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
-1.5 / -4.0	0.0 / 2.5	WOH	WOH	WOH	WOH 0	620(DH)-1			MUCK, light gray (2.5Y7/2), to grayish brown (2.5Y5/2), very soft, wet, strong HCl reaction, mostly organics
-4.5									3.0
-6.5	5.0	3	9	12	21	620(DH)-2			LIMESTONE, boundstone, pale yellow (5Y8/2), soft, wet, friable, strong HCl reaction, oolitic (Miami Formation) 5.0ft: very soft, fossiliferous
-9.0	7.5	10	9	8	17	620(DH)-3			SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA
-11.5	10.0	8	6	5	11	620(DH)-4			
-13.9	12.4	7	11	21	32	620(DH)-5			10.0ft: medium hard, moderately indurated
-16.4	14.9	17	20	10	30	620(DH)-6			12.4ft: soft
-21.0	19.5	14	16	31	47	620(DH)-7			14.9ft: moderately hard
-26.0	24.5	13	7	7	14	620(DH)-8			19.5ft: very soft
-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) 25.5ft: Switch sampling method to coring 25.5ft: white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones
-32.0	30.5					RUN-1			
-37.0	35.5					RUN-2			26.0ft: loss of circulation 30.5ft: medium hard, moderately indurated, recrystallized calcite, few vugs
-42.0	40.5					RUN-3			35.5ft: moderately hard, coralline
-47.0	45.5					RUN-4 620DH-CS-02			40.5ft: hard, indurated
-49.2									47.7
-52.0	50.5					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
-57.0	55.5					RUN-6 620DH-CS-03			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 55.5ft: trace sand, bedding planes at 56.1ft and 57.7ft
-62.0	60.5					RUN-7			
-67.0	65.5					RUN-8 620DH-CS-04			
-72.0	70.5					RUN-9			65.5ft: soft to moderately hard, friable to indurated 65.7 to 83.0ft: thin sand interbeds
						RUN-10			

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: 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; Silty SAND (SM), white (5Y8/1), wet, fine grained sand, strong HCl reaction -89.0 — 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

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	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	620(DH)-14			158.5ft: olive gray (5Y5/2)
-170.0	168.5	7	8	10	18	620(DH)-15			
-180.0	178.5	3	4	6	10	620(DH)-16			178.5ft: loose
-190.0	188.5	4	3	9	12	620(DH)-17			188.5ft: medium dense
-200.0	198.5	5	6	9	15	620(DH)-18			198.5ft: trace limestone fragments
-215.0	213.5	4	5	8	13	620(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

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)

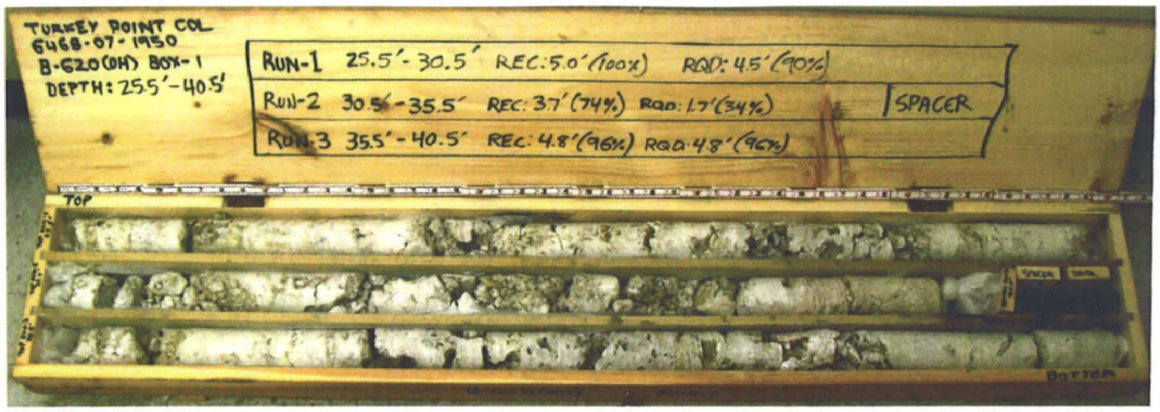
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Begin Coring @ 25.5 ft
-27.0	25.5	5.0	1:38 2:55 3:04 4:12 4:33	(5.0) 100%	(4.5) 90%	RUN-1	(20.7) 93%	(18.2) 82%		LIMESTONE, boundstone, 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									

