MACTEC

GEOTECHNICAL BORING LOG

Prepared By _____ Date 7/10/08

Checked By _____ Date 7-10-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	BORING DIAMETER: 4" to 15.0', 3" to 151.2'	CASING DEPTH: 4" to 15.0', 3" to 124.0'	HAMMER (ID):140 lb. Auto (MEC-03)
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	BITS USED: 4 1/4" Drag Bit & 2 15/16" Roller Cone

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
-1.4					Ground Surface				
-1.4	0.0	WOH	WOH	WOH	WOH 0	603-1			-1.4 0.0 MUCK, light gray (2.5Y7/2), to black (2.5Y2.5/1), very soft, wet, mostly organics,
-3.9	2.5	WOH	3	10	13	603-2A&B			-4.7 trace roots, trace shell fragments 3.3
-6.4	5.0	10	8	8	16	603-3			LIMESTONE, boundstone, white (2.5Y8.1), very soft, wet, moderately indurated, trace shell fragments (Miami Formation)
-8.9	7.5	10	7	6	13	603-4			5.0ft: oolitic
-11.4	10.0	5	9	10	19	603-5			7.5ft: mottled very dark gray (2.5Y3/1)
-13.9	12.5	5	11	16	27	603-6			10.0ft: pale yellow (2.5Y8/2), to light brownish gray (2.5Y6/2), mottled light olive brown (2.5Y5/4), trace calcareous concretion
-16.4	15.0	7	50/0.5		57/1.0	603-7			12.5ft: pale yellow (2.5Y8/2), to light gray (2.5Y7/2), soft
-17.4	16.0					RUN-1			15.0ft: white (2.5Y8/1), mottled light gray (2.5Y7/1), hard, indurated
-19.8	18.4					RUN-2			16.0ft: Switch sampling method to coring
-24.8	23.4					RUN-3			16.0ft: light gray (2.5Y7/2), moderately hard, indurated, trace sand, shells, vugs, fossiliferous, locally interconnected vugs
-29.8	28.4					RUN-4			18.4ft: trace recrystallized calcite
-34.8	33.4					RUN-5			-24.8 23.4 LIMESTONE, boundstone, white (2.5Y8/1), to light brownish gray (2.5Y6/2), moderately hard to hard, indurated, little recrystallized calcite, trace shell fragments, trace to few vugs (Upper Fort Thompson Formation)
-39.8	38.4					RUN-6			25.9ft: loss of circulation
-44.8	43.4					RUN-7			28.4ft: coralline
-49.8	48.4					RUN-8			33.4ft: white (2.5Y8/1), hard
-54.8	53.4					RUN-9			43.4ft: white (2.5Y8/1) to gray (2.5Y5/1), trace coralline
-59.8	58.4					RUN-10			-49.8 48.4 LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation)
-64.8	63.4					RUN-11			53.4ft: medium hard, moderately indurated to friable
-69.8	68.4					RUN-12			58.4ft: moderately hard, indurated, trace sand
-74.8	73.4					RUN-13			63.4ft: soft to medium hard, friable to moderately indurated
									68.4ft: moderately hard, indurated
									73.4ft: soft to medium hard, friable to moderately indurated, trace coralline

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	BORING DIAMETER: 4" to 15.0', 3" to 151.2'	CASING DEPTH: 4" to 15.0', 3" to 124.0'	HAMMER (ID):140 lb. Auto (MEC-03)
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	BITS USED: 4 1/4" Drag Bit & 2 15/16" Roller Cone

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
-76.2					Continued from previous page				
-79.8	78.4					RUN-14			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation) *(continued)*
-84.8	83.4					RUN-15			83.4ft: moderately hard, indurated
-89.8	88.4					RUN-16			88.4ft: medium hard
-94.8	93.4					RUN-17			93.4ft: moderately indurated
-99.8	98.4					RUN-18			98.4ft: moderately hard, indurated, few shells and shell molds
-104.8	103.4					RUN-19			103.4ft: hard, indurated
-109.8	108.4					RUN-20			108.4ft: moderately hard, moderately indurated
-114.8	113.4					RUN-21			
-116.4	115.0								Silty SAND (SM), light gray (5Y7/2), medium dense, moist, fine grained sand, little fines (Tamiami Formation)
-121.9	120.5	6	12	10	22	603-8			120.5ft: Switch sampling method to SPT Sandy SILT (ML), light gray (5Y7/2), very stiff, moist, fine to coarse sand, fine gravel
-126.1	124.7	6	12	10	22	603-9			124.7ft: greenish gray (10Y6/1), trace shells
-133.1	131.7								126.2ft: loss of circulation
-133.1	131.7	4	5	6	11	603-10			Silty SAND (SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, fine gravel, trace shells
-137.8	136.4	5	2	5	7	603-11			136.4ft: loose, fine to coarse sand
-140.9	139.5	12	10	8	18	603-12			139.5ft: medium dense
-146.1	144.7	7	9	10	19	603-13			
-151.1	149.7								

