RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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February 2, 2009

Winoma Johnson
NAVFAC MIDLANT (Code OPNEEV)
Environmental Restoration
Building Z 144, Room 109
9742 Maryland Avenue
Norfolk, VA 23511-3095

RE: Stone Revetment Replacement Design 100 % Submission, and Evaluation of Response to Comments on the Stone Revetment Replacement Design 90 % Submission, Old Fire Fighter Training Area, Naval Station Newport, Newport, Rhode Island

Dear Ms Johnson,

The Rhode Island Department of Environmental Management, Office of Waste Management has reviewed the Navy's Response to comments on the Stone Revetment Replacement Design 90 % Submission; Old Fire Fighter Training Area and the Stone Revetment Replacement Design 100 % Submission; Old Fire Fighter Training Area. Attached are comments generated as a result of this review of these two submittals. .

The 100% Design document was sent out when the Response to Comments on the 90 % Design were still in review. Therefore, as necessary, issues on both the 90 % and 100% design are addressed in the evaluation of the Navy's Response to Comments on the 90% Design Submission. If the Navy has any questions concerning the above, please contact this Office at 401-222-2797, ext. 7111.

Sincerely,

Paul Kulpa

Paul Kulpa
Office of Waste Management

cc: Matthew DeStefano, DEM OWM
Richard Gottlieb, DEM OWM
Terry Walsh, DEM OWR
Ken Anderson, RI CRMC
Robert Lim, EPA Region I
Cornelia Mueller, NSN

Evaluation of Response to Comments on the
90% Submission
Stone Revetment Design
and Comments on the
100 % Submission
Stone Revetment Design
Old Fire-Fighting Training Area
NETC

1. ` General Comment

Installation of the revetment will entail the removal of contaminated soils. This will necessitate the submission of a sampling and analysis plan, a soil management plan, a storm water management plan and a dust control plan. The 90 % Design implies that these documents will be submitted as part of the contractor's preconstruction plans. Please be advised that these primary documents are subject to review and approval by the regulatory agencies. Therefore, please either submit these documents as part of the 90 % design for review and approval, or note in the 90 % Design they will be submitted as primary documents to the regulatory agencies for review and approval.

Evaluation of Response

Comment has been addressed.

2. `General Comment

The proposal calls for the installation of a stone revetment along an area of contaminated shoreline. Installation of the revetment in this area will not allow for subsequent remedial actions. Therefore, all soils above the Rhode Island Site Remediation Residential Direct Exposure Standards and contaminated sediments at and in the vicinity of the revetment must be removed prior to the installation of the revetment. In regards to the soils/sediments in the vicinity of the revetment the extent of the soils/sediments to be removed must be of sufficient width and depth, such that any subsequent removal action can occur without compromising the revetment and/or require the installation of sheet piling or other techniques to protect the revetment.

Evaluation of Response

The Navy acknowledges that there is a risk at the site in the sediments; however the source of the observed contamination is uncertain as it may be due to the storm drains. As noted in past correspondence the Office of Waste Management has a number of concerns with the Navy's postion that the source of the contamination is the storm water drains. The recent investigations/removal actions conducted at the site has demonstrated that these concerns

are well founded. Two oil water separators, which discharge onto the beach in the vicinity of the storm water drain were found. These structures, as well as the discharge pipes, still contained petroleum contaminated soils and sludges and they can account for the observed contamination in the sediments. Another source for the observed contamination on the beach is the heavily contaminated soils and free product which was found in test pits immediately adjacent to the beach and/or immediately adjacent to the storm water discharge pipes. Contaminants from these sources would either migrate directly onto the beach or preferentially through the soils around the discharge pipe and/or the pipe itself.

The forensic study was based upon the assumption that only marine diesel would have been used at the site. A review of the engineering plans and other historical sources of information found during the investigation revealed that the ship mark up contained a ship boiler, an aircraft hanger, etc. A variety of fuels would have been used at these locations. In addition, the engineering plans of the underground storage tanks were clearly labeled as oil and gasoline providing further evidence of the use of multiple fuels.

As it is clear that contamination from the site has affected soils beneath the site and the adjacent sediment and as contaminated soil which exceeds regulations is present in and immediately adjacent to the proposed location of the revetment, it is the Office of Waste Management's postion that the Navy take the prudent course and remove all contaminated soils and sediments at and immediately adjacent to the revetment.

