



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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October 26, 1999

Mark Evans, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Draft Feasibility Study for Soil and Ground Water at the Lower Subbase at the Naval Submarine Base-New London in Groton, Connecticut

Dear Mr. Evans:

EPA reviewed the document entitled "Feasibility Study for Soil and Groundwater at the Lower Subbase, Naval Submarine Base, New London, Groton, Connecticut," dated July 1999. The Feasibility Study (FS) summarizes results of past characterization of contamination in each of the seven Zones of the Lower Subbase, as well as human-health and ecological risk assessments. It further identifies and evaluates remedial technologies appropriate to the contaminants present and the site characteristics. EPA reviewed the document for consistency with previous site characterization efforts and the appropriateness of the remedial alternatives considered. Overall, I am disappointed with the FS's failure to evaluate ARAR-complaint alternatives, the lack of attention given to areas with higher contamination, the limited evaluation of treatment technologies, the inconsistencies in the risk analyses, and the unclear descriptions of how the analyses and evaluations were performed. Detailed comments are provided in Attachment A.

EPA identified numerous errors in the ARARs tables and is therefore providing revised ARARs tables to replace the tables in the FS (*see* Attachment B). The ARARs tables and discussion of compliance with ARARs must be consistent throughout the FS.

The FS appears to propose a hierarchy of remedial approaches, typically of increasingly aggressive scope, and to evaluate them *relative* to each other for each Zone. For this reason, the proposed remedial activities were reviewed for their general appropriateness and efficacy, rather than for details of the proposed remedial designs. For example, issues regarding the quantity or location of monitoring wells can be debated during remedial design. Small changes of this nature are assumed to have insignificant impact on the evaluation of the *relative* merits of various levels of remedial action.

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EPA's primary concern relates to the FS's failure to evaluate ARAR-compliant alternatives. Zones 2, 3, 4, and 7 contain RCRA characteristic wastes. None of the alternatives evaluated in the FS comply with RCRA requirements.

Although the Navy includes a removal component for contaminated soils in the most aggressive alternative evaluated for each Zone where removals are deemed effective, EPA is concerned that the FS does not fully evaluate treatment technologies, including treatment trains that could address multiple contaminants of concern. As a result, the remedies evaluated in the FS do not satisfy the NCP preference for treatment.

The balancing of alternatives in the FS appears to place greater emphasis on implementability than on overall protectiveness of human health and the environment and long-term effectiveness and permanence. For example, while EPA recognizes that exploration and remediation of the Lower Subbase will be hampered by extensive cover by buildings and pavement, it is highly inappropriate to eliminate alternatives because they are difficult to implement. EPA also considered the objectivity of the assessments of the criteria noted. In particular, the appropriateness of the *range* of remedial alternatives considered by Navy was evaluated for the particular contaminants identified at the site and for the particular site conditions. Consideration of remedial alternatives that fall short of reasonable objectives for cleanup obviously would not present the full range necessary to select a preferred alternative in light of the NCP criteria.

Because of historic use patterns, contamination is ubiquitous and varied in nature, but patchy and often at moderate levels. Extensive building and pavement cover throughout the Lower Subbase will complicate the implementability of any necessary remediation. The argument that extensive infrastructure (buildings, utilities, and pavement) and base activities result in access difficulties that limit remedial alternatives is not persuasive. In fact, you may recall from a few years ago that a local television station had little difficulty entering the lower subbase and filming it for the evening news. While these factors affect cost and implementability, they are not insurmountable engineering challenges.

The FS fails to adequately address contaminated soils in deeper strata and the potential risks posed by them. More aggressive removals of contaminated soils must be considered in Zones 1, 4 and 7, in view of the higher human-health and ecological risks calculated for those areas, the elevated TPH and lead values in deeper soils, and the potential for contaminant migration. Special excavation methods (*e.g.*, sheetpile bulkheads, lowering the water-table by pumping encircling hydraulic-control wells, *etc.*) may be required to remove soils below the water table because of the shallow water table. Both lead and TPH above industrial/commercial direct exposure criteria and/or pollutant mobility criteria have been identified in deeper soils:

Zone 1 (<i>see Fig. 2-1</i>)	Zone 4 (<i>see Fig. 2-6</i>)	Zone 7 (<i>see Fig. 2-10</i>)
TPH at 14,000 mg/kg (10-14 ft bgs) at 13MW2; TPH at 11,000 mg/kg (12-14 ft bgs) at 13MW3; TPH at 51,600 mg/kg (9-11 ft bgs) at 13MW18; TPH at 7000 mg/kg (10-12 ft bgs) at 13MW5; TPH at 26,800 mg/kg (11-12 ft bgs) at GS-32L; TPH at 14,900 mg/kg (7 ft bgs) at GS-29L; TPH at 6670 mg/kg (6 ft bgs) at GS-25L	TPH at 11,800 mg/kg (6-8 ft bgs) at 13TB2A; Pb at 2080 mg/kg (4-6 ft bgs) at 13TB2A; TPH at 9360 mg/kg (8 ft bgs) at GS-9L;	Pb at 13,300 mg/kg (5-6 ft bgs) at MW5-7RI / TB10-7RI; Pb at 9770 mg/kg (14-16 ft bgs) at 20TB4; Pb at 2580 mg/kg (5-6 ft bgs) at TB9-7RI; benzo(a)pyrene at several locations

The contamination at 5-6 ft bgs in Zone 7 appears to be at or just above the water table (*see Fig. 10-2 in the RI*).

As human-health risk is the principal driver for soil removals that might be considered, it is useful to summarize, from the tables provided (Tables 1-4 to 1-10), where the major concerns lie. As with most human health risk assessments, the Future Resident scenario clearly carries the highest risks. The Navy maintains, appropriately, that this scenario is extremely conservative, because it is very unlikely that the site will be developed for residential use in the foreseeable future. Nonetheless, the risk assessment concluded that the Future Resident would be exposed to cumulative cancer risk in excess of the CTDEP criterion of 10^{-5} under the reasonable maximum exposure scenario for all seven Zones, and under the Central Tendency Exposure scenario for Zone 1, as well. The Full-Time Employee is exposed to risk in exceedance of the CTDEP criterion for the RME scenario in Zones 1, 4, and 7. The Construction Worker is at risk above the CTDEP criterion for the RME scenario only in Zone 1.

Given the risks posed by the site residential development/exposure should be avoided. This can be achieved through land-use restrictions. The risk to the Full-Time Employee can be reduced by the hot-spot removals for shallow soils proposed in Navy's most aggressive alternatives, and other alternatives that may be included in subsequent revisions to the FS. Additional removals targeted at contaminants in deep soils would appear to provide little benefit to the Full-Time Employee. However, the FS does not evaluate remedial alternatives for the deep soil to address unacceptable risk in the construction worker scenario.

Generally, only validated data are used to calculate cancer risks and non-cancer hazards. Please indicate what level of quality assurance and quality control were performed in the unvalidated data analyses and/or on the results. Please also justify the use of the unvalidated data and discuss how the exposure points calculated in the Human Health Risk Assessment have been affected.

Data supporting the risk calculations for the full-time employee appears (re: Appendix B, Table B-3) to include both shallow and deep soil. For the current full-time employee, only exposure to

shallow soil seems reasonable. However, if there is construction of other structures on the property, then the future full-time employee may be exposed to the soils at greater depths. Were the 95% UCLs for the current and future (*i.e.*, exposure to shallow soil versus shallow & deep soil) full-time employee compared? If so, was the greater 95% UCL (*i.e.*, benzo(a)pyrene) based on the exposure to the combination of both the shallow and deep soils?

The human health risk based PRG derivation discussion in the text of the FS does not include derivation of a risk based PRG for lead. The FS should compare the state standard and the site-specific risk-based PRG for lead so that the lower value can be used as the PRG. The derivation of soil lead PRGs is necessary as they need to be applied to shallow soil and deep soil.

The most aggressive remedial alternative proposed and evaluated in the FS includes a component of "Selective Excavation/Offsite Disposal" (considered for Zones 1, 3, 4, 5, and 7). The proposed Selective Excavation targets any exceedance of the industrial/commercial direct exposure criteria and/or pollutant mobility criteria identified in *shallow* soils. Additional exceedances of these criteria are identified in *deep* soils in Zones 1, 2, 3, 4, 5, and 7. Although these exceedances have been identified, the FS does not evaluate any remedial action designed to mitigate the risks associated with them. EPA guidance stipulates that response actions be developed for each medium for which remedial action objectives have been established, and this must include deep soils. Permanent solutions are to be given preference in the selection of the remedy wherever practicable. Therefore, the Navy should develop a remedial alternative that addresses deeper contamination in areas where exceedances have been identified. Zones of particular concern in this regard are Zone 4 where lead was detected at 2080 mg/kg from 4 to 6 ft bgs at 13TB2A, and Zone 7 where lead was detected at high concentrations from 5 to 16 ft bgs, and benzo(a)pyrene was detected in elevated concentrations. Example of high detections within Zone 7 include; Pb at 13,300 mg/kg (5-6 ft bgs) at MW5-7RI / TB10-7RI, and Pb at 9770 mg/kg (14-16 ft bgs) at 20TB4). It is recognized that these exceedances in deep soil mostly lie below the water table at the site (typically 5-7 ft bgs; see, *e.g.*, Fig. 10-2 in the RI), and therefore removals would entail a greater scope than those considered for shallow soils. Nonetheless, removal of soils below the water table is entirely feasible from an engineering perspective.

An evaluation of removal of deep soils showing exceedances, particularly in Zones 4 and 7 should be performed in order to meet the EPA requirement that the FS address remedial alternatives for all media, and in anticipation of the preference given to active and permanent measures to reduce risk.

There is an inconsistency in the current proposal for Selective Excavation. The concentrations of benzo(a)pyrene and indeno(123cd)pyrene are above ICDEC and/or PMC in shallow soil (2-4 ft bgs) in Zone 1 at TB4-1RI, but this area is not included among the targets for soil removals in the Selective Excavation alternative.

As hot-spot removals are considered, one factor that should be included in the FS is the likelihood that the site characterization to date is exhaustive, and provides a reliable guide for the

removals. Certainly the hot spots identified (*e.g.*, Pb at 189,000 mg/kg in shallow soil at 20MW6 in Zone 7) are genuine hot spots, and there is some benefit in their removal. However, it is worth noting that much of the contamination of shallow soils appears to be widespread and “spotty.” That is, relatively high concentrations of contaminants of concern (COCs) are often found without any obvious correlation to neighboring exploration points (*e.g.*, Pb in shallow soil at WE4A in Zone 4). The mechanism by which these hot spots developed is often unknown (*e.g.*, grading with contaminated fill material?, discrete releases?, *etc.*). Therefore, it is worth emphasizing that a scattering of soil borings is likely to hit a scattering of contaminants, as has been observed. High concentrations may be quite local in extent, while undiscovered highs may lie almost anywhere between, including locations quite close to a measured low. One should not be misled by the contour plots of various contaminants provided in the RI (*e.g.*, Drawing 8 for TPH in shallow soil, Drawing 10 for Pb in shallow soil). The smooth distributions of contaminants implied by these maps are very likely an artifact of the interpolation scheme used to create the contour maps from sparse data. In other words, the distributions are most likely much more heterogeneous.

Minimization of the mobility of contaminants in shallow soils must be considered. Lead is mobile through physical transport of the particulates to which it is sorbed. Additionally, it appears that monitoring is appropriate to ensure that contaminants are not migrating to the Thames River.

The significance of groundwater contamination is inappropriately minimized by the fact that no groundwater use is anticipated. Contaminant transport, particularly to the adjacent Thames River, must be considered if the remedy is going to be protective. EPA recognizes, however, that the groundwater contamination identified to date is patchy, with no indication of well-defined plumes amenable to active treatment.

Ecological risks were found to be minimal across the entire Lower Subbase, principally because the site is and historically has been highly developed (*e.g.*, §2.3.2, p. 2-13). The lingering issue for potential impact of the site to the natural ecosystem is the risk to receptors exposed to sediment in the Thames River. The sediment is potentially impacted by contamination delivered to the river via storm water discharge and discharging groundwater. The FS clearly acknowledges potential impacts to the river system of this type (*e.g.*, for Zone 1, §1.2.2, p. 1-5, notes the three storm water outfalls, and §1.6.1, p. 1-36, discusses transport pathways to the river). However, the appropriate response to this issue within the concept of a “tiered monitoring program” (*e.g.*, §4.3.2.1, p. 4-6) is not developed. The outline of the tiered monitoring program should explicitly mention the likely scope of monitoring of storm drains, sediment, surface water and sediment in the near shore region of the river.

Tiered monitoring programs are proposed as alternatives for Zones 1, 4, and 7. It is stated in the “Overall Protection of Human Health and the Environment” sections that tiered monitoring programs would verify that zone-specific COCs do not adversely impact potential ecological

receptors at downgradient/offsite areas. However, it is not specifically stated that contaminant detections in groundwater will be screened against ecological criteria.

It should be noted that many of the remedial options may be impacted owing to the complex underground system of steam and condensate pipes, storm water conveyance systems, and fuel pipelines which cover the facility.

All of the zones abut the Thames River, although the river bank habitat for wildlife is poor. In fact, the entire Lower Subbase is predominantly buildings, piers, parking lots, *etc.* Consequently, the terrestrial exposures to site-related contaminants would be very limited.

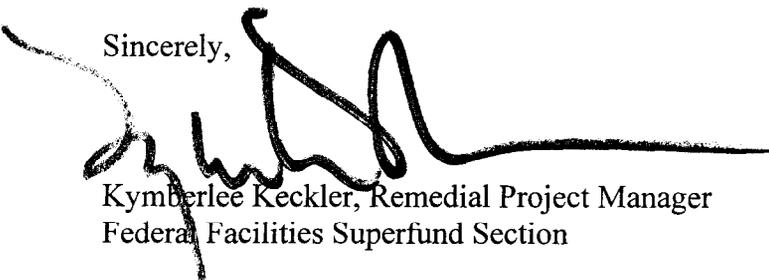
Numerous toxicity tests and bioaccumulation studies have been undertaken in the Thames River during the Phase II Remedial Investigation and these studies generally concluded a low to moderate risk from the site-related contaminants. Consequently, the human health risks are driving the cleanup more than the ecological risk. Although the ecological risk assessment noted some areas of potential risk to sediment dwelling organisms adjacent to Pier 17 in Zone 7, most of the Pier 17 sediments have been dredged, thereby potentially removing the potential risk in this area.

Each of the zones has its own storm water conveyance system or outfalls that drain excess precipitation from the subbase into the Thames river. Often these can be a conduit for contamination to enter the river either by overland runoff or, alternatively, if the locally high water table seeps into the conveyance system. The document, however, fails to discuss the outfalls or the NSB's storm water management and compliance program. Additionally, the FS does not explain how the remedial options will address this potential source of contamination to the river.

One of the alternatives evaluated for the groundwater is intrinsic bioremediation. Consideration should be given to using enzymes and humic acids that can expedite the breakdown of organic contaminants.

I look forward to working with you and the Connecticut Department of Environmental Protection toward the cleanup of the lower submarine base. Please contact me at (617) 918-1385 to arrange a meeting to discuss these comments.

Sincerely,



Kimberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachments

cc: Mark Lewis, CTDEP, Hartford, CT
Darlene Ward, NSBNL, Groton, CT
David Peterson, USEPA, Boston, MA
Cynthia Hanna, USEPA, Boston, MA
Patti Lynne Tyler, USEPA, Lexington, MA
Jennifer Stump, Gannett Fleming, Harrisburg, PA
Charles McLeod, EA Engineering, Newburgh, NY

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. ES-3	Need to add Selective Excavation/Offsite Disposal alternatives for Zone2, since the area exceeds TCLP for lead and must be addressed under federal and state hazardous waste management requirements.
p. 1-2, bullet 2	Change “ARAR” to “ARARs” throughout the text unless you are talking about a single statute or regulation which is an ARAR.
p. 1-21, §1.3.7	The text makes passing mention that “... organic compounds detected were reported to be representative of native background conditions...” Given the detail devoted to discussion of background inorganics (<i>e.g.</i> , Tables 1-1 to 1-3), this statement regarding organics should be expanded with more discussion and supporting tables. In particular, what “native background” levels were established for organic compounds such as chlorinated VOCs? “Background” values of organic compounds are usually taken to be zero because of their anthropogenic origin.
p. 1-27, §1.4.1	Discuss how soil from the area exceeds CT PMC for lead and arsenic.
p. 1-27, §1.4.2	Discuss how soil from the area exceeded both TCLP and CT PMC for lead.
p. 1-28, §1.4.3	Discuss how soil from the area exceeded both TCLP and CT PMC for lead.
p. 1-28, §1.4.4	Discuss how soil from the area exceeded both TCLP and CT PMC for lead.
p. 1-29, §1.4.5	Discuss how soil from the area exceeded the CT PMC for lead.
p. 1-30, §1.4.7	Discuss how soil from the area exceeded TCLP for lead.
p. 1-32, ¶1	Revise paragraph, unless natural attenuation will address lead and arsenic contamination present in the zone.
p. 1-32, ¶4	Remove this paragraph, since natural attenuation will not address lead levels which exceed TCLP, and therefore must be managed as hazardous waste.

- p. 1-33, §1.5.4 In this and subsequent sections, the discussion of mobility of inorganic constituents invokes the phrase, “The mobility of some of the inorganic constituents may be supported by the groundwater data and TCLP soil data.” This seems to imply that the *data* are ambiguous with regard to the mobility issue. However, the uncertainty is associated more with the *criteria* used to assess the data. It is more appropriate to state that the data support the conclusion that the inorganics may be mobile. The syntax adopted in §1.5.5, p. 1-34, for example, is more precise: “Analytical data ... indicated ... that inorganic constituents may be migrating to ground water ...”
- p. 1-33, ¶2 Remove this paragraph, since natural attenuation will not address lead levels which exceed TCLP, and therefore must be managed as hazardous waste.
- p. 1-33, ¶5 Remove this paragraph, since natural attenuation will not address lead levels which exceed TCLP, and therefore must be managed as hazardous waste.
- p. 1-34, ¶3 Revise paragraph, unless natural attenuation will address lead contamination present in the zone.
- p. 1-35, ¶3 Remove this paragraph, since natural attenuation will not address lead levels that exceed TCLP, and therefore must be managed as hazardous waste.
- p. 1-36, ¶4 In the first sentence change “as wells” to “as well” (make this change at the beginning of §§ 1.6.2 through 1.6.7).
- p. 1-36, ¶5 Revise the second sentence to address whether the pavement is a sufficient barrier to meet state direct exposure criteria. If not, then potential human exposure must be addressed.
- p. 1-37, ¶2 In the last sentence change “is expected to be reduced” to “is required to be controlled under hazardous waste management standards.”
- p. 1-37, ¶3 Remove this paragraph, since a pavement cover does not meet federal/state hazardous waste capping standards.
- p. 1-38, ¶3 Remove this paragraph, since a pavement cover does not meet federal/state hazardous waste capping standards.

