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LETTER AND COMMENTS FROM RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT REGARDING DRAFT FEASIBILITY STUDY SITE 12 TANK FARM 4 NS  
NEWPORT RI  
12/12/2011  
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

12 December 2011

Roberto Pagtalunan  
NAVFAC MIDLANT (Code OPTE3)  
Environmental Restoration  
Building Z-144, Room 109  
9742 Maryland Avenue  
Norfolk, VA 23511-3095

Re: Draft Feasibility Study  
Site 12, Tank Farm 4, NETC

Dear Mr. Pagtalunan,

The Office of Waste Management at the Rhode Island Department of Environmental Management has conducted a review of the *Draft Feasibility Study*, dated October 2011 for Tank Farm 4 (Site 12), Naval Station Newport, located in Newport, RI. As a result of this review, this Office has generated the attached comments on the *Draft Feasibility Study*.

Please be advised that any conclusions presented in this document or areas identified for remediation will have no bearing on areas addressed under the State Program.

If you have any questions in regards to this letter, please contact me at (401) 222-2797, extension 7020 or by e-mail at [pamela.crump@dem.ri.gov](mailto:pamela.crump@dem.ri.gov).

Sincerely,

Pamela E. Crump, Sanitary Engineer  
Office of Waste Management

cc: Matthew DeStefano, DEM OWM  
Gary Jablonski, DEM OWM  
Richard Gottlieb, DEM OWM  
Deb Moore, NSN  
Kymberlee Keckler, EPA Region I  
Steve Parker, Tetra Tech

**RIDEM's Comments on the  
Draft Feasibility Study  
Site 12, Tank Farm 4, NETC**

**1. Page ES-1, Executive Summary; 5<sup>th</sup> paragraph, 2<sup>nd</sup> sentence.**

*"The screening ecological risk assessment (ERA) did not identify the potential for ecological risks to the terrestrial and aquatic receptors exposed to chemicals associated with DU4-1."*

As you are aware, RIDEM had several concerns with the methods used in this screening ecological risk assessment, and requested that the Navy complete the full baseline ecological risk assessment for both Tank Farms 4 & 5. These concerns are currently under discussion. As such, the submitted comments do not address ecological concerns or ecological areas which may require remediation. Comments on these potential areas of concern will be submitted at a later date.

**2. Page ES-2, Executive Summary; 2<sup>nd</sup> paragraph, 3<sup>rd</sup> sentence.**

*"Analytical results from current soil and groundwater samples were compared with these remediation goals."*

Please note that all existing data for this site, including older data obtained prior to the Data Gaps Assessment, must be included in this Feasibility Study to ensure that all areas that may require remediation, land use controls, etc. are being addressed. The remedial alternatives proposed in this Feasibility Study are solely based on the data obtained during the Data Gaps Assessment. Please revise this FS to include all historical investigations.

**3. Page ES-2, Executive Summary; 5<sup>th</sup> bullet, last sentence.**

*"...the magnitude of the soil PRG exceedances are small, generally less than 10 times the PRG."*

RIDEM does not concur that an exceedance less than 10 times the PRG would be considered "small". All exceedances greater than the PRGs represent an unacceptable risk. Therefore please remove this subjective statement concerning the magnitude of the exceedance and either simply note that exceedances were observed or note the range of the exceedance without commentary.

**4. Page ES-2, Executive Summary; last paragraph.**

The remedial alternatives for soil presented in this FS are not sufficient as areas exceeding PRGs are proposed to be left in place without a cap/cover, treatment, etc. Please be advised

that all areas exceeding RIDEM's Residential Direct Exposure and Leachability Criteria, including TPH, must be identified and remedial alternatives must be proposed in this FS.

**5. Page 1-1, Introduction; 1<sup>st</sup> paragraph.**

Please change Site 13 to Site 12 and Decision Unit 5-1 to 4-1. Also, please replace Operable Unit 02 with Operable Unit 11.

