



Water Environment Consultants
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GA DNR / HMP

January 22, 2019

Mr. Paul D. Tobler
Coastal Permit Coordinator
DNR Coastal Resources Division
One Conservation Way
Brunswick, GA 31520

RE: Additional information in support of a Coastal Marshlands Protection Act permit application for the installation and operation of a silt suspension system at Savannah Bulk Terminal and East Coast Terminal, Savannah River, Chatham County, Georgia

Dear Mr. Tobler:

On behalf of Savannah Bulk Terminal LLC (SBT), Water-Environmental Consultants (WEC) has included herein additional information in support of the application for a Coastal Marshlands Protection Act permit for the installation and operation of a silt suspension system at their berths along the Savannah River, in Chatham County, GA.

The additional information below is numbered in accordance with the numbered items requested by your December 5th letter:

1. An application fee of \$100 is enclosed.
2. At this time, a Revocable Letter Request has not been submitted. As you suggested, we are waiting for CRD review of the property deeds/ownership to determine whether two forms will need to be submitted, or if one is sufficient.
3. Mailing addresses of all adjacent property owners are included as Exhibit A.
4. Alternatives to the proposed project would be the use of other berth sedimentation maintenance techniques such as hydraulic and/or agitation dredging, as presently permitted. However, the silt suspension system was designed to reduce adverse impacts that dredging imposes on the environment. Any increase in turbidity or suspended solids caused by the disruption of the fluid mud bottom during the operation of the silt suspension system will be minimal and insignificant when compared to alternative maintenance technologies (i.e., dredging). The silt suspension system units create a relatively high volume, low velocity current along the bottom directed out towards the federal navigation channel. Furthermore, unlike dredging which seeks to remove or re-suspend high volumes of accumulated material after settlement, the silt suspension system

will operate on every ebb tide thereby preventing the material from accumulating in the first place. For these reasons, the silt suspension system is the preferred alternative for maintenance of berth sedimentation at the project site.

5. The property boundary plat is included as Exhibit B.
6. The deeds and all relevant ownership information for the two parcels that the project occurs on are included as Exhibit C.
7. In consideration of the public interest, the proposed project:
 - (1) Will not harmfully obstruct or alter the natural flow of navigational waters in the affected area. The proposed project is limited to the dockside of the berthing area and away from the federal navigation channel.
 - (2) Will not cause harmful or increased erosion, shoaling of channels, or create stagnant areas of water. In contrast, the proposed project is designed to prevent shoaling within the affected area.
 - (3) Will not unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply. An evaluation of these concerns were performed for the joint permit application and concluded that:
 - i. No jurisdictional wetlands will be affected;
 - ii. Any potential water quality impacts during construction will be considerably less when compared to dredged material maintenance alternatives and can be controlled by reasonable contractor precautions and practices. Any potential construction impacts will be temporary, short-term and localized;
 - iii. Any potential adverse impacts to protected species were determined to be limited to Shortnose and Atlantic sturgeon. An analysis of underwater noise impacts concluded that the proposed project would have no adverse effects on these species. Similarly, an evaluation of fish mortality or injury from the entrainment or impingement on the intake screens of the silt suspension units found that that the rates of fish entrainment by the units were relatively low. Furthermore, impacts that did occur resulted in relatively small changes in the affected environment and ecological functions when compared to existing impacts in the river, including dredging and other ship related activities, water flow modifications from the upstream dam, fishing, urban and agricultural runoff, and natural variability due to drought and salinity changes.
 - iv. Impacts to the Atlantic sturgeon critical habitat in the Savannah River will be insignificant because any physical or biological impacts to the proposed project area during construction (i.e., pile driving), such as increases in turbidity and suspended sediments, are expected to minimal, localized, and short lasting.

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8. Zoning confirmation letters from the City of Savannah and Chatham County are included as Exhibit D.
9. The owner certifies that the will be conducted in compliance with applicable erosion and sediment control responsibilities, if required.
10. The owner certifies that the proposed project is not over a hazardous waste site or landfill.
11. The Georgia Environmental Protection Division is considering the addition of the silt suspension system at Savannah Bulk Terminal and East Coast Terminal as a minor modification to the original water quality certification for maintenance dredging of the berths. A copy of the Water Quality Certification issued by the Department for maintenance dredging is included as Exhibit E.

