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U S NAVY RESPONSES TO U S FISH AND WILDLIFE SERVICE COMMENTS ON DRAFT FEASIBILITY STUDY/CORRECTIVE MEASURES STUDY FOR SITE 1 INCINERATOR LANDFILL MCRD PARRIS ISLAND SC

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NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION

US FISH AND WILDLIFE SERVICE COMMENTS ON 1 DRAFT FEASIBILITY STUDY/CORRECTIVE MEASURES STUDY FOR SITE/SWMU 1 - INCINERATOR LANDFILL MARINE CORPS RECRUIT DEPOT PARRIS ISLAND, SOUTH CAROLINA EPA ID#: SC6170022767, DATED AUGUST 24, 2001

The U. S. Fish and Wildlife Service (Service) has reviewed the above-referenced document and offers the following comments for your consideration.

1. **Comment:** Site/SWMU 1 is a 7-acre incinerator landfill at the tip of Horse Island which extends approximately 670 feet into the marsh toward Archer Creek and is approximately 400 feet in width; an extensive saltmarsh is located along the northern, eastern, and western portions of the peninsula on which Site 1 and SWMU 41 (former incinerator) are located. It is estimated that 56,000 cubic yards of soil, fill, and waste material were disposed of in the landfill from 1921 to 1965; wastes were piled on the land or placed in trenches into the marsh, extending the edge of the landfill farther into the marsh. Fill dirt was also used to build up the land at the edge of the marsh, and the landfill progressively extended farther into the marsh as wastes were dumped on the edge of the fill. Waste materials included combustion residues (ash) from the coal-fired incinerator at SWMU 41; noncombustible wastes such as cans, bottles, and construction debris; and hazardous wastes such as paint thinners, diesel fuels, kerosene, and strippers. Results of the ecological risk assessment performed as part of the RI/RFI for Site 1 indicated that pesticides, PAHs, and several heavy metals in sediments and soils pose an unacceptable risk to aquatic and terrestrial ecological receptors.

The Feasibility Study/Corrective Measures Study (FS/CMS) develops Remedial Action Objectives (RAOs) and Remedial Goal Options (RGOs) for Site/SWMU 1 and evaluates four potential remedial alternatives for addressing risks to human health and the environment at the site:

Alternative 1 - No action

Alternative 2a – Removal of sediments that exceed ecological RGOs for pesticides and inorganics to an on-site cap. Sediments exceeding ecological and human health RGOs for PAHs would be monitored for natural attenuation.

Alternative 2b - Removal and placement under an on-site cap of all sediments exceeding ecological and human health RGOs for pesticides, inorganics, and PAHs.

Alternative 3 - Removal and off-site disposal of sediments exceeding ecological and human health RGOs for pesticides, inorganics, and PAHs.

Primary issues of concern to the Service involve the presumptive remedy, the selection of Remedial Goal Options (RGOs), and the lack of compliance with Section 404 of the Clean Water Act and Section 404(b)(1) guidelines regarding wetlands mitigation and restoration.

Response: The Navy concurs with most of the above interpretation of the FS, but would like to clarify that the following points.

- The ecological risk assessment only indicates the potential for unacceptable risk to aquatic and ecological receptors. The recommended alternative for site remediation, will specifically address both the chemical and physical impacts in the area.

Detailed responses to the RGO and Section 404 wetland mitigation and restoration are presented below.

2a. **Comment:** Section 3.3 **PRESUMPTIVE REMEDY** discusses the decision criteria for the application of the presumptive remedy of source containment (i.e., an on-site cap as proposed in Alternatives 2a and 2b). The application of source containment to a landfill located in an estuarine, intertidal salt marsh is at best questionable and at worst ineffective.

Response: The majority of Site 1 is located outside of the salt water marsh. The proposed remedy will specifically address removal of waste and contaminated sediments from within the salt water marsh and place them under an engineered cap design to effectively control migration of contaminants that would result in adverse impacts to the environment.

2b. **Comment:** The likelihood is that the groundwater hydraulic head is tidally influenced (i.e., there is a twice daily flush in and out), thus providing an exposure pathway to site contaminants for groundwater to surface water, sediments, and ecological receptors. While the Site/SWMU 1 contaminant sampling plan was developed assuming application of the presumptive remedy, there was apparently no monitoring of groundwater levels relative to tidal stage to document the presence or absence of a tidally influenced hydraulic head. However, the documented salinity of the groundwater indicates that surface water and groundwater are interconnected.