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	BORING DIAMETER: 4" to 15.0', 3" to 151.2'	CASING DEPTH: 4" to 15.0', 3" to 124.0'	HAMMER (ID):140 lb. Auto (MEC-03)
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	BITS USED: 4 1/4" Drag Bit & 2 15/16" Roller Cone

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
-151.0					Continued from previous page				
		5	7	8	15	603-14			-152.6 149.7ft: fine grained sand 151.2
									Boring Terminated at Elevation -152.6 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	CASING DEPTH: 4" to 15.0', 3" to 124.0'		HAMMER (ID): 140 lb. Auto (MEC-03)
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	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 @ 16.0 ft
-17.4	16.0	2.4	0:27 0:45	(1.6) 67%	(0.5) 21%	RUN-1	(4.4) 59%	(1.9) 26%		LIMESTONE, boundstone, white (2.5Y8.1), very soft, wet, moderately indurated, trace shell fragments (Miami Formation) *(continued)*
-19.8	18.4	5.0	0:17/0.4 0:06 0:52 0:22 0:13 0:13	(2.8) 56%	(1.4) 28%	RUN-2				16.0ft: light gray (2.5Y7/2), moderately hard, indurated, trace sand, shells, vugs, fossiliferous, locally interconnected vugs 18.4ft: trace recrystallized calcite
-24.8	23.4									-24.8 23.4
		5.0	0:11 0:16 0:41 0:49 0:36	(4.2) 84%	(1.1) 22%	RUN-3	(21.6) 86%	(14.9) 60%		LIMESTONE, boundstone, white (2.5Y8/1), to light brownish gray (2.5Y6/2), moderately hard to hard, indurated, little recrystallized calcite, trace shell fragments, trace to few vugs (Upper Fort Thompson Formation)
-29.8	28.4	5.0	0:11 0:16 0:16 0:11 0:26	(3.3) 66%	(0.5) 10%	RUN-4				25.9ft: loss of circulation 28.4ft: coralline
-34.8	33.4	5.0	0:36 0:34 0:38 0:35 0:38	(5.0) 100%	(4.7) 94%	RUN-5				33.4ft: white (2.5Y8/1), hard
-39.8	38.4	5.0	0:40 0:48 0:45 0:59 1:04	(5.0) 100%	(5.0) 100%	RUN-6				
-44.8	43.4	5.0	0:10 1:02 1:16 1:08 1:47	(4.1) 82%	(3.6) 72%	RUN-7				43.4ft: white (2.5Y8/1) to gray (2.5Y5/1), trace coralline
-49.8	48.4									-49.8 48.4
		5.0	1:37 1:20 1:19 0:53 0:25	(5.0) 100%	(4.0) 80%	RUN-8	(55.7) 84%	(34.5) 52%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation)
-54.8	53.4	5.0	0:29 0:26 0:39 0:06 0:10	(3.6) 72%	(1.4) 28%	RUN-9				53.4ft: medium hard, moderately indurated to friable
-59.8	58.4	5.0	0:26 0:21 0:18 0:11 3:30	(4.2) 84%	(2.2) 44%	RUN-10				58.4ft: moderately hard, indurated, trace sand
-64.8	63.4	5.0	0:47 0:24 0:38 0:49 0:14	(4.3) 86%	(2.2) 44%	RUN-11				63.4ft: soft to medium hard, friable to moderately indurated
-69.8	68.4	5.0	0:16 0:53 0:48 2:01 1:18	(3.4) 68%	(1.1) 22%	RUN-12				68.4ft: moderately hard, indurated 73.4ft: soft to medium hard, friable to moderately indurated, trace coralline
-74.8	73.4	5.0	0:26 1:04 0:38 1:18 1:34	(3.3) 66%	(1.6) 32%	RUN-13				
-79.8	78.4	5.0	1:09 0:58 0:28 0:44 0:38	(4.0) 80%	(2.7) 54%	RUN-14				
-84.8	83.4	5.0	0:27 0:12 0:20 0:41 0:58	(4.3) 86%	(3.0) 60%	RUN-15				83.4ft: moderately hard, indurated
-89.8	88.4	5.0	1:16 0:58	(5.0) 100%	(4.2) 84%	RUN-16				88.4ft: medium hard

