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: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-620(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,395 US ft (NAD83/90)	EASTING: 876,648 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 215.0 ft	BORING DIAMETER: 4" to 215.0'	CASING DEPTH: 4" to 105.5'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/18/08	COMPLETED: 3/23/08	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
-1.5					Ground Surface				
-1.5	0.0	WOH	WOH	WOH	WOH	620(DH)-1			-1.5 0.0 MUCK, light gray (2.5Y7/2), to grayish brown (2.5Y5/2), very soft, wet, strong HCl reaction, mostly organics
-4.0	2.5	3	9	12	21	620(DH)-2			-4.5 3.0 LIMESTONE, boundstone, pale yellow (5Y8/2), soft, wet, friable, strong HCl reaction, oolitic (Miami Formation)
-6.5	5.0	10	9	8	17	620(DH)-3			5.0ft: very soft, fossiliferous
-9.0	7.5	8	6	5	11	620(DH)-4			
-11.5	10.0	7	11	21	32	620(DH)-5			10.0ft: medium hard, moderately indurated
-13.9	12.4	17	20	10	30	620(DH)-6			12.4ft: soft
-16.4	14.9	14	16	31	47	620(DH)-7			14.9ft: moderately hard
-21.0	19.5	13	7	7	14	620(DH)-8			19.5ft: very soft
-26.0	24.5								-25.5 24.0
-27.0	25.5	50/0.4			50/0.4	620(DH)-9			LIMESTONE, boundstone, pale yellow (5Y8/2), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
						RUN-1			25.5ft: Switch sampling method to coring
-32.0	30.5					RUN-2			25.5ft: white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones 26.0ft: loss of circulation 30.5ft: medium hard, moderately indurated, recrystallized calcite, few vugs
-37.0	35.5					RUN-3			35.5ft: moderately hard, coralline
-42.0	40.5					RUN-4 620DH-CS-02			40.5ft: hard, indurated
-47.0	45.5					RUN-5			45.5 to 47.7ft: light bluish gray (5PB7/1), locally interconnected vugs and filled with recrystallized calcite, horizontal bedding plane at 47.7ft
-52.0	50.5					RUN-6 620DH-CS-03			-49.2 47.7 LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, few gastropod shell molds and casts, vertical fractures filled with calcite and cemented sand, strong HCl reaction, horizontal bedding planes at 48.7ft and 49.0ft (Lower Fort Thompson Formation) 50.5ft: trace vugs, porous
-57.0	55.5					RUN-7			55.5ft: trace sand, bedding planes at 56.1ft and 57.7ft
-62.0	60.5					RUN-8 620DH-CS-04			
-67.0	65.5					RUN-9			65.5ft: soft to moderately hard, friable to indurated
-72.0	70.5					RUN-10			65.7 to 83.0ft: thin sand interbeds

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

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BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-620(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,395 US ft (NAD83/90)	EASTING: 876,648 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 215.0 ft	BORING DIAMETER: 4" to 215.0'	CASING DEPTH: 4" to 105.5'	HAMMER (ID):140 lb. Auto (07)
DATE STARTED: 3/18/08	COMPLETED: 3/23/08	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
-76.3					Continued from previous page				
-77.0	75.5					RUN-11			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, few gastropod shell molds and casts, vertical fractures filled with calcite and cemented sand, strong HCl reaction, horizontal bedding planes at 48.7ft and 49.0ft (Lower Fort Thompson Formation) *(continued)*
-82.0	80.5					RUN-12			-84.5 75.5ft: hard, indurated 83.0
-87.0	85.5					RUN-13			80.5ft: soft to hard, friable to indurated
-89.0									Silty SAND (SM), white (5Y8/1), wet, fine grained sand, strong HCl reaction 87.5
-92.0	90.5					RUN-14			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones, few vugs 90.5ft: medium hard to hard, friable to indurated
-97.0	95.5					RUN-15			95.5ft: hard, indurated
-102.0	100.5					RUN-16			100.5ft: little vugs
-107.0	105.5					RUN-17			
-112.0	110.5					RUN-18			110.5ft: hard to soft, indurated to friable
-117.0	115.5					RUN-19			-117.0 115.5 GRAVEL with sand (GM), pale yellow (5Y8/3), very dense, wet, fine to coarse grained sand, fine to coarse gravel, strong HCl reaction, trace shell fragments, cemented sand fragments (Tamiami Formation)
-122.0	120.5	15	15	36	51	620(DH)-10			120.5ft: switch sampling method to SPT
-126.5									125.0 Silty SAND (SM), light greenish gray (10Y7/1), medium dense, wet, strong HCl reaction, fine grained sand
-131.5	130.0	3	5	6	11	620(DH)-11			
-140.0	138.5	5	3	6	9	620(DH)-12			138.5ft: loose
-150.0	148.5	5	8	12	20	620(DH)-13			148.5ft: light olive gray (5Y6/2), medium dense

