

# **Former Pease Air Force Base Portsmouth, New Hampshire**

Zone 3

## **Zone 3 Record of Decision Amendment**

December 2003 Contract No. F41624-00-D-8022 Delivery Order No. 001

# DECLARATION FOR THE RECORD OF DECISION AMENDMENT ZONE 3, PEASE AIR FORCE BASE SUPERFUND SITE NOVEMBER 2003 PORTSMOUTH AND NEWINGTON, NEW HAMPSHIRE

#### STATEMENT OF PURPOSE

This decision document presents the amended remedial action for Zone 3 at the Pease Air Force Base Superfund Site developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9601 *et seq.* and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as amended, 40 Code of Federal Regulations (CFR) Part 300.

The New Hampshire Department of Environmental Services (NHDES) concurs with the amended remedy for Zone 3.

#### STATEMENT OF BASIS

This decision is based on the Administrative Record (AR) file which has been developed in accordance with Section 113(k) of CERCLA and which is available for public review at the former Pease Air Force Base (AFB) Site 8, 20 Short Street, Newington, New Hampshire. The AR Index (Appendix A to this Record of Decision (ROD) Amendment) identifies each of the items comprising the AR upon which the selection of the amended remedial action is based.

#### ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from Zone 3, if not addressed by implementing the response action selected in this ROD Amendment, may present an imminent and substantial endangerment to the public health or welfare.

#### DESCRIPTION OF THE AMENDED REMEDY

The modified Zone 3 cleanup approach will improve the long-term effectiveness of the remedy, and document cleanup actions for sites that were not addressed in the 1995 Zone 3 ROD. Major Components of the amended remedy include:

- x Construction of a contingency wellhead treatment system for the Haven well.
- x Optimization of the Site 39 source area groundwater extraction system with monitored natural attenuation of the down-gradient plume.
- x Termination of groundwater extraction to control contaminant migration southwest of Sites 34 and 39.
- x Modification of the Zone 3 long-term monitoring program to measure the performance of the amended remedy.

- Modification of the Zone 3 long-term monitoring program to measure the performance of the amended remedy.
- Ongoing treatment of Site 49 and Site 73 source area groundwater contamination with permeable reactive barriers (PRBs).
- Implementation of land use controls that protect human receptors from exposure to contaminants in soils and groundwater at sites in Zone 3 and at Site 49
- A review of the Site every five years to ensure that the remedy remains protective of human health and the environment.
- No further action at Site 65.

#### STATUTORY DETERMINATIONS

The amended remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate for this remedial action, and is cost effective. The amended remedy also utilizes permanent solutions and alternative treatment technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. As this remedy will result in hazardous substances remaining onsite above health based levels, a review will be conducted every five years after implementation of the components of this amendment to ensure that the remedy continues to provide adequate protection of human health and the environment.

#### DECLARATION

The foregoing represents an amendment of the Zone 3 ROD by the United States Air Force, the United States Environmental Protection Agency, with concurrence of the New Hampshire Department of Environmental Services.

Date 24 Deember 2003

Date: 12-30-63

Concur and recommend for immediate implementation:

By: albert J.	Lowa		
Albert F. Lowas	15/		

Director, Air Force Real Property Agency

United States Department of the Air Force

**United States Environmental Protection Agency** 

Susan Studlien

Director

Office of Site Remediation & Restoration

Region I

#### **ZONE 3 RECORD OF DECISION AMENDMENT**

# FORMER PEASE AIR FORCE BASE PORTSMOUTH, NEW HAMPSHIRE

Contract No. F41624-00-D-8022 Delivery Order No. 01

# Prepared for:

Air Force Base Conversion Agency (AFBCA) The Pentagon, Washington, DC 20330

Air Force Center for Environmental Excellence (AFCEE)
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December 2003

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#### LIST OF ACRONYMS AND ABREVIATIONS

μg/L micrograms per liter
AFB Air Force Base

Air Force United States Air Force

AFRPA Air Force Real Property Agency

AGQS Ambient Groundwater Quality Standards

ARAR Applicable or Relevant and Appropriate Requirements

BCT BRAC Cleanup Team

BRAC Base Realignment and Closure

BTEX Benzene, Toluene, Ethylene, and Xylene

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CFR Code of Federal Regulations

CG Cleanup Goals

COC Constituents of Concern

CREW Concrete Recovery Extraction Well

DCA 1,1-dichloroethane DCE Dichloroethylene

DNAPL Dense Non-Aqueous Phase Liquid

DOD Department of Defense

USEPA United States Environmental Protection Agency

FFA Federal Facility Agreement

ft Feet

GAC Granulated Activated Carbon

gal Gallon

gpm gallons per minute

GMZ Groundwater Monitoring Zone GWTP Groundwater Treatment Plant HHCs Halogenated Hydrocarbons

HMSA Hazardous Materials Storage Area

IRM Interim Remedial Measure

IRP Installation Restoration Program

JETC Jet Engine Test Cell
JP-4 Jet, Petroleum (Jet Fuel)
LTMP Long Term Monitoring Plan
NCP National Contingency Plan

NHDES New Hampshire Department of Environmental Services

ORP Oxidation Reduction Potential

OWS Oil Water Separator

PAH Polynuclear Aromatic Hydrocarbons

PCE Tetrachloroethene PD-680 Stoddard Solvent

PDA Pease Development Authority

# LIST OF ACRONYMS AND ABREVIATIONS (Continued)

PRB Permeable Reactive Barrier RAO Remedial Action Objective

Resource Conservation and Recovery Act **RCRA** Remedial Design and Remedial Action RD/RA

Remedial Investigation and Feasibility Study RI/FS

Amendment of the Record of Decision **ROD** Amendment

ROD Record of Decision TCE Trichloroethene

**Technical Impracticability** ΤI

United States Code USC

Underground Storage Tank UST

Roy F. Weston, Inc. Weston

Volatile Organic Compounds VOC

 $yd^3$ cubic yard

1,1,1-trichloroethane 1,1,1-TCA

# 1.0 SITE NAME, LOCATION, DESCRIPTION AND RATIONALE FOR AMENDMENT

The former Pease Air Force Base (AFB) is located in the Town of Newington and the City of Portsmouth, both in Rockingham County, New Hampshire. As shown in Figure 1-1, Appendix B, the former AFB occupies approximately 4,365 acres and is located on a peninsula in southeastern New Hampshire. The peninsula is bounded on the west and southwest by Great Bay, on the northwest by Little Bay, and on the north and northeast by the Piscataqua River.

This Record of Decision (ROD) Amendment presents modifications to the 1995 Zone 3 ROD that address groundwater impacts from CERCLA plumes in Zone 3 and also documents response actions that have been implemented at three additional sites since the time of the 1995 Zone 3 ROD. Zone 3 is located in the central portion of the former AFB and occupies approximately 440 acres (see Figure 1-2, Appendix B). The zone contains numerous buildings with adjacent paved parking areas, a network of roads and the flightline area. A large section of Zone 3 covers the flightline area of the base, which includes portions of the runway, aircraft parking apron, and the grassy infield between the aircraft parking apron and the runway. The aircraft parking apron is a major feature of the base, covering nearly one third of the zone. The primary water supply well for the former AFB (Haven well) is located within Zone 3 on the grassy infield area (see Figure 1-2, Appendix B).

On September 26, 1995, the Air Force and EPA, with concurrence from the NHDES, and in accordance with the CERCLA, 42 USC §§ 9601 *et seq.*, issued the ROD for Zone 3 at the AFB Site (Roy F. Weston Inc., [Weston] 1995). As described more fully below, the ROD focused mainly on selecting remedies designed to protect the Haven water supply well while restoring Zone 3 groundwater quality.

Under the Zone 3 ROD, the primary remedial action objective (RAO) was to restore the overburden and bedrock groundwater to selected cleanup goals in a time-frame consistent with CERCLA and the NCP. The ROD also placed pumping limitations on the Haven well to prevent interference with contamination migration control systems and prevent migration of Zone 3 groundwater contamination to the well. To accomplish the groundwater restoration objective, the Zone 3 ROD

required the removal of contaminated soil that posed a leaching threat to underlying groundwater, source area groundwater extraction to reduce contaminant mass and to prevent the migration of plumes, and institutional controls to prevent human exposure to contaminated groundwater.

Since the Zone 3 remedy was implemented in 1995, long-term monitoring data have been collected to assess the progress towards restoration of the overburden and bedrock aquifers beneath the former AFB. This data includes the collection of groundwater level measurements and groundwater samples for chemical analysis. On-going evaluations of remedy performance, as presented in Zone 3 annual monitoring reports and ground water extraction optimization modeling simulations, indicate that while the existing remedy is currently protective of human health and the environment, the long-term effectiveness of the remedy is uncertain. The basis of this uncertainty is the local complexity of the overburden and bedrock aquifers and the dynamic interaction between the Haven well's utilization and Zone 3 overburden and bedrock groundwater contaminant plumes. As longterm water demand from the Haven well increases, greater potential exists for groundwater contamination to migrate and threaten water quality at the well. The Haven well is the main water supply well for the former base and is an important resource for the New Hampshire seacoast. An increase in the demand for potable water has been predicted by the City of Portsmouth which, will require the maximum safe utilization of the Haven well in the future. This ROD Amendment addresses changes to the 1995 Zone 3 ROD (Weston, 1995) to improve the long-term effectiveness of the groundwater restoration component of the remedy while ensuring that water quality from the Haven well is maintained under increased demand.

This ROD Amendment also documents response actions that have been implemented at three sites since the 1995 Zone 3 ROD was finalized. The three sites include Site 49 (former Building 22), Site 65 (Building 213), and Site 73 (Building 234) (see Figure 1-2, Appendix B). Of these sites, Site 49 was not identified and Sites 65 and 73 were under investigation at the time the Zone 3 ROD was issued. These sites are being added in this ROD Amendment to formally document the implemented remedies for these sites in accordance with CERCLA and the NCP.

This ROD Amendment and the documents, which form the basis for the Amendment, are available at the following Information Repository:

MWH Field Office Former Pease AFB, Site 8 20 Short Street Portsmouth, NH 03801 (603) 334-6430

Hours: Monday through Thursday, 8 a.m. to 4 p.m.

#### 1.1 SITE HISTORY AND RESPONSE ACTIVITY

At the onset of World War II, an airport at the former AFB location was used by the U.S. Navy. The U.S. Air Force assumed control of the site in 1951, and construction of the base was completed in 1956. Under Air Force command, the base served to maintain a combat-ready force capable of long-range bombardment operations. Over time various quantities of fuels, oils, lubricants, solvents, and protective coatings were used to support the mission, and as a result contaminants from these substances were released into the environment. In December 1988, Pease AFB was selected as one of 86 military installations to be closed by the Secretary of Defense's Commission on Base Realignment and Closure (BRAC). The base was closed as an active installation on March 1991. The Air Force has transferred most of the former AFB to the Pease Development Authority (PDA) via a 55-year long-term lease in anticipation of eventual deeded transfer. The airfield is now a fully operational commercial airport. Other property is currently being used or developed for light commercial and industrial facilities. A portion of the base was transferred to the U.S. Department of Interior (DOI) for use as a national wildlife refuge and the Air Force retained 229 acres of the former base for use by the New Hampshire Air National Guard (NHANG).

In accordance with Executive Order 12580, the Air Force is designated the lead agency authority to conduct CERCLA cleanup activities at the former AFB and is responsible for all costs associated with the cleanup of contamination associated with past Air Force activities. The Air Force has been conducting an environmental cleanup program at the former AFB since 1983. This program is executed according to the guidelines of the Air Force Installation Restoration Program (IRP) and the NHDES Underground Storage Tank (UST) program. The former AFB was proposed to be added

to the National Priority List (NPL) in 1989 and was listed in 1990. On April 24, 1991 the Air Force, EPA, and NHDES signed a Federal Facilities Agreement (FFA) establishing the protocols for conducting the environmental study and cleanup of the former AFB.

The following paragraphs below briefly summarize the history of sites addressed in the 1995 Zone 3 ROD as well as Sites 49, 65, and 73, which were not included in Zone 3 ROD.