**6. Page 1-1, Introduction; 4<sup>th</sup> paragraph, last sentence.**

*"It is this DGA report that provides the basis of this FS."*

Please see comment #2.

**7. Page 1-2, Objectives and Approach; 1<sup>st</sup> paragraph, last sentence.**

*"The Site COCs, identified in the DGA report, are PAHs and manganese in soil, and arsenic, cobalt, iron and manganese in groundwater."*

According to Section 8.7.1 "DU 4-1 HHRA Results" of the DGA report, child residents, adult residents and lifelong residents could be affected by exposure to arsenic in surface soil and all soil. Also, child residents could be affected by exposure to PCBs and endrin aldehyde in groundwater, and adult resident could be affected by exposure to PCBs in groundwater. Therefore, please include arsenic as a COC for soil and PCBs and endrin aldehyde as COCs for groundwater in the statement above, and revise this FS as necessary.

**8. Page 1-4, Section 1.4, Tank Farm 4 Background Information; 2<sup>nd</sup> paragraph, 5<sup>th</sup> sentence.**

Tank 41 is located to the east (slightly southeast) of Ruin 2. Please change North to East.

**9. Page 1-4, Section 1.4, Tank Farm 4 Background Information; 2<sup>nd</sup> paragraph.**

*"Further investigations are ongoing in regards to Tanks and fuel systems at the Tank Farm 4 Site. These areas are being investigated under the petroleum-oil-lubricant (POL) program which operates under the state regulatory authority, and not under CERCLA."*

The petroleum-oil-lubricant (POL) program does not exist. Please replace this with the RIDEM Underground Storage Tank (UST) and Site Remediation programs.

**10. Page 1-4, Section 1.4, Tank Farm 4 Background Information; last paragraph, last sentence.**

*"Confirmation sampling for CERCLA contaminants was not conducted during this removal action."*

This statement is not correct. Please replace with “*Limited confirmation sampling for CERCLA contaminants was conducted during this removal action.*”

**11. Page 1-6, Section 1.4.1, 2004-2007; 1<sup>st</sup> sentence.**

*“In October 2004, the Navy began field work on a Site Investigation and removal action to fully characterize the entire Site.”*

Please remove the underlined text from the above statement as the Navy did not fully characterize the entire Site and did not propose to do so during this investigation.

**12. Page 1-6, Section 1.4.1, 2004-2007; Bullet.**

Please include a more thorough discussion of the investigation and removal action performed at the former burn chamber/OWS, including but not limited to, a description of the size of the removal and backfill areas, the locations where confirmatory samples were collected, and the results of the investigations conducted to determine the extent of the remaining contamination.

**13. Page 1-13, Section 1.8, Nature and Extent of Contamination; last paragraph.**

RIDEM does not concur with the background comparison in this report. Please be advised that RIDEM, to date, has not accepted the “Basewide Background Study Report”. Contaminants cannot be screened out based on background if there is not an EPA and RIDEM approved background study. The background study must meet the requirements of RIDEM’s Remediation Regulations. It is suggested that a site-specific background study be conducted for these sites.

**14. Page 1-14, Section 1.8, Nature and Extent of Contamination; 2<sup>nd</sup> & 3<sup>rd</sup> paragraphs.**

Regarding the RSLs for tap water, please state in this section whether they are based on federal MCLGs, federal risk-based standards or Rhode Island’s groundwater standards.

**15. Page 1-15, Section 1.9, Fate and Transport Characteristics of Site Contaminants; 1<sup>st</sup> paragraph.**

Please indicate if lead was detected in surface or subsurface soil at levels exceeding federal RSLs or RIDEM RDEC or Leachability Criteria. Be advised that RIDEM lead standards (Res.-150 mg/kg, I/C-500 mg/kg) are more stringent than EPA’s (Res.-400 mg/kg, I/C-800 mg/kg).

**16. Page 1-15, Section 1.9, Fate and Transport Characteristics of Site Contaminants; 2<sup>nd</sup> paragraph.**

Please include a comparison of detected groundwater concentrations to RIDEM Groundwater Criteria in this paragraph.