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

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BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-620(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,395 US ft (NAD83/90)	EASTING: 876,648 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 215.0 ft	BORING DIAMETER: 4" to 215.0'	CASING DEPTH: 4" to 105.5'	HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 3/18/08	COMPLETED: 3/23/08	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
-151.1					Continued from previous page				
									Silty SAND (SM), light greenish gray (10Y7/1), medium dense, wet, strong HCl reaction, fine grained sand *(continued)*
-160.0	158.5	3	4	8	12	B620(DH)-14			158.5ft: olive gray (5Y5/2)
-170.0	168.5	7	8	10	18	B620(DH)-15			
-180.0	178.5	3	4	6	10	B620(DH)-16			178.5ft: loose
-190.0	188.5	4	3	9	12	B620(DH)-17			188.5ft: medium dense
-200.0	198.5	5	6	9	15	B620(DH)-18			198.5ft: trace limestone fragments
-215.0	213.5	4	5	8	13	B620(DH)-19			-216.5 215.0
									Boring Terminated at Elevation -216.5 ft

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

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BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-620(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,395 US ft (NAD83/90)	EASTING: 876,648 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 215.0 ft	CASING DEPTH: 4" to 105.5'	HAMMER (ID): 140 lb. Auto (07)		
DATE STARTED: 3/18/08	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 @ 25.5 ft
-27.0	25.5	5.0	1:38 2:55 3:04 4:12 4:33	(5.0) 100%	(4.5) 90%	RUN-1	(20.7) 93%	(18.2) 82%		LIMESTONE, boundstone, pale yellow (5Y8/2), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) *(continued)* 25.5ft: white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones
-32.0	30.5	5.0	2:25 2:01 1:55 1:38 1:23	(3.7) 74%	(1.7) 34%	RUN-2				26.0ft: loss of circulation 30.5ft: medium hard, moderately indurated, recrystallized calcite, few vugs
-37.0	35.5	5.0	1:49 2:18 1:53 2:21 2:22	(4.8) 96%	(4.8) 96%	RUN-3				35.5ft: moderately hard, coralline
-42.0	40.5	5.0	2:57 2:55 2:59 3:43 3:30	(5.0) 100%	(5.0) 100%	RUN-4 *620DH-CS-02*				40.5ft: hard, indurated
-47.0	45.5	5.0	2:25 2:33 2:25 2:31 2:02	(5.0) 100%	(5.0) 100%	RUN-5				45.5 to 47.7ft: light bluish gray (5PB7/1), locally interconnected vugs and filled with recrystallized calcite, horizontal bedding plane at 47.7ft
-49.2										47.7
-52.0	50.5	5.0	1:57 2:55 0:55 0:22 0:25	(4.5) 90%	(3.6) 72%	RUN-6 *620DH-CS-03*	(28.7) 81%	(19.5) 55%		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, few gastropod shell molds and casts, vertical fractures filled with calcite and cemented sand, strong HCl reaction, horizontal bedding planes at 48.7ft and 49.0ft (Lower Fort Thompson Formation) 50.5ft: trace vugs, porous
-57.0	55.5	5.0	0:20 0:40 0:44 0:44 0:45	(3.6) 72%	(2.5) 50%	RUN-7				55.5ft: trace sand, bedding planes at 56.1ft and 57.7ft
-62.0	60.5	5.0	1:45 1:48 1:32 0:58 1:22	(4.1) 82%	(3.4) 68%	RUN-8 *620DH-CS-04*				
-67.0	65.5	5.0	2:30 2:22 2:41 2:23 2:01	(3.4) 68%	(2.0) 40%	RUN-9				65.5ft: soft to moderately hard, friable to indurated 65.7 to 83.0ft: thin sand interbeds
-72.0	70.5	5.0	1:53 1:35 1:50 1:05 1:33	(3.1) 62%	(0.6) 12%	RUN-10				
-77.0	75.5	5.0	0:55 2:01 2:12 1:55 2:23	(4.7) 94%	(2.9) 58%	RUN-11				75.5ft: hard, indurated 80.5ft: soft to hard, friable to indurated
-82.0	80.5	5.0	2:01 1:12 1:28 2:48 2:06	(3.3) 66%	(1.7) 34%	RUN-12				
-84.5										83.0
-87.0	85.5	5.0	0:41 1:14 1:52 1:47 1:49	(5.0) 100%	(4.0) 80%	RUN-13	(2.8) 62%	(NA)		Silty SAND (SM), white (5Y8/1), wet, fine grained sand, strong HCl reaction
-89.0										87.5
-92.0	90.5	5.0	0:30 1:39 2:01 1:08 1:21	(4.1) 82%	(2.7) 54%	RUN-14	(21.3) 76%	(15.7) 56%		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones, few vugs 90.5ft: medium hard to hard, friable to indurated
-97.0	95.5	5.0	0:37 0:20 0:31 0:56 1:03	(2.7) 54%	(1.2) 24%	RUN-15				95.5ft: hard, indurated
-102.0	100.5									

