



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

August 21, 1992

Mr. Francisco La Greca
U.S. Department of the Navy
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Dear Mr. La Greca:

Pursuant to our August 17, 1992 telephone conversation regarding the draft Interim Record of Decision (ROD) for Ground Water Remediation near Tanks 53 and 56 at the Naval Education and Training Center (NETC), EPA received the "Final Draft" version of the interim ROD from TRC Environmental Corporation on August 18, 1992. Please find attached EPA's final round of comments on this document.

Upon incorporation of the attached EPA recommendations and comments and resolution of any outstanding State issues, the "final" document should be circulated for Navy concurrence prior to Northern Division's submission of the final interim ROD for Region I concurrence and signature. It is requested, however, that prior to the preparation and dissemination of the "final" document, a copy of the amended pages and tables be transmitted to the regulatory agencies for final review and concurrence.

Should you have any questions in regards to the attached, please do not hesitate to call me at (617) 573-5764. In addition, please be advised that from August 25 - 27 I can be reached at (303) 238-7751.

Sincerely,

Carol A. Keating

Carol A. Keating
Remedial Project Manager
Federal Facilities Superfund Section

Attachments

cc: Paul Kulpa, RIDEM
Rachel Marino, NETC Newport
Robert Smith, TRC Environmental Corporation
Bob DiBiccaro, EPA ORC



ATTACHMENT I

- The final interim remedial action ROD should have a title page that includes the following:

RECORD OF DECISION
FOR AN
INTERIM REMEDIAL ACTION
AT TANK FARM FIVE, TANKS 53 AND 56
GROUND WATER OPERABLE UNIT
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

- The next page in the interim ROD should be the table of contents. The table of contents should be amended to include the following:

Appendix B - Responsiveness Summary
Appendix C - RIDEM Letter of Concurrence

- The table of contents should be followed by a "List of Figures" which should be followed by a "List of Tables," if applicable.
- Page 1, **DECLARATION, STATEMENT OF BASIS AND PURPOSE** -

¶ 1 - Please insert, "Through this document, the Navy plans to remedy, on an interim basis, by ground water extraction and treatment, the threat to human health and the environment posed by contaminated ground water" prior to the last sentence. In addition, the last sentence should indicate where the administrative record for the site is located.

¶ 3 - Please add a new paragraph that states, "A final remedy for the site including both ground water and source operable units is being developed through the Remedial Investigation/Feasibility Study process and a subsequent Record of Decision (ROD) will be issued to address the final site remedy."

- Page 2, **STATUTORY DETERMINATIONS**, First sentence - Please delete "to the interim remedial action" and replace it with "for this limited scope."
- The Declaration narrative section should be preceded by two separate signature pages. The first should read:

"The foregoing represents the selection of an interim remedial action by the Department of the Navy and the U.S. Environmental Protection Agency, Region I, with concurrence of the Rhode Island Department of Environmental Management. Concur and Recommend for immediate implementation:

By: _____ Date:
Thomas A. Dames

Title: Captain, CEC, U.S. Navy
Commanding Officer
Northern Division
Naval Facilities Engineering Command

By: _____ Date:
N.J. Pattarozzi

Title: Captain, U.S. Navy
Commanding Officer
Naval Education and Training Center
Newport, Rhode Island

The second page should read:

"The foregoing represents the selection of an interim remedial action by the Department of the Navy and the U.S. Environmental Protection Agency, Region I, with concurrence of the Rhode Island Department of Environmental Management.

By: _____ Date:
Julie Belaga

Title: Regional Administrator, USEPA

- Page 1, I. **SITE NAME, LOCATION, AND DESCRIPTION** - Please insert the following "introductory" paragraph:

"The U.S. Naval Education and Training Center (NETC) Newport is a National Priorities List (NPL) site. There are currently four areas of contamination (AOC) and six study areas (SAs) within NETC Newport that are under investigation. This interim Record of Decision (ROD) relates to the contaminated ground water plume originating from Tanks 53 and 56 in Tank Farm Five."

Figures 1, 2 and 3 should immediately proceed this discussion (as pages 2, 3, and 4, respectively).

- Page 4, B. **ENFORCEMENT HISTORY**, ¶ 4, First Sentence - Please insert "for the cleanup of hazardous substances pursuant to CERCLA" after "(RIDEM)" at the end of the sentence.
- Page 5, IV. **SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION**, Fourth Sentence - Please insert, "(including Tanks 53 and 56) after "Tank Farm Five."

- Page 7, ¶ 2, Third line - "Four exposure scenarios were evaluated..." The ROD should briefly discuss the four scenarios mentioned.
- Page 7, ¶ 2, Last sentence - How does the "Risk Assessment Technical Report (TRC, 1991)" differ from the two reports mentioned on the previous page, i.e., June 1991 Tank Closure Investigation Report and Final Phase I Remedial Investigation Report? If it is in fact one of these two documents, it should be referred to as such.
- Page 7, ¶ 4, First sentence - Insert a period after the word "assumed" and delete "along with associated." The second sentence should be "Exposures to soil contaminants were also evaluated." The rest of the paragraph should remain as is.
- Page 9, ¶ 1 - Please insert, "The interim action for ground water extraction and treatment will prevent future migration and reduce contaminant concentrations in contaminated ground water within Tank Farm Five."
- Page 12, ¶ 3, Seventh Line - Remove space between "coagulation/" and "filtration."
- Page 16, A. Interim Ground Water Cleanup Levels. First Sentence - As requested in EPA's August 12, 1992 correspondence, please delete "all major" and replace it with "those."
- Page 19, B. The Selected Remedy Attains ARARs - As discussed in the model ROD, the environmental laws from which ARARs for the selected remedial action are derived, and the specific ARARs and TBCs must be outlined and discussed in a brief narrative summary in this section in addition to their listing in Appendix A. An explanation as to why an ARAR is applicable or why an ARAR is relevant or appropriate, or why a TBC was considered, needs to be explained in the narrative. These explanations need not be more than a few sentences.

(Please refer to the attached ARARs discussion (Attachment 2) from the Brunswick Naval Air Station (BNAS) July 1992 interim ROD for an example of an "acceptable" ARARs summary/narrative.)