- p. 1-39, ¶3 Remove this paragraph, since a pavement cover does not meet federal/state hazardous waste capping standards.
- p. 1-39, ¶6 Revise the second sentence to address whether the pavement is a sufficient barrier to meet state direct exposure criteria. If not, then potential human exposure must be addressed.
- p. 1-40, ¶3 Revise the second sentence to address whether the pavement is a sufficient barrier to meet state direct exposure criteria. If not, then potential human exposure must be addressed.
- p. 1-41, ¶3 Remove this paragraph, since a pavement cover does not meet federal/state hazardous waste capping standards.
- p. 1-46, ¶3 In the third sentence change “an ROD” to “a ROD.”
- p. 2-1, §2.2 Change the two sentences in the first paragraph from “is similar to the CERCLA process. Pursuant to SARA and the NCP, the development and evaluation of remedial alternatives under CERCLA includes...ARAR” to “complies with CERCLA standards, including...ARARs.”
- Either remove the third sentence in the first paragraph or change it from “neither SARA nor the NCP” to “SARA and the NCP” (the nine criteria in the NCP are the standard for determining whether a particular remedy provides a sufficient cleanup).
- In the second paragraph, first sentence remove “, techniques, materials, equipment, and methods.” In the second sentence change “public health, welfare,” to “human health.”
- In the third paragraph change the second and third sentences to: “The remedial alternative must attain applicable or relevant and appropriate requirements under federal environmental laws and state environmental or facility siting laws or provide grounds for invoking one of the waivers permitted under the statute.”
- p. 2-2, ¶1 Change the sentence to: “CERCLA Section 121, codified at 40 C.F.R. Part 300.400(e), states that removal or remedial actions conducted entirely onsite do not require Federal, State, or local permits. However, any substantive, non-administrative requirements of statutes and regulations which include permitting requirements must be complied with or waived.”

- p. 2-2, §2.2.1 In the first bullet and second bullets change “substantive environmental protection” to “substantive Federal environmental and State environmental and facility siting.”
- p. 2-2, §2.2.2 In the first sentence change the beginning of the sentence to: “ARARs for remedial action alternative can be classified into...”
- Under #1, second sentence remove the examples provide and replace with “the State of Connecticut Remediation Standard Regulations.”
- Under #2, second sentence change “federal/state/local wetlands protection guidelines” to “federal/state wetlands protection standards.”
- p. 2-3 Remove the third and fourth bullets since these are To Be Considered (TBC), not ARARs.
- p 2-3, §2.2.3 Change the section to: “Federal and state guidance documents or advisories do not have the status of ARARs and are not enforceable. However, they may be considered when developing remedies which will be protective of human health and the environment.”
- p. 2-3, §2.2.4 Change the first paragraph to: “To comply with CERCLA, a remedy must either meet all identified ARAR standards or qualify for a waiver. Pursuant to Section 300.430(f)(3), there are several criteria under which an ARAR may be waived, if the standard cannot be attained.” The last sentence of the original paragraph is not accurate since the cost-effectiveness of a remedy is not a grounds for a waiver.
- p. 2-4, § 2.2.5.1 This section includes a discussion of all of the Chemical-Specific ARARs that are listed in Table 2-1, Summary of Chemical-Specific ARARs and TBC Guidance. The Federal Clean Water Act is listed on Table 2-1, but is not discussed in the text in § 2.2.5.1. The text in this section should be updated to include a discussion on the Federal CWA.
- p 2-4, §2.2.5.1 Remove the Federal Safe Drinking Water Act since the Site is in a GB zone. In addition, human health risk calculations are To Be Considered (TBC) not an ARAR. You may chose to add “and To Be Considered” after “Requirements” in the title and in the last sentence of the first paragraph change “ARAR were considered” to “ARARs and TBCs were considered.” Also in the last sentence of the section change “ARAR are described” to “ARARs and TBCs are described.”

Remove the paragraphs on the Federal Safe Drinking Water Act since the Site is in a GB zone and the Act does not apply.

p. 2-6, ¶2 The first sentence is not accurate since, the RDEC is still applicable, but is being addressed through an ELUR. Also the Base cannot meet the conditions for creating a state ELUR under the Remediation Regulations until such time that a deed or lease is created. At this time all the Base can do is record and enforce the ELUR under the Base Master Plan or other base-wide land use control mechanism and commit to recording the ELUR if a deed or lease for the area is ever created.

The second sentence also is not accurate, since land under a Land Use Restriction may still be required to have soil in the first two feet to meet direct exposure criteria.

p. 2-7, ¶2 In the fourth sentence remove “(approved by the CTDEP Commissioner)” since at NPL sites EPA would give the approval (based on the Agency’s interpretation of the CT regulations).

p. 2-7, ¶3 Move the Human Health Risk Calculations to the TBC section.

p. 2-8, § 2.2.5.2 This section includes a discussion of all of the Location-Specific ARARs that are listed in Table 2-2, Summary of Location-Specific ARARs and TBC Guidance. The Federal Coastal Zone Management Act is not included in either the discussion in § 2.2.5.2 or Table 2-2. This ARAR should be included in both places in the chapter. Also, the Federal Endangered Species Act is listed on Table 2-2, but is not discussed in the text in § 2.2.5.2. The text in this section should be updated to include a discussion on the Federal Endangered Species Act.

p. 2-8, ¶1 Change the last sentence before the bullets to: “The following are some of the location-specific ARARs that were identified...” or reference all of the ARARs included in EPA’s revised alternative-specific tables (in Sec. 4). In particular, wetlands and flood plain ARARs were omitted.

p. 2-8, ¶2 In the first sentence change “the coastal boundary” to “the designated coastal zone.”

In the second sentence change “intent” to “substantive requirements” and add at the end add “(but the Navy will consult with applicable officials concerning coastal zone issues).”

p. 2-8, ¶3 There are no known federal endangered species at the base. One of the state species is a fish which lives in the Thames. There are five species of state listed plants which occur may occur on the base (see the FS for DRMO or Area A Downstream).

Change the last sentence to: “The Navy will consult with applicable state officials to address potential impacts to state endangered and threatened species from the proposed remedial measures.”

p. 2-8, ¶4 The National Historic Preservation Act is not an ARAR unless you have any sites or suspected sites in the area of the Remedial Action.

p. 2-9, § 2.2.5.3 This section includes a discussion of all of the Action-Specific ARARs that are listed in Table 2-3, Summary of Action-Specific ARARs and TBC Guidance. The Connecticut Hazardous Waste Management Regulations and the Connecticut Air Toxics Control Regulations are listed on Table 2-3, but are not discussed in the text in § 2.2.5.3. The text in this section should be updated to include a discussion on these regulations.

p. 2-9, bullet 1 Instead of citing RCRA, site the CT Hazardous Waste Remediation Standards, since CT is a delegated state and has incorporated most of RCRA into their regulations.

In the second bullet, move Section 404 of the CWA into the location-specific section, along with the Rivers and Harbors Act in the third bullet.

In the fifth bullet the name of the regulation is missing, there just is a partial citation. State that Sec. 22a-426 are the CT Water Quality Standards.

p. 2-9, ¶2 Instead of discussing RCRA, have the section under the CT Hazardous Waste Remediation Standards (since CT is a delegated state and has incorporated most of RCRA into their regulations). In the third sentence change “landfill permitting” to “capping of hazardous waste”. Change the last sentence to “These requirements are applicable to a CERCLA action when the COC are listed in the regulations or exhibit hazardous waste characteristics, as is the case in Zones 2, 3, 4, and 7 within the Lower Subase OU. In the zone where characteristic hazardous wastes are present the wastes and associated contaminated media must either be capped or treated under these applicable standards, or removed and disposed of in a permitted hazardous waste landfill.”

All of the citations in the bullets should be to the applicable section of the CT regulations rather than the RCRA cites.

In the first bullet change “Manifesting” to “Handling.”

p. 2-10, bullet 1 Will any of the remedies involve the use of containers? If not remove the bullet. Remove the fourth bullet since transporter requirements are not ARARs.

p. 2-10 Clean Water Act section - Section 404 is a location-specific ARAR. Furthermore, if the remedial action does not propose to discharge into a POTW, the standards should not be cited as an ARAR. Specific comments on the bullets are:

In the first bullet, AWQC’s are only action-specific ARARs if you are using them to develop monitoring standards in the River or its sediments. If you are using AWQC’s to develop sediment or surface water cleanup levels then they would be chemical-specific ARARs.

In the third bullet the correct citation for the pretreatment standards is 40 CFR 403. Do not cite this standard as an ARAR unless it is proposed to discharge into a POTW.

In the fourth bullet move Section 404 into location-specific ARARs section.

p. 2-11, bullet 1 Once this is moved to location-specific ARARs, change the last sentence from “may involve Section 404 permitting through the U.S. Army Corps of Engineers” to “, and monitoring activity in the intertidal or subtidal zone will need to meet the substantive standards of Section 404. This includes a finding that the proposed remedial action is the best practicable alternative to avoiding, minimizing or mitigating impacts to protected aquatic habitats.”

p. 2-11, ¶2 In the last sentence change “may be regulated by permit through the U.S. Army Corps of Engineers under this act” to “, or monitoring activities within the Thames River will meet the substantive requirements under this Act.”

p. 2-11, ¶3 Change the title to “Connecticut Water Pollution Control Regulations.”

In the third sentence change “requires a CTPDES permit” to “needs to meet the substantive requirements of the regulations.” In the fourth sentence change “permit” to “regulations.”

- p. 2-11, ¶4 Remove the last sentence since the OU is not in a GA groundwater zone.
- p. 2-11, ¶5 The AWQC are promulgated standards and therefore would be an ARAR, not a TBC. If they are being used to set monitoring standards for the Thames and its sediments they are action-specific.
- p. 2-12, ¶1 Change the last sentence to: The Ambient Water Quality Criteria will be used to help assess the success of the remedial action through monitoring of surface water and sediment quality in the Thames River.”
- p. 2-12, ¶2 Move this section to the Action-Specific ARARs, promulgated statutes are not TBCs. Remove the first four sentences. In the fifth sentence remove “as part of a State Implementation Plans or as guidance To Be Considered” and “(whether as a new point source or as a modification of the existing point source)”.
- p. 2-12, ¶3 Move this section to the Action-Specific ARARs, promulgated statutes are not TBCs.
- p. 2-13, ¶1 If sediments in the storm water system are not addressed in this FS, will a possible determination that the sediments are contaminated require the reopening of this ROD to address the problem. If contaminated material is to be excavated and removed as part of this action, wouldn’t it also make sense to remove any contaminated sediments at the same time?
- p. 2-13, §2.3.1, ¶3, first line If the value “0.16 ug/Kg” is in total toxic equivalent (TEQ) of dioxin (*i.e.*, 2,3,7,8-tetrachlorodibenzo-*p*-dioxin or TCDD), please note this in the text.
- p. 2-13, §2.3.1, ¶3 The current EPA policy for dioxin residential-based clean-up is that the TEQ should be lower than 1 part per billion (ppb). The corresponding clean-up range for commercial/industrial exposures is between 5 ppb and 20 ppb. Therefore, the justification for not considering dioxin in PRG development should be that the detected quantity is less than EPA’s 1 ppb starting point for residential-based clean-up (*re*: EPA directive “Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites,” April 13, 1998, 9200.4-26). Please omit the discussion regarding the dioxin concentration compared to other Superfund sites and add text addressing this comment.

- p. 2-13, § 2.3.1, ¶3,
last line Are the data for the dioxin analyses accurate? Please note the reason why the data were not validated and if any assessment of their quality was completed. Using data of unknown quality to conclude whether dioxin should be evaluated further is not appropriate.
- p. 2-14, §2.3.2 The text states, “No ecological risk COC were retained in this FS.” While it is understood that the relatively low ecological risks identified in the RI imply that the selection of remedial alternatives will not be driven by ecological risk considerations, it must be acknowledged that there remain concerns about potential impacts of groundwater or storm water discharge to the river. These concerns may, at the least, influence the design of the monitoring program selected.
- p. 2-14, §2.3.2 A new section should be inserted to discuss the CT Hazardous Waste Management Standards. These regulations will be the controlling standards for setting cleanup goals in Zones 2, 3, 4, & 7 where characteristic hazardous waste (lead exceeding TCLP is present). Standards for either capping, treating, or removing the lead and all contaminated media will have to be met.
- Renumber the section on the CT Remediation Standards as 2.3.4.
- p. 2-15, ¶2 Reorder the bullets so that ARARs compliance is first (since compliance with CT Hazardous Waste Management requirements will be the primary driver in determining the remedy in 4 of the 7 zones).
- Before discussing Human Health and Ecological Risk-Based PRGs discuss compliance with CT Hazardous Waste Management Standards, then the CT PRGs.
- p. 2-15, § 2.4.1, ¶5 As discussed in the first general comment, use of unvalidated data in HHRA calculations is a nuance. Please describe how the “recalculated” risk values differ from those presented in the HHRA. In particular, described any differences between the HHRA and Feasibility Study lists of COCs.
- p. 2-16, § 2.4 This section presents the human health based PRGs. Although section 1 of the FS summarizes lead risks to human health, no soil PRG is presented for lead on page 2-16. The derivation of soil lead PRGs is necessary because it needs to be applied to both shallow soil and deep soil.
- p. 2-17, ¶1 In the first sentence remove “federal and.”

- p. 2-17, ¶2 It should be noted that the CT Remediation goals are only applicable in those zones (1, 5 and 6) where characteristic waste is not present and does not require cleanup under the CT Hazardous Waste Management regulations or they are applicable where contamination exceeding the PRGs is still present after the regulated hazardous waste has been capped, treated, or removed.
- In the text of the paragraph, the first sentence is not accurate since the RDEC is still applicable, but is being addressed through an ELUR. Also the Base cannot meet the conditions for creating a state ELUR under the Remediation Regulations until such time that a deed or lease is created. At this time all the Base can do is record and enforce the ELUR under the Base Master Plan or other base-wide land use control mechanism and commit to recording the ELUR if a deed or lease for the area is ever created.
- p. 2-18, ¶1 In the first sentence change “CTDEP” to “EPA.”
- p. 2-18, §2.4.1 The text discusses requirements for the discharge of treated water to surface water and reinjection to groundwater, but omits discussion of discharge to sewers and/or wastewater systems. This must be included.
- p. 2-18, ¶5 In the third sentence change “the substantive requirements of a CTPDES permit (based upon Connecticut Water Pollution Control Regulations)” to “federal and state discharge standards.”
- p. 2-18, ¶6 Insert a new first sentence and revise the old first sentence to read: “In the four zones (2, 3, 4, and 7) where characteristic hazardous waste is present the CT Hazardous Waste Management Regulations set the PRGs, independent of present or future land use scenarios and their associated receptors. In the three remaining zones where characteristic hazardous waste has not been identified (1, 5, and 6), PRGs differ between....”
- p. 2-19, ¶2 Remove this entire paragraph, since ARARs cannot be waived unless the circumstance meets one of the limited waiver criteria under the NCP (or change the paragraph the discuss the NCP waiver criteria).
- p. 2-19, ¶3 Remove this paragraph or revise. In order to invoke a waiver under the NCP, the Navy first has to identify if any ARAR would only require (without any other alternatives available) excavation of the entire site (i.e. the CT Hazardous Waste Management Regulations may cite excavation as an alternative, but the risk from the site could be addressed through hot-spot excavation, capping, treatment or some other regulatory alternative).

- p. 2-19, §2.4.3 This section needs some revision since compliance with CT Hazardous Waste Management Regulations in Zones 2,3,4 and 7 is not tied to land use scenario and media.
- p. 2-29, §2.5 This section needs some revision since compliance with CT Hazardous Waste Management Regulations in Zones 2,3,4 and 7 is not tied to land use scenario. Only zones that don't have to be remediated under the Hazardous Waste Regulations, or those zones where hazardous waste will still have residual contamination exceeding CT Remediation Regulation standards after a being remediated for the hazardous waste contamination will need to address cleanup standards for industrial vs residential reuse.
- p. 2-29, § 2.5 This section discusses the areas of attainment, and on page 2-29 the zones and particular COCs for each zone are listed as bulleted items. There are several discrepancies between the information presented in these bullets and the information presented in Table 2-8 for GW COCs. Specifically: (1) on Table 2-8, Zone 4 COCs listed are lead, copper, 1,1-DCE, vinyl chloride, and TPH, but the bullet for Zone 4 on page 2-29 lists only lead, PAH, vinyl chloride, and 1,1-DCE; (2) on Table 2-8, Zone 5 has NI (none identified), but the bullet for Zone 5 on page 2-29 as well as Table 2-9 lists TPH as a COC; and (3) on Table 2-8, Zone 7 lists phenanthrene as the only COC, but the bullet on page 2-29 and Table 2-9 list lead, PAH, and phenanthrene. The text in section 2.5 and the information in Table 2-8 should be corrected to correspond as appropriate.
- p. 2-29, bullets 2, 3, 4, & 7 Add that lead levels in these zones exceeded TCLP, and therefore the zones contain characteristic hazardous waste.
- §2 Figures A number of figures in this section (*e.g.*, Figs. 2-6, 2-10) adopt the symbol "AS" for arsenic. Please revise to the standard chemical symbol, "As", for ease of interpretation and consistency.
- §2, Table 2-9 The PRG for lead in shallow soil is given as 1,000 µg/kg for Zones 3 and 4, but as 1,000,000 µg/kg for Zone 7. Please check all magnitudes shown in this table for consistent conversions from mg/kg to µg/kg.
- Table 2-6 Need to add a column for the CT Hazardous Waste Management Regulations which set the TCLP threshold for lead at 5.0 mg/l.
- Table 2-8 Need to include exceedances of CT Hazardous Waste Management Regulation standards for TCLP (in zones 2, 3, 4, and 7). These PRGs are independent of present or future land use.

