	33.4					RUN-1			29.8ft: Switch sampling method to coring
-39.3	38.4					RUN-2			29.8ft: moderately hard, moderately indurated, fossiliferous, vugs filled with cemented sand and shell fragments
-44.3	43.4					RUN-3			33.4ft: hard, indurated, few vugs, coralline
-49.3	48.4					RUN-4			38.4ft: loss of circulation
-54.3	53.4					RUN-5			43.4ft: white (10YR8/1) to 46.8ft, then gray (10YR6/1) to 48.4ft
-59.3	58.4					RUN-6			-49.3 48.4 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few to little shell molds and casts (Lower Fort Thompson Formation)
-64.3	63.4					RUN-7			53.4ft: moderately hard, moderately indurated, little vugs, trace sand
-69.3	68.4					RUN-8			58.4ft: few vugs
-71.3	70.4					RUN-9			-61.9 61.0 POORLY GRADED SAND (SP), light gray (10YR7/1), soft, moist, fine grained sand, and interbedded LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, trace vugs, few to little sand
-74.3	73.4					RUN-10			68.4ft: fine to medium grained sand, some shell fragments, few to little friable LIMESTONE fragments, strong HCl reaction -71.3 70.4
						RUN-11			LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, few

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/19/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)	
BORING NO.: B-720(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,397 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 204.9 ft	BORING DIAMETER: 4" to 204.9'	CASING DEPTH: 4" to 118.4'	HAMMER (ID):140 lb. Auto (MEC-05)	
DATE STARTED: 4/5/08	COMPLETED: 4/8/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Tricone	

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
-75.7					Continued from previous page				
									vugs, strong HCl reaction, trace sand 73.4ft: fossiliferous LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, few vugs, strong HCl reaction, trace sand *(continued)* 78.4ft: moderately hard to hard, moderately indurated to indurated, trace vugs, few shell molds and casts 83.4ft: moderately hard, moderately indurated, few vugs
-79.3	78.4					RUN-12			
-84.3	83.4					RUN-13			
-89.3	88.4					RUN-14			
-93.3	92.4								POORLY GRADED SAND (SP), light gray (10YR7/1), moist, fine to medium grained sand, soft, some shell fragments, strong HCl reaction
-94.3	93.4					RUN-15			
-99.3	98.4					RUN-16			
-100.3	99.4								LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, little vugs, fossiliferous, strong HCl reaction, few to some shell molds and casts
-104.3	103.4					RUN-17			
-109.3	108.4					RUN-18			108.4ft: soft to moderately hard, friable to moderately indurated
-113.9	113.0								POORLY GRADED SAND with silt (SP-SM), light gray (10YR7/1), medium dense, wet, fine to coarse grained sand, some shell fragments, strong HCl reaction, with soft, friable to moderately indurated cemented sand layers (Tamiami Formation)
-114.3	113.4					RUN-19			
-119.3	118.4	6	8	5	13	720(DH)-10			118.4ft: Switch sampling method to SPT
-129.3	128.4	4	4	4	8	720(DH)-11			128.4ft: greenish gray (5GY5/1), loose, weak HCl reaction
-139.7	138.8	8	9	8	17	720(DH)-12			Silty SAND (SM), greenish gray (5GY5/1), medium dense, wet, weak HCl reaction, fine to coarse grained sand, fine gravel
-149.3	148.4	5	7	10	17	720(DH)-13			

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 8/19/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)	
BORING NO.: B-720(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,397 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 204.9 ft	BORING DIAMETER: 4" to 204.9'	CASING DEPTH: 4" to 118.4'	HAMMER (ID):140 lb. Auto (MEC-05)	
DATE STARTED: 4/5/08	COMPLETED: 4/8/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Tricone	

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
-150.5					Continued from previous page				
									148.4ft: fine grained sand Silty SAND (SM), greenish gray (5GY5/1), medium dense, wet, weak HCl reaction, fine to coarse grained sand, fine gravel *(continued)*
-159.3	158.4								-159.3 158.4
		4	6	13	19	B-720(DH)-14			Sandy SILT (ML), greenish gray (5GY5/1), very stiff, wet, weak HCl reaction, fine to coarse grained sand, fine gravel
-169.3	168.4								
		4	6	13	19	B-720(DH)-15			
-179.3	178.4								
		3	4	7	11	B-720(DH)-16			
-189.3	188.4								
		3	4	13	17	B-720(DH)-17			
-199.3	198.4								
		3	4	7	11	B-720(DH)-18			
-204.3	203.4								
		4	5	8	13	B-720(DH)-19			-205.8 204.9
									Boring Terminated at Elevation -205.8 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/19/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-720(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,397 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 204.9 ft	CASING DEPTH: 4" to 118.4'		HAMMER (ID): 140 lb. Auto (MEC-05)
DATE STARTED: 4/5/08	COMPLETED: 4/8/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