- Page 21, XIII. **STATE ROLE** - Please insert "As a party to the FFA," at the beginning of the second sentence. In addition, please change "declaration" to "letter" in the last sentence.

TABLE 1

- See attached revisions.
- Why are benzene, 1,2-dichloroethene(total), cadmium, chromium, lead, and thallium included on the table?

TABLE 2

- Benzene, trichloroethene, and vinyl chloride should be deleted from the list of volatile organic contaminants of concern (COCs).
- The exposure factors for all volatile organics should be 0.012.
- The target endpoint of toxicity for 1,1,1-trichloroethane is the liver.
- The hazard index should be revised based on the revised as follows:

<u>Volatile Organic</u>	<u>Avg.</u>	<u>Reas.Max.</u>
1,2-Dichloroethene(Total)	7.0×10^{-3}	.75
Tetrachloroethene	3.3×10^{-3}	8.0×10^{-3}
1,1,1-Trichloroethane	6.3×10^{-4}	2.5×10^{-2}

- Manganese should be added to the list of inorganic COCs. The exposure factor is .029; the reference dose is .1; the target endpoint is the CNS; the average hazard index is 1.5; and the maximum hazard index is 2.8.

TABLE 3

- Manganese should be added to the list of inorganic COCs.
- See attached revisions.
- Why are benzene and vinyl chloride included on the table?
- Insert the following at the bottom of the table.

"The cleanup level for arsenic has been set at the MCL of 50 ppb. The carcinogenic risk posed by arsenic at 50 ppb in ground water will approximate 1 in 1,000. However, in light of recent studies indicating that many skin tumors arising from oral exposure to arsenic are non-lethal and in light of the possibility that the dose-response curve for the skin cancers may be sublinear (in which case the cancer potency factor used to generate risk estimates will be overstated),

factor used to generate risk estimates will be overstated), it is EPA policy to manage these risks downward by as much as a factor of ten. As a result, the carcinogenic risks for arsenic at this Site have been managed as if they were 1 in 10,000. (See EPA memorandum, "Recommended Agency Policy on the Carcinogenic Risk Associated with the Ingestion of Inorganic Arsenic" dated June 21, 1988.)

APPENDIX A

- The appendix format needs to be revised. Consistent with the model ROD format and that of the BNAS interim ROD ARARs tables that were provided for reference in EPA's August 5, 1992 correspondence (and are also attached to this letter for your reference (Attachment 3)), the chemical- and location- specific ARARs tables should have five separate columns: media, requirement (statute, regulation/guidance), status, synopsis, and consideration in the remedial process.

- State regulations and standards listed as State ARARs and TBC should also identify the corresponding legal citations on the tables.

- Table A-1

RCRA - Subpart F -- Ground Water Protection Standards, Alternate Concentration Limits (40 CFR 264.94) should be added to the table of chemical-specific ARARs as "relevant and appropriate." (Please refer to the BNAS ARARs summary/table for further clarification).

US EPA Risk Reference Doses (RFDs) and USEPA Human Health Assessment Group Cancer Slope Factors (CSFs) should be added to the table of chemical-specific ARARs as "to be considered." (Please refer to the BNAS ARARs summary/table for further clarification.)

- Table A-5

As discussed previously, the appendix format needs to be revised. Consistent with the model ROD format and that of the BNAS interim ROD ARARs tables that were provided for reference in EPA's August 5, 1992 correspondence (and are also attached to this letter for your reference), the action-specific ARARs table should have four columns: requirement (statute, regulation/guidance), status, synopsis, and consideration in the remedial process.

Reference to CERCLA and SARA should be removed from the ARARs tables.

Please add the four federal requirements listed on page A-6 of the BNAS ARARs summary (see attached) to Table A-5. If the Navy believes that these ARARs should not be listed as such for this proposed interim action, please provide an explanation to support this decision.

- Responsiveness Summary - As stated previously, this section should become Appendix B.

TABLE 1
 CARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION OF GROUND WATER
 TANK FARM FIVE

EXPOSURE PATHWAY: INGESTION OF CHEMICALS IN DRINKING WATER

Contaminant of Concern	Concentration (ug/l)		Exposure Factor (l/kg/day)	Cancer Potency (mg/kg/day)	Risk-Estimate Adult	
	Avg.	Max.			Avg.	Reas. Max.
<u>VOLATILE ORGANICS</u>						
Benzene	NA	NA	0.029 0.012	2.9x10 ⁻⁰²	NA	NA
1,2-Dichloroethene(Total)	5.7	630	0.029 0.012	NA	NA	NA
Tetrachloroethene	2.8	7.0	0.029 0.012	5.1x10 ⁻⁰²	1.7x10 ⁻⁰⁶	4.2x10⁻⁰⁶ 4.3x10 ⁻⁶
1,1,1-Trichloroethane	4.7	190	0.029 0.012	NA	NA	NA
Trichloroethene	3.6	38	0.029 0.012	1.1x10 ⁻⁰¹	4.6x10 ⁻⁰⁷	4.9x10 ⁻⁰⁶
Vinyl Chloride	NA	NA	0.029 0.012	1.9	NA	NA
<u>INORGANICS</u>						
Arsenic	73	265	0.029 0.012	1.75	1.5x10 ⁻⁰³	5.4x10 ⁻⁰³
Beryllium	3.4	10.2	0.029 0.012	4.3	1.7x10 ⁻⁰⁴	5.1x10 ⁻⁰⁴
Cadmium	1.7	5.0	0.029 0.012	NA	NA	NA
Chromium	88	384	0.029 0.012	NA	NA	NA
Lead	93	630	0.029 0.012	NA	NA	NA
Thallium	4	4	0.029 0.012	NA	NA	NA
SUM:					1.7x10 ⁻⁰³	5.9x10 ⁻⁰³