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 7/10/08

MACTEC

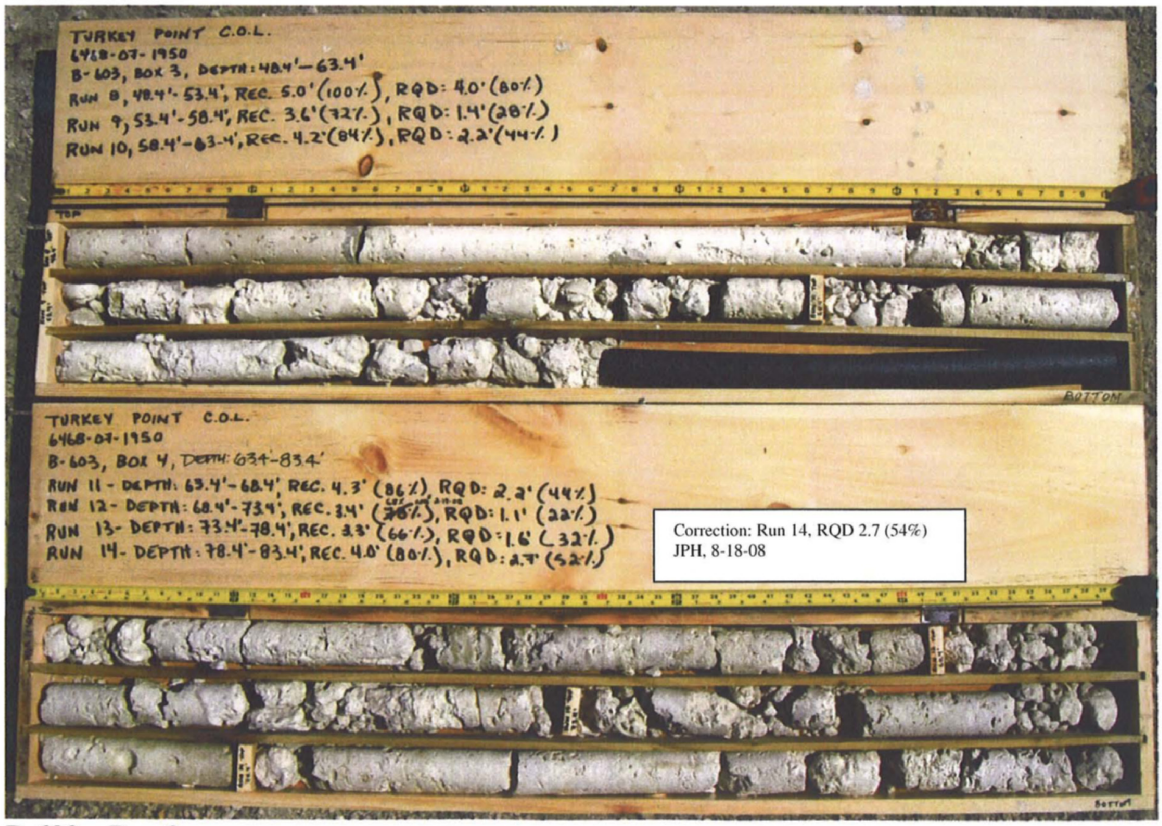
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	CASING DEPTH: 4" to 15.0', 3" to 124.0'		HAMMER (ID): 140 lb. Auto (MEC-03)
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	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
-94.8	93.4		0:52 0:44 0:22							LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation) *(continued)*
-99.8	98.4	5.0	0:40 0:28 0:22 0:18 0:26	(4.5) 90%	(3.2) 64%	RUN-17				93.4ft: moderately indurated
-104.8	103.4	5.0	0:15 0:19 0:29 0:32 0:35	(4.4) 88%	(3.0) 60%	RUN-18				98.4ft: moderately hard, indurated, few shells and shell molds
-109.8	108.4	5.0	0:27 0:35 0:30 0:34 0:37	(5.0) 100%	(4.1) 82%	RUN-19				103.4ft: hard, indurated
-114.8	113.4	5.0	0:21 0:18 1:11 0:23 0:06	(4.0) 80%	(1.8) 36%	RUN-20				108.4ft: moderately hard, moderately indurated
-116.4	115.0	5.0	0:16 0:07 0:36 0:18 0:07	(1.0) 20%	(0.0) 0%	RUN-21	(0.0) 0%	(NA)		Silty SAND (SM), light gray (5Y7/2), medium dense, moist, fine grained sand, little fines (Tamiami Formation)
-119.8	118.4									Coring Terminated at Elevation -152.6