**17. Page 1-18, Section 1.10, Soil Risks; ILCR Table.**

RIDEM has reviewed the hypothetical receptors, adult resident, child resident, trespassers, etc and has determined that all of these are applicable and appropriate for both the PRG process and the FS. In regards to the PRG development process, please ensure that any exposure routes, contaminants or areas that exceed RIDEM's risk levels of  $10^{-6}$  for individual risk and  $10^{-5}$  for cumulative risk are retained in this FS.

**18. Page 1-18, Section 1.10, Soil Risks; 3<sup>rd</sup> paragraph.**

*"It was found that the arsenic concentrations at the Site are within the background concentrations of one of the soil types represented, and above the background concentrations of the other. This uncertainty suggests risk management be applied before directing remedial actions to address this constituent."*

Please be advised that RIDEM did not approve the Basewide Background Study. Please provide a figure, in the response to comments, showing the soil types on and adjacent to Tank Farm 4, as this will have a bearing on which portions of the background study can be used to determine background.

**19. Page 1-19, Section 1.10, Groundwater Risks; 2<sup>nd</sup> paragraph.**

Please be advised that the ILCRs for child residents, adult residents, and lifelong residents hypothetically using groundwater at Tank Farm 4 for domestic purposes exceed RIDEM risk criteria. Therefore, these must be retained in this FS. Please ensure that any exposure routes, contaminants or areas that exceed RIDEM's risk levels of  $10^{-6}$  for individual risk and  $10^{-5}$  for cumulative risk are retained in this FS.

**20. Page 1-19, Section 1.10, Groundwater Risks; 3<sup>rd</sup> paragraph.**

*"The chemicals retained as COCs for groundwater at the Site were therefore endrin aldehyde, arsenic, cobalt, iron and manganese."*

According to Section 8.7.1 "DU 4-1 HHRA Results" of the DGA report, child and adult residents could be affected by exposure to PCBs in groundwater. Therefore, please include PCBs in the statement above and revise this Feasibility Study to evaluate PCBs in groundwater.

**21. Page 1-19, Section 1.11, Ecological Risk Assessment; whole section.**

Please see comment #1.

**22. Page 2-3, Section 2.1.4, Identification of Applicable or Relevant and Appropriate Requirements; whole section.**

Please ensure that of the State ARARs listed on the attached table are included in the list of ARARs in Tables 2-1, 2-2 and 2-3 of this Feasibility Study.

**23. Page 2-4, Section 2.1.4.1, Soil; 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence.**

Please be advised that the State of Rhode Island Oil Contaminated Soil Policy (RIDEM, 1991) is an ARAR and must be retained in this FS.

**24. Page 2-4, Section 2.1.4.1, Groundwater; 1<sup>st</sup> paragraph.**

Please be advised that groundwater must also meet any more stringent State groundwater standards.

**25. Page 2-5, Section 2.2, Development of Preliminary Remediation Goals (PRGs); 3<sup>rd</sup> paragraph.**

*“At this site, the screening level ERA (steps 1-3a of the 8 step ecological risk assessment guidelines) did not identify potential risks to a level that would merit conducting a BERA...”*

Please see comment #1.

**26. Page 2-6, Section 2.2.2, Derivation of Human Health Risk-Based Preliminary Remediation Goals; 3<sup>rd</sup> paragraph.**

Please be advised that under RIDEM's Remediation Regulations, recreational standards are the same as residential standards, except in certain circumstances. Please refer to the definition of “Recreational Facility for Public Use” in section 3.62 of the revised regulations (Nov. 2011).

**27. Page 2-9, Section 2.2.3, Applicable or Relevant and Appropriate Requirements and To-Be-Considered Guidance for PRGs; 2<sup>nd</sup> paragraph.**

Please be advised that this Site's groundwater classification is GA/NA; therefore, RIDEM's GA Leachability Criteria shall be included as ARARs for this Site.