carcinogens

noncarcinogens

TABLE 3
GROUND WATER CLEANUP LEVELS
TANKS 53 AND 56, TANK FARM FIVE

Carcinogenic Contaminants of Concern	Cleanup Level (ppb)	Basis	Level of Risk	
VOLATILE ORGANICS				
Benzene	2.5	PAL	9x10 ⁻⁰⁷	
Tetrachloroethene	2.5	PAL	2x10 ⁻⁰⁶	
Trichloroethene	200 ^{2?} 25?	PAL	3x10 ⁻⁰⁷	
Vinyl Chloride	1	PAL	2x10 ⁻⁰⁵	
INORGANICS				
Arsenic	15 50	MCL	3x10⁻⁰⁴	
Beryllium	1	MCL	5x10 ⁻⁰⁵	
Lead	15	AL	NA	
SUM			4x10 ⁻⁰⁴	
<i>risk = 1.0 x 10⁻⁴ *</i>				
Non-carcinogenic Contaminants of Concern	Cleanup Level (ppb)	Basis	Target Endpoint of Toxicity	Hazard Index
VOLATILE ORGANICS				
1,2-Dichloroethene(cis-)	70	MCLG	Decreased hematocrit and hemoglobin	2x10⁻⁰¹ 6x10⁻⁰¹ -2
1,2-Dichloroethene(trans-)	100	MCLG	Decreased hematocrit and hemoglobin	3x10⁻⁰¹ 2
1,1,1-Trichloroethane	200	MCLG	No adverse effect Liver	2x10 ⁻⁰²
INORGANICS				
Cadmium	5	MCLG	Proteinuria	1x10 ⁻⁰¹ 2.3 x 10 ⁻⁰¹
Chromium (Total)	100	MCLG	None observed	1x10 ⁻⁰²
Manganese	3650	Risk	CNS	9 x 10 ⁻²
Thallium	0.5	MCLG	Increased SGOT and LDH levels, alopecia	8x10⁻⁰¹

MCL - Maximum Contaminant Level. National Primary Drinking Water Regulations, Final Rule Amendm nts to Saf Drinking Water Act (SDWA), U.S.EPA, Eff ctive July 1992.
MCLG - Maximum Contaminant Level Goal, based on health considerations only, Final Rul Amm ndments to SDWA, U.S.EPA, Effectiv July 1992
PAL - Pr ventive Action Limit; Rul s and Regulations for Ground Water Quality (DEM-GW-01-92), May 1992.
AL - Action L v l r pres ntative of drinking water quality at the tap, U.S.EPA, May 7, 1991.

* - see comments for insert

1.0

XI. STATUTORY DETERMINATIONS

The interim remedial action selected for implementation at NAS Brunswick for the Eastern Plume is consistent with CERCLA and, to the extent practicable, the National Contingency Plan. The selected interim remedy is protective of human health and the environment, attains ARARs for the limited scope of the action, and is cost-effective. The selected interim remedy also satisfies the statutory preference for treatment that permanently and significantly reduces the toxicity, mobility, or volume of hazardous substances as a principal element. Additionally, the selected interim remedy uses alternate treatment technologies or resource recovery technologies to the maximum extent practicable.

A. THE SELECTED INTERIM REMEDY IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT

The interim remedy at this site will permanently reduce the risks posed to human health and the environment by eliminating, reducing, or controlling exposures to human and environmental receptors through treatment; more specifically, protection is provided by containment of the plume to prevent the migration of contaminated groundwater to currently uncontaminated areas, and by permanent reduction of contaminant concentrations in the water through treatment and off-site disposal of the sludge produced by metals pretreatment. The selected remedy will treat extracted groundwater to levels that are protective of human health, posing human health risks that are within the 10^{-4} to 10^{-6} incremental cancer risk range and that are within the Hazard Quotient of 1.0 for noncarcinogens. Finally, implementation of the interim action will not pose unacceptable short-term risks or cross-media impacts; there will be little danger to workers or the community during treatment and the contaminants removed will be destroyed.

B. THE SELECTED INTERIM REMEDY ATTAINS ARARs

This remedy will attain all applicable or relevant and appropriate federal and state requirements that apply to this limited scope interim action. Generally, ARARs for the selected interim remedial action are a subset of those found in Tables 2-1, 2-2, and 2-4 of Section 2.0 of the FS (E.C. Jordan Co., 1992a). Because the FS considered permanent remedial alternatives and the remedy selected is an interim remedy, some of the ARARs outlined in the FS do not apply to this interim action. ARARs that do apply to this interim action are listed in Appendix A and are discussed below.

When considering interim remedies, it is appropriate to analyze compliance only with those laws and regulations that are applicable, or relevant and appropriate, to the

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limited scope of this interim action. The selected interim remedy would meet the following federal and state ARARs for the treatment of groundwater, discharge of the treated water, and disposal of treatment process sludges:

Chemical-specific ARARs

- Safe Drinking Water Act (SDWA) - MCLs and non-zero MCLGs
- Resource Conservation and Recovery Act (RCRA) - MCLs
- Maine Drinking Water Rules
- Clean Water Act (CWA) - Ambient Water Quality Criteria (AWQC)
- Maine Regulations Relating to Water Quality Criteria for Toxic Pollutants

The following chemical-specific policies, criteria, and guidelines were also considered:

- Maine Department of Human Services Rule 10-144A, CMR Chapter 233 - Maximum Exposure Guidelines (MEGs)
- USEPA Risk Reference Doses (RfDs)
- USEPA Human Health Assessment Group Cancer Slope Factors (CSFs)

Location-specific ARARs

- Maine Natural Resources Protection Act
- Natural Resources Protection Act
- Maine Standards for Classification of Minor Drainages
- Maine Standards for Classification of Groundwater
- Maine Site Location Development Law and Regulations

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Action-specific ARARs

- Resource Conservation and Recovery Act (RCRA) - General Facility Standards
- RCRA - Preparedness and Prevention
- RCRA - Contingency Plan and Emergency Procedures
- RCRA - Miscellaneous Units
- Maine Hazardous Waste Management Rules
- Occupational Safety and Health Administration (OSHA) - General Industry Standards
- OSHA - Safety and Health Regulations
- OSHA - Recordkeeping, Reporting, and Related Regulations
- Clean Water Act (CWA) - Pretreatment Standards for POTW Discharge
- CWA - National Pollutant Discharge Elimination System (NPDES)
- Maine Water Pollution Control Law: Conditions of Licenses
- Maine Water Pollution Control Law: Certain Deposits and Discharges Prohibited
- Underground Injection Control Program
- Maine Rules to Control the Subsurface Discharge of Pollutants by Well Injection

