

B-707 - Box 5



GEOTECHNICAL BORING LOG

Prepared By 277 Date 5-30-08

Checked By [Signature] Date 5-30-08

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)								
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA							
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR.	NA							
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'		CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)								
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100	
-1.4					Ground Surface							-1.4	0.0	
-1.4	0.0	WOH	WOH	WOH							708(DH)-1			
-4.0	2.6										708(DH)-2			
-6.4	5.0	11	22	23							708(DH)-3			
-9.4	8.0	10	10	6							708(DH)-4			
-11.0	9.6	6	20	13							708(DH)-5			
-14.4	13.0	3	12	15							708(DH)-6			
-16.9	15.5	11	50/0.5								708(DH)-7			
-21.9	20.5	10	50/0.5								708(DH)-8			
-27.0	25.6	9	6	7							708(DH)-9			
-27.5	26.1	50/0.5									RUN-1			
-31.8	30.4										RUN-2			
-36.8	35.4										RUN-3			
-41.8	40.4										708(DH)-CS-01			
-46.8	45.4										RUN-4			
-51.8	50.4										RUN-5			
-56.8	55.4										RUN-6			
-61.8	60.4										708(DH)-CS-04			
-66.8	65.4										RUN-7			
-71.8	70.4										RUN-8			
-76.3	74.9										708(DH)-CS-06			
											RUN-9			
											RUN-10			

TURKEY POINT COL BORE, TURKEY POINT GP, TURKEY POINT COL GDT, 5-20-08



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs					
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker			GROUND WATER (ft)			
BORING NO.: B-708(DH)				DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR. NA						
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'			CASING DEPTH: 4" to 105.8'			HAMMER (ID): 140 lb. Auto (07)				
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3			BITS USED: 3 7/8" Roller Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-76.2					Continued from previous page							
-81.9	80.5										RUN-11	
-86.9	85.5										RUN-12	
-91.9	90.5										RUN-13	
-96.9	95.5										RUN-14	
-101.9	100.5										RUN-15	
-106.9	105.5										RUN-16 708(DH)-CS-07	
-111.9	110.5										RUN-17	
-116.9	115.5	12	10	16							RUN-18	
-127.4	126.0	8	10	13							708(DH)-10	
-136.9	135.5	8	11	8							708(DH)-11	
-144.1	142.7	13	14	15							708(DH)-12	
											708(DH)-13	

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL GDT, S 3008



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)	
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'		CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-151.0					Continued from previous page							
-154.3	152.9	6	8	12		20				708(DH)-14		Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) (continued)
-164.4	163.0	6	14	10		24				708(DH)-15		
-174.4	173.0	1	2	6		8				708(DH)-16		173.0ft: loose
-184.4	183.0	2	2	6		8				708(DH)-17		
-194.4	193.0	1	2	4		6				708(DH)-18		193.0ft: weak HCl reaction
-204.4	203.0	3	3	4		7				708(DH)-19		
-214.4	213.0	3	5	8		13				708(DH)-20		213.0ft: medium dense, strong HCl reaction
-224.4	223.0	9	8	5		13				708(DH)-21		Silty SAND (SM), greenish gray (10Y5/1), medium dense, moist, fine grained sand, little fines, strong HCl reaction (Hawthorn Group)

TURKEY POINT COL BORE TURKEY POINT G.P.J. TURKEY POINT COL.GDT 5/30/08



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)	
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'		CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)	

DATE STARTED: 3/7/08	COMPLETED: 3/13/08	CORE SIZE: HQ3	BITS USED: 3 7/8" Roller Cone
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ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-225.8					Continued from previous page							
-234.4	233.0	7	12	16								Silty SAND (SM), greenish gray (10Y5/1), medium dense, moist, fine grained sand, little fines, strong HCl reaction (Hawthorn Group) (continued)
-244.4	243.0	10	15	21						708(DH)-23		243.0ft: dense, no HCl reaction
-254.3	252.9	4	10	19						708(DH)-24		252.9ft: medium dense
-266.4	265.0	5	12	30						708(DH)-25		256.0ft: dense
												Boring Terminated at Elevation -267.9 ft

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



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft) 0 HR. NA 24 HR. NA
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)	
TOTAL DEPTH: 266.5 ft		CASING DEPTH: 4" to 105.8'			HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/7/08		COMPLETED: 3/13/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