Table 2-9	Need to include exceedances of CT Hazardous Waste Management Regulation standards for TCLP (in zones 2, 3, 4, and 7) for lead.
p. 3-3, ¶1	Revise the last two sentences. Monitoring will need to be retained in all zones where COC's exceeding PRGs are present in any contaminated media. It will also be necessary to monitor the Thames River and its sediments off-shore of the zones to monitor the effectiveness of the remedies (if waste is being left in place).
p. 3-3, ¶2	In the last two sentences change "Deed restrictions" to "Land use restrictions recorded on the Base Master Plan."
	Add a last sentence: "If property interests in the Site are ever transferred land use restrictions will be recorded in the transfer instrument (including deeds and leases) according to applicable federal, state or local standards."
p 3-3, bullet 1	Add at the end of the last sentence "and land use restrictions are recorded on the Base Master Plan."
p 3-3, bullet 2	In second sentence remove the statement that notices are not required. Signs should be installed if waste is left in place which poses a risk to base personnel using the site (<i>i.e.</i> notices not to dig through the pavement). In addition any land use restrictions should be recorded on the Base Master Plan.
p. 3-3, ¶3	In the second sentence insert "recorded on the Base Master Plan" after "ELUR."
p. 3-4, §3.1.2.1	In this section should discuss how the asphalt cover and buildings would serve as a "cap" to limit direct exposure to contaminated soils. However, the existing cover is not sufficient to satisfy hazardous waste management standards in Zones 2, 3, 4, and 7.
p. 3-5, ¶2	Replace the last sentence with: "Although the use of an engineered capping system to comply with hazardous waste managements standards will not be retained. The maintenance of the asphalt "cap" to prevent direct exposure to contaminated soils will be retained."
p. 3-8, bullet 1	Change the last sentence (and everywhere else this appears in the text) from "CTDEP" to "federal and state regulators."

- p. 3-10, ¶1 In the last sentence remove “(Zones 1, 3, 4, 5, and 7).” Excavation should be considered in all zones, particularly those containing characteristic hazardous waste.
- p. 3-13, bullet 2 Change the last sentence (and everywhere else this appears in the text) from “CTDEP” to “federal and state regulators.”
- p. 3-13, §3.1.4.2 The discussion of “effectiveness” for aerobic bioremediation notes that the technique is not effective for inorganics, including lead. Here, and in similar discussions of various remedial technologies, the implication is that the technology is limited in its effectiveness because it only addresses one class of site contaminants (*e.g.*, organics), while it is ineffective against another (*e.g.*, lead). This should not be presented as a generic argument against the effectiveness of the technology for application at the Lower Subbase site. It is unrealistic to seek a single approach to remediate sites contaminated with organics and inorganics that are widespread.
- p. 3-24, §3.1.4.13 The bullet on “Effectiveness” states, “... larger saturated zones (*i.e.*, approximately 50 feet to ground water)... are required...” Please check for internal consistency. It would seem that either a large *unsaturated* zone (depth to groundwater) or a large saturated zone (saturated thickness) is required.
- p. 3-33, ¶2 Replace the last two sentences with: “Soils mixed with hazardous waste present below the water table may require excavation and dewatering. Therefore, this technology will be retained in the Zones where characteristic hazardous waste is present.”
- p. 3-36, ¶3 Elsewhere in this chapter it has stated that groundwater extraction would only occur in Zone 4. In this paragraph groundwater extraction in Zone 1 is also discussed.
- p. 3-42, § 3.1.6.9 The text states the higher maintenance cost of air stripping is a reason for no further consideration of this technology. However, cost is not addressed in a separate paragraph in this section. A discussion of the higher cost of air stripping in comparison with less costly but equally effective technologies must be included.
- p. 3-48, ¶2 Insert a new second sentence: “Excavated material will have to be tested, according to applicable standards, to determine whether it qualifies to be disposed of in a permitted hazardous waste or solid waste facility.”

- p. 3-48, §3.1.9 This section also needs to discuss groundwater discharge/treatment from any dewatering activity either from pumping groundwater out of excavations or dewatering saturated soils.
- In the second bullet change “CTDEP” to “applicable federal and state officials.”
- p. 3-49, bullet 2 Change “CTDEP” to “applicable federal and state officials.”
- Table 3-1, p. 1 Under Institutional Control - Monitoring - Needs to be retained in all zones where contamination exceeding CT Hazardous Waste Management or CT Remediation Regulation standards is left in place.
- Under Institutional Control - Access/Use Restriction - Should retain posting signs in areas subject of land use restriction (as was done at DRMO). Should change the second sentence of the Description to: “Record and enforce Environmental Land Use Restrictions (ELUR) under the Base Master Plan or other base-wide land use control mechanism and commit to recording the ELUR if a deed or lease for the area is ever created.”
- Under Containment - Capping/Single Layer Cap - Should be retained for those zones where the Navy is relying on the existing asphalt cap to prevent direct exposure to soils, exceeding CT Remediation Regulation standards.
- Table 3-1, p. 2 Under Source Removal - Mechanical excavation - Need to retain this option in Zone 2, where characteristic hazardous waste is present. Should also consider retaining in Zone 6 if CT Remediation Reg. standards are exceeded.
- Table 3-1, p.3 Under *In Situ* Treatment - Natural Attenuation - Can only be retained for Zone 4 if the alternative addresses CT Hazardous Waste Management standards.
- Table 3-1, p.6 Under *Ex Situ* Treatment - Dewatering - Should be retained for all Zones where excavation is being considered and where it will be necessary to excavate down to saturated soil (particularly to address hazardous waste or mixed contaminated media).
- Table 3-1, p. 7 Under *Ex Situ* Treatment - Physical/Chemical-Carbon Adsorption - Should be retained for all zones where excavation down to saturated soil and

discharge of treated groundwater is being considered (particularly to address hazardous waste or mixed contaminated media).

- Table 3-1, p. 8 Under Disposal - Offsite - Need to retain this option in Zone 2, where characteristic hazardous waste is present. Should also consider retaining in Zone 6 if CT Remediation Reg. standards are exceeded and excavation is required.
- Table 3-1, p. 8 Under Disposal - Ground-Water Discharge/Surface Water - Should be retained for all zones where excavation down to saturated soil and discharge of treated groundwater is being considered (particularly to address hazardous waste or mixed contaminated media).
- p. 4-1, §4.1 Need to address CT PMC exceedances for lead and arsenic.
- p. 4-4, ¶1 Need to discuss CT PMC exceedances for lead and arsenic.
- p. 4-5, §4.3.2.1 How would the alternative address CT PMC exceedances for lead and arsenic?
- p. 4-7, ¶2 In the second sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition any ELUR would be recorded on the Base Master Plan which” should be inserted after “The ELUR” and “that would alter the existing asphalt cap” should be inserted after “construction activities.”
- In the fourth and fifth sentences insert “or lease” after “deed.”
- p. 4-7, §4.3.2.2 How would the alternative address CT PMC exceedances for lead and arsenic?
- p. 4-8, ¶1 Change the third and fourth sentences to: “No treatment is specified, but ELUR would address risks associated with direct exposure. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.”
- p. 4-8, ¶2 In the first sentence add at the end: “, but would not be effective in addressing exceedances in PMC for lead and arsenic.”
- p. 4-8, ¶5 Replace this paragraph with: “No treatment to reduce toxicity, mobility, and volume is proposed under this Alternative.”

- p. 4-11, ¶4 In the second sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition the ELUR would be recorded on the Base Master Plan which would include” after “ELUR would include” and “that would alter the existing asphalt cap” should be inserted after “construction activities.”
- In the fourth and fifth sentences insert “or lease” after “deed.”
- p. 4-11, §4.3.3.2 How would the alternative address CT PMC exceedances for lead and arsenic?
- At the end of the second sentence add: “through the Base Master Plan and by posting warning signs around the contaminated area.
- At the end of the third sentence add: “by maintaining the existing asphalt cover over the site.”
- p. 4-12, ¶4 Will this alternative meet the CT Remediation Regulation PMC for lead and arsenic? If not the alternative does not satisfy ARARs.
- p. 4-13, ¶2 In the last sentence change “CTDEP” with “federal and state regulators.” Make sure this change is made globally throughout the document.
- p. 4-13, ¶3 The first sentence should be changed to: ELUR would be implementable since recording the restriction in the Base Master Plan can be readily accomplished and posting the area to warn base personnel about the restrictions would require few resources.”
- p. 4-14, ¶2 In the first sentence insert “lead, arsenic,” before “TPH.”
- In the bullet, need to describe where lead and arsenic exceeds PMC and would be removed.
- p. 4-14, ¶3 In the fourth sentence explain what the plastic liner is meant to accomplish (would not appear to meet any regulatory standard to addressing PMC issues).
- p. 4-16, ¶5 In the third sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition the ELUR would be recorded on the Base Master Plan which would include” after “ELUR would include”

and “that would alter the existing asphalt cap” should be inserted after “construction activities.”

In the fifth and sixth sentences insert “or lease” after “deed.”

- p. 4-17, ¶3 In the first sentence insert “, including recording the restrictions in the Base Master Plan and posting the site to warn Base personnel,” after “ELR.”
- p. 4-18, ¶1 Need also discuss addressing lead and arsenic above PMCs.
- p. 4-19, ¶2 In the last sentence change “CTDEP” with “federal and state regulators.” Make sure this change is made globally throughout the document.
- p. 4-19, ¶3 The first sentence should be changed to: ELUR would be implementable since recording the restriction in the Base Master Plan can be readily accomplished and posting the area to warn base personnel about the restrictions would require few resources.”
- p. 4-20, ¶1 Add as a new last sentence: “Chemical, location and action-specific ARARs tables for each alternative are presented in Tables 4-3 through 4-17.
- p. 4-20, ¶2 In the second sentence change “similar to” to “less than” and change “but would take longer to reduce the COC concentrations” to “since it will potentially address organic COC concentrations over time, but will not reduce inorganic COCs in the soil.”
- Change the third sentence to: “Alternative 2 would provide limited protection to human health and the environment through institutional controls and monitoring.”
- p. 4-20, ¶4 In the first sentence insert “lead, arsenic,” before “PAH.”
- In the third sentence replace the text in () with “(which would include warning posting signs, documenting and enforcing the ELUR under the Base Master Plan, and committing to recording the ELUR if a deed or lease for the area is ever created).”
- p. 4-20, ¶5 In the first sentence insert “partially” before “protective”. Insert a new second sentence: “However, the treatment technology will not address inorganic COCs at the site.”

- p. 4-20, ¶7 Change the first and second sentences to “Only Alternative 4 would comply with all ARARs, particularly the requirements under the CT Standard Remediation Regulations for meeting pollutant mobility standards for lead and arsenic. Alternative 1 does not address state remediation standards to site COC. Alternative 2 and 3 would address directed exposure requirements for industrial use, but not pollutant mobility. Under all four alternatives 2, 3, and 4 residential criteria would not be met, but would be addressed through ELUR.”
- p. 4-21, ¶2 Insert a new fourth sentence: “However, only Alternative 4 would address inorganic COCs through excavation and removal.
- p. 4-21, ¶3 Replace the last sentence with: “Natural attenuation under Alternative would be ineffective in addressing inorganic COCs.
- p. 4-21, ¶5 Remove the first sentence since off-site disposal is not regarded as a reduction in toxicity, mobility and volume through treatment. In the second sentence change “Alternative 3” to “Alternatives 3 and 4.” Remove the third and fourth sentences for the same reason as noted above for the first sentence.
- In the seventh sentence insert “direct exposure” before “risks associated.”
- p. 4-22, ¶1 In the forth sentence change “carefully” to “only” and after “monitored” add “, with no action taken to address elevated concentrations of inorganic COCs in soil above PRGs.” Remove the last sentence since Alternative 2 does not address inorganic PRGs.
- p. 4-22, ¶2 In the last sentence change “COC” to “only the organic COCs.”
- p. 4-22, §4.4.5 In this section also address lead and arsenic, in addition to PAHs and mercury.
- In the third sentence change the text after “however, Alternative 3” to: “does not address inorganic COCs which exceed PRGs.
- Change the last two sentences to: Neither Alternatives 1 or 2 achieve the PRGs for inorganic contaminants, however overtime natural attenuation could reduce the organic contaminant levels to below PRG.”
- Table 4-2, p. 1 Under Alternative 2, Overall Protectiveness-Human Health - insert a new first sentence: “Would not meet PRGs for inorganic COCs.” In the current second sentence insert “organic” before “COC.”

Table 4-2, p.1	Under Alternative 3, Overall Protectiveness-Human Health - insert a new first sentence: "Would not meet PRGs for inorganic COCs."
Table 4-2, p. 1	Under Alternative 2, Overall Protectiveness-Environment, Potential offsite receptors - Insert a new second sentence: "Does not address pollutant mobility of inorganic COCs, except through monitoring." Remove the last sentence since natural attenuation will not address inorganic COCs.
Table 4-2, p. 1	Under Alternative 3, Overall Protectiveness-Environment, Potential offsite receptors - Insert a new second sentence: "Does not address pollutant mobility of inorganic COCs, except through monitoring." In the last sentence insert "Organic" before "COC concentrations."
Table 4-2, p. 1	Under Alternatives 2 and 3, Compliance with ARARs, Chemical-specific - Change the text to "Would not comply because the alternative does not address exceedances of pollutant mobility criteria for inorganic COCs."
Table 4-2, p. 1	Under Alternative 4, Compliance with ARARs, Chemical-specific - In the first sentence insert "lead, arsenic," before "TPH."
Table 4-2, p. 2	Under Alternative 2, Long-Term Effectiveness and Permanence, Magnitude of residual risk - Insert a new first sentence: "Risks from inorganic COCs above PRGs not addressed except through monitoring." In the second sentence insert "organic" before "COC."
Table 4-2, p. 2	Under Alternative 3, Long-Term Effectiveness and Permanence, Magnitude of residual risk - Insert a new first sentence: "Risks from inorganic COCs above PRGs not addressed except through monitoring." In the second sentence insert "organic" before "COC."
Table 4-2, p. 2	Under Alternative 1, Reduction in Toxicity..., Treatment process used - In the second sentence insert "organic" before "COC."
Table 4-2, p. 2	Under Alternative 2, Reduction in Toxicity..., Treatment process used - Insert a new first sentence: "Not treatment included." In the current first sentence insert "organic" before "COC." Remove the third sentence.
Table 4-2, p. 2	Under Alternative 4, Reduction in Toxicity..., Treatment process used - Remove the first sentence (excavation/removal not treatment).
Table 4-2, p. 2	Under Alternative 1, Reduction in Toxicity..., Hazardous material destroyed - In the second sentence insert "organic" before "COC."

Table 4-2, p. 2	Under Alternative 2, Reduction in Toxicity..., Hazardous material destroyed - Insert a new first sentence: “Not treatment included.” In the second sentence remove “and inorganic.”
Table 4-2, p. 2	Under Alternative 3, Reduction in Toxicity..., Hazardous material destroyed - Replace the second sentence with: “No treatment of inorganic COCs included.”
Table 4-2, p. 2	Under Alternative 4, Reduction in Toxicity..., Hazardous material destroyed - Replace the first sentence with: “No treatment of inorganic COCs included.”
Table 4-2, p. 2	Under Alternative 1, Reduction in Toxicity..., Type and quantity of residuals - In the second sentence insert “Organic” before “COC.” Add a third sentence: “Inorganic COCs would remain onsite untreated.”
Table 4-2, p. 2	Under Alternative 2, Reduction in Toxicity..., Type and quantity of residuals - Insert a new first sentence: “Not treatment included.” In the second sentence change “Complete intrinsic” to “Intrinsic.”
Table 4-2, p. 2	Under Alternative 3, Reduction in Toxicity..., Type and quantity of residuals - Replace the second sentence with: “No treatment of inorganic COCs included.”
Table 4-2, p. 2	Under Alternative 4, Reduction in Toxicity..., Type and quantity of residuals - Replace the first sentence with: “No treatment of inorganic COCs included.” Remove the last sentence.
Table 4-2, p. 2	Under Alternative 2, Reduction in Toxicity..., Degree to which treatment is irreversible - Replace the first sentence with: “Not treatment included.”
Table 4-2, p. 2	Under Alternative 3, Reduction in Toxicity..., Degree to which treatment is irreversible - Add a second sentence: “No treatment of inorganic COCs included.”
Table 4-2, p. 2	Under Alternative 4, Reduction in Toxicity..., Degree to which treatment is irreversible - In the first sentence change “Selective excavation and aerobic” to “Aerobic.” Add a second sentence: “No treatment of inorganic COCs included.”
Table 4-2, p. 2	Under Alternative 2, Reduction in Toxicity..., Statutory preference for treatment - Replace the sentence with: “Does not satisfy.”

- Table 4-2, p. 2 Under Alternatives 3 and 4, Reduction in Toxicity..., Statutory preference for treatment - Change to “Partially satisfies for organic COCs.”
- p. 5-1 Chapter 5 does not discuss the presence of lead exceeding TCLP which make the lead RCRA characteristic waste. Since RCRA characteristic waste and media contaminated with RCRA characteristic waste is present, the CT Hazardous Waste Management standards are the controlling ARAR for the site. Neither of the alternatives analyzed addresses this issue, therefore every section of this chapter needs to address the presence of hazardous waste in the Zone.
- p. 5-1, ¶1 Remove the third sentence since when hazardous waste is present, present or future land use is irrelevant (cleanup not driven by the CT Remediation Standards which do allow different cleanups for different land uses).
- p. 5-1, ¶2 Replace the last sentence with: “Lead levels, which exceed TCLP, are present in Zone 2 which qualifies the contamination as hazardous waste. TPH above PRG were also identified in deep soil in Zone 2.”
- p. 5-1, ¶3 Discuss where lead and lead-contaminated soil exceeding TCLP were located within the Zone. In the third sentence insert “for TPH” after “concentrations.”
- p. 5-1, ¶4 Add a third bullet that will address an alternative that is compliant with the CT Hazardous Waste Management standards - possibly selective excavation/offsite disposal.
- p. 5-3, ¶6 Change the Compliance with ARARs paragraph to: “The No Action alternative would not comply with chemical-specific ARARs because no action would be taken to address hazardous waste (lead) nor TPH concentrations exceeding CT Remediation Standard regulations. Because no remedial actions are specified, location- and action-specific ARARs are not applicable to the No Action Alternative.”
- p. 5-4, ¶3 Remove the third sentence.
- p. 5-5, ¶2 Replace the first sentence with: “ELUR would not address the presence of characteristic hazardous waste in Zone 2.” Remove the third and fourth sentences since ELUR are irrelevant to addressing characteristic hazardous waste in the Zone.