Response: The tidal study is provided in the Site 1 RI report and was discussed at several of the partnering team meetings. As indicated in the comment, the surface water and groundwater near the edge of the Site are interconnected.

Water level measurements in the monitoring wells during a tidal cycle are provided in the Site 1 RI Appendix B. As suggested, this data demonstrates the groundwater elevation cycling in the monitoring wells with individual water head measurements cycling by 1 to 2 feet. At high tide, most of these wells are located at waters edge. At low tide, these wells are 200 to 1000 feet from surface water. Note that PAI-01-MW-4S, which is located approximately 130 feet from the nearest surface water shows no direct effects from the tidal cycle.

2c. **Comment:** In addition, groundwater was found to contain concentrations of naphthalene and metals (copper, lead, mercury, and zinc) potentially harmful to ecological receptors; the Remedial Investigation (RI) Report reports that pesticides and aroclors were not detected in groundwater but detection limits are not reported and extremely low concentrations of these contaminants are known to cause adverse effects to ecological receptors.

Response: Laboratory detection limits are provided in Appendix C of the RI report. The detection limit discussion and resolution has been addressed at several recent partnering team meetings. In particular, the use of method detection limits (MDLs) has eliminated most of the concerns. The investigation used the best available reliable technology for detecting these chemicals in groundwater. This concern with detection limits for groundwater is also part of the reason that the proposed remedy for these chemicals focused on the sediment and soil in which these chemicals concentrate and are measurable.

2d. **Comment:** While source containment may be practical and the presumptive remedy (an onsite cap) would reduce the potential for vertical migration of groundwater contaminants to sediments and surface water due to reduced surface infiltration, the presumptive remedy does not ensure elimination of the source of sediment and surface water contamination. This is conceded is Section 3.4.4 which states that "The landfill containment remedial action/corrective measure would need to be engineered so that groundwater containment could be implemented in the future, if it is determined to be necessary." Section 4.2.3 discussing containment states that "the contaminated media must be isolated from the primary transport mechanisms . . . to reduce the migration of contaminants . . . [via] installation of surface and subsurface barriers that either block or divert any transport media from the contaminants." How does the presumptive remedy (Alternatives 2a and 2b) address the potential twice daily flush in and out of the landfill's contaminated wastes via a tidally influenced hydraulic head? What data are utilized to conclude

that “the cap system would prevent concentrations of COCs in waste material from migrating to groundwater, sediment and surface water”?

Response: A comparison of the groundwater and surface water data from the site with very conservative screening criteria found only very minor exceedances. The surface water chemicals that were detected were more likely to be associated with particulate migration (erosion) of exposed wastes. The placement of waste materials within the landfill as indicated under Alternatives 2a and 2b would eliminate the surface water particulate migration pathway.

As indicated the groundwater was noted to contain several metals (soluble) and organics at concentrations that exceed the screening values. Based on the site wastes, these chemicals likely result from direct leaching of waste materials at the site. This leaching process is the primary reason why a low permeability cap instead of a permeable cover was considered for this site.

However, the exceedances noted were relatively low compared to the screening criteria, (e.g. maximum hazard quotients of 2.4 to 9.2). On the average, the concentration of chemicals detected in the groundwater are similar to or less than the screening values as well as background surface water values. The exception is mercury. The average calculated mercury concentration is elevated because of an elevated detection limit (0.2 µg/l). But mercury was detected in only 1 of the 8 samples collected.

Groundwater (µg/l)

Parameter	Maximum Concentration	Average Concentration	EPA Region 4 Screening Value	Background Surface Water
Naphthalene	57	9.7	23.5	Not Applic.
Copper	7.8	2.8	2.9	13
Lead	36.4	11.4	8.5	11
Mercury	0.23	0.028 to 0.11	0.025	Not Detect.
Zinc	112	53	86	66

As a result, under Alternatives 2a and 2b, the waste materials would be consolidated within the cap area and designed to be isolated from the surface water tidal cycles. Waste materials currently directly in contact with surface water would be typically elevated 5 to 10 feet above the high water mark.

The cap would be designed to minimize the flow of surface water into the cap area, and therefore minimize outflow. The flow into the cap area would be dependent on the flow area (cross section)

available, hydraulic gradient, and conductivity of the media. Since under existing conditions only minor exceedances exist in the surface water and groundwater, a reduction of only 70 to 80% is required in order to comply with the stringent ecological values for ecological receptors. Higher reductions will be targeted and should be achieved with only consolidation and containment actions.