The following policies, criteria, and guidelines (i.e., TBCs) will also be considered during the implementation of the remedial action:

- MEDEP, Bureau of Water Quality Control, Policy Number 10: "The Discharge of Hazardous Substances to Groundwater of the State"

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Federal and State Drinking Water Regulations. The chemical-specific ARARs identified for the Eastern Plume can be applied to the interim remedy in two manners. In the instance of drinking water standards, MCLs and other guidance and criteria to be considered (TBCs) were used in the development of target cleanup levels for the remediation of groundwater at the site. Drinking water standards may also be used separately, or in conjunction with surface water standards, in the development of discharge limits for treated groundwater.

In the development of groundwater cleanup levels, the groundwater in the aquifer underlying the site is classified by the state as GW-A, a drinking water source. The quality and safety of drinking water sources is regulated by the SDWA and Maine Drinking Water Rules. MCLs are enforceable standards under the SDWA that represent the maximum level of contaminants that is acceptable for users of public drinking water supplies. MCLs are relevant and appropriate because, while the groundwater on and off site is not currently used as a drinking water source, the groundwater underlying NAS Brunswick potentially could be used as a drinking water source in the future.

Target cleanup levels for groundwater within the Eastern Plume were developed based on results of the baseline risk assessment. Federal and state MCLs were the first order of standards used in establishing cleanup levels. For those contaminants for which no MCLs were available, other criteria and guidelines (i.e., TBCs) were used. TBCs used during the risk assessment and in establishing cleanup levels included Maine MEGs, USEPA RfDs, and USEPA CSFs.

The objective of the interim remedial action is to prevent further migration of the Eastern Plume. As an interim action, not all ARARs will be attained. Attainment of groundwater standards and risk-based target cleanup levels will be addressed as part of the ROD for the final site remedy.

Federal and State Water Quality Criteria. In developing discharge limits for treated groundwater, drinking water standards and surface water standards identified under chemical-specific ARARs may be applicable to the interim remedy depending on the choice of discharge option. The interim remedy considers three options for discharge of treated groundwater. The Navy's preferred option is discharge of treated water to the Brunswick POTW. Under this option, discharge limits would be based on factors regulated by the POTW's NPDES permit, pretreatment regulations, and water pollution control laws, which will be discussed under action-specific ARARs. Because final discharge from the POTW would be to the Androscoggin River, federal AWQC and Maine Water Quality Criteria are ultimately applicable to this discharge option.

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Pretreatment standards are being developed with the Brunswick POTW. Both the Pretreatment Standards and CWA NPDES will be attained upon successful establishment of pretreatment standards for discharge from the groundwater treatment plant.

Another option for the discharge of treated groundwater would be groundwater reinjection. As required by Underground Injection Control Programs, to be discussed under action-specific ARARs, federal and state MCLs and MEGs would apply to the development of discharge limits. To reinject groundwater, MCLs and MEGs would be attained through treatment of contaminated groundwater.

The final option for discharge of treated groundwater would be directly to a surface water source on NAS Brunswick. This action would be governed by NPDES and Water Pollution Control Regulations, to be discussed under action-specific ARARs. However, these regulations would require development of discharge limits that comply with federal and state Water Quality Criteria. Compliance with NPDES and Water Pollution Control regulations would be through treatment of contaminated groundwater to final discharge limits and regular monitoring of effluent.

State Location-specific Regulations. All the location-specific ARARs that apply to the interim remedy are related to piping that will need to cross Mere Brook. The State of Maine location-specific ARARs relate to work conducted within 100 feet of a stream or wetland. While no significant invasive work will be conducted close to Mere Brook, construction activities to run piping over the brook are an element of the interim remedy.

The Maine Natural Resources Protection Act provides that activities adjacent to streams must not cause unreasonable soil erosion, cause unreasonable harm to significant wildlife habitats, unreasonably interfere with natural water flow, lower water quality, or unreasonably cause or increase flooding. Chapter 305 of the MEDEP regulations provides further standards for erosion control and soil excavation. Implementation of the selected interim remedy would not impact the drainage or natural flow of Mere Brook. Because the pipeline will cross Mere Brook at an existing roadway bridge, minimal effects are expected. However, soil erosion controls will be employed during excavation along the pipeline.

Portions of the Maine Site Location Development Law, and associated regulations, apply to this site. The law and regulations provide that new development, which handles hazardous waste, cannot have an adverse effect on the natural environment or pose an unreasonable risk of discharge to a significant groundwater aquifer. Applicable portions of Chapter 375, which set forth the no adverse environmental effect standards regulation of natural drainageways, runoff, erosion, sedimentation

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control, and groundwater quality, will be attained by the interim remedy. As mentioned, implementation of the selected interim remedy would not impact the drainage or natural flow of Mere Brook. Soil erosion controls will be employed during excavation along the pipeline to minimize soil entering Mere Brook. Groundwater extraction will remediate groundwater and prevent further impact to the environment.

Federal and State Hazardous Waste Regulations. The applicability of RCRA and Maine Hazardous Waste Regulations depends on whether the wastes are RCRA-hazardous wastes as defined under these regulations. To date, there is no information available (i.e., manifests) to indicate that RCRA-regulated materials were disposed of at Sites 4, 11, and 13. However, because toxic constituents are present in the source materials and groundwater in the Eastern Plume, many portions of the federal and state hazardous waste regulations are relevant and appropriate to the interim remedy.

RCRA General Facility Standards, Preparedness and Prevention, and Contingency Plan and Emergency Procedures will be attained during construction and operation of the groundwater treatment plant. The treatment plant, which will be secured to prevent access by unauthorized personnel. The facility will be designed, maintained, constructed, and operated to minimize the possibility of an unplanned release that could threaten human health or the environment. During remedial construction, safety and communication equipment will be installed at the site, and local authorities will be familiarized with site operations. Contingency plans will be developed and implemented during site work and treatment plant operation. A program will be developed for handling, storage, and recordkeeping, in accordance with Maine Hazardous Waste Management Rules.