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)

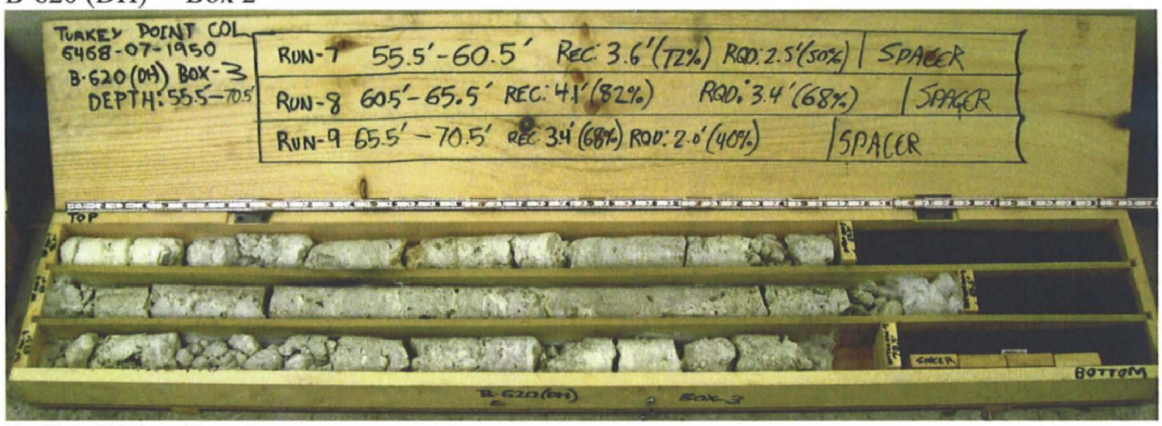
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
-107.0	105.5	5.0	0:36 0:49 0:38 0:44 0:45	(4.0) 80%	(3.3) 66%	RUN-16				LIMESTONE, boundstone, white (5Y8/1), 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 -117.0 115.5
-122.0	120.5	5.0	0:33 0:53 0:45 0:42 1:14	(1.5) 30%	(0.0) 0%	RUN-19				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