- p. 5-5, ¶4 Change the first sentence to: “Alternative 2 would not be protective of human health and the environment since the presence of characteristic hazardous waste and contaminated media is not addressed.”
- p. 5-5, ¶5 Change this paragraph to: “ELUR may be partially protective of TPH PRG under a current land use scenario. However, the presence of characteristic hazardous waste requires additional action beyond ELUR.”
- p. 5-6, ¶1 Replace the paragraph with: “Alternative 2 would not comply with action-specific ARARs under the CT Hazardous Waste Management standards, since it does not address characteristic hazardous waste and contaminated media present in Zone 2.”
- p. 5-6, ¶2 Replace the paragraph with: “Alternative 2 would not be effective or permanent since characteristic hazardous waste and contaminated media would not be addressed by the ELUR.”
- p. 5-6, ¶3 Replace the first sentence with: “Alternative 2 would not be effective since characteristic hazardous waste and contaminated media would not be addressed by the ELUR.”
- p. 5-6, ¶7 Insert a Section 5.3.3 that includes an alternative that is compliant with the CT Hazardous Waste Management standards.
- p. 5-7, ¶2 Add at least one Alternative that meets hazardous waste management standards and therefore would be protective. Change the first sentence to: “Alternative 2 would only provide limited protection of human health and the environment.”
- p. 5-7, ¶3 Replace the second and third sentence with: “Alternative 2 would only offer limited protection since it does not address characteristic hazardous waste and contaminated media in the Zone, but does include institution controls that would limit direct contact with TPH-contaminated soil.”
- p. 5-7, ¶4 Change this paragraph to: “Alternatives 1 and 2 do not comply with ARARs.” Then describe how an Alternative 3 (or additional alternatives) would comply.
- p. 5-7, ¶5 Change the second and third sentences to: “Because no remedial actions are specified under Alternative 1, location- and action-specific ARARs are not applicable to the No Action alternative.”

- p. 5-7, ¶6 Change the paragraph to: “Alternative 2 would comply, through ELUR, with location-specific ARARS which address remedial measures for TPH contaminated soils above PRGs. Alternative would also comply with all location-specific ARARs. However, Alternative 2 would not comply with action-specific ARARs which address the management of characteristic hazardous waste and contaminated media.”
- Insert a new last paragraph: “Chemical, location and action-specific ARARs tables for each alternative are presented in Tables 5-3 through 4-12 (Table 4-10 thru 4-12 are examples of tables for a selective excavation/off-site disposal option which would comply with the CT Hazardous Waste Management standards).
- p. 5-7, ¶7 Describe how an Alternative 3 would be effective. Change the first sentence to: “Alternative 2 would not be effective in the long-term for achieving RAO through ELUR since the remedy is insufficient to address the presence of characteristic hazardous waste and contaminated media.”
- p. 5-7, ¶10 Remove the second sentence.
- p. 5-8, § 5.4.7 There is a discrepancy in the text in the first sentence of this section which states “...highest for Alternative 1 (\$14,000)...lowest for Alternative 1,...”. It appears the text should read “The capital cost are highest for Alternative 2 (\$14,000) and lowest for Alternative 1...” Please make this change to the text. This discrepancy also occurs in § 9.4.7 on page 9-9.
- p. 5-8, ¶1 Describe how an Alternative 3 would be effective in the short-term. Change the first sentence to: “Alternative 2 would provide only limited short-term effectiveness, in regards to TPH contamination, but would not be effective against contamination by characteristic hazardous waste and contaminated media. Alternative 1 would be the least effective. In the second sentence change “Alternative 1” to “Alternatives 1 and 2.” Remove the third sentence.
- p. 5-8, ¶3 Remove the first and second sentences.
- p. 5-8, ¶4 In the first sentence change “Alternative 2” to whichever Alternative(s) are described which will meet hazardous waste management standards. Remove the second and third sentence. Add a fourth sentence which describes what required services are available for whichever Alternative(s) are described which will meet hazardous waste management standards.

p. 5-8, ¶5	Change “both Alternatives 1 and 2” to “all Alternatives” (if that is the case depending on the additional alternative(s) described).
Table 5-1	Describe additional Alternatives which comply with hazardous waste management standards.
Table 5-2, p. 1	Under Alternative 2, Overall Protectiveness-Human Health - Insert a new first sentence “Would not be protective against characteristic hazardous waste. In the second sentence change “COC” to “TPH.”
Table 5-2, p. 1	Under Alternatives 1 and 2, Overall Protectiveness-Environment, Potential offsite receptors - Change the text to: “Does not address characteristic hazardous waste and contaminated media.”
Table 5-2, p. 1	Under Alternative 1, Compliance with ARARs, Chemical-specific - Change the text to: “Would not comply since characteristic hazardous waste and elevated COCs above Residential Direct Exposure Criteria not addressed.”
Table 5-2, p. 1	Under Alternative 2, Compliance with ARARs, Action-specific - Change the text to: “Would not comply since characteristic hazardous waste and contaminated media not addressed as required by CT Hazardous Waste Management standards.”
Table 5-2, p. 1	Under Alternative 2, Long-Term Effectiveness and Permanence, Magnitude of residual risk - Add a new first sentence: “Would not be protective against characteristic hazardous waste and contaminated media.” Change the second sentence to: “ELUR would provide some limited protection by address direct exposure risks to TPH.”
Table 5-2, p. 1	Under Alternative 2, Long-Term Effectiveness and Permanence, Adequacy and reliability of controls - Change the first sentence to: “ Inadequate to address characteristic hazardous waste and contaminated media in the Zone.”
Table 5-2, p. 2	Under Alternatives 1 and 2, Reduction in Toxicity... - The response to every sub category except the last (Statutory preference for treatment) for both alternatives should be: “No treatment included.” Natural attenuation should not be discussed. Under Alternative 2, Reduction in Toxicity..., Statutory preference... - Change “Satisfied” to “Does not satisfy.”

- Table 5-2, p. 2 Under Alternatives 1 and 2, Short-Term Effectiveness, Protection of site workers and protection of community - Under both subcategories change to: "Risks from the presence of characteristic hazardous waste are not addressed."
- Under Alternative 2, Short-Term Effectiveness, Time to achieve... - Change to: "Remedial goals would not be achieved."
- Table 5-2, p. 3 Under Alternative 2, Implementability, Ability to monitor - Change to "Able to monitor effectiveness." (monitoring would be required for this remedy).
- Table 5-2, p. 3 Under Alternatives 1 and 2, Implementability, Ability to obtain approvals... - For both alternatives change the text to: "Unlikely to receive regulatory approvals since characteristic hazardous waste to be left in place."
- p. 6-1 General Comment to Chapter 6 - This section does not discuss the presence of lead exceeding TCLP which make the lead RCRA characteristic waste. Since RCRA characteristic waste and media contaminated with RCRA characteristic waste is present, the CT Hazardous Waste Management standards are the controlling ARAR for the site. None of the alternatives analyzed addresses this issue, therefore every section of this chapter needs to address the presence of hazardous waste in the Zone. Alternative 3 - Selective Excavation could address the hazardous waste issue if the excavation was conducted in compliance with CT Hazardous Waste Management standards.
- p. 6-1, ¶1 Remove the third sentence since when hazardous waste is present, present or future land use is irrelevant (cleanup not driven by the CT Remediation Standards which do allow different cleanups for different land uses).
- p. 6-1, ¶2 Replace the last sentence with: "Lead levels, which exceed TCLP, are present in Zone 2 which qualifies the contamination as characteristic hazardous waste."
- p. 6-1, ¶3 Revise the second sentence to discuss the presence of lead exceeding TCLP in addition to exceedances of the ICDEC and PMC criteria.
- p. 6-1, ¶4 Need to make sure the lead levels in groundwater do not exceed CT Hazardous Waste Management standards codified in 40 CFR 264.92.

- p. 6-4, ¶3 In the fifth sentence first describe lead exceedances of TCLP, which make the lead a characteristic hazardous waste.
- Change the sixth sentence to: “The No Action alternative does not contain any provisions to remediate characteristic hazardous waste present at the Site.
- p. 6-4, ¶4 Remove the second and third sentences since natural attenuation is not an ARARs matter.
- p. 6-5, ¶1 The first two lines are is repeated from the last paragraph of page 6-4. Remove the second and third sentences since the presence of characteristic hazardous waste needs to be addressed under any use scenario.
- p. 6-5, ¶2 Remove the third sentence since natural attenuation is not Reduction of Toxicity...Through Treatment.
- p. 6-5, §6.3.2 Change this title to “Alternative 2- Natural Attenuation, Tiered Monitoring and Institutional Controls.”
- p. 6-5, ¶6 Insert “would only partially” before “address the RAO.”
- p. 6-6, ¶1 Insert a new first sentence: “However, Alternative fails to address characteristic hazardous waste and contaminated media present at the site.”
- p. 6-6, ¶2 Change the first two sentences to: “ELUR may limit future human contact with residual COC in soil. However, ELUR do not suitable address the presence of characteristic hazardous waste and contaminated media.” Remove the third and fourth sentences since ELUR are irrelevant to addressing characteristic hazardous waste in the Zone.
- p. 6-6, ¶4 Change the first sentence to: “Alternative 2 would not be protective of human health and the environment since the presence of characteristic hazardous waste and contaminated media is not addressed.”
- p 6-7, ¶1 Replace the paragraph with: “Alternative 2 would not comply with action-specific ARARs under the CT Hazardous Waste Management standards, since it does not address characteristic hazardous waste and contaminated media present in Zone 3.”

- p. 6-7, ¶2 Replace the paragraph with: “Alternative 2 would not be effective or permanent since characteristic hazardous waste and contaminated media would not be addressed by the ELUR.”
- p. 6-7, ¶3 Replace the first sentence with: “Alternative 2 would not be effective since characteristic hazardous waste and contaminated media would not be addressed by the ELUR.”
- p. 6-8, §6.3.3 Change the Title to: “Alternative 3 - Selective Excavation/Offsite Disposal, Tiered Monitoring and Institutional Controls.”
- p. 6-8, bullet 1 Insert “characteristic hazardous waste and contaminated media and any additional” after “excavation of.”
- p. 6-8, ¶3 Insert “characteristic hazardous waste and contaminated media and any additional” before “areas of soil.”
- p. 6-8, ¶4 In this paragraph describe where characteristic hazardous waste and contaminated media would be excavated.
- p. 6-9, ¶3 In the first sentence need to discuss whether all characteristic hazardous waste and contaminated media could be excavated and if not how the remaining waste would be remediated based on the requirements of the CT Hazardous Waste Management standards. If there are additional areas where lead is not at hazardous levels but still exceed industrial land use PRG, then institutional controls would be required under the CT Remediation Regulations.
- In the third sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition any ELUR would be recorded on the Base Master Plan which would include” should be inserted after “ELUR would include.”
- In the last sentence insert “or lease” after “deed.”
- p. 6-10, ¶1 In the first sentence insert “characteristic hazardous waste and contaminated media and any additional contamination” before “above industrial land.”
- p 6-10, ¶2 In the first sentence replace “risks under” with “risks from characteristic hazardous waste and from additional lead contaminations which exceeds”

In the third sentence add at the end “, as long as characteristic hazardous waste is not left in place. If characteristic waste remains on site, then there must be compliance with the standards under the CT Hazardous Waste Management regulations which require more than ELUR.”

In the last sentence insert “or lease” after “deed.”

p. 6-10, ¶4

In the first sentence add at the end: “as long as standards under the CT Hazardous Waste Management Regulations are met.” In the second sentence replace “current industrial land use PRG” with “characteristic hazardous waste levels, as well as above PRGs for current industrial land use.”

p. 6-12, ¶3

Change the 2nd sentence to: “Alternative 2 would only offer limited protection, since it does not address characteristic hazardous waste and would leave soil above industrial land use PRGs on the Site. Alternative 2 does limit human exposure to soil.”

p. 6-12, ¶4

In the first sentence insert “from the presence of characteristic hazardous waste,” before “future residents.” In the last sentence change “preventing” to “limiting” since the ELUR does not address the risks posed by hazardous waste at the site. Add a new last sentence: “Finally, Alternatives 2 and 3 include at least yearly monitoring of any contamination left in place to determine that it is not posing a risk to the environment.”

p. 6-12, ¶5

In the last sentence change “that would become a deed” to “that would include posting warnings to base personnel about the presence of subsurface contamination, recording and enforcing the land use restriction under the Base Master Plan, and recording the ELUR as a deed or lease.”

p. 6-12, ¶6

Change the sentence to: “Alternatives 1 and 2 would not comply with ARARs. Alternative 3 will comply with ARARs.”

p. 6-12, ¶7

Change the first sentence to: “The presence of characteristic hazardous waste and contaminated requires that standards for hazardous waste management be complied with.”

Change the fourth sentence to: “Alternative 2, which consists only of implementing ELUR, will not comply with chemical-specific pollutant mobility criteria or with action-specific hazardous waste management requirements.”

Change the fifth sentence to: “Alternative 3 will comply with all chemical- and action-specific ARARs by removing lead-contaminated soil which exceeds characteristic hazardous waste and pollutant mobility criteria, and implementing ELUR to meet industrial land use requirements, which includes restrictions against residential use.”

- p. 6-12, ¶8 Change the paragraph to: “Because no remedial actions are specified under Alternative 1, location- and action-specific ARARs are not applicable. Alternatives 2 and 3 would be conducted in accordance with their respective location-specific ARARs (see Tables 6-3 through 6-11).”
- p. 6-13, ¶1 Change the first sentence to: “Only Alternative 3 will be effective in the long-term for achieving RAO. Neither Alternatives 1 or 2 address site contamination by characteristic hazardous waste. “
- p. 6-13, ¶2 In the first sentence insert “the presence of characteristic hazardous waste and contaminated media and” after “were associated with.” Change the second and third sentences to: “Alternative 1 would include no action to address site risks. Alternative 2 would provide limited long-term effectiveness by instituting ELUR which would reduce the risk of human exposure to contaminated media. “ At the end of the fourth sentence add: “removing the characteristic hazardous waste and waste exceeding industrial PMC. ELUR under Alternative 3 would be protective in controlling human exposure to remaining contaminated media and preventing future residential activity at the site. Monitoring of residual contamination under Alternatives 2 and 3 would help provide long-term protection of the environment.”
- p. 6-13, § 6.4.4 Replace the two paragraphs with: “None of the proposed alternatives provides any treatment which would result in a reduction of toxicity, mobility, and volume. Alternative 3 would result in the removal of contamination, thereby reducing on-site toxicity, mobility and volume and the contamination will be transported, untreated, to a permitted disposal facility.”
- p. 6-13, § 6.4.5 Rewrite the first two paragraphs to state: “Alternatives 1 and 2 are not effective in the short-term since they fail to adequately address characteristic hazardous waste on-site. Alternative 3 is the most effective in the short-term since it would achieve RAO, since the identified risks and elevated COC concentrations would be addressed.”
- p. 6-14, § 6.4.7 Cost estimates for Alternatives 2 and 3 should include annual monitoring.

<p>Table 6-2, p. 1</p> <p>Table 6-2, p. 1</p> <p>Table 6-2, p. 1</p> <p>Table 6-2, p. 1</p> <p>Table 6-2, p. 2</p> <p>Table 6-2, p. 2</p>	<p>Under Alternative 2, Overall Protectiveness - Human Health - Add a new first sentence: “Does not provide protection against the presence of characteristic hazardous waste.”</p> <p>Under Alternative 3, Overall Protectiveness - Human Health - Insert “above characteristic hazardous waste levels and” before “above current industrial.”</p> <p>Under Alternative 2, Overall Protectiveness - Environment - Replace the second sentence with: “Yearly monitoring will be used to assess potential offsite migration of COC.”</p> <p>Under Alternative 3, Overall Protectiveness - Environment - Add a new last sentence: “Any remaining contamination will be monitored to assess potential offsite migration of COC.”</p> <p>Under Alternative 2, ARARs, Chemical-specific - Change the text to: “Would not comply since Alternative does not address lead levels above current industrial land use Preliminary Remediation Goals. ELUR does address remaining COCs.”</p> <p>Under Action-specific - Change text to: “Would not comply with hazardous waste management standards.”</p> <p>Under Alternative 3, ARARs, Chemical-specific - Insert “above characteristic hazardous waste levels and ” before “above current.”</p> <p>Under Action-specific - Change text to: “Would comply with action-specific requirements, including hazardous waste management standards.”</p> <p>Under Alternative 2, Long-Term Protectiveness, Magnitude of residual risk - Does not address risk from characteristic hazardous waste.”</p> <p>Under Adequacy and reliability of controls - Replace the first sentence with: “Passive control inadequate to address on-site hazardous waste.” Add at the end of the last sentence: “except at least yearly monitoring.”</p> <p>Under Alternative 3, Long-Term Protectiveness, Magnitude of residual risk - In the second sentence insert “at least yearly monitoring and” before “addressed through.”</p> <p>Under Adequacy and reliability of controls - Add at the end of the last sentence: “except at least yearly monitoring.”</p>
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- Table 6-2, p. 2 Under Alternatives 1, 2, and 3, every subcategory except Statutory preference for treatment: Text for each should be “No treatment included.” (ELUR and excavation/off-site disposal are not treatment).
- Under Alternative 3, Statutory preference for treatment - Change text to “Does not satisfy.”
- Table 6-2, p. 3 Under Alternative 2, Short-term Effectiveness, Time to Achieve Remedial Goals - Change the text to “Remedial goals would not be achieved.”
- Under Alternative 3, Short-term Effectiveness, Time to Achieve Remedial Goals - In the third sentence insert “, at least yearly monitoring, “ after “soil removal.”
- Table 6-2, p. 3 Under Alternative 2, Implementability, Ability to construct and operate - Add at the end of the second sentence “and monitoring program.”
- Ability to monitor - Change the text to: “At least yearly monitoring would be readily implementable, the existing monitoring well network onsite can be used if needed.”
- Ability to receive regulatory approval - Change text to: “Unlikely to receive regulatory approval since hazardous waste would be left on-site.
- Table 6-2, p. 3 Under Alternative 2, Implementability, Ability to construct and operate - In the second sentence insert “ of hazardous waste” after “excavation”. Change the last sentence to: “At least yearly monitoring will be implemented, as well as recording and enforcing the agreement in the Base Master Plan.
- Ability to monitor - Change the text to: “At least yearly monitoring would be readily implementable, the existing monitoring well network onsite can be used if needed.”
- p. 7-1 This chapter must address the presence of characteristic hazardous waste (lead) and contaminated media (see discussions for Zones 2 and 3). The comments in this chapter mirror those previously made in the proceeding chapters for Zones where characteristic hazardous waste occurs.
- p. 7-1, ¶1 Remove the third sentence since PRGs need to be developed to meet the CT Hazardous Waste Management standards.

