MACTEC



| | | | |
|---|---|---|---|
| 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 | 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 | 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 @ 16.8 ft |
| -18.1 | 16.8 | 4.7 | 1:24<br>1:36<br>3:49<br>1:23<br>1:38/0.7 | (2.3)<br>49% | (1.2)<br>26% | RUN-1 | (3.1)<br>43% | (1.2)<br>17% | | LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, strong HCl reaction, little fine grained sand, oolitic (Miami Formation) *(continued)*<br>16.8ft: white (2.5Y8/1), medium hard, moderately indurated, fossiliferous, few to little locally interconnected vugs |
| -22.8 | 21.5 | 4.8 | 5:22<br>1:56<br>3:11<br>1:28<br>0:48/0.8 | (3.1)<br>65% | (1.7)<br>35% | RUN-2 | | | | -25.3 — 24.0 |
| -27.6 | 26.3 | 5.0 | 0:34<br>0:53<br>1:57<br>2:16<br>2:01 | (4.6)<br>92% | (3.2)<br>64% | RUN-3 | (23.8)<br>97% | (20.5)<br>84% | | LIMESTONE, boundstone, white (2.5Y8/1), medium hard to moderately hard, moderately indurated, fossiliferous, coralline, few vugs (Upper Fort Thompson Formation)<br>27.0ft: loss of circulation |
| -32.6 | 31.3 | 5.0 | 2:23<br>0:36<br>0:49<br>0:22<br>1:00 | (4.8)<br>96% | (4.5)<br>90% | RUN-4 | | | | 31.3ft: moderately hard |
| -37.6 | 36.3 | 5.0 | 0:49<br>0:46<br>0:51<br>1:34<br>1:54 | (4.9)<br>98% | (4.5)<br>90% | RUN-5 | | | | |
| -42.6 | 41.3 | 5.0 | 0:47<br>1:29<br>1:14<br>1:22<br>1:01 | (5.0)<br>100% | (5.0)<br>100% | RUN-6 | | | | |
| -47.6 | 46.3 | 5.0 | 0:35<br>0:32<br>0:52<br>1:27<br>1:17 | (4.8)<br>96% | (4.2)<br>84% | RUN-7 | | | | 46.3ft: white (2.5Y8/1), to 46.6ft then greenish gray (10Y6/1), to 48.5ft<br>-49.8 — 48.5 |
| -52.6 | 51.3 | 5.0 | 0:35<br>0:39<br>0:27<br>0:10<br>1:10 | (4.2)<br>84% | (3.2)<br>64% | RUN-8 | (56.5)<br>86% | (33.5)<br>51% | | LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation)<br>51.3ft: trace shell molds and casts |
| -57.6 | 56.3 | 5.0 | 0:37<br>0:37<br>0:25<br>1:01<br>1:32 | (5.0)<br>100% | (4.9)<br>98% | RUN-9 | | | | 56.3ft: moderately hard, indurated |
| -62.6 | 61.3 | 5.0 | 1:25<br>0:47<br>0:44<br>0:37<br>0:26 | (4.5)<br>90% | (2.9)<br>58% | RUN-10 | | | | |
| -67.6 | 66.3 | 5.0 | 0:03<br>0:09<br>0:30<br>1:14<br>1:42 | (3.0)<br>60% | (1.8)<br>36% | RUN-11 | | | | 66.3 to 68.3ft: possible sand layer |
| -72.6 | 71.3 | 0.9 | 3:09/0.9 | (0.6)<br>67% | (0.6)<br>67% | RUN-12 | | | | 71.3ft: hard |
| -73.5 | 72.2 | 4.1 | 0:08/0.1<br>0:39<br>0:43<br>0:20<br>0:25 | (4.0)<br>98% | (2.0)<br>49% | RUN-13 | | | | |
| -77.6 | 76.3 | 5.0 | 0:21<br>0:24<br>0:15<br>0:07<br>0:11 | (4.5)<br>90% | (2.5)<br>50% | RUN-14 | | | | 76.3ft: moderately hard, moderately indurated |
| -82.6 | 81.3 | 5.0 | 0:24<br>0:24<br>0:29<br>0:21<br>0:41 | (4.6)<br>92% | (1.3)<br>26% | RUN-15 | | | | 81.3ft: little vugs, few shell molds and casts |
| -87.6 | 86.3 | 5.0 | 0:30<br>1:13<br>0:34<br>0:11<br>0:16 | (4.3)<br>86% | (1.6)<br>32% | RUN-16 | | | | 86.3ft: few shell molds and casts |
| -92.6 | 91.3 | | | | | | | | | |

