

# **Attachment C**

Draft Section 404(b)(1) Evaluation

**DRAFT SECTION 404(b)(1) EVALUATION**  
**Mississippi River Mainline Levee**  
**Seepage Control Measures**  
**Coahoma and Tunica Counties, Mississippi**

**I. Project Description**

a. Location

The proposed seepage control measures are located along the Mississippi River Mainline Levee (MRL), near the towns of Rena Lara, in Coahoma County, and Trotter's Landing, in Tunica County, Mississippi. However, proposed seepage control measures at Trotters project area would not result in the fill of any Waters of the United States; therefore, only proposed seepage control activities at the Rena Lara project area are included in the following analysis. The location of each proposed action is presented in Figures 1 and 2.

b. General Description

The U.S. Army Corps of Engineers (USACE), Memphis District (MVM), is proposing a seepage control project that involves installing four relief wells, modification of existing drainage systems, placement of rip-rap to prevent potential scour, reshaping the existing water berm, and clearing vegetation from existing ditches. The location of each proposed action is presented in Figure 2.

The existing ditch proposed to be re-shaped, receive fill to provide back pressure and prevent sand boils, and have rip-rap placed to prevent scour occupies approximately 1.13 acres of wetlands dominated by black willow, cottonwood, smartweed and cocklebur. The location proposed for relief well placement is a wetland area currently used as a water berm and is dominated by early successional species such as black willow and cottonwood. Utilizing values obtained from previous relief well projects within MVM, each relief well, when located in a wetland, is estimated to impact approximately 0.012 acres. Therefore, the four proposed relief wells are anticipated to impact approximately 0.06 acres of wetlands. The location of the proposed access road adjacent to the ditch and the spoil area for excess material are currently planted in pasture grass and subjected to routine mowing and/or cattle grazing.

Compensatory mitigation requirements for unavoidable impacts to wetlands would consist of reforesting 1.8 acres of prior converted cropland with bottomland hardwood species and restoring hydrology, if applicable. However, USACE has purchased and planted a mixture of bottom-land hardwoods on 5,094 acres of land for MRL construction items within the Vicksburg District, which tracks and provides mitigation for MVM MRL projects within the State of Mississippi. Currently, required wetland mitigation associated with the ongoing MRL program in Mississippi is less than the original expected amount for MRL construction projects. Therefore, required mitigation,

considering the anticipated impacts of the proposed project, is 121 acres (504 functional capacity units) less than the expected amount for MRL construction projects to date. Thus, environmental impacts resulting from the recommended alternative are addressed through the ongoing mitigation plan for Mississippi River Levees and Seepage projects.

c. Authority and Purpose

The proposed action is authorized as part of the Flood Control Act of 1928, as amended. A 1998 final Supplemental EIS (SEIS), *Mississippi River Mainline Levees Enlargement and Seepage Control*, addressed seepage control measures to be implemented along the MRL. Since publication of the SEIS, it has been determined that other seepage control measures need to be installed along the MRL to prevent continued seepage under flood conditions, potential degradation of the levee, or eventual levee failure which could result in property damage and cause human injuries and/or loss of life.

d. General Description of Dredged or Fill Material

1) General Characteristics of Material

Rip-rap – R-400 rip-rap would be placed within the ditch to act as a grade control structure to account for the change in elevation that results from the proposed fill and to mitigate erosion and scour.

Backfill – Excavated material from the ditch modification would be placed to a maximum depth of 2.7 feet within the ditch to apply backpressure, which is anticipated to reduce sand boils previously noted within the ditch.

Relief Wells – Each eight-inch relief would be surrounded by a three-foot circular concrete well pad and three guard posts.

2) Quantity of Material

Rip-rap – Approximately 825 tons of R-400 rip-rap would be required for the proposed Rena Lara project.

Backfill – Approximately 758 cubic yards of excavated material would be used as backfill within the ditch at the Rena Lara project area.

Relief Wells – Approximately 6 cubic yards of concrete would be used to construct the circular well pads.