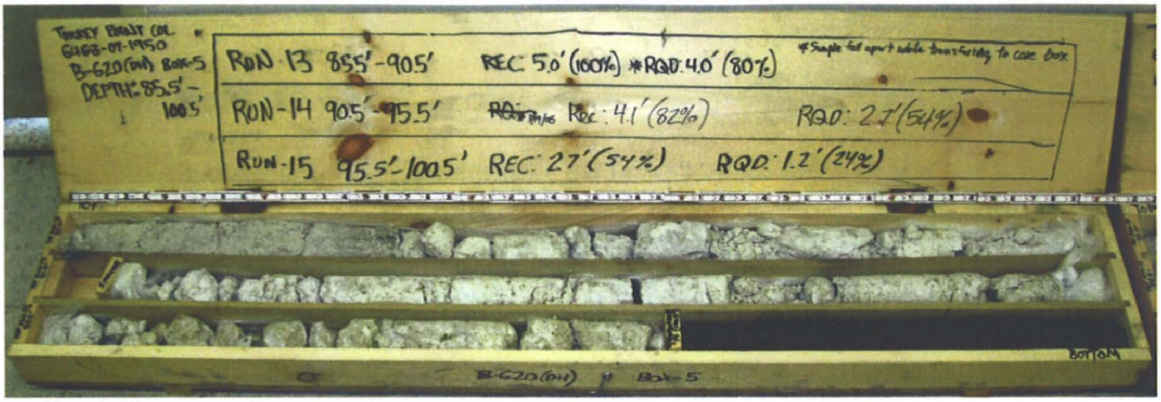
B-620 (DH) – Box 1

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
0.2 / -2.6	0.0 / 2.8	1	1	WOH	1	621-1			MUCK, very dark gray (10Yr3/1), very soft, dry, mostly organic, strong HCl reaction
-4.9	5.1	1	WOH	WOH	0 WOH	621-2			
-7.3	7.5	1	2	9	11	621-3			-5.9 / 6.1 Field notes do not indicate that sample 621-3 was split into separate jars
-9.6	9.8	5	5	6	11	621-4			LIMESTONE, boundstone, white (10YR8/1), very soft, wet, strong HCl reaction, oolitic (Miami Formation)
-11.8	12.0	11	12	7	19	621-5			
-14.3	14.5	11	16	17	33	621-6			12.0ft: medium hard
-18.3	18.5	6	9	13	22	621-7			14.5ft: soft, fossiliferous
-23.3	23.5	7	6	3	9	621-8			18.5ft: very soft
-28.3	28.5	3	4	2	6	621-9			-25.8 / 26.0
-28.8 / -30.1	29.0 / 30.3	50/0.5			50/0.5	621-10 / RUN-1			LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) 29.0ft: Switch sampling method to coring
-35.1	35.3					RUN-2			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs 30.3ft: coralline
-40.1	40.3					RUN-3			
-45.1	45.3					RUN-4 / 621-CS-01			
-50.1	50.3					RUN-5			45.3 to 48.3ft: light gray (10YR7/1), trace recrystallized calcite -48.1 / 48.3 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) 50.3ft: trace shell molds, trace fine sand
-55.1	55.3					RUN-6			
-60.1	60.3					RUN-7			
-65.1	65.3					RUN-8			60.3ft: trace to few shell molds
-70.1	70.3					RUN-9			65.3ft: sandy
						RUN-10			70.3ft: few to little shell molds and casts

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: 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-17 621-CS-04			105.3ft: hard, indurated
-110.1	110.3					RUN-18			110.3ft: pale yellow (5Y8/2), to greenish gray (5GY6/1)
-115.1	115.3								-114.3 — 114.5
		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								-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
-30.1	30.3	5.0	0:18/0.3	92%	46%	RUN-2	99%	70%		(Upper Fort Thompson Formation) *(continued)*
			0:39	(4.9)	(3.2)					LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous,
			0:34	98%	64%					strong HCl reaction, few vugs
			0:26							30.3ft: coralline
			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
-50.1	50.3		0:39				61%	36%		shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
		5.0	1:01	(4.3)	(4.0)	RUN-6				50.3ft: trace shell molds, trace fine sand
			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							

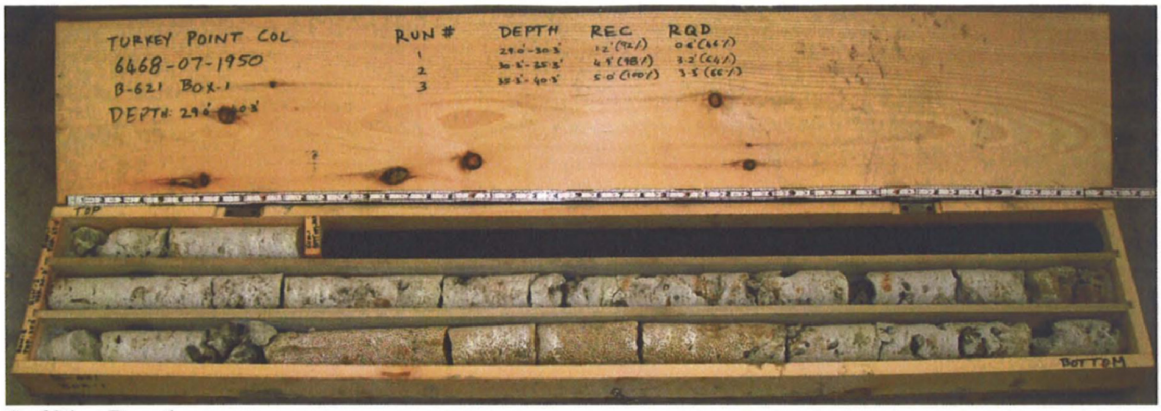
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