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

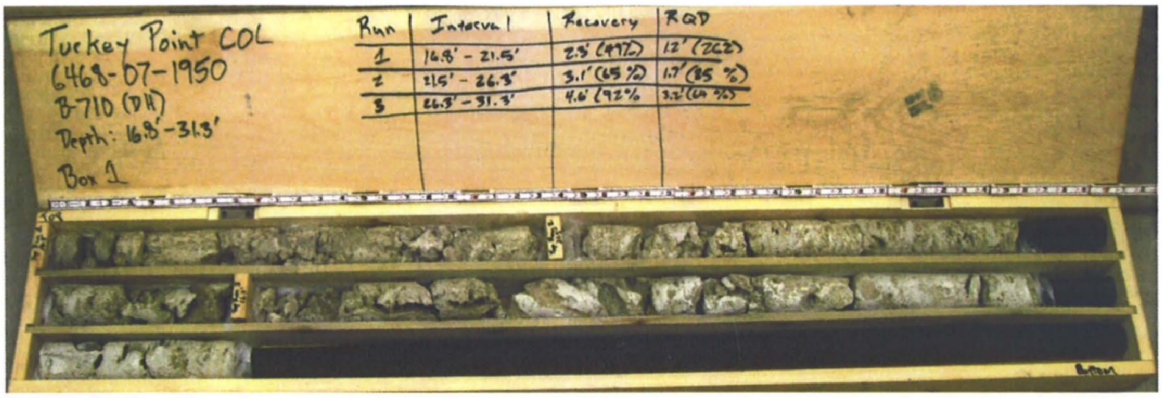
MACTEC



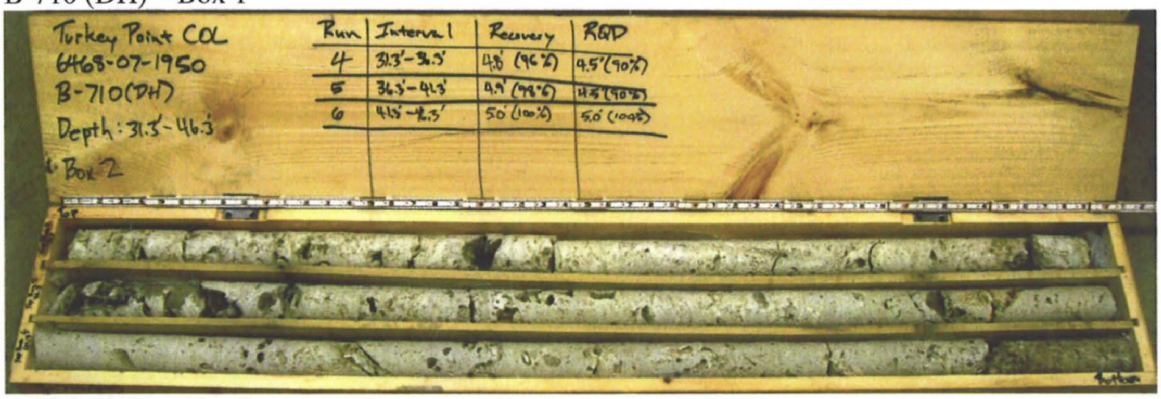
| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: O. Rodriguez |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-75 (CLT) | DRILLER: J. Warren/ C. Sloan/ M. Harvey | GROUND WATER (ft) |
| BORING NO.: B-710(DH) | DRILL 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 | 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 | 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 |
| -97.6 | 96.3 | 5.0 | 0:05 0:08 0:10 0:10 0:09 | (4.2) 84% | (1.7) 34% | RUN-17 | | | | 91.3ft: sandy LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) *(continued)* |
| -102.6 | 101.3 | 5.0 | 0:30 0:06 0:06 0:24 0:16 | (2.8) 56% | (0.9) 18% | RUN-18 | | | | |
| -107.6 | 106.3 | 5.0 | 0:12 0:13 1:15 0:12 0:20 | (5.0) 100% | (3.9) 78% | RUN-19 | | | | 101.3ft: medium hard, little shell molds and casts |
| -112.6 | 111.3 | 5.0 | 0:12 0:14 0:09 0:13 0:08 | (4.8) 96% | (3.2) 64% | RUN-20 | | | | 106.3ft: moderately hard to friable, few shell molds and casts |
| -117.6 | 116.3 | 5.0 | 0:27 0:33 0:14 0:05 0:06 | (2.5) 50% | (0.4) 8% | RUN-21 | (0.7) 10% | (NA) | | -115.3 114.0 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) |
| -122.6 | 121.3 | 5.0 | 0:05 0:06 0:08 0:02 0:02 | (0.7) 14% | (0.0) 0% | RUN-22 | | | | 116.3ft: limestone fragments -122.6 121.3 |
| | | | | | | | | | | Coring Terminated at Elevation -122.6 |

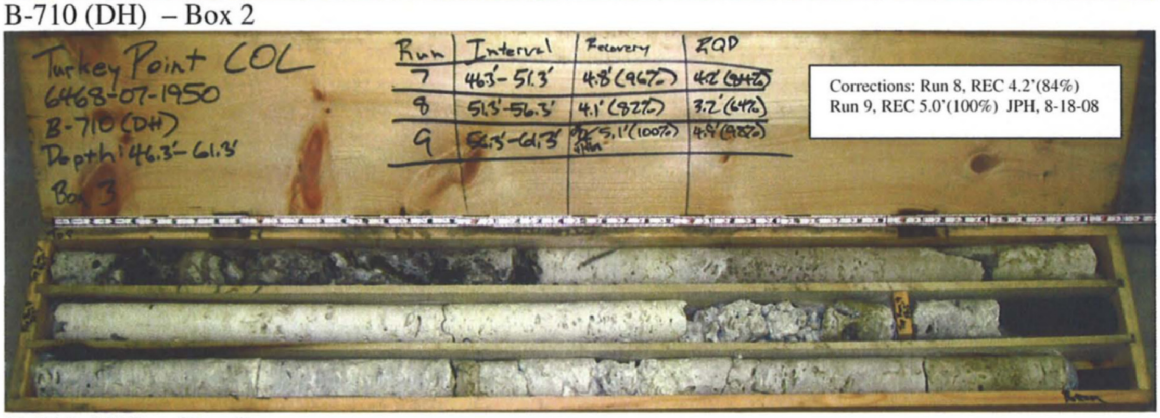
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08