3. **Comment:** Section 3.4.4 also contains the statement that "The results of the ERA did not indicate that groundwater poses a concern to ecological receptors. As a result, groundwater will not be retained as a medium of concern for ecological concerns." This statement is not supported in the RI Report, which contains the ERA (Ecological Risk Assessment). Naphthalene, copper, lead, mercury, and zinc were present in groundwater at concentrations that exceed those established as protective of saltwater aquatic life; four volatile organic compounds, 10 semivolatile organic compounds, and six metals were detected for which Region 4 has no ecological screening values.. The RI Report states that "The groundwater data are adequate to proceed to a feasibility study/corrective measures study to evaluation options for managing contaminated groundwater. . . . remedial options will focus on reducing infiltration and tidal effects." What is the basis of the statement in the FS that groundwater will not be retained as a medium of concern for ecological receptors? What remedial options focus on reducing tidal effects as related to groundwater? Are there data documenting tidal effects on site groundwater?

Response: The RI and FS statements are consistent. The FS acknowledges the current impact on localized groundwater and as a pathway to ecological receptors in the surface water and sediment. The statements in the FS are the basis for not selecting active remediation of the site groundwater. Effective technologies are not available to address the groundwater contaminants. Groundwater will be indirectly remediated by addressing the source of the contamination in the wastes.

The remedial options focus on controlling/eliminating the interaction between contaminated groundwater and surface water. The options specifically address this interaction by consolidation and isolation of the wastes from direct contact with the surface water; the reduction in the migration of contaminated groundwater via control of precipitation infiltration, and control of surface water migration into the capped area.

Data documenting the tidal effects on site groundwater are provided in Appendix B of the RI.

4. **Comment:** Section 3.4.3. states that surface water is retained as a medium of concern based on the results of the human health risk assessment. According to the ERA, surface water

concentrations of pentachlorophenol, copper, lead, mercury, silver, and zinc had maximum hazard quotients (HQs) ranging from 1.12 for zinc to 21.7 for copper. Exposure to surface water contaminants was included in the food chain modeling, although we cannot say what surface water consumption contributed to the calculated HQs since our copy of the RI is missing section F-1 through F-4 of Appendix F, Ecological Risk Assessment Support. Still, the ERA concluded that "Surface water contaminants do not appear to pose potential risks to ecological receptors." In section 5.0 of the FS it is conceded that Alternatives 2a and 2b will not meet the chemical specific ARARs of State Water Quality Standards for the Protection of Saltwater Aquatic Life, yet it is also stated that "surface water will be addressed through the management of soil, fill and waste, groundwater, and sediment." What is the basis for the determination that surface water contaminants do not appear to pose potential risks to ecological receptors? How will the presumptive remedy address the issue of surface water contamination relative to a tidally influenced hydraulic head?

Response: The Navy will re-issue Appendix F-1 through F-4 pages to USFWS. The basis for the lack of significant risk to ecological receptors is detailed in the Site 1 RI report and is based on low concentrations, frequency of detection, and comparison to background values. However, the Navy acknowledges that based on the groundwater data, the waste materials at the site are likely leaching these contaminants to the surface water either via the groundwater or particulate migration.

The reference to compliance with state ARARs is based on time. Alternative 2a and 2b will achieve chemical specific ARARs, although not initially. Once the wastes have been isolated and no longer act as a source of contamination, chemical concentrations in the groundwater and surface water will decrease. The uncertainty is in the length of time required for the groundwater and surface water to attenuate. As indicated above, surface water contamination will be eliminated by controlling surface water migration and precipitation inflow.

5. **Comment:** Section 3.7 **REMEDIAL GOAL OPTIONS** (RGOs) provides a summary of the site-specific RGOs selected to aid in assessing impacted sediment at Site/SWMU 1. As stated, sediment RGOs were selected from Region 4 ecological screening values (total PAHs and metals, except arsenic which was determined to be "Not Relevant" based apparently on an RGO which included "background" concentrations) and background concentrations (pesticides). The PAH and metals RGOs are based on effects on aquatic organisms and do not take into account effects on higher level consumers such as piscivorous birds that are under the jurisdiction of the Service. The selected RGOs for pesticides are one to two orders of magnitude **above** EPA's sediment screening values which are as much as two orders of magnitude **above** aquatic

organism effects values. Like the PAH and metals RGOs, the pesticide RGOs do not take into account effect on higher level receptors.