3. General Comment

The work plan notes that a Portadam will be installed during the installation of the stone revetment. A review of the proposed limits of excavation identified in the 90% Design report and the extent of sediment contamination exceeding PRGs identified in the Feasibility Study reveals that extending the excavation at certain locations, beyond that outlined in the 90% Design Report, but still within the working limits of the Portadam system will allow for the removal of the contaminated sediments exceeding PRGs. Addressing the contaminated sediments now will avoid the need to perform a dredging action as identified in the Feasibility Study, and allow for the removal of contaminated sediments under dry conditions. This will greatly reduced both the time and cost of the removal action and allow for this portion of the site to be addressed. Please revise the work plan to include removal of these sediments.

Evaluation of Response

The Navy refers to Comment 2 Response above and notes that there are restrictions due to the presence of eel grass beds. Please see RIDEM's evaluation above, and note that RIDEM is not proposing removing contaminated sediments from the eel grass beds.

4. General Comment

The proposed excavation to install the revetment will extend into the water table. Contaminated groundwater, including free product exist at the site. It is recommended that the Navy employ crush stone in the backfill in the water table and the smear zone along with PVC

stand pipes. This will allow for, if needed, removal of contaminated groundwater and/or injection of oxygen or oxidants to avoid contamination of the revetment and the newly installed clean beach sand.

Evaluation of Response

The response focuses on recovery wells, and not on injection. In terms of the recovery trench, please show the engineering calculation and/or explain why a recovery trench upgradient of the revetment cannot be installed. Also, please address the concerns with respect to injection of air, oxidants, etc to address contamination present in the water table.

5. General Comment

Please be advised that at all locations the toe of the revetment cannot extend onto the existing beach, (i.e. there must be no loss of the beach environment, be advised that the beach extends beyond the high tide mark). Further, in areas where the toe stabilization will be placed beneath the beach the Navy must create and maintain a beach, which has a minimal thickness of two feet, which is also similar in nature to what is or was at the site. Please clearly state these requirements in the document (Due to the information presented in the figures and the nature of the legends it is not clear where these requirements are being met at all locations).

Evaluation of Response

The Navy has stated that the size of the coastal beach will increase as depicted in the attached drawings. As such, it appears that the agencies are in agreement and that it is the intention of the Navy that there be no lost of the coastal beach.

Recently, representatives from RIDEM, RICRMC and the Navy inspected the beach adjacent to the Old Fire Fighter Training Area. During this inspection logistics associated with how to avoid accidently filling in of the coastal beach were broached. It was recommended that the coastal features be staked with off sets to demarcate their location. These off sets would be inspected and approved by the regulatory agencies prior to construction of the revetment. This would insure that the revetment contractor did not accidently fill in portions of the beach. If the above approach is agreeable to the Navy please include this provision in the 100 Design document.

6. General Comment

One function of the revetment is to eliminate the migration of contaminated soils into the adjacent sediments. Considering the cost of the revetment it is strongly recommended that the Navy consider removing the contaminated soils at the site and install a simple, less costly, revetment.

Evaluation of Response

The Navy has indicated that the comment has been noted. Considering the size of the revetment with respect to other revetments located on the base and/or else where in the State

the Office of Waste Management recommends that the Navy evaluate it's design to ascertain whether a smaller revetment can be installed in conjunction with soil removal.

7. Section 3.2, 2008 Geotechinical Investigation, Visual Survey Rocky Shore Page 3-4.

The report notes that a visual survey was conducted of the rocky shore to ascertain the characteristics of the beach, (rock size, etc). A review of historical aerial photographs indicates that in the past this beach did not reflect the current composition. In addition, similarly located beaches elsewhere on the island and the base also do not reflect the aforementioned composition. The current beach conditions may be due to erosion of the mounds which were created when the fire fighter was dismantled and/or erosion of materials placed along the embankment. As the revetment will solve the erosion problem, the beach to be installed should reflect preerosion conditions, i.e. be similar in nature to other beaches located in the same environment. Please modify the document to state that the beach to be installed in this area will reflect preerosion conditions.

Evaluation of Response

Recently representatives from RIDEM, RICRMC and the Navy inspected the beach adjacent to the Old Fire Fighter Training Area. In regards to beach along the western end of the site it appears that the original beach contained stones 3-4 inches and smaller in size. There were also concrete, bricks, larger rocks and other material which appear to make up the original revetment (the revetment was in disrepair). The 90 % design document called for the removal of the concrete, brick, etc. and the reuse of existing stone on the beach provided that it was not contaminated. The agencies agreed that the concrete, brick and other debris, must be removed from the shoreline In regards to the existing stone on the beach it could be reused, however, any new material brought onto the beach would have to be 3-4 inches in diameter or less. Further, the stone in the existing revetment could not be used on the beach.