#### 1.2 HISTORIES FOR SITES INCLUDED IN THE 1995 ZONE 3 ROD

# 1.2.1 Site 19 (Newfields Ditch) and Site 20 (Grafton Ditch)

Newfields and Grafton ditch are both manmade drainage ditches whose headwaters originate to the west of Site 34 (see Figure 1-2). Both ditches received historical releases associated with aircraft maintenance activities and storm water runoff from the aircraft parking apron. Newfields Ditch is divided into Upper and Lower Newfields Ditch; Upper Newfields Ditch is the portion of the drainageway that extends from its headwaters to a point just east of Portsmouth Avenue where it joins with Hodgsons Brook. Lower Newfields Ditch begins just east of Portsmouth Avenue and flows east until it eventually discharges to the Piscataqua River. Upper Grafton Ditch flows east from its headwaters until it enters a storm sewer. The storm sewer flows along Dover Avenue collecting additional storm water until it discharges to Grafton Ditch east of Grafton Road. This portion of Grafton Ditch is called Lower Grafton Ditch.

#### 1.2.2 Site 31 (Building 244)

Building 244 was used for aircraft maintenance beginning in 1958 (see Figure 1-2). An underground storage tank (UST) used to collect solvents was removed in 1991 by the Air Force as part of UST compliance program activities at the former AFB. The building is currently used by the NHANG for administrative purposes.

#### 1.2.3 Site 34 (Building 222)

The Jet Engine Test Cell (JETC) was used to test the performance of jet engines over complete power ranges (see Figure 1-2). Liquid generated from activities at the JETC potentially contained polynuclear aromatic hydrocarbons (PAHs), fuel, hydraulic fluid, and solvents. Before 1989, waste liquid from Building 222 drained directly to the Test Cell Ditch, which forms the uppermost section of Grafton Ditch. In 1989, the test cell bay effluent was discharged to an oil/water separator prior to its discharge to the Test Cell Ditch, while the effluent from the exhaust stack was discharged directly to the Test Cell Ditch. After modification of the test cell in December 1989, only the effluent from the wash-down of the intake stack and the building storm water drains discharged to the Test Cell Ditch. The rest of the effluent was containerized for disposal. Other sources of contamination at Site 34 are the former locations of the 5,000 gallon (gal) UST that was used to store jet fuel, the oil/water separator, and two No. 2 heating fuel USTs. All the USTs at Site 34 were removed in September 1992.

Several interim remedial measures (IRMs) were performed at Site 34. These measures included sediment removal from a portion of the Test Cell Ditch and operation of a pilot groundwater extraction and treatment system. The purpose of the extraction system was to provide management of the dissolved phase benzene groundwater plume specifically associated with Site 34. A soil removal action was performed under the Site 34 Source Area ROD (Weston, 1993) in July 1994 to excavate contaminated overburden soils. Approximately 10,700 tons of contaminated soil were excavated from the site. An Explanation of Significant Differences (ESD) for the Site 34 Source Area ROD was completed in May 1995 to change the location of soil disposal from off-base to onbase. The ESD called for using the Site 34 soils as fill material on Landfill 5 at Pease AFB prior to its closure with a RCRA hazardous waste cap. Building 222 is not currently being utilized.

## 1.2.4 Site 35 (Building 226)

Building 226, referred to as the Industrial Wastewater Treatment Plant, was built in 1956 to house a dissolved air flotation water treatment system (see Figure 1-2). The system operated from 1956 to 1975, processing aircraft washwater and wastewater from Buildings 119 and 227. During this

period, treated water was discharged to the sanitary sewer system. In 1973, an oil/water separator was installed next to Building 226 to replace the dissolved air flotation system. Beginning in 1974, wastewater that passed through the oil/water separator was discharged into the storm sewer system. In 1989, the oil/water separator discharge was rerouted to the base sanitary sewer system. Building 226 was removed in 1992, and the building foundation was removed in the spring of 1993 and then paved over.

In addition to the oil/water separator, areas of concern at Site 35 include the former 15,000-gal UST and the Hazardous Material Storage Area. The UST was used to store solvents and was located next to the oil/water separator between Buildings 226 and 227. The UST and the oil/water separator were removed in October 1991. The Hazardous Material Storage Area was used for temporary drum storage between 1982 and 1990 and was located on the asphalt area between Building 226 and Dover Avenue.

#### 1.2.5 Site 38 (Building 120)

Site 38 consists of several maintenance shops (Building 120) that were used for a variety of purposes when the base was in operation (see Figure 1-2). The shops include a sheet metal shop, paint shop, welding shop, battery shop, and a nondestructive testing area. The sources of contamination at Site 38 were the drum storage area and the floor drain pipeline adjacent to the eastern corner of the building. Building 120 is currently used by the PDA as a vehicle storage and maintenance facility.

#### 1.2.6 Site 39 (Building 227)

Site 39 includes the largest hangar at the former Pease AFB, which served as a major maintenance area for aircraft (see Figure 1-2). The hangar was used for a variety of general maintenance activities, including degreasing, paint stripping, minor repairs, and the wash-down of aircraft. The northern quarter of the hangar housed a wash rack area and a hazardous waste storage area (HWSA) for 55-gal drums. The floor drains in that area were connected to the Building 226 Industrial Wastewater Treatment Plant (1956 to 1974) and later, to the oil/water separator (1974 to 1991).

From 1956 to 1974, the floor drains for the other sections of the building (along with the roof drains) connected directly into the Flightline storm water sewer system, which discharges into McIntyre Brook. In 1974, a low-flow bypass line was constructed to connect these drains with the Building 226 oil/water separator. From 1974 to 1991, wastewater from the Building 227 floor drains emptied into the Flightline storm sewers only during rainstorms when the wastewater was highly diluted. Contaminant sources are suspected to be solvent, oil, and fuel spills on the floors or outside the building and wastewater discharged to the Flightline storm sewers from the building drainage system. Building 227 is currently being used by a commercial aircraft carrier as aircraft maintenance facility.

#### 1.3 HISTORIES FOR SITES NOT INCLUDED IN THE 1995 ZONE 3 ROD

## 1.3.1 Site 49 (former Building 22)

Site 49 covers approximately 5 acres and is comprised of the area occupied by the former Building 22 (a former communications building), surrounding driveways and grassy areas, and down-gradient areas associated with the groundwater contaminant plume (see Figure 1-2).

Trichloroethene (TCE) and perchloroethene (PCE) were used at Building 22 until the late 1970s. Releases of these compounds to site soils resulted in a plume of groundwater contamination extending outside the south wing of former Building 22 in an easterly direction. Building 22 was demolished and the site has been redeveloped with a privately owned office building and parking lots. The surrounding area is either undeveloped or undergoing redevelopment. Section 2.4 details the history of remedial actions accomplished at Site 49.

#### 1.3.2 Site 65 (Building 213)

Site 65 consists of Building 213 which served as a maintenance facility for aircraft ground equipment (see Figure 1-2). Releases of hazardous substances to soil and groundwater were associated with a former hazardous materials storage area (HMSA) and a former oil/water separator, and aircraft parking equipment area. The oil/water separator at Building 213 served as part of the

aircraft ground equipment maintenance activities and regularly received wastewater along with fuels, lubricants, and solvents through a single floor drain in a wash rack area. The 1,700 gallon separator reclaimed product and returned it to a storage tank inside the building. The remaining wastewater was delivered to the sanitary sewer system. The HMSA, located near the eastern corner of Building 213, was used to store paint and lubricants in a flammables storage shed, and degreasers, and antifreeze were stored atop a temporary metal runway in an unpaved area. Section 2.4 describes remedial actions performed at Site 65.

# 1.3.3 Site 73 (Building 234)

Building 234 was constructed in 1959 and originally used as a liquid oxygen plant. In 1978, it was converted to house a water demineralization plant (see Figure 1-2). Two USTs installed at the site for the storage of fuel oil for emergency power generation were removed in 1989 and 1991 as part of Air Force UST compliance activities. Air Force records for Site 73 indicate that TCE and PCE were used as solvents and degreasers at Building 234. Cleaning and degreasing operations were conducted in the vicinity of the concrete area northeast of Building 234, with discharges to the environment apparently occurring in the form of spills or runoff associated with the operations. Remedial actions at Site 73 are described in Section 2.4.

#### 1.4 COMMUNITY PARTICIPATION

Throughout the history of IRP activities at Pease AFB, the local community has been actively involved and informed. The Air Force, EPA, and NHDES, have kept the community and other interested parties apprised of cleanup activities through informational meetings, fact sheets, press releases, and public meetings. Below is a brief chronology of public outreach events:

- x In 1983, the Air Force established the administrative record file, which includes all documents relevant to the Pease AFB Installation Restoration Program (IRP). The administrative record file is located at the MWH Field Office located at the Pease International Tradeport.
- x In 1990, a Technical Review Committee (TRC), now known as the Restoration Advisory Board (RAB), was established to create a forum for the Air Force, EPA, NHDES, and the

- local community to discuss Pease cleanup issues. The RAB currently meets on an as-needed basis to review the environmental program and receive community input.
- x In January 1991, the Air Force prepared and distributed a Community Relation Plan (CRP) that outlined a program to address community concerns and keep citizens informed of and involved with cleanup activities at Pease AFB. The CRP was revised by the Air Force in October 1994.
- x In 1992, the Air Force established an information repository for the environmental cleanup activities at the former Pease AFB. The information repository is available for public review at the MWH Field Office located at the Pease International Tradeport.
- x On May 21, 2002, the Air Force mailed the Proposed Plan to Amend the Zone 3 ROD.
- x On May 26, 2002, the Air Force published a notice announcing a public informational meeting on the Zone 3 Proposed Plan in the Portsmouth Herald Sunday and the Foster's Sunday Citizen newspapers.
- x On June 6, 2002, a public information meeting and a question-and-answer session was held to present the details of the Zone 3 Proposed Plan. Following the conclusion of the public information meeting, the Air Force conducted an informal public hearing to solicit comments on the plan. A transcript of the public meeting is included as Appendix C.
- x From May 24 to June 24, 2002, a public comment period, on the Proposed Plan for Zone 3 was held.
- x Public comments and the Air Force's response to the comments are included in the Responsiveness Summary (Appendix D).

#### 2.0 SCOPE AND ROLE OF OPERABLE UNIT

In an effort to accelerate cleanup time-lines, the Air Force designed a base-wide strategy plan for conducting RI/FS and RD/RA activities. This strategy grouped numerous sites into eight zones or operable units. The sites were grouped based on geographic location, similar ground water properties and geologic units. This zone operable unit strategy, along with the associated cleanup schedules was memorialized in an Amendment to the Pease FFA. Amendment #1 to the Pease FFA was signed in March 18, 1993.

The 1995 Zone 3 ROD addressed both source control and management of migration measures to reduce potential human health and environmental risks identified in the RI/FS. Source control activities involved the remediation of contaminated soil at Sites 33 (Building 229), 38 (Building 120), and 39 (Building 227), groundwater at Sites 34 (Building 222), 35 (Building 226), and Site 39, and sediment at Upper Newfields and Upper Grafton Ditches (see Figure 1-2, Appendix A). Results of the Zone 3 RI indicated that Site 31 did not pose an unacceptable risk to human health and the environment and no further remedial actions were required. Management of migration activities, via groundwater extraction and treatment and natural attenuation, addressed dissolved-phase overburden and bedrock groundwater contamination southwest of Sites 34 and Site 39, and east of the hydraulic containment area of Site 32/36 (Buildings 113/119) (see Figure 1-2, Appendix A). Source area response actions at Site 32/36 were documented separately in the Site 32/36 ROD that was also finalized in September 1995.

This ROD Amendment specifically addresses source control actions at Site 34 and Site 39, and groundwater management of migration actions southwest of these sites. This ROD Amendment also documents response actions taken at Site 73, which lies in the Zone 3 operable unit, and Site 49 and Site 65 which lie north and south of the Zone 3 boundary, respectively.

#### 2.1 SUMMARY OF SITE CHARACTERISTICS

**Zone 3.** The shallow subsurface beneath Zone 3 generally consists of five lithologic units. Unconsolidated lithologic units include the Upper Sand (US), the Marine Clay and Silt (MCS), the

Lower Sand (LS), and a Glacial Till (GT). The bedrock underlying these lithologic units is either the Kittery or Eliot formation, depending on the specific Site location within Zone 3. The thickness of the overlying unconsolidated lithologic units varies across the site. In addition, the elevation of the bedrock interface is highly variable which is likely a result of the Zone's glacial history.