**28. Page 2-9, Section 2.2.3, Applicable or Relevant and Appropriate Requirements and To-Be-Considered Guidance for PRGs; 4<sup>th</sup> paragraph.**

Please be advised that the State's groundwater standards must be retained as ARARs for this Site. Please retain this paragraph in this FS.

**29. Page 2-10, Section 2.2.3, Background Concentrations; whole section.**

RIDEM does not concur with the background comparison in this report. Please be advised that RIDEM, to date, has not accepted the "Basewide Background Study Report".

**30. Page 2-12, Section 2.2.4.2, Risk Management for Groundwater, Cobalt**

*"...cobalt in groundwater may be ubiquitous in the area since a source has not been identified, is likely a result of naturally occurring cobalt in the bedrock and bedrock derived soil"*

Cobalt concentrations in groundwater could be present due to the use of No. 6 Fuel Oil at these tank farms. Please include this statement in this section.

**31. Page 2-14, Section 2.2.4.2, Risk Management for Groundwater; 2<sup>nd</sup> paragraph.**

Concentrations of manganese detected at this Site present an unacceptable risk, as the CTE risk to the child resident is HQ=3.0 via future potable use of groundwater. The Navy must develop remedial alternatives to address manganese in groundwater in this FS.

**32. Page 2-15, Section 2.3.1, Remedial Action Objectives for Soil; 1<sup>st</sup> paragraph.**

*"...the estimated risks associated with ingestion of and dermal contact with vadose zone soils by future residents (PAHs and arsenic in soil) and construction workers (manganese in soil dust) exceed RIDEM's target cancer risk of  $1 \times 10^{-5}$ ."*

Please develop a remedial action objective (RAO) to protect construction workers from exposure to manganese in soil dust and include this RAO in this FS.

**33. Page 2-15, Section 2.3.1, Remedial Action Objectives for Soil; 2<sup>nd</sup> paragraph.**

*"The Navy has indicated that the Site should be available for industrial use and limited recreational use after the remedial action has taken place."*

Please be advised that industrial/commercial use of the Site will require restrictions enforceable by RIDEM, including an ELUR, which must be clearly defined in the ROD. If an ELUR limiting the site to industrial/commercial use is placed on the Site, all surface soil that does not meet industrial/commercial criteria will need to be addressed by a remedial alternative(s) that may involve capping, removal, treatment, etc. Regarding recreational use, please see Section 3.62, "Recreational Facility for Public Use" of the RIDEM Remediation Regulations (revised Nov 2011).

**34. Page 2-16, Section 2.4.1, Soil; 1<sup>st</sup> paragraph.**

*"...the area and volume estimate for soil was calculated for soils associated with the hot spot only."*

Remedial alternatives for soil in this FS should include alternatives for addressing all soil at the Site exceeding residential and commercial/industrial criteria. Therefore, the Navy must calculate the volumes of soil for all areas that exceed PRGs and present this in this section of this FS.

**35. Page 3-3, Section 3.3, Evaluation of Retained Soil Process Options and Technologies; whole section.**

This report focuses on environmental land use restrictions, removal and capping. It is recommended that other alternatives be evaluated in this FS.

**36. Page 3-6, Section 3.3.2, Land Use Controls/Deed Restrictions; Whole Section.**

Please note in this and any other section dealing with land use controls that said controls must meet all of the requirements of RIDEM Remediation Regulations and shall be subject to independent enforcement by the State. Further, annual cost such as yearly inspections, production of an annual report to be submitted to RIDEM, maintenance cost associated with any restrictions such as fences, etc must be included in the cost analysis for this alternative. Finally, be advised that if elevated levels of contaminants are found in surface soils, fencing alone is not considered a viable remedial alternative. Typically, capping, demonstration that natural attenuation is occurring and will be achieved in a timely manner, phytoremediation, etc is incorporated into the remedy.

**37. Page 3-6, Section 3.3.2, Land Use Controls/Deed Restrictions; 2<sup>nd</sup> paragraph.**

The Land Use Control Remedial Design (LUC RD) must be approved by EPA and RIDEM and is enforceable under the FFA and the State regulations. Please add this language to this paragraph in this FS.