- p. 7-1, ¶2 In the second sentence the text needs to discuss meet CT Hazardous Waste Management standards.
- p. 7-1, ¶3 The FS must show and discuss where lead exceeded TCLP levels. Compliance with the CT Hazardous Waste Management standards for groundwater must also be explained.
- p. 7-4, ¶3 In the sixth sentence change the sentence to “Lead has been identified as exceeding TCLP standards and qualifying as characteristic hazardous waste.” Also move the sentence to the second sentence.
- Change the last sentence to: “Alternative does not address the presence of characteristic hazardous waste or exceedances of CT Remediation standards. Therefore the No Action alternative does not contain any provisions to safeguard future conditions.”
- p. 7-4, ¶4 In the first sentence insert “characteristic hazardous waste levels and” after “reported above.” Remove the second sentence.
- p. 7-5, ¶1 In the second sentence insert "the presence of characteristic hazardous waste and with" before "full-time employees."
- In the third sentence add at the end: “or to address the presence of characteristic hazardous waste.”
- p. 7-5, ¶2 Remove the third sentence since natural attenuation is not treatment.
- p. 7-5, ¶3 In the first sentence insert “and the environment” after “human health” and add at the end “from the presence of characteristic hazardous waste or from exposure to soils exceeding direct exposure criteria.”
- p. 7-6, §7.3.2 Change the title to: “Monitored Natural Attenuation, Tiered Monitoring, and Institutional Controls”
- p. 7-6, ¶3 In the third sentence remove all of the sentence after the “;” - change “in soil;” to “in soil.” Natural attenuation does not address the presence of characteristic hazardous waste.
- p. 7-6, ¶4 Remove this paragraph since natural attenuation does not address the presence of characteristic hazardous waste.
- p. 7-8, ¶1 Replace the paragraph with: “Institutional controls would include posting warnings to base personnel about the presence of subsurface

contamination, recording and enforcing the ELUR under the Base Master Plan, and recording the ELUR in any deed or lease in the event the property is ever transferred. ELUR would include limitations to construction activities, prevent the use of ground water, and would prevent residential redevelopment of the zone. The ELUR could prevent some direct contact with some of the site COC. However, ELUR and natural attenuation are insufficient to address the risk posed by the zone's characteristic hazardous waste.”

- p. 7-8, ¶3 Replace the first three sentences with: “Alternative 2 would not be protective of human health and the environment since institutional controls along would be insufficient to address the risk posed by the presence of characteristic hazardous waste. ELUR would provided some limited protection from risks posed by COCs above residential use criteria, by limiting direct exposure and residential redevelopment.”
- p. 7-9, ¶1 Replace the paragraph with: “Alternative 2 would not comply with ARARs identified for Zone 4 (Tables 7-3 through 7-14). ELUR and natural attenuation are insufficient to satisfy action-specific ARARs under the CT Hazardous Waste Management regulations. In addition, the Alternative does not address the chemical-specific CT Remediation Standard Regulations for industrial land use PRG for lead. Alternative 2 would be conducted in accordance with location-specific ARARs.”
- p. 7-9, ¶2 Insert a new second paragraph: “Alternative 2 would not provide long-term effectiveness and permanence since is would leave characteristic hazardous waste in place without sufficiently addressing the risks posed to human health and the environment.”
- p. 7-9, ¶3 Remove the third and fourth sentences.
- p. 7-9, ¶5 Replace this paragraph with: "Alternative 2 does not include any treatment that reduces the toxicity, mobility and volume of COCs within the Zone."
- p. 7-10, ¶2 Change the first and second sentences to: “Alternative 2 would not address the short-term risks posed by the presence of characteristic hazardous waste within the Zone. The Alternative would provide some limited protection from direct exposure by maintaining the existing asphalt cover over the contaminated media. However, this cover is insufficient to meet protectiveness standards for hazardous waste.”
- p. 7-10, § 7.3.3 In the title change “Environmental Land Use Restriction” to “Institutional Controls.”

In the first bullet insert “characteristic hazardous waste levels and” after “lead exceeding.”

p. 7-11, ¶2

In the fifth sentence insert “characteristic hazardous waste levels and” after “indicated above.”

Change the last sentence to whatever measure would be required under the CT Hazardous Waste Management regulations to address residual characteristic hazardous waste left on-site.

p. 7-11, ¶3

Need to identify the area(s) where characteristic hazardous waste was identified and what steps will be taken to excavate the waste and mixed contaminated media in compliance with hazardous waste management standards.

p. 7-12, ¶5

In the first sentence insert “organic COCs in” before “Zone 4.”

p. 7-14, ¶1

In the first sentence insert “characteristic hazardous waste levels and” after “COC above.”

Replace the rest of the paragraph with: “Institutional controls would include posting warnings to base personnel about the presence of subsurface contamination, recording and enforcing the ELUR under the Base Master Plan, and recording the ELUR in any deed or lease in the event the property is ever transferred. ELUR would include limitations to construction activities, prevent the use of ground water, and would prevent residential redevelopment of the zone. The ELUR could prevent some direct contact with some of the site COC. However, ELUR are sufficient to address the remaining risk posed by the site after excavation only if remaining contamination is managed according to applicable hazardous waste management standards.”

p. 7-14, ¶3

In the first sentence split the sentence at the "and" and change the second half of the sentence to: "COC concentrations. The Alternative would not be protective of human health and the environment for groundwater since COCs exceeding PRGs for groundwater would be left contaminated.

Change the second sentence to: “Remaining COC in soil and groundwater would not be addressed by institutional controls, which would only be protective if they met applicable hazardous waste management and soil/groundwater remediation requirements.”

- p. 7-14, ¶2 In the second sentence insert “not fully” before “reduce risks.” In the third sentence insert “partially” before “addressed.” In the fourth sentence insert “partially” before “protected” and “or lease” after “deed.”
- p. 7-15, ¶2 Change the paragraph to: “Alternative 3 would not comply with ARARs identified for Zone 4 (Tables 7-3 through 7-14). Although excavation would remove characteristic hazardous waste in compliance with action-specific ARARs under the CT Hazardous Waste Management regulations, groundwater contamination is not sufficiently addressed. The Alternative's natural attenuation and institutional controls do not address the chemical-specific CT Remediation Standard Regulations for groundwater PRG for lead. Alternative 3 would be conducted in accordance with location-specific ARARs.”
- p. 7-15, ¶3 In the second sentence insert “not” before “be effective.” Remove the third sentence.
- Change the sixth sentence to: “However, natural attenuation would not adequately address inorganics in ground water.”
- p. 7-15, ¶4 Add at the end of the first sentence: “as long as the excavation stage is able to remove all of the hazardous waste from the Zone.”
- p. 7-15, ¶5 Replace the paragraph with: “Alternative 3 does not include any treatment that reduces the toxicity, mobility and volume of COCs within the Zone, although excavation and off-site disposal will remove the most of the contamination from the Zone.”
- p. 7-16, ¶1 In the first sentence insert “partially” before “effective” and insert “including the characteristic hazardous waste and mixed media within the Zone,” after “highest COC concentrations.”
- Change the last sentence to: “Natural attenuation would not be effective for reducing residual non-organic COC concentrations, although it may be effective for reducing the risk from organic COCs over the long-term. The tiered monitoring program would be used to determine short-term risks from the residual COCs after the excavation and disposal is completed.”
- p. 7-17, bullet 1 Insert “characteristic hazardous waste levels for lead and” before “selective excavation of.”
- p. 7-17, ¶2 In the fifth sentence insert “characteristic hazardous waste levels and” after “indicated above.”

Change the last sentence to whatever measure would be required under the CT Hazardous Waste Management regulations to address residual characteristic hazardous waste left on-site.

p. 7-17, ¶4

Need to identify the area(s) where characteristic hazardous waste was identified and what steps will be taken to excavate the waste and mixed contaminated media in compliance with hazardous waste management standards.

p. 7-19, ¶3

In the last sentence change “the substantive requirements of a CTPDES permit” to “applicable federal and state discharge standards.”

p. 7-20, ¶5

In the first sentence insert “characteristic hazardous waste levels or” after “COC above.”

In the fourth sentence replace “ELUR” with “institutional controls, including ELUR,”

Replace the fifth sentence with: “Institutional controls would include posting warnings to base personnel about the presence of subsurface contamination, recording and enforcing the ELUR under the Base Master Plan, and recording the ELUR in any deed or lease in the event the property is ever transferred. ELUR would include limitations to construction activities, prevent the use of ground water, and would prevent residential redevelopment of the zone. Institutional controls will be sufficient to address the remaining risk posed by the site after excavation only if remaining contamination is managed according to applicable hazardous waste management and soil/groundwater remediation standards.”

Remove the seventh sentence.

p. 7-21, ¶1

In the first sentence insert “characteristic hazardous waste level and” after “concentrations above.”

In the third sentence change “ELUR” with “Institutional controls, including ELUR.”

p. 7-21, ¶3

In the second sentence change “ELUR” with “Institutional controls, including ELUR.”

In the third sentence insert “chemical-specific,” before “location-specific.”

In the fourth sentence change “the substantive requirements of a CTPDES permit” to “applicable federal and state discharge requirements.”

- p. 7-21, ¶4 In the first sentence change “ELUR” with “institutional controls, including ELUR.”
- p. 7-22, ¶2 Remove the first, second, and fourth sentences.
- p. 7-22, ¶3 Insert “characteristic hazardous waste levels and” after “concentrations above.”
- p. 7-22, ¶4 In the ninth sentence change “the substantive requirements of a CTPDES permit” to “applicable federal and state discharge requirements.”
- p. 7-23, ¶4 Change the second and third sentences to: "The protectiveness of Alternative 3 is less than Alternative 4 since it does not address risk from ground water contamination."

Change the fourth sentence to "The protectiveness of Alternative 2 is significantly less than Alternatives 3 and 4, since the Alternative does not address the risks posed by the presence of characteristic hazard waste in the Zone."
- p. 7-23, ¶5 In the first sentence insert “characteristic hazardous waste and” after “addressed regarding.”

In the third sentence insert at the end: “, however, the existing surface cover does not meet the applicable requirements of the hazardous waste management standards.”

In the fourth sentence change “it address” to “which partially address.”
- p. 7-23, ¶6 Change the second sentence to: “Alternative 3 is less protective than Alternative 4 since the Alternative will no achieve PRG in ground water, particularly for inorganic contaminants.”
- p. 7-24, ¶1 In the last sentence change “take longer than Alternatives 3 and 4 to” to “would not achieve.”
- p. 7-24, ¶3 Change the sentence to: “Alternative 4 would comply with ARARs. Alternatives 3, 2, and 1 would not comply.”

p. 7-24, ¶4

Change the first sentence to: “Lead was reported over characteristic hazardous waste levels.”

Remove the fourth sentence. Change the fifth sentence to: “Alternative 2 would not achieve PRG since it would leave characteristic hazardous waste in place and would not achieve PRGs, since it is limited to monitored natural attenuation.”

Change the sixth sentence to: Alternative 3 would achieve some PRGs by excavating contaminated soil, however ground water contamination is not adequately addressed in order to meet chemical-specific remediation standards.

In the eighth sentence replace “ELUR” with “institutional controls, including ELUR.”

p. 7-24, ¶5

Change the paragraph to: Alternatives 2, 3, and 4 would meet location-specific ARARs. There are no location-specific or action-specific ARARs for Alternative 1. Alternatives 3 and 4 would meet action-specific ARARs for the management of hazardous waste through excavation. However, only Alternative 4 adequately addresses potential hazardous waste contamination of ground water.”

p. 7-24, ¶6

Change the first sentence to: “Only Alternative 4 would achieve RAO for both soil and groundwater. Alternative 3 would achieve RAO for soil, but does not adequately address ground water, particularly for inorganic COCs. Alternative 2 would not be protective since it does not address characteristic hazardous waste present within the Zone.”

p. 7-24, ¶7

In the second sentence insert “characteristic hazardous waste and” after “associated with.”

Change the third sentence to: “Although the existing pavement surface cover reduces the potential for exposure to subsurface soil it is not meet cover standards under hazardous waste management standards.”

p. 7-25, ¶1

Change the second sentence to: “Institution controls alone, as called for in Alternative 2, would not be protective against the presence of hazardous waste. Institutional controls with excavation and removal of contaminated soil, under Alternative 3, would be more protective against risks from soil, but does not address ground water risk. Only Alternative 4, which incorporates excavation and removal, ground water treatment, institutional controls and monitoring is fully protective over the long-term.”

- p. 7-25, ¶2 Remove the paragraph.
- p. 7-25, § 7.4.4 Neither excavation/removal or natural attenuation are considered to be treatment under the NCP. Replace this entire section with: “Only Alternative 4 provides treatment of contaminated ground water. None of the alternatives would treat contaminated soil through reduction of toxicity, mobility or volume.”
- p. 7-26, ¶1 Replace the second sentence with: “Alternative 2 would not be effective in the short-term because it does not address hazardous waste or inorganic COC above PRGs within the Zone. Alternative 3 does address contaminated soil through excavation/removal, institutional controls, and monitoring, but does not adequately address ground water contamination above PRGs.”
- p. 7-26, ¶2 Change the second sentence to: “Institution controls alone, as called for in Alternative 2, would not be protective against the presence of hazardous waste. Institutional controls with excavation and removal of contaminated soil, under Alternative 3, would be more protective against risks from soil, but does not address ground water risk. Only Alternative 4, which incorporates excavation and removal, ground water treatment, institutional controls and monitoring are fully protective over the long-term.”
- p. 7-26, ¶3 In the first sentence insert “characteristic hazardous waste levels and” after “in soil above.”
- Table 7-2, p. 1 Under Alternative 2, Overall Protectiveness - Human Health - Change the text to: “Would not address human health risks from characteristic hazardous waste nor from exceedances of industrial and ground water PRGs.”
- Table 7-2, p. 1 Under Alternative 3, Overall Protectiveness - Human Health - Change the text to: “Selective excavation would remove human health risks from hazardous waste and exceedance in soil PRGs. However, the Alternative does not adequately address ground water PRGs, particularly for inorganic COCs.”
- Table 7-2, p. 1 Under Alternative 2, Overall Protectiveness - Environment, Potential offsite receptors - Replace the last sentence with: “Does not address environmental risks from characteristic hazardous waste nor from exceedance of industrial and groundwater PRGs.”

Table 7-2, p. 1	<p>Under Alternative 3, Overall Protectiveness - Environment, Potential offsite receptors - Change the text to: “Selective excavation would remove environmental risks from hazardous waste and exceedance in soil PRGs. However, the Alternative does not adequately address ground water PRGs, particularly for inorganic COCs.”</p>
Table 7-2, p. 1	<p>Under Alternative 2, ARARs, Chemical-specific - Replace the text with: “Would not comply since contamination would be left in place.”</p> <p>ARARs, Action-specific - Replace the text with: “Would not comply since the Alternative does not meet hazardous waste management requirements.”</p>
Table 7-2, p. 1	<p>Under Alternative 3, ARARs, Chemical-specific - Change the text to: Selective excavation of COC in soil will comply with remediation standards, however ground water PRG will not be met.”</p> <p>ARARs, Action-specific - May comply, if any residual hazardous waste left in place is managed in accordance with hazardous waste management requirements.</p>
Table 7-2, p. 2	<p>Under Alternative 2, Long-Term Effectiveness, Magnitude of residual risk - Change the first sentence to: “Does not address long-term risk from characteristic hazardous waste or from exceedances of remediation standards.”</p> <p>Remove the third sentence.</p> <p>Under Adequacy and reliability of controls - Change text to “Not adequate to address the presence of characteristic hazardous waste or exceedances of remediation standards.”</p>
Table 7-2, p. 2	<p>Under Alternative 3, Long-Term Effectiveness, Magnitude of residual risk - Change the text to: “Selective excavation will remove hazardous waste and exceedances of industrial remediation standards. ELUR will prevent exposure to remaining COC in the soil. Does not address risks posed by ground water, particularly by inorganic COCs, except by limiting exposure and monitoring.”</p> <p>Adequacy and reliability of controls - Add at the end: “In adequate to address inorganic COCs in groundwater.”</p>
Table 7-2, pp. 2	<p>Reduction in Toxicity, Mobility, and Volume - For Alternatives 1, 2, and 3</p>

- & 3 - Text for every subcategory except Statutory preference should be “No treatment included.” For Alternatives 2 and 3, Statutory preference for treatment - Change to “Does not satisfy.”
- For Alternative 4 - In text for every subcategory except Statutory preference -Remove all references to excavation of soil, intrinsic bioremediation, and natural attenuation. The only treatment proposed is for ground water. For Statutory preference - Change text to “Satisfies the preference for treatment for ground water, but not for soil.”
- Table 7-2, p. 3 Under Alternative 2, Short-Term Effectiveness, Protections of site workers - Change the text to: “Does not address risks from the presence of hazardous waste.
- Under Time to achieve remedial goals - Change text to: “Remedial goals would not be achieved.”
- Table 7-2, p. 3 Under Alternative 3, Short-Term Effectiveness, Time to achieve remedial goals - Change text to: “Soil removal and implementation of institutional controls would achieve remedial goals for soil. Remedial goals for groundwater would not be achieved, particularly for inorganic COCs.”
- Table 7-2, p. 4 Under Alternative 2, Implementability, Ability to obtain approvals - Change text to: “Unlikely to receive regulatory approval since hazardous waste and COC exceeding remediation standards would be left in place.”
- Under Alternative 3, Implementability, Ability to obtain approvals - Change text to: “Unlikely to receive regulatory approval since remedial goals for ground water would not be achieved, particularly for inorganic COCs.”
- Under Alternative 4, Implementability, Ability to obtain approvals - In the last sentence change “CTDEP” to “federal and state regulators.”
- p. 8-1, § 8.1 Throughout this chapter need to address CT PMC exceedances for lead. Instead of detailed comments please refer to the comments made for Chapter 4, Zone 1, except that in that zone there were PMC exceedances for lead and arsenic.
- p. 8-3, § 8.3.1.2 Also discuss exceedance of CT PMC for lead.
- p. 8-5, § 8.3.2 Throughout this section need to address CT PMC exceedances for lead.