Response: The RGOs were developed in accordance with standard procedures and in accordance with EPA and Navy guidance.

Arsenic was not selected as an RGO because of low concentrations detected, infrequent exceedences of screening values, and similarity to background concentrations. A more detailed discussion is provided in Section 7.8.4 of the RI report.

Even though the selected RGOs are based primarily on effects screening values, the selected values are also protective of higher level consumers. As presented in the Site 1 RI report, the potential risk to these consumers (based on food chain HQs equal to 1.0) is limited to a few pesticides and metals. These pesticides and metals are the same chemicals that are specifically being addressed by the alternatives considered. Cleanup to these levels will also be protective of higher level consumers.

For example, back-calculated minimum RGOs for protection of the Heron and Osprey are summarized in the following table. This table shows RGOs based on NOAEL HQs equal to 1.0 and RGOs based on LOAEL HQs equal to 1.0, respectively. Note that these values assume that the chemicals are present at this concentration uniformly throughout the home range of these receptors. As a result, higher concentrations can be present, provided that lower concentrations are also present within the species home range.

Potential Range of RGOs for Protection of the Heron and Osprey

Chemical	Heron (equiv. RGO)	Osprey (equiv. RGO)
DDD (µg/kg)	39.6/396	108/1,080
DDE (µg/kg)	1.4/14	3.9/39
DDT (µg/kg)	66/666	18/180
Arsenic (mg/kg)	13.7/41	11.7/35
Lead (mg/kg)	6.3/63	5.3/53
Mercury (mg/kg)	0.036/0.36	0.03/0.3
Zinc (mg/kg)	80/729	69/620

These calculations above demonstrate that under a worst case scenario, the selected RGO in the FS are within an approximate acceptable range for protection of upper level consumers. In addition to the chemical distribution considerations, these calculations are also conservative because they assume that the food source (e.g. red drum) lives its entire life in contact with these

sediments (fish bowl scenario) and that the bird lives exclusively on these fish. In reality, the fish will feed and grow over an extended range and therefore the actual bioconcentration of these chemicals in the fish will be much lower. In combination, these considerations result in the above equivalent RGO's being conservative by one or more orders of magnitude.

In practice, by eliminating the maximum areas of contamination as proposed, the remaining areas have much lower concentrations than the RGOs. For example, of the 8 sediment samples collected outside of the proposed excavation area, only one sample had detectable concentrations of pesticides and then at a maximum concentration of 8.2 ug/kg for DDE.

6a. **Comment:** Based on the Ecological Risk Assessment, DDT, DDD, DDE, arsenic, lead, mercury, and zinc in sediment all pose risk of injury to piscivorous birds (and the Toxicity Reference Values used in the food chain modeling for arsenic, copper and lead are one to two orders of magnitude above documented adverse effects/no adverse effects concentrations); arsenic, copper, lead, and mercury pose risk to mammalian receptors; and flourenthene, pyrene, arsenic, and mercury pose a risk to fish. As stipulated in Region 4's ecological risk assessment guidance, the role of a Superfund ERA includes " to . . . (2) derive contaminant levels which would not pose unacceptable risks, and (3) provide the information necessary to make a risk management decision concerning the practical need and extent of remedial action." Use of sediment ecological screening values protective only of aquatic organisms (ER-Ls, ER-Ms, PELs) as RGOs ignores the results of the ERA and potential injury to higher level organisms; these RGOs cannot be said to represent "low risk to ecological receptors" when the results of the ERA are not included.

Response: As discussed above, the RGOs are protective of all ecological receptors.

6b. **Comment:** Use of RGOs based on aquatic effects screening values and background concentrations resulting from anthropogenic sources may significantly underestimate both the need for remedial action and the areal extent of needed remedial action.

Response: Aquatic effects screening values are protective of aquatic organisms and the potential risk to ecological consumers were addressed through the ERA and are summarized above.

In addition, failure to consider background and anthropogenic sources in the development of RGO can result in goals that are not obtainable. As for background sources, these materials

represent natural native metals. In addition, in many cases, these metals represent micronutrients essential to the health of organisms.

As noted, anthropogenic sources and in particular pesticides do require special consideration. These chemicals were routinely and commercially applied in accordance with the applicable regulations at the base and possibly disposed at some sites such as Site 1. RGOs must be developed that can distinguish between these two scenarios. The RGOs must also provide a balance between destruction/disruption of wetlands versus potential local impacts. Note also that remaining organics present in the sediments will biodegrade over time, although slowly.