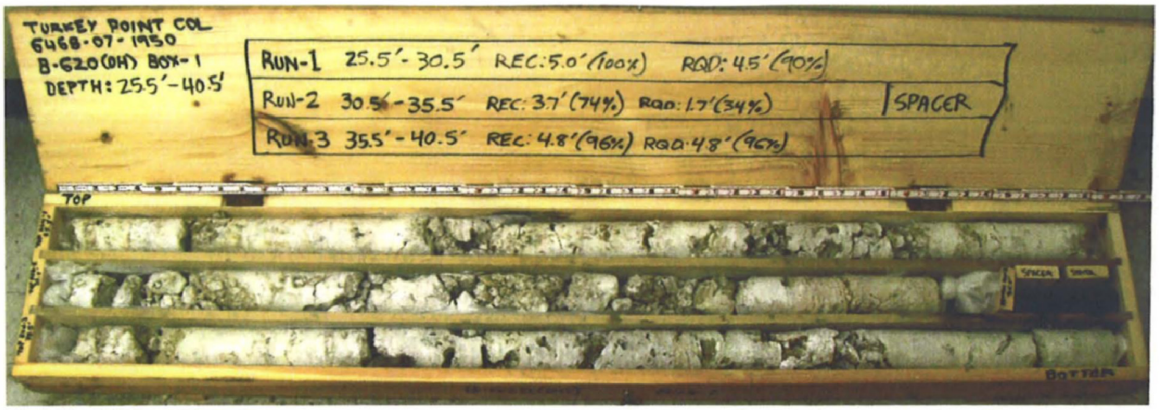
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/19/08

MACTEC

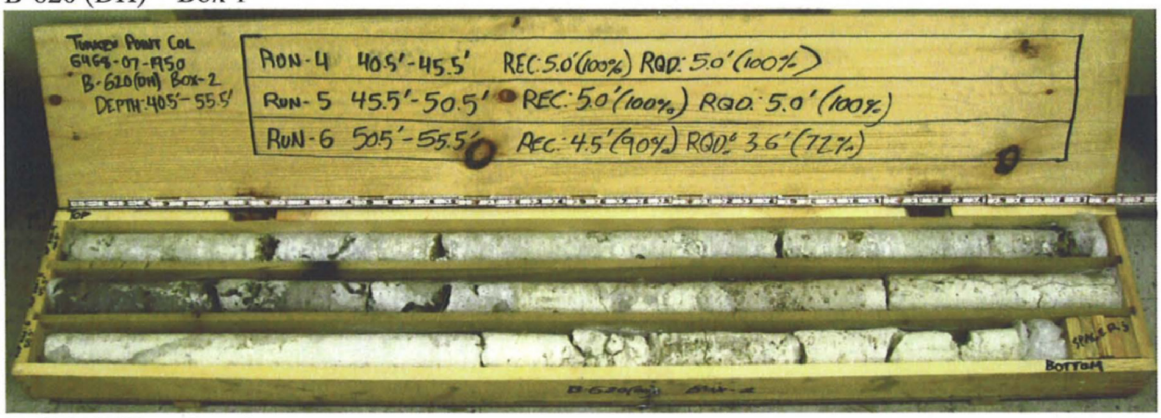
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)	
BORING NO.: B-620(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,395 US ft (NAD83/90)	EASTING: 876,648 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 215.0 ft	CASING DEPTH: 4" to 105.5'	HAMMER (ID): 140 lb. Auto (07)		
DATE STARTED: 3/18/08	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
-107.0	105.5	5.0	0:36 0:49 0:38 0:44 0:45	(4.0) 80%	(3.3) 66%	RUN-16				LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones, few vugs *(continued)* 100.5ft: little vugs
-112.0	110.5	5.0	1:06 0:59 0:36 1:08 0:43	(4.7) 94%	(3.8) 76%	RUN-17				
-117.0	115.5	5.0	0:40 0:05 1:57 1:10 1:23	(2.8) 56%	(1.7) 34%	RUN-18				110.5ft: hard to soft, indurated to friable
-122.0	120.5	5.0	0:33 0:53 0:45 0:42 1:14	(1.5) 30%	(0.0) 0%	RUN-19				-117.0 115.5 GRAVEL with sand (GM), pale yellow (5Y8/3), very dense, wet, fine to coarse grained sand, fine to coarse gravel, strong HCl reaction, trace shell fragments, cemented sand fragments (Tamiami Formation) -122.0 120.5 Coring Terminated at Elevation -122.0