MACTEC

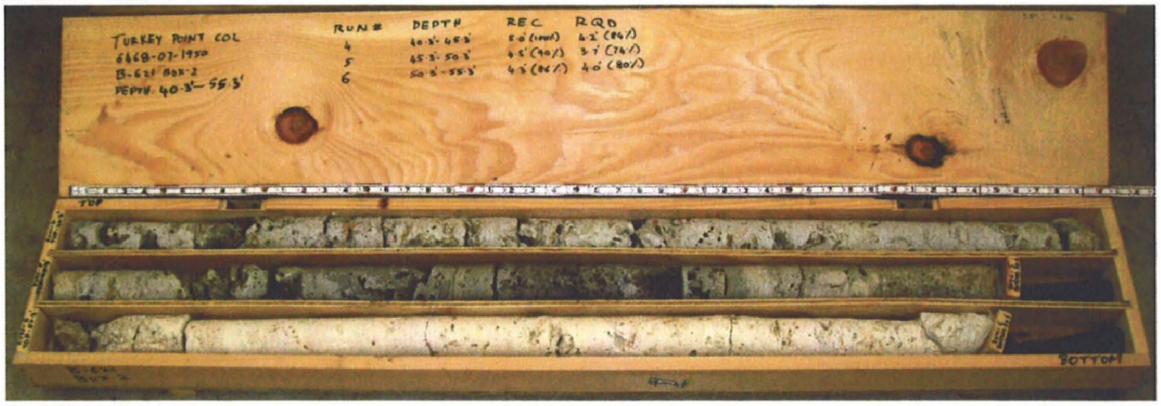
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-621	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND 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
										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 0:21	(4.0) 80%	(2.5) 50%	RUN-18				110.3ft: pale yellow (5Y8/2), to greenish gray (5GY6/1)
										-114.3 / 114.5
-115.1	115.3						(0.0) 0%	(NA)		-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

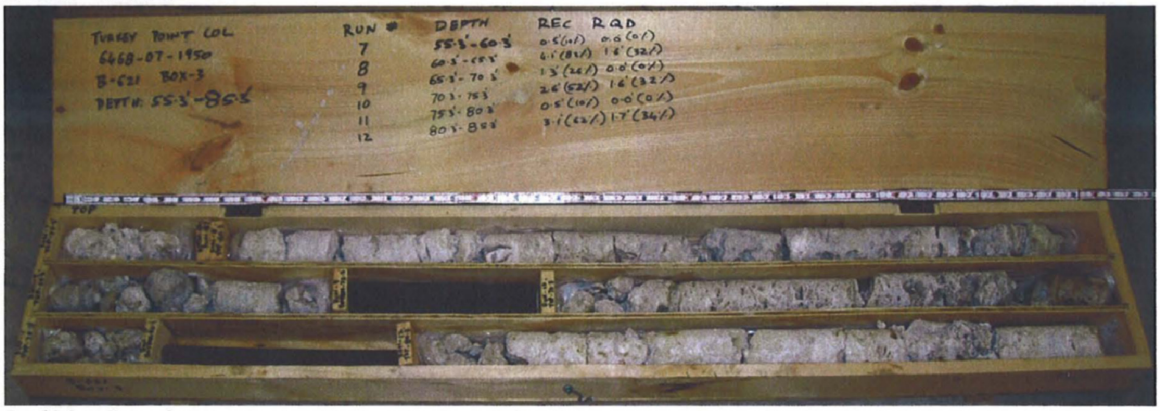
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