3) Source of Material

Rip-rap – Rip-rap would be provided from commercial sources.

Backfill – Backfill would be obtained from the excavation required for ditch modification.

Relief Wells – Concrete used for well pads would be obtained from commercial sources.

e. Description of the Proposed Discharge Site(s)

- 1) Location – Excavated material from the ditch modification would be discharged within the ditch adjacent to the MRL (Figure 2). Additionally, rip-rap would be placed within the ditch to act as a grade control structure and to mitigate erosion and scour. Relief wells would be located in a wetland area currently used a water berm.
- 2) Size – It is anticipated approximately 1.2 acres of wetlands would be impacted at the Rena Lara project area.
- 3) Type(s) of Habitat – The existing ditch proposed to be re-shaped, receive fill, and have rip-rap placed to prevent scour occupies approximately 1.13 acres of wetlands dominated by black willow, cottonwood, smartweed and cocklebur. The location proposed for relief well placement is a wetland area currently used a water berm and is dominated by early successional species such as black willow and cottonwood.
- 4) Timing and Duration of Discharge – Construction is scheduled to commence in the immediate future, and would take place as soon as possible. However, every effort would be made to construct during periods of low water and dry conditions, and best management practices would be applied.

f. Description of Disposal Method

Excavated material from the proposed ditch modification would be placed and graded with conventional earth moving equipment (e.g., bulldozers and excavators) within the existing ditch to provide back pressure and prevent sand boils.

## II. Factual Determinations

a. Physical Substrate Determinations

- 1) Substrate Elevation and Slope – The drainage ditch would be re-shaped to provide positive flow away from the levee and relief wells. The ditch bottom would be raised from 152 feet NAVD88 to 155 feet NAVD88.
- 2) Sediment Type – Soils in the project area are predominately Commerce and Crevasse soils and Sharkey clay.

- 3) Dredged/Fill Material Movement – Material would be excavated from the existing ditch banks and deposited within the ditch bottom.
- 4) Physical Effects on Benthos – Placement of rip-rap and fill would have a minimal impact on benthos. Benthic communities would return to pre-existing conditions shortly after project completion.
- 5) Other Effects – N/A
- 6) Actions Taken to Minimize Impacts – The following best management practices would be implemented during construction to minimize impacts:
  - Effective erosion control will be in place prior to construction and maintained throughout the construction period.
  - Construction will take place during periods of low rainfall and low water stages.
  - Vegetation to be cleared will be the minimum necessary to allow for construction access.
  - All disturbed areas will be seeded within 30 days after construction is completed.
  - Construction debris will be kept from entering the ditch channel and shall be disposed of properly.
  - Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the water.

b. Water Circulation, Fluctuation, and Salinity Determinations

- 1) Water – No change in water quality is expected due to this action.
  - a) Salinity – N/A
  - b) Water Chemistry – Water chemistry of the project area would not be expected to change as a result of the excavation of material or placement of rip-rap and relief wells.
  - c) Clarity – There would be temporary increases in turbidity during rip-rap and fill placement. Turbidity would be expected to return to pre-construction levels shortly after construction is completed.
  - d) Color – No expected change.
  - e) Odor – No expected change.
  - f) Taste – No expected change.
  - g) Dissolved Gas Levels – No expected change.