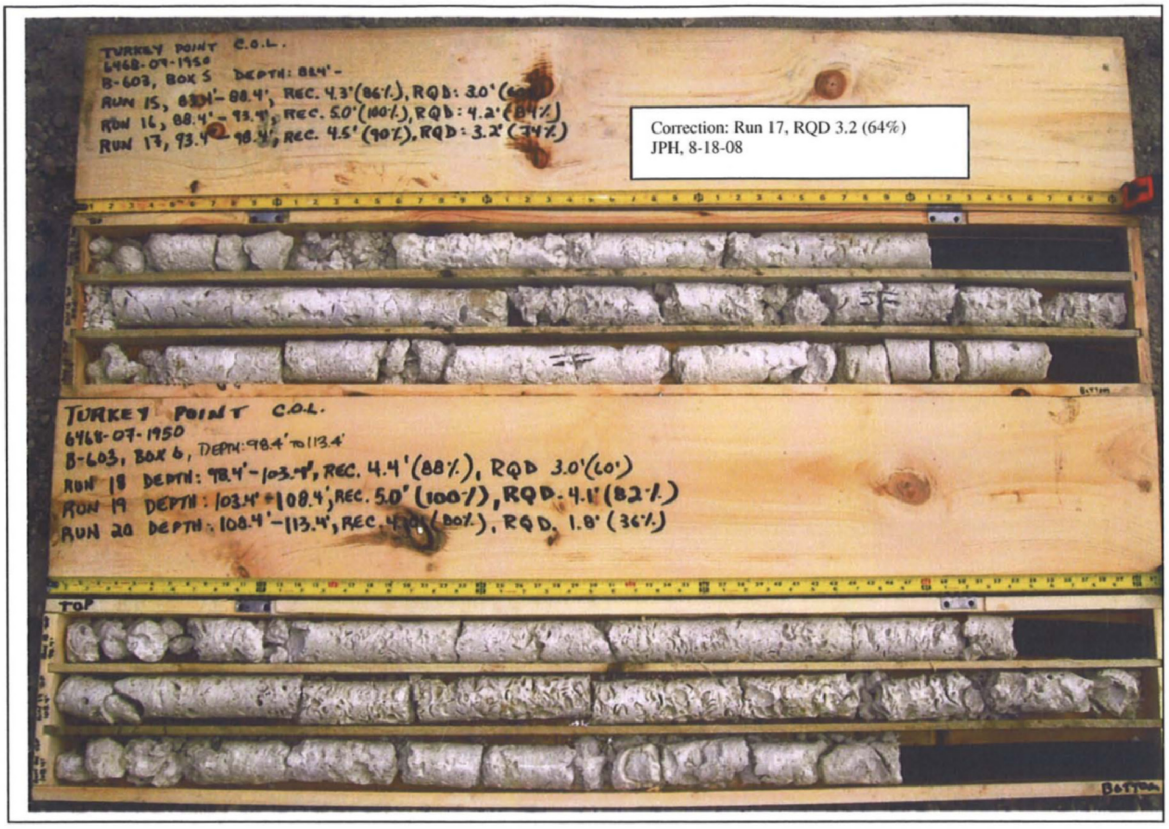
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08



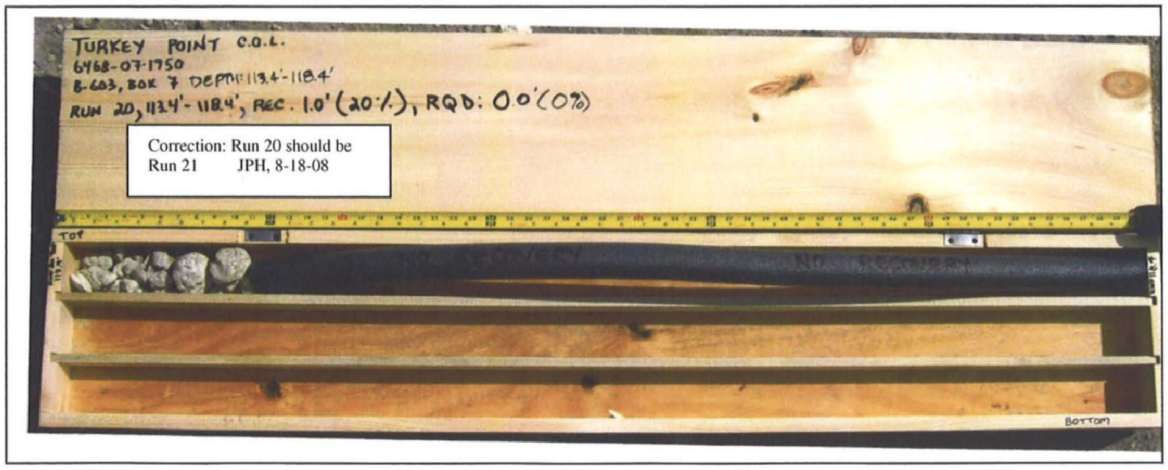
B-603 – Box 1
B-603 – Box 2



B-603 – Box 3
B-603 – Box 4



B-603 – Box 5
B-603 – Box 6



B-603 – Box 7

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 5-30-08

Checked By [illegible] 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-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-604(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,916 US ft (NAD83/90)	EASTING: 876,592 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 165.0 ft	BORING DIAMETER: 5" to 29.0', 4" to 165.0'	CASING DEPTH: 4" to 29.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 3/19/08	COMPLETED: 3/23/08	CORE SIZE: HQ3	BITS USED: 4 7/8" & 3 7/8" Roller Cones