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 @ 26.1 ft
-27.5	26.1	4.3	1:11/0.3 1:49 3:37 5:56 5:36	(4.2) 98%	(0.4) 9%	RUN-1	(19.7) 92%	(11.7) 54%		LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) (continued) 26.1ft: white (10YR8/1), with gray (10YR6/1), medium hard, moderately indurated, fossiliferous, recrystallized calcite, coralline, little to some vugs 27.0ft: loss of circulation
-31.8	30.4	5.0	2:37 2:16 3:02 2:18 3:41	(3.3) 66%	(0.7) 14%	RUN-2				
-36.8	35.4	5.0	2:15 3:08 3:31 3:25 6:01	(5.0) 100%	(3.7) 74%	RUN-3 708(DH)-CS-01				35.4ft: medium hard to hard, moderately indurated to indurated, little vugs
-41.8	40.4	5.0	2:33 2:06 2:58 3:01 3:27	(5.0) 100%	(5.0) 100%	RUN-4				40.4ft: white (10YR8/1), hard, indurated, few vugs
-46.8	45.4	5.0	1:49 2:35 2:26 1:58 1:34	(5.0) 100%	(4.7) 94%	RUN-5				45.4 to 47.6ft: gray (10YR6/1), trace vugs
-51.8	50.4	5.0	2:42 2:16 1:36 0:55 0:35	(4.8) 96%	(3.5) 70%	RUN-6 708(DH)-CS-04	(50.1) 75%	(30.8) 46%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) 53.3ft: moderately hard, moderately indurated, trace to few shell molds and casts
-56.8	55.4	5.0	0:58 0:45 1:09 1:48 4:43	(5.0) 100%	(4.2) 84%	RUN-7				55.4ft: hard, indurated
-61.8	60.4	5.0	2:02 2:08 1:29 0:36 0:29	(3.2) 64%	(2.4) 48%	RUN-8 708(DH)-CS-06				60.4ft: moderately hard to hard, moderately indurated to indurated 63.0 to 65.4ft: friable, fractured
-66.8	65.4	5.0	0:15 0:41 0:30 2:00 1:35	(1.9) 38%	(0.6) 12%	RUN-9				65.4ft: indurated, sandy, coralline
-71.8	70.4	4.5	1:56 2:50 3:15 1:33	(3.2) 71%	(1.9) 42%	RUN-10				70.4ft: hard
-76.3	74.9	5.6	3:25/0.5 1:21/1.6 1:20 1:26 1:43 1:50	(4.2) 75%	(3.2) 57%	RUN-11				
-81.9	80.5	5.0	0:40 0:48 0:24 1:01 2:37	(3.2) 64%	(0.7) 14%	RUN-12				80.5ft: moderately hard, moderately indurated, trace to few shell molds and casts
-86.9	85.5	5.0	1:35 1:28 6:46 2:46 2:52	(4.7) 94%	(2.9) 58%	RUN-13				85.5ft: moderately hard to hard, moderately indurated to indurated
-91.9	90.5	5.0	1:17 1:49 1:00 1:04 1:44	(4.4) 88%	(2.9) 58%	RUN-14				
-96.9	95.5	5.0	0:26 0:40 0:51 1:18 1:50	(2.8) 56%	(0.4) 8%	RUN-15				
-101.9	100.5									

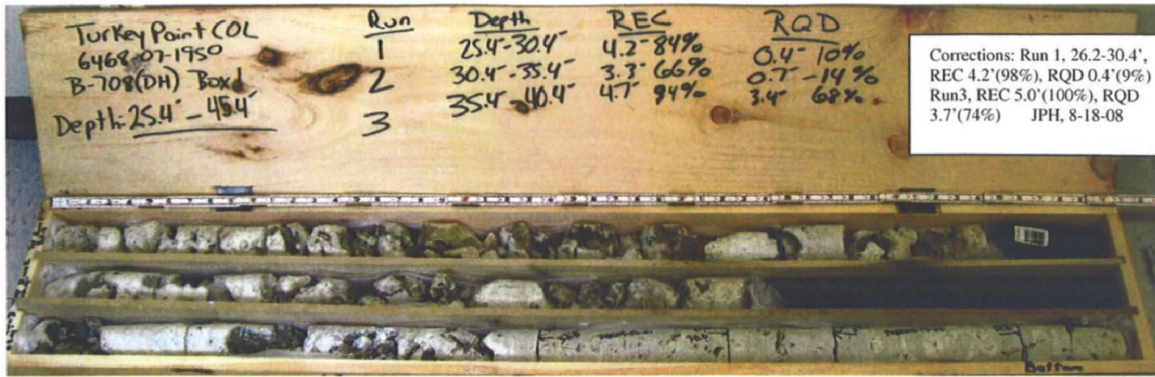
TURKEY POINT CORE TURKEY POINT GP TURKEY POINT COL GDT 5/30/08



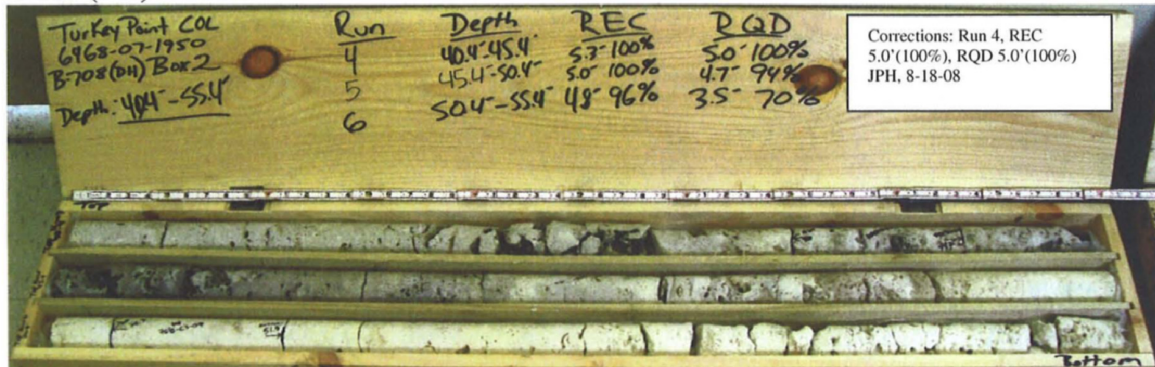
BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)	
TOTAL DEPTH: 266.5 ft		CASING DEPTH: 4" to 105.8'			HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