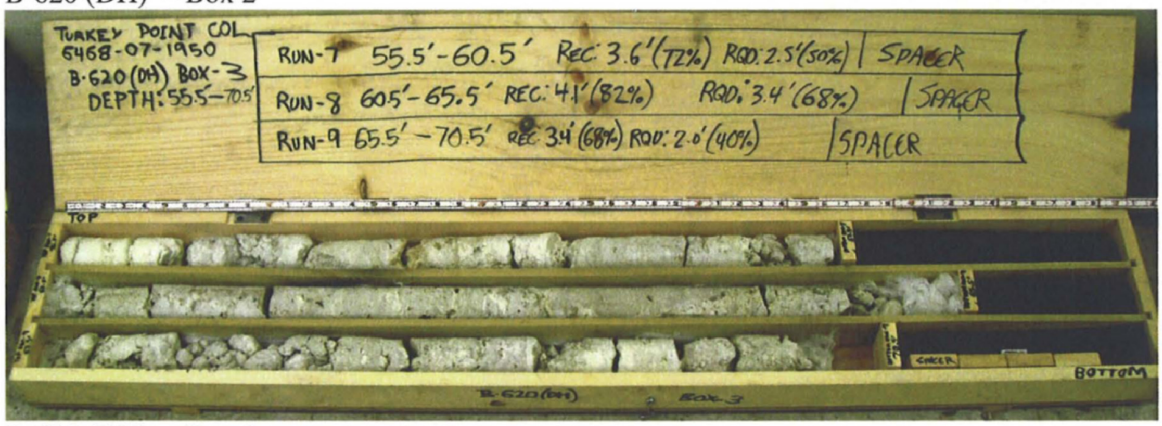
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/19/08