Regional groundwater flow is to the south-southeast within Zone 3 under static conditions (i.e., when the Haven well is not being used). There also exists localized flow vectors at each of the Sites depending upon the season. A more detailed description of the geologic, hydrogeologic, and hydrologic characteristics of Zone 3 can be found within the ROD for Zone 3 (Weston, 1995).

Groundwater contaminant plumes extending beyond the identified source areas have been delineated at IRP Sites 34, 35, 38, and 39. The identified contaminant plumes are primarily halogenated hydrocarbons (HHCs) with the most extensive groundwater contaminant plume originating from IRP Site 39 (see Figure 2-1, Appendix A). The current nature and extent of groundwater contamination at each of the sites within Zone 3 is discussed in the *Zone 3 2002 Annual Report (MWH, 2003a)*.

**Site 49.** The shallow subsurface beneath Site 49 generally consists of the undifferentiated US and LS underlain by Glacial Till (GT). The underlying bedrock is likely the phyllitic Eliot formation, which varies across the site and with depth from highly weathered Shallow Bedrock (SBR) to more competent Deep Bedrock (DBR). The thickness of the overlying unconsolidated lithologic units varies between 15 and 35 ft.

Groundwater flow at Site 49 is to the east-northeast under static conditions. A more detailed description of the geologic, hydrogeologic, and hydrologic characteristics of Site 49 are presented in the *Engineering Evaluation/Cost Analysis Report, Site 49 Communications Building No. 22 (TN & Associates, Inc., 1999)*.

The contaminant plume associated with Site 49 consists primarily of TCE and PCE. The current nature and extent of groundwater contamination at Site 49 is discussed in the *Site 49 2002 Status Report (MWH, 2003b)*.

**Site 65.** Information on the physical characteristics at Site 65 is included in the *Zone 3 Remedial Investigation Report Addendum 1, Site 65 Site Investigation* (Weston, 1994). There currently exists no groundwater contamination at the site (see Figure 2-3, Appendix A).

Site 73. Lithologic units underlying Site 73 include a Silty Fine Sand (Undifferentiated Sediments, UDS), the MCS, the LS, and the GT. The bedrock underlying these lithologic units is likely the phyllitic Eliot formation. The thickness of the UDS varies between 30 to 35 ft when the MCS is not present. When the MCS is present, which varies in thickness between 2 to 5 at a depth of 15 to 20 ft bgs, the UDS then varies in thickness between 20 to 25 ft. Where the MCS is present the LS is present at a depth between 25 to 35 ft bgs across the site. Finally, the top of bedrock is overlain by the GT, which is present at a depth between 35 to 48 ft bgs across the site. The depth at which the bedrock occurs varies between 40 to 48 feet bgs. A more detailed description of the physical characteristics of Site 73 are discussed in the Site 73 Remedial Investigation Report/Feasibility Study (Revised Draft) (Weston, 1996) and Site 73 Supplemental Characterization Report (Bechtel, 1998b).

The contaminant plume associated with Site 73 consists primarily of the HHCs, PCE, and TCE (see Figure 2-4, Appendix A). The current nature and extent of groundwater contamination at Site 73 is discussed in the *Site 73 2002 Status Report (MWH, 2003c)*.

## 2.2 ORIGINAL REMEDIAL ACTION OBJECTIVES (RAOs)

The remedy selected in the 1995 Zone 3 ROD was developed to satisfy the following RAOs:

#### Sediment in Upper Newfields and Upper Grafton Ditches (Sites 19 and 20)

x Protect ecological receptors from direct contact with, or ingestion of, sediment containing contaminants at concentrations that may present a potential unacceptable risk.

#### **Soil at Sites 33, 38, and 39**

x Minimize leaching of contaminants from soil to groundwater or surface water that would result in groundwater or concentrations of surface water contamination that may present an unacceptable health risk.

#### Zone 3 Overburden and Bedrock Groundwater

- x Protect human receptors from ingestion of, or direct contact with, contaminated groundwater that may present an unacceptable health risk;
- x Comply with chemical-specific applicable or relevant and appropriate requirements (ARARs);
- x Prevent discharge of contaminated groundwater to surface water bodies where such discharges may cause unacceptable risks to human health and the environment; and
- x Prevent contaminant migration toward the Haven well.

To achieve soil and sediment RAOs, the Zone 3 ROD required excavation and off-base disposal of contaminated sediments and soil that exceeded cleanup goals specified in the ROD. The Zone 3 ROD and the subsequent design phase of the remedy called for the following activities to achieve the groundwater RAOs.

- x Construction of a groundwater extraction and treatment system to reduce contaminant mass at the Site 34, Site 35, and Site 39 source areas (the Site 32 source area remedy is specified in the 1995 Site 32/36 ROD);
- x Construction of a groundwater extraction and treatment system to control the migration of contaminated groundwater southwest of Sites 34 and 39;
- x Construction of a subsurface recharge trench system to accept treated groundwater from the two treatment systems;
- x Limit the pumping rate of the Haven well to prevent interference with contamination migration control systems and prevent migration of Zone 3 groundwater contamination to the well [Note: a pumping rate limitation of 300 gpm was established by the Air Force with regulatory agency concurrence during 1994.];
- x Establishment of a Groundwater Management Zone (GMZ) in accordance with State of New Hampshire regulations and restrict the use of groundwater.

#### 2.3 ZONE 3 REMEDIAL ACTIVITIES COMPLETED TO DATE

Soil and Sediment Remedial Actions. Soil and sediment remedial actions required under the Zone 3 ROD were completed in 1996. The Air Force excavated and disposed off-base 235 tons of soil from Site 33 that exceeded soil remediation goals for arsenic, 418 tons of soil from Site 38 that exceeded remediation goals for polynuclear aromatic hydrocarbons (PAHs), and 181 tons soil from Site 39 that potentially exceeded remediation goals for TCE and manganese. To achieve the sediment RAOs, the Air Force excavated and disposed off-base 465 tons of sediment from Upper Grafton Ditch and 345 tons of sediment from Upper Newfields that exceeded remediation goals for PAHs and several metals.

Groundwater Remedial Actions. To achieve Zone 3 ROD groundwater RAOs, eleven wells were either installed or existing monitoring wells re-configured to extract groundwater for treatment at one of the two groundwater treatment systems constructed under the Site 32/36 and Zone 3 remedies. Three of these wells were to be used for extraction at the Site 39 source area, one well for extraction at the Site 35 source area, two wells for extraction at the Site 34 source area, and five wells for hydraulic control of groundwater flow southwest of Sites 34 and 39. As part of the remedial design process, the pumping strategy was determined based on numerical groundwater flow modeling for optimization of groundwater extraction.

In addition to the construction of the groundwater extraction and treatment systems, the Air Force prohibited the installation of drinking water wells at the former Pease AFB and imposed a 300 gpm pumping limit on the Haven well to prevent groundwater withdrawal from interfering with the contamination migration control system to be implemented as part of the Zone 3 remedy. The pumping limitation was based on groundwater modeling results that indicated that the Zone 3 groundwater extraction systems would prevent plume migration toward the Haven well when it pumped at 300 gpm or less. The 300 gpm limit was further defined by the Air Force as averaged over a 24 hour period.

Groundwater extraction and treatment at Sites 32, 34 and 39 has been underway since 1997 to meet Zone 3 groundwater RAOs. As part of the Zone 3 remedy, groundwater quality, flow condition, and

treatment system operations data have been collected to monitor the effectiveness of groundwater remedial actions in meeting RAOs. These data are presented in annual performance monitoring reports. The annual reports are also the basis for recommended operational changes or modifications to ensure ground water remedial actions meet long-term performance expectations and remain cost effective. Since implementing groundwater extraction efforts, the Air Force has revised the groundwater flow models using actual operational hydraulic data in an effort to improve groundwater containment efforts.

#### 2.4 REMEDIAL ACTIVITIES COMPLETED TO DATE AT SITES 49, 65, AND 73

**Site 49.** Investigations in 1997, 1999, and 2000 identified chlorinated organics in both soils and groundwater (R. W. Gillespie & Associates, 1997, TN & Associates, Inc., 1999, and Versar, Inc., 2000a). The primary contaminants included TCE, PCE, and their associated degradation products. The source of the contamination is presumed to be the former maintenance activities near the garage of former Building 22. A groundwater contaminant plume has been defined as originating outside of the south wing of former Building 22 and extending in an easterly direction towards the eastern boundary of the former Pease AFB. The current extent of the groundwater plume is illustrated in Figure 2-3, Appendix A.

In 1997, approximately 800 cubic yards of contaminated soil were removed from Site 49. In 1998, a crushed drum and approximately 3 cubic yards of impacted soil were removed east of former Building 22. Post-removal sampling concluded that the majority of the impacted soil was removed.

An engineering evaluation/cost analysis (EE/CA) was prepared in 1999 (TN & Associates, Inc. 1999) to evaluate a limited set of alternatives to reduce concentrations of TCE, PCE, and the associated degradation products migrating in groundwater from the source area. The three alternatives evaluated in the Site 49 EE/CA included ground water pump and treat, Hydrogen Release Compound (HRC®) Injection, and a zero-valent granular iron permeable reactive barrier (PRB). An action memorandum was signed by the Air Force in February 2000 (AFBCA, 2000) selecting the zero-valent PRB alternative as the preferred technology to reduce chlorinated volatile

organic compounds migrating from the source area. The Site 49 PRB conceptual design consisted of a continuous wall of a zero-valent iron and sand mixture extending across the width of the plume immediately up-gradient of the new office building constructed at the site. The PRB extends through the unconsolidated deposits from the ground water table (approximately five feet from ground surface) down to the top of bedrock surface (15 to 17 feet below ground surface). A SBR treatment zone consisting of closely spaced bedrock boreholes filled with zero-valent iron extends ten feet into the shallow fractured bedrock just up-gradient of the continuous PRB constructed in the unconsolidated deposits. The construction of the Site 49 PRB was completed in July 2000 (Versar, Inc., 2000b). Site 49 PRB performance monitoring has been ongoing since completion of the PRB (Site 49 Performance and Long-Term Monitoring Sampling and Analysis Plan - Revision 1, MWH 2002a).

**Site 65.** Site 65 consists of Building 213 which served as a maintenance facility for aircraft ground equipment. The oil/water separator was removed in 1992 by the Air Force as part of UST compliance activities. USTs associated with the building were removed in 1993. A soil removal action was performed at the HMSA during 1992.

Trace concentrations of VOCs, including TCE, PCE, and 1,2-DCE were reported in groundwater down-gradient of the HMSA in 1994. Of these constituents, only TCE was reported at a concentration [6 parts per billion (ppb)] above the New Hampshire Ambient Groundwater Quality Standards (AGQS) of 5 ppb. Groundwater monitoring was performed at the site until 1999. In 1999, USEPA and NHDES concurred that groundwater monitoring was no longer required, and that no further action (NFA) was necessary at Site 65 (EPA, 1999).

**Site 73.** A remedial investigation/feasibility study was completed in 1996 as part of the CERCLA process. A groundwater extraction remedy was tentatively identified by the Air Force as the preferred remedy, but it was later decided that further site evaluation was needed before the selection of a final remedy for the site could be made.

A limited groundwater quality profiling investigation was performed in the summer of 1996 (Johnson, 1996) to determine the extent of the chlorinated solvent plume from Site 73.

Supplemental profiling performed in the fall of 1996 concluded that the down-gradient plume likely extended far beyond the most southerly profile transect, located along the northern edge of the wooded area south of Exeter Street.

Additional characterization activities were completed in 1997 to investigate the potential for Dense Non-Aqueous Phase Liquids (DNAPLs) in the suspected source area, characterize shallow bedrock groundwater conditions, and determine whether the down-gradient wetlands were a discharge point for Site 73 groundwater. Results from this supplemental characterization activity were used to evaluate and subsequently implement a full-scale treatability/technology demonstration study using a zero-valent granular iron PRB technology to treat contaminated groundwater migrating from the source area. Construction of the Site 73 PRB was completed in August 1999. Since construction of the PRB, groundwater flow and quality data have been collected to evaluate the performance of the PRB in destroying contaminated groundwater migrating from the source area.