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) %		
										Continued from previous page
-106.9	105.5	5.0	0:55 1:50 1:20 0:58 1:23	(4.9) 98%	(4.2) 84%	RUN-16 708(DH)- CS-07				100.5ft: hard, indurated, little shell molds and casts LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-111.9	110.5	5.0	1:43 1:10 1:33 1:05 1:08	(3.4) 68%	(1.1) 22%	RUN-17				
-116.9	115.5	5.0	0:52 1:04 1:01 1:04 0:30	(1.6) 32%	(0.0) 0%	RUN-18	(0.0) 0%	(NA)		-115.4 -116.9 Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) Coring Terminated at Elevation -116.9

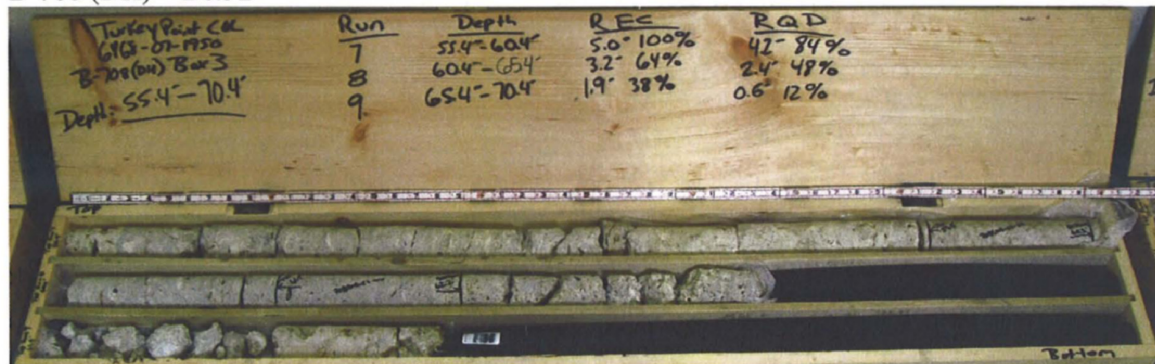
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30:08