B-620 (DH) – Box 1



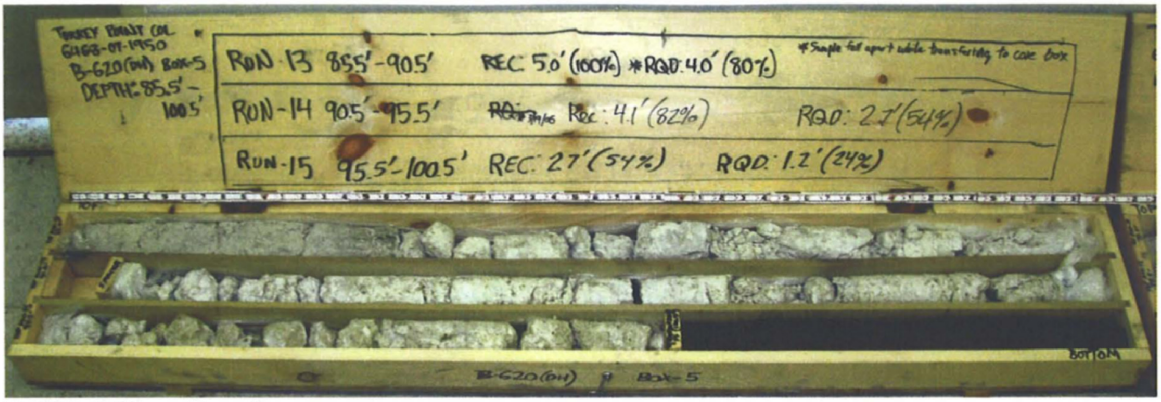
B-620 (DH) – Box 2



B-620 (DH) – Box 3



B-620 (DH) – Box 4



B-620 (DH) – Box 5



B-620 (DH) – Box 6

MACTEC

GEOTECHNICAL BORING LOG

Prepared By: [illegible] Date: 5-30-08

Checked By: [illegible] Date: 5-30-08

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-621	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,368 US ft (NAD83/90)	EASTING: 876,949 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.5 ft	BORING DIAMETER: 4" to 27.9', 3" to 126.5'	CASING DEPTH: 4" to 27.9', 3" to 115.3'	HAMMER (ID):140 lb. Auto (MEC-02)
DATE STARTED: 4/3/08	COMPLETED: 4/4/08	CORE SIZE: HQ3	BITS USED: 2 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
0.2					Ground Surface				
0.2	0.0	1	1	WOH	1	621-1			MUCK, very dark gray (10Yr3/1), very soft, dry, mostly organic, strong HCl reaction
-2.6	2.8								
		1	WOH	WOH	0 WOH	621-2			
-4.9	5.1				SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA				
		1	2	9	11	621-3			Field notes do not indicate that sample 621-3 was split into separate jars
-5.9									6.1
-7.3	7.5								LIMESTONE, boundstone, white (10YR8/1), very soft, wet, strong HCl reaction, oolitic (Miami Formation)
		5	5	6	11	621-4			
-9.6	9.8								
		11	12	7	19	621-5			
-11.8	12.0								12.0ft: medium hard
		11	16	17	33	621-6			
-14.3	14.5								14.5ft: soft, fossiliferous
		6	9	13	22	621-7			
-18.3	18.5								18.5ft: very soft
		7	6	3	9	621-8			
-23.3	23.5								
		3	4	2	6	621-9			
-25.8									26.0
-28.3	28.5								LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
-28.8	29.0	50/0.5			50/0.5	621-10			29.0ft: Switch sampling method to coring
-30.1	30.3					RUN-1			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs
						RUN-2			30.3ft: coralline
-35.1	35.3					RUN-3			
-40.1	40.3					RUN-4			
-45.1	45.3					621-CS-01 RUN-5			45.3 to 48.3ft: light gray (10YR7/1), trace recrystallized calcite
-48.1									48.3
-50.1	50.3					RUN-6			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
-55.1	55.3					RUN-7			50.3ft: trace shell molds, trace fine sand
-60.1	60.3					RUN-8			60.3ft: trace to few shell molds
-65.1	65.3					RUN-9			65.3ft: sandy
-70.1	70.3					RUN-10			70.3ft: few to little shell molds and casts

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: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-621	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,368 US ft (NAD83/90)	EASTING: 876,949 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.5 ft	BORING DIAMETER: 4" to 27.9', 3" to 126.5'	CASING DEPTH: 4" to 27.9', 3" to 115.3'	HAMMER (ID):140 lb. Auto (MEC-02)
DATE STARTED: 4/3/08	COMPLETED: 4/4/08	CORE SIZE: HQ3	BITS USED: 2 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
-74.6					Continued from previous page				
-75.1	75.3					RUN-11			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 75.3 to 80.3ft: possible thin interbeds of sand and friable limestone 80.3ft: trace to few shell molds and casts, few vugs
-80.1	80.3					RUN-12			
-85.1	85.3					RUN-13			
-90.1	90.3					RUN-14			
-95.1	95.3					RUN-15			95.3ft: moderately hard to hard, moderately indurated to indurated, sandy
-100.1	100.3					RUN-16			
-105.1	105.3					RUN-17			105.3ft: hard, indurated
-110.1	110.3					621-CS-04			110.3ft: pale yellow (5Y8/2), to greenish gray (5GY6/1)
-114.3	114.5					RUN-18			
-115.1	115.3	3	5	12	17	621-11			POORLY GRADED SAND with silt (SP-SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, strong HCl reaction, trace shell fragments, little fines (Tamiami Formation) 115.3ft: Switch sampling method to SPT
-124.8	125.0	7	14	11	25	621-12			
-126.3	126.5								Silty SAND (SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, strong HCl reaction, trace shell fragments, little fines Boring Terminated at Elevation -126.3 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: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-621	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,368 US ft (NAD83/90)	EASTING: 876,949 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.5 ft	CASING DEPTH: 4" to 27.9', 3" to 115.3'		HAMMER (ID): 140 lb. Auto (MEC-02)
DATE STARTED: 4/3/08	COMPLETED: 4/4/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Begin Coring @ 29.0 ft
-28.8	29.0	1.3	0:45	(1.2)	(0.6)	RUN-1	(19.1)	(13.5)		LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) *(continued)*
-30.1	30.3	5.0	0:18/0.3	92%	46%	RUN-2	99%	70%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs
			0:39	(4.9)	(3.2)					30.3ft: coralline
			0:34	98%	64%					
			0:26							
			0:26							
-35.1	35.3		0:29							
		5.0	0:20	(5.0)	(3.3)	RUN-3				
			0:23	100%	66%					
			0:22							
			0:20							
-40.1	40.3		0:25							
		5.0	0:23	(5.0)	(4.2)	RUN-4				
			0:26	100%	84%					
			0:22							
			0:28							
-45.1	45.3		0:39			*621-CS-01*				
		5.0	0:43	(4.5)	(3.7)	RUN-5				45.3 to 48.3ft: light gray (10YR7/1), trace recrystallized calcite
			0:33	90%	74%					
			0:41							-48.1 ——— 48.3
			0:41				(40.6)	(23.7)		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
-50.1	50.3		0:39				61%	36%		50.3ft: trace shell molds, trace fine sand
		5.0	1:01	(4.3)	(4.0)	RUN-6				
			0:59	86%	80%					
			0:43							
			0:35							
-55.1	55.3		0:40							
		5.0	1:01	(0.5)	(0.0)	RUN-7				
			0:40	10%	0%					
			1:12							
			1:25							
-60.1	60.3		0:44							
		5.0	0:38	(4.1)	(1.6)	RUN-8				60.3ft: trace to few shell molds
			0:36	82%	32%					
			0:30							
			0:27							
-65.1	65.3		0:28							
		5.0	0:24	(1.3)	(0.0)	RUN-9				65.3ft: sandy
			0:15	26%	0%					
			0:16							
			0:19							
-70.1	70.3		0:26							
		5.0	0:18	(2.6)	(1.6)	RUN-10				70.3ft: few to little shell molds and casts
			0:24	52%	32%					
			0:39							
			0:24							
-75.1	75.3		0:37							
		5.0	0:32	(0.5)	(0.0)	RUN-11				75.3 to 80.3ft: possible thin interbeds of sand and friable limestone
			0:22	10%	0%					
			0:11							
			0:13							
-80.1	80.3		0:37							
		5.0	0:24	(3.1)	(1.7)	RUN-12				80.3ft: trace to few shell molds and casts, few vugs
			0:18	62%	34%					
			0:11							
			0:22							
-85.1	85.3		0:23							
		5.0	0:24	(4.6)	(2.2)	RUN-13				
			0:38	92%	44%					
			0:36							
			0:40							
-90.1	90.3		0:37							
		5.0	0:48	(4.1)	(1.9)	RUN-14				
			0:38	82%	38%					
			0:19							
			0:25							
-95.1	95.3		0:34							
		5.0	0:41	(2.9)	(2.1)	RUN-15				95.3ft: moderately hard to hard, moderately indurated to indurated, sandy
			0:30	58%	42%					
			0:24							
			0:21							
-100.1	100.3		0:18							
		5.0	0:19	(2.2)	(0.0)	RUN-16				
			0:24	44%	0%					
			0:26							