In regards to the revetment, there was a proposal to incorporate existing revetment stone into the new revetment. It is not clear which existing revetment stone is proposed for reuse. That is, whether it is "newer" revetment stone south of the Jersey barriers which were recently brought to the site when the mounds were removed and is composed of granite, or the "older" revetment stone, a mixture of shale, granite and other rock types, which was installed when the Fire Fighter Training Area was created, or both. This needs to be specified in the document. Be advised that all stones must meet specification and regulatory approval is required.

8. Section 3.2, 2008 Geotechinical Investigation, Analytical Sample Results Page 3-4.

The report references TPH results from samples collected at the beach. Please be advised that due to the wide variety of oils used at the site, tanks held both gasoline ad heavy oils, two separate TPH test must be performed, such as GRO and DRO. Further, the test must be conducted such that the full range of petroleum products found at the site are analyzed, i.e.

carbon range extends from light end to C 44. Please modify the table to reflect the particular TPH analysis performed. Also please be advised that in the future all TPH test must included low and high-end petroleum products.

Evaluation of Response

Response was not included in the package. Please insure that the 100 % Design addresses the above comment.

9. Section 4.2.1, Structural Protection Requirements
Page 4-6, General

The stabilization for the toe trench of the revetment extends into the beach area. At McAllister Point Landfill a gravity wall was installed which did not extend into the beach area. A gravity wall at this location was found sufficient even though the revetment height and size was considerably larger then that at the OFFTA. Further, the McAllister Point site is exposed to a greater wave fetch, and storm conditions. Considering the location of eel grass at the western end of the site, at a minimum the Design should considered a gravity wall at this location (it is also recommended that a gravity wall be consider at the eastern end of the site). Finally, please be advised that the Navy will have to maintain the beach environment above the proposed toe stabilization structure.

Evaluation of Response

The Navy has noted that the gravity wall at the McAllister Point Landfill extended into the intertidal area. It is acknowledge that at certain locations the gravity wall at McAllister Point Landfill extended into the beach because at high tide along a significant portion of the landfill there was no exposed beach and the water was a couple of feet deep at the toe (at these locations during low tide the exposed beach was only a few feet wide). The intent of the comment was to note that the McAllister Point Landfill revetment was significantly larger then that proposed at OFFTA, yet the gravity wall was smaller and did not extended out as far. Accordingly, the Navy should evaluate the design to ascertain if cost savings can be realize with a small toe, which would also avoid the long term problems of maintain a beach over the toe.

10. Section 4.2.1, Structural Protection Requirements
Page 4-6, General

The revetment as designed is larger and more complex then that found elsewhere at the base, (especially, at the western end of the site where the revetment is greater than thirty feet wide). It is not clear why a revetment of this nature is required. Considering the cost of the project and the potential impacts to the adjacent eel grass beds it is recommended that the Navy review the proposed design to ascertain if it can be reduced in magnitude.

Evaluation of Response

Comment was not addressed in the 90% Design Response. Please address comment.

11. Section 4.2.1, Structural Protection Requirements
Page 4-6, Table

This table notes that a nominal diameter stone of 1.68 feet has a weight of 779 lbs. Based on the last paragraph of page 4-5 it is noted that a stone has a density of 165 lb/ft^3. Assuming a sphere which has a volume of $4/3\pi r^3$ the weight of the stone would equal $4/3(3.1415)(0.84ft^3)(165\ lb/ft^3) = 409$ lbs. This is significantly different than the 779 lbs stated. Please explain how this weight was obtained.

Evaluation of Response

Comment has been addressed.

12. Section 4.2.1, Structural Protection Requirements
Page 4-6, Table

There appears to be a discrepancy between the diameters and the weights in this table and the Construction Specifications Section. Please review and correct as necessary.

Evaluation of Response

Comment was not addressed in the 90% Design Response. Please address comment.

13. Section 4.2.2, Excavation Requirements
Page 4-6

Contaminated soil and sediment, which exceed regulatory requirements, is present within the footprint of the revetment. Accordingly, the 90 % Design must include a stipulation for the sampling and removing of any soils/ sediment, which exceed regulatory requirements. Please modify the document accordingly.

Evaluation of Response

Removal of the soils in question will be a relatively straight forward, inexpensive process during revetment construction. Removal after the revetment is install will be very costly. Further, alternate remedial techniques to address contamination in the vicinity of the revetment by comparison will be more complicated and difficult to implement. Therefore, either remove the soils at this lcoation now or forego installation of the revetment until an alternative remedial action for these soils has been submitted to the regulatory agencies, approved by the regulatory agencies and a Record of Decision or equivalent State document has been signed by the Navy committing them to the approved remedial alternative. Finally, please be advised that as a cost savings measure the Navy may wish to evaluate storage and treatment of the removed soils at the Tank Farms or other locations on the base in lieu of off site disposal.