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 @ 29.8 ft
-30.7	29.8	3.6	0:39 0:41 0:42 0:28/0.6	(3.4) 94%	(3.0) 83%	RUN-1	(18.0) 97%	(16.7) 90%		LIMESTONE, boundstone, white (10YR8/1), hard, moist, strong HCl reaction, oolitic (Upper Fort Thompson Formation) *(continued)* 29.8ft: moderately hard, moderately indurated, fossiliferous, vugs filled with cemented sand and shell fragments
-34.3	33.4	5.0	1:14 0:50 0:38 0:29 0:30	(5.0) 100%	(4.4) 88%	RUN-2				33.4ft: hard, indurated, few vugs, coralline
-39.3	38.4	5.0	1:03 1:08 0:52 1:05 1:07	(4.6) 92%	(4.5) 90%	RUN-3				38.4ft: loss of circulation
-44.3	43.4	5.0	0:56 1:05 1:05 1:26 1:36	(5.0) 100%	(4.8) 96%	RUN-4				43.4ft: white (10YR8/1) to 46.8ft, then gray (10YR6/1) to 48.4ft
-49.3	48.4	5.0	1:08 1:16 1:02 1:14 0:55	(5.0) 100%	(5.0) 100%	RUN-5	(9.4) 75%	(7.7) 61%		-49.3 48.4 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few to little shell molds and casts (Lower Fort Thompson Formation)
-54.3	53.4	5.0	0:40 1:06 0:48 0:19 0:28	(2.6) 52%	(0.4) 8%	RUN-6				53.4ft: moderately hard. moderately indurated, little vugs, trace sand
-59.3	58.4	5.0	0:41 0:26 0:49 0:38 0:21	(1.8) 36%	(1.8) 36%	RUN-7				58.4ft: few vugs
-64.3	63.4	5.0	0:25 1:27 0:41 1:04 3:29	(1.7) 34%	(0.0) 0%	RUN-8	(3.7) 39%	(0.0) 0%		-61.9 61.0 POORLY GRADED SAND (SP), light gray (10YR7/1), soft, moist, fine grained sand, and interbedded LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, trace vugs, few to little sand
-69.3	68.4	1.8	0:26 3:35	(1.8) 100%	(0.0) 0%	RUN-9				68.4ft: fine to medium grained sand, some shell fragments, few to little friable LIMESTONE fragments, strong HCl reaction
-71.1	70.2	3.2	2:10 1:56 2:32	(3.2) 100%	(2.9) 91%	RUN-10 *RUN-10*	(15.2) 69%	(11.1) 50%		-71.3 70.4 LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, few vugs, strong HCl reaction, trace sand
-74.3	73.4	5.0	0:23 0:25 0:37 0:29 0:23	(2.6) 52%	(1.7) 34%	RUN-11				73.4ft: fossiliferous
-79.3	78.4	5.0	0:36 0:19 0:15 0:29 0:41	(3.0) 60%	(1.7) 34%	RUN-12				78.4ft: moderately hard to hard, moderately indurated to indurated, trace vugs, few shell molds and casts
-84.3	83.4	5.0	0:30 0:19 0:27 0:54 0:39	(2.7) 54%	(2.1) 42%	RUN-13				83.4ft: moderately hard, moderately indurated, few vugs
-89.3	88.4	5.0	0:54 0:15 0:17 0:21 0:18	(3.9) 78%	(2.7) 54%	RUN-14				-93.3 92.4
-94.3	93.4	5.0	0:41 0:35 0:23 0:19 0:19	(2.7) 54%	(0.0) 0%	RUN-15	(2.7) 39%	(0.0) 0%		POORLY GRADED SAND (SP), light gray (10YR7/1), moist, fine to medium grained sand, soft, some shell fragments, strong HCl reaction
-99.3	98.4	5.0	0:48 1:05 0:53 1:08 0:47	(3.6) 72%	(2.1) 42%	RUN-16	(7.6) 56%	(5.6) 41%		-100.3 99.4 LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, little vugs, fossiliferous, strong HCl reaction, few to some shell molds and casts
-104.3	103.4	5.0	0:34	(3.8)	(3.5)	RUN-17				