#### 2.5 CHANGES TO THE 1995 ZONE 3 ROD

**Objectives.** This section compares the revised RAOs to the original Zone 3 RAOs listed in Section 2.2. The first three RAOs for overburden and bedrock groundwater are unchanged. The fourth RAO is revised to allow for increased demand for water from the Haven well.

X Minimize contaminant migration toward the Haven well should increased water demand require pumping the Haven well at the maximum safe yield.

**Elements.** Certain elements of the Zone 3 response action are being revised to better meet the amended RAOs. This section describes the revised elements of the Zone 3 response action and explains how the amended RAOs will be met. More detailed description of the amended response action components is presented in Section 3.2.

There is uncertainty regarding Zone 3 contaminant plume behavior as demand for water from the Haven well increases. Recent aquifer tests, Haven well operational data, and groundwater models indicate that pumping at the Haven well at 300 gpm does not result in the migration of Zone 3 CERCLA plumes toward the Haven well. By optimizing the Site 39 groundwater remedy to focus

on hydraulic control of the source area, plume migration towards the Haven well will be further prevented from impacting the water quality at the Haven well. However, to address uncertainties associated with the potential for groundwater contamination in the bedrock aquifer to threaten the Haven well, contingency wellhead treatment will be made available.

The current low volume groundwater extraction system at Site 39 is slowly removing chlorinated volatile organic contaminants from the source area. Optimized groundwater extraction from the Site 39 source area will increase mass removal rates and will accelerate compliance with chemical-specific ARARs for the dissolved-phase plume emanating from Site 39. Optimized extraction also will provide hydraulic control over the source area preventing contaminant migration toward the Haven well.

Zone 3 groundwater monitoring indicates that chemical-specific ARARs have been met for plumes emanating from Sites 34 and 35. Groundwater extraction to control CERCLA plume migration from Site 34 is no longer required to minimize contaminant migration toward the Haven well.

The revised RAOs will require changes to the Zone 3 long-term monitoring program to evaluate performance of the revised remedy while ensuring human receptors are protected from exposure to groundwater contaminants.

The Air Force intends to transfer the real property within Zone 3 and at Site 49 by deed to the Pease Development Authority (PDA). The amended response actions include land use controls in the form of deed restrictions and restrictive covenants that will protect human receptors from exposure to contaminated groundwater in Zone 3 and Site 49 GMZs.

#### 2.5.1 Changes to Sites Addressed Under the 1995 ROD

**Current Status.** The current Zone 3 groundwater remedy consists of source area groundwater extraction to reduce contaminant mass and groundwater extraction in down-gradient areas to prevent this contamination from further degrading down-gradient groundwater quality. In April 2000, hydraulic operational data collected as part of the Zone 3 performance monitoring program

were utilized to re-calibrate the groundwater flow model originally developed for Zone 3 by Weston in 1995.

Groundwater flow simulations included in the April 2000 update (Bechtel, 2000a) simulated varying Haven well pumping rates to further understand the hydraulic interactions between Haven well usage and remedial groundwater extraction schemes. Results of these simulations indicated that groundwater containment efforts southwest of Sites 34 and 39 may not be possible when the Haven well is pumped at 300 gpm. While water demand from the Haven well is currently 100 to 200 gpm, future estimates for water demand would require the Haven well be pumped at rates greater than 300 gpm. Increased usage of the Haven well may occur before contaminated Zone 3 overburden and bedrock groundwater is restored to Zone 3 ROD groundwater restoration goals. Therefore, it was determined that modification of the Zone 3 remedy was needed to achieve Zone 3 RAOs. A key consideration in selecting a revised remedy required the examination of future water demand from the Haven well aguifer. The maximum safe yield that can be extracted from the Haven well has been estimated in the range of 500 gpm (City of Portsmouth, personal communication, 2002). It is anticipated that future water demand will require the Haven well to be pumped at its maximum safe yield. The amended remedy will allow full utilization of the Haven well should an increase in demand occur before restoration of contaminated groundwater is achieved by: 1) optimization of the Site 39 groundwater extraction remedy to enhance source removal and source area hydraulic containment, and 2) provision of contingency wellhead treatment to address uncertainties associated with Zone 3 contaminant migration pathways in the bedrock aquifer that could potentially threaten groundwater quality at the Haven well.

The current Zone 3 remedy does not address the potential need to extract groundwater at the maximum safe yield. In addition, performance monitoring data indicate that the Haven aquifer is more complex than originally understood when the 1995 Zone 3 remedy was selected. Specifically, it was determined that while the Haven well is constructed in the overburden, it is also hydraulically connected to the bedrock aquifer. This hydraulic connection introduced a new degree of uncertainty regarding contaminant migration pathways and the ability of the groundwater remedy to prevent

migration of contamination to the well. Contaminant concentrations above groundwater restoration goals exist in both the overburden and bedrock aquifers.

As previously mentioned, the 1995 Zone 3 groundwater remedy consists of source area groundwater extraction at Sites 34, 35, and 39. In addition, the remedy included groundwater extraction at wells southwest of Sites 34 and 39 to prevent contamination from degrading groundwater quality and impacting the Haven well. This groundwater extraction has been on-going since implementation of the Zone 3 groundwater remedy. Source area groundwater extraction efforts at Site 34 and Site 35 have achieved groundwater RAOs based on performance monitoring data. Groundwater extraction down-gradient of Site 34 is no longer required. However at Site 39 performance data indicate that, due to the generally low permeability of the sand units in which source area extraction occurs, the amount of contamination removed from the ground water has been limited. Also, extraction from the overburden units does not control potential contaminant migration in the bedrock underlying the source area.

Objectives. More focused low volume groundwater extraction from more hydraulically conductive overburden and fractured bedrock lithologic units in the vicinity of the Site 39 source area would achieve greater source removal and exert hydraulic control of the source area contaminant plume. High volume groundwater extraction between Site 39 and the Haven well will no longer be required when groundwater extraction efforts at Site 39 are optimized to provide enhanced source removal and plume control. Contingency wellhead treatment would address uncertainties associated with contaminant migration pathways in the bedrock aquifer that could threaten the Haven well. To achieve these objectives and assure the long-term effectiveness and permanence of the Zone 3 remedy in achieving groundwater RAOs, the amended remedy replaces the current groundwater extraction activities with the following major activities:

- 1. Design and construction of a contingency wellhead treatment system for the Haven well;
- 2. Optimization of the Site 39 source area groundwater extraction system to enhance source removal and exert hydraulic containment. Monitored natural attenuation of the dissolved-phase groundwater plume down gradient of Site 39;

3. Termination of the current down-gradient groundwater extraction system to control contaminant migration southwest of Sites 34 and 39 upon optimization of the Site 39 source area groundwater extraction system.

4. Modification of the Zone 3 long-term monitoring program to evaluate performance of the amended remedy and establish a decision framework for activating the wellhead treatment system.

5. Implementation of land use controls that protect human receptors from exposure to contaminants in soils and groundwater at sites in Zone 3 and at Site 49.

# 2.5.2 Remedy Modifications associated with Contamination not Identified in the 1995 Zone 3 ROD

This ROD Amendment also serves to document response actions that have been implemented at three sites since the Zone 3 ROD was issued. Of these sites, Site 49 was not identified and Sites 65 and 73 were under investigation at the time the ROD was issued. These sites are being added in this ROD Amendment to formally document the implemented remedies, consistent with CERCLA and the National Contingency Plan (NCP). The following activities have been implemented for these three sites:

#### Site 73

- x In-situ groundwater treatment with a zero valent iron PRB;
- x Monitored natural attenuation of the groundwater contaminant plume down-gradient of the PRB; and
- x Implementation of a long-term performance monitoring plan.

#### Site 49

- x In-situ groundwater treatment with a zero valent iron PRB;
- x Monitored natural attenuation of the groundwater contaminant plume down-gradient of the PRB;
- x Implementation of a long-term performance monitoring plan; and

x Establishment of a Groundwater Management Zone (GMZ) in accordance with New Hampshire regulations.

# Site 65

No further action.

#### 3.0 SUMMARY OF SITE RISKS

The 1995 ROD summarizes the risks for Zone 3. Since that time, the principal contaminants of concern have remained unchanged, although the overall concentrations in Zone 3 groundwater have generally remained the same or have declined. Exposure scenarios have not changed since the 1995 ROD. The findings of the 1995 ROD concluded that while Site 33, 38, and 39 soils did not pose a direct contact or ingestion risk to human receptors, they did pose a leaching threat to underlying groundwater. These soils were excavated and disposed of off-base. Sediments in Upper Newfields and Upper Grafton Ditch also did not pose a direct human contact or ingestion risk. The only unacceptable risk to human health that exists in Zone 3 is associated with the consumption of ground water for drinking purposes. To prevent exposure to contaminated groundwater, the Air Force has prohibited the installation of drinking water wells in Zone 3 and is currently implementing remedies under CERCLA to reduce risks to human health and the environment. Implementation of this revised remedy will further guarantee that consumption of groundwater in Zone 3 does not result in unacceptable risk.

The ecological risk assessment conducted during the Zone 3 remedial investigation measured the potential ecological impacts of contaminants detected at sites located in the zone. While site soils did not pose a significant risk to ecological receptors, sediments in Upper Newfields and Upper Grafton Ditches did pose significant risks. Risks associated with these sediments were eliminated through excavation and off-base disposal of sediments.

# 3.1 COMPARATIVE ANALYSIS OF THE ORIGINAL REMEDY AND AMENDED REMEDY

Section 121(b)(1) of CERCLA presents several factors that must be considered when assessing potential remedies. Building upon these specific statutory mandates, the NCP articulates nine evaluation criteria to be used in assessing the individual remedies. This section of the ROD Amendment profiles the relative performance of the amended remedy against the nine criteria, noting how it compares to the original remedy. These criteria are as follows:

#### 3.1.1 Evaluation Criteria

**Threshold Criteria.** The two threshold criteria described below must be met in order for the amended remedy to be eligible for selection in accordance with the NCP.

- 1. **Overall protection of human health and the environment** addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway, are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.
- 2. Compliance with applicable or relevant and appropriate requirements (ARARS) addresses whether or not a remedy will meet all of the ARARs of other Federal and State environmental laws and/or provides grounds for invoking a waiver.

**Primary Balancing Criteria.** The following five criteria are utilized to compare and evaluate the elements of one alternative to another that meet the threshold criteria.

- 3. **Long-term effectiveness and permanence** address the protectiveness of remedies over time, along with the degree of certainty that they will prove successful.
- 4. **Reduction of toxicity, mobility, or volume through treatment** addresses the degree to which remedies employ recycling or treatment that reduces toxicity, mobility, or volume, including how treatment is used to address the principal threats posed by the site.
- 5. **Short term effectiveness** addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until cleanup goals are achieved.
- 6. **Implementability** addresses the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
- 7. **Cost** includes estimated capital and operation and maintenance (O&M) costs, as well as present worth costs.

**Modifying Criteria.** The modifying criteria are used on the final evaluation of remedial alternatives generally after EPA has received public comment on the RI/FS and Proposed Plan.

8. **State acceptance** addresses the State's position and key concerns related to the Amended ROD remedy and the 1995 Zone 3 ROD remedy, and the State's comments on ARARs or the proposed use of waivers.

9. **Community acceptance** addresses the public's general response to the remedy change described in the Proposed Plan.

# 3.1.2 Comparative Analysis

**Overall Protection of Human Health and the Environment.** This criterion considers whether a remedy, as a whole, will protect human health and the environment. This includes an assessment of how public health and environmental risks are properly eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Under the 1995 Zone 3 ROD, exposure to contaminated groundwater was prevented, and overall protection was provided, through groundwater extraction and treatment, limitation on the Haven well extraction rate, and establishment of the Zone 3 GMZ. The remedy modifications in the ROD Amendment enhance the overall protectiveness of the remedy for sites included in the 1995 Zone 3 ROD. Installation of a wellhead treatment system for the Haven well assures that the well continues to provide safe potable water, should the Zone 3 overburden or bedrock groundwater contamination threaten the well, considering the predicted increase in demand. Protectiveness in other areas of Zone 3 is provided by the existing restrictions on groundwater use within the Zone 3 and Site 49 GMZs and optimized groundwater extraction within the Site 39 source area.

