

## **APPENDIX A**

# **Section 404(B)(1) Evaluation Report for A Section 219 Project Environmental Infrastructure; Water and Sewer System at Big Hill Acres**

## ***Jackson County, Mississippi***

### **I. Project Description**

#### ***A. Location***

The project area is located in West Jackson County, near Vancleave, approximately 9 miles north of Interstate 10. The project boundaries are generally Roanoke Road to the west, Joe Batt/Jim Ramsey Road to the north, Old Fort Bayou Road to the east, and Seaman Road to the south.

#### ***B. General Description***

The project will provide a community water distribution and a sewage collection system for Big Hill Acres Subdivision in Jackson County, Mississippi. Big Hill Acres Subdivision falls outside the boundaries of any neighboring incorporated cities. The project consists of 855 platted lots spread across approximately 2,400 acres, of which a large portion contains wetlands. The residences and driveways are constructed on previously filled wetlands. Big Hill Acres Subdivision was constructed by private developers during the 1990's through 2004, and most of the residences in the subdivision are served by individual residential water wells and underground septic tanks.

The U.S. Army Corps of Engineers (Corps), Mobile District will construct the project as described in the Environmental Assessment; however, the local sponsor, Jackson County Utility Authority (JCUA), will construct the main lift station for centralized collection and associated sewer mains for transmission to the existing wastewater treatment facility located nearby. JCUA will also install service laterals from the edge of the public right-of-way over private property to each individual homestead.

Approximately 1,700 cubic yards of sandy clay fill material will be placed in approximately 0.20 acre of wetlands within the developed subdivision. Avoidance and minimization of impacts to wetlands will result in most of the dedicated lots to remain undisturbed and in a natural state; however, direct filling of approximately 0.20 acre of wetlands is unavoidable as a result of constructing the required lift stations and water tank. The benefits of the project far outweigh the unavoidable wetland impacts by replacement of the failing septic systems and the resultant improved water quality throughout the project area.

The Corps will coordinate with Federal and State of Mississippi resource agencies during the required environmental compliance process. This report addresses potential water quality

impacts that would potentially result from constructing the new water and sewer systems in Big Hill Acres. Further details of the project are in the EA to which this Section 404(b)(1) Evaluation is appended.

### **C. Authority and Purpose**

Section 219 of the Water Resources Development Act (WRDA) of 1992, as amended, *Environmental Infrastructure Program*, authorizes the Corps to provide assistance to non-Federal interests for carrying out water-related environmental infrastructure and resource protection and development projects described in subsection (c), including wastewater treatment and related facilities and water supply, storage, treatment, and distribution facilities. Such assistance may be in the form of technical, planning, design, and construction assistance. The authorizing language is as follows: “The project was authorized for design and construction assistance by Section 219 of the WRDA of 1992 (Public Law 102-580) as amended by Section 504 of WRDA 96 (Public Law 104-303), Sections 331 of WRDA 99 (Public Law 106-53), and Section 1(a) WRDA 99 corrections (Public Law 106-109), Section 3103 and 5158 WRDA 2007 (PUBLIC LAW 110-114—NOV. 8, 2007).”

### **D. General Description of Dredged or Fill Material**

**(1) General Characteristics of Material.** The fill material would consist of sandy clay fill material.

**(2) Quantity of Material.** Approximately 1,700 cubic yards of fill material would be placed in approximately 0.20 acre of lands characteristic of wetlands for construction of a new water well and elevated tank, and four lift stations in conjunction with construction of the new water and sewer system for Big Hill Acres.

**(3) Source of Material.** The material would be obtained from an upland commercial source.

### **E. Description of the Proposed Discharge Site**

**(1) Location.** The locations of the new water well, elevated tank, and proposed lift stations will be on existing platted lots within the subdivision. The sites contain wetlands and are shown on the project drawings found in the EA. The majority of the project will be constructed within the public rights-of-way. An additional 10-foot easement may be required along each side of the roadway and is being obtained by the local sponsor in conjunction with the Corps, Mobile District’s Real Estate Division.