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
-1.5					Ground Surface				
-1.5	0.0	WOH	WOH	WOH	WOH	604(DH)-1			MUCK, dark grayish brown (10YR4/2), very soft, moist, organics
-4.5	3.0								
-5.0	3.5	5	11	13	24	604(DH)-2			LIMESTONE, boundstone, pale yellow (2.5Y8/3), soft, moist, some coarse grained sand, strong HCl reaction, oolitic (Miami Formation)
-7.5	6.0	12	10	8	18	604(DH)-3			6.0ft: very soft
-10.0	8.5	8	14	19	33	604(DH)-4			8.5ft: medium hard, wet
-12.0	10.5	8	19	50/0.2	69/0.7	604(DH)-5			10.5ft: white (10YR8/1), hard, trace coarse grained sand
-15.0	13.5	11	28	25	53	604(DH)-6			13.5ft: moderately hard
-20.0	18.5	5	5	6	11	604(DH)-7			18.5ft: very soft
-25.0	23.5	7	9	12	21	604(DH)-8			23.5ft: soft, few coarse grained sand. few shell fragments
-26.5	25.0								LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, coarse grained sand, strong HCl reaction (Upper Fort Thompson Formation)
-30.0	28.5	5	1	2	3	604(DH)-9			25.0ft: loss of circulation
-35.0	33.5								33.5ft: white (10YR8/1), very dense
-35.4	33.9	50/0.4			50/0.4	604(DH)-10 RUN-1			33.9ft: Switch sampling method to coring
-40.3	38.8					RUN-2			33.9ft: hard, indurated, strong HCl reaction, fossiliferous, little vugs
-45.3	43.8					RUN-3			38.8ft: moderately indurated
-50.3	48.8					RUN-4 604(DH)-CS-01 604(DH)-CS-02			
-50.3	48.8								LIMESTONE, boundstone, white (10YR8/1), hard. moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-55.3	53.8					RUN-5			53.8ft: moderately hard to hard
-60.3	58.8					RUN-6			58.8ft: moderately hard, indurated
-65.3	63.8					RUN-7			63.8ft: hard, trace coarse grained sand
-70.3	68.8					RUN-8			
-75.3	73.8					RUN-9			

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

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-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-604(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,916 US ft (NAD83/90)	EASTING: 876,592 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 165.0 ft	BORING DIAMETER: 5" to 29.0', 4" to 165.0'	CASING DEPTH: 4" to 29.0'	HAMMER (ID):140 lb. Auto (MEC-05)
DATE STARTED: 3/19/08	COMPLETED: 3/23/08	CORE SIZE: HQ3	BITS USED: 4 7/8" & 3 7/8" Roller Cones

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
-76.3					Continued from previous page				
-80.3	78.8					RUN-10 604(DH)-CS-03			LIMESTONE, boundstone, white (10YR8/1), hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 78.8 to 79.6ft: sand zone
-85.3	83.8					RUN-11			83.8 to 86.0ft: sand zone
-90.3	88.8					RUN-12			88.8ft: trace to few vugs
-95.3	93.8					RUN-13			
-100.3	98.8					RUN-14			98.8ft: shell molds and casts
-105.3	103.8					RUN-15			
-110.3	108.8					RUN-16			
-115.3	113.8					RUN-17			
-116.5	115.0								Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, some fines, fine grained sand, strong HCl reaction (Tamiami Formation)
-120.3	118.8	4	6	9	15	604(DH)-11			118.8ft: Switch sampling method to SPT; no recovery
-130.4	128.9	3	6	7	13	604(DH)-12			128.9ft: no recovery
-140.0	138.5	7	7	8	15	604(DH)-13			138.5ft: fine to medium grained sand, fine gravel
-150.0	148.5	5	7	9	16	604(DH)-14			

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-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)	
BORING NO.: B-604(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,916 US ft (NAD83/90)	EASTING: 876,592 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 165.0 ft	BORING DIAMETER: 5" to 29.0', 4" to 165.0'	CASING DEPTH: 4" to 29.0'	HAMMER (ID):140 lb. Auto (MEC-05)	
DATE STARTED: 3/19/08	COMPLETED: 3/23/08	CORE SIZE: HQ3	BITS USED: 4 7/8" & 3 7/8" Roller Cones	

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
-151.1					Continued from previous page				
									Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, some fines, fine grained sand, strong HCl reaction (Tamiami Formation) *(continued)*
-165.0	163.5								-165.0 163.5
		4	6	10	●16	604(DH)-15			-166.5 Sandy SILT (ML), greenish gray (10Y6/1), very stiff, moist, fine grained sand, strong HCl reaction 165.0
									Boring Terminated at Elevation -166.5 ft