This ROD Amendment also provides greater protection in Zone 3 overall, by addressing sites not included in the 1995 Zone 3 ROD. The treatment of groundwater at Sites 49 and 73 reduces contaminant loading on the aquifer while enhancing the effectiveness of monitored natural attenuation in the down-gradient portions of the plumes. The established groundwater use restrictions and the creation of a GMZ at Site 49 will prevent human exposure to groundwater in this area.

Compliance with Applicable and/or Relevant and Appropriate Regulations. This criterion addresses whether or not a remedy complies with all state and federal environmental and public health laws and requirements that apply or are relevant and appropriate to the conditions and remedy at a specific site. If an Applicable or Relevant and Appropriate Requirement (ARAR) cannot be met, the analysis of a remedy must provide the grounds for invoking a statutory waiver.

Both of the remedies will meet the requirements of all ARARs in a time-frame consistent with CERCLA and the NCP. Optimized groundwater extraction at the Site 39 source area is expected to further shorten restoration time-frames to meet ARARs. The ROD Amendment enhances compliance with ARARs at sites not included in the 1995 Zone 3 ROD. The groundwater treatment remedies implemented at Sites 49 and 73 remove contaminant mass, while supporting natural attenuation of the down-gradient groundwater plumes. The only ARARs that Zone 3, Site 49, and Site 73 are not currently in compliance with are the chemical-specific ARARs that pertain to drinking water standards.

Long-term Effectiveness and Permanence. This criterion refers to the ability of an alternative to maintain reliable protection of human health and the environment over time, once the remedial action objectives and cleanup levels have been met. The remedy described in the 1995 Zone 3 ROD achieved long-term effectiveness and permanence by source area removal through groundwater extraction and treatment. The ROD Amendment enhances the long-term effectiveness and permanence of the remedy by optimizing groundwater extraction at Site 39 to achieve greater mass removal and maintain hydraulic control and the installation of the wellhead treatment system for the Haven well. The availability of a contingency wellhead treatment system for the Haven well and the prohibition on the installation of drinking water wells will prevent potential exposure to contaminants now and in the future. Contaminants in the down-gradient portion of Zone 3 plumes are permanently destroyed through natural attenuation.

Remedial actions in the ROD Amendment achieve long-term effectiveness and permanence at sites not included in the 1995 Zone 3 ROD through contaminant removal via the Site 49 and Site 73 PRBs and by restricting groundwater use in the Zone 3 and Site 49 GMZs.

Reduction of Toxicity, Mobility, and Volume through Treatment. This criterion contains three measures of the overall performance of a remedy. The 1986 amendments to the CERCLA emphasize that, whenever possible, a remedy will be selected that uses a treatment process to permanently reduce the level of toxicity of contaminants at a site, inhibit or eliminate the spread of contaminants away from the source of contamination, and reduce the volume of contamination at a site.

The remedy presented in the 1995 Zone 3 ROD reduced contaminant toxicity, volume, and mobility through source removal, groundwater extraction and treatment, and monitored natural attenuation. These actions continue under the ROD Amendment for the sites included in the 1995 ROD. Enhanced extraction at Site 39 will further reduce the mobility and volume of contaminants in groundwater in Zone 3.

The ROD Amendment documents additional reduction in contaminant mobility and volume at sites not addressed in the 1995 Zone 3 ROD. The PRBs installed at Sites 49 and 73 reduce contaminant volume and mobility through treatment.

**Short-term Effectiveness.** This criterion refers to the likelihood of adverse impacts on human health or the environment that may be posed during the construction and implementation of an alternative until remedial action objectives and cleanup levels are achieved.

Short-term risks associated with the groundwater remediation under the 1995 Zone 3 ROD were limited to risks to workers during construction of groundwater extraction and treatment systems and during operation and maintenance of those systems. Under this ROD Amendment, short-term risks for sites included in the 1995 Zone 3 ROD are limited to worker risks related to installation of extraction wells, construction of the Haven well treatment system and decommissioning of the Site 34 GWTP. These risks are no greater than those typically associated with construction efforts. No

short-term risks are associated with the sites not included in the 1995 Zone 3 ROD (other than operation and maintenance) because these remedies are already in-place.

**Implementability.** This criterion refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the alternative.

The 1995 Zone 3 ROD included remedial actions for groundwater that were readily implementable based on proven technologies, i.e. groundwater extraction and treatment systems. Remedial actions in this ROD Amendment for sites included in the 1995 Zone 3 ROD are also readily implementable. Information needed to design and construct the treatment plant at the Haven well is available, and enhanced extraction at Site 39 involves optimizing the system already installed. Implementation of the monitored natural attenuation portion of the remedy, and modifications to long-term monitoring require adjustment of current monitoring plans and reporting. The treatment remedies included in this ROD Amendment for Sites 49 and 73 are already installed and operating.

**Cost.** This criterion includes the capital (up-front) cost of implementing each remedy as well as the cost of operating and maintaining that remedy over the long-term.

The net present-worth cost of the remedy included in the 1995 Zone 3 ROD was estimated as \$15,082,100 (Weston, 1995). This ROD Amendment does not significantly change the cost of the remedy at the sites addressed in the 1995 Zone 3 ROD. The proposed changes increase the overall cost of the remedy because of the construction of the Haven well treatment system, and increased operations and maintenance costs associated with the PRBs at Sites 49 and 73. The estimated cost of the amended remedy, projected over a 30-year period, is estimated to be \$22,000,000. The additional costs associated with the amended remedy are somewhat offset by savings associated with terminating operation of the Site 34 treatment system facility, discontinuing pumping at the Site 34/39 non-source area extraction wells, and optimizing the Zone 3 long-term monitoring network.

**State Acceptance.** This criterion addresses whether, based on its review of the data derived from the Site and the Proposed Plan (PP), the State of New Hampshire concurs with, opposes, or has no comment on the remedy change selected for the Site.

NHDES provided concurrence with the 1995 Zone 3 ROD, and has remained involved with remedial decisions at Zone 3 between 1995 and present. The State of New Hampshire has issued a letter of concurrence for this Amendment to the ROD for Zone 3. The letter of concurrence has been attached as Appendix E.

**Community Acceptance.** This criterion addresses whether the public concurs with proposed remedy change. Community acceptance of these proposals was evaluated based on comments received at the public hearing.

The public was supportive of the remedial actions implemented under the 1995 Zone 3 ROD. Appendix C presents a transcript of the public meeting. Appendix D presents a Responsiveness Summary, summarizing the comments on the amended remedy received during the public comment period. The amended remedy was supported by the public, and the remedy has not been substantially changed from that presented in the Proposed Plan.

#### 3.2 THE AMENDED REMEDY

The amended remedy will restore, through treatment and natural attenuation processes, Zone 3, Site 73, and Site 49 groundwater to chemical-specific ARARs in a time-frame consistent with CERCLA and the NCP. To protect human receptors from ingestion of contaminated groundwater that may present an unacceptable health risk, groundwater use restrictions have been implemented and will continue to be maintained.

#### 3.2.1 Groundwater Restoration Goals.

The results of the Zone 3 human health risk assessment for groundwater indicated that groundwater posed cancer and non-cancer risks to future off-base residents in exceedance of EPA's range of acceptable risk levels of 10<sup>-4</sup> to 10<sup>-6</sup>, or a hazard index greater than 1, respectively. A comparison

of the maximum detected concentrations of contaminants in groundwater with ARARs indicated that several chemical-specific ARARs were exceeded. Risk-based concentrations, chemical-specific ARARs, and background levels (for inorganics only) were evaluated in the development of restoration goals. Groundwater restoration goals for 18 organic and 8 inorganic contaminants were established in the Zone 3 ROD. Since the completion of the ROD in 1995, progress towards attaining these cleanup goals has been affected by changes in Zone 3 groundwater quality and changes in chemical-specific ARARs.

Groundwater quality in Zone 3 has been continually monitored as part of the Zone 3 Long-Term Monitoring Plan (Bechtel, 1999b). Groundwater monitoring data from several rounds of sampling conducted since the Zone 3 ROD was issued indicate that some groundwater contaminants are no longer detected. For this reason, three organic compounds (chloromethane, phenanthrene, and pentachlorophenol) have been eliminated as Zone 3 groundwater restoration goals. In addition, three metals (aluminum, cadmium, and chromium) have also been eliminated.

Chemical-specific ARARs that were relied on in the development of Zone 3 ROD groundwater restoration goals included Federal MCLs and New Hampshire's Ambient Groundwater Quality Standards (AGWQS). Since the finalization of the restoration goals, these chemical-specific ARARs have undergone change. Specifically, the Federal MCL for arsenic has been modified from 50 µg/L to 10 µg/L. Similarly, with the promulgation of new State of New Hampshire groundwater protection regulations on February 23, 1999 (when Env-Wm 1403 Groundwater Management and Groundwater Release Detection Permits replaced Env-Ws 410 Groundwater Protection Rules), the State of New Hampshire changed several existing standards and adopted new standards for several additional chemicals.

As a direct result of these changes to Zone 3 groundwater quality and chemical specific ARARs, this ROD Amendment establishes the following groundwater restoration objectives for Zone 3, Site 73 and Site 49:

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Zone 3 Groundwater Restoration Goals				
<b>Chemical of Concern</b>	<b>Cancer Classification</b>	Restoration Goal (µg/L)	Basis	
Trichloroethene	Non Carcinogenic	5	MCL/NHAGQS	
cis-1,2-Dichloroethene	Non Carcinogenic	70	MCL/NHAGQS	
trans-1,2-Dichloroethene	Non Carcinogenic	100	MCL/NHAGQS	
Vinyl Chloride	Carcinogenic	2	MCL/NHAGQS	
Tetrachloroethene	Non Carcinogenic	5	MCL/NHAGQS	
1,1-Dichloroethene	Carcinogenic	7	MCL/NHAGQS	
1,2-Dichloroethane	Non Carcinogenic	5	MCL/NHAGQS	
Chlorobenzene	Non Carcinogenic	100	MCL/NHAGQS	
Benzene	Carcinogenic	5	MCL/NHAGQS	
Ethylbenzene	Non Carcinogenic	700	MCL/NHAGQS	
Toluene	Non Carcinogenic	1,000	MCL/NHAGQS	
Naphthalene	Carcinogenic	20	MCL/NHAGQS	
sec-Butylbenzene	Non Carcinogenic	7.3	Risk (Weston, 1995)	
2-Methyl-naphthalene	Non Carcinogenic	280	NHAGQS	
bis(2-Ethylhexyl)	Carcinogenic	6	MCL	
Arsenic	Carcinogenic	23	Background (Weston, 1995)	
Lead	Non Carcinogenic	15	MCL	
Manganese	Non Carcinogenic	942	Background (Weston, 1995)	
Vanadium	Non Carcinogenic	256	Risk (Weston 1995)	

Site 49 Groundwater Restoration Goals				
<b>Chemical of Concern</b>	<b>Cancer Classification</b>	Restoration Goal (µg/L)	Basis	
Trichloroethene	Non Carcinogenic	5	MCL/NHAGQS	
cis-1,2-Dichloroethene	Non Carcinogenic	70	MCL/NHAGQS	
trans-1,2-Dichloroethene	Non Carcinogenic	100	MCL/NHAGQS	
Vinyl Chloride	Carcinogenic	2	MCL/NHAGQS	
Tetrachloroethene	Non Carcinogenic	5	MCL/NHAGQS	
1,1-Dichloroethene	Carcinogenic	7	MCL/NHAGQS	
1,1-Dichloroethane	Non Carcinogenic	81	NHAGQS	
1,2-Dichloroethane	Carcinogenic	5	MCL/NHAGQS	
2-Butanone	Non Carcinogenic	170	NHAGQS	
Naphthalene	Carcinogenic	20	MCL/NHAGQS	
Carbon Disulfide	Non Carcinogenic	7	NHAGQS	
Methylene Chloride	Non Carcinogenic	5	NHAGQS	
Dibromochloromethane	Carcinogenic	0.3	NHAGQS	