**38. Page 3-6, Section 3.3.2, Land Use Controls/Deed Restrictions; Groundwater Monitoring.**

Although elevated levels of contaminants have been found in the soils, this report has proposed not to include groundwater monitoring at the site. Please be advised that groundwater monitoring will be required if the concentration of any contaminants, including TPH, exceed RIDEM leachability standards, unless wells located in the areas of exceedance, with a sufficiently long sampling history, covering all quarters, demonstrate that no exceedances have been observed. Further, independent of the concentration in the soils, if concentrations of any contaminants exceed standards and/or product such as TPH is found in groundwater, then groundwater monitoring will be applied. This comment applies to this and any other section dealing with groundwater monitoring.

**39. Page 3-9-3-16, Sections 3.3.3-3.3.6, Soil Containment, Removal, Ex-Situ Treatment, & Disposal.**

How will the Navy address soil proposed to be left in place with concentrations exceeding PRGs? Please reevaluate the options presented in this FS and include another soil alternative which considers capping, covering and/or treatment of soils in areas exceeding EPA and/or RIDEM criteria, as these options could be more cost effective than excavation and off-site disposal.

**40. Page 3-11, Section 3.3.2, Land Use Controls/Deed Restrictions; Permeable/Impermeable Cap**

This report concludes that due to logistics associated with managing the isolated areas of contaminated soils, an impermeable or permeable cap will not be retained in the Feasibility Study. RIDEM would consider concurring with this provided that all areas which exceed RIDEM's standards, including TPH, are subject to removal or other active remedial alternatives.

**41. Page 3-17, Section 3.4, Evaluation of Retained Groundwater Process Options and Technologies; whole section.**

The report limits groundwater alternatives to removal and monitoring with removal not being retained. Other groundwater treatment alternatives, such as in situ treatment technologies, should also be evaluated. This technology is a viable option for restoring the geochemistry of the aquifer in areas where historical releases have occurred with the tank farm. Please modify the report accordingly.

**42. Page 4-2, Section 4.1.3, Alternative SO3 – Hot Spot Excavation, Offsite Disposal and LUCs; 1<sup>st</sup> paragraph.**

The excavation of the hot spot alone will not eliminate risk to residential users on a small lot-size level due to the remaining areas on the site exceeding PRGs. Additional remedial actions, active or passive, must be required for this reason. Please revise this FS as necessary.

**43. Page 5-2, Section 5.1.2, Component 1: Monitoring; whole section.**

This section includes a discussion of monitored natural attenuation of metals in groundwater. RIDEM concurs with the Navy's conclusion that MNA is not applicable for metals. It is recommended that alternatives to address the source of the metals, such as actions to change the oxidation state of soils, etc be evaluated.

**44. Page 5-2, Section 5.1.2, Component 1: Monitoring; 3<sup>rd</sup> paragraph.**

Please be advised that long-term monitoring may include the establishment of new wells based on the requirements of the long-term monitoring plan.

**45. Tables 2-1, 2-2 & 2-3, Potential ARARs and TBCs**

Please ensure that of the State ARARs listed on the attached table are included in the list of ARARs in Tables 2-1, 2-2 and 2-3 of this Feasibility Study.

**46. Table 2-4, Preliminary Remediation Goals – Soil**

The selected PRGs for benzo(k)fluoranthene for hypothetical child residents and hypothetical lifelong residents do not meet the RIDEM Direct Exposure Criteria. Please change these PRGs to 0.9 mg/kg for both surface and subsurface soil.

**47. Table 2-4, Preliminary Remediation Goals – Soil**

The PRGs developed for arsenic in this FS, 19 mg/kg for surface soil and 24 mg/kg for subsurface soil, do not meet RIDEM's Direct Exposure Criteria. It is understood that data from a background analysis may be used as a basis for PRG development; however, RIDEM does not accept the Navy's background comparisons used in this FS.