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-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-604(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,916 US ft (NAD83/90)	EASTING: 876,592 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 165.0 ft	CASING DEPTH: 4" to 29.0'		HAMMER (ID): 140 lb. Auto (MEC-05)
DATE STARTED: 3/19/08	COMPLETED: 3/23/08	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 @ 33.9 ft
-35.4	33.9	4.9	0:55 1:02 1:05 1:16	(1.5) 31%	(1.3) 27%	RUN-1	(3.6) 24%	(1.8) 12%		LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, coarse grained sand, strong HCl reaction (Upper Fort Thompson Formation) 25.0ft: loss of circulation *(continued)* 33.9ft: hard, indurated, strong HCl reaction, fossiliferous, little vugs 38.8ft: moderately indurated
-40.3	38.8		1:00/0.9							
		5.0	1:02 2:05 1:55 2:12	(0.4) 8%	(0.0) 0%	RUN-2				
-45.3	43.8		0:50							
		5.0	ND 2:03 2:53 3:39	(1.7) 34%	(0.5) 10%	RUN-3				
-50.3	48.8		2:30							-50.3 48.8
		5.0	0:59 1:29 1:08 0:45	(4.8) 96%	(4.8) 96%	RUN-4 *604(DH)-CS-01* *604(DH)-CS-02*	(44.9) 68%	(27.2) 41%		LIMESTONE, boundstone, white (10YR8/1), hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-55.3	53.8		0:30							
		5.0	0:28 0:29 0:36 0:29	(4.3) 86%	(2.7) 54%	RUN-5				53.8ft: moderately hard to hard
-60.3	58.8		0:28							
		5.0	0:31 0:35 0:52 0:37	(2.3) 46%	(0.3) 6%	RUN-6				58.8ft: moderately hard, indurated
-65.3	63.8		0:25							
		5.0	0:16 1:00 0:30 0:40	(3.5) 70%	(1.8) 36%	RUN-7				63.8ft: hard, trace coarse grained sand
-70.3	68.8		0:45							
		5.0	0:04 0:35 0:45 0:05	(1.9) 38%	(0.4) 8%	RUN-8				
-75.3	73.8		0:51							
		5.0	0:15 0:07 0:11 0:36	(1.8) 36%	(0.8) 16%	RUN-9				
-80.3	78.8		1:35							
		5.0	2:14 1:33 0:47 0:45	(3.6) 72%	(2.0) 40%	RUN-10 *604(DH)-CS-03*				78.8 to 79.6ft: sand zone
-85.3	83.8		1:04							
		5.0	0:59 0:37 1:42 1:20	(2.7) 54%	(0.0) 0%	RUN-11				83.8 to 86.0ft: sand zone
-90.3	88.8		2:30							
		5.0	0:04 0:21 0:43 0:59	(1.7) 34%	(0.6) 12%	RUN-12				88.8ft: trace to few vugs
-95.3	93.8		0:22							
		5.0	0:27 0:40 0:50 0:49	(4.7) 94%	(3.4) 68%	RUN-13				
-100.3	98.8		0:56							
		5.0	0:52 0:53 0:44 0:58	(5.0) 100%	(4.0) 80%	RUN-14				98.8ft: shell molds and casts
-105.3	103.8		0:50							
		5.0	0:52 1:05 0:55 1:03	(5.0) 100%	(4.4) 88%	RUN-15				
-110.3	108.8		0:55							

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5.30.08

MACTEC

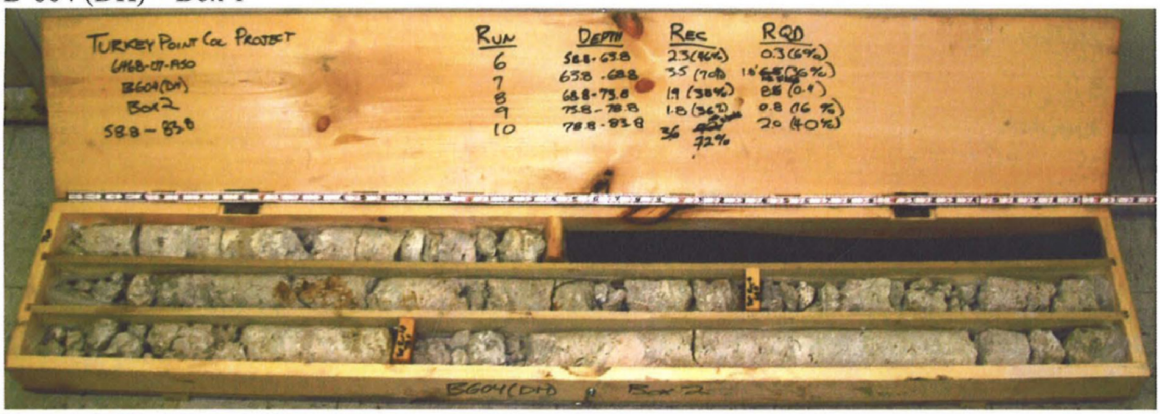
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-604(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,916 US ft (NAD83/90)	EASTING: 876,592 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 165.0 ft	CASING DEPTH: 4" to 29.0'		HAMMER (ID): 140 lb. Auto (MEC-05)
DATE STARTED: 3/19/08	COMPLETED: 3/23/08	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
		5.0	1:12 0:58 1:04 1:02 2:00	(3.1) 62%	(1.5) 30%	RUN-16				LIMESTONE, boundstone, white (10YR8/1), hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-115.3	113.8									-116.5 115.0
		5.0	0:54 0:57 0:49 0:46 0:18	(0.5) 10%	(0.5) 10%	RUN-17	(0.0) 0%	(NA)		Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, some fines, fine grained sand, strong HCl reaction (Tamiami Formation)
-120.3	118.8									-120.3 118.8
										Coring Terminated at Elevation -120.3

