CS-54 Cameron-Creole Watershed Grand Bayou Marsh Creation 30% Comments

1. *First and foremost, I think it is very important for this project to re-evaluate the proposed target marsh elevation. Since that target is apparently based on water elevation data from outside the impounded project area, I question whether the water elevation data used to set the target are representative of the project area. I would not however, recommend using the "healthy marsh elevation" that was determined for the project area (at least not without additional confirmation), as it seems low compared to most healthy marsh elevations we usually see reported. It may be that there is no healthy marsh near your project area, or you may have to look harder, and go farther from your project area to find it. The target you selected may or may not be reasonable, but to the extent it is based on hydrology data from outside the impoundment, it would appear to be questionable.*

Response to EPA Comment 1:

As mentioned during the meeting, there were two reasons why the target marsh elevation was evaluated using water level data outside of the Watershed: 1. We wanted to design a marsh that could exist independent of the operation of the water control structures and 2. There exist discrepancies between the gage readings from the CRMS stations within the Watershed. We feel that, at this point, both issues have been resolved and we are now looking at water elevations within the Watershed. However, this approach brings up another issue of how to design an intertidal marsh within an 'impounded' area with little to no tidal range. The Project Team is in the process of determining an appropriate method to choose a target elevation which will be presented in the 95% design.

We are in agreement with you that the healthy marsh elevation surveys are low and we are currently looking a bit farther east to find more consistent healthy marsh targets.

2. *I want to reiterate that, while you obviously made considerable effort to try to find a way to use maintenance dredged material beneficially for marsh creation, instead of digging a new hole in Calcasieu Lake, the former would still be preferable, and is clearly the least environmentally-damaging alternative.*

Response to EPA Comment 2:

We do not intent to rule out this alternative until 95% design. At this point, we feel that we have explored all possible scenarios for correlating our marsh creation project with the USACE's Calcasieu Ship Channel Dredging Maintenance Event. However, this option will not be removed as a possibility until all design features are 95% complete and all interested stakeholders have been informed of the project's intentions.

3. *I recommend explicitly stating (in the design report) your intent regarding gapping/degradation of the containment levee, including as much detail as possible. Created marshes will have limited ecological function unless the containment is sufficiently gapped/degraded.*

<u>Response to EPA Comment 3:</u>

Your recommendation is noted and will be incorporated into the 95% report.

4. *I recommend going beyond a Tier 1 analysis of sediments proposed for marsh creation. As I think you are aware, Tier 1 analysis, under the Inland Testing Manual, usually consists of evaluating only whether or not there is "reason to believe" the sediments may be contaminated. In practice, such "analyses" are often very subjective. We recommend at a minimum, that you analyze the sediments proposed for dredging, and sediments from your marsh creation site for comparison, for a comprehensive, but appropriate, list of contaminants. Depending on the results, we may further recommend toxicity and elutriate testing, and possibly, bioaccumulation testing.*

<u>Response to EPA Comment 4:</u>

See Below Response to Comment 5.

5. *And finally, while this is a NEPA/OM&M issue, we recommend that you evaluate the potential impacts of dredging in the lake, to water quality in the lake, especially dissolved oxygen in the bottom waters.*

<u>Response to EPA Comment 5:</u>

We are investigating monitoring of potential borrow area impacts to water quality and will finalize those plans at 95% after further coordination with LDWF and other interested parties.

<u>Response to Comment #4:</u>

An in-house screening level evaluation of the suitability of using Calcasieu Lake sediment for the restoration of marsh habitat east of the lake was conducted on June 20, 2012, and subsequently on April 30, 2013. This assessment is limited to review of geographical information systems in the Lafayette Field Office, internet database searches, and a review of available sediment data. A site visit was not conducted and exhaustive literature and data searches have not been conducted.