**48. Table 2-6, Preliminary Remediation Goals – Groundwater**

Please ensure that the state's groundwater and drinking water standards are included in this table for the development of PRGs. Please note that the revised Remediation Regulations (November 2011) include a GA Groundwater Objective for arsenic of 0.01 mg/l.

**49. Table 2-6, Preliminary Remediation Goals – Groundwater**

As stated in comment #12, PCBs should be listed as COCs for hypothetical child and adult residents. Please develop PRGs for PCBs in groundwater and revise this FS as necessary.

**50. Figure 2-4, PAHs in Subsurface Soil, Lifetime Resident**

Benzo(a)pyrene found in the 2-4 ft interval at SB-939 exceeds the PRG by 10 times, and is proposed to be left in place. RIDEM does not accept this proposal. Please include remedial alternatives for soil at this location in this FS.

**51. Figure 2-13, Manganese in Groundwater, Lifetime Resident**

Manganese was detected in groundwater at MW-920 at a concentration exceeding 10 times the PRG. The Navy must propose a remedial alternative to address groundwater at this location, as well as the entire decision unit.

### RIDEM ARAR Table

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Air Quality	Air Pollution Control Regulations, RI Dept. of Health, Division of Air Pollution Control, effective 8/2/67, amended 7/19/07 - regulation No. 1 - Visible Emissions.	No contaminant emissions will be allowed for periods of more than three minutes in any one hour which is greater or equal to 20% opacity.	Action Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 5 – Fugitive Dust, RIDEM, 7/19/07	Reflects that reasonable precautions be taken to prevent particulate matter from becoming airborne.	Action Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 7 – Emissions Detrimental to Persons or Property, RIDEM, 7/19/07	Prohibits emissions of contaminants which may be injurious to human, plant, or animal life or cause damage to property or which unreasonably interferes with the enjoyment of life and property.	Action and Chemical Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 15 – Control of Organic Solvent Emissions, RIDEM, 7/19/07	Limits the amount of organic solvents emitted to the atmosphere	Action and Chemical Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Toxics Guidelines, RIDEM, 4/04.	Companion to Air Pollution Control Regulation No. 22	Action and Chemical Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Guidelines for Air Quality Modeling for Air Toxics Substances, RIDEM, 9/04	Companion to Air Pollution Control Regulations Nos. 9 and 22	Action and Chemical Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 17 - Odors. 7/19/07	Prohibits the release of objectionable odors across property lines.	Action and Location Specific	RIGL Section 23-23, as amended 1992
Air Quality	Rhode Island Air Pollution Control Regulation 22 – Air Toxics, RIDEM, 7/19/07	This regulation prohibits the emissions of specified contaminants at rates which would result in ground level concentrations greater than acceptable ambient levels in the regulation.	Action and Chemical Specific	RIGL Section 23-23, as amended 1992
Drinking Water	Public Drinking Water Laws, Protection of Public Drinking Water	Applicable to remedial alternatives that affect public drinking water supplies.	Chemical and Location Specific	RIGL 46-14