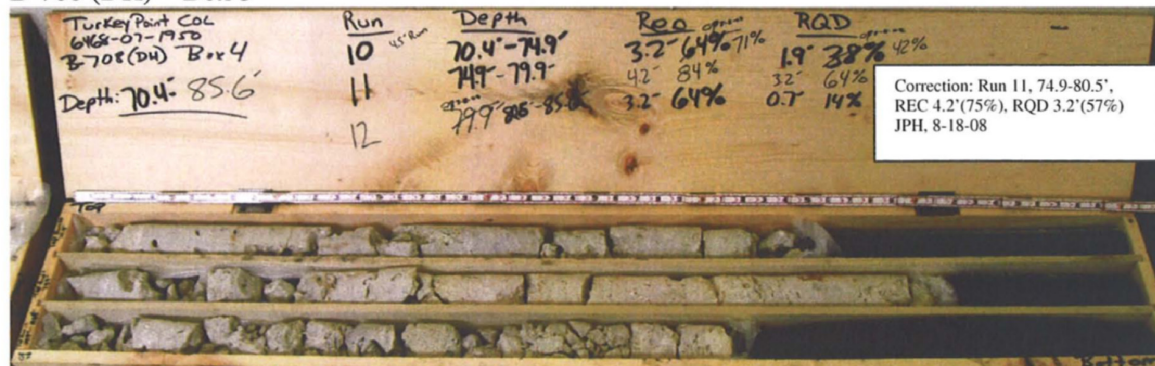
B-708 (DH) - Box 1



B-708 (DH) - Box 2

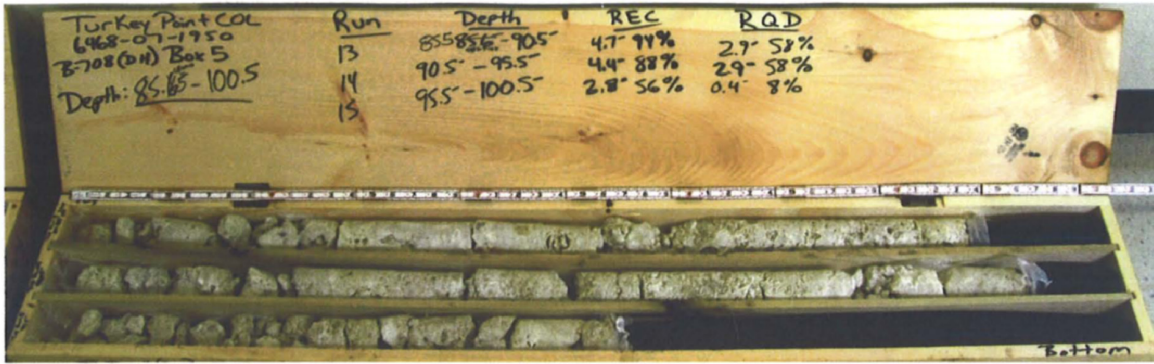


B-708 (DH) - Box 3

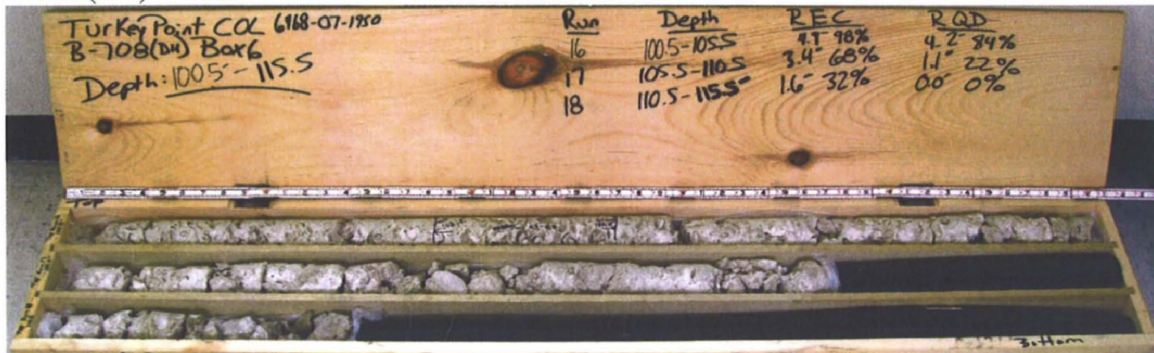


B-708 (DH) - Box 4





B-708 (DH) – Box 5



B-708 (DH) – Box 6



GEOTECHNICAL BORING LOG

Prepared By JPP Date 5/30/08

Checked By JM Date 6/30/08

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-550X (ATL)		DRILLER: R. Landeros/P. Pitts		GROUND WATER (ft)							
BORING NO.: B-709		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA						
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,761 US ft (NAD83/90)		EASTING: 875,841 US ft (NAD83/90)		24 HR.	NA						
TOTAL DEPTH: 150.0 ft		BORING DIAMETER: 4" to 28.5', 3" to 150.0'		CASING DEPTH: 4" to 28.5', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-05)							
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		BITS USED: 2 15/16 & 4 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100
-1.3					Ground Surface								
-1.3	0.0	WOH	WOH	WOH							709-1		MUCK, very dark brown (10YR2/2). very soft, moist, organic
-3.8	2.5										709-2A&B		
-6.6	5.3	WOH	5	8							709-3		LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, strong HCl reaction, fossiliferous, oolitic (Miami Formation)
-8.8	7.5	8	8	4							709-4		5.3ft: white (5Y8/1) 7.5ft: white (10YR8/1)
-11.3	10.0	4	9	4							709-5		10.0ft: soft
-13.8	12.5	8	12	9							709-6		
-16.3	15.0	11	14	11							709-7		
-19.8	18.5	10	18	11							709-8		18.5ft: very soft
-24.8	23.5	6	6	8							709-9		
-29.8	28.5	3	4	12							709-10		LIMESTONE, boundstone, white, (10YR8/1), hard, wet, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation)
-30.5	29.2	40	50/0.2						90/0.7		RUN-1		29.2ft: Switched sampling method to coring 29.2ft: white (2.5Y8/1), hard, indurated, coralline, fossiliferous, recrystallized calcite, strong HCl reaction, some vugs
-35.3	34.0										RUN-2		30.0ft: loss of circulation 34.0ft: few vugs
-40.3	39.0										RUN-3		
-45.3	44.0										RUN-4		44.0ft: white (2.5Y8/1) to 45.6 then gray (2.5Y6/1) to 48.4ft, some vugs
-50.3	49.0										RUN-5		
-55.3	54.0										RUN-6		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-60.3	59.0										RUN-7		49.0ft: moderately hard, moderately indurated, few vugs 54.0ft: hard, indurated
-65.3	64.0										RUN-8		
-70.3	69.0										RUN-9		69.0ft: moderately hard to hard, moderately indurated to indurated. sandy, some vugs
-75.3	74.0										RUN-10		

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



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/P. Pitts		GROUND WATER (ft)								
BORING NO.: B-709		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,761 US ft (NAD83/90)		EASTING: 875,841 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 150.0 ft		BORING DIAMETER: 4" to 28.5', 3" to 150.0'		CASING DEPTH: 4" to 28.5', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-05)								
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		BITS USED: 2 15/16 & 4 7/8" Roller Cone								
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
-76.1					Continued from previous page									
-80.3	79.0													74.0ft: hard, indurate
-81.6	80.3													74.0 to 79.0ft: possible interbedded sand
-83.1	81.8	6	12	17										LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-85.3	84.0													79.0ft: no recovery, inner barrel sand-locked
-90.3	89.0													80.3ft: Switch sampling method to SPT
-95.3	94.0													80.3ft: LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, some coarse grained sand
-100.3	99.0													81.8ft: Switch sampling method to coring
-105.3	104.0													81.8ft: LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few coarse grained sand, trace shell molds
-110.3	109.0													84.0ft: extremely indurated, few vugs
-115.3	114.0													89.0ft: indurated
-121.8	120.5	6	7	9										99.0ft: moderately hard, some vugs, little to some shell molds and casts
-124.8	123.5	18	18	7										104.0ft: hard
-129.8	128.5	6	8	11										
-134.8	133.5	WOH	WOH	2										
-139.8	138.5	7	9	11										
-144.8	143.5	6	6	12										
-149.8	148.5	5	6	10										