- h) Nutrients – No expected change.
  - i) Eutrophication – No expected change.
  - j) Others as Appropriate – No expected change.
- 2) Current Patterns and Circulation
- a) Current Patterns and Flow – Current patterns are not expected to change. However, flows may potentially be increased during high water or rain events due to the action of the relief wells.
  - b) Velocity – Water velocity is not expected to be change.
  - c) Stratification – No expected change.
  - d) Hydrologic Regime – Installation of the relief wells would affect existing hydrology landside of the levees by transporting seepage waters from the wells to existing drainage ditches. Impacts to water quality within the Mississippi River would be minimal, if any, due to the heavy sediment loads normally carried by the river. Thus, no significant impacts to water quality will occur as a result of the work.
- 3) Normal Water Level Fluctuations – Existing water levels in the ditch is determined by rainfall and channel capacity. By modifying existing ditches, the storage capacity within the ditch would increase, but water level fluctuations should be minimal.
- 4) Salinity Gradients – N/A
- 5) Actions Taken to Minimize Impacts – Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above.
- c. Suspended Particulate/Turbidity Determinations
- 1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site – Minor increases in suspended particulates and turbidity levels are expected during construction. Best management practices will be used throughout the construction process to minimize the impact. Ambient conditions are expected to return shortly after completion of construction.
  - 2) Effects on Chemical and Physical Properties of the Water Column
    - a) Light Penetration – Minor impacts are expected to light penetration due to an expected increase in turbidity levels during construction. Ambient conditions are expected to return shortly after completion of construction.

- b) Dissolved Oxygen – No change is expected due to the shallow water depth and currents.
- c) Toxic Metals and Organics – No effect on toxic metals and organics are expected.
- d) Pathogens – N/A
- e) Aesthetics – Aesthetics would be temporarily impacted during construction due to the presence of construction equipment.
- f) Others as Appropriate – None noted.

3) Effects on Biota

- a) Primary Production – Project activities would remove approximately 1.2 acres of wetlands. Aquatic vegetation is limited within the existing ditches. The proposed work should have little effect on primary production after the banks re-vegetate.
- b) Suspension/Filter Feeders – Increased turbidity would be of short duration, and any organisms that are impacted should re-populate the area after project completion.
- c) Sight Feeders – Resident fish are adapted to turbidity increases that occur after every rainstorm. Project-related turbidity increases would be minor compared to these natural events. Since fish and other sight feeders are highly mobile, project impacts to sight-feeding organisms would be insignificant and short term.
- d) Actions Taken to Minimize Impacts – Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above.

d. Contamination Determinations

It is not expected that any contaminants would be introduced or translocated due to construction. A hazardous, toxic, and radioactive waste survey has been conducted on the area. No potential sources of contamination were found.

e. Aquatic Ecosystem and Organism Determinations

- 1) Effects on Plankton – Planktonic organisms may be temporarily disturbed during construction, as increases in turbidity are expected. However, turbidity levels would be expected to return to pre-construction levels shortly after construction is completed. Therefore, there will be no significant impacts to plankton.

- 2) Effects on Benthos – Benthic organisms may be disturbed with the turbidity increase, but no more than what would naturally occur during high flow events.
- 3) Effects on Nekton – Nekton would be temporarily displaced during construction, but will return shortly after project completion.
- 4) Effects on Aquatic Food Web – Temporary reductions in benthic and suspension/filter communities in such a small area should not significantly impact the aquatic food web during construction. These organisms would quickly colonize the area after construction.
- 5) Effects on Special Aquatic Sites
  - a) Sanctuaries and Refuges – N/A
  - b) Wetlands – Approximately 1.2 acres of wetlands would be impacted by the proposed project. Approximately 1.8 acres of mitigation is proposed to offset these impacts and fulfill mitigation requirements.
  - c) Mud Flats – N/A
  - d) Vegetated Shallows – N/A
  - e) Coral Reefs – N/A
  - f) Riffle and Pool Complexes – N/A
- 6) Threatened and Endangered Species – Pursuant to Section 7 of the Endangered Species Act, as amended, USACE has determined that the tree clearing required for the proposed project may affect, but is not likely to affect the northern long eared bat or the wood stork. Furthermore, based on location of the project and surveys of the project area, USACE has determined that the proposed project would have no effect on the fat pocketbook, pallid sturgeon, least tern, or pondberry. Additionally, no evidence of bald eagles, or their nests, were observed at any project location. The bald eagle is no longer listed as a threatened species, but is still protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act.
- 7) Other Wildlife – Terrestrial wildlife would be minimally impacted with the clearing of woody vegetation and may be temporarily displaced during project construction.
- 8) Actions Taken to Minimize Impacts – Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above.