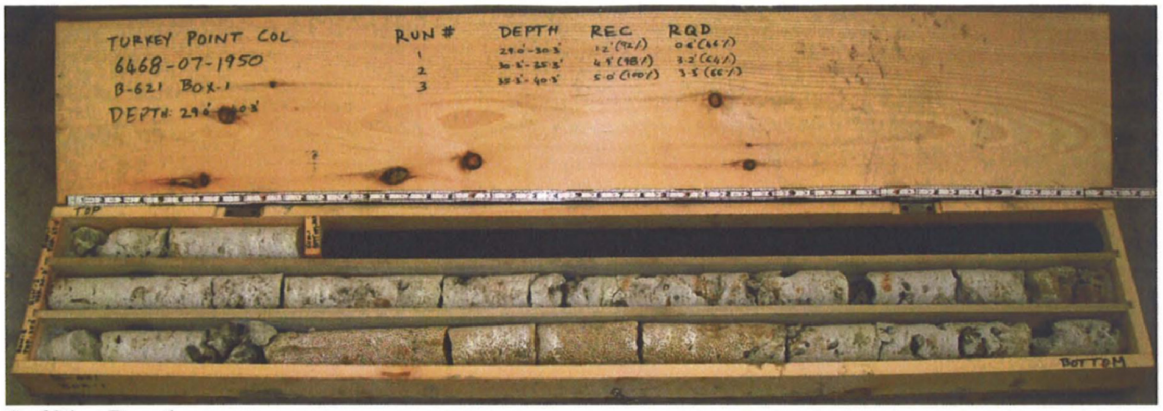
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5.30.08