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Groundwater	Rules and Regulations for Groundwater Quality, RIDEM, 5/15/06	<p>Incorporated RI Groundwater Standards. Intends to protect and restore quality of groundwater resources for use as drinking water and other beneficial uses, to assure protect of public health and welfare and the environment</p> <p>These rules set numerical criteria for contaminants in certain aquifers classified as potential drinking water sources (such as the aquifer at the Site), and require that such groundwater be maintained at a quality that does not have any reasonable potential to cause a violation of surface water quality standards.</p>	Action, Chemical and Location Specific	RIGL 46-12, 46-13.1, 23-18.9, 23-19.1, 42-17.6, and 42-17.1, 1956 as amended
Groundwater	Rules and Regulations for Groundwater Quality, RIDEM, 5/15/06	These rules prescribe design requirements for construction of monitoring wells, how monitoring shall be undertaken, and how wells shall be abandoned once monitoring is complete.	Action Specific	RIGL 46-12, 46-13.1, 23-18.9, 23-19.1, 42-17.6, and 42-17.1, 1956 as amended
Groundwater	Underground Injection Control Program Rules and Regulations, RIDEM, 6/10/84	Applicable for any remedial or removal action where subsurface discharge or underground injection of treated or untreated groundwater may occur.	Action and Location Specific	RIGL 46-12, 42-35, 42-17.3, 23-19.1, as of August 1983
Hazardous Waste	Rhode Island Rules and regulations for Hazardous Waste Management Sections 1 through 5, RIDEM 3/4/07	<p>These rules apply to generators, transporters and treatment/storage facilities dealing with hazardous wastes. The statutes require disposal of solid waste and hazardous waste at licensed facilities.</p> <p>Outlines requirement for general waste analyses, security procedures, inspections, safety, etc.. Sets design, construction, and operational requirements for hazardous waste containers and tanks, and closure requirements for hazardous waste facilities.</p>	Action, Chemical and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 8, RIDEM 3/4/07.	Outlines operational requirements for all hazardous waste treatment, storage, and disposal facilities	Action and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 9, RIDEM 3/4/07.	Outlines requirement for general waste analyses, security procedures, inspections, safety, etc.. Sets design, construction, and operational requirements for hazardous waste containers and tanks, and closure requirements for hazardous waste facilities.	Action and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 10, RIDEM 3/4/07.	Outlines design, operational, and closure requirements for new hazardous waste landfills.	Action and Location Specific	RIGL 23-19.1-10, 23-19.14-18, 42-17.1-2, 42-35, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, Section 11, RIDEM 3/4/07.	Outlines design, operational, and closure requirements for incineration facilities	Action and Location Specific	RIGL 23-19.1, 23-19.14, 42-17.1-2, 46-12, 46-13.1, RIDEM 1956 as amended
Hazardous Waste	Rhode Island Rules and Regulations for Hazardous Waste Management, RIDEM 3/4/07, Sections 12 and 13.	Requires minimal standards for solid waste landfill capping. Specifies type and depth of cap barrier layers and engineering standards. Includes measures to protect against odors and dust.	Action and Location Specific	RIGL 2-1, 2-22, 2-23, 5-51, 23-18.8, 23-19, 23-19.1, 23-23, 23-63, RIDEM 1956 as amended
Hazardous Materials, Soil, Groundwater, Surface water, Sediments	RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases ( <u>Remediation Regulations</u> ), as amended November 2011.	Applicable for removal actions involving reporting, investigation, and remediation of contaminated sites. These rules establish criteria for cleanup of contamination caused by a release of hazardous material.	Action, Chemical and Location Specific	RIGL 23-19.1-11.1, 23-19.14-18, 42-17.1-2, 42-35, 46-12-3 and 46-12-5, as amended
Solid Waste	Rhode Island Rules and Regulations for Solid Waste Management, RIDEM Solid Waste Regulation No. 1, 10/25/05	Applicable for the minimization of environmental hazards associated with operation of solid waste facilities, including management and disposal of dredged material	Action, Chemical and Location Specific	RIGL 23-19.1-11.1, 23-19.14-18, 42-17.1-2, 42-35, 46-12-3 and 46-12-5, as amended
Solid Waste	Rhode Island Rules and Regulations for Solid Waste Management, RIDEM Solid Waste Regulation No. 2, 10/25/05.	Applicable for the construction of final covers and leachate collection systems; and Applicable for all monitoring plans that result from on-site remedial actions.	Action, Chemical and Location Specific	RIGL 2-1, 2-22, 2-23, 5-51, 23-18.8, 23-19, 23-19.1, 23-23, 23-63, RIDEM 1956 as amended