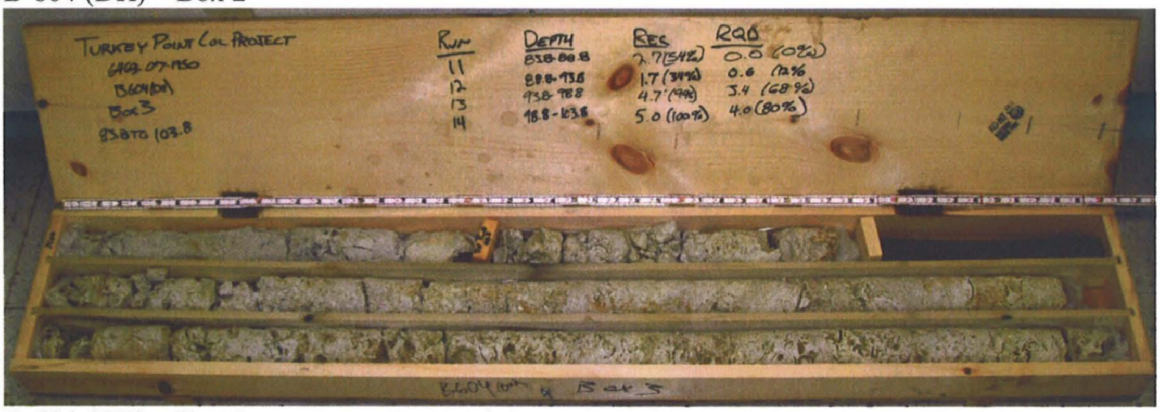
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



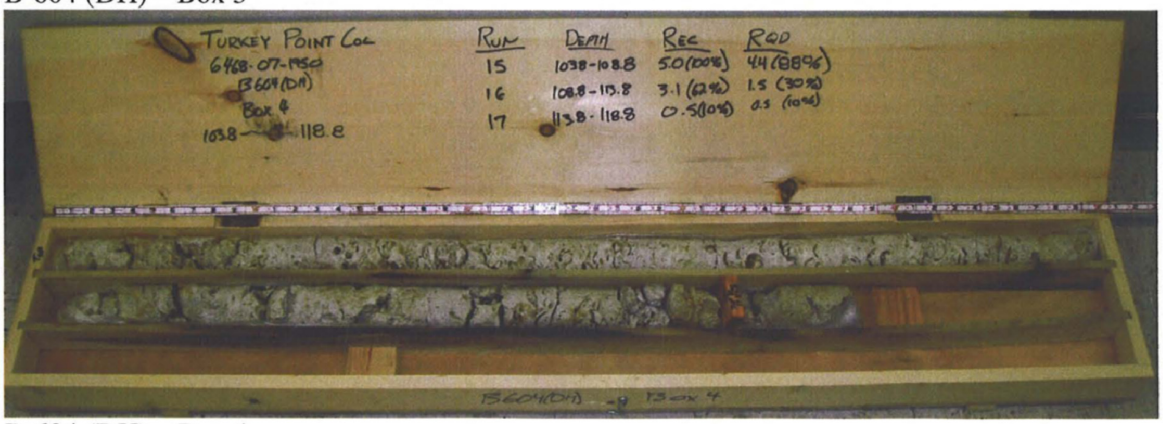
B-604 (DH) – Box 1



B-604 (DH) – Box 2



B-604 (DH) – Box 3



B-604 (DH) – Box 4

MACTEC

GEOTECHNICAL BORING LOG

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

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

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor/L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-605	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.7 ft (NAVD88)	NORTHING: 396,917 US ft (NAD83/90)	EASTING: 876,694 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 201.0 ft	BORING DIAMETER: 4" to 36.0', 3" to 201.0'	CASING DEPTH: 4" to 36.0', 3" to 119.9'	HAMMER (ID):140 lb. Auto (MEC-03)
DATE STARTED: 2/23/08	COMPLETED: 2/27/08	CORE SIZE: HQ3	BITS USED: 3 7/8" and 2 15/16" Tricones