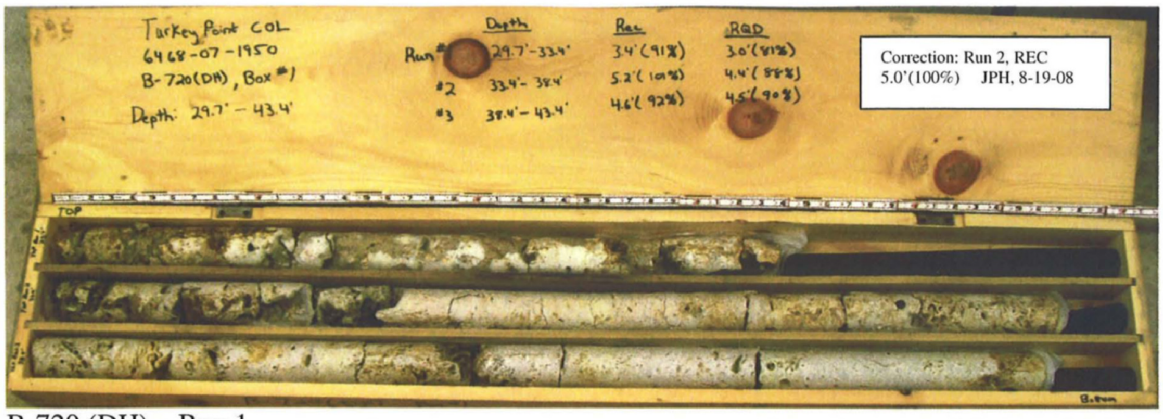
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/19/08

MACTEC

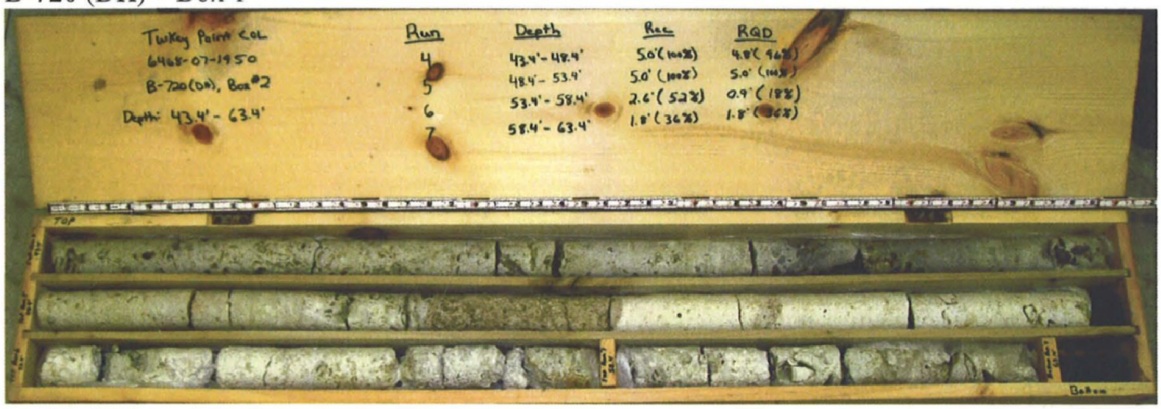
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)	
BORING NO.: B-720(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 397,397 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 204.9 ft	CASING DEPTH: 4" to 118.4'		HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 4/5/08	COMPLETED: 4/8/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

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
										Continued from previous page
			0:39 0:32 0:28	76%	70%					LIMESTONE, boundstone, white (10YR8/1), moderately hard, moderately indurated, little vugs, fossiliferous, strong HCl reaction, few to some shell molds and casts *(continued)*
-109.3	108.4		0:19							
		5.0	0:26 0:22 0:19 1:37	(0.2) 4%	(0.0) 0%	RUN-18				108.4ft: soft to moderately hard, friable to moderately indurated
-114.3	113.4		0:39							-113.9 113.0
		5.0	0:25 0:21 0:10 0:11	(0.7) 14%	(0.0) 0%	RUN-19	(0.7) 13%	(NA)		POORLY GRADED SAND with silt (SP-SM), light gray (10YR7/1), medium dense, wet, fine to coarse grained sand, some shell fragments, strong HCl reaction, with soft, friable to moderately indurated cemented sand layers (Tamiami Formation)
-119.3	118.4		0:11							-119.3 118.4
										Coring Terminated at Elevation -119.3

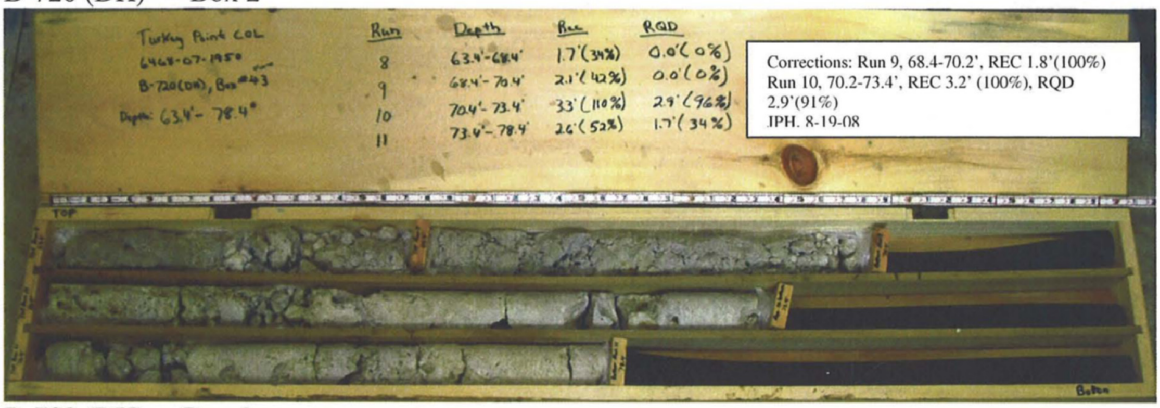
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/19/08