**(2) Size.** Avoidance and minimization of impacts to wetlands will result in most of the platted lots to remain undisturbed and in a natural state; however, direct filling of approximately 0.20 acre of wetlands is unavoidable as a result of constructing the required lift stations and water tank. The benefits of the project far outweigh the unavoidable wetland impacts by replacement of the failing septic systems and the resultant improved water quality throughout the project area.

**(3) Type of Site.** The project consists of 855 platted lots spread across approximately 2,400 acres, of which a large portion contains wetlands. The residences and driveways are constructed on previously filled wetlands. Big Hill Acres Subdivision was constructed by private developers during the 1990’s through 2004, and most of the residences in the subdivision are served by individual residential water wells and underground septic tanks.

**(4) Type of Habitat.** The majority of the project area contains palustrine wetlands. The residences and driveways are constructed on previously filled wetlands. The wetlands consist primarily of pine flatwoods and savannahs within. The site contains some uplands and wetlands, primarily pine flatwoods with some very dense understory of shrub canopy and some savannahs

displaying open areas of herbaceous cover including pitcher plants and ferns. The topography of the site is gently sloping to moderate sloping and contains numerous intermittent and ephemeral forested drains. The project site has been previously impacted by the construction of residential development, drives, and yards.

**(5) Timing and Duration of Discharge.** The project would occur in 2013 with completion approximately one year later.

***F. Description of Disposal Method***

Methods of placement and disposal for these projects will utilize construction equipment such as trackhoes, dump trucks, backhoes, and various smaller vehicles for transport.

**I. Factual Determinations (Section 230.11)**

***A. Physical Substrate Determinations.***

**(1) Substrate Elevation and Slope.** The project will result in filling of approximately 0.20 acre of wetlands. Best Management Practices (BMPs) will be utilized to reduce impacts to nearby areas. All trenching for installation of water/sewer lines will be recontoured and revegetated to minimize impacts to construction areas; therefore, no changes to existing elevations are anticipated except for the direct filling of wetlands for installation of the water well/tank and lift stations.

**(2) Sediment Type.** Materials used for fill would consist of sandy clay sediments suitable for construction.

**(3) Dredged/Fill Material Movement.** The use of BMPs would reduce impacts to nearby areas. It is believed that no adverse impacts and only short-term disturbances would occur from movement of materials.

**(4) Physical Effects on Benthos.** Not Applicable.

**(5) Other effects.** No other effects are anticipated.

**(6) Actions Taken to Minimize Impacts (Subpart H).** Actions will be taken to minimize impacts to all project areas during the construction and maintenance activities. No other actions to minimize impacts to the physical substrate are deemed appropriate for these projects. Avoidance and minimization of impacts to wetlands will result in most of the platted lots to remain undisturbed and in a natural state; however, direct filling of approximately 0.20 acre of wetlands is unavoidable as a result of constructing the required lift stations and water tank. The benefits of the project far outweigh the unavoidable wetland impacts by replacement of the failing septic systems and the resultant improved water quality throughout the project area.

***B. Water Column Determinations***

**(1) Salinity.** Not Applicable.

**(2) Water Chemistry (pH, etc.).** Not Applicable.

**(3) Clarity.** Not Applicable.

**(4) Color.** Not Applicable.

**(5) Odor.** Not Applicable.

**(6) Taste.** Not Applicable.

**(7) Dissolved Gas Levels.** Not Applicable.

**(8) Nutrients.** Not Applicable.

**C. *Water Circulation, Fluctuation, and Salinity Gradient Determinations***

**(1) Current Patterns and Circulation.**

**(a) Current Patterns and Flow.** Not Applicable.

**(b) Velocity.** Not Applicable.

**(2) Stratification.** Not Applicable.

**(3) Hydrologic Regime.** Not Applicable.

**(4) Normal Water Level Fluctuations.** Not Applicable.

**(5) Salinity Gradient.** Not Applicable.

**D. *Suspended Particulate/Turbidity Determination***

**(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site.** The project will result in filling of approximately 0.20 acre of wetlands. Best Management Practices (BMPs) will be utilized to reduce impacts to nearby areas. All trenching for installation of water/sewer lines will be recontoured and revegetated to minimize impacts to construction areas; therefore, no changes to existing elevations are anticipated except for the direct filling of wetlands for installation of the water well/tank and lift stations. Avoidance and minimization of impacts to wetlands will result in most of the platted lots to remain undisturbed and in a natural state; however, direct filling of approximately 0.20 acre of wetlands is unavoidable as a result of constructing the required lift stations and water tank. The benefits of the project far outweigh the unavoidable wetland impacts by replacement of the failing septic systems and the resultant improved water quality throughout the project area.