f. Proposed Disposal Site Determinations

- 1) Mixing Zone Determinations – N/A
- 2) Determination of Compliance with Applicable Water Quality Standards – USACE, MVM, has requested water quality certification from the State of Mississippi, Department of Environmental Quality, with the draft environmental assessment and the Joint Public Notice
- 3) Potential Effects on Human Use Characteristic
  - a) Municipal and Private Water Supply – N/A
  - b) Recreational and Commercial Fisheries – N/A
  - c) Water Related Recreation – N/A
  - d) Aesthetics – Aesthetics would be temporarily impacted during construction due to the presence of construction equipment.
  - e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves – N/A

g. Determination of Cumulative Effects on the Aquatic Ecosystem

Approximately 1.2 of wetlands would be impacted by the proposed project. Approximately 1.8 acres of mitigation is proposed to offset the impact. The impacts associated with the proposed project activities should not have any significant adverse cumulative effects on the environment in addition to those reported in the 1998 Supplemental Environmental Impact Statement.

h. Determination of Secondary Effects on the Aquatic Ecosystem

Not Applicable.

**III. Findings of Compliance for MRL Seepage Control Measures**

a. Evaluation of Availability of Practical Alternatives to the Proposed Discharge Site Which Would have Less Adverse Impact on the Aquatic Ecosystem

A draft environmental assessment has been completed that addresses alternatives to the proposed action. The recommended plan was determined to be the most cost effective and least environmentally damaging of the alternatives studied in detail. The no action alternative was determined not to be practical. The proposed action would protect existing public infrastructure, and private homes and businesses. Without

installation of seepage control measures, the integrity of the levee will be compromised. Seepage could potentially undermine the levee and cause it to fail during a flood event.

b. Compliance with Applicable State Water Quality Standards

Application for State of Mississippi water quality certification has occurred with the draft environmental assessment and the Joint Public Notice. A determination concerning water quality certification has not been made to date. Those making comments to this 404(b)(1) evaluation are asked to furnish a copy of their comments to the Mississippi Department of Environmental Quality.

c. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 Of the Clean Air Act

Coahoma and Tunica counties are in attainment for all air quality standards. No significant impacts to air quality are expected. The equipment to be used is a mobile source. Therefore, the project is exempt from air quality permitting requirements.

d. Compliance with Endangered Species Act of 1973

No impacts are expected to federally listed or proposed threatened or endangered species. This project has been coordinated with the Department of Interior, U.S. Fish and Wildlife Service.

e. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972

Not applicable.

f. Evaluation of Extent of Degradation of the Waters of the United States

1) Significant Adverse Effects on Human Health and Welfare

- a) Municipal and Private Water Supplies – N/A
- b) Recreation and Commercial Fisheries – N/A
- c) Plankton – No significant impacts are expected.
- d) Fish – No significant impacts are expected.
- e) Shellfish – N/A
- f) Wildlife – No significant impacts are expected.

- g) Special Aquatic Sites – N/A
- 2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems – No significant impacts are expected.
- 3) Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity, and Stability – No significant impacts are expected.
- 4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values – No significant impacts are expected.

g. Appropriate and Practical Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above. Chiefly, best management practices will be implemented, construction will occur during low-flow periods, and impact areas will be limited to the extent necessary for construction.

h. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material is:

Specified as complying with the requirements of these guidelines; or,

Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem; or,

**All conditions from the Mississippi Department of Environmental Quality would be adhered to.**

Specified as failing to comply with the requirements of these guidelines.