During treatment of contaminated groundwater, sludges containing some toxic constituents will be produced. A component of groundwater treatment includes laboratory analysis of this sludge, including Toxicity Characteristic Leachate Procedure (TCLP) testing. If the sludge fails TCLP testing, this material will be considered hazardous. As a characteristic hazardous waste, RCRA regulations, including Land Disposal Restrictions will apply and the sludge will be treated and disposed of in a RCRA Subtitle C facility.

Because toxic constituents are present on site, OSHA regulations protecting worker health and safety at hazardous waste sites are applicable to the implementation and long-term operation of the interim remedy. Site workers will have completed training and will have appropriate health and safety equipment on site. Contractors and subcontractors working on site will follow health and safety procedures.

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Federal and State NPDES, Water Pollution Control, and Underground Injection Regulations. As mentioned, many action-specific ARARs will regulate the discharge of treated groundwater. The three discharge options for the interim remedy include: (1) Brunswick POTW, (2) reinjection to groundwater, and (3) direct discharge to surface water. Discharge of treated groundwater to the Brunswick POTW is the Navy's preferred option; however, final approval has not been obtained from the POTW. CWA Pretreatment Standards for POTW Discharge would be attained through treatment of the groundwater to these standards. Indirectly, CWA NPDES is an applicable regulation because the final discharge is to the Androscoggin River, and the Brunswick POTW has a current NPDES permit.

If discharge to the POTW is not acceptable, a second alternative is to reinject treated water back to groundwater. The federal Underground Injection Control Program and Maine Rules to Control the Subsurface Discharge of Pollutants by Well Injection are applicable to this discharge option. These regulations would require and be attained through establishment of standards for the treatment of groundwater that attain federal and state drinking water standards and guidance values.

The third discharge option would be to send treated groundwater directly to a surface water source on NAS Brunswick. The CWA NPDES and Maine Water Pollution Control Laws would apply to this method of discharge. Under this option, an NPDES permit would need to be obtained. In the course of obtaining that permit, discharge limits for the treatment plant effluent would be established. Federal and state water quality criteria would be used in the development of final discharge limits.

~~C. THE SELECTED INTERIM REMEDIAL ACTION IS COST-EFFECTIVE~~

~~The selected interim remedy is cost-effective; that is, the remedy affords overall effectiveness proportional to its costs. The Navy evaluated the overall effectiveness of the interim action by assessing the relevant three criteria: long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness, in combination. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs. The costs of this remedial alternative are:~~

~~*Estimated Capital Cost.* \$1,223,000
Estimated Operation and Maintenance Costs (net present worth): \$1,845,000*
Estimated Total Cost (net present worth): \$4,223,000*~~

~~*Net present worth costs are based on a 10 percent discount factor and five years of operation.~~

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Attachment 3

APPENDIX A

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

TABLE A-1
 CHEMICAL-SPECIFIC ARARS, CRITERIA, ADVISORIES, AND GUIDANCE

ROD: EASTERN PLUME
 NAS BRUNSWICK

MEDIA	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
<u>GROUNDWATER/ SURFACE WATER</u>				
<u>Federal</u>	SDWA - MCLs (40 CFR 141.11 - 141.16)	Relevant and Appropriate	MCLs have been promulgated for several common organic and inorganic contaminants. These levels regulate the concentration of contaminants in public drinking water supplies, but may also be considered relevant and appropriate for groundwater aquifers used for drinking water.	Groundwater at NAS Brunswick is not a current source of drinking water; therefore, MCLs are not applicable, but may be relevant and appropriate. To assess the potential risks to human health due to consumption of groundwater, contaminant concentrations compared to their MCLs.
	SDWA - MCLGs (40 CFR 141.50 - 141.51)	Relevant and Appropriate	MCLGs are health-based criteria. As promulgated under SARA, MCLGs are to be considered for drinking water sources. MCLGs are available for several organic and inorganic contaminants.	The 1990 National Contingency Plan states that non-zero MCLGs are to be used as goals. Because groundwater at NAS Brunswick is not a current source of drinking water, MCLGs are not applicable, but may be relevant and appropriate. Contaminant concentrations in groundwater were compared to their MCLGs.
	RCRA - Subpart F Groundwater Protection Standards, Alternate Concentration Limits (40 CFR 264.94)	Relevant and Appropriate	This requirement outlines standards, in addition to background concentrations and MCLs, to be used in establishing clean-up levels for remediating groundwater contamination.	Most of the MCLs promulgated under RCRA are the same as SDWA MCLs. The standards set forth under RCRA do not reflect recent changes and additions to SDWA MCLs. Because groundwater is not a current source of drinking water; RCRA MCLs are not applicable, but may be relevant and appropriate
	Federal AWQC	Applicable	Federal AWQC include (1) health-based criteria developed for 95 carcinogenic and noncarcinogenic compounds and (2) water quality parameters. AWQC for the protection of human health provide levels for exposure from drinking water and consuming aquatic organisms, and from consuming fish alone. Remedial actions involving contaminated surface water or groundwater must consider the uses of the water and the circumstances of the release or threatened release; this determines whether AWQC are relevant and appropriate.	AWQC will be applicable if treated groundwater is discharged to surface water. The Navy's preferred discharge option is to the Brunswick POTW, although the Navy has not yet received approval from POTW. AWQC may be considered during development of pretreatment standards because the POTW discharges its effluent to the Androscoggin River.