Thank you for the review of the review of these materials. If you require any additional information during the reviewing process, please do not hesitate to contact me.

Sincerely,



Matt Goodrich, P.E.
Principal

- Exhibit A: Mailing Addresses of Adjacent Property Owners
- Exhibit B: Property Boundary Plats
- Exhibit C: Deeds and Relevant Ownership Information
- Exhibit D: Zoning Confirmation Letters
- Exhibit E: 401 Water Quality Certifications

1 Introduction

1.1 Permits Requested

Savannah Bulk Terminal (SBT) is applying for a Department of the Army permit under Section 10 of the Rivers and Harbors Act for the installation and operation of a silt suspension system at their berths in Savannah, GA.

This document provides information in support of SBT's permit request. A completed Joint Application for a Department of the Army, Corps of Engineers Permit and Request for Water Quality Certification is included with this document (Attachment A).

SBT is requesting a Letter of Permission for the project, which uses an abbreviated process to authorize minor projects with no significant environmental impacts and should encounter no substantive opposition. The proposed project does not include the discharge of dredged or fill material, and it will not have more than a minimal impact on the environment; therefore, a Standard Permit should not be required for the project.

1.2 Owner/Applicant

The proposed project is on property belonging to both SBT and East Coast Terminal (ECT), but the proposed project will be owned and operated by SBT. Water Environment Consultants (WEC) is serving as their agent for this project. The applicant's and agent's contact information is provided below.

General Applicant	Applicant's Agent
Mr. Frank Peeples, Jr. Manager Savannah Bulk Terminal LLC PO Box 2253 Savannah, Georgia 31402	Mr. Matt Goodrich, P.E. Water Environment Consultants P.O. Box 2221 Mount Pleasant, SC 29465-2221 (842) 375-9022

1.3 Plan of Application

This narrative project description is Exhibit A to the Joint Permit Application. Attachment A in this package includes the Joint Application form (issued by the Savannah Army Engineer District) for: a Department of the Army, Corps of Engineers Permit and Request for Water Quality Certification. This application has also been expanded with supporting documents that detail the studies that were conducted and referenced throughout the project narrative. This inclusive permit application contains the following:

- Attachment A: USACE Joint Permit Application Form
- Attachment B: Permit Application Drawings
- Attachment C: Underwater Noise Analysis

1.4 Project Location

ECT and SBT are located along the Savannah River approximately 2 miles downstream from the Talmadge Memorial Bridge. Site vicinity and location maps are provided in Attachment B (Sheets 1 and 2, respectively, of the permit application drawings).

2 Purpose and Need

2.1 Existing Facility Description

The ECT facility, shown in Figure 2-1, is used for receipt and shipment of conventional and containerized general cargo, dry and liquid bulk commodities. It includes an 800 foot long berth that is 100 feet wide and maintained at a depth of -38 ft MLW (-41.9 ft NAVD88). The drawings in Exhibit B show the terminal location of the berth in relation to the federal navigation channel.

The SBT facility, shown in Figure 2-2, is used for receipt and shipment of dry and liquid bulk commodities. It includes a 1,000 foot long berth that is 100 feet wide and maintained at a depth of -38 ft MLW (-41.9 ft NAVD88). The drawings in Exhibit B show the terminal location of the berth in relation to the federal navigation channel.

2.2 Need for the Proposed Project

ECT and SBT must maintain permitted depths at their berths in order to continue safe operations, and the proposed silt suspension system will help maintain these berth areas by reducing the shoaling that occurs in the berth areas. Some areas of Savannah River suffer shoaling well over one foot of deposition per month. Sedimentation in the berthing areas can consist of clay and fine silts, originating from tributaries of Savannah River. These sediments flocculate upon reaching the more saline waters of the lower Savannah River, settling to the bottom and forming a mobile layer of fluid mud. The fluid mud is dragged along the bottom by water currents until coming to rest in areas of reduced velocity, such as deep-draft berthing areas. When at rest, the fluid mud undergoes rapid consolidation, with a sharp increase in yield strength and erosion resistance. Within a few days, the fluid mud becomes part of the permanent sediment bottom.