\_\_\_\_\_  
Date

Prepared by:  
U.S. Army Corps of Engineers,  
Mississippi Valley Division,  
Regional Planning and  
Environmental Division South,  
Memphis, Tennessee

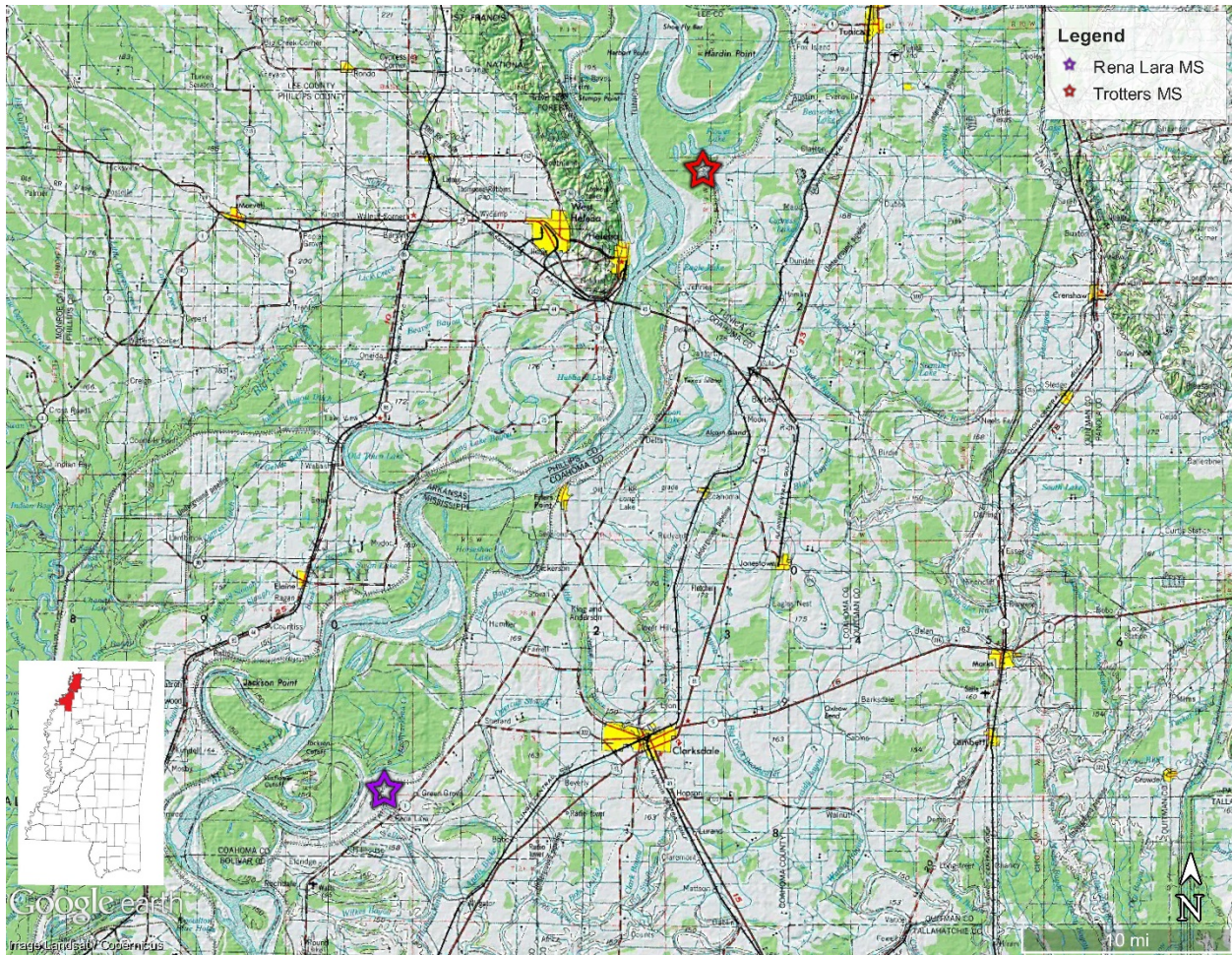


Figure 1. Location of proposed seepage control measures along the Mississippi River mainline levee, Coahoma and Tunica counties, Mississippi.