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Solid Waste	Rhode Island Rules and Regulations for Solid Waste Management, RIDEM Solid Waste Regulation No. 4, 10/25/05.	Outlines requirements for on-site waste incineration.	Action, Chemical and Location Specific	RIGL 2-1, 2-22, 2-23, 5-51, 23-18.8, 23-19, 23-19.1, 23-23, 23-63, RIDEM 1956 as amended
Surface Water	Rhode Island Water Quality Regulations, RIDEM, 7/11/06.	<p>Incorporated RI Ambient Water Quality Standards. Classifies water use and defines water quality goals to protect public health and welfare, enhance the quality of state water, and serve the purpose of the CWA.</p> <p>These rules set ambient water quality criteria (AWQCs) applicable to surface waters in Rhode Island. These AWQCs may include numeric limits for chronic exposures to aquatic life, acute exposures to aquatic life, human consumption of water and aquatic organisms, and human consumption of aquatic organisms only. They also forbid activities or discharges that would cause a violation of these criteria.</p>	Action, Chemical and Location Specific	RIGL 46-13.1, May 1992
Surface Water	Regulations for Rhode Island Pollutant Discharge elimination System (RIPDES), RIDEM, 2/25/03.	Applicable for discharges to surface waters and to protect waters from discharges of pollutants	Action, Chemical and Location Specific	RIGL 46-13.1, May 1992
Surface Water and Groundwater	Oil Pollution Control Regulations, RIDEM, 1/3/91	Establishes guidelines for the prevention of discharge, escape or release of oil into the waters of the State and to preserve and protect the quality of the waters of the State, consistent with the purposes of the Clean Water Act	Action and Location Specific	RIGL 46-12, 42-17.1 and 42-35, 1956 as amended
Waste Water	Rhode Island Pretreatment Regulations, RIDEM, 7/16/84	Applicable for any remedial or removal action where treated or untreated liquids are discharged to a Publicly Owned Treatment Works (POTW) facility	Action, Chemical and Location Specific	RIGL 46-13.1, May 1992

Media	Requirements	Requirements Synopsis	Specific Applicability	Legal Citation
Wetlands	Rules and Regulations governing the enforcement of the Freshwater Wetlands Act, RIDEM, 4/23/98; and amendments thereto 9/19/01.	<p>Applicable to actions required to prevent the undesirable drainage, excavation, filling, alteration, encroachment, or any other form of disturbance or destruction to a wetland.</p> <p>These rules require that all wetlands and wetland functions be protected to the maximum extent possible, including by preventing pollutants, sediment, direct discharges of stormwater runoff, or any material foreign to a wetland or hazardous to life from entering any wetland. The rules also require that hazardous material remediations fully protect, replace, restore and/or mitigate harm to any affected wetlands</p>	Action and Location Specific	RIGL 2-1-18 et seq., as amended 1994
Wetlands	Regulations Adopted by the Department of Natural Resources Governing the Enforcement of Chapter 197 of the Public Laws of 1974	These rules should be considered should remedial activities impact any freshwater wetlands or associated buffer zones	Action Specific and Location	RIGL 2-1-20.1, 42-35-1, 2-1-18, September 1974 et seq., as amended 1994
Wetlands	Regulations Adopted by the Department of Natural Resources Governing the Enforcement of Chapter 213 of the Public Laws of 1974	These rules should be considered should remedial activities impact any freshwater wetlands or associated buffer zones	Action Specific and Location	RIGL 2-1-20.1, 42-35-1, 2-1-18, September 1974 et seq., as amended 1994
Wetlands	Coastal Resources Management Council Regulations	Sets standards for management and protection of coastal resources.	Action and Location Specific	RIGL 46-23-1 <i>et seq</i>
Other	Rhode Island Hazardous Substance Community Right-to-Know Act, RIGL 23-24.4	Establishes rules for public right to know concerning hazardous waste storage, discharge, emissions and transportation. Applicable if remedial action involves the off-site disposal or on-site treatment of hazardous substances.	Action, Chemical and Location Specific	RIGL, Title 23, Chapter 24.4 Public Right to Know Requirements as amended in 1989.
Other	Rhode Island Endangered and Threatened Species Act	To be considered if remedial alternative affects any plants or animals of special concern	Location Specific	RIGL 20-37