**(2) Effects on Chemical and Physical Properties of the Water Column.**

**(a) Light Penetration.** Not Applicable.

**(b) Dissolved Oxygen.** Not Applicable.

**(c) Toxic Metals and Organics.** Not Applicable.

**(d) Pathogens.** Not Applicable.

**(e) Esthetics.** Not Applicable.

**(3) Effects on Biota.** No long-term adverse impacts are anticipated. Because of the relatively small project footprint, there should be no basic change in overall characteristics. There may be temporary disruption of the fauna community caused by the construction activities but they should avoid the disturbed area and should return shortly after construction activity is completed. There would be a permanent loss of grasses due to construction and grading within the project area. Approximately 0.20 acre of undisturbed wetlands would be directly filled for construction of the lift stations and elevated water tank. All graded and scarred areas would be stabilized and the use of BMPs would help minimize disturbances. It is anticipated that affected areas would be small and would rapidly recover within a few months.

**(a) Primary Production Photosynthesis.** Not Applicable.

**(b) Suspension/Filter Feeders.** Not Applicable.

**(c) Sight Feeders.** Not Applicable.

**(4) Actions Taken to Minimize Impacts (Subpart H).** No further actions are deemed appropriate.

### ***E. Contaminant Determinations***

The fill material would consist of clean sandy clay fill material obtained from a commercial source.

### ***F. Aquatic Ecosystem and Organism Determinations***

No effect.

**(1) Effects on Plankton.** Not Applicable.

**(2) Effects on Benthos.** Not Applicable.

**(3) Effects on Nekton.** Not Applicable.

**(4) Effects on Aquatic Food Web.** No effect.

**(5) Effects on Special Aquatic Sites.**

**(a) Sanctuaries and Refuges.** Not Applicable.

**(b) Wetlands.** The project will result in filling of approximately 0.20 acre of wetlands. Best Management Practices (BMPs) will be utilized to reduce impacts to nearby areas. All trenching for installation of water/sewer lines will be recontoured and revegetated to minimize impacts to construction areas; therefore, no changes to existing elevations are anticipated except for the direct filling of wetlands for installation of the water well/tank and lift stations. Avoidance and minimization of impacts to wetlands will result in most of the platted lots to remain undisturbed and in a natural state; however, direct filling of approximately 0.20 acre of wetlands is unavoidable as a result of constructing the required lift stations and water tank. The benefits of the project far outweigh the unavoidable wetland impacts by replacement of the failing septic systems and the resultant improved water quality throughout the project area.

**(c) Mud Flats.** Not Applicable.

**(d) Vegetated Shallows.** Not Applicable.

**(e) Coral Reefs.** Not Applicable.

**(f) Riffle and Pool Complexes.** Not Applicable.

**(6) Effects on Threatened and Endangered Species.** The proposed project is being coordinated with the USFWS to determine if any endangered or threatened plant or animal species would be adversely affected by the proposed project. Based on reviews, the Corps, Mobile District determined that no endangered or threatened plant or animal species would be adversely affected by the proposed action. Based on previous conversations with the USFWS, they anticipate no adverse impacts to listed species would occur and state the project would provide an overall benefit. The Corps, Mobile District will obtain concurrence from the USFWS with our determination of “No Effect” to any listed threatened and/or endangered species prior to construction.

**(7) Effects on Other Wildlife.** No long-term adverse impacts are anticipated. Because of the relatively small project footprint, there should be no basic change in overall characteristics. There may be temporary disruption of the fauna community caused by the construction activities but they should avoid the disturbed area and should return shortly after construction activity is completed.

**(8) Actions to Minimize Impacts.** There would be a permanent loss of grasses due to construction and grading within the project area. Approximately 0.20 acre of undisturbed wetlands would be directly filled for construction of the lift stations and elevated water tank. All graded and scarred areas would be stabilized and the use of BMPs would help minimize disturbances. It is anticipated that affected areas would be small and would rapidly recover within a few months. No further action anticipated.