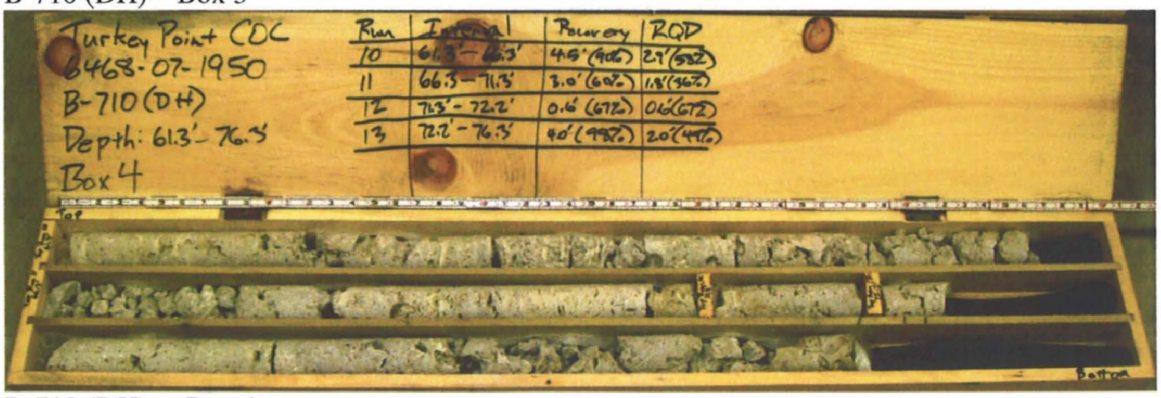

B-710 (DH) – Box 1




B-710 (DH) – Box 2

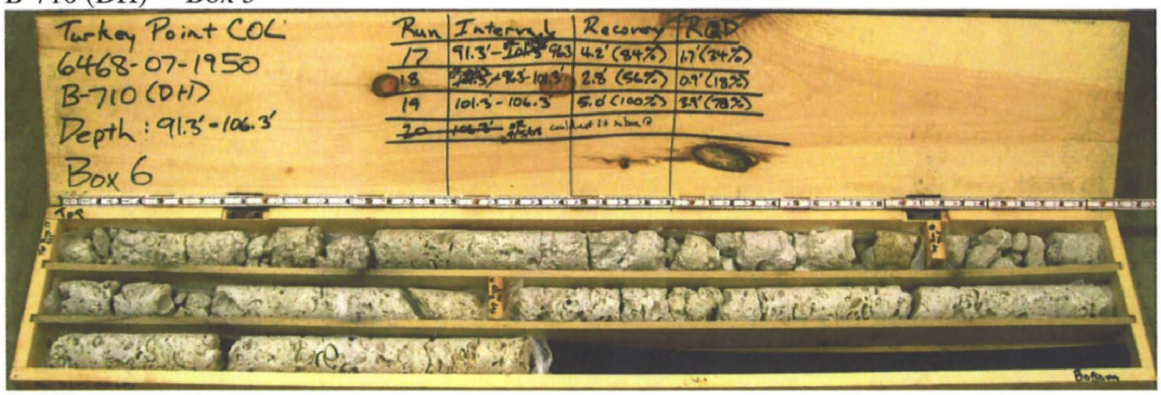



B-710 (DH) – Box 3

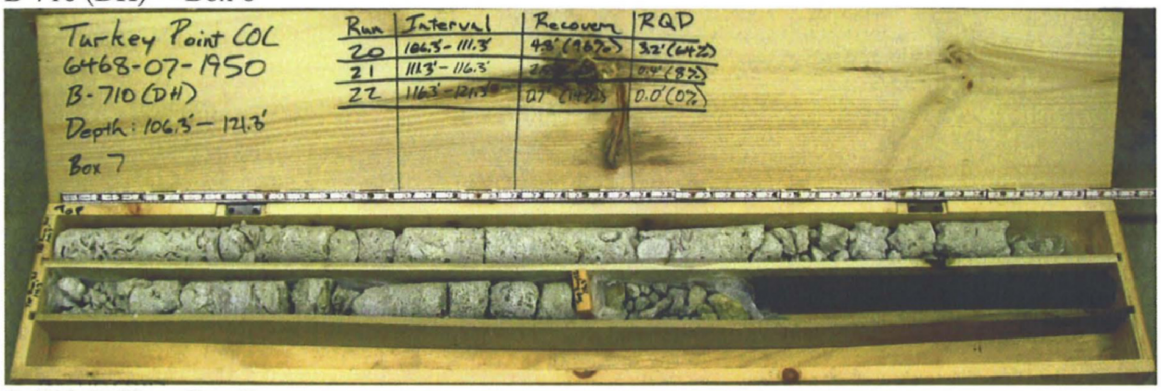



B-710 (DH) – Box 4

B-710 (DH) – Box 5




B-710 (DH) – Box 6




B-710 (DH) – Box 7

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 7-10-08

Checked By [illegible] Date 7-10-08

SHEET 1 OF 1

| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: S. Lehman |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (CLT) | DRILLER: J. Warren/ C. Sloan/ M. Harvey | GROUND WATER (ft) |
| BORING NO.: B-710(DH)R | DRILL METHOD: Mud Rotary | SAMPLE METHODS: SPT | 0 HR. NA |
| GROUND ELEV.: -1.3 ft (NAVD88) | NORTHING: 397,087 US ft (NAD83/90) | EASTING: 875,782 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 15.0 ft | BORING DIAMETER: 3" to 15' | CASING DEPTH: 0.0 | HAMMER (ID):140 lb. Auto (MEC-04) |
| DATE STARTED: 4/22/08 | COMPLETED: 4/22/08 | CORE SIZE: | BITS USED: 2 7/8" 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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Ground Surface | | | | 0.0 |
| | 0.0 | WOH | WOH | WOH | ●0 WOH | 710(DH)R-1 | | | This boring drilled to ammend standard penetration tests performed in boring B-710(DH) from 0.0 to 15.0ft, which were invalid due to nonconforming hammer drop distance. |
| | 3.5 | | | | | | | | 2.5 |
| | 6.0 | 11 | 9 | 7 | ●16 SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA | 710(DH)R-2 | | | MUCK, dark grayish brown (2.5Y4/2), to black (2.5Y2.5/1), very soft, wet, organics, strong HCl reaction |
| | 8.5 | 5 | 10 | 14 | ●24 | 710(DH)R-3 | | | LIMESTONE, boundstone, white (2.5Y8/1), very soft, moderately indurated, oolitic, strong HCl reaction (Miami Formation) |
| | 11.0 | 5 | 5 | 3 | ●8 | 710(DH)R-4 | | | 6.0ft: white (2.5Y8/1), to gray (2.5Y6/1), soft |
| | 13.5 | 20 | 8 | 13 | ●21 | 710(DH)R-5 | | | 8.5ft: white (2.5Y8/1), very soft |
| | | 3 | 8 | 34 | ●42 | 710(DH)R-6 | | | 11.0ft: soft |
| | | | | | | | | | 15.0 |
| | | | | | | | | | 13.5ft: medium hard |
| | | | | | | | | | Boring Terminated at Depth 15.0 ft |

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

MACTEC

SHEET 1 OF 1

| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: S. Lehman |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550 (CLT) | DRILLER: J. Warren/ C. Sloan/ M. Harvey | GROUND WATER (ft) |
| BORING NO.: B-710(DH)R | DRILL METHOD: Mud Rotary | SAMPLE METHODS: SPT | 0 HR. NA |
| GROUND ELEV.: -1.3 ft (NAVD88) | NORTHING: 397,087 US ft (NAD83/90) | EASTING: 875,782 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 15.0 ft | CASING DEPTH: 0.0 | | HAMMER (ID): 140 lb. Auto (MEC-04) |
| DATE STARTED: 4/22/08 | COMPLETED: 4/22/08 | CORE SIZE: | CORE BARREL TYPE: NA |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0.0 | | | | | | | | | Ground Surface |
| | | | N=0 | | | 710(DH)R-1 | | | | This boring drilled to ammend standard penetration tests performed in boring B-710(DH) from 0.0 to 15.0ft, which were invalid due to nonconforming hammer drop distance. 2.5 |
| | | | N=16 | | | 710(DH)R-2 | | | | MUCK, dark grayish brown (2.5Y4/2), to black (2.5Y2.5/1), very soft, wet, organics, strong HCl reaction |
| | | | N=24 | | | 710(DH)R-3 | | | | LIMESTONE, boundstone, white (2.5Y8/1), very soft, moderately indurated, oolitic, strong HCl reaction (Miami Formation) 6.0ft: white (2.5Y8/1), to gray (2.5Y6/1), soft |
| | | | N=8 | | | 710(DH)R-4 | | | | 8.5ft: white (2.5Y8/1), very soft |
| | | | N=21 | | | 710(DH)R-5 | | | | 11.0ft: soft |
| | | | N=42 | | | 710(DH)R-6 | | | | 13.5ft: medium hard 15.0 |

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

MACTEC

GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 5-30-08

Checked By [illegible] Date 5-30-08

SHEET 1 OF 4

| | | | |
|---|---|---|---|
| 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/ N. Rodriguez | GROUND WATER (ft) |
| BORING NO.: B-710G(DH) | DRILL METHOD: Mud Rotary | SAMPLE METHODS: NA | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,075 US ft (NAD83/90) | EASTING: 875,792 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 273.5 ft | BORING DIAMETER: 4" to 273.5' | CASING DEPTH: 4" to 115.0' | HAMMER (ID):140 lb. Auto (MEC-05) |
| DATE STARTED: 3/10/08 | COMPLETED: 3/13/08 | CORE SIZE: NA | BITS USED: 3 7/8" Milling & 3 7/8" 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 |
| | | | | | SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA | | | | Boring drilled to perform down-hole geophysical testing. See boring B-710(DH) for complete soil and rock descriptions. |
| | | | | | | | | | -4.9 3.5 Muck |
| | | | | | | | | | LIMESTONE (Miami Formation) |
| | | | | | | | | | -26.4 25.0 |
| | | | | | | | | | LIMESTONE (Upper Fort Thompson Formation) |
| | | | | | | | | | 30.0ft: some loss of circulation |
| | | | | | | | | | -49.9 48.5 |
| | | | | | | | | | LIMESTONE (Lower Fort Thompson Formation) |

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

MACTEC



| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: S. Woodham |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-550X (ATL) | DRILLER: R. Landeros/ N. Rodriguez | GROUND WATER (ft) |
| BORING NO.: B-710G(DH) | DRILL METHOD: Mud Rotary | SAMPLE METHODS: NA | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,075 US ft (NAD83/90) | EASTING: 875,792 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 273.5 ft | BORING DIAMETER: 4" to 273.5' | CASING DEPTH: 4" to 115.0' | HAMMER (ID):140 lb. Auto (MEC-05) |
| DATE STARTED: 3/10/08 | COMPLETED: 3/13/08 | CORE SIZE: NA | BITS USED: 3 7/8" Milling & 3 7/8" 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 | | | | |
| | | | | | | | | | LIMESTONE (Lower Fort Thompson Formation) *(continued)* |
| | | | | | | | | | -114.4 / 113.0 Silty SAND (SM) (Tamiami Formation) |
| -139.7 | 138.3 | 8 | 9 | 11 | 20 | | | | 138.3ft: SPT energy measurement |
| -144.7 | 143.3 | | | | | | | | |
| -146.2 | 144.8 | 9 | 14 | 18 | 32 | | | | 143.3ft: SPT energy measurement |
| | | 7 | 10 | 11 | 21 | | | | 144.8ft: SPT energy measurement |

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: R. Landeros/ N. Rodriguez | GROUND WATER (ft) |
| BORING NO.: B-710G(DH) | DRILL METHOD: Mud Rotary | SAMPLE METHODS: NA | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,075 US ft (NAD83/90) | EASTING: 875,792 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 273.5 ft | BORING DIAMETER: 4" to 273.5' | CASING DEPTH: 4" to 115.0' | HAMMER (ID):140 lb. Auto (MEC-05) |
| DATE STARTED: 3/10/08 | COMPLETED: 3/13/08 | CORE SIZE: NA | BITS USED: 3 7/8" Milling & 3 7/8" 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 | | | | |
| | | | | | | | | | Silty SAND (SM) (Tamiami Formation) *(continued)* |
| | | | | | | | | | -221.4 / 220.0 Silty SAND (SM) (Hawthorn Group) |

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: R. Landeros/ N. Rodriguez | GROUND WATER (ft) |
| BORING NO.: B-710G(DH) | DRILL METHOD: Mud Rotary | SAMPLE METHODS: NA | 0 HR. NA |
| GROUND ELEV.: -1.4 ft (NAVD88) | NORTHING: 397,075 US ft (NAD83/90) | EASTING: 875,792 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 273.5 ft | BORING DIAMETER: 4" to 273.5' | CASING DEPTH: 4" to 115.0' | HAMMER (ID):140 lb. Auto (MEC-05) |
| DATE STARTED: 3/10/08 | COMPLETED: 3/13/08 | CORE SIZE: NA | BITS USED: 3 7/8" Milling & 3 7/8" 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 |
|---|---|---|---|---|---|---|---|---|---|
| -225.8 | | | | | Continued from previous page | | | | |
| | | | | | | | | | Silty SAND (SM) (Hawthorn Group) *(continued)* |
| | | | | | | | | | 250.0ft: loss of circulation |
| | | | | | | | | | -274.9 273.5 |
| | | | | | | | | | Boring Terminated at Elevation -274.9 ft |

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

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: 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-711 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.1 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 875,885 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.7 ft | BORING DIAMETER: 4" to 30.5', 3" to 151.7' | CASING DEPTH: 4" to 30.5', 3" to 123.0' | HAMMER (ID):140 lb. Auto (07) |
| DATE STARTED: 3/4/08 | COMPLETED: 3/6/08 | 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 |
|---|---|---|---|---|---|---|---|---|---|
| -1.1 | | | | | Ground Surface | | | | -1.1 / 0.0 |
| -1.1 / -3.6 | 0.0 / 2.5 | WOH | WOH | 1 | 1 | 711-1 | | | MUCK, grayish brown (10YR5/2), to light gray (10YR7/2), very soft, wet, strong HCl reaction, mostly organic |
| -6.1 | 5.0 | WOR | 8 | 11 | 19 | 711-2A&B | | | -4.1 / 3.0 2.5ft: dark grayish brown (10YR4/2) |
| -8.6 | 7.5 | 8 | 7 | 6 | 13 | 711-3 | | | LIMESTONE, boundstone, white (5Y8/1), very soft, wet, friable, strong HCl reaction, oolitic (Miami Formation) |
| -11.0 | 9.9 | 7 | 11 | 3 | 14 | 711-4 | | | |
| -13.6 | 12.5 | 4 | 7 | 7 | 14 | 711-5 | | | |
| -16.1 | 15.0 | 35 | 36 | 22 | 58 | 711-6 | | | 12.5ft: moderately hard |
| -21.1 | 20.0 | 11 | 17 | 22 | 39 | 711-7 | | | 15.0ft: medium hard<br>16.5ft: loss of circulation |
| -25.1 | 24.0 | 8 | 6 | 5 | 11 | 711-8 | | | 20.0ft: very soft |
| -30.0 | 28.9 | 14 | 8 | 1 | 9 | 711-9 | | | 24.0ft: friable to indurated, some circulation returned<br>-27.1 / 26.0 |
| -31.6 | 30.5 | 19 | 29 | 32 | 61 | 711-10 | | | LIMESTONE, boundstone, white (5Y8/1), hard, wet, strong HCl reaction, indurated, highly fragmented (Upper Fort Thompson Formation)<br>30.5ft: Switch sampling method to coring<br>30.5ft: hard, indurated, few to little vugs, fossiliferous, recrystallized calcite, coralline<br>30.5ft: loss of circulation |
| -36.6 | 35.5 | | | | | RUN-1<br>711-CS-01 | | | |
| -41.6 | 40.5 | | | | | RUN-2<br>711-CS-02 | | | |
| -46.6 | 45.5 | | | | | RUN-3 | | | |
| -51.6 | 50.5 | | | | | RUN-4 | | | 45.5ft: white (5Y8/1), to 46.7ft then gray (5Y6/1), to 48.4ft, trace vugs<br>-49.5 / 48.4 |
| -56.6 | 55.5 | | | | | RUN-5<br>711-CS-03 | | | LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) |
| -61.6 | 60.5 | | | | | RUN-6<br>711-CS-04 | | | |
| -66.6 | 65.5 | | | | | RUN-7<br>711-CS-05<br>711-CS-06 | | | |
| -71.6 | 70.5 | | | | | RUN-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: 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-711 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.1 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 875,885 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.7 ft | BORING DIAMETER: 4" to 30.5', 3" to 151.7' | CASING DEPTH: 4" to 30.5', 3" to 123.0' | HAMMER (ID):140 lb. Auto (07) |
| DATE STARTED: 3/4/08 | COMPLETED: 3/6/08 | CORE SIZE: HQ3 | BITS USED: 3 7/8" Tricone |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | BLOWS PER FOOT 0 20 40 60 80 100 | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| -75.9 | | | | | Continued from previous page | | | | |
| -76.6 | 75.5 | | | | | RUN-10 | | | LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) *(continued)* 75.5ft: hard to moderately hard, indurated to moderately indurated |
| -81.6 | 80.5 | | | | | RUN-11 | | | 80.5ft: white (5Y8/1), to light gray (10YR7/2), hard, indurated, trace shell molds and casts |
| -86.6 | 85.5 | | | | | RUN-12 711-CS-07 | | | 85.5ft: white (5YR8/1), moderately hard, moderately indurated, trace vugs |
| -91.6 | 90.5 | | | | | RUN-13 | | | 90.5ft: white (10YR8/1), medium hard to hard, moderately indurated, no vugs |
| -96.6 | 95.5 | | | | | RUN-14 | | | |
| -101.6 | 100.5 | | | | | RUN-15 711-CS-08 711-CS-09 | | | 100.5ft: hard, indurated, little shell molds and casts |
| -106.6 | 105.5 | | | | | RUN-16 | | | 105.5ft: medium hard to hard |
| -111.6 | 110.5 | | | | | RUN-17 | | | 110.5ft: soft to hard, indurated |
| -114.1 | | | | | | | | | 113.0 |
| -116.6 | 115.5 | | | | | RUN-18 | | | Silty SAND (SM), white (10YR8/1), wet, indurated to friable, fine grained sand, little fines (Tamiami Formation) |
| -121.6 | 120.5 | 5 | 7 | 6 | 13 | 711-11 | | | 120.5ft: Switch sampling method to SPT 120.5ft: medium dense |
| -131.3 | 130.2 | 3 | 3 | 5 | 8 | 711-12 | | | 130.2ft: greenish gray (10Y6/1), loose, fine to medium grained sand, trace indurated cemented sand |
| -141.3 | 140.2 | 7 | 7 | 11 | 18 | 711-13 | | | 140.2ft: medium dense |

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: 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-711 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.1 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 875,885 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.7 ft | BORING DIAMETER: 4" to 30.5', 3" to 151.7' | CASING DEPTH: 4" to 30.5', 3" to 123.0' | HAMMER (ID):140 lb. Auto (07) |
| DATE STARTED: 3/4/08 | COMPLETED: 3/6/08 | CORE SIZE: HQ3 | BITS USED: 3 7/8" Tricone |

| ELEV. (ft) | DEPTH (ft) | BLOW COUNT 0.5ft | 0.5ft | 0.5ft | BLOWS PER FOOT 0 20 40 60 80 100 | SAMP NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| -150.7 | | | | | Continued from previous page | | | | |
| -151.3 = 150.2 | | 3 | 6 | 10 | ●16 | 711-14 | | | -152.8 150.2ft: fine to coarse grained sand, fine to coarse gravel 151.7 |
| | | | | | | | | | Boring Terminated at Elevation -152.8 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: 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-711 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.1 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 875,885 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.7 ft | CASING DEPTH: 4" to 30.5', 3" to 123.0' | | HAMMER (ID): 140 lb. Auto (07) |
| DATE STARTED: 3/4/08 | COMPLETED: 3/6/08 | 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 @ 30.5 ft |
| -31.6 | 30.5 | 5.0 | 0:43<br>1:03<br>2:31<br>2:15<br>2:08 | (5.0)<br>100% | (3.5)<br>70% | RUN-1<br>711-CS-01 | (16.6)<br>93% | (13.5)<br>75% | | LIMESTONE, boundstone, white (5Y8/1), hard, wet, strong HCl reaction, indurated, highly fragmented (Upper Fort Thompson Formation) *(continued)*<br>30.5ft: hard, indurated, few to little vugs, fossiliferous, recrystallized calcite, coralline<br>30.5ft: loss of circulation |
| -36.6 | 35.5 | | | | | | | | | |
| -41.6 | 40.5 | 5.0 | 1:16<br>2:31<br>3:00<br>1:32<br>1:38 | (4.1)<br>82% | (3.8)<br>76% | RUN-2<br>711-CS-02 | | | | |
| -46.6 | 45.5 | 5.0 | 1:19<br>1:57<br>2:45<br>2:47<br>2:43 | (4.6)<br>92% | (4.0)<br>80% | RUN-3 | | | | |
| -51.6 | 50.5 | 5.0 | 2:34<br>1:41<br>1:01<br>1:45<br>3:58 | (4.4)<br>88% | (3.3)<br>66% | RUN-4 | (52.3)<br>81% | (37.1)<br>57% | | 45.5ft: white (5Y8/1), to 46.7ft then gray (5Y6/1), to 48.4ft, trace vugs<br>-49.5 48.4<br>LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) |
| -56.6 | 55.5 | 5.0 | 2:41<br>2:02<br>1:47<br>1:18<br>2:02 | (5.0)<br>100% | (4.1)<br>82% | RUN-5<br>711-CS-03 | | | | |
| -61.6 | 60.5 | 5.0 | 2:35<br>2:38<br>2:12<br>0:59<br>1:33 | (5.0)<br>100% | (5.0)<br>100% | RUN-6<br>711-CS-04 | | | | |
| -66.6 | 65.5 | 5.0 | 2:51<br>2:12<br>2:17<br>2:02<br>1:00 | (4.9)<br>98% | (4.2)<br>84% | RUN-7<br>711-CS-05<br>711-CS-06 | | | | |
| -71.6 | 70.5 | 5.0 | 0:56<br>0:49<br>0:43<br>0:52<br>4:15 | (3.0)<br>60% | (1.4)<br>28% | RUN-8 | | | | |
| -76.6 | 75.5 | 5.0 | 3:29<br>4:55<br>4:43<br>2:20<br>4:25 | (4.8)<br>96% | (4.1)<br>82% | RUN-9 | | | | |
| -81.6 | 80.5 | 5.0 | 1:21<br>1:33<br>1:42<br>1:28<br>1:49 | (3.0)<br>60% | (0.9)<br>18% | RUN-10 | | | | 75.5ft: hard to moderately hard, indurated to moderately indurated |
| -86.6 | 85.5 | 5.0 | 1:06<br>0:56<br>1:42<br>2:35<br>1:42 | (3.6)<br>72% | (1.0)<br>20% | RUN-11 | | | | 80.5ft: white (5Y8/1), to light gray (10YR7/2), hard, indurated, trace shell molds and casts |
| -91.6 | 90.5 | 5.0 | 2:13<br>3:21<br>4:00<br>3:36<br>1:28 | (4.6)<br>92% | (3.9)<br>78% | RUN-12<br>711-CS-07 | | | | 85.5ft: white (5YR8/1), moderately hard, moderately indurated, trace vugs |
| -96.6 | 95.5 | 5.0 | 0:13<br>0:51<br>0:28<br>0:28<br>1:08 | (3.5)<br>70% | (2.6)<br>52% | RUN-13 | | | | 90.5ft: white (10YR8/1), medium hard to hard, moderately indurated, no vugs |
| -101.6 | 100.5 | 5.0 | 0:33<br>0:36<br>0:40<br>0:43<br>1:03 | (3.2)<br>64% | (0.8)<br>16% | RUN-14 | | | | |
| -106.6 | 105.5 | 5.0 | 0:54<br>0:44<br>1:20<br>1:03<br>1:46 | (4.9)<br>98% | (4.4)<br>88% | RUN-15<br>711-CS-08<br>711-CS-09 | | | | 100.5ft: hard, indurated, little shell molds and casts |

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

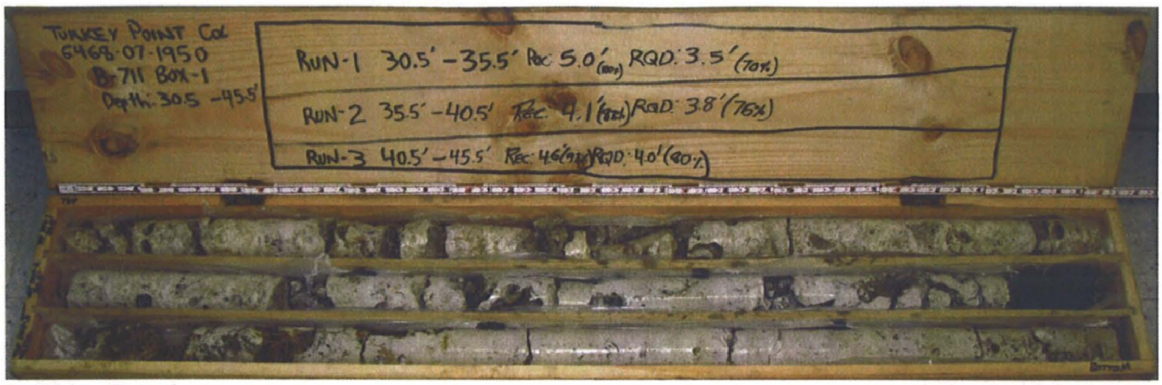
MACTEC



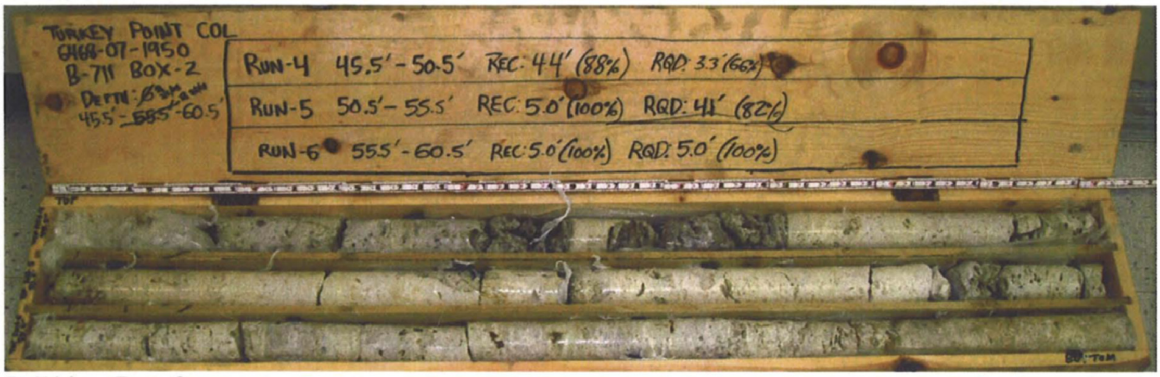
| | | | |
|---|---|---|---|
| BECHTEL PROJECT NO.: 25409 | MACTEC PROJECT NO.: 6468-07-1950 | COUNTY: Miami-Dade | GEOLOGIST: R. Clark |
| SITE DESCRIPTION: Turkey Point COL | DRILL MACHINE: CME-750 (Miller) | DRILLER: G.Bilbrey/P.McKorkle/J.Tucker | GROUND WATER (ft) |
| BORING NO.: B-711 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.1 ft (NAVD88) | NORTHING: 397,086 US ft (NAD83/90) | EASTING: 875,885 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 151.7 ft | CASING DEPTH: 4" to 30.5', 3" to 123.0' | | HAMMER (ID): 140 lb. Auto (07) |
| DATE STARTED: 3/4/08 | COMPLETED: 3/6/08 | 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 |
| -111.6 | 110.5 | 5.0 | 0:42<br>0:54<br>0:54<br>0:48<br>0:45 | (4.4)<br>88% | (3.6)<br>72% | RUN-16 | | | | LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) *(continued)*<br>105.5ft: medium hard to hard |
| -116.6 | 115.5 | 5.0 | 0:38<br>0:47<br>0:55<br>0:59<br>0:23 | (2.1)<br>42% | (0.0)<br>0% | RUN-17 | | | | 110.5ft: soft to hard, indurated<br>-114.1 113.0 |
| | | | | | | | (1.2)<br>16% | (NA) | | Silty SAND (SM), white (10YR8/1), wet, indurated to friable, fine grained sand, little fines (Tamiami Formation) |
| -121.6 | 120.5 | 5.0 | 0:39<br>0:33<br>0:46<br>1:11<br>0:47 | (0.0)<br>0% | (0.0)<br>0% | RUN-18 | | | | -121.6 120.5 |
| | | | | | | | | | | Coring Terminated at Elevation -121.6 |

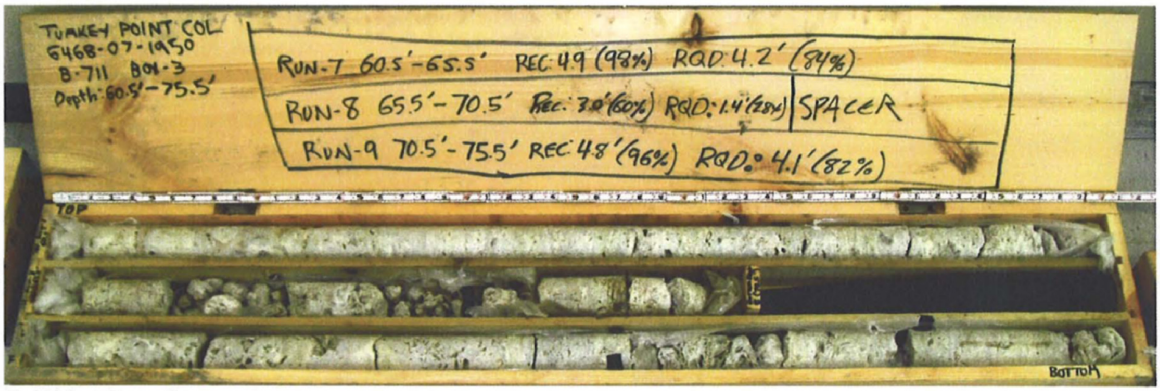
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