A-1

continued

TABLE A-1
CHEMICAL-SPECIFIC ARARs, CRITERIA, ADVISORIES, AND GUIDANCE

ROD: EASTERN PLUME
NAS BRUNSWICK

MEDIA	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
<u>Federal Guidance and Criteria To Be Considered</u>	USEPA Risk Reference Doses (RfDs)	To Be Considered	RfDs are the levels considered unlikely to cause significant adverse health effects associated with a threshold mechanism of action in human exposure for a lifetime.	Because there are only a limited number of promulgated standards for contaminants in soil and water, USEPA RfDs were used to characterize risks due to noncarcinogens in various media.
	USEPA Human Health Assessment Group Cancer Slope Factors (CSFs)	To Be Considered	Carcinogenic effects present the most up-to-date information on cancer risk potency derived from USEPA's Human Health Assessment Group	Because there are only a limited number of promulgated standards for contaminants in soil and water, USEPA CSFs were used to compute the individual incremental cancer risk resulting from exposure to certain compounds.
<u>State</u>	Maine Drinking Water Rules (10-144A CMR Chapters 231-233)	Relevant and Appropriate	Maine's Primary Drinking Water Standards are equivalent to federal MCLs. When state levels are more stringent than federal levels, the state levels may be used.	Groundwater at NAS Brunswick is not a current source of drinking water; therefore, State Drinking Water Standards are relevant and appropriate. Contaminant concentrations in groundwater were compared to State standards to assess the potential risks to human health due to consumption of groundwater.
	Maine Regulations Relating to Water Quality Criteria for Toxic Pollutants (MEDEP Regs, Chapter 584)	Applicable	This rule limits the concentrations of certain materials allowed in Maine waters to prevent the occurrence of pollutants in toxic amounts as required by state and federal law. Except if naturally occurring, ambient levels of toxic pollutants shall not exceed the Clean Water Act AWQC. Where AWQC do not exist, the Board of Environmental Protection shall adopt site-specific numerical criteria.	This rule will be applicable if treated groundwater is discharged to surface water. The Navy's preferred discharge option is to the Brunswick POTW, although the Navy has not yet received approval from the POTW. AWQC will be considered during development of pretreatment standards. This rule is potentially applicable in development of pretreatment standards if AWQC do not exist for any contaminants present groundwater.

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continued

TABLE A-1
CHEMICAL-SPECIFIC ARARs, CRITERIA, ADVISORIES, AND GUIDANCE

ROD: EASTERN PLUME
NAS BRUNSWICK

MEDIA	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PR OCESS
<u>State Criteria and Guidance To Be Considered</u>	Rules Relating to Testing of Private Water Systems for Potentially Hazardous Contaminants (10-144A CMR Chapter 233, Appendix C)	To Be Considered	Appendix C outlines Maximum Exposure Guidelines (MEGs) for organic and inorganic compounds. MEGs include health advisories, which are maximum allowable concentrations of specific contaminants in drinking water.	MEGs have been considered for chemical compounds for which there are no promulgated standards. MEGs may be considered if treated groundwater is discharged back to groundwater. The Navy's preferred discharge option is to the Brunswick POTW; however the Navy has not yet received approval from the POTW. MEGs may potentially be considered during development of discharge limits for reinjection of treated groundwater.

Notes:

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- ARAR = Applicable or Relevant and Appropriate Requirement
 - AWQC = Ambient Water Quality Criteria
 - CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
 - CFR = Code of Federal Regulations
 - CMR = Code of Maine Rules
 - CPF = carcinogenic potency factor
 - FS = feasibility study
 - MCL = Maximum Contaminant Level
 - MCLG = Maximum Contaminant Level Goal
 - MEG = Maximum Exposure Guidelines
 - MEDEP = Maine Department of Environmental Protection
 - MRSA = Maine Revised Statutes Annotated
 - NAS = Naval Air Station
 - OSWER = Office of Solid Waste and Emergency Response
 - RI = remedial investigation
 - RCRA = Resource Conservation and Recovery Act
 - RfD = reference dose
 - SARA = Superfund Amendments and Reauthorization Act
 - SDWA = Safe Drinking Water Act
 - USEPA = U.S. Environmental Protection Agency

TABLE A-2
 LOCATION-SPECIFIC ARAR , CRITERIA, ADVISORIES, AND GUIDANCE

ROD: EASTERN PLUME
 NAS BRUNSWICK

MEDIA	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
<u>State</u>	Maine Natural Resources Protection Act (38 MRSA, Section 480-A through S)	Applicable	This act outlines requirements for certain activities adjacent to any freshwater wetland greater than 10 acres or with an associated stream, brook, or pond or adjacent to a coastal wetland. The activities must not unreasonably interfere with certain natural features, such as natural flow or quality of any waters, nor harm significant aquatic habitat, freshwater fisheries, or other aquatic life.	Because piping will need to be extended across Mere Brook, this regulation is applicable. Remedial activities will need to meet the substantive requirements of this Act.
	Natural Resources Protection Act, Permit by Rule Standards (MEDEP Regs, Chapter 305)	Applicable	This rule outlines prescribed standards for specific activities that may take place in or adjacent to wetlands and water bodies.	Because piping will need to be extended across Mere Brook, this regulation is applicable. Activities involving disturbance of soil material within 100 feet of the normal high water line, will be designed to incorporate all applicable standards.
	Maine Standards for Classification of Minor Drainages (38 MRSA, Section 468)	Applicable	Mere Brook is classified as a Class B water under the state water quality standards. Class B waters are defined as suitable for drinking water (after treatment), fishing, recreation in and on the water, and as habitat for fish and other aquatic life.	These regulations apply to activities conducted adjacent to Mere Brook. Remedial construction should not result in the degradation of water quality classification. These regulations may also potentially apply if treated groundwater is discharged to surface water. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. The designated uses of the waters receiving either direct discharge or POTW effluent must be considered and protected when developing either discharge limits or pretreatment standards.
	Maine Natural Resources Protection Act (38 MRSA, Section 480-A through S)	Applicable	A permit application must be submitted and approved by the Maine Bureau of Land Quality Control and Section 480-D performance standards met when conducting activities adjacent to any freshwater wetland greater than 10 acres or with an associated stream, brook, or pond.	Substantive requirements of this regulation apply to activities conducted adjacent to Mere Brook. However, a permit is not required for the selected remedy since the administrative permit requirement are waived for remedial activities conducted on-site at federal Superfund sites.

