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LETTER AND U S NAVY RESPONSE TO U S EPA REGION I COMMENTS REGARDING DEFENSE, REUTILIZATION AND MARKETING OFFICE SLOPE STABILIZATION NSY PORTSMOUTH ME
9/22/1999
FOSTER WHEELER ENVIRONMENTAL CORPORATION

Raymond Martha PORT

From: Carl Tippmann [ctippmann@fwenc.com]
Sent: Wednesday, September 22, 1999 1:35 PM
To: RaymondM@mail.ports.navy.mil
Subject: DRMO Slope Stabilzation Comments and Responses

----- Forwarded by Carl Tippmann/Langhorne/FWENC on 09/22/1999 01:36 PM -----

Carl Tippmann
09/20/1999 06:11 PM

To: fjevans@efdnorth.navfac.navy.mil
cc: GIBISONTM@exchange.efdnorth.navfac.navy.mil, Dan Sullivan/Atlanta/FWENC@FWENC, jcawi@aol.com
Subject: DRMO Slope Stabilzation Comments and Responses

The following are the comments and responses from the RAB member and EPA:

RAB Member Comment (via Marty Raymond)

Section 6.2 of the workplan mentions storm water and erosion control but no specifics are given on what methods are to be used. The RAB member wants to know what methods will be employed.

Response:

The primary method of erosion protection to be employed will be diversion. By installing a temporary berm above the excavation slope surface water will be diverted away from the excavation area. The slope surface disturbance area will be kept to a minimum. Disturbed areas will be covered daily with stone or polyethylene sheeting to prevent erosion. Since the base of the excavation consists of large rock, installation of silt fence is not possible. Also the swift tidal currents will prevent installation of silt curtain in the Piscataqua River.

EPA Comments

1. EPA notes that based on a review of site information and photos, it appears that the slope failure (i.e., scouring beneath and at the toe of the concrete blocks) is likely the result of improper provisions for filtering and inadequate slope toe protection.

Response:

We concur with the EPA observation that scouring contributed to the slope failure. The shoreline restoration design provides for filtering by use of multiple layers of increasingly larger materials.
The rock will be keyed into the existing material. Note, the underlying embankment rock is similar

to the outermost rock facing the restored slope.

2. The proposed design drawings were provided without any details regarding design rationale.
There are no additional details provided in the Remedial Action Work Plan. It appears that the design drawings might be typical of local shoreline protection, however EPA cannot comment on the appropriateness of items such as slope grade, stone size, etc. based on the information provided.

Response:

Due to the timeline of accomplishing the task this season, detailed design drawings were not prepared.

3. Figure 4-1, DRMO Shoreline Stabilization Cross-Section: It may be difficult to place pea gravel over the existing soil on steep slopes. EPA suggests placing crushed stone with proper size requirements instead of pea gravel to improve friction resistance. In lieu of using crushed stone, the slope could be flattened to accommodate pea gravel.

Response:

The DRMO Shoreline Stabilization Cross Section will be revised to substitute FS-1 stone for the pea gravel. The FS1 Stone ranges from a maximum of 1/2 inch to a minimum of a No. 50 Sieve with an average size of a Number 16 sieve. This size should provide the soil filtering characteristics as well as the structural characteristics to hold the slope.

4. Figure 4-1, DRMO Shoreline Stabilization Cross Section: Two geotextile layers may not be necessary because they develop the weakest interface within the armoring structures (resulting in slippage failures). EPA recommends using a thick (i.e., high tensile strength), nonwoven geotextile to improve soil-retention capability, water-flow capability, mechanical-damage resistance, and durability. EPA does not believe that woven textile should be included, as this is most susceptible to slippage.

Response:

The DRMO Shoreline Stabilization Cross Section will be revised to substitute one layer of 16 ounce nonwoven geotextile for the layers of nonwoven and layer of woven geotextile currently shown.

5. Figure 4-1, DRMO Shoreline Stabilization Cross Section: The interface between the 4-6"rock layer and the 18-24" rock layer is almost vertical near the top of the slope. Achieving this vertical contact during construction will be very difficult. This interface should be modified to make it more practical from a construction stand point.

Response:

This is a graphical depiction of where the larger stone will be transitioned to smaller stone. The exact configuration of this joint will vary depending on the shape of the individual rocks.

6. Figure 4-2, Curb Detail Cross Section: EPA recommends that when the GCL from the existing cap is repaired, it be extended three feet below the concrete curb area in order to minimize water penetration between the cap and concrete curb. As shown on the design drawings, water infiltration may develop tensile cracks which trigger slope failures.

Response:

The detail indicates how the existing GCL will be restored to approximately its current configuration.
The GCL will contain water within the existing DRMO work pad diverting it away from the slope area.