B-621 – Box 1

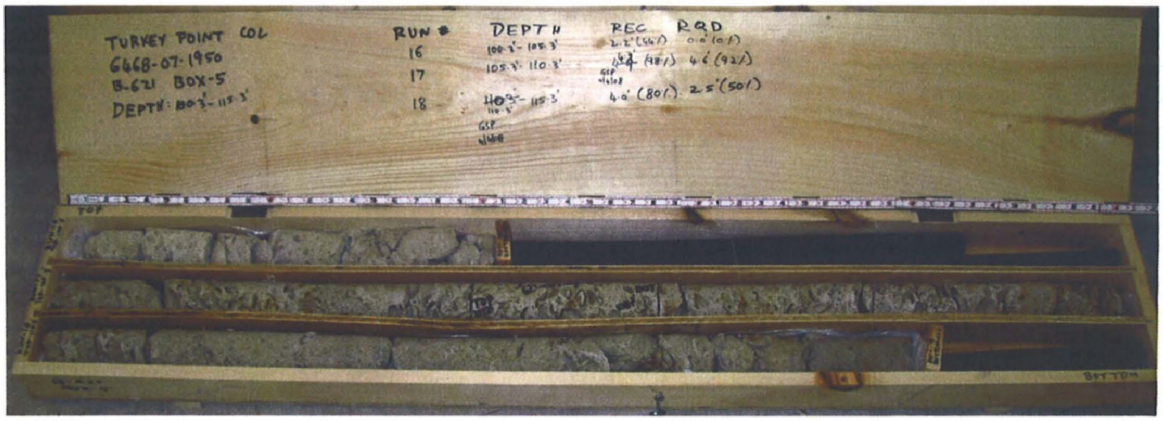


B-621 – Box 2



B-621 – Box 3

B-621 – Box 4


TURKEY POINT COL
6468-07-1950
B-621 BOX-5
DEPTH: 100.3'-115.3'
RUN #
DEPTH
REC
RQD
16
17
18

B-621 – Box 5

MACTEC

GEOTECHNICAL BORING LOG

Prepared By JPF 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
0.2 / -2.3	0.0 / 2.5	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
-4.9	5.1	WOH	WOH	WOH	WOH 0	622-2			
-7.1	7.3	3	12	18	30	622-3			-5.4 / 5.6 Field notes do not indicated that sample 622-3 was split into separated jars
-9.8	10.0	7	7	9	16	622-4			LIMESTONE, boundstone, white (10YR8/1), soft, wet, strong HCl reaction, oolitic (Miami Formation)
-12.3	12.5	5	7	8	15	622-5			7.3ft: very soft
-14.5	14.7	22	21	18	39	622-6			12.5ft: medium hard, fossiliferous
-18.3	18.5	7	12	16	28	622-7			14.7ft: soft
-23.3	23.5	3	12	43	55	622-8			18.5ft: moderately hard
-28.3	28.5	3	13	20	33	622-9			23.5ft: medium hard
-29.0 / -30.0	29.2 / 30.2	7	50/0.1		57/0.6	622-10 RUN-1			-25.8 / 26.0 LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) 29.2ft: Switch sampling method to coring 29.2ft: white (10YR8/1), hard, indurated, trace coralline, strong HCl reaction, few vugs
-35.0	35.2					RUN-2			
-40.0	40.2					RUN-3			
-45.0	45.2					RUN-4			40.2ft: recrystallized calcite
-50.0	50.2					RUN-5			45.2ft: white (10YR8/1) to 46.5ft then light gray (10YR7/1) to 47.8ft
-55.0	55.2					RUN-6			-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)
-60.0	60.2					RUN-7			55.2ft: moderately hard to hard, moderately indurated to indurated, few shell molds and casts
-65.0	65.2					RUN-8			60.2ft: hard, indurated
-70.0	70.2					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 8/14/08

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