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
-1.7					Ground Surface				
-1.7	0.0	WOR	WOR	WOR	WOR	605-1			MUCK, very dark gray (10YR3/1), very soft, moist, mostly organics
-4.2	2.5	2	6	8	14	605-2			LIMESTONE, boundstone, very pale brown (10YR8/2), very soft, moist, friable (Miami Formation)
-6.7	5.0	7	7	8	15	605-3			5.0ft: white (10YR8/1), medium dense, trace shell fragments, oolitic
-9.2	7.5	3	25	9	34	605-4			7.5ft: light gray (10YR7/2), medium hard
-11.7	10.0	3	10	5	15	605-5			10.0ft: white (10YR8/1), very soft
-14.2	12.5	3	6	9	15	605-6			
-16.7	15.0	8	13	10	23	605-7			15.0ft: light gray (10YR7/1), soft
-21.7	20.0	3	8	8	16	605-8			20.0ft: very soft, trace calcite crystals
-25.7	24.0	5	22	28	50	605-9			LIMESTONE, boundstone, white (10YR8/1), moderately hard, moist, trace shell fragments (Upper Fort Thompson Formation)
-26.7	25.0								
-31.7	30.0	16	13	4	17	605-10			30.0ft: very pale brown (10YR8/2), very soft, coralline
-36.7	35.0								33.0ft: loss of circulation
-37.9	36.2	11	36	50/0.2	86/0.7	605-11			35.0ft: white (10YR8/1), hard
-39.8	38.1					RUN-1			36.2ft: Switch sampling method to coring
-44.8	43.1					RUN-2			36.2ft: medium hard, moderately indurated, fossiliferous, few vugs
-49.8	48.1					RUN-3			43.1ft: hard, moderately indurated, recrystallized calcite
-54.8	53.1					RUN-4			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, little vugs, some shells, trace recrystallized calcite in vugs (Lower Fort Thompson Formation)
-59.8	58.1					RUN-5			53.1ft: medium hard, moderately indurated
-64.8	63.1					RUN-6			
-69.8	68.1					RUN-7			63.1ft: few vugs
-74.8	73.1					RUN-8			68.1ft: mottled light gray (10YR7/1), some vugs, interbedded sand
-75.6	73.9					RUN-9			
						RUN-10			

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

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

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor/L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-605	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.7 ft (NAVD88)	NORTHING: 396,917 US ft (NAD83/90)	EASTING: 876,694 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 201.0 ft	BORING DIAMETER: 4" to 36.0', 3" to 201.0'	CASING DEPTH: 4" to 36.0', 3" to 119.9'	HAMMER (ID):140 lb. Auto (MEC-03)
DATE STARTED: 2/23/08	COMPLETED: 2/27/08	CORE SIZE: HQ3	BITS USED: 3 7/8" and 2 15/16" Tricones

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
-76.5					Continued from previous page				
-80.6	78.9					RUN-11			73.9ft: hard, indurated, mostly vugs LIMESTONE, boundstone, white (10YR8/1), hard, indurated, little vugs, some shells, trace recrystallized calcite in vugs (Lower Fort Thompson Formation) *(continued)*
-85.6	83.9					RUN-12			83.9ft: moderately indurated
-90.6	88.9					RUN-13			88.9ft: moderately hard, indurated, few vugs
-94.6	92.9					RUN-14			92.9ft: trace vugs, trace sand
-95.6	93.9					RUN-15			
-100.6	98.9					RUN-16			
-105.6	103.9					RUN-17			103.9ft: hard, shell molds and casts
-110.6	108.9					RUN-18			108.9ft: moderately hard
-115.6	113.9					RUN-19			
-116.7									113.9ft: light gray (2.5Y7/2), hard 115.0
-121.6	119.9	9	8	11	19	605-12			Sandy SILT (ML), light gray (2.5Y7/1), very stiff, wet, fine to medium grained sand, strong HCl reaction (Tamiami Formation) 119.9ft: Switch sampling method to SPT
-126.2									124.5
-126.6	124.9	4	9	12	21	605-13			Silty SAND (SM), greenish gray (10Y5/1), medium dense, fine grained sand, strong HCl reaction
-131.6	129.9					605-14			129.9ft: No sample taken
-133.1	131.4	3	5	8	13	605-15			131.4ft: fine to medium grained sand, some loss of circulation
-136.6	134.9	9	15	22	37	605-16			134.9ft: dense, trace shell fragments
-141.6	139.9	8	12	19	31	605-17			
-146.6	144.9	7	10	14	24	605-18			144.9ft: medium dense

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