14. Section 4.2.2, Excavation Requirements
Page 4-6

There are two-discharge pipes, which contain oil sludge on the beach and in the embankment where the revetment is to be installed. The Design must stipulate that the entire length of these pipes, and any other similar pipes, and any associated contaminated soils/sediments in the vicinity of the pipe will be removed.

Evaluation of Response

The Navy noted that the pipes in question were removed during the 2008 removal action. Please be advised that these pipes were left in place. The Office of Waste Management concurs that all pipes in the sediment and revetment area must be removed along with any contamination. The only pipes to be left in place are active stormwater discharge pipes. In order to avoid confusion in the field please modify the 100% Design to include a requirement to remove all non storm water pipes.

15. Section 4.2.3, Shoreline Stabilization
Page 4-7, Paragraph 1

To protect the geotextile the stone revetment provisions should be made to place the stones on this material rather than dropping the stones.

Evaluation of Response

Comment has been addressed,

16. Section 5.5, Permanent Stabilization
Page 5-4,

Whatever grass seed mixture is selected, one of the requirements should be that it could withstand a salt-water environment.

Evaluation of Response

Navy has stated that the 100 % Design will be evaluated to insure that the grass seed mixture is tolerant of brackish conditions. As such the comment has been addressed.

17. Section 5.6 Stormwater Management Consideration
Page 5-5,

The temporary storage structures will have an impermeable liner. Please state where the overflow will be pumped if the 110% capacity is exceeded.

Evaluation of Response

Comment has been addressed

18. Section 5.7, Inspection and Maintenance of Erosion and sediment Controls, Third Bullet Page 5-5,

This bullet notes that seeded areas will be checked and reseeded if necessary. In the event of soil erosion please state if new soil, in addition to reseeding will take place (i.e. soil erodes prior to grass growing).

Evaluation of Response

Comment has been addressed

19. Section 5.6, Response Procedures for Spill Mitigation Page 5-6,

Please note that if a spill occurs the regulators must also be notified.

Evaluation of Response

Comment has been addressed

20. Figure C-7

In this figure and others a dashed line is used to depict the existing grade and the final grade. This does not allow one to distinguish between the two and ascertain whether regulatory requirements are being met. Please employ an alternate line scheme.

Evaluation of Response

Comment has been addressed

21. Figure

Please produce an overhead figure clearly delineating the current toe of the existing revetment/end of embankment and the proposed toe/end of embankment. Also, this overhead figure should clearly delineate the portions of the toe stabilization, which is to be placed under the beach. Without this information it is not possible to confirm that the revetment, as designed, will not extend beyond the existing fort print of the site.

Evaluation of Response

Comment has been addressed

Comments on the
100 % Submission
Stone Revetment Design
Old Fire-Fighting Training Area
NETC

1. **Section 4.2.3, Confirmatory Sampling Stormwater Management Consideration Page 4-7,**

   The design document notes that the frequency, collection methods and analytical methods for the confirmatory samples will be specified in the contractors work plan. It is recommended that the frequency of samples, collection methods, etc. reflect that employed during the removal action. Please be advised that, whether these parameters are incorporated into the Design document, or the contractors work plan, regulatory approval is necessary.

2. **Section 4.2.3, Confirmatory Sampling Stormwater Management Consideration Page 4-7,**

   The document has listed a clean up standard of 30,000 ppm for TPH. As noted in past correspondence the 30,000 ppm proposal is not acceptable. Please be advised that once the revetment is installed that it will be difficult to remove contaminated soils. Therefore, the document must be modified to stipulate a remedial objective equivalent to either the residential or industrial commercial criteria. Further, the TPH standard requires compliance with regulatory limits for applicable parameters such as SVOCs and metals. Please modify the report accordingly.

3. **Figures, 4-2,4-3,4-4, 4-5, Sheet 7**

   Figures 4-2, 4-3, 4-4, 4-5 in the main body of the 100 % Design show the reuse rip rap extending from the western end of the site to almost the central portion. Sheet C-7 seems to limit the rip rap to cross section A-A and B-B?, which is only a portion of the western end of the site. If this is the case the sheets do not correspond to the Figures in the main text.

4. **Figures, 4-2,4-3,4-4, 4-5, Sheet 7**

   The Design proposes to reuse existing rip rap at the site. Please specify which rip rap is proposed to be reused, i.e. the rip rap south of the Jersey barriers on the western end of the site, any suitable rip rap located anywhere on the site, etc. Be advised that the revetment stones must meet design specifications, as well as, regulatory approval.