TURKEY POINT BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/20/08



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade		GEOLOGIST: S. Woodham						
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/P. Pitts		GROUND WATER (ft)					
BORING NO.: B-709				DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA					
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,761 US ft (NAD83/90)		EASTING: 875,841 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 150.0 ft		BORING DIAMETER: 4" to 28.5', 3" to 150.0'			CASING DEPTH: 4" to 28.5', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-05)						
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		BITS USED: 2 15/16 & 4 7/8" Roller Cone							
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
-150.9													Continued from previous page
													Boring Terminated at Elevation -151.3 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5.30.08



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/P. Pitts		GROUND WATER (ft)	
BORING NO.: B-709		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,761 US ft (NAD83/90)		EASTING: 875,841 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 150.0 ft		CASING DEPTH: 4" to 28.5', 3" to 120.0'				HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

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 @ 29.2 ft
-30.5	29.2	4.8	1:42 1:20 1:30 1:10	(4.2) 88%	(2.5) 52%	RUN-1	(16.7) 87%	(12.7) 66%		LIMESTONE, boundstone, white, (10YR8/1), hard, wet, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation) (continued) 29.2ft: white (2.5Y8/1), hard, indurated, coralline, fossiliferous, recrystallized calcite, strong HCl reaction, some vugs
-35.3	34.0	5.0	2:00/0.8	(3.9) 78%	(2.9) 58%	RUN-2				30.0ft: loss of circulation 34.0ft: few vugs
-40.3	39.0	5.0	1:10 1:12 1:13 0:51 1:06	(5.0) 100%	(4.5) 90%	RUN-3				
-45.3	44.0	5.0	0:44 1:20 1:12 1:04 1:58	(4.2) 84%	(3.4) 68%	RUN-4				44.0ft: white (2.5Y8/1) to 45.6 then gray (2.5Y6/1) to 48.4ft, some vugs
-50.3	49.0	5.0	0:57 0:43 1:06 1:11 1:12	(4.9) 98%	(4.0) 80%	RUN-5	(43.8) 66%	(26.6) 40%	-49.7	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 49.0ft: moderately hard, moderately indurated, few vugs
-55.3	54.0	5.0	0:52 0:55 0:20 0:45 0:30	(3.9) 78%	(2.6) 52%	RUN-6				54.0ft: hard, indurated
-60.3	59.0	5.0	0:37 0:35 1:12 1:02 0:42	(4.6) 92%	(4.6) 92%	RUN-7				
-65.3	64.0	5.0	0:36 0:39 0:56 0:36 0:10	(3.3) 66%	(1.5) 30%	RUN-8				
-70.3	69.0	5.0	0:15 0:10 0:36 0:57 1:23	(3.0) 60%	(0.4) 8%	RUN-9				69.0ft: moderately hard to hard, moderately indurated to indurated, sandy, some vugs
-75.3	74.0	5.0	0:30 0:27 0:25 0:20 0:47	(1.6) 32%	(0.0) 0%	RUN-10				74.0ft: hard, indurate 74.0 to 79.0ft: possible interbedded sand
-80.3	79.0	1.3	0:15 0:07/0.3	(0.0) 0%	(0.0) 0%	RUN-11				79.0ft: no recovery, inner barrel sand-locked
-81.6	80.3	1.3				709-11				80.3ft: Switch sampling method to SPT
-83.1	81.8	2.2	1:15 1:45	(1.8) 82%	(0.9) 41%	RUN-12				80.3ft: LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, some coarse grained sand
-85.3	84.0	2.2	0:36/0.2	(3.5) 70%	(1.3) 26%	RUN-13				81.8ft: Switch sampling method to coring 81.8ft: LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few coarse grained sand, trace shell molds
-90.3	89.0	5.0	1:36 1:15 5:37 3:41 2:28	(0.5) 10%	(0.4) 8%	RUN-14				84.0ft: extremely indurated, few vugs
-95.3	94.0	5.0	3:32 1:09 0:54 1:25 0:26	(0.5) 10%	(0.4) 8%	RUN-14				89.0ft: indurated
-100.3	99.0	5.0	1:25 1:05 0:26 0:31 0:21	(2.3) 46%	(1.2) 24%	RUN-15				
-105.3	104.0	5.0	0:51 0:55 0:27 0:40 0:46	(4.9) 98%	(3.3) 66%	RUN-16				99.0ft: moderately hard, some vugs, little to some shell molds and casts