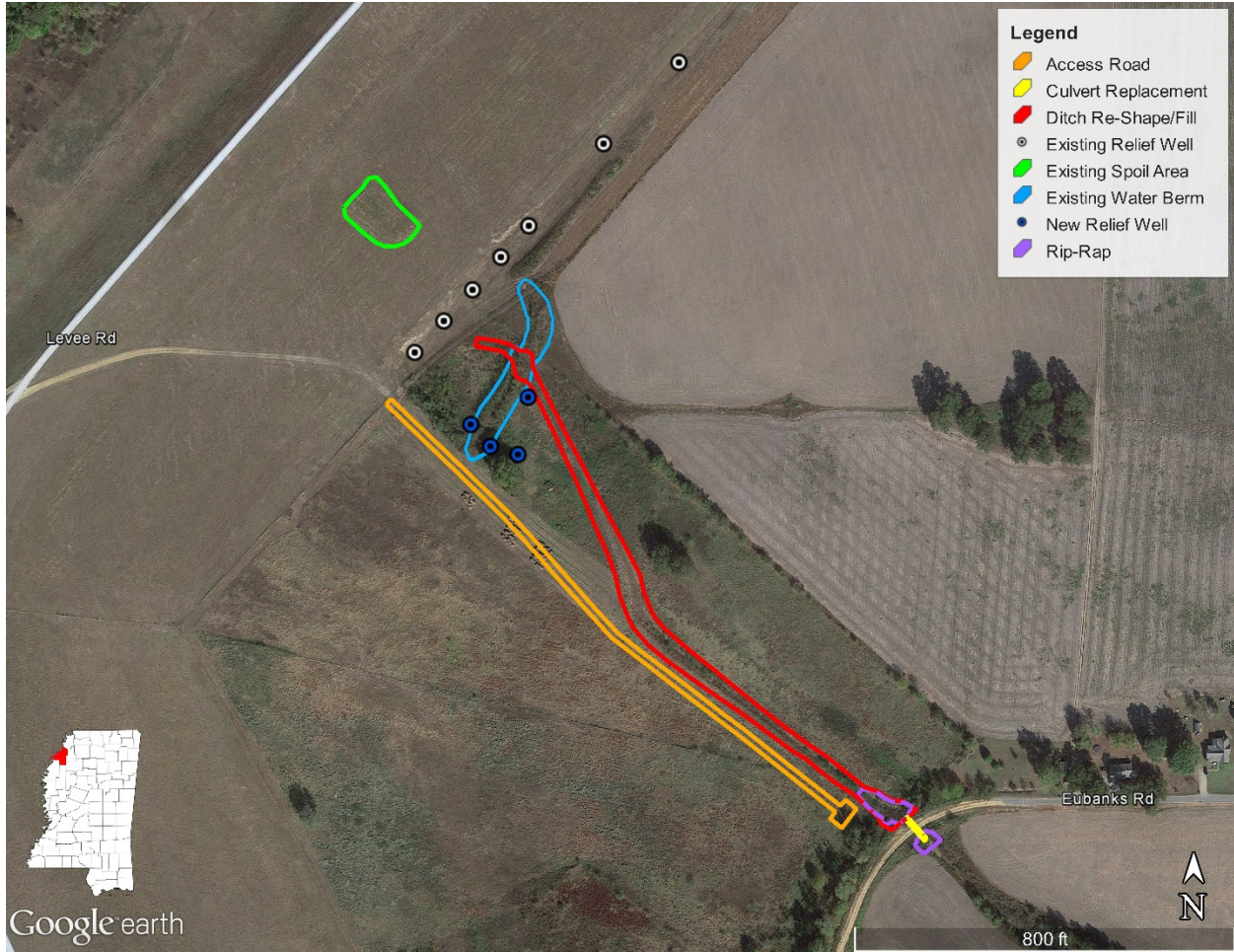


Figure 2. Proposed seepage control measures along the Mississippi River mainline levee at the Rena Lara project area, Coahoma County, Mississippi.