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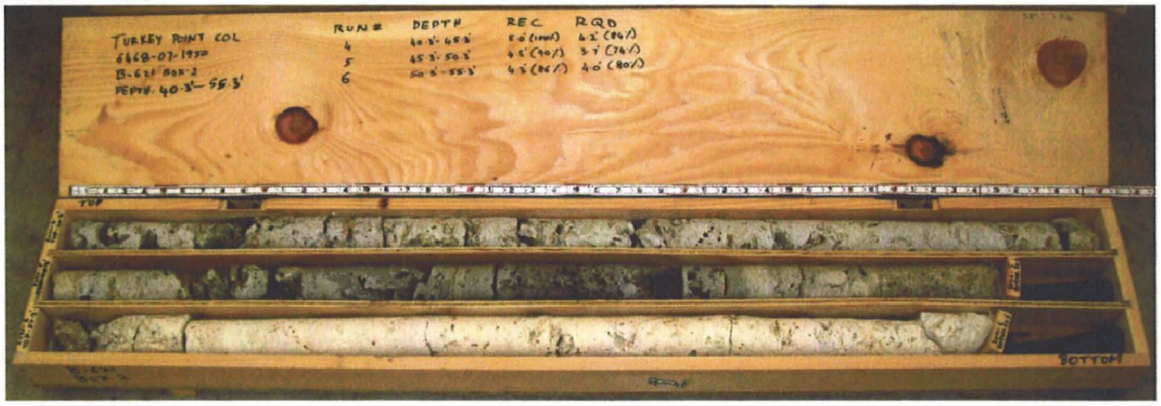
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa	
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)	
BORING NO.: B-621	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR.	NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,368 US ft (NAD83/90)	EASTING: 876,949 US ft (NAD83/90)	24 HR.	NA
TOTAL DEPTH: 126.5 ft	CASING DEPTH: 4" to 27.9', 3" to 115.3'		HAMMER (ID): 140 lb. Auto (MEC-02)	
DATE STARTED: 4/3/08	COMPLETED: 4/4/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
-105.1	105.3		0:34 0:31							LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
		5.0	0:25 0:24 0:21 0:20 0:19	(4.9) 98%	(4.6) 92%	RUN-17 *621-CS-04*				105.3ft: hard, indurated
-110.1	110.3									
		5.0	0:26 0:23 0:29 0:19	(4.0) 80%	(2.5) 50%	RUN-18				110.3ft: pale yellow (5Y8/2), to greenish gray (5GY6/1)
-115.1	115.3		0:21				(0.0) 0%	(NA)		-114.3 114.5 -115.1 115.3 POORLY GRADED SAND with silt (SP-SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, strong HCl reaction, trace shell fragments, little fines (Tamiami Formation) Coring Terminated at Elevation -115.5

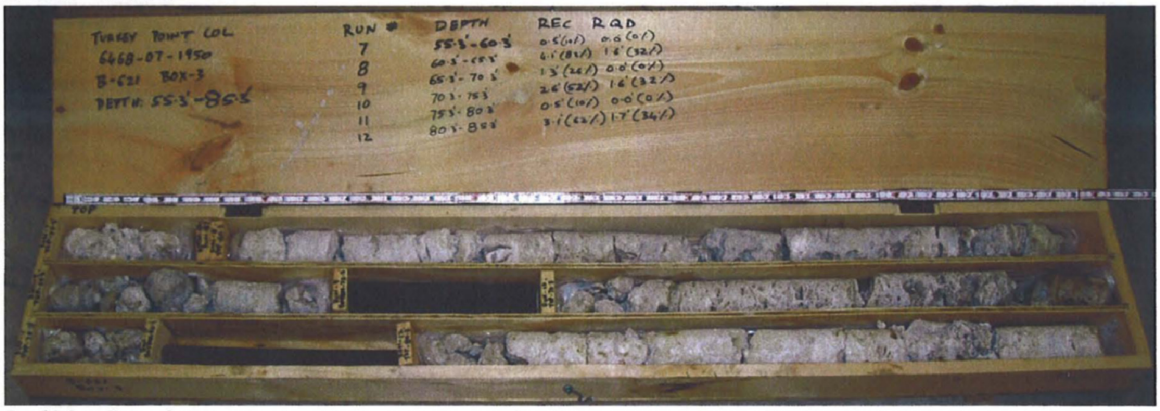
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