Site 73 Groundwater Restoration Goals				
<b>Chemical of Concern</b>	Cancer Classification	Restoration Goal (µg/L)	Basis	
Trichloroethene	Non Carcinogenic	5	MCL/NHAGQS	
cis-1,2-Dichloroethene	Non Carcinogenic	70	MCL/NHAGQS	
trans-1,2-Dichloroethene	Non Carcinogenic	100	MCL/NHAGQS	
Vinyl Chloride	Carcinogenic	2	MCL/NHAGQS	
Tetrachloroethene	Non Carcinogenic	5	MCL/NHAGQS	
1,1-Dichloroethene	Carcinogenic	7	MCL/NHAGQS	
1,1-Dichloroethane	Non Carcinogenic	81	NHAGQS	

MCL – Maximum Contaminant Level NHAGQS – New Hampshire Ambient Groundwater Quality Standards, May 2000

LHA – Lifetime Health Advisory, May 1993

 $\mu g/L-Micrograms\ per\ liter$ 

#### 3.2.2 Description of Remedial Components

The paragraphs below provide a detailed description of the amended remedy's components:

#### **Zone 3 Remedy Modifications**

#### 1. Construction of a Contingency Groundwater Treatment System for the Haven Well

This activity will include construction of a contingency treatment system to treat potentially contaminated groundwater from the Haven well should Zone 3 performance monitoring data indicate that any Zone 3 groundwater contaminant plumes threaten water quality at the wellhead. The plant will likely utilize a physical treatment process such as air stripping to remove volatile organic compounds from the groundwater. Depending on influent concentrations of volatile organic compounds, treatment of air emissions from an air stripper treatment system may be required. The Haven well treatment system will be designed with appropriate factors of safety to account for potential temporal increases in influent contaminant concentrations and/or increased flow rates. The existing Pease AFB water treatment facility was constructed in 1985 to provide chlorination and fluoridation to the Pease water supply. The new treatment system for organic constituents will be designed and installed such that it can be run in conjunction with the existing system. The new treatment system will be maintained by the Air Force to ensure it will available to treat VOCs on short notice. The Air Force will operate the treatment system to prevent exposure to Zone 3 groundwater contaminants above the remedial goals.

# 2. Optimization of Source Area Extraction and Implementation of Monitored Natural Attenuation of the Down-gradient Portion of the Site 39 Plume.

This activity involves optimizing the existing Site 39 source area extraction system. The optimized source area pumping system will increase contaminant removal rates and exert hydraulic control on the plume in the lower overburden and shallow bedrock emanating from Site 39, such that it does not threaten the Haven well. The optimized system will ensure that the dissolved-phase plume emanating from Site 39 will meet chemical-specific ARARs in a time-frame consistent with CERCLA and the NCP and that contaminant migration to the Haven well is minimized. The Zone

3 long-term monitoring program will address the operations, maintenance, and monitoring objectives of the optimized system. Natural attenuation processes will be relied on to restore overburden and bedrock groundwater contamination that is down-gradient of Site 39 to Zone 3 groundwater restoration goals.

#### 3. Termination of Extraction Southwest of Sites 34 and 39

Treatment of groundwater from wells in the aircraft parking apron area southwest of Sites 34 and 39 will be terminated once source area extraction at Site 39 has been optimized. Optimized groundwater extraction at the Site 39 source area to achieve greater mass removal and hydraulic control along with the availability of the wellhead treatment as a contingency remedy no longer necessitates the need for groundwater extraction from the wells in the aircraft parking apron.

#### 4. Modification of the Zone 3 Long-Term Monitoring Program

The current Zone 3 long-term performance monitoring program is designed to evaluate the progress of the following groundwater response actions:

- x Groundwater extraction and treatment to prevent the migration of contaminated groundwater southwest of Sites 34 and Site 39 toward the Haven well;
- x Site 39 source area groundwater extraction and treatment;
- x Site 32 source area groundwater extraction and treatment and natural attenuation of the contaminant plume outside of the Site 32 TI Zone; and
- x Restoration of Zone 3 overburden and bedrock groundwater contamination via monitored natural attenuation.

Under the amended remedy, groundwater extraction southwest of Sites 34 and 39 will cease upon optimization of the Site 39 source area extraction system. The Zone 3 long-term monitoring plan will then be revised to evaluate the performance of the amended remedy. Performance monitoring will be required for the following activities:

x Site 39 source area hydraulic control and groundwater extraction optimization and treatment process;

x Site 32 source area groundwater extraction and treatment and natural attenuation of the groundwater contaminant plume outside of the Site 32 TI Zone;

x Restoration of Zone 3 overburden and bedrock groundwater contamination via monitored natural attenuation;

x Evaluating plume migration to determine the need to start-up the treatment system to treat Haven well water.

#### 5. Implementation of Land Use Controls and Institutional Controls

ICs are a component of the amended Zone 3 remedy. ICs are the non-technical non-engineering actions, which support or complement the implementation of cleanup actions required by this amended remedy. Implementation, monitoring, and enforcement of the selected ICs will be used to ensure protection of human health and the environment at property encompassed by Zone 3 and Site 49. The ICs will also be used to maintain the integrity of the physical remedial action components.

The Air Force is responsible for implementing, maintaining, and monitoring, and reporting on the remedial actions identified herein including institutional controls for the duration of the remedies selected in this Zone 3 Record of Decision Amendment. It will exercise this responsibility in accordance with CERCLA and the National Contingency Plan (NCP). The ICs shall be maintained until the groundwater is suitable for unlimited exposure and unrestricted use. Approval by EPA and NHDES is required for any modification or termination of the ICs.

It is anticipated that successful implementation, operation, maintenance, and enforcement of these ICs in accordance with the terms of the Zone 3 ROD Amendment will achieve protective and legally compliant remedies.

The following are the goals and objectives of the ICs

X Prevent exposure to contaminated soil;-

x Prevent exposure to contaminated groundwater;

x Protect the integrity of the Site 49 and Site 73 PRBs, groundwater treatment systems, and monitoring well networks.

To achieve these goals and objectives the Air Force is requiring that use restrictions and controls be placed on the property where the residual contamination is located. The following are the corresponding use restrictions and controls on the Property where the contamination is located (see also Figure 3-1 Institutional Control Boundaries):

- x Prohibit the development and use of property for residential housing, elementary and secondary schools, child care facilities and playgrounds; and
- x Prohibit the installation of wells within the Zone 3 and Site 49 groundwater management zones except for the purpose of determining or monitoring groundwater quality or quantity.
- x Prevent any activity that will adversely impact the integrity of monitoring wells, PRBs, treatment facilities, piping, and other facilities on the property.

The Air Force will take the following actions to ensure that the aforementioned use restrictions and the controls are effective in protecting human health and the environment:

**a. Deed Restrictions** Each transfer of fee title from the United States will include a CERCLA 120(h)(3) covenant which will have a description of the residual contamination on the property and the environmental use restrictions, described above, expressly prohibiting activities inconsistent with the performance measure goals and objectives described above.

The environmental restrictions are included in a section of the CERCLA 120(h)(3) covenant that the United States is required to include in the deed for any property that has had hazardous substances stored for one year or more, known to have been released or disposed of on the property. Each deed will also contain a reservation of access to the property for the Air Force, USEPA, and the State of New Hampshire, and their respective officials, agents, employees, contractors, and subcontractors for purposes consistent with the Air Force Installation Restoration Program ("IRP") or the Federal Facility Agreement ("FFA"). The deed will contain appropriate provisions to ensure that the restrictions continue to run with the land.

**b.** Lease Restrictions During the time between the adoption of this ROD amendment and deeding of the property, equivalent restrictions are being implemented by lease terms, which are no less restrictive than the use restrictions and controls described above, in this ROD amendment. These

restrictive than the use restrictions and controls described above, in this ROD amendment. These

lease terms shall remain in place until the property is transferred by deed, at which time they will

be superceded by the institutional controls described in this ROD amendment.

c. Notice Concurrent with the transfer of fee title, information regarding the environmental use

restrictions and controls will be communicated in writing to the property owners and to appropriate

state and local agencies to ensure such agencies can factor such conditions into their oversight and

decision-making activities regarding the property. The Air Force will consult with EPA and NHDES

on deed restriction language, consistent with the terms of the Pease AFB FFA, and provide a copy

of the executed deeds to the regulatory agencies as soon as practicable after the transfer of fee title.

d. Monitoring Monitoring of the environmental use restrictions and controls will be conducted

annually by the Air Force. The monitoring results will be included in a separate report or as a section

of another environmental report, if appropriate, and provided to the USEPA and the NHDES. The

annual monitoring reports will be used in preparation of the Five Year Review to evaluate the

effectiveness of the remedy. The Five Year Review report will make recommendations on the

continuation, modification, or elimination of annual reports and IC monitoring frequency. The Five

Year Review report will be submitted to the regulatory agencies in accordance with the FFA.

The annual monitoring report, submitted to the regulatory agencies by the Air Force, will evaluate

the status of the ICs and how any IC deficiencies or inconsistent uses have been addressed. The

annual evaluation will address whether the use restrictions and controls referenced above were

communicated in the deed(s), whether the owners and state and local agencies were notified of the

use restrictions and controls affecting the property, and whether use of the property has conformed

with such restrictions and controls.

e. Response to Violations The Air Force will notify the EPA and NHDES via e-mail or telephone

as soon as practicable, but no later than ten days after discovery of any activity that is inconsistent

with the IC objectives, or use restrictions, or any action that may interfere with the effectiveness of

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the ICs. Any violations that breach federal, state or local criminal or civil law will be reported to the appropriate civil authorities.

f. Enforcement Any activity that is inconsistent with the IC objectives or use restrictions, or any

other action that may interfere with the effectiveness of the ICs will be addressed by the Air Force

as soon as practicable, but in no case will the process be initiated later than 10 days after the Air

Force becomes aware of the violation. The Air Force will exercise such rights as it retained under

the transfer documents to direct that activities in violation of the controls be immediately halted. To

the extent necessary, the Air Force will engage the services of the Department of Justice to enforce

such rights. The Air Force will notify EPA and NHDES regarding how the Air Force has addressed

or will address the breach as soon as practicable, but not later than 30 days after sending EPA and

NHDES notification of the breach as stated in paragraph e. above.

g. Notification of Land Use Modification The recipient of the property will obtain joint approval

from the Air Force, EPA and NHDES for any proposals for modification of ICs or for any proposal

for a modification of land use at a site inconsistent with the use restrictions and assumptions

described in this ROD Amendment.

The Air Force may arrange for third parties or other entities to perform any and all of the above

actions. Any such arrangement shall be undertaken and executed in accordance with all applicable

legal requirements, to include the Air Force's functions, obligations, and responsibilities under

CERCLA.

Remedy Modifications Associated with Contamination not Identified in the 1995 Zone 3 ROD

1. In-Situ Treatment of Site 73 Groundwater Contamination with a PRB, Monitored Natural Attenuation of the Existing Plume Down-Gradient of the PRB, and

Implementation of a Long-Term Performance Monitoring Plan

A zero-valent granular iron PRB was installed at Site 73 in 1999. Performance monitoring data

collected during 2001 and 2002 indicate that the PRB is successfully removing contaminants from

contaminated groundwater that is passing through it, promoting flushing of the down-gradient plume

with clean water, and enhancing natural attenuation processes. Long-term performance monitoring

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will continue to ensure that the PRB continues to perform as designed and contaminated groundwater is restored to Site 73 groundwater restoration goals. While no further action is required for Site 73 soils, use of the site remains restricted because the risk-based soil cleanup goals were not based on unlimited use and unrestricted exposure.

# 2. In-Situ Treatment of Site 49 Groundwater Contamination with a PRB, Monitored Natural Attenuation of the Existing Plume Down-Gradient of the PRB, Maintenance of Groundwater Management Zone, and Implementation of a Long-Term Performance Monitoring Plan

As discussed in Section 2.4, the Air Force signed an Action Memorandum for a Non-Time Critical Removal Action at Site 49 in February 2000. The recommended alternative, a zero-valent PRB, was installed later in 2000. Recent monitoring data indicate that contaminant removal is occurring within the PRB, and that natural attenuation is resulting in further degradation of contaminants in the down-gradient plume. A GMZ has been established to restrict groundwater use in the area of the Site 49 plume. Long-term performance monitoring will continue to ensure that the PRB continues to perform as designed and contaminated groundwater is restored to Site 49 groundwater restoration goals. While no further action is required for Site 49 soils, use of the site remains restricted because the risk-based soil cleanup goals were not based on unlimited use and unrestricted exposure.