**G. Proposed Disposal Site Determinations**

**(1) Mixing Zone Determination.** Not Applicable.

**(a) Depth of water at the disposal site.** Not Applicable.

**(b) Current velocity, direction, and variability at disposal sites.** Not Applicable.

**(c) Degree of turbulence.** Not Applicable.

**(d) Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site.** Not Applicable.

**(e) Discharge vessel speed and direction, if appropriate.** Not Applicable.

**(f) Rate of discharge.** Not Applicable.

**(g) Ambient concentrations of constituents of interest.** Not applicable.

**(h) Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities.** Not Applicable.

**(i) Number of discharge actions per unit of time.** The project would utilize construction type equipment for hauling, placement, and grading of fill material. Additional types of construction equipment would be utilized for installation of water/sewer lines.

**(2) Determination of Compliance with Applicable Water Quality Standards.** The proposed activities are anticipated to be in compliance with water quality standards.

**(3) Potential Effects on Human Use Characteristics.**

**(a) Municipal and Private Water Supply.** The project will provide a community water distribution and a sewage collection system for Big Hill Acres Subdivision in Jackson County, Mississippi. The U.S. Army Corps of Engineers (Corps), Mobile District will construct the project as described below; however, the local sponsor, Jackson County Utility Authority (JCUA), will construct the main lift station for centralized collection and associated sewer mains for transmission to the existing wastewater treatment facility located nearby. JCUA will also install service laterals from the edge of the public right-of-way over private property to each individual homestead. The water wells are fairly shallow and are not up to the standards set forth by Mississippi State Department of Health (MSDH) for public water supply wells (pers. comm. Tommy Fairfield JCUA). Many of the well heads become submerged during frequent floods. There are concerns that some private wells have been contaminated by failing septic systems. Most of the residents of Big Hill Acres currently reside without a reliable, safe water supply and without water for fire protection. Also, the residents rely on failing septic tank systems, which continue to contaminate their properties and the area's environmental resources.

**(b) Recreational and Commercial Fisheries.** No effect.

**(c) Water Related Recreation.** No effect.

**(d) Esthetics.** Esthetics will be temporarily reduced in the immediate vicinity of the proposed project site. The project area consists of a residential subdivision on large lots; however the overall characteristics of the area will remain unchanged. There is potential that the few residents within the area may be disturbed by the presence of the heavy equipment during construction activities; however, these activities are temporary in nature so the disturbance is anticipated to be minimal. The new water and sewer system would provide an overall benefit to the public health, safety, and welfare due to contamination from failing septic systems and unsafe water wells that currently exist.

**(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves.** No effect.

**Other Effects.** No effect.

#### ***H. Determination of Cumulative Effects on the Aquatic Ecosystem***

The proposed actions are not expected to have significant cumulative adverse impacts

#### ***I. Determination of Secondary Effects of the Aquatic Ecosystem.***

The proposed actions are not expected to have any significant secondary adverse effects on the aquatic ecosystem

### **III. Finding of Compliance with the Restrictions on Discharge**

- A. No significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.
- B. The proposed project represents the least environmentally damaging practicable alternative.
- C. The planned construction activities and placement of fill materials would not violate any applicable State water quality standards; nor will it violate the Toxic Effluent Standard of Section 307 of the Clean Water Act (CWA). Appropriate evaluation of analytical and ecotoxicological testing of sediments, site water, and elutriates results revealed that no adverse impacts would result from the proposed disposal actions.
- D. Use of the proposed fill sites will not jeopardize the continued existence of any Federally-listed endangered or threatened species or their critical habitat.
- E. The proposed placement of fill material will not contribute to significant degradation of waters of the United States. Nor will it result in significant adverse effects on human health and welfare, including municipal and private water supplies; recreation and commercial fishing; life stages of organisms dependent upon the aquatic ecosystem; ecosystem diversity, productivity and stability; or recreational, aesthetic or economic values.
- F. Appropriate and practicable steps will be taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

**DATE:** \_\_\_\_\_

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**Steven J. Roemhildt**  
**Colonel, Corps of Engineers**  
**District Commander**