B-621 – Box 1



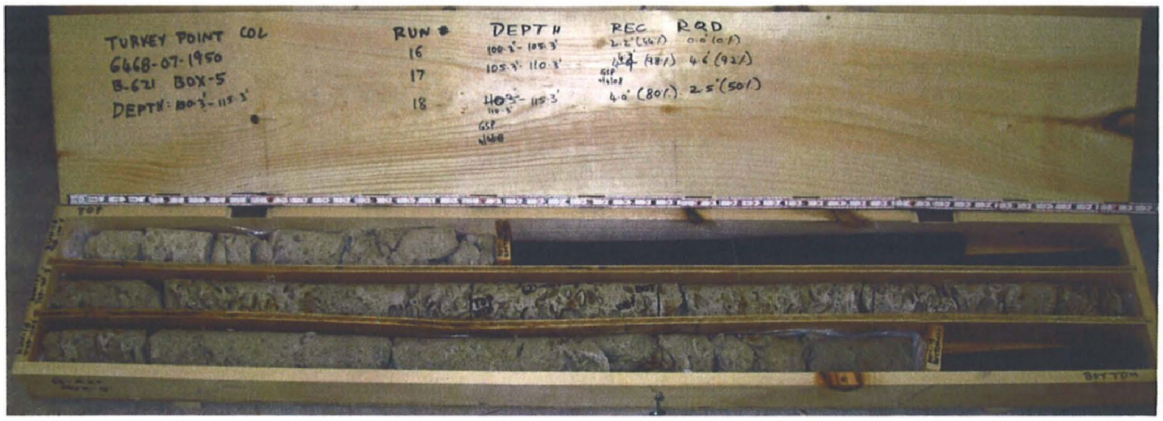
B-621 – Box 2



B-621 – Box 3



B-621 – Box 4


TURKEY POINT COL
6468-07-1950
B-621 BOX-5
DEPTH: 100'-115'
RUN #
DEPTH
REC
RQD
16
17
18
100'- 105'
105'- 110'
110'- 115'
4.0' (80%)
2.5' (50%)

B-621 – Box 5

MACTEC

GEOTECHNICAL BORING LOG

Prepared By JPG Date 8-14-08

Checked By SJL Date 9/19/08

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-622	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,421 US ft (NAD83/90)	EASTING: 876,811 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 100.2 ft	BORING DIAMETER: 4" to 28.9', 3" to 100.2'	CASING DEPTH: 4" to 28.9'	HAMMER (ID):140 lb. Auto (MEC-02)
DATE STARTED: 4/4/08	COMPLETED: 4/6/08	CORE SIZE: HQ3	BITS USED: 2 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
0.2					Ground Surface				
0.2	0.0	WOH	1	WOH	1	622-1			MUCK, light brownish gray (10YR6/3), to very dark gray (10YR3/1), very soft, moist, mostly organic, strong HCl reaction
-2.3	2.5	WOH	WOH	WOH	WOH 0	622-2			
-4.9	5.1	3	12	18	SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA 30	622-3			Field notes do not indicated that sample 622-3 was split into separated jars
-5.4	5.6								LIMESTONE, boundstone, white (10YR8/1), soft, wet, strong HCl reaction, oolitic (Miami Formation)
-7.1	7.3	7	7	9	16	622-4			7.3ft: very soft
-9.8	10.0	5	7	8	15	622-5			
-12.3	12.5	22	21	18	39	622-6			12.5ft: medium hard, fossiliferous
-14.5	14.7	7	12	16	28	622-7			14.7ft: soft
-18.3	18.5	3	12	43	55	622-8			18.5ft: moderately hard
-23.3	23.5	3	13	20	33	622-9			23.5ft: medium hard
-25.8	26.0								LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation)
-28.3	28.5								
-29.0	29.2	7	50/0.1		57/0.6	622-10			29.2ft: Switch sampling method to coring
-30.0	30.2					RUN-1			
						RUN-2			29.2ft: white (10YR8/1), hard, indurated, trace coralline, strong HCl reaction, few vugs
-35.0	35.2					RUN-3			
-40.0	40.2					RUN-4			40.2ft: recrystallized calcite
-45.0	45.2					RUN-5			45.2ft: white (10YR8/1) to 46.5ft then light gray (10YR7/1) to 47.8ft
-47.6	47.8								LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, trace to few gastropod shell molds and casts, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-50.0	50.2					RUN-6			
-55.0	55.2					RUN-7			55.2ft: moderately hard to hard, moderately indurated to indurated, few shell molds and casts
-60.0	60.2					RUN-8			60.2ft: hard, indurated
-65.0	65.2					RUN-9			
-70.0	70.2					RUN-10			

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 8/14/08

MACTEC

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-622	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,421 US ft (NAD83/90)	EASTING: 876,811 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 100.2 ft	BORING DIAMETER: 4" to 28.9', 3" to 100.2'	CASING DEPTH: 4" to 28.9'	HAMMER (ID):140 lb. Auto (MEC-02)
DATE STARTED: 4/4/08	COMPLETED: 4/6/08	CORE SIZE: HQ3	BITS USED: 2 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
-74.6					Continued from previous page				
-75.0	75.2					RUN-11			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, trace to few gastropod shell molds and casts, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*
-80.0	80.2					RUN-12			75.2ft: moderately hard to hard, moderately indurated 80.2ft: moderately hard, moderately indurated
-85.0	85.2					RUN-13			85.2ft: trace fine grained sand
-90.0	90.2					RUN-14			90.2ft: hard, indurated, few to little shell molds and casts
-95.0	95.2					RUN-15			95.2ft: moderately hard to hard, moderately indurated, trace shell molds and casts
-100.0	100.2								Boring Terminated at Elevation -100.0 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/14/08