However as discussed in the FS, once the initial excavation is completed, confirmation samples will be collected and evaluated for risk to human health and the environment. This evaluation will confirm that sufficient sediments have been removed. In addition, the alternatives include long term monitoring to confirm the effectiveness of the alternatives. In the event that the selected alternative is not effective, contingency remedies are available.

6c. **Comment:** As it is, the areal extent of Area I as shown in Figures 3-2, 5-1, 5-3, and 5-4, barely includes a sampling location where these aquatic effects RGOs are exceeded (SD-020-01 is on the outside boundary of the delineated contamination/ remedial action area), while SD-019-01, which has concentrations of copper and lead that are essentially equal to the RGOs, is far outside the contamination/remedial action boundary delineation. Similarly, on the eastern side of the site, SD-011-01 and SD-004-01 have concentrations of total PAHs near the aquatic screening value, with individual PAHs significantly exceeding ecological effects values; DDD and DDE concentrations at SD-011-01 exceed pesticide effects values. Yet, these two locations are considerably outside the delineated boundary of contamination/remediation.

Response: As stated above, cleanup of the site sediments to the stated RGO will be protective of higher level consumers. Background and anthropogenic sources of chemicals must be considered in establishing RGO. Otherwise, cleanups become technically impractical. As previously noted, the RGOs represent maximum chemical concentrations remaining at the site. Actual concentrations will be much lower after remediation is complete and additionally, for the pesticides, mercury, and PAHs, chemical concentrations will decrease over time due to biological processes. The metals concentrations will also likely decrease, or mineralize and become less available to biological receptors.

Because the detected concentrations approximately equal the RGO, sediment sample SD-020-01 is on the boundary of the planned excavation. In addition, a small tidal stream flows through this area and represents a practical boundary for both historic contaminant migration and excavation.

Chemical concentrations in SD-019-01, -004-01 and -011-01 are at concentrations below the RGO, and therefore are outside of the targeted cleanup area. For the RGOs, Total PAHs were selected as RGOs instead of individual PAHs. Total PAHs are based on more technical research than the individual PAH screening values. Recent research (Swartz, 1999) indicates that Total PAH effects levels could be 2 to 3 times higher than that used in the FS. Also, PAHs are noted to biodegrade. Once the source of continuing contamination is removed, these chemical concentrations will continue to decrease over time.

7. **Comment:** What is the basis for not incorporating the results of the ERA into the selection of sediment RGOs consistent with EPA guidance which states that an ERA should "provide enough information to establish site clean up goals for protection of ecological resources"?

Response: The results of the ERA were indirectly incorporated in the sediment RGOs. Based on recent experience at MRCD Parris Island Site 3 and the similarity between Site 1 and Site 3 and the example provided above, the EPA Region IV Screening Levels are also protective of upper consumer receptors.

8. **Comment:** Why is there no RGO for arsenic?

Response: Arsenic was not selected as an RGO because of low concentrations detected, infrequent exceedences of screening values, and proximity to background concentrations.

9. **Comment:** What is the basis of using "background" pesticide concentrations, resulting from years of basewide pesticide application, as RGOs when those concentrations are significantly above concentrations known to cause adverse effects to trust species? How is the use of "background" concentrations as screening values and ultimately RGOs consistent with EPA guidance which states that "Screening values should be based on contaminant levels associated with ecological effects, instead of area or regional background levels"? While "basewide application" of pesticides may not be specifically related to activities that occurred at Site/SWMU 1, these existing "background" concentrations are a result of activities that occurred at Parris Island. Should not the Remedial Action Objective/RGO at Site/SWMU 1 (as well as other sites on the base) be to achieve pesticide concentrations that are protective of trust resources, rather than to dismiss harmful concentrations as something that are present due to "basewide application"?

Response: Pesticides have in the past and continue to be used to control insect populations in the area. The values have been discussed at several partnering team meetings. Screening values presented during the RI do not consider background or regional levels. However, development of RGO for cleanup purposes does consider these other factors.

