



## DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P. O. BOX 60267

NEW ORLEANS, LOUISIANA 701600267

REPLY TO  
ATTENTION OF:

AUG 26 2011

Programs and Project Management Division  
Protection and Restoration Office

Ms. Susan Maclay  
President  
Southeast Louisiana Flood  
Protection Authority - West  
7001 River Road  
Marrero, Louisiana 70072

Dear Ms. Maclay:

This is in response to your letters dated July 15, 2011 and August 10, 2011, regarding questions that you have asked me to address on three West Bank and Vicinity (WBV) contracts; WBV-14c.2, WBV-3b and WBV-15a.2. On July 25, 2011, I provided responses to the questions in your letter dated July 15, 2011, enclosure 1, and I appeared at the Southeast Louisiana Flood Protection Authority – West (SLFPA-W) Board meeting to address the Board’s concerns on these contracts. At that meeting I advised of a number of steps that our team is taking to assess the quality concerns raised by the Board, and I offered to you that I would put in writing what those steps are. To address your concerns we have revised our quality assurance procedures, made changes to our project management team, the Contractor has changed some of their staff assigned to this project in the field, we have modified the contract to obtain the borrow material from a different source, we are assigning a Quality Assurance (QA) Team to assess quality control and assurance procedures, and we are implementing an investigative plan to include trenching, coring and geophysical testing to assess the extent of any unsuitable or objectionable material and determine the scope of any necessary corrective action.

### Quality Assurance Tiger Team

WBV-14c.2

US Army Corps of Engineers (Corps) has put together a scope of work to stand up a QA “Tiger Team” of technical experts outside of the Corps’ New Orleans District to review our contracts’ embankment specifications, assess the contractor’s quality control methods and the Corps’ quality assurance procedures. This team will participate in the scope development and evaluation of the investigative inspection trenching throughout the full length of the levee and make recommendations on any corrective actions, if required, based on the findings of this investigation. This team will make an independent evaluation of the levee’s performance and compliance with Hurricane Storm Damage Risk Reduction System (HSDRRS) criteria. The

Corps has invited the Office of Coastal Protection and Restoration (OCPR) and SLFPA-W to participate on this team by adding non-Federal team members that have sufficient technical expertise to assess the geotechnical criteria and performance of this levee; others members, such as inspectors from OCPR and SLFPA-W may also participate as observers. This team is already reviewing the inspection plan for WBV-14c.2 and will be fully in place by August 31, 2011.

#### WBV-3b

The QA Tiger Team will also review the quality control and assurance processes on the WBV-3b contract as well as the recent findings of objectionable material found in the levee section. OCPR and SLFPA-W will also be asked to participate with the tiger team's assessment and recommendations on the WBV-3b contract.

#### Investigative Plan

#### WV-14c.2

The Corps and the QA Tiger Team members have put together a proposed inspection plan for the entire WBV-14c.2 levee. This inspection plan is intended to provide additional information to assess the extent of unsuitable or objectionable material that may be present in the entire levee section to include the protected side stability berm, the levee crown and the floodside slope. This plan will include trenching, coring and geophysical testing. The geophysical testing will be performed by Fugro Consultants and includes ground penetrating radar and electromagnetic mapping. Unsuitable and/or objectionable material could be the result of borrow from the degraded previously existing levee section or material hauled from the contractor's offsite borrow pit. The depth and linear distance between trenches has been determined as a sampling method and can be changed, increased or decreased in the field based on the findings and collaboration with the QA Tiger Team including OCPR and SLFPA-W team members. The draft inspection plan has been provided to OCPR and SLFPA-W for their review and comments due August 24, 2011. This investigative trenching will also provide additional input to the Corps to verify levee performance and to finalize any corrective actions necessary to ensure that the levee meets HSDRRS criteria, meets quality standards and performs as designed. Corrective actions, if necessary, may include disking and removal of any unsuitable or objectionable material, degrading levee section and rebuilding with suitable material, or adding additional lift(s) to the levee section to "cap" unsuitable or objectionable material. Final corrective actions, if necessary, will be fully coordinated with OCPR and SLFPA-W.