- p. 8-5, ¶3 In the second sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition any ELUR would be recorded on the Base Master Plan which” should be inserted after “The ELUR” and “that would alter the existing asphalt cap” should be inserted after “construction activities.”
- In the fourth and fifth sentences insert “or lease” after “deed.”
- p. 8-5, §8.3.2.2 How would the alternative address CT PMC exceedances for lead?
- p. 8-6, ¶3 Change the third sentence to: No treatment is specified, but ELUR would address risks associated with direct exposure. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.
- p. 8-6, ¶4 In the first sentence add at the end: “, but would not be effective in addressing exceedances in PMC for lead.
- p. 8-6, ¶5 Remove the second and third sentences.
- p. 8-7, § 8.3.3 This section needs to discuss how CT PMC exceedances for lead will be addressed.
- p. 8-8, ¶3 In the third sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition the ELUR would be recorded on the Base Master Plan which would include” after “ELUR would include” and “that would alter the existing asphalt cap” should be inserted after “construction activities.”
- In the fourth and fifth sentences insert “or lease” after “deed.”
- p. 8-8, §8.3.3.2 How would the alternative address CT PMC exceedances for lead?
- At the end of the second sentence add: “through the Base Master Plan and by posting warning signs around the contaminated area.
- p. 8-8, ¶6 In the last sentence insert “or lease” after “deed.”
- p. 8-9, ¶2 Will this alternative meet the CT Remediation Regulation PMC for lead? If not, the alternative does not satisfy ARARs.

- p. 8-9, ¶4 Replace this paragraph with: “No treatment to reduce toxicity, mobility, and volume is proposed under this Alternative.”
- p. 8-10, § 8.4 This section needs to be revised base on the comments made above regarding each alternative and whether the presence of lead exceeding CT PMC is adequately addressed.
- p. 8-10, ¶3 Add as a new last sentence: “Chemical, location and action-specific ARARs tables for each alternative are presented in Tables 8-3 to 8-11.
- p. 8-10, ¶4 Change the first sentence to: Alternative 3 would be most protective of human health and the environment, while Alternative 2 would only provide limited protection.
- p. 8-10, ¶6 In the first sentence insert “lead” before “TPH.”
- In the third sentence replace the text in parentheses with “(which would include warning posting signs, documenting and enforcing the ELUR under the Base Master Plan, and committing to recording the ELUR if a deed or lease for the area is ever created).”
- p. 8-10, ¶7 Change the first sentence to “Only Alternative 3 would comply with all ARARs, particularly the requirements under the CT Standard Remediation Regulations for meeting pollutant mobility standards for lead. Alternative 1 does not address state remediation standards to site COC. Alternative 2 would address direct exposure requirements for industrial use, but not pollutant mobility. Under Alternatives 2 and 3 residential criteria would not be met, but would be addressed through ELUR.”
- p. 8-11, ¶3 Change the first sentence to: Alternative 3 would be effective in the long-term for achieving RAO, while Alternative 2 would only provide limited effectiveness for partially achieving RAO.
- p. 8-11, ¶4 Add at the end of the last sentence: “, but Alternative does not address lead exceeding PMC.
- p. 8-11, ¶5 Change the sentence to: “Under Alternative 3, selective excavation would permanently remove lead and TPH above current industrial land use PRG and PMC.”
- p. 8-11, §8.44 Replace this section with: “No treatment to reduce toxicity, mobility, and volume is proposed under any of the Alternatives.”

p. 8-12, §8.4.5	In this section also address lead, in addition to TPH.
p. 8-12, ¶2	Change the second sentence to: “Alternative 2 provides only limited effectiveness since it address direct exposure to contaminated soil, but not PMC for lead.”
p. 8-12, ¶3	In the third sentence add at the end “however, the Alternative does not address lead exceeding PMC.
Table 8-2, p. 1	Under Alternative 2, Overall Protectiveness-Human Health - insert a new first sentence: “Would not meet PRGs for lead.” In the first sentence insert “partially” before “addressed.”
Table 8-2, p. 1	Under Alternative 2, Overall Protectiveness-Environment, Potential offsite receptors - Replace the text with: “Does not address pollutant mobility of inorganic COCs, except through monitoring. However, low risks to offsite ecological receptors are present.”
Table 8-2, p. 1	Under Alternative 1, Compliance with ARARs, Location-specific - Change the text to “Not applicable because no actions are specified.”
Table 8-2, p. 1	Under Alternative 2, Compliance with ARARs, Chemical-specific - Change the text to “Would not comply because the alternative does not address exceedances of pollutant mobility criteria for inorganic COCs.”
Table 8-2, p. 1	Under Alternative 2, Long-Term Effectiveness and Permanence, Magnitude of residual risk - Insert a new first sentence: “Risks from inorganic COCs above PRGs not addressed except through monitoring.” In the second sentence insert “partially” before “addressed.”
Table 8-2, p. 1	Under Alternative 2; Long-Term Effectiveness and Permanence, Adequacy and reliability of controls - Replace the first sentence with “Would not be reliable to address exceedances in PMC.”
Table 8-2, p. 2	Under Alternatives 1-3, Reduction in Toxicity..., for all subcategories except Statutory preference - Replace all text with: “No treatment included.”
Table 8-2, p. 2	Under Alternative 3, Reduction in Toxicity..., Statutory preference - Change text to: “Does not satisfy.”

- Table 8-2, p. 3 Under Alternative 2, Implementability, Ability to obtain approvals - Change text to: “Unlikely to receive regulatory approval because exceedances of CT PMC not adequately addressed.”
- p. 9-5, ¶5 In the second sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition the ELUR would be recorded on the Base Master Plan which would include” after “ELUR would include” and “that would alter the existing asphalt cap” should be inserted after “construction activities.”
- In the fourth sentence insert “or lease” after “deed.”
- p. 9-6, ¶1 In the last sentence insert “or lease” after “deed.”
- p. 9-7, ¶1 Add as a new last sentence: “Chemical, location and action-specific ARARs tables for each alternative are presented in Tables 9-3 through 9-8.
- Table 9-2, p. 2 Under Alternative 3, Reduction of Toxicity, Statutory preference - Change text to “Does not satisfy.”
- p. 10-1 Chapter 10 does not discuss the presence of lead exceeding TCLP criteria that make the soil RCRA characteristic waste. Since RCRA characteristic waste and media contaminated with RCRA characteristic waste is present, the CT Hazardous Waste Management standards are the controlling ARAR for the site. None of the alternatives analyzed addresses this issue, therefore every section of this chapter must be rewritten to address the presence of hazardous waste in the Zone. Alternative 3 - Selective Excavation could address the hazardous waste issue if the excavation was conducted in compliance with CT Hazardous Wasted Management standards. See also comments made for Chapter 6, Zone 3 where there was also hazardous waste present and the three alternatives presented in this chapter are also proposed.
- p. 10-1, ¶1 Remove the third sentence since when hazardous waste is present, present or future land use is irrelevant (cleanup not driven by the CT Remediation Standards which do allow different cleanups for different land uses).
- p. 10-1, ¶2 Replace the last sentence with: “Lead levels, which exceed TCLP, are present in Zone 2 which qualifies the contamination as characteristic hazardous waste.”

- p. 10-1, ¶3 In this paragraph discuss the presence of lead exceeding TCLP. Need to make sure the lead levels in groundwater do not exceed CT Hazardous Waste Management standards codified in 40 CFR 264.92.
- p. 10-4, ¶2 Need to address lead exceedances of TCLP, which make the lead a characteristic hazardous waste.
- Change the third sentence to: “The No Action alternative does not contain any provisions to remediate hazardous waste present at the Site.
- p. 10-4, ¶4 Remove the second and third sentences since natural attenuation is not an ARARs matter.
- p. 10-4, ¶5 Remove the second sentence since the presence of characteristic hazardous waste needs to be addressed under any use scenario.
- p. 10-5, ¶1 Remove the third sentence since natural attenuation is not Reduction of Toxicity...Through Treatment.
- p. 10-5, §6.3.2 Change this title to “Alternative 2- Natural Attenuation, Tiered Monitoring and Institutional Controls”.
- p. 10-5, ¶5 Insert “would only partially” before “address the RAO.”
- p. 10-5, ¶6 Insert a new first sentence: “However, Alternative fails to address characteristic hazardous waste and contaminated media present at the site.”
- p. 10-6, ¶3 In the last sentence insert “characteristic hazardous waste levels and” before “current industrial.”
- p. 10-6, ¶5 Change the first two sentences to: “ELUR may limit future human contact with residual COC in soil. However, ELUR do not suitable address the presence of characteristic hazardous waste and contaminated media.” Remove the rest of the paragraph since ELUR are irrelevant to addressing characteristic hazardous waste in the Zone.
- p. 10-7, ¶1 Change the first sentence to: “Alternative 2 would not be protective of human health and the environment since the presence of characteristic hazardous waste and contaminated media is not addressed.”
- p. 10-7, ¶3 Replace the first and second sentences with: “Alternative 2 would not comply with action-specific ARARs under the CT Hazardous Waste

Management standards, since it does not address characteristic hazardous waste and contaminated media present in Zone 7.”

- p. 10-7, ¶4 Replace the paragraph with: “Alternative 2 would not be effective or permanent since characteristic hazardous waste and contaminated media would not be addressed by the ELUR.”
- p. 10-7, ¶5 Replace the paragraph with: “Alternative 2 does not include any treatment to reduce toxicity, mobility, and volume of contaminants.”
- p. 10-8, ¶1 Replace the paragraph with: “Alternative 2 would not be effective in addressing the presence of characteristic hazardous waste within the Zone. The institutional controls would have some limited effectiveness in reducing direct exposure to contaminants.
- p. 10-8, §10.3.3 Change the Title to: “Alternative 3 - Selective Excavation/Offsite Disposal, Tiered Monitoring and Institutional Controls.”
- p. 10-8, bullet 1 Insert “characteristic hazardous waste and contaminated media and any additional” after “excavation of.”
- p. 10-8, ¶2 Revise the last sentence to describe a closure procedure which will satisfy CT Hazardous Waste Management requirements.
- p. 10-8, ¶3 In this paragraph describe where characteristic hazardous waste and contaminated media would be excavated.
- p. 10-9, ¶4 In the first sentence need to discuss whether all characteristic hazardous waste and contaminated media could be excavated and if not how the remaining waste would be remediated based on the requirements of the CT Hazardous Waste Management standards. If there are additional areas where lead is not at hazardous levels but still exceed industrial land use PRG, then institutional controls would be required under the CT Remediation Regulations.
- p. 10-10, ¶5 In the third sentence insert “posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition any ELUR would be recorded on the Base Master Plan which would include” should be inserted after “ELUR would include.”

In the last sentence insert “or lease” after “deed.”

- p. 10-11, ¶2 In the first sentence insert “characteristic hazardous waste and contaminated media and any additional contamination” before “above industrial land.”
- p 10-11, ¶3 In the first sentence insert “include posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition any ELUR would be recorded on the Base Master Plan and” should be inserted after “ELUR would.” Also in the first sentence insert “residual” before “COC.” and add at the end “, as long as characteristic hazardous waste is not left in place. If characteristic waste remains on site, then there must be compliance with the standards under the CT Hazardous Waste Management regulations which require more than ELUR.”
- In the fourth sentence insert “or lease” after “deed.”
- p. 10-11, ¶5 In the first sentence add at the end: “as long as standards under the CT Hazardous Waste Management Regulations are met.”
- p. 10-12, ¶1 In the second sentence insert “characteristic hazardous waste levels and” after “soil exceeding.”
- p. 10-12, ¶2 Replace the paragraph with: “Alternative 3 does not include any treatment to reduce toxicity, mobility, and volume of contaminants.”
- p. 10-12, ¶3 In the second sentence insert “characteristic hazardous waste levels and” after “exceeding.”
- p. 10-13, ¶3 Add as a new last sentence: “Chemical, location and action-specific ARARs tables for each alternative are presented in Tables 10-3 to 10-11.
- p. 10-13, ¶4 Change the second sentence to: “Alternative 2 would only offer limited protection, since it does not address characteristic hazardous waste and would leave soil above industrial land use PRGs on the Site. Alternative 2 does limit human exposure to soil.”
- p. 10-13, ¶5 In the first sentence insert “from the presence of characteristic hazardous waste, ” before “full-time employees.” In the sixth sentence change “preventing” to “limiting” since the ELUR does not address the risks posed by hazardous waste at the site.

- p. 10-14, ¶1 Change the sentence to: “Alternatives 1 and 2 would not comply with ARARs, since the presence of hazardous waste is not addressed. Alternative 3 will comply with ARARs.”
- p. 10-14, ¶2 Change the first sentence to: “The presence of characteristic hazardous waste and contaminated requires that standards for hazardous waste management be complied with.”
- Change the fourth sentence to: “Alternative 2, which consists only of implementing ELUR, will not comply with chemical-specific pollutant mobility criteria or with action-specific hazardous waste management requirements.”
- Change the fifth sentence to: “Alternative 3 will comply with all chemical- and action-specific ARARs by removing lead-contaminated soil that exceed characteristic hazardous waste and pollutant mobility criteria, and implementing ELUR to meet industrial land use requirements, which includes restrictions against residential use.”
- p. 10-14, ¶3 Change the paragraph to: “Because no remedial actions are specified under Alternative 1, location- and action-specific ARARs are not applicable. Alternatives 2 and 3 would be conducted in accordance with their respective location-specific ARARs (see Tables 10-3 through 10-11).”
- p. 10-14, ¶4 Change the first sentence to: “Only Alternative 3 will be effective in the long-term for achieving RAO. Neither Alternatives 1 or 2 address site contamination by characteristic hazardous waste.”
- p. 6-13, ¶2 Change the second sentence to: “Alternative 1 would include no action to address site risks. Alternative 2 would provide limited long-term effectiveness by instituting ELUR which would reduce the risk of human exposure to contaminated media.”
- Change the second sentence: “Selective excavation with offsite disposal under Alternative 3 would remove the characteristic hazardous waste and waste exceeding industrial PRG. ELUR under Alternative 3 would be protective in controlling human exposure to remaining contaminated media and preventing future residential activity at the site.”
- p. 10-14, §10.4.4 Change the section to: “None of the Alternatives includes treatment which will reduce toxicity, mobility, and volume of contaminants.

- p. 10-15, §10.4.5 Rewrite the first two paragraphs to state: “Alternatives 1 and 2 are not effective in the short-term since they fail to adequately address characteristic hazardous waste on-site. Alternative 3 is the most effective in the short-term since it would achieve RAO, since the identified risks and elevated COC concentrations would be addressed.”
- Table 10-2, p. 1 Under Alternative 2, Overall Protectiveness - Human Health - Add a new first sentence: “Does not provide protection against the presence of characteristic hazardous waste.”
- Under Alternative 3, Overall Protectiveness - Human Health - Insert “above characteristic hazardous waste levels and” before “above current industrial.”
- Table 10-2, p. 1 Under Alternative 2, ARARs, Chemical-specific - Change the text to: “Would not comply since Alternative does not address lead levels above current industrial land use Preliminary Remediation Goals.”
- Under Action-specific - Change text to: “Would not comply with hazardous waste management standards.”
- Table 10-2, p. 1 Under Alternative 3, ARARs, Chemical-specific - Insert “above characteristic hazardous waste levels and ” before “above current.”
- Under Action-specific - Change text to: “Would comply with action-specific requirements, including hazardous waste management standards.”
- Table 10-2, p. 2 Under Alternative 2, Long-Term Protectiveness, Magnitude of residual risk - Replace the text with: “Does not address risk from characteristic hazardous waste.”
- Under Adequacy and reliability of controls - Replace the first sentence with: “Passive control is inadequate to address on-site hazardous waste.” Add at the end of the last sentence: “except for at least yearly monitoring.”
- Table 10-2, p. 2 Under Alternative 3, Long-Term Protectiveness, Magnitude of residual risk - In the second sentence insert “at least yearly monitoring and” before “addressed through.”
- Under Adequacy and reliability of controls - Add at the end of the last sentence: “except at least yearly monitoring.”

Table 10-2, p. 2	Under Alternatives 1, 2, and 3, every subcategory except Statutory preference for treatment: Text for each should be “No treatment included.” ELUR and excavation/off-site disposal are not considered treatment under the NCP.
	Under Alternative 3, Statutory preference for treatment - Change text to “Does not satisfy.”
Table 10-2, p. 3	Under Alternative 2, Short-term Effectiveness, Time to Achieve Remedial Goals - Change the text to “Remedial goals would not be achieved.”
	Under Alternative 3, Short-term Effectiveness, Time to Achieve Remedial Goals - In the third sentence insert “, at least yearly monitoring, “ after “soil removal.”
Table 10-2, p. 3	Under Alternative 2, Implementability, Ability to monitor - Change the text to: “At least yearly monitoring would be readily implementable, the existing monitoring well network onsite can be used.”
	Ability to receive regulatory approval - Change text to: “Unlikely to receive regulatory approval since hazardous waste would be left on-site.
Table 6-2, p. 3	Under Alternative 3, Implementability, Ability to construct and operate - In the second sentence insert “ of hazardous waste” after “excavation”. Change the last two sentences with: “At least yearly monitoring will be implemented, as well as recording and enforcing the agreement in the Base Master Plan.
	Ability to monitor - Change the text to: “At least yearly monitoring would be readily implementable, the existing monitoring well network onsite can be used.”
p. 11-1, § 11.1	For Zone 2 need to add an alternative for Selective Excavation/Offsite Disposal, Tiered Monitoring and Institutional Controls. For all of the Zones, use the titles used in the EPA ARARs tables provided and in the comments above.
p. 11-2, § 11.22	In the first paragraph, in the first sentence insert “residual” before “COC.” and add at the end “, as long as characteristic hazardous waste is not left in place. If characteristic waste remains on site, then there must be compliance with the standards under the CT Hazardous Waste Management regulations which require more than ELUR.