Environmental Conditions

<u>Oil and Gas Operations</u>

The area includes oil and gas extraction field operations with pipelines and active and plugged and abandoned well heads. The nearest operations are approximately 6,600 feet west and 6,500

feet northwest of the proposed dredging area in the Calcasieu Oil Field. The proposed work should not encounter any wells or pipelines. Some sediment contamination may have occurred from the spillage of fluids or drilling materials used in the drilling of wells.

EPA EnviroMapper
No sites are identified within 5 miles of the proposed dredging area.

EPA WATERS Database
Calcasieu Lake status is listed as good (not impaired).

Hazardous Waste Sites (CERCLIS)
No identified hazardous waste sites are located within 15 miles of the proposed dredging area.

Hazardous Waste Facilities (RCRIS)
No hazardous waste facilities are located within 5 miles of the proposed dredging area.

Risk Management (RMP)
No sites listed in the RMP database are located within 15 miles of the proposed dredging area.

Toxic Release Inventory (TRI)
No sites are within 9 miles of the proposed dredging area.

Emergency Response Notification System (ERNS)
No sites are located within 15 miles of the proposed dredging area.

National Response Center (NRC) Database
No incidents identified for Calcasieu Lake.

Louisiana DEQ Fish Consumption Advisories
A fish consumption advisory exists for Lake Calcasieu from the estuary to the Gulf (37 miles) due to low levels of hexachlorobenzene, hexachloro-1,3 butadiene, and polychlorinated biphenyls (PCBs) in fish tissue.

LDEQ water quality database

This is being looked into and will be evaluated and incorporated in the 95% design.

Calcasieu Lake Sediment Studies
A review of the U.S. Army Corps of Engineers 2009 Draft document entitled “Calcasieu River and Pass, Louisiana Dredged Material Management Plan (CSC DMMP) and Supplemental Environmental Impact Statement” indicates a potential for bio-accumulative pesticides and PCBs to be present in some areas of Calcasieu Lake sediment at levels of ecological concern. It is

important to note that no samples were collected from the southeastern portion of Calcasieu Lake during this study. The nearest sediment sample was collected approximately 6 miles west, in the navigation channel. This sample (D6-06-5) is located at lat. 29 52 7.04, long. 93 20 42.2. The sample analysis revealed that the pesticides DDT and Endosulfan II were present at levels above ecological risk benchmarks. PCB-1016 was also detected but was below ecological risk benchmarks.

Discussion

The Corps' CSC DMMP EIS determined that the proposed discharge of dredged material effluent from potential disposal/placement areas into receiving waters of associated broken marsh, Calcasieu Lake, or into the Calcasieu River would comply with state water quality standards or with other equivalent benchmarks within LDEQ regulatory mixing zones (Draft CRP CMMP 2009). Material dredged from the Calcasieu Ship Channel has a greater exposure to discharges from oil, gas, and chemical refineries serviced by the ship channel compared to the proposed borrow area near Grand Bayou.

Neither the results of the CSC DMMP benthic toxicity tests nor of the bioaccumulation tests indicate a reason to believe that discharge of dredged material from the navigation channel at proposed shallow open water sites within broken marsh or within Calcasieu Lake would result in significant degradation of the aquatic ecosystem or produce an unacceptable adverse effect on survival, growth or reproduction of aquatic organisms or pose a human health risk due to toxicity or bioaccumulation (Draft CRP CMMP 2009).

Sediments dredged from the Calcasieu Ship Channel are currently being used beneficially to create and restore marsh and previous analyses of those sediments and associated water quality parameters have determined that the overall effects on water quality would be beneficial. Material dredged from the Calcasieu Ship Channel has a greater exposure to discharges from oil, gas, and chemical refineries serviced by the ship channel compared to the proposed borrow area near Grand Bayou. Further, based on our screening level evaluation which is dependent on available information provided by reputable sources we do not believe sediments within the borrow area are contaminated nor would result in unacceptable adverse effects within the marsh creation area. We, therefore, do not intend to conduct additional analyses beyond the Inland Testing Manual Tier 1 analysis at this time.