2.3 Project Purpose

The purpose of the proposed silt suspension system is to reduce shoaling and maintenance dredging efforts at the ECT and SBT berths.

2.4 Adjacent Land Owners

A map showing adjacent property owners is provided in Attachment B (Sheet 3 of the permit application drawings).

3 Proposed Project Description

3.1 Description of the Technology

A U.S. Navy-funded Research and Development program developed the scour jetting concept, with subsequent refinements by Scour Systems, Inc. The company was renamed SedCon Technologies, Inc. in recognition that the units do not “scour” but rather maintain the suspension of particles already suspended in the water column. The silt suspension system units are operated only on the outgoing tide, allowing tidal currents to carry the suspended sediments seaward.

The silt suspension system consists of a series of submerged, near-bottom units mounted along the face of a wharf. Each unit has a hydraulic motor-driven impeller that draws water downward into a bell-mouthed intake and discharges it outward across the bottom of the berth. A single hydraulic power source feeds the units through a small diameter header pipe and branching riser hoses. A personal computer operates the units in sequence, beginning at the upstream end of the system. Each unit will complete a 180-degree horizontal rotation as it directs a flow of water across the bottom of the berth.

3.2 Project Construction

ECT and SBT propose to install and operate a total of nine (9) silt suspension system units, placed approximately 162 to 237 feet apart at Berths 2 and 4, as shown by the drawings in Attachment B. Three of the units will be installed on three new guide piles attached to the existing Berth 4 dock. Six of the units will be installed on six new support platforms. Each new support platform will require a total of seven steel pipe piles. Altogether, a total of 45 steel pipe piles with a 24-inch diameter, including support platform piles and guide piles, will be installed using a vibratory driver. The project will require new 3-foot catwalks to the new support platforms, as indicated Sheets 4 through 9 of the permit application drawings (Attachment B). The piles will be installed from land-based equipment situated on the dock and/or barge-based equipment.

The work is anticipated to commence upon receipt of the project permits. Construction will be completed over a 5-year period. This will include an initial phase with installation of the units at Berth 2, followed by a later second phase with installation of the units at Berth 4.

3.3 Project Operation

The system will be operated twice per day on the outgoing tide, in perpetuity.

4 Resources Occurring within the Project Area and Potential Impacts

4.1 Waters of the United States

4.1.1 Wetlands

No jurisdictional wetlands will be affected by the installation and operation of the proposed silt suspension system.

4.1.2 Open Waters/Unconsolidated Mud River Bottom

The berthing areas where the proposed silt suspension system would be installed are in open water areas and have unconsolidated mud river bottom habitat.

4.1.3 Water Quality

Potential water column impacts from the proposed project are considerably less when compared to those of dredged material maintenance alternatives.

Chemical water quality impacts are possible from installation and construction-related activities and can be controlled by reasonable contractor precautions and practices. Any impact from these activities will be temporary, short-term and localized. Potential impacts during operation are possible from normal equipment functioning (drawing water from near mid-column and discharging it as a low velocity current along the bottom) and from equipment malfunction. The chemical impacts from normal operation of these units on the water column should be predominantly positive because the river system is often somewhat stratified in this reach and the units will transport significant quantities of better quality and more highly oxygenated water from mid-column to the bottom of the system. While these effects will likely be small and localized, they should be positive. The most significant chemical effect from equipment malfunction would be caused by a hydraulic fluid leak from the power transfer system. Because these systems are placed in sensitive estuarine areas, the manufacturer has added several safety devices, leak detection equipment, and automatic shut offs, to prevent this type of problem. In addition, the systems will use a vegetable oil-based fluid instead of a potentially more harmful petroleum-based product.