In the third sentence insert “include posting signs on the site if waste is left in place which poses a risk to base personnel using the site (i.e. notices not to dig through the pavement). In addition any ELUR would be recorded on the Base Master Plan and” should be inserted after “ELUR would.”

In the fifth sentence insert “or lease” after “deed.”

- p. 11-3, § 11.2.3 This section needs to be revised based on the above comments. All zones where contamination is left in place require monitoring.
- p. 11-3, § 11.2.4 This section needs to be revised based on the above comments. Natural attenuation is only potentially applicable to organic COCs. In zones with characteristic hazardous waste and inorganic COCs, natural attenuation is not adequate for achieve PRGs.
- p. 11-4, § 11.2.5 This section needs to be revised based on the above comments. In the first paragraph, second sentence there needs to be inserted “characteristic hazardous waste levels and” before COC exceeding.”
- References The December 1989 Risk Assessment Guidance, Part A (RAGS A) should be included in the reference list along with the August 1997 Exposure Factors Handbook.
- App. B, Table B-1 The toxicity values used in the risk and PRG calculations are presented in this table. However, the source of each toxicity value is not indicated. Source information should be included in this table.
- App. B, Table B-2 The adult resident exposure duration values for dermal and ingestion exposure routes are listed as 24 (RME) and 7 (CTE) years. Should the values be 30 (RME) and 9 (CTE) years? If so, please correct the table.
- App. B, Table B-2, Inhalation Rates The inhalation rates seem to be generally overestimated for the full-time employee and construction worker. In addition, the references listed for the inhalation rates are confusing. EPA’s Exposure Factor Handbook, Volume I, Table 5-23 (August 1997) should be consulted for inhalation rates. The reference listed as “(e)” is superseded by RAGs Part A, which was issued in December 1989; this reference includes a recommendation of 20 M³/day for a residential adult. However, values listed in Table 5-23 of the Exposure Factor Handbook are recommended for use in the contaminant intake calculations.
- App. B, Table B-2, Footnote (b) How can “age-adjusted ingestion and dermal contact rates” be applied for the adult resident? Please correct or clarify the text.

- App. B, Table B-3 The table should include footnotes regarding the derivation of the information presented (*e.g.*, UCLs, number of analyses, *etc.*). The table appears to include the combined shallow and deep soil information presented in Appendix D. Please also reference the source of the data.
- App. B, p. B-3 The methods used in the calculation of the PRG values are presented on this page. At the bottom of Page B-3, the text erroneously states that the desired risk level for noncarcinogens is 10^{-6} and that the desired risk level for carcinogens is 1. The text should be corrected to read a desired Cancer Risk of 10^{-6} and a desired Hazard Quotient of 1.0.
- App. B, Table B-2 The exposure parameters for all exposure scenarios are displayed in Table B-2. The PM10 Exposure Factors that are shown for inhalation of dust are given as 1.8E-8 for both the Full-time Employee and the Resident, and 9E-8 for the Construction Worker. Upon review, however, it was noticed that the air concentrations values were derived using a PM10 factor of 1.8E-6. Therefore, the table should be corrected.
- App. B, Table B-2 The exposure parameters for all exposure scenarios are displayed in Table B-2. However, the ABS values for each COC are not presented. The ABS values to be used in the dermal calculations must be presented.
- App. B, Table B-3 The chemical dibenzo(a,h)anthracene is incorrectly spelled “dibenzo(a,h)anthracent” in the table.

ATTACHMENT B

**TABLE 4-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 1
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 4-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 1
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL <div style="text-align: center;">There are no federal location-specific ARARS</div>				

STATE OF CONNECTICUT

There are no state location-specific ARARS

TABLE 4-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 1
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL <div style="text-align: center;">There are no federal action-specific ARARS</div>				
<hr/> STATE OF CONNECTICUT <div style="text-align: center;">There are no state action-specific ARARS</div>				

TABLE 4-6

**ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 4-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 4-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 4-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 4-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 1

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Hazardous waste determinations will be performed on all contaminated material generated during monitoring activities to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated materials which exceed applicable limits will be managed in accordance with requirements of these regulations, if necessary.
Hazardous Waste Management: TSDF Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 4-9

**ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - AEROBIC BIOREMEDIATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through treatment of some organic contaminants and institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through treatment of some organic contaminants and institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use. The alternative would treat some of the organic soil contaminants, but does not address inorganic soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 4-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - AEROBIC BIOREMEDIATION, TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring or other remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring or other remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring or other remedial activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 4-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - AEROBIC BIOREMEDIATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring or other remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 4-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - AEROBIC BIOREMEDIATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 4-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - AEROBIC BIOREMEDIATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 1

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Hazardous waste determinations will be performed on all contaminated material generated during monitoring activities to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated materials which exceed applicable limits will be managed in accordance with requirements of these regulations, if necessary.
Hazardous Waste Management: TSDF Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 4-12
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 1
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants above industrial land use PRGs in the soil through excavation and off-site disposal. Remaining residential exposure risk would be addressed by bioremediation, monitoring and land use restrictions.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants above industrial land use PRGs in the soil through excavation and off-site disposal. Remaining residential exposure risk would be addressed by bioremediation, monitoring and land use restrictions.

STATE OF CONNECTICUT

Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would meet industrial standards in the soil through excavation and off-site disposal of all soils which exceed industrial standards. Compliance with residential exposure standards would be addressed by bioremediation, monitoring and land use restrictions for the remaining unexcavated areas of contaminated soil which exceed residential standards.
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TABLE 4-13
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 4-13
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 4-13
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

<p>CT Endangered Species Act</p>	<p>CGS § 26-303 thru 314</p>	<p>Applicable</p>	<p>Regulates activities affecting state-listed endangered or threatened species or their critical habitat.</p>	<p>The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i>, have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.</p>
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TABLE 4-14
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Clean Water Act, Section 402, National Pollution Discharge Elimination System (NPDES)	33 USC 1342; 40 CFR 122 through 125	Applicable	These standards govern the discharge of water into surface waters.	Ground and surface water removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, to meet discharge criteria according to substantive requirements of NPDES if the discharge occurs on-site.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Water Pollution Control	RCSA § 22a-430-1 through 8	Applicable	These rules regulate water discharge to surface water.	Surface and groundwater removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, in compliance with these regulations if the discharge occurs on-site.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Surface and groundwater removed from excavations, along with water from the sediment/soil dewatering process, will be treated, if necessary, in a manner which is consistent with the anti-degradation policy in the Water Quality Standards if the discharge occurs on-site. In addition, the standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 4-14
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification</p>	<p>RCSA § 22a-449(c) 100-101</p>	<p>Applicable</p>	<p>CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.</p>	<p>Hazardous waste determinations will be performed on all contaminated soil excavated to determine whether levels of regulated constituents exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these regulations, if necessary. Also, wastes produced from surface and groundwater and dewatering treatment will be tested to determine whether levels of certain regulated constituents exceed TCLP limits.</p>
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TABLE 4-14
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL, AEROBIC BIOREMEDIATION,
TIERED MONITORING, ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 1
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Hazardous Waste Management: Generator Standards	RCSA § 22a-449(c)-102	Applicable	This section establishes standards for various classes of generators. The standards of 40 CFR 262 are incorporated by reference.	Surface and groundwater and dewatering treatment residues (spent filtration media and activated carbon) could contain high concentrations of regulated constituents. Although the residues are not expected to fail hazardous characteristics, substantive requirements of these regulations will be met.
Hazardous Waste Management: TSDF Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Any hazardous waste which is treated or temporarily stored on-site as part of the remedy will be managed in accordance with the requirements of this section.
Air Pollution Control	RCSA § 22a-174 1-20	Applicable	These regulations require permits to construct and to operate specified types of emission sources and contain emission standards that must be. Pollutant abatement controls may be required. Specific standards pertain to fugitive dust (18b).	Emission standards for fugitive dust from excavation and restoration operations will be met with dust control measures. Emissions will be managed to comply with these standards.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.

**TABLE 5-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 5-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL There are no federal location-specific ARARS				

STATE OF CONNECTICUT

There are no state location-specific ARARS

TABLE 5-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal action-specific
ARARS

STATE OF CONNECTICUT

There are no state action-specific
ARARS

TABLE 5-6

ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
 ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
 LOWER SUBBASE - ZONE 2
 NSB-NLON, GROTON, CONNECTICUT
 PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to TPH contaminated soil to acceptable levels under industrial use, however, characteristic hazardous waste is not adequately addressed. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 5-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 5-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 5-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 5-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
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FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these regulations

TABLE 5-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: TSDf Standards</p>	<p>RCSA § 22a-449 (c) 104</p>	<p>Applicable</p>	<p>This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference. Groundwater protection standards are cited in 40 CFR 264.92.</p>	<p>As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.</p>

TABLE 5-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 5-9
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Any contaminated soil which remains after the removal of hazardous or mixed waste under the CT Hazardous Waste Management Regulation requirements would be managed according to these standards. Contamination exceeding residential use standards would be subject to land use restrictions and monitoring.

TABLE 5-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with remedial activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 5-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 5-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any remedial work in the River or its tidal zone will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 5-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Clean Water Act, Section 402, National Pollution Discharge Elimination System (NPDES)	33 USC 1342; 40 CFR 122 through 125	Applicable	These standards govern the discharge of water into surface waters.	Ground and surface water removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, to meet discharge criteria according to substantive requirements of NPDES if the discharge occurs on-site.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Characteristic hazardous waste and mixed waste on the Site will be excavated and disposed of off-site. Hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these standards

TABLE 5-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: Generator Standards</p>	<p>RCSA § 22a-449(c)-102</p>	<p>Applicable</p>	<p>This section establishes standards for various classes of generators. The standards of 40 CFR 262 are incorporated by reference</p>	<p>Surface and groundwater and dewatering treatment residues (spent filtration media and activated carbon) could contain high concentrations of regulated constituents. Although the residues are not expected to fail hazardous characteristics, substantive requirements of these regulations will be met.</p>
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TABLE 5-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 2
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Hazardous Waste Management: TSDf Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Excavation and offsite disposal of characteristic hazardous waste and mixed waste present on the Site will comply with these standards. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.
Water Pollution Control	RCSA § 22a-430-1 through 8	Applicable	These rules regulate water discharge to surface water.	Surface and groundwater removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, in compliance with these regulations if the discharge occurs on-site.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Surface and groundwater removed from excavations, along with water from the sediment/soil dewatering process, will be treated, if necessary, in a manner which is consistent with the antidegradation policy in the Water Quality Standards if the discharge occurs on-site. Standards will also be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Air Pollution Control	RCSA § 22a-174 1- 20	Applicable	These regulations require permits to construct and to operate specified types of emission sources and contain emission standards that must be. Pollutant abatement controls may be required. Specific standards pertain to fugitive dust (18b).	Emission standards for fugitive dust from excavation and restoration operations will be met with dust control measures. Emissions will be managed to comply with these standards.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.

TABLE 6-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 6-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal location-specific
ARARS

STATE OF CONNECTICUT

There are no state location-specific
ARARS

TABLE 6-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL <div style="text-align: center;">There are no federal action-specific ARARS</div>				

STATE OF CONNECTICUT

There are no state action-specific ARARS

TABLE 6-6

**ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.

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Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to TPH contaminated soil to acceptable levels under industrial use, however, characteristic hazardous waste is not adequately addressed. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.
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TABLE 6-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 et. seq., 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 6-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 6-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 3 OF 3

<p>CT Endangered Species Act</p>	<p>CGS § 26-303 thru 314</p>	<p>Applicable</p>	<p>Regulates activities affecting state-listed endangered or threatened species or their critical habitat.</p>	<p>The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i>, have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.</p>
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TABLE 6-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these regulations

TABLE 6-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: TSDf Standards</p>	<p>RCSA § 22a-449 (c) 104</p>	<p>Applicable</p>	<p>This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference. Groundwater protection standards are cited in 40 CFR 264.92.</p>	<p>As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.</p>
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TABLE 6-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 6-9
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants above industrial land use PRGs in the soil through excavation and off-site disposal. Remaining residential exposure risk would be addressed by monitoring and land use restrictions.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants above industrial land use PRGs in the soil through excavation and off-site disposal. Remaining residential exposure risk would be addressed by monitoring and land use restrictions.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential used of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would meet industrial standards in the soil through excavation and off-site disposal of all soils which exceed industrial standards. Compliance with residential exposure standards would be addressed by monitoring and land use restrictions for the remaining unexcavated areas of contaminated soil which exceed residential standards.

TABLE 6-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 6-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 6-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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**TABLE 6-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3**

FEDERAL

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Clean Water Act, Section 402, National Pollution Discharge Elimination System (NPDES)	33 USC 1342; 40 CFR 122 through 125	Applicable	These standards govern the discharge of water into surface waters.	Ground and surface water removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, to meet discharge criteria according to substantive requirements of NPDES if the discharge occurs on-site.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Water Pollution Control	RCSA § 22a-430-1 through 8	Applicable	These rules regulate water discharge to surface water.	Surface and groundwater removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, in compliance with these regulations if the discharge occurs on-site.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Surface and groundwater removed from excavations, along with water from the sediment/soil dewatering process, will be treated, if necessary, in a manner which is consistent with the antidegradation policy in the Water Quality Standards if the discharge occurs on-site.

TABLE 6-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification</p>	<p>RCSA § 22a-449(c) 100-101</p>	<p>Applicable</p>	<p>CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.</p>	<p>Hazardous waste determinations will be performed on all contaminated soils excavated to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils/sediments which exceed applicable limits will be managed in accordance with requirements of these regulations, if necessary. Also, wastes produced from surface and groundwater and dewatering treatment will be tested to determine whether levels of certain regulated constituents exceed TCLP limits.</p>
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TABLE 6-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - SELECTIVE EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 3
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Hazardous Waste Management: Generator Standards	RCSA § 22a-449(c)-102	Applicable	This section establishes standards for various classes of generators. The standards of 40 CFR 262 are incorporated by reference.	Surface and groundwater and dewatering treatment residues (spent filtration media and activated carbon) could contain high concentrations of regulated constituents. Although the residues are not expected to fail hazardous characteristics, substantive requirements of these regulations will be met.
Hazardous Waste Management: TSD Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Any hazardous waste which is treated or temporarily stored on-site as part of the remedy will be managed in accordance with the requirements of this section.
Air Pollution Control	RCSA § 22a-174 1-20	Applicable	These regulations require permits to construct and to operate specified types of emission sources and contain emission standards that must be. Pollutant abatement controls may be required. Specific standards pertain to fugitive dust (18b).	Emission standards for fugitive dust from excavation and restoration operations will be met with dust control measures. Emissions will be managed to comply with these standards.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.

**TABLE 7-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 7-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal location-specific
ARARS

STATE OF CONNECTICUT

There are no state location-specific
ARARS

TABLE 7-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL <div style="text-align: center;">There are no federal action-specific ARARS</div>				
<hr/> STATE OF CONNECTICUT <div style="text-align: center;">There are no state action-specific ARARS</div>				

TABLE 7-6

**ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use, however, characteristic hazardous waste is not adequately addressed. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 7-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any remedial actions that will occur within the 100-year floodplain of the Thames River will be carried out to minimize impacts to floodplain resources.

TABLE 7-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 7-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 7-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these regulations

TABLE 7-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: TSDf Standards</p>	<p>RCSA § 22a-449 (c) 104</p>	<p>Applicable</p>	<p>This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference. Groundwater protection standards are cited in 40 CFR 264.92.</p>	<p>As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.</p>
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TABLE 7-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 7-9
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Also establishes ground water remediation standards. Requirements are based on groundwater in the area being classified by the state as a GB.	Any contaminated soil which remains after the removal of hazardous or mixed waste under the CT Hazardous Waste Management Regulation requirements would be managed according to these standards. However, this alternative does not address contamination in ground water which exceeds these standards. Contamination exceeding residential use standards would be subject to land use restrictions and monitoring.

TABLE 7-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with remedial activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 7-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
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Coastal Zone Management Act	16 USC Parts 1451 ef. seq.	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 7-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

<p>CT Endangered Species Act</p>	<p>CGS § 26-303 thru 314</p>	<p>Applicable</p>	<p>Regulates activities affecting state-listed endangered or threatened species or their critical habitat.</p>	<p>The state-threatened Atlantic sturgeon inhabits the Thames River. Any remedial work in the River or its tidal zone will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i>, have been documented in the NSB-NLON area. Remediation of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.</p>
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TABLE 7-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Clean Water Act, Section 402, National Pollution Discharge Elimination System (NPDES)	33 USC 1342; 40 CFR 122 through 125	Applicable	These standards govern the discharge of water into surface waters.	Ground and surface water removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, to meet discharge criteria according to substantive requirements of NPDES if the discharge occurs on-site.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Characteristic hazardous waste and mixed waste on the Site will be excavated and disposed of off-site. Hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these standards

TABLE 7-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: Generator Standards</p>	<p>RCSA § 22a-449(c)-102</p>	<p>Applicable</p>	<p>This section establishes standards for various classes of generators. The standards of 40 CFR 262 are incorporated by reference</p>	<p>Surface and groundwater and dewatering treatment residues (spent filtration media and activated carbon) could contain high concentrations of regulated constituents. Although the residues are not expected to fail hazardous characteristics, substantive requirements of these regulations will be met.</p>
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TABLE 7-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Hazardous Waste Management: TSDf Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference. Ground water protection standards are codified in 40 CFR § 264.94.	Excavation and offsite disposal of characteristic hazardous waste and mixed waste present on the Site will comply with these standards. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.
Water Pollution Control	RCSA § 22a-430-1 through 8	Applicable	These rules regulate water discharge to surface water.	Surface and groundwater removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, in compliance with these regulations if the discharge occurs on-site.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Surface and groundwater removed from excavations, along with water from the sediment/soil dewatering process, will be treated, if necessary, in a manner which is consistent with the antidegradation policy in the Water Quality Standards if the discharge occurs on-site. Standards will also be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Air Pollution Control	RCSA § 22a-174 1-20	Applicable	These regulations require permits to construct and to operate specified types of emission sources and contain emission standards that must be. Pollutant abatement controls may be required. Specific standards pertain to fugitive dust (18b).	Emission standards for fugitive dust from excavation and restoration operations will be met with dust control measures. Emissions will be managed to comply with these standards.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.