Change of borrow material source

WBV-14c.2

During the construction of a levee, it is not unusual to encounter woody or other debris of various extents in the excavation and placement of fill into the levee section. Our field personnel are trained to deal with these concerns and to administer the contract in accordance with the specifications, which allow for certain tolerances of these and other materials in the final product. While our records indicate that WBV 14c.2 was constructed in accordance with these standards, as a means to complete the levee sections in a manner to more effectively reduce concerns about the quantity and extent of unsuitable and objectionable material, we have issued a contract modification to eliminate the use of the material degraded from the existing levee and borrow from the contractor furnished borrow pit at River Birch. The remaining quantity of borrow material will come from the Willowbend contractor furnished borrow source. This material is considered “cleaner” and requires less “picking” to remove objectionable material.

Quality Assurance Procedures

WBV-14c.2

As material is being placed throughout the site and is covering greater areas due to the shallow, final lifts, the Corps has doubled its inspection efforts by adding two additional Quality Assurance Representatives (QARs; Inspectors). The lead QAR will oversee a joint inspection with the contractor’s quality control staff, and together they will perform a final inspection of the material prior to compaction or placement of the next lift.

In an effort to keep the OCPR and SLFPA-W inspectors engaged in all compaction and lift inspections, the Corps will forward an anticipated daily work schedule to OCPR and SLFPA-W each morning and invite their participation in joint compaction inspections, if they are available and want to participate in observation of the material. In addition to sending the daily work schedule, the Corps will call the OCPR and SLFPA-W inspector as soon as the picking crew nears the end of an embankment reach. The contractor will provide as much advance notice as possible but at a minimum of 1-hour notice will be provided to the lead QAR prior to compaction and this along with having a QAR assigned to the picking crew at all times, will provide the maximum amount of advanced notice available for compaction and lift inspections.

The contractor has added additional quality control staff to include more pickers to remove any unsuitable or objectionable material.

MVN and Contractor Personal Changes

WBV-14c.2

As was mentioned at the SLFPA-W Board meeting on July 15, 2011, the Corps has assigned Senior Project Manager, Mr. Kevin Wagner, to oversee the completion of the construction of WBV-14c.2, WBV-14b.2 and WBV-14f. Kevin will ensure that all quality assurance procedure changes are implemented, that the work is fully coordinated with OCPR and SLFPA-W, and that all work is completed in accordance with the Corps quality standards. Kevin has exceptional experience in this type of work and the overall collaboration that is needed to address the quality concerns that have been raised on these projects.

It is also our understanding that the contractor has made some changes to their staff and added a second debris picking crew to improve the overall quality and inspections as construction continues.

As for the WBV-15a.2 Lake Cataouatche Levee that was addressed in your letter dated July 15, 2011, I believe that the concerns that you expressed relative to drainage between the protected side berm and the adjacent drainage canal have been coordinated with your team and are being addressed by a contract modification. We had a productive joint pre-final inspection on this contract. The contract is working on the completion of punch list items which we are coordinately closely with OCPR and SLFPA-W. We expect to have a final inspection on this contract in the next coming months once punch lists items are complete and we have verified turf establishment.

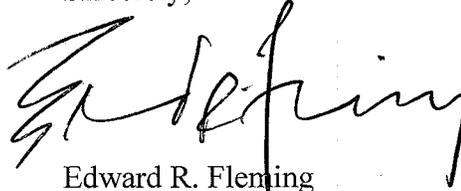
My team is still evaluating and putting together responses to the questions provided in your letter of August 10, 2011. I will provide you a written response to those questions by September 12, 2011, to allow sufficient time for the board to review those responses prior to your September 26, 2011, board meeting as you requested.

Be assured, I am committed to completing the HSDRRS in accordance with design criteria and in full compliance with specifications through quality assurance. My team is very focused on implementing the red zone activities that include joint inspections to verify completion of any necessary corrective actions. We will work closely with your staff to review and update the WBV Collaboration Plan that outlines our processes for coordinating and executing inspection of construction activities and resolving all issues prior to issuance of Notification of Construction Complete letters.

Through our partnership, we have collectively been able to accomplish hurricane risk reduction for the citizens on the west bank of the Mississippi River in Orleans, Jefferson,

Plaquemines and St Charles parishes. Should you have any questions concerning this correspondence, you may contact Mr. Thomas A. Holden Jr., Deputy District Engineer for Project Management, or me at (504) 862-2204.

Sincerely,



Edward R. Fleming  
Colonel, US Army  
District Commander

Enclosure

Copies Furnished (w/encl):

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## Enclosure 1

*Previously provided to SLFPA-W via email on July 25, 2011*

**MVN responses to SLFPA-W's questions asked in letter dated July 15, 2011 (attachment #1)**

### **WBV-14c.2**

1. Can the USACE provide a final survey of the project? If so, by when? If the elevation is below the required construction design elevation and cross-section, as shown in plans and specifications, how will this deficiency be addressed? (See attached letters dated November 23, 2010 and February 2, 2011.)