10. **Comment:** Section 5.0 **EVALUATION OF REMEDIAL ACTION/CORRECTIVE MEASURES ALTERNATIVES** proposes that excavated wetlands associated with Alternatives 2A, 2B, and 3 "be restored by allowing these areas to fill in with natural sediment deposits . . . [and] to naturally re-vegetate." Neither the impacts of the alternative actions themselves on existing wetlands (i.e., types and acreages affected) or the implications of no active restoration are discussed in the evaluation of alternatives. EPA guidance as contained in EPA/540/R-94/019 *Considering Wetlands At CERCLA Sites* states that "Attention to wetlands continues through . . . the feasibility study where the impact of the response actions on the wetlands shall be considered." Allowing natural sedimentation and revegetation does not meet the substantive requirements of Section 404(b)(1) guidelines which require compensatory mitigation for unavoidable adverse impacts on wetlands nor is this consistent with the above-referenced EPA guidance which states that "Unavoidable impacts to wetlands must be mitigated to comply with pertinent regulations and executive orders."

Response: The FS does address the impact on wetlands. For example, Page 6-4. "Under Alternatives 2a, 2b, and 3, vegetation on the landfill area and the salt marsh would be removed. Additionally, the implementation of slope stablization would encroach on wetlands. Measures would be conducted to either minimize the reduction in wetlands or to create wetland areas elsewhere. "

The use of natural sedimentation and revegetation was presented in the draft FS, because it was recognized that engineered attempts to re-establish wetland are general slow and only partially effective, especially in a tidal area such as Site 1. As discussed in responses to other partnering team member comments, the design phase of the remediation will specially incorporate reasonable and viable wetland restoration activities and will be discussed at upcoming meetings.

11. **Comment:** Further, it is the responsibility of the Natural Resource Trustees, which include the Department of Defense (DOD) at Parris Island, (1) to assess injury to natural resources resulting from site activities, which in the case of Site/SWMU 1 includes filling of wetlands from the landfilling operation as well as wetlands excavation as an unavoidable component of the remedy and (2) to develop either primary or compensatory restoration actions that would return the

injured resources to their baseline condition (i.e., prior to site activities) or would provide to the public resources comparable to those injured. Implementing wetlands restoration as part of the Site/SWMU 1 remedy would minimize or could eliminate residual injuries for which damages could be sought under the Natural Resource Damage Assessment (NRDA) process as provided for by CERCLA. Section 5.0 and the alternatives evaluated therein need to be revised to incorporate an assessment of the impacts of each alternative on wetlands, to provide for compensatory mitigation for unavoidable adverse impacts consistent with Section 404(b)(1) guidelines and EPA guidance for considering wetlands at CERCLA sites, and to provide for restoration of injured resources consistent with DOD's Natural Resource Trustee responsibilities under CERCLA and the associated NRDA regulations.

Response: The alternatives developed (except No Action) provide for the restoration of 2 to 7 acres of wetland. The action alternatives do not require the permanent taking of wetlands. Any compensatory mitigation or restoration actions that are subject to existing regulations will be preformed in accordance with our responsibility as a NRT; however, lands filled prior to the implementation of the Clean Water Act are not subject to the requirements of the same.

12. **Comment:** Finally, Section 3.2 **ARARS/MEDIA CLEANUP STANDARDS** needs some revisions. The discussion of Section 404 of the Clean Water Act as an ARAR needs modifying to clarify that site wetlands are considered "navigable waters" under Section 404 and to discuss Section 404(b)(1) guidelines. While EPA AWQCs are "non-enforceable guidelines," South Carolina has adopted these as State Water Quality Standards which are chemical specific for a number of organic and inorganic constituents and which are enforceable for the protection of aquatic life. The Magnuson-Stevens Fishery Conservation and Management Act specifies that each Federal agency shall consult with the Secretary of Commerce (through the National Marine Fisheries Service) with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by such agency that may adversely affect any essential fish habitat identified under this Act and should be added to the ARARs for Site/SWMU1. Likewise, CERCLA NRDA regulations should be included at least as a TBC in light of DOD's standing as a Natural Resource Trustee at the site.

Response: Section 404 of the clean water act is discussed in Section 3.2.2 of the FS. A more detailed evaluation of ARARs, such as the Section 404 requirements will be developed in the Remedial Design.

South Carolina adoption of surface water quality standards is discussed on Page 3-10 of the FS. This ARAR is specially addressed in each of the Alternatives in Section 5.0.

The Magnuson-Stevens Fishery Conservation and Management Act is an administrative requirement to notify of the Secretary of Commerce of actions that may adversely impact fish habit. Since the site will be remediated to eliminate environmental impacts, adverse impacts are not anticipated. However, the Secretary of Commerce will be notified of the proposed remedy.