TABLE 7-12
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 2

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Contaminated groundwater will be extracted and treated. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Contaminated groundwater will be extracted and treated. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
STATE OF CONNECTICUT				
Hazardous Waste Management: Standards for owners and operators of hazardous waste treatment, storage, and disposal facilities - groundwater protection standards	RCSA § 22a-449(c)-104	Relevant and appropriate	This section establishes standards for groundwater protection from hazardous waste facilities. The standards of 40 CFR 264 are incorporated by reference. In particular, 40 CFR 264.94 sets concentration limits for hazardous constituents in groundwater.	Groundwater will be treated to meet these standards.

TABLE 7-12
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 4
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 2

Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. The regulations also establish groundwater cleanup standards. Requirements are based on groundwater in the area being classified by the state as a GB.	Groundwater will be extracted and treated to meet these standards. Any contaminated soil which remains after the removal of hazardous or mixed waste under the CT Hazardous Waste Management Regulation requirements would be managed according to these standards, including land use restrictions and monitoring.
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TABLE 7-13
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring or discharge activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 et seq., 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any remedial action in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, discharges or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 7-13
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 7-13
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT
TIERED MONITORING, AND ENVIRONMENTAL LAND USE RESTRICTIONS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

<p>CT Endangered Species Act</p>	<p>CGS § 26-303 thru 314</p>	<p>Applicable</p>	<p>Regulates activities affecting state-listed endangered or threatened species or their critical habitat.</p>	<p>The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities and discharges, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i>, have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.</p>
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TABLE 7-14
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Clean Water Act, Section 402, National Pollution Discharge Elimination System (NPDES)	33 USC 1342; 40 CFR 122 through 125	Applicable	These standards govern the discharge of water into surface waters.	Ground and surface water removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, to meet discharge criteria according to substantive requirements of NPDES if the discharge occurs on-site.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Characteristic hazardous waste and mixed waste on the Site will be excavated and disposed of off-site. Hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils or ground water which exceed applicable limits will be managed in accordance with requirements of these standards

TABLE 7-14
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: Generator Standards</p>	<p>RCSA § 22a-449(c)-102</p>	<p>Applicable</p>	<p>This section establishes standards for various classes of generators. The standards of 40 CFR 262 are incorporated by reference</p>	<p>Surface and groundwater and dewatering treatment residues (spent filtration media and activated carbon) could contain high concentrations of regulated constituents. Although the residues are not expected to fail hazardous characteristics, substantive requirements of these regulations will be met.</p>

TABLE 7-14
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 4 - EXCAVATION/OFFSITE DISPOSAL, GROUND-WATER EXTRACTION/EX SITU TREATMENT,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBASE - ZONE 4
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Hazardous Waste Management: TSD Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Excavation and offsite disposal of characteristic hazardous waste and mixed waste present on the Site will comply with these standards. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater.
Water Pollution Control	RCSA § 22a-430-1 through 8	Applicable	These rules regulate water discharge to surface water.	Surface and groundwater removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, in compliance with these regulations if the discharge occurs on-site.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Surface and groundwater removed from excavations, along with water from the sediment/soil dewatering process, will be treated, if necessary, in a manner which is consistent with the antidegradation policy in the Water Quality Standards if the discharge occurs on-site. Standards will also be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Air Pollution Control	RCSA § 22a-174 1-20	Applicable	These regulations require permits to construct and to operate specified types of emission sources and contain emission standards that must be. Pollutant abatement controls may be required. Specific standards pertain to fugitive dust (18b).	Emission standards for fugitive dust from excavation and restoration operations will be met with dust control measures. Emissions will be managed to comply with these standards.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.

**TABLE 8-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 5
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 8-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 5
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal location-specific
ARARS

STATE OF CONNECTICUT

There are no state location-specific
ARARS

TABLE 8-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 5
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL There are no federal action-specific ARARS				
<hr/> STATE OF CONNECTICUT There are no state action-specific ARARS				

TABLE 8-6

ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
 ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
 LOWER SUBBASE - ZONE 5
 NSB-NLON, GROTON, CONNECTICUT
 PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 8-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON, GROTON, CONNECTICUT
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FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any remedial actions that will occur within the 100-year floodplain of the Thames River will be carried out to minimize impacts to floodplain resources.

TABLE 8-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 8-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON, GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 8-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 1

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Hazardous waste determinations will be performed on all contaminated material generated during monitoring activities to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated materials which exceed applicable limits will be managed in accordance with requirements of these regulations, if necessary.
Hazardous Waste Management: TSD Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 8-9

ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
 ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL, TIERED MONITORING AND INSTITUTIONAL CONTROLS
 LOWER SUBBASE - ZONE 5
 NSB-NLON, GROTON, CONNECTICUT
 PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through treatment of some organic contaminants and institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through treatment of some organic contaminants and institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use. The alternative would treat some of the organic soil contaminants, but does not address inorganic soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 8-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with remedial activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 8-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 8-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 5
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

<p>CT Endangered Species Act</p>	<p>CGS § 26-303 thru 314</p>	<p>Applicable</p>	<p>Regulates activities affecting state-listed endangered or threatened species or their critical habitat.</p>	<p>The state-threatened Atlantic sturgeon inhabits the Thames River. Any remedial work in the River or its tidal zone will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i>, have been documented in the NSB-NLON area. Remediation of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.</p>
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TABLE 9-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 9-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal location-specific
ARARS

STATE OF CONNECTICUT

There are no state location-specific
ARARS

TABLE 9-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal action-specific
ARARS

STATE OF CONNECTICUT

There are no state action-specific
ARARS

TABLE 9-6

**ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to contaminants in the soil through institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use. The alternative meet residential use standards through utilizing institutional controls, including posting and recording land use restrictions on the Base Master Plan.

TABLE 9-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any remedial actions that will occur within the 100-year floodplain of the Thames River will be carried out to minimize impacts to floodplain resources.

TABLE 9-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 9-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 6
NSB-NLON, GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 9-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 6
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 1

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Hazardous waste determinations will be performed on all contaminated material generated during monitoring activities to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated materials which exceed applicable limits will be managed in accordance with requirements of these regulations, if necessary.
Hazardous Waste Management: TSDF Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference.	Any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

**TABLE 10-3
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would also not be addressed.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would not eliminate exposure to characteristic hazardous waste and contaminants above industrial land use PRGs in the soil. In addition, residential exposure risk would not be addressed.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	The alternative would not meet industrial standards in the soil. Compliance with residential exposure standards would also not be addressed.

TABLE 10-4
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal location-specific
ARARS

STATE OF CONNECTICUT

There are no state location-specific
ARARS

TABLE 10-5
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 1 - NO ACTION
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
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FEDERAL

There are no federal action-specific
ARARS

STATE OF CONNECTICUT

There are no state action-specific
ARARS

TABLE 10-6

**ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1**

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would limit exposure to some, but not all, contaminants in the soil through institutional controls.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Requirements are based on groundwater in the area being classified by the state as a GB.	Land use controls and maintenance of the asphalt cap over the area would limit direct exposure to contaminated soil to acceptable levels under industrial use, however, characteristic hazardous waste is not adequately addressed. The alternative does not address soil contaminants which exceed pollutant mobility criteria, nor does the alternative meet residential use standards.

TABLE 10-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with monitoring activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any remedial actions that will occur within the 100-year floodplain of the Thames River will be carried out to minimize impacts to floodplain resources.

TABLE 10-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 2 OF 3

Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any monitoring activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

TABLE 10-7
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 3 OF 3

CT Endangered Species Act	CGS § 26-303 thru 314	Applicable	Regulates activities affecting state-listed endangered or threatened species or their critical habitat.	The state-threatened Atlantic sturgeon inhabits the Thames River. Any work in the River or its tidal zone, including monitoring activities, will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i> , have been documented in the NSB-NLON area. Remediation and monitoring of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.
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TABLE 10-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these regulations

TABLE 10-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON GROTON, CONNECTICUT
PAGE 2 OF 3

<p>Hazardous Waste Management: TSDf Standards</p>	<p>RCSA § 22a-449 (c) 104</p>	<p>Applicable</p>	<p>This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference. Groundwater protection standards are cited in 40 CFR 264.92.</p>	<p>As proposed under this Alternative, monitoring and institutional controls are insufficient under these regulations to address characteristic hazardous waste and mixed waste present on the Site. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored of on this site as part of the remedy will be managed in accordance with the requirements of this section.</p>
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TABLE 10-8
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 2 - NATURAL ATTENUATION, TIERED MONITORING AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON GROTON, CONNECTICUT
PAGE 3 OF 3

Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.

TABLE 10-9
ASSESSMENT OF CHEMICAL-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON, GROTON, CONNECTICUT
PAGE 1 OF 1

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
FEDERAL				
Cancer Slope Factors (CSF)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
Reference Dose (RfD)		To be considered	These are guidance values used in risk assessment to evaluate the potential carcinogenic or non-carcinogenic hazard caused by exposure to contaminants.	The alternative would eliminate exposure to contaminants through excavation of contaminated soils and off-site disposal. Any remaining exposure risk would be addressed by monitoring and land use restrictions.
STATE OF CONNECTICUT				
Remediation Standard Regulations	CGS 22a-133k; RCSA 22a-133k - 1 thru 3	Applicable	These regulations establish direct exposure and pollutant mobility criteria for contaminated soils based on either industrial or residential use of the Site. Also establishes ground water remediation standards. Requirements are based on groundwater in the area being classified by the state as a GB.	Any contaminated soil which remains after the removal of hazardous or mixed waste under the CT Hazardous Waste Management Regulation requirements would be managed according to these standards. Contamination exceeding residential use standards would be subject to land use restrictions and monitoring.

TABLE 10-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON GROTON, CONNECTICUT
PAGE 1 OF 3

FEDERAL

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Clean Water Act, Section 404	33 USC 1344; 40 CFR Part 230 and 33 CFR Parts 320-323	Applicable	These rules regulate the discharge of dredge and fill materials in wetlands and navigable waters. Such discharges are not allowed if practicable alternatives are available.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures will be taken to minimize adverse effects and to replace or restore protected wetland functions and values if required.
Executive Order 11990 RE: Protection of Wetlands	Executive Order 11990, 40 CFR Part 6, Appendix A	Applicable	This Order requires Federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction and to preserve the values of wetlands, and to prescribe procedures to implement the policies and procedures of this Executive Order.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive standards of the provision. Measures to minimize adverse effects and to replace or restore protected wetland functions and values will be considered and incorporated into any plan or action wherever feasible.
Rivers and Harbors Act, Section 10	33 USC 403; 33 CFR Parts 320-323	Applicable	Sets forth criteria for obstructions or alterations of navigable waters.	Work in the Thames River associated with remedial activities will comply with the Act's environmental standards
Fish and Wildlife Coordination Act	16 USC Part 661 <i>et. seq.</i> , 40 CFR 122.49	Applicable	This order protects fish and wildlife when federal actions result in control or structural modification of a natural stream or body of water.	Appropriate agencies would be consulted prior to implementation to find ways to minimize adverse effects to fish and wildlife from any work in wetlands or the Thames River.
Executive Order 11988 Re: Floodplain Management	Executive Order 11988	Applicable	This order requires Federal agencies, wherever possible, to avoid or minimize adverse impacts upon floodplains. Requires reduction of risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values of the floodplains.	Any excavation, filling, or monitoring associated with remedial actions that will occur within the 100-year floodplain of the Thames River and will be carried out to minimize impacts to floodplain resources.

TABLE 10-10
ASSESSMENT OF LOCATION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
NSB-NLON GROTON, CONNECTICUT
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Coastal Zone Management Act	16 USC Parts 1451 <i>et. seq.</i>	Applicable	Requires that any actions must be conducted in a manner consistent with state approved management programs.	This site is located in a state coastal flood zone (within the 100 year floodplain). Therefore, applicable coastal zone management requirements will be addressed.
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STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Coastal Management	CGS §§22a-92 and 94	Applicable	Requires projects within a state designated coastal zone to minimize adverse impacts on natural coastal resources.	This site is located in a state coastal zone. Therefore, applicable state coastal zone management requirements will be addressed
Tidal Wetlands	RCSA § 22a-30-1 through 17	Applicable	These rules regulate all activities within or affecting tidal wetlands and watercourses.	Any remedial activity which occurs within intertidal or subtidal wetlands in the Thames River will meet the substantive requirements of the CT standards and will address any potential alteration of wetlands and watercourses.

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<p>CT Endangered Species Act</p>	<p>CGS § 26-303 thru 314</p>	<p>Applicable</p>	<p>Regulates activities affecting state-listed endangered or threatened species or their critical habitat.</p>	<p>The state-threatened Atlantic sturgeon inhabits the Thames River. Any remedial work in the River or its tidal zone will be implemented so as to not negatively impact the sturgeon or any of its critical habitat which may occur within the River. In addition, two state-threatened plants, Golden Alexanders and Seaside Crowfoot, have been sighted in the NSB-NLON area. Also, three state special concern species, Creeping Bush-clover, Crooked-stem Aster, and <i>Carex crawfordii</i>, have been documented in the NSB-NLON area. Remediation of the contaminated areas will be implemented so as to address potential negative impacts to the listed plant species or any of their critical habitat which might occur within the Site.</p>
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**TABLE 10-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
ALTERNATIVE 3 - EXCAVATION/OFFSITE DISPOSAL,
TIERED MONITORING, AND INSTITUTIONAL CONTROLS
LOWER SUBBASE - ZONE 7
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FEDERAL

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
Clean Water Act, Section 304	33 USC 1314; 40 CFR 122.44	Relevant and Appropriate	Guidelines establish Ambient Water Quality Criteria (AWQC) for the protection of human health and/or the aquatic organisms.	Standards will be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Clean Water Act, Section 402, National Pollution Discharge Elimination System (NPDES)	33 USC 1342; 40 CFR 122 through 125	Applicable	These standards govern the discharge of water into surface waters.	Ground and surface water removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, to meet discharge criteria according to substantive requirements of NPDES if the discharge occurs on-site.

STATE OF CONNECTICUT

Requirement	Citation	Status	Synopsis of Requirement	Action to Be Taken to Attain ARAR
Hazardous Waste Management: Generator and Handler Requirements, Listing and Identification	RCSA § 22a-449(c) 100-101	Applicable	CT is delegated to administrate the federal RCRA statute through its state regulations. These sections establish standards for listing and identification of hazardous waste. The standards of 40 CFR 260-261 are incorporated by reference.	Characteristic hazardous waste and mixed waste on the Site will be excavated and disposed of off-site. Hazardous waste determinations will be performed on all excavated soils to determine that that levels of regulated constituents do not exceed applicable limits. Any contaminated soils which exceed applicable limits will be managed in accordance with requirements of these standards

TABLE 10-11
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<p>Hazardous Waste Management: Generator Standards</p>	<p>RCSA § 22a-449(c)-102</p>	<p>Applicable</p>	<p>This section establishes standards for various classes of generators. The standards of 40 CFR 262 are incorporated by reference</p>	<p>Surface and groundwater and dewatering treatment residues (spent filtration media and activated carbon) could contain high concentrations of regulated constituents. Although the residues are not expected to fall hazardous characteristics, substantive requirements of these regulations will be met.</p>
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TABLE 10-11
ASSESSMENT OF ACTION-SPECIFIC ARARs AND TBCs
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Hazardous Waste Management: TSDF Standards	RCSA § 22a-449 (c) 104	Applicable	This section establishes standards for treatment, storage, and disposal facilities. The standards of 40 CFR 264 are incorporated by reference. Ground water protection standards are codified in 40 CFR § 264.94.	Excavation and offsite disposal of characteristic hazardous waste and mixed waste present on the Site will comply with these standards. In regards to proposed monitoring activities, standards will be used to evaluate monitoring results to determine if further remedial action is required to address hazardous waste releases into groundwater. In addition, any hazardous waste which is temporarily stored on this site as part of the remedy will be managed in accordance with the requirements of this section.
Water Pollution Control	RCSA § 22a-430-1 through 8	Applicable	These rules regulate water discharge to surface water.	Surface and groundwater removed from excavations, along with water from any required soil dewatering process, will be treated, if necessary, in compliance with these regulations if the discharge occurs on-site.
Water Quality Standards	CGS 22a-426	Applicable	Connecticut's Water Quality Standards establish specific numeric criteria, designated uses, and anti-degradation policies for groundwater and surface water.	Surface and groundwater removed from excavations, along with water from the sediment/soil dewatering process, will be treated, if necessary, in a manner which is consistent with the antidegradation policy in the Water Quality Standards if the discharge occurs on-site. Standards will also be used to evaluate monitoring results to determine if further remedial action is required to protect resources.
Air Pollution Control	RCSA § 22a-174 1-20	Applicable	These regulations require permits to construct and to operate specified types of emission sources and contain emission standards that must be. Pollutant abatement controls may be required. Specific standards pertain to fugitive dust (18b).	Emission standards for fugitive dust from excavation and restoration operations will be met with dust control measures. Emissions will be managed to comply with these standards.
Connecticut Guidelines for Soil Erosion and Sediment Control	CT Council on Soil and Water Conservation	TBC	Technical and administrative guidance for development, adoption and implementation of erosion and sediment control program.	Guidelines will be followed to protect wetland and aquatic resources.