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continued

TABLE A-2
LOCATION-SPECIFIC ARARs, CRITERIA, ADVISORIES, AND GUIDANCE

ROD: EASTERN PLUME
NAS BRUNSWICK

MEDIA	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
	Maine Standards for Classification of Groundwater (38 MRSA, Section 470)	Applicable	This law requires the classification of the state's groundwater to protect, conserve, and maintain groundwater resources in the interest of the health, safety, and general welfare of the people of the state. Under the Maine standards, groundwater is classified as GW-A.	This regulation will apply if treated groundwater is discharged back to groundwater. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. If discharge to groundwater is employed, the classification and uses of groundwater will be evaluated during development of discharge limits.
	Maine Site Location Development Law and Regulations (38 MRSA Sections 481-490; MEDEP Regs, Chapters 371-377)	Applicable	This act and associated regulations govern new developments, including those that handle hazardous waste. New developments cannot adversely affect existing uses, scenic character, or natural resources in the municipality or neighboring municipality.	Those regulations concerning No Adverse Environmental Impact (i.e., Chapter 375) are applicable to implementation of the interim remedy. In particular, standards for protection of groundwater would apply to construction and groundwater treatment activities. However, any licenses required, by reference, will not need to be obtained since permits are not required for actions conducted on-site at federal Superfund sites.

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Notes:

- ARAR = Applicable or Relevant and Appropriate Requirements
- CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
- CFR = Code of Federal Regulations
- CWA = Clean Water Act
- MRSA = Maine Revised Statutes Annotated
- MEDEP = Maine Department of Environmental Protection
- NAS = Naval Air Station
- RI/FS = Remedial Investigation/Feasibility Study
- RCRA = Resource Conservation and Recovery Act

TABLE A-3
ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENT

R D: EASTERN PLUME
NAS BRUNSWICK

REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
<u>Federal</u>			
RCRA - General Facility Standards (40 CFR 264.10-264.18)	Relevant and Appropriate	General facility requirements outline general waste analysis, security measures, inspections, and training requirements.	The waste material at Sites 4, 11, and 13 have not been formally defined as a RCRA-regulated waste; therefore, only sections of the facility standards are relevant and appropriate. All other relevant general requirements will be incorporated into the construction and operation of the groundwater treatment plant.
RCRA - Preparedness and Prevention (40 CFR 264.30-264.37)	Relevant and Appropriate	This regulation outlines requirements for safety equipment and spill-control for hazardous waste facilities. Part of the regulation includes a requirement that facilities be designed, maintained, constructed, and operated to minimize the possibility of an unplanned release that could threaten human health or the environment.	Because toxic constituents are present within the Eastern Plume groundwater, preparedness and prevention requirements are relevant and appropriate to the implementation of the selected remedy. During remedial construction, safety and communication equipment will be installed at the site, and local authorities will be familiarized with site operations.
A-6 RCRA - Contingency Plan and Emergency Procedures (40 CFR 264.50-264.56)	Relevant and Appropriate	This regulation outlines the requirements for emergency procedures to be used following explosions, fires, etc.	Because toxic constituents are present in Eastern Plume groundwater, contingency plans and emergency procedures are relevant and appropriate to the implementation of the selected remedy. Plans will be developed and implemented during site work including installation of extraction wells, and implementation of site remedies. Copies of the plans will be kept on-site.
RCRA - Miscellaneous Units (40 CFR 264.600-264.999)	Relevant and Appropriate	These standards are applicable to miscellaneous units not previously defined under existing RCRA regulations. Subpart X outlines performance requirements that miscellaneous units be designed, constructed, operated, and maintained to prevent releases to the subsurface, groundwater, surface water, and wetlands that may have adverse effects on human health and the environment.	Because the selected remedy includes a groundwater treatment plant, the general design, performance, and operating requirements of Subpart X are relevant and appropriate. However, a permit is not required for remedial actions conducted on-site at federal Superfund sites.

continued

TABLE A-3
ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

ROD: EASTERN PLUME
NAS BRUNSWICK

REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
RCRA Land Disposal Restrictions (40 CFR 268)	To be determined	Land disposal of RCRA hazardous wastes is restricted without specified treatment. It must be determined that the waste, beyond a reasonable doubt, meets the definition of one of the specified restricted wastes and the remedial action must constitute "placement" for the land disposal restrictions to be considered applicable. For each hazardous waste, the LDRs specify that the waste must be treated either by a treatment technology or to a concentration level prior to disposal in a RCRA Subtitle C permitted facility.	During treatment of groundwater, sludge containing hazardous constituents will be generated. The selected remedy includes provisions for analysis of this sludge, including Toxicity Characteristic Leachate Procedure (TCLP) testing. LDRs are potentially applicable if the sludge fails TCLP. The selected remedy does address handling and disposal of the sludge as a hazardous waste, if necessary.
OSHA - General Industry Standards (29 CFR Part 1910)	Applicable	These regulations specify the 8-hour time-weighted average concentration for various organic compounds. Training requirements for workers at hazardous wastes operations are specified in 29 CFR 1910.120.	Because toxic constituents are present in Eastern Plume groundwater, OSHA regulations are applicable. Proper respiratory equipment will be worn if it is impossible to maintain the work atmosphere below designated concentrations. Workers performing activities would be required to have completed specific training requirements.
OSHA - Safety and Health Standards (29 CFR Part 1926)	Applicable	This regulation specifies the type of safety equipment and procedures to be followed during site remediation.	Because toxic constituents are present in Eastern Plume groundwater, OSHA regulations are applicable. All appropriate safety equipment will be on-site. In addition, safety procedures would be followed during on-site activities.
OSHA - Recordkeeping, Reporting, and Related Regulations (29 CFR 1904)	Applicable	This regulation outlines the recordkeeping and reporting requirements for an employer under OSHA.	Because toxic constituents are present in Eastern Plume groundwater, OSHA regulations are applicable. These requirements will apply to all site contractors and subcontractors, and must be followed during all site work