Response: As with all completed sections of levee, the contractor is required to perform compliance surveys to show that not only have required elevations been reached, but also that required slopes have been attained. As WBV-14c.2 is still under construction, the final compliance surveys have not been conducted as of yet. It is anticipated that the contractor will be conducting final compliance cross section surveys as reaches of the project are brought to final grade. These surveys will be forwarded to SLFPA-W as soon as they are received from the contractor. In addition a centerline profile survey will be taken within 60 days of when the NCC letter is issued to ensure that the levees is above the elevation required to provide 100-year level of risk reduction. A copy of this survey will be provided to your staff at the final inspection or along with the NCC letter. The settlement curves will be reviewed to ensure that the amount of settlement observed is within expected limits. Further investigations will be conducted on any areas that experienced unusually high rates of settlement and subsidence and corrective actions will be taken if required prior to NCC.

2. What corrective action will be implemented by the USACE to address areas that exceed the allowable percentage of unsuitable material, as identified in Table 2 of GeoEngineers' report? (See attached.)

Response: In the referenced report, the state took 6 tests, 5 of which came back with less than 1% of **total** debris. The single test that was above the 1% threshold came from an area that was not completely picked at the time of the test. The sample for this test was taken on April 20th from lift #4 at roughly elevation +7.5, and was labeled test site #2. The material for this sample had been sealed pending a rain event prior to the state's test. Shortly after this material was sealed, the USACE directed the contractor to cease embankment operations in this general area of the levee, so that investigations could be conducted on the percentage of small, allowable debris. At the time the USACE directed the contractor to cease operations in this area; all equipment and personnel were moved to the east end of the project. As such, the pickers did not pick this area prior to the state's testing. On April 27<sup>th</sup>, after the state completed its testing and the contractor was allowed to return to work in the area of the lone unacceptable test, the material in the area of state sample #2 (lift #4) was disked in advance of placing lift #5. Upon diskings, the contractor's picking crew cleaned lift #4 prior to the placing of lift #5. The 5 satisfactory tests support the adequacy of the picking process. When the material is picked, the state's test results show that it contains less than the 1% of objectionable allowed by contract. Using this rationale, it is evident that the lone unacceptable test was remedied once the picking process for lift #4 was completed on April 27, 2011, prior to the placement of lift #5. This rationale strongly resembles our QC/QA testing procedures. We do not test every cubic yard of fill or every linear foot of levee. We test 500 foot reaches of levee. A successful test demonstrates that the method used to achieve the results, is sound. From that, it can be extrapolated that all reaches or areas of fill, when worked with similar methods, would yield similar, acceptable results. Lastly, the state's testing of the material was initiated as a way to determine if there was an excessive amount of small, acceptable debris. However, the state tested for **total** debris, and not only unsuitable debris, and still found only a single test out of specification...and by only 0.8%. As stated, this was remedied once the contractor picked lift #4.

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3. What detailed technical resolution for removing all unsuitable material within the entire levee section can the USACE provide to us?

Response: The specifications do not require the removal of all unsuitable material. Section 31 24 00.00 12, EMBANKMENT, Paragraph 2.1 MATERIALS, states:

“...pieces of wood will not be considered objectionable in the embankment provided their length does not exceed 1 foot, their cross-sectional area is less than 4 square inches, and they are distributed throughout the fill. Not more than 1 percent (by volume) of objectionable material shall be contained in the earth material placed in each cubic yard of the levee section.”

The picking process is setup to identify and remove material above this specified threshold, and the contractor has strived to remove all debris meeting the definition of objectionable. Smaller pieces of debris not meeting the objectionable definition have also been removed by the contractor. It is generally accepted that even the best picking efforts will not identify and remove all debris, thus the allowable 1% of objectionable. Unfortunately, there is no standard ASTM testing procedure to determine this 1% allowance.

4. What verification and testing methods will be provided to show that the contractor is in compliance with plans and specifications, including assurance that the entire levee section does not contain unsuitable material?

Response: There is no standard test to determine the 1% allowance for objectionable materials. The QA/QC testing procedures do not have a quantitative method for determining the percentage of objectionable debris in the levee material once picked. The picking process is setup to identify and remove debris above the specified threshold for objectionable material, and each lift is inspected by the QA/QC staffs after picking and prior to compaction so that it can be determined if the picking effort satisfied the requirement of the specification. The results of these inspections are subjective and are contained in the QA/QC reports.