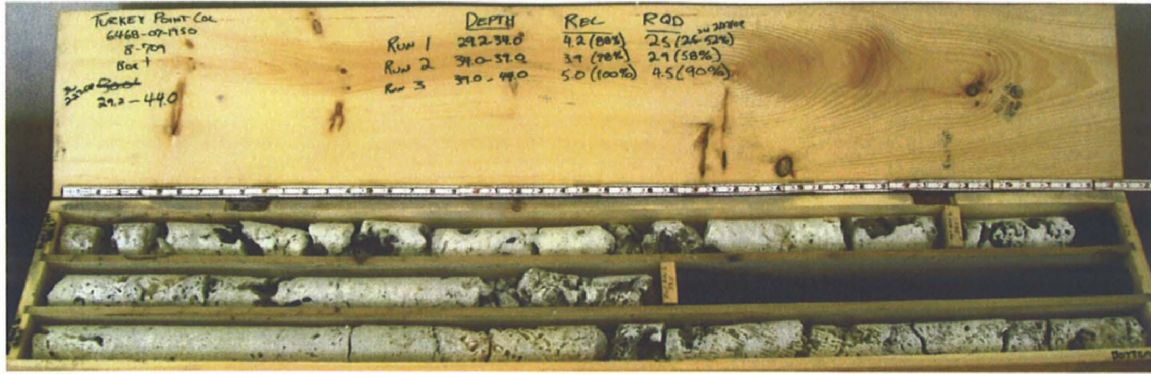
TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDI 5:30'08



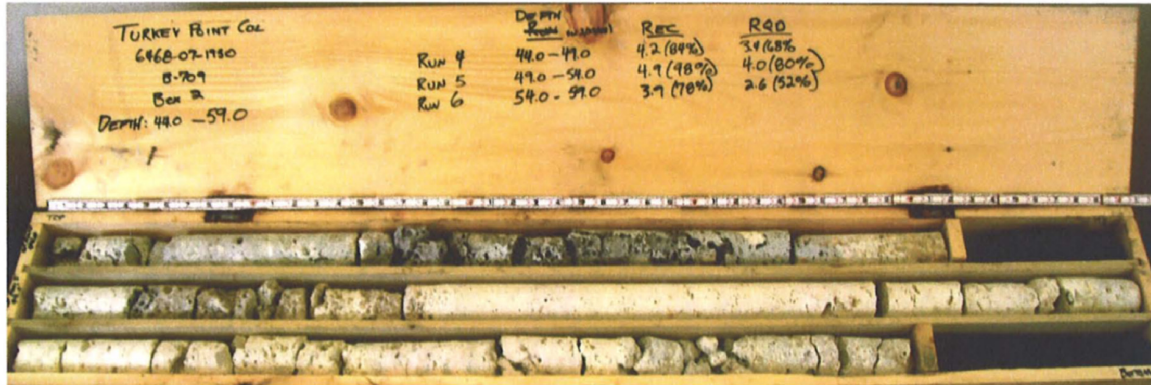
BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/P. Pitts		GROUND WATER (ft)	
BORING NO.: B-709		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,761 US ft (NAD83/90)		EASTING: 875,841 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 150.0 ft		CASING DEPTH: 4" to 28.5', 3" to 120.0'				HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

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) %		
										Continued from previous page
-110.3	109.0	5.0	1:10 0:53 0:46 1:00 0:40	(5.0) 100%	(4.0) 80%	RUN-17				104.0ft: hard LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-115.3	114.0	5.0	0:30 1:50 1:29 0:43 0:31	(3.4) 68%	(1.8) 36%	RUN-18				
-120.3	119.0	5.0	0:38 0:37 0:24 0:19 0:25	(0.5) 10%	(0.0) 0%	RUN-19	(0.0) 0%	(NA)		-116.3 114.0ft: light gray (5Y7/1) Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, little fines. HCl reaction (Tamiami Formation) 115.0 -120.3 119.0
										Coring Terminated at Elevation -120.3

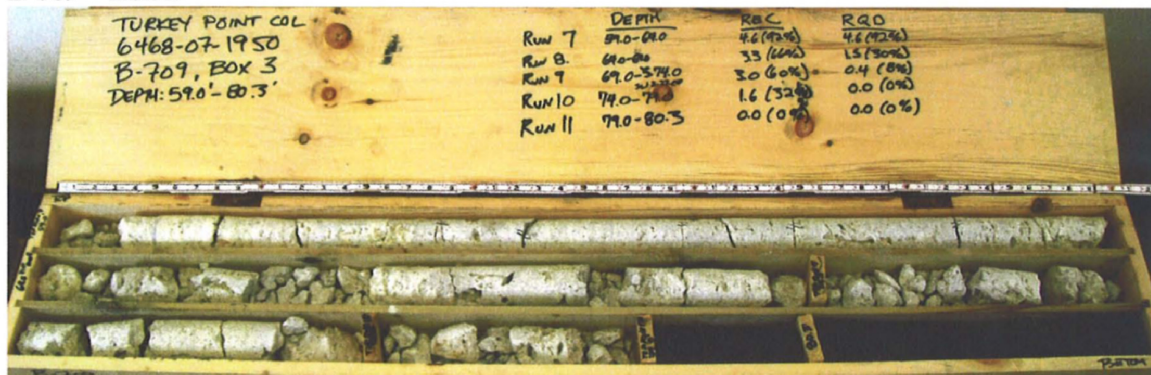
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDI 5/30/08