#### 3. No Further Action at Site 65

An oil/water separator and contaminated soil that posed a threat to underlying groundwater at Site 65 were removed 1992. Subsequent groundwater investigations indicated localized low-level contamination consisting of PCE, TCE, and, 1,2-DCE. In 1999, long-term groundwater monitoring data was presented by the Air Force to support the conclusion that Site 65 groundwater met groundwater quality standards. EPA and NHDES concurred with this conclusion. Therefore, no further remedial actions are necessary for Site 65. Site 65 is suitable for unlimited use and unrestricted exposure.

#### 3.3 STATUTORY DETERMINATIONS

The remedial action selected for implementation for Zone 3 at Pease AFB is consistent with CERCLA and, to the extent practicable, the NCP. The amended remedy is protective of human health and the environment, attains ARARs and is cost effective. The amended remedy also satisfies the statutory preference for treatment that permanently and significantly reduces the mobility, toxicity or volume of hazardous substances as a principal element. Additionally, the amended remedy utilizes alternate treatment technologies or resource recovery technologies to the maximum extent practicable.

The Amended Remedy is Protective of Human Health and the Environment. In the 1995 Zone 3 ROD, exposure to contaminated groundwater was prevented, and overall protection was provided, through groundwater extraction and treatment, limitations on the Haven well pumping rate, and establishment of the Zone 3 GMZ. The remedy modifications in this ROD Amendment enhance the overall protectiveness of the remedy for sites included in the 1995 Zone 3 ROD. Installation of a wellhead treatment system as a contingent remedy for the Haven well assures future users greater protection from exposure to potentially contaminated groundwater. Protectiveness in other areas of Zone 3 is provided by the existing groundwater use restrictions and the enhanced groundwater extraction and hydraulic controls within the source area at Site 39. This ROD Amendment also provides greater protection in Zone 3 overall, by addressing sites not included in the 1995 Zone 3 ROD. The treatment of groundwater at Sites 49 and 73 reduces contaminant loading on the aquifer, enhancing the effectiveness of natural attenuation in the down-gradient plumes. Establishment of a GMZ with groundwater use restrictions at Site 49 prevents exposure to contaminated groundwater in this area.

The Amended Remedy Attains ARARs. This remedy will attain all applicable or relevant and appropriate federal and state requirements that apply to the amended remedy within a timeframe consistent with CERCLA and the NCP. All ARARs for the amended remedy are provided in tabular form in Appendix F. Environmental laws from which ARARs for the amended remedial action are derived include:

#### **Chemical-Specific ARARs**

- x Federal Safe Drinking Water Act;
- x New Hampshire Drinking Water Quality Standards; and
- x New Hampshire Groundwater Management and Groundwater Release Detection Permit Rules.

#### **Action-Specific ARARs**

- x Federal Resource Conservation and Recovery Act;
- x Federal Safe Drinking Water Act;
- x Federal Clean Air Act;
- x Federal Clean Water Act;
- x New Hampshire Groundwater Management and Groundwater Release Detection Permit Rules;
- x New Hampshire Drinking Water Quality Standards;
- x New Hampshire Groundwater Discharge Permit and Registration Rules; and
- x New Hampshire Toxic Air Pollution Regulations.

New Hampshire is an authorized State under RCRA, New Hampshire standards will apply to the amended remedy to the extent they are part of the authorized RCRA program. The following policies, criteria, and guidance will also be considered (TBCs) during the implementation of the remedial action:

- x U.S. EPA Health Advisories;
- x U.S. EPA Risk Reference Doses (RFD's);
- x NHDES Contaminated Sites Risk Characterization and Management Policy; and
- x U.S. EPA Directive 9355.0-28, Control of Air Emissions from Air Strippers at Superfund Groundwater Sites.

The Amended Remedial Action is Cost-Effective. The amended remedy is cost-effective since it provides overall effectiveness proportional to its cost. The net present-worth cost of the remedy included in the 1995 Zone 3 ROD was estimated as \$15,082,100. This ROD Amendment does not significantly change the cost of the remedy for sites addressed in the 1995 Zone 3 ROD. The proposed changes increase the overall cost of the remedy because of the construction of the Haven well treatment system, and increased operations and maintenance costs associated with the PRBs at Sites 49 and 73. The estimated cost of the amended remedy, projected over a 30-year period, is estimated to be \$22,000,000. This estimate includes costs associated with operation of the Haven well treatment system should contamination threaten the well and require start-up of the system. Criteria for the start-up of the Haven well treatment system will be specified in the Zone 3 revised long-term monitoring plan. The additional costs associated with the amended remedy are somewhat offset by savings associated with terminating operation of the Site 34 and Site 35 groundwater extraction systems, discontinuing groundwater extraction southwest of Sites 34 and 39, and optimizing the Zone 3 long-term performance monitoring plan.

The Amended Remedy Utilizes Permanent Solutions and Alternative Treatment or Resource Recovery Technologies to the Maximum Extent Practicable. Once it has been determined that the amended remedy is protective of human health and the environment and will attain ARARs, an examination is made to determine whether the amended remedy utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

This determination was made by deciding whether the 1995 Zone 3 ROD remedy or the amended remedy presented in the ROD Amendment provides the better balance of trade-offs in terms of:

- x Long-term effectiveness and permanence;
- x Reduction of toxicity, mobility or volume through treatment;
- x Short-term effectiveness;
- x Implementability; and
- x Cost.

The balancing test emphasized:

x Long-term effectiveness and permanence; and

x The reduction of toxicity, mobility and volume through treatment.

The balancing test <u>considered</u> as principal elements:

x The preference for treatment; and

x The bias against off-site land disposal of untreated waste; and community and state

acceptance.

The amended remedy for this ROD Amendment provides the better balance of trade-offs as

compared to the 1995 Zone 3 ROD.

The amended remedy provides an improvement in the long-term effectiveness of the 1995 Zone 3

remedy through the construction of the treatment system for the Haven well to ensure that human

receptors are not exposed to contaminated water that could present an unacceptable risk.

Groundwater extraction and treatment at Site 39 will be optimized to improve the reduction in

volume and mobility of contamination and will accelerate groundwater restoration time-frames. The

PRBs installed at Sites 49 and 73 will also greatly reduce the toxicity, mobility, and volume of

contamination at these sites so that down-gradient groundwater quality can naturally attenuate to

groundwater restoration goals.

The Amended Remedy Satisfies the Preference for Treatment Which Permanently and

Significantly reduces the Toxicity, Mobility or Volume of the Hazardous Substances as a

**Principal Element.** The amended remedy provides a greater level of treatment to reduce the

toxicity, mobility, and volume of hazardous substances over the 1995 Zone 3 remedy through

optimized ground water extraction and treatment at Site 39 and construction of a wellhead treatment

system for the Haven well should groundwater contamination threaten the well. Additionally, the

PRBs installed at Site 49 and 73 will permanently and significantly reduce the toxicity, mobility and

volume of contamination at these sites.

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Five Year Reviews. Because this ROD Amendment would result in contaminants remaining onsite, the Air Force will review the performance of the amended remedy at Zone 3 at least once every five years after the initiation of the modifications to assure that the remedial action continues to be protective of human health and the environment. This review will be consistent with the CERCLA §121(c) applicable for five-year site reviews in effect at the time of the review. No review is required for Site 65, because remedial actions at this site have reduced contaminants below levels of concern, and the site is available for unlimited use and unrestricted exposure.

#### 4.0 DOCUMENTATION OF NO SIGNIFICANT CHANGES

The Proposed Plan to Amend the 1995 Zone 3 Cleanup Plan was released for public comment in May 2002. The proposed changes call for attaining protectiveness of human health and the environment through construction of a contingent wellhead treatment system for the Haven well, optimization of the source area groundwater extraction system for Site 39, and modification of the long-term performance monitoring program to reflect the revised remedial strategy for Zone 3. The plan also documents remedial actions that have been implemented at Sites 49, 65, and 73 that were not originally addressed in the 1995 Zone 3 remedy. Based on comments received by the Air Force during the public comment period, which concluded on June 24, 2002, no significant change is needed to the proposed amended cleanup plan.

#### 4.1 STATE ROLE

The New Hampshire Department of Environmental Services has reviewed the remedy change and concurs with the amended remedy described in Section 3.2 of this Amendment. A copy of the State concurrence letter is attached as Appendix E.

#### 5.0 REFERENCES

- Air Force (U.S. Air Force), 1997. Property Transfer Guidance: Air Force Demonstrations that Remedial Actions are Operating Properly and Successfully Under CERCLA, Section 120(h)(3).
- Air Force Base Conversion Agency (ABCA), 2000. *IRP Site 49 Remedial Action Decision, Consensus Statement*, Pease AFB, New Hampshire
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- Bechtel, 1997b. Work Plan for Site Characterization and Technology Evaluation at Site 73, Pease Air Force Base.
- Bechtel, 1998a. Zone 3 Excavations Remedial Action Report, Pease AFB, New Hampshire.
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- Bechtel, 2000a. Zone 3 Groundwater Model Update Report, Pease AFB, New Hampshire.
- Bechtel, 2000b. Technical Memorandum for Supplemental Sampling at Site 73, Pease Air Force Base.
- Bechtel, 2000c. Technical Memorandum for the Investigation of the Downgradient Portion of the Site 73 Chlorinated Solvent Plume at the Pease AFB. Pease Air Force Base, New Hampshire.
- Bechtel, 2001. Site 73 Permeable Reactive Wall Technology Demonstration, Technology Evaluation Report, Pease Air Force Base.
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- MWH, 2002b. Site 39 2001 Groundwater investigation Report, Pease Air Force Base, New Hampshire.
- MWH, 2002c. *Site 49 Preliminary Draft 2001 Annual Report Report*, Pease Air Force Base, New Hampshire.
- MWH, 2002d. Site 73 2001 Status Report, Pease Air Force Base, New Hampshire.
- MWH, 2003a. Zone 3 2002 Annual Report, Former Pease Air Force Base, New Hampshire.
- MWH, 2003b. Site 49 2002 Status Report, Former Pease Air Force Base, New Hampshire.
- MWH, 2003c. Site 73 2002 Status Report, Former Pease Air Force Base, New Hampshire.
- NHDES, 1999. New Hampshire Department of Environmental Standards, *Ambient Groundwater Standards*, Document, Env-Wm 1403.05;
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- Versar, Inc., 2000b. *Shallow and Deep PRB Construction Installation Report*, Pease AFB, New Hampshire.
- Weston, 1993. Zone 3 Draft Final Feasibility Study Report, Pease AFB, New Hampshire.

Weston, 1994. Zone 3 Remedial Investigation Report Addendum 1 Site 65 Site Investigation, Pease AFB, New Hampshire.

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Weston, 1995a. Technical Memorandum – Site 34/39 Performance Test, Pease AFB, NH.

Weston 1996. Pease Air Force Base Installation Restoration Program, Site 73 Remedial Investigation Report/Feasibility Study (Revised Draft), Pease AFB, New Hampshire.