5. Can a copy of the project's QA/QC process be provided, as well as the corresponding records which document that it has been followed? If so, by when?

Response: Copies of the contracts daily Quality Assurance Reports (QAR) was provided to your staff on July 15, 2011.

6. Since inspectors report and my personal site visit can confirm that unsuitable material remains in the levee, we are concerned that USACE inspectors may not be performing an adequate job. If the USACE has QC/QA inspection reports, photos or other documentation to verify that all unsuitable material was removed prior to each lift, please provide copies of these to us.

Response: The QARs were provided on July 15, 2011. It is the goal of the USACE and the contractor to remove all known or visible objectionable debris. However, as stated in the response to question #4, there is no quantitative data to prove the percentage of objectionable material that remain after picking. Each lift is inspected by the QA/QC staffs after picking and prior to compaction so that it can be determined if the picking effort satisfied the requirement of the specification. The results of these inspections are subjective and are noted throughout the QA/QC reports.

7. What is the current USACE procedure to demonstrate that you have successfully addressed all of our documented concerns? Please make copies available to us prior to the board meeting.

Response: As stated in the email from LTC Jernigan on June 12, 2011, early-on in construction, objectionable debris was identified as present in sections of the pre-existing levee, particularly on the project reach between the Westminster Pump Station and the old Orleans Village Pump Station. This was confirmed through

exploratory trenching, material in this area was “wasted”, and the design of the stability berm on the protected side of the levee (where the old levee used to be) was modified with an additional 2-foot cap. Other reaches of the project did not appear to contain objectionable material at the time, but may be contributing to the objectionable material being identified in these reaches as the top portions of the old levee are degraded and some of the material is placed into the final levee and stability berm cross-sections.

Further actions that USACE and the contractor will take to continue to address the concerns presented by the SLFPA-W were outlined in the above referenced email and are presented below:

- The contractor has been directed to remove any and all objectionable material identified in the course of construction. This will be continuously reinforced by Corps of Engineers staff on site.
- The Resident Engineer (Glenn Gremillion) for this project provided a copy of all Quality Assurance Daily Inspection reports for this project to the SLFPA-W Executive Director on July 15, 2011, as requested.
- The Resident Engineer has also developed a process that will allow your staff to inspect and verify the quality of lifts once the material is placed and “picked” by the contractor prior to placement of any additional lifts, turving operations, and/or final acceptance. The Senior Project Manager (Kevin Wagner) will coordinate this plan with the SLFPA-W Executive Director or designated members of OCPR/SLFPA-W to discuss and refine the plan for implementation in the field.
- The USACE Chief of Engineering will provide an assessment of the results of the OCPR’s recent debris content test on this project by July 29, 2011.
- The USACE Chief of Engineering and the Chief of Construction have developed and will implement an exploratory inspection/trenching plan to assess the amount of objectionable material contained in the new levee and stability berm. This inspection plan was presented to the SLFPA-W Executive Director during the July 19, 2011 Senior Leaders meeting. SLFPA-W and OCPR will be invited to participate and inspect the investigative trenching. USACE will collaborate with the SLFPA-W and OCPR on any potential corrective measures based on the results of this trenching.

8. Why was a decision made that allowed the contractor to use the top layer of unsuitable material from the borrow pit? Historically, this has not been allowed; why was an exception made for this project?

Response: No decision was made to allow the contractor to use unsuitable material from the borrow area. As stated in the response to previous questions, the threshold for objectionable material is defined by contract and a deviation thereto was never allowed. What has been allowed is the contractor’s use of the upper layers of the borrow area that contained some woody debris that is not considered objectionable, such as small wood chips. The decision to use the upper portions of the borrow area was made contingent to the contractor’s ability to remove objectionable material from this layer to ensure the resulting blended material from his excavation operation was acceptable by the requirements of the contract. The material resulting from the contractor’s excavation/blending operations was tested to make certain that it properly classified as either a CH or CL material in accordance with ASTM-D- 2487. The blended material was tested to make certain that it did not contain more than 35% of sand. The blended material was tested to make certain that the plasticity index was above 10. The blended material was tested to make certain that its overall organic content was less than 9% by weight. A control compaction curve was established for the blended material to determine appropriate moisture and density relationships. There was no exception made on the borrow material requirements for this contract. The contract requires the contractor to furnish material that meets all of the above characteristics and provide an end product that meets other contract requirements to include percentage of objectionable material and the required in-place compaction.