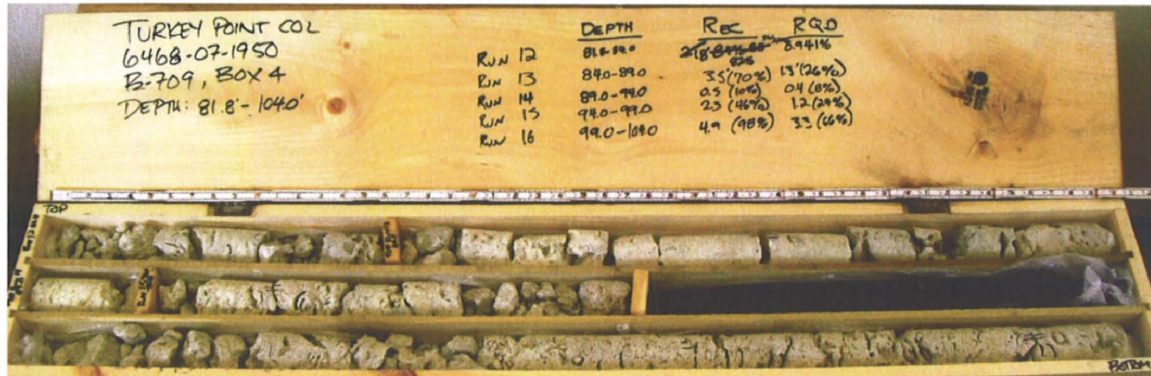
B-709 - Box 1



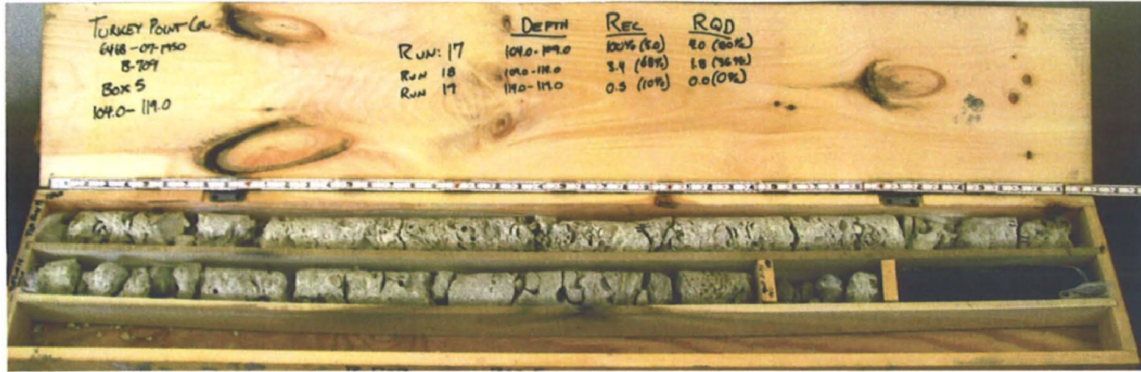
B-709 - Box 2



B-709 - Box 3



B-709 - Box 4



B-709 - Box 5





GEOTECHNICAL BORING LOG

Prepared By *[Signature]* Date 8-19-08

Checked By *[Signature]* Date 8/19/08

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez							
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-75 (CLT)		DRILLER: J. Warren/ C. Sloan/ M. Harvey		GROUND WATER (ft)						
BORING NO.: B-710(DH)				DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA						
GROUND ELEV.: -1.3 ft (NAVD88)				NORTHING: 397,087 US ft (NAD83/90)		EASTING: 875,793 US ft (NAD83/90)		24 HR. NA						
TOTAL DEPTH: 250.9 ft		BORING DIAMETER: 4" to 18.5', 3" to 250.9'			CASING DEPTH: 4" to 18.5', 3" to 123.0'		HAMMER (ID):140 lb. Auto (MEC-09)							
DATE STARTED: 4/2/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 4.5" Tricones								
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
-1.3					Ground Surface								0.0	
-1.3	0.0	WOH	WOH	WOH	0						710(DH)-1			Standard penetration tests performed for this boring from 0.0 to 15.0ft not valid due to nonconforming hammer drop distance. Boring redrilled from 0.0 to 15.0ft at offset location as B-710(DH)R. MUCK, no recovery LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, strong HCl reaction, little fine grained sand, oolitic (Miami Formation) 7.5ft: little to few fine grained sand  12.5ft: trace sand  15.0ft: hard 16.8ft: Switch sampling method to coring 16.8ft: white (2.5Y8/1), medium hard, moderately indurated, fossiliferous, few to little locally interconnected vugs  25.3 LIMESTONE, boundstone, white (2.5Y8/1), medium hard to moderately hard, moderately indurated, fossiliferous, coralline, few vugs (Upper Fort Thompson Formation) 27.0ft: loss of circulation  31.3ft: moderately hard  46.3ft: white (2.5Y8/1), to 46.6ft then greenish gray (10Y6/1), to 48.5ft 49.8 LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) 51.3ft: trace shell molds and casts  56.3ft: moderately hard, indurated  66.3 to 68.3ft: possible sand layer  71.3ft: hard
-3.8	2.5	7	8	10							710(DH)-2		2.0	
-6.1	4.8	8	8	7							710(DH)-3			
-8.8	7.5	11	4	4							710(DH)-4			
-11.1	9.8	3	4	5							710(DH)-5			
-14.1	12.8	4	6	5							710(DH)-6			
-16.3	15.0	8	50/0.4								710(DH)-7			
-18.1	16.8								58/0.9		RUN-1			
-22.8	21.5										RUN-2			
-27.6	26.3										RUN-3		24.0	
-32.6	31.3										RUN-4			
-37.6	36.3										RUN-5			
-42.6	41.3										RUN-6			
-47.6	46.3										RUN-7			
-52.6	51.3										RUN-8		48.5	
-57.6	56.3										RUN-9			
-62.6	61.3										RUN-10			
-67.6	66.3										RUN-11			
-72.6	71.3										RUN-12			
-73.5	72.2										RUN-13			