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continued

TABLE A-3
ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENT

ROD: EASTERN PLUME
NAS BRUNSWICK

REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
CWA - NPDES Regulations (40 CFR Parts 122, 125)	Applicable	This requirement implements the NPDES program that specifies the applicable effluent standards, monitoring requirements, and standard and special conditions for direct discharge.	NPDES requirements will be applicable if treated groundwater is discharged to surface water. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. Both on- and off-site discharges from CERCLA sites to surface waters are required to meet the substantive CWA NPDES requirements, including discharge limitations, monitoring requirements, and best management practices. Brunswick POTW has a current NPDES permit. A permit would be required if treated groundwater is discharged on-site.
Underground Injection Control Program (40 CFR 144, 146, 147, 1000)	Applicable	These regulations outline minimum program and performance standards for underground injection programs. Technical criteria and standards for siting, operation and maintenance, and reporting and recordkeeping as required for permitting are set forth in Part 146.	This regulation will be applicable if treated groundwater is discharged back to groundwater. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. Discharge of treated groundwater, by well injection, must be in accordance with all the criteria and standards in these federal regulations, as well as meet all state Underground Injection Control Program requirements. Treated groundwater must meet all SDWA standards prior to well injection.
CWA - Pretreatment Standards for POTW Discharge (40 CFR Part 403)	Applicable	This regulation specifies pretreatment standards for discharges to a POTW. If treated groundwater is discharged to a POTW, the POTW must have mechanisms available to meet the requirements of the National Pretreatment Program - Introduction of Pollutants which cause pass through or interference are prohibited. Discharges must also comply with any local POTW regulations. If hazardous waste is discharged to the POTW, the POTW may be subject to RCRA permit-by-rule.	This regulation is applicable since the Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. If treated groundwater is discharged to a POTW, the treated water must meet all discharge limitations imposed by the POTW.

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TABLE A-3
ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

ROD: EASTERN PLUME
NAS BRUNSWICK

REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PROCESS
<u>State</u>			
Maine Rules to Control the Subsurface Discharge of Pollutants by Well Injection (MEDEP Regs, Chapter 543)	Applicable	This regulation prohibits the injection of hazardous waste into or above water-bearing formations via a new Class IV well. The subsurface discharge into or through a Class IV well that would cause or allow the movement of fluid into an underground source of drinking water that may result in a violation of any Maine Primary Drinking Water Standard, or which may otherwise adversely affect public health, is prohibited.	These regulations will be applicable if treated groundwater is discharged back to groundwater. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. For discharge to the subsurface, groundwater must be treated to a target clean-up level less than or equal to the Maine MEGs to be recharged to the aquifer.
Maine Hazardous Waste Management Rules (MEDEP Regs, Chapters 800-802, 850, 851, 853-857)	Relevant and Appropriate	The rules provide a comprehensive program for handling, storage, and recordkeeping at hazardous waste facilities. They supplement the RCRA regulations.	Because these requirements supplement RCRA hazardous waste regulations, they are relevant and appropriate.
6-V Maine Water Pollution Control Law: Conditions of Licenses (38 MRSA, Section 414-A)	Applicable	Regulates the discharge of any pollutants. Specifies that the discharge, either by itself or combined with other discharges, will not lower the quality of any classified body of water below such classification. The discharge will be subject to effluent limitations that require application of the best practicable treatment.	The substantive requirements of this regulation will apply if treated groundwater is discharged to surface water. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. If treated water is discharged directly to surface water the effluent must receive the best practicable treatment before discharge.
Maine Water Pollution Control Law: Certain Deposits and Discharges Prohibited (38 MRSA, Section 420)	Applicable	No person, firm, corporation, or other legal entity shall place, deposit, discharge, or spill mercury or toxic or hazardous substances, either directly or indirectly, into the inland groundwater or surface waters, tidal waters, on the ice, or on the banks thereof, so that the same may flow or be washed into such waters, or in such manner that the drainage therefrom may flow into such waters.	This regulation will apply if treated groundwater is discharged to surface water. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. If discharge to surface water is employed, Best Management Practices will be used when handling wastes.

continued

TABLE A-3
ACTION-SPECIFIC APPLICABLE R RELEVANT AND APPROPRIATE REQUIREMENTS

ROD: EASTERN PLUME
NAS BRUNSWICK

REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	CONSIDERATION IN THE REMEDIAL PR OCESS
<u>State Guidance and Criteria To Be Considered</u>			
MEDEP, Bureau of Water Quality Control, Policy Number 10, "The Discharge of Hazardous Substances to Groundwaters of the State"	To Be Considered	The Bureau will deny applications for waste discharge licenses for the discharge to groundwaters of substances designated by the Board to be hazardous when such substances are present in concentrations exceeding groundwater levels which occur naturally in the area. Exemption may be granted if the groundwater is treated to reduce the concentrations of pollutants discharged to below the level considered safe for drinking water	This policy will need to be considered if treated groundwater is discharged back to groundwater. The Navy's preferred discharge option is to the Brunswick POTW; however, the Navy has not yet received approval from the POTW. If treated water is discharged to the subsurface, the minimum level of groundwater treatment would be required to provide adequate protection if no other means of disposal is feasible. This policy would only be considered after application of federal and state underground injection control regulations.

Notes:

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- AHERA = Asbestos Hazard Emergency Response Act
- CAA = Clean Air Act
- CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
- CFR = Code of Federal Regulations
- CMR = Code of Maine Regulations
- CWA = Clean Water Act
- DOT = Department of Transportation (U.S.)
- LDRs = Land Disposal Restrictions
- FS = feasibility study
- MEDEP = Maine Department of Environmental Protection
- MEG = Maximum Exposure Guidelines
- MRSA = Maine Revised Statutes Annotated
- NAS = Naval Air Station
- NESHAP = National Emission Standards for Hazardous Air Pollutants
- NPDES = National Pollutant Discharge Elimination System
- OSHA = Occupational Safety and Health Administration
- POTW = publicly owned treatment works
- RACT = Reasonably Available Control Technology
- RI = remedial investigation
- RCRA = Resource Conservation and Recovery Act
- SDWA = Safe Drinking Water Act
- TCLP = Toxicity Characteristic Leachate Procedure
- µg/m³ = micrograms per cubic meter
- VOC = volatile organic compound