9. Please provide an explanation on the decision of not executing the mod that directed the contractor to remove the top layer of unsuitable material from the new borrow pit cell, and provide written verification that the contractor did not continue to use the new borrow pit cell.

Response: As explained in previous answers, the contract requirements relative to objectionable material has never been modified or changed. A decision was made not to direct removal and wasting of the upper layer of woody debris from the borrow area, because of the contractor's ability to use and blend these layers and to produce an end product that meets the contract requirements.

**WBV-3b**

1. Can the USACE provide a final survey of the project? If so, by when? If the elevation is below the required construction design elevation and cross-section, as shown in plans and specifications, how will this deficiency be addressed? (See attached letters dated November 23, 2010 and February 2, 2011.)

Response: Compliance surveys were taken by the contractor to verify that the risk reduction features were constructed in accordance with plans and specifications including construction elevation. Copies of these surveys will be provided to your staff by July 29, 2011. In addition a centerline profile survey will be taken within 60 days of when the NCC letter is issued to ensure that the levees is above the elevation required to provide 100-year level of risk reduction. A copy of this survey will be provided to your staff at the final inspection or along with the NCC letter. The settlement curves will be reviewed to ensure that the amount of settlement observed is within expected limits. Further investigations will be conducted on any areas that experienced unusually high rates of settlement and subsidence and corrective actions will be taken if required prior to NCC.

2. Because our inspectors reported finding large logs and other unsuitable material in this levee section, the contractor and USACE's construction division visited the site and removed utility trailers filled with unsuitable material (see attached picture). What verification and testing methods will be provided to show that the contractor is in compliance with plans and specifications, including assurance that the entire levee section does not contain unsuitable material?

Response: The material on the trailer shown on the picture included with your letter is debris that was removed from along the silt fence line of the project. The majority of the debris was outside of the project right of way and deposited by local businesses throughout the years. As an example, during the prefinal inspection a large pile of concrete debris was observed that was deposited by an adjacent business within the construction right of way. We will request Marine Coatings to remove the material, and verify that it has been removed prior to final inspection. The daily USACE QA reports and the inspections reports by SLFPA-W have been reviewed, and they reflect that there was not a significant or consistent problem with debris in the embankment material. The same borrow material source (Walker Road Pit) used for the WBV-3b levee was used on WBV-12 and WBV-90.

3. What technical documentation can the USACE provide to validate the method for replacing the slope pavement at the utility crossing and at the transition between the earthen levee and the T wall? What procedure can be implemented to minimize future maintenance issues with slope pavement?

Response: The slope pavement is deliberately left unreinforced to allow cracking and movement. The intent is to allow cracking in order to indicate where the levee is subsiding. Similar to a levee lift, this is anticipated maintenance. Any repair is cosmetic in nature. An articulated concrete mat would be preferred. Unfortunately, there is not a flexible articulated concrete armoring that has been sufficiently researched. The alternative, grouted rip rap remains an acceptable solution, but was not preferred by your staff. For minor separation and cracks, no repair is needed. Application of mastic filler does little to improve performance. However, any excessive, slab separation should be removed and the underlying levee inspected, backfilled, and concrete pavement replaced in-kind.

4. What action is the USACE undertaking to address existing gaps at roller gates?

Response: A contract modification has been issued to correct the seal on the roller gates. The contractor mobilized to the site to perform the work on July 20, 2011, and the work will be completed prior to final inspection.

5. There are multiple areas where elimination of ruts, grading and drainage needs to be completed. If so, by when can we expect this to be finished?

Response: The contractor has mobilized to the site to fix the rutting; however, the recent rainfall has delayed the contractor by one week. The contractor will fine grade the minor rutting at the toe of the levee slope and will backblade the slope at the toe of the landside berm. The contractor will reseed the areas affected, and address the areas along the silt fence line in coordination with the property owner. All of this work should be completed by August 10, 2011; prior to final inspection.

#### **WBV-15a.2**

1. Can the USACE provide a final survey of the project? If so, by when? If the elevation is below the required construction design elevation and cross-section, as shown in plans and specifications, how will this deficiency be addressed? (See attached letters dated November 23, 2010 and February 2, 2011.)