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8:18:08



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez						
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-75 (CLT)		DRILLER: J. Warren/ C. Sloan/ M. Harvey		GROUND WATER (ft)						
BORING NO.: B-710(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA						
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 397,087 US ft (NAD83/90)		EASTING: 875,793 US ft (NAD83/90)		24 HR. NA						
TOTAL DEPTH: 250.9 ft		BORING DIAMETER: 4" to 18.5', 3" to 250.9'		CASING DEPTH: 4" to 18.5', 3" to 123.0'		HAMMER (ID):140 lb. Auto (MEC-09)						
DATE STARTED: 4/2/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 4.5" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-76.1					Continued from previous page							
-77.6	76.3										RUN-14	LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) (continued)
-82.6	81.3										RUN-15	76.3ft: moderately hard, moderately indurated 81.3ft: little vugs, few shell molds and casts
-87.6	86.3										RUN-16	86.3ft: few shell molds and casts
-92.6	91.3										RUN-17	91.3ft: sandy
-97.6	96.3										RUN-18	
-102.6	101.3										RUN-19	101.3ft: medium hard, little shell molds and casts
-107.6	106.3										RUN-20	106.3ft: moderately hard to friable, few shell molds and casts
-112.6	111.3										RUN-21	
-117.6	116.3										RUN-22	114.0 POORLY GRADED SAND (SP), pale yellow (2.5Y8/3), medium dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments (Tamiami Formation) 116.3ft: limestone fragments
-122.6	121.3										710(DH)-8	121.3ft: Switch sampling method to SPT
-129.7	128.4	7	6	7							710(DH)-9	125.0 Silty SAND (SM), pale yellow (2.5Y8/3), dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments
-139.7	138.4	10	15	17							710(DH)-10	138.4ft: greenish gray (10Y6/1)
-149.7	148.4	8	11	20							710(DH)-11	148.4ft: very dense, trace shell fragments
		23	35	44								

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT S:18 US



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-75 (CLT)		DRILLER: J. Warren/ C. Sloan/ M. Harvey		GROUND WATER (ft)	
BORING NO.: B-710(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 397,087 US ft (NAD83/90)		EASTING: 875,793 US ft (NAD83/90)		24 HR.	NA
TOTAL DEPTH: 250.9 ft		BORING DIAMETER: 4" to 18.5', 3" to 250.9'		CASING DEPTH: 4" to 18.5', 3" to 123.0'		HAMMER (ID): 140 lb. Auto (MEC-09)	
DATE STARTED: 4/2/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 4.5" Tricones	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-150.9					Continued from previous page							
-159.7	158.4	7	10	23						710(DH)-12		158.6ft: dense
-169.7	168.4	18	45	50/0.3						710(DH)-13		168.4ft: very dense
-179.7	178.4	8	5	10						710(DH)-14		178.4ft: medium dense
-190.3	189.0	6	15	19						710(DH)-15		189.0ft: dense
-199.7	198.4	17	22	30						710(DH)-16		199.3ft: Sandy SILT (ML), greenish gray (10Y6/1), hard, wet, strong HCl reaction, cemented silt fragments
-209.7	208.4	10	11	18						710(DH)-17		208.4ft: very stiff
-219.7	218.4	14	16	30						710(DH)-18		218.4ft: hard
												222.0ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/18/08



BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez						
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-75 (CLT)		DRILLER: J. Warren/ C. Sloan/ M. Harvey		GROUND WATER (ft)						
BORING NO.: B-710(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR.	NA					
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 397,087 US ft (NAD83/90)		EASTING: 875,793 US ft (NAD83/90)		24 HR.	NA					
TOTAL DEPTH: 250.9 ft		BORING DIAMETER: 4" to 18.5', 3" to 250.9'		CASING DEPTH: 4" to 18.5', 3" to 123.0'		HAMMER (ID): 140 lb. Auto (MEC-09)						
DATE STARTED: 4/2/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 4.5" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80			
-225.7					Continued from previous page							
-229.7	228.4	15	16	25								Silty SAND (SM), greenish gray (10Y6/1), dense wet strong HCl reaction, trace shell fragments (Hawthorn Group) (continued)
-239.7	238.4	12	14	20								POORLY GRADED SAND (SP), light greenish gray (10Y7/1), dense wet strong HCl reaction
-250.6	249.3	9	13	22								Silty SAND (SM), greenish gray (10Y6/1), dense, wet, strong HCl reaction
												Note: Standard penetration tests performed for this boring from 0.0 to 15.0ft not valid due to nonconforming hammer drop distance. Boring redrilled from 0.0 to 15.0ft at offset location as B-710(DH)R. Boring Terminated at Elevation -252.2 ft

TURKEY POINT BORE, TURKEY POINT GPJ, TURKEY POINT COL.GDT 8/18/08