Other water quality impacts will primarily come from increases in turbidity or suspended solids caused by the disruption of the fluid mud bottom during equipment operation. These impacts will be minimal and insignificant when compared to alternative maintenance technologies such as hydraulic and agitation dredging. Even normal ship operations (through propeller re-suspension) are expected to create a larger and more sustained suspended solids impact than the silt suspension system units. The units create a relatively high volume, low velocity current along the bottom directed out toward the federal shipping channel. Unlike dredging, which seeks to remove or re-suspend high volumes of accumulated material after settlement, these units will operate on every ebb tide thereby preventing the material from settling in the first place.

4.2 Protected Species

4.2.1 Threatened and Endangered Species

As part of the permitting process, the US Army Corps of Engineers must determine potential project impacts to species listed under the Endangered Species Act (ESA). Protected species in the area that have the potential to be impacted by the proposed project include:

- North Atlantic Right Whale
- West Indian Manatee
- Sea Turtles
- Shortnose and Atlantic Sturgeon

Any potential impacts to protected species from the proposed project may occur during installation and/or operation of the silt suspension system. After consideration of the scope of the proposed project, any potential adverse impacts are thought to be limited to Shortnose and Atlantic sturgeon.

4.2.1.1 Potential Impacts during Installation

The proposed project includes the installation of a total of 45 steel pipe guide piles using a vibratory hammer. During pile driving, noise is produced when the energy from the hammer is transferred to the pile and released as pressure waves into the surrounding water and sediments. Depending on the type and location of pile-driving activity, pile-driving noise can result in potential effects ranging from behavioral effects (caused by the animal hearing the noise), to physiological effects with very extreme cases resulting in death.

An underwater noise analysis was performed by WEC to determine potential project impacts to shortnose and Atlantic sturgeon as a result of pile driving noise during construction of the project. The report (included as Attachment C) provides a detailed analysis of the noise impacts caused by the installation of these piles, including a description of: the potential routes of noise effects to sturgeon; the noise assessment criteria; background noise sources in the project area; and the calculated impact areas exceeding the criteria for injurious and behavioral effects.

Based on the findings of the noise analysis, the proposed project will have no adverse effects on shortnose or Atlantic sturgeon as a result of noise from pile installation.

4.2.1.2 Potential Impacts during Operation

The operation of the proposed silt suspension system may potentially affect shortnose and Atlantic sturgeon by direct entrainment or impingement on the intake screen. This potential impact has been evaluated in 2008 during detailed investigations by Applied Technology and Management for Georgia Port Authority (GPA) during their permitting process for their silt suspension system at Garden City Terminal. Results from the study indicated that while operating at full power, rates of fish entrainment by the silt suspension system was relatively low. Furthermore, impacts that did occur resulted in relatively small changes in the affected environment and ecological functions when compared to existing impacts in the river, including dredging and other ship related activities, water flow

modifications from the upstream dam, fishing, urban and agricultural runoff, and natural variability due to drought and salinity changes.

4.3 Habitats

4.3.1 Critical Habitat

On August 16, 2017, NMFS designated critical habitat for Atlantic sturgeon along more than 3,968 miles of coastal river habitat extending from Maine to Florida. Within the rivers designated as critical habitat for Atlantic sturgeon, the project area is located in South Atlantic Unit 3 (Savannah Unit).

Any physical or biological impacts to the proposed project area during construction (i.e., pile driving), such as increases in turbidity and suspended sediments, are expected to minimal, localized, and short lasting. Therefore, it is concluded that the proposed project will have insignificant impacts to the Atlantic sturgeon critical habitat in the Savannah River.

4.3.2 Essential Fish Habitat

Any physical or biological impacts to the proposed project area during construction (i.e., pile driving), such as increases in turbidity and suspended sediments, are expected to minimal, localized, and short lasting. Therefore, it is concluded that the proposed project will have insignificant impacts to Essential Fish Habitat in the Savannah River.

5 Protection of Water Quality and Water Uses

In support of the request for Water Quality Certification from the State of Georgia, the applicant provides the following statements:

1. All activities will be performed in a manner to minimize turbidity in the stream.
2. There will be no petroleum-based oils or other toxic pollutants released from the proposed activities which will reach the river.
3. All work performed during construction will be done in a manner to prevent interference with any legitimate water uses.