Response: Compliance surveys were taken by the contractor with the exception of the option area at the Chevron pipeline crossing to verify that the levee was constructed in accordance with plans and specifications including construction elevation. In addition a centerline profile survey will be taken within 60 days of when the NCC letter is issued to ensure that the levee is above the elevation required to provide 100-year level of risk reduction. A copy of this survey and the compliance surveys will be provided to your staff at the final inspection or along with the NCC letter. The settlement curves will be reviewed to ensure that the amount of settlement observed is within expected limits. Further investigations will be conducted on any areas that experienced unusually high rates of settlement and subsidence and corrective actions will be taken if required prior to NCC.

2. On the protected side berm, there are several areas of seepage that continue to worsen. What corrective action will be taken? What will be the USACE's responsibility after the project is turned over, should the problem persist?

Response: USACE believes that the wet spots shown in the inspection report by SLFPA-W on June 9, 2011, are caused by the consolidation of organic clay with high moisture content under the new levee and berm loading. The clay layer is at or near the ground surface of the wet areas. The area, as time passes, will begin to dry and the wet spots will disappear as excess pore pressures dissipate. As such, no corrective is needed at this time. It is our recommendation that a collaborative post construction effort between USACE and SLFPA-W be used to monitor the issue accordingly.

3. There are at least four small excavated areas on the landside berm that the USACE contractor had dug on previous contracts. The areas are small and the berm around them has been filled and sloped to drain. We have previously asked that the excavated areas be filled and have been told no. These areas are an impediment to effective operation and maintenance as well as a potential safety hazard for our employees. We believe these areas should be filled, prior to turnover.

Response: USACE Project Delivery Team (PDT) is currently assessing this issue. The area in question is not actually on the levee berm, but in the area between the WBV-15a.2 protected side levee berm and the parallel drainage canal. Preliminary evaluation indicates that the area needs to be graded and sloped to drain and lower spots filled to eliminate the standing water within the vegetative free zone and up to the drainage canal.

USACE would like SLFPA-W to provide station numbers for the areas of concern to confirm that we are addressing all of the areas of your concern.

4. On the flood side berm, remedial measures are required in several areas where settlement has occurred. It is necessary that proper measures are identified, as well as transition tie-ins of the foreshore (rip-rap) protection in WBV-18.2 and WBV-24. How will the USACE address these deficiencies?

Response: We have reviewed the most recent SLFPA-W inspection on this contract and are not sure that we have sufficient information to fully respond to this issue. We will discuss this concern with your staff and assess what actions may be necessary at the tie-ins to the adjacent contracts; WBV-18.2 and WBV-24.

5. On the flood side berm, additional rip-rap is needed in several areas where settlement has occurred. How will this be corrected?

Response: USACE recommends adding rip-rap, either new stone or recycled concrete, to achieve contract grade. USACE roughly estimates the required quantity to be 14K tons. USACE plans to modify the existing contract to provide contract grade with either stone, recycled concrete or combination of both.

6. Portions of the land side berm do not slope to drain to the drainage canal. The Authority was promised that this would be corrected. While a majority of the problem is corrected, several areas continue to have water trapped between the levee and the drainage canal. What assurance can the USACE provide that the remaining problems will be corrected?

Response: We understand this issue to be the same as question #3. Preliminary evaluation indicates that the area, which is outside of the levee berm, needs to be graded and sloped to drain and lower spots filled to eliminate the standing water within the vegetative free zone and up to the drainage canal.

7. Recent citizens' complaints to the media and local government officials about reduced draft in the Outer Cataouatche Canal adjacent to WBV-15a.2 have resulted in our confirmation of the problem. Although we understood some changes in under water elevation would occur because of levee construction, we have a concern that this situation is beyond expectations. Please provide a detailed explanation of what has occurred and if the situation possibly indicates rotation of the levee into the canal above design criteria.

Response: USACE has received the same inquiries from a local recreational boat user, and the situation is not beyond our expectations. On the floodside, although within the existing ROW, construction required building the toe of the levee approximately 40 feet out into the Outer Cataouatche Canal. This required placing earthen fill at the existing top of canal bank and pushing the earthen fill into the canal. As stated in the specifications, material to be deposited under water shall be placed in such a manner as to ensure the soft material will be forced progressively outward from the section and not be trapped with the section. This fill placement operation does push a mud wave in front of the berm construction and pushes the organic material out into the open canal. Based on the depth of the canal, the depth to which this material must be filled is assumed to be 3 feet. The floodside berm has been expanded at this 3-ft depth at least 40 ft into the canal with the mud wave pushing the organic material ahead approximately 70 feet into the canal for a total area of disturbance of 110 feet. We are currently drafting a formal response to address the issue with the citizen who has made the complaint. We will copy furnish SLFPA-W and JPDD on that letter.