B-720 (DH) – Box 1

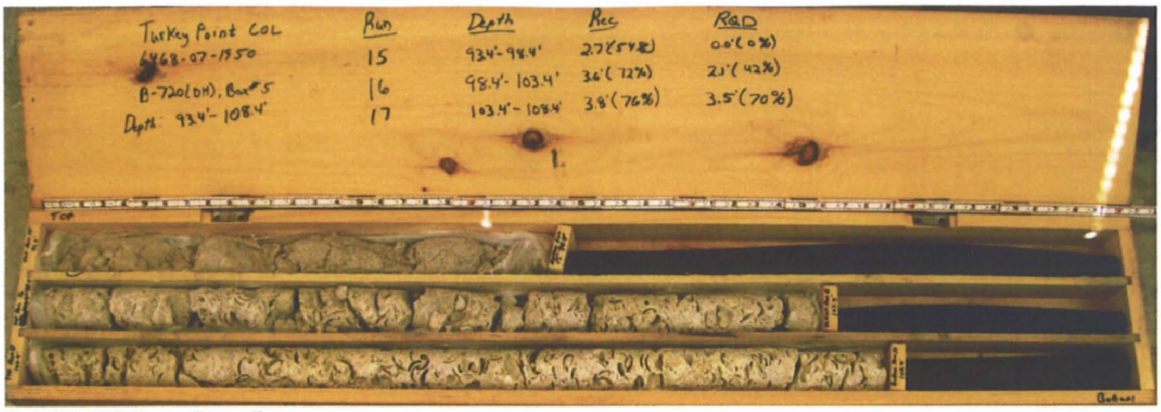


B-720 (DH) – Box 2



B-720 (DH) – Box 3

B-720 (DH) – Box 4



B-720 (DH) – Box 5

B-720 (DH) – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By: _____ Date: 5-30-08

Checked By: _____ Date: 5-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 Marsh Buggy	DRILLER: P. Pitts/R. Price	GROUND WATER (ft)
BORING NO.: B-720G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,385 US ft (NAD83/90)	EASTING: 875,794 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 220.8 ft	BORING DIAMETER: 4" to 220.8'	CASING DEPTH: NA	HAMMER (ID):140 lb. Auto (MEC-425)
DATE STARTED: 3/12/08	COMPLETED: 3/20/08	CORE SIZE: NA	BITS USED: 3 7/8" Mill Bit

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
-1.1					Ground Surface				-1.1 0.0
					SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				Boring drilled to perform down-hole geophysical testing. See boring B-720(DH) for complete soil and rock descriptions.
-3.6	2.5								Muck
									LIMESTONE (Miami Formation)
-26.1	25.0								LIMESTONE (Fort Thompson Formation)

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 Marsh Buggy	DRILLER: P. Pitts/R. Price	GROUND WATER (ft)
BORING NO.: B-720G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,385 US ft (NAD83/90)	EASTING: 875,794 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 220.8 ft	BORING DIAMETER: 4" to 220.8'	CASING DEPTH: NA	HAMMER (ID):140 lb. Auto (MEC-425)
DATE STARTED: 3/12/08	COMPLETED: 3/20/08	CORE SIZE: NA	BITS USED: 3 7/8" Mill Bit

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
-75.9					Continued from previous page				LIMESTONE (Fort Thompson Formation) *(continued)*
-116.1									SAND (Tamiami Formation) 115.0

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 Marsh Buggy	DRILLER: P. Pitts/R. Price	GROUND WATER (ft)	
BORING NO.: B-720G(DH)	DRILL METHOD: Mud Rotary	SAMPLE METHODS: NA	0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 397,385 US ft (NAD83/90)	EASTING: 875,794 US ft (NAD83/90)	24 HR. NA	
TOTAL DEPTH: 220.8 ft	BORING DIAMETER: 4" to 220.8'	CASING DEPTH: NA	HAMMER (ID):140 lb. Auto (MEC-425)	
DATE STARTED: 3/12/08	COMPLETED: 3/20/08	CORE SIZE: NA	BITS USED: 3 7/8" Mill Bit	

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
-150.7					Continued from previous page				SAND (Tamiami Formation) *(continued)*
-221.9	220.8								Boring Terminated at Elevation -221.9 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08