# APPENDIX A ADMINISTRATIVE RECORD INDEX

# PEASE AIR FORCE BASE New Hampshire





# Administrative Record Index

Amendment to the Zone 3 Record of Decision

Zone 3, Site 49, Site 65, Site 73

23 May 2002

**Short List Format** 

Air Force Base Conversion Agency
Division A

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
11 Aug 99	Administrative Record File Index	LABAT-ANDERSON INCORPORATED	01
Apr 91	SOW, RI/FS, Draft Final Report	AFCEE/ESB	02
May 95	Draft Supplemental EIS	AFCEE/ERB	03
Jun 84	Phase II, Problem Confirmation and Quantification Presurvey Report	Roy F. Weston, Inc.	04
Jan 84	Records Search Report	CH2M Hill	05
20 Jul 90	Stage 3B, PA, Report	Roy F. Weston, Inc.	06
Nov 91	PA, Final Report, OT-038	ICF Kaiser Engineers, Inc.	07
Aug 86	Phase II Stage 1, Final Confirmation/Quantification Report, Vol I of II	Roy F. Weston, Inc.	08
Aug 87	Phase II Stage 1, Final Confirmation/Quantification Report, Vol II of II, Appendices	Roy F. Weston, Inc.	09
Feb 91	Stage 3B, PA/SI, Draft Report	Roy F. Weston, Inc.	10
Jul 92	SI, Final Report, Vol I of II, OT-038	ICF Kaiser Engineers, Inc.	11
Jul 92	SI, Final Report, Vol II of II, Appendices, OT-038	ICF Kaiser Engineers, Inc.	12
16 Mar 84	New Hampshire Water Supply and Pollution Control Commission Letter to HQ SAC Concerning Phase I, Record Search Report	Donahue, Michael P New Hampshire Water Supply an Pollution Control Commission	23 d
24 Nov 86	NHDPHS Interdepartmental Letter Concerning IRP Report	Strohm, Brian C New Hampshire Division of Publ Health Services	24 ic

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
03 Feb 87	NHDES Letter to Base Hospital Concerning Phase II Stage 1, Draft IRP Report	Sills, Michael A New Hampshire Department of Environmental Services	25
08 May 87	USAF OEHL Letter to NHDES Concerning Phase II Stage 1, Draft IRP Report	Ostraat, Randall C, Maj USAF OEHL	26
18 Jul 90	NHDES Letter to Base Concerning Site Walkovers Made with Members of Sherburne Civic Group	Pease, Richard H New Hampshire Department of Environmental Services	28
28 Jul 92	Base Letter to EPA Concerning Submittal of SI, Report, OT-038	Ditto, Arthur L AFBDA/OL-A	29
25 May 94	Weston Letter to Base Concerning Water Hardness, Zone 3	dePersia, Lee R Roy F. Weston, Inc.	32
03 Jun 94	Base Letter to EPA and NHDES Transmitting Letter Report, Test Pit Investigation, Zone 2	Ditto, Arthur L AFBCA/OL-A	34
28 Jun 95	Base Letter to AFCEE Concerning EBS	Ditto, Arthur L AFBCA/OL-A	38
10 Dec 97	Bechtel Letter to Base Transmitting Contamination Assessment Report, ST-049	Taylor, Stewart W Bechtel Environmental, Inc.	47
16 Dec 97	Base Letter to EPA and NHDES Transmitting Contamination Assessment Report, ST-049	Ditto, Arthur L AFBCA/DA Pease	48
02 Mar 98	Bechtel Letter to Base Transmitting Final Draft Supplemental Characterization Report, ST-073	Burnell, Suzanne L Bechtel Environmental, Inc.	49
03 Mar 98	Base Letter to EPA and NHDES Transmitting Final Draft Supplemental Characterization Report, ST-073	Ditto, Arthur L AFBCA/DA Pease	50

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
24 Mar 98	NHDES Letter to Base Concerning Supplemental Characterization Report, ST-073	Hilton, Scott New Hampshire Department of Environmental Services	51
13 Apr 98	EPA Letter to Base Concerning Review of Supplemental Characterization Report, ST-073	Daly, Michael J EPA Region I	52
Aug 97	Draft Basewide Surface Water, Sediment, and Fish Tissue Monitoring Plan	Bechtel Environmental, Inc.	53
Feb 98	Draft Long Term Monitoring SAP	Bechtel Environmental, Inc.	54
Apr 98	Draft Final Basewide Surface Water, Sediment, and Fish Tissue Monitoring Plan	Bechtel Environmental, Inc.	55
Mar 98	Final Draft Supplemental Characterization Report, ST-073	Bechtel Environmental, Inc.	56
Apr 98	Draft Conceptual Design Report for Zero-Valent Iron Permeable Reactive Wall Technology Demonstration, ST-073	Bechtel Environmental, Inc.	57
18 Nov 97	Bechtel Memorandum Concerning Building Demolition and Excavation, ST-049	Bechtel Environmental, Inc.	58
Jan 91	Stage 3, ITIR, Soil Removal, Building 222, OT-023	Roy F. Weston, Inc.	61
Apr 91	Stage 3, ITIR, Soil Removal, Building 113, ST-030	Roy F. Weston, Inc.	62
Oct 92	Stage 3B, ITIR, Draft Groundwater Treatment Plant, Appendix K, ST-030/OT-024	Roy F. Weston, Inc.	66
Oct 92	Stage 3B, ITIR, Draft Groundwater Treatment Plant, Technical Report and Appendices A-J, ST-030/OT-024	Roy F. Weston, Inc.	67

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Nov 92	Stage 3B, Draft ITIR, Groundwater Treatment Plant, Technical Report and Appendices A-D, OT-023	Roy F. Weston, Inc.	68
Nov 92	Stage 3B, Draft ITIR, Groundwater Treatment Plant, Appendices E-G, OT-023	Roy F. Weston, Inc.	69
Dec 95	Final Groundwater Extraction and Treatment Assessment, ST-030/OT-024	Roy F. Weston, Inc.	70
Dec 97	Contamination Assessment Report, ST-049	Bechtel Environmental, Inc.	71
Apr 98	Draft Contamination Assessment Report, Addendum 1, ST-049	Bechtel Environmental, Inc.	72
May 98	RA, Draft Report, SD-021, SD-034	Bechtel Environmental, Inc.	73
08 Mar 89	Weston Letter to USAF OEHL Concerning Tank Removal at Building 244, ST-018	Sheedy, Katherine A Kolvites, Bette L Roy F. Weston, Inc.	74
25 Sep 90	NHDES Letter to Base Concerning Groundwater Remediation Pilot Plan, Contract Document and Specifications, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	75
01 Nov 90	Weston Letter to HSD Concerning Recovery Well Update, ST-030/OT-024	Barnes, Edward S Roy F. Weston, Inc.	77
05 Nov 90	Weston Letter to Base Concerning Anticipated Effluent Quality from Groundwater Treatment Plants, ST-030, OT-023, OT-024	Nowack, Bette L Cunningham, Arthur J Roy F. Weston, Inc.	78
03 Dec 90	Weston Letter to Base Transmitting Corrected Anticipated Effluent Quality Tables for 05 Nov 90 Letter, ST-030, OT-023, OT-024	Nowack, Bette L Roy F. Weston, Inc.	80

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
13 Sep 89	NHDES Letter to Weston Concerning Supplemental Proposal to Air Strip Contaminated Groundwater, ST-030, OT-023, OT-024	Andrews, Richard D New Hampshire Department of Environmental Services	82
20 Aug 90	Base Letter to NHDES Concerning Amendments to Groundwater Treatment System Air Emissions, ST-030, OT-023, OT-024	Prescott, David M, LtCol 509 CSG/DEEV	85
22 Aug 90	Base Letter to NHDES Concerning Wetlands Permit for National Priorities List Related Work, ST-030, OT-023, OT-024	Jones, Richard A 509 CSG/DEEV	86
11 Jan 91	NHDES Letter to Base Concerning Pilot Groundwater Treatment Systems for Areas of Concern, ST-030, OT-023, OT-024	Baxter, Carl W New Hampshire Department of Environmental Services	87
24 Jan 91	Base Letter to NHDES Concerning Pilot Groundwater Treatment Systems, ST-030, OT-023, OT-024	Jones, Richard A 509 CSG/DEEV	88
10 Dec 90	Base Letter to EPA Concerning Intent to Discharge Effluent from Two Pilot Groundwater Treatment Systems, ST-030, OT-023, OT-024	Jones, Richard A 509 CSG/DEEV	89
24 Jan 91	Base Letter to EPA Concerning Pilot Groundwater Treatment Systems, ST-030, OT-023, OT-024	Jones, Richard A 509 CSG/DEEV	90
13 Aug 92	Base Letter to EPA Transmitting Groundwater Treatment Plant Evaluation Report, OT-023	Ditto, Arthur L AFBDA/OL-A	91
14 Oct 92	Weston Letter to AFCEE Transmitting ITIR, Groundwater Treatment Plant, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	93

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
19 Oct 92	Weston Letter to AFCEE Transmitting Advance Copy of ITIR, Groundwater Treatment Plant, OT-023	dePersia, Lee R Roy F. Weston, Inc.	94
27 Jun 95	Base Letter to EPA and NHDES Transmitting RA, Draft Closure Plan, OT-023	McKenzie, Mark A AFBCA/OL-A	100
18 Aug 95	Weston Letter to Base Concerning Shutdown and Scale-Back of Pilot Groundwater Recovery and Treatment Plants, ST-030, OT-023, OT-024	dePersia, Lee R Roy F. Weston, Inc.	101
01 Dec 97	Base Facsimile to EPA and NHDES Transmitting Bechtel Memorandum Concerning Procedures for Soil Removal, ST-049	Ditto, Arthur L AFBCA/DA Pease	102
09 Apr 98	Bechtel Letter to Base Transmitting Draft Conceptual Design Report for Zero-Valent Iron Permeable Reaction Wall, ST-073	Curtis, L Suzanne Bechtel Environmental, Inc.	103
10 Apr 98	Base Letter to EPA and NHDES Transmitting Draft Conceptual Design Report for Zero-Valent Iron Permeable Reaction Wall, ST-073	Ditto, Arthur L AFBCA/DA Pease	104
13 Apr 98	Base Letter to EPA and NHDES Transmitting Draft Contamination Assessment Report, Addendum 1, ST-049	Ditto, Arthur L AFBCA/DA Pease	105
14 Apr 98	Base Letter to Bechtel Concerning Pilot Study of Zero-Valent Iron Reactive Wall, Zone 3, ST-073	Ditto, Arthur L AFBCA/DA Pease	106
16 Apr 98	Base Letter to EPA and NHDES Concerning Draft Conceptual Design Report for Zero-Valent Iron Permeable Reactive Wall	Ditto, Arthur L AFBCA/DA Pease	107

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
05 Jun 98	NHDES Letter to Base Concerning Draft Conceptual Design Report for Zero-Valent Iron Permeable Reactive Wall, ST-073	Hilton, Scott New Hampshire Department of Environmental Services	108
Nov 87	Phase II Stage 2, Final QAPP	Roy F. Weston, Inc.	109
Aug 89	Stage 3, QAPP	Roy F. Weston, Inc.	110
Jan 91	Stage 4, Draft Final SAP	Roy F. Weston, Inc.	111
Apr 91	Draft Health Assessment SAP	Roy F. Weston, Inc.	112
15 Oct 92	Weston Letter to Base Concerning Aquifer Test Procedure Plan, Bedrock Well 39-6080, OT-031	Casper, Robert J Roy F. Weston, Inc.	113
22 Jan 91	Weston Letter to Base Concerning Pumping Tests, ST-030/OT-024	Bruckner, Amy E Roy F. Weston, Inc.	114
28 Sep 92	Weston Letter to Base Concerning Pumping Tests, Zone 3	Casper, Robert J Roy F. Weston, Inc.	118
01 Oct 92	Weston Letter to Base Concerning Aquifer Test Plan for Lower Sand Well 31-518, ST-018	Spratt, James G Roy F. Weston, Inc.	121
15 Oct 92	Weston Letter to Base Concerning Aquifer Test Plan for Lower Sand Well 39-5101, OT-031	Casper, Robert J Roy F. Weston, Inc.	122
23 Oct 92	Weston Letter to AFCEE Concerning Analysis Using SW846 Method 8330 for Explosives	Barnes, Edward S Roy F. Weston, Inc.	123
19 Nov 92	Weston Letter to AFCEE Concerning Ethylene Dibromide Analysis Using Modified Method E504.1	Barnes, Edward S Roy F. Weston, Inc.	125
02 Dec 92	Stage 4, SAP, QAPP Portion, Addendum 3	Roy F. Weston, Inc.	127

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
21 Jun 94	Base Letter to NHDES and EPA Concerning Submittal of Construction Quality Plan and SAP for Ditch Maintenance	McKenzie, Mark A AFBCA/OL-A	129
23 Aug 95	NHDES Letter to Base Concerning Water Level Measurement and Recommendations, ST-030/OT-024	Lynn, Gary S New Hampshire Department of Environmental Services	130
UNK	<b>GWTP Summary Tables</b>	Roy F. Weston, Inc.	135
25 Nov 98	TN & Associates Letter to Base Concerning Field Activities Report, ST-049	Clite, Nova Voight, David S TN & Associates, Inc.	136
20 Nov 91	Letter Report, Background Soluble Metals Concentrations for Groundwater	Barnes, