

Field Trip: On 16 Sep 11, Engineering Div. personnel visited the construction site of WBV-14c2, West Bank and Vicinity, New Orleans, Louisiana, Hurricane Protection Project, Westwego to Harvey Canal, New Westwego Pumping Station to Orleans Village Levee.

Purpose: Geophysical testing at the site has started and preliminary results for about half of the North-South levee portion have been completed and “Ground Truthing” was performed to validate preliminary findings. The “Ground Truthing” (field observations) allows for field/equipment comparison and provides information for fine-tuning and calibration of the equipment readings and results.

The following Engineering Div. personnel were on-site: Richard Pinner, Mark Woodward, Kim Tullier, Randy Perrin. Also present were representatives from Construction Div., OCPR, SLFPA-W, and the Contractor.

The A-E Contractor (FFEB) has supplied preliminary results plot of the Electromagnetic (EM) mapping for approximately 2200 feet of levee length by 300 feet of width (from berm toe to berm toe). The EM results were plotted and 115 possible anomalies locations delineated. The chosen locations were based on the 12 highest EM readings for anomalies. Of the 12 locations, 7 were chosen for excavation (Sites 22, 27/28, 21, 46, 55/56, 58, 70). Double number site designations were given to sites with 2 anomalies in close proximity.

Seven dig locations were identified by Engr. Div. The excavations were directed by CD, all within the ROW of the north/south levee of WBV-14c.2. The excavations range from approximately 9 CY to 15 CY of excavated soils. It appeared that all the berm excavations penetrated the ground water table. Excavator scrapped 6 inches of soil and placed on the side for inspection. This seems to work well for finding intermediate to large objects. All excavations yielded clay soils. Nearly all of the wood and the few pieces of debris found in the protected side excavations appeared to originate from layers below the newly compacted fill placed in the current construction contract. Some of the floodside and protected side berm excavations were dug to a depth of 5 feet down to approximately elevation 1 or somewhat lower, down to what appeared to be at the ground water table level.

We note there were no signs of seepage in the 7 excavated areas.

Dig Sites: Sites are designated by anomaly numbers from A-E provided plot. See photos below. For the approximate 15 CY of excavated soils per site, the findings are as follows:

- 1) Site 22 - Protected Side Berm 29° 52' 53.6" -90° 08' 08.4"
Sta. 82+98 – Protected Side, 80 ft from C/L levee
Found: Two pieces of wood (4-5' depth), one a fist-sized piece of wood.
- 2) Site 27/28 - Protected Side Berm 29° 52' 54.2" -90° 08' 08.4"
Sta. 82+05 – Protected Side, 53 ft from C/L levee
Found: Three pieces of wood. One found 2-3' of depth, other two at 4-5' depth.

- 3) Site 21 - Floodside Berm 29° 52' 53.2" -90° 08' 10.1"
 Sta. 83+54 – Floodside, 64 ft from C/L levee
 Found: Two pieces of wood. One found 2-3' of depth, the other at 4-5' depth.

- 4) Site 46 - Protected Side Berm 29° 52' 57.4" -90° 08' 07.4"
 Sta. 79+02 – Protected Side, 67 ft from C/L levee
 Found: Two pieces of wood (4'-5' deep). Debris (2' x 2' x 1") broken piece of side wall of concrete drain pipe (3' deep).

- 5) Site 55/56 - Protected Side Berm 29° 52' 58.3" -90° 08' 06.8"
 Sta. 77+83 – Protected Side, 63 ft from C/L levee
 Found: A piece of wood (2' x 2' x 5" at 3' depth). Two pieces of debris (a 1" dia. steel pipe about 16" long at 4' depth) and a 2.5' long piece of rubber hose.

- 6) Site 58 - Protected Side Levee Slope 29° 52' 58.4" -90° 08' 07.3"
 Sta. 77+83 – Protected Side, 15 ft from C/L levee
 Found: One small piece of fist-sized wood (3' deep).

- 7) Site 70 - Protected Side Levee Slope 29° 53' 02.0" -90° 08' 06.2"
 Sta. 74+18 – Protected Side, 11 ft from C/L levee
 Found: One piece of wood less than 1 foot in length (4'-5' deep).

FFEB will proceed with both geophysical techniques (GPR and EM) as directed in their task order. Currently, the EM testing seems to produce some accurate and some false results based on the anomalies investigated. The A-E is expected to adjust his equipment and/or interpretation of the equipment readings to produce improved results.

The purpose of the excavations was to “Ground Truth” the geophysical equipment readings. Although a specific, detailed search for wood was not performed and wood/debris found was not measured in detail, we note that for the 7 dig sites, all appeared to have wood/debris contents far less than 1% assuming a 10-15 CY excavation. In addition, all holes excavated yielded clay soils and the excavation bottom and sides were absent of wood and debris. No through seepage was observed at these sites. No sand was observed at any of these seven sites. The soil strength appears very good. Based on these excavations and observations, the small amount of wood and debris would have no impact on the performance of the levee.

Kim Tullier, Geotechnical Branch, New Orleans District
 Geotechnical Branch



Site 22



Site 27/28



Site 21



Site 46



Site 55/56



Site 58



Site 70



Typical Dig Site (#21)