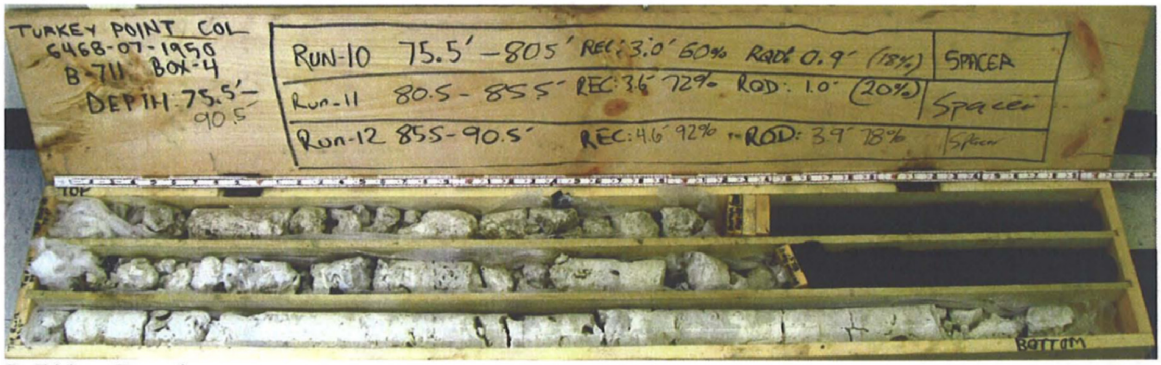

B-711 – Box 1



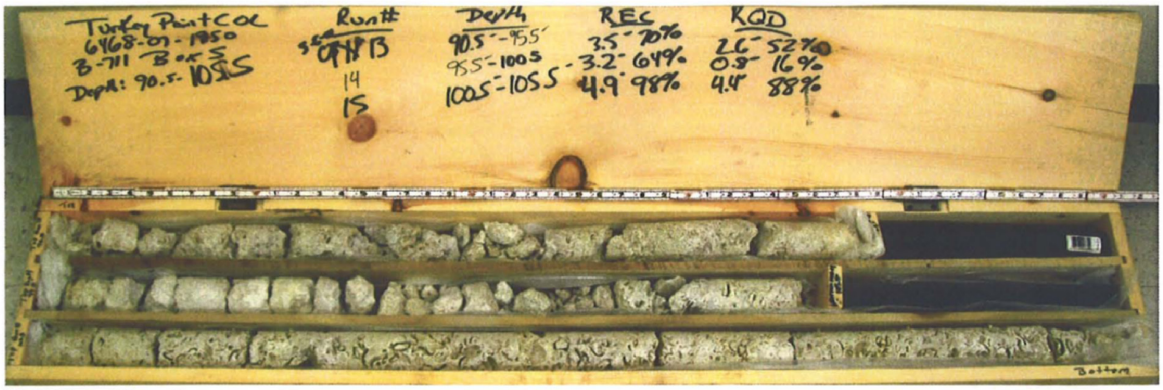

B-711 – Box 2



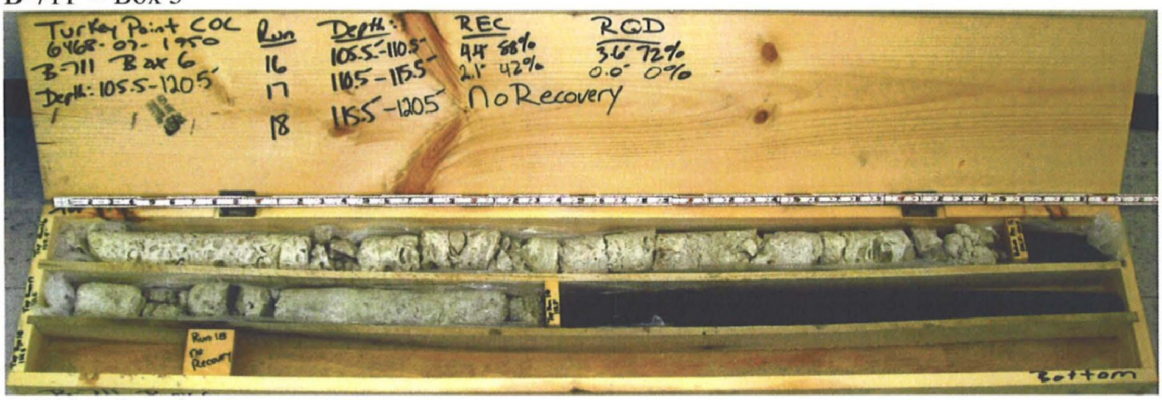

B-711 – Box 3




B-711 – Box 4




B-711 – Box 5




B-711 – Box 6

MACTEC

# GEOTECHNICAL BORING LOG

Prepared By [illegible] Date 7-10-08
Checked By [illegible] Date 7-10-08



| | | | |
|---|---|---|---|
| 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-712 | DRILL METHOD: Mud Rotary/ Core | SAMPLE METHODS: SPT/Core | 0 HR. NA |
| GROUND ELEV.: -1.1 ft (NAVD88) | NORTHING: 397,082 US ft (NAD83/90) | EASTING: 876,022 US ft (NAD83/90) | 24 HR. NA |
| TOTAL DEPTH: 128.3 ft | BORING DIAMETER: 4" to 28.1', 3" to 128.3' | CASING DEPTH: 4" to 28.1', 3" to 122.0' | HAMMER (ID):140 lb. Auto (MEC-02) |
| DATE STARTED: 3/19/08 | COMPLETED: 3/21/08 | 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 |
|---|---|---|---|---|---|---|---|---|---|
| -1.1 | | | | | Ground Surface | | | | -1.1 / 0.0 |
| -1.1 / -4.0 | 0.0 / 2.9 | WOH | WOH | WOH | 0 | 712-1 | | | MUCK, very dark grayish brown (2.5Y3/2), very soft, moist, mostly organic, strong HCl reaction |
| -7.1 | 6.0 | 7 | 6 | 5 | 11 | 712-2 | | | -4.2 / 3.1 LIMESTONE, boundstone, pale yellow (5Y8/2), very soft, wet, strong HCl reaction, oolitic |
| -10.1 | 9.0 | 6 | 4 | 16 | 20 | 712-3 | | | 6.0ft: white (5Y8/1) |
| -12.5 | 11.4 | 3 | 4 | 7 | 11 | 712-4 | | | |
| -14.9 | 13.8 | 16 | 46 | 12 | 58 | 712-5 | | | 11.4ft: white (10YR8/1), moderately hard |
| -20.1 | 19.0 | 16 | 28 | 44 | 72 | 712-6 | | | |
| -25.1 | 24.0 | 6 | 9 | 11 | 20 | 712-7 | | | 19.0ft: very soft, moist, trace shell fragments |
| -30.1 | 29.0 | 6 | 9 | 4 | 13 | 712-8 | | | -27.1 / 26.0 LIMESTONE, boundstone, white (10YR8/1), very soft, moist, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation) |
| -31.6 | 30.5 | 24 | 27 | 30 | 57 | 712-9 | | | 26.5ft: loss of circulation |
| -32.9 | 31.8 | | | | | RUN-1 | | | 29.0ft: hard |
| -37.9 | 36.8 | | | | | RUN-2 | | | 30.5ft: Switch sampling method to coring<br>30.5ft: white, (5Y8/1), hard, indurated, strong HCl reaction, little vugs<br>31.8ft: fossiliferous, coralline, some vugs |
| -42.9 | 41.8 | | | | | RUN-3 | | | 36.8ft: dark greenish gray (4/10Y), few vugs |
| -47.9 | 46.8 | | | | | RUN-4 | | | 41.8ft: pale yellow (2.5Y8/4) |
| -52.9 | 51.8 | | | | | RUN-5 | | | 46.8ft: white (2.5Y8/1), to 48.4ft then gray (N5/) to 50.8ft<br>-51.9 / 50.8 LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) |
| -57.9 | 56.8 | | | | | RUN-6 | | | |
| -62.9 | 61.8 | | | | | RUN-7 | | | 56.8ft: white (5Y8/1) |
| -67.9 | 66.8 | | | | | RUN-8 | | | |
| -72.9 | 71.8 | | | | | RUN-9 | | | 66.8ft: white (8/N) |
| | | | | | | RUN-10 | | | 71.8ft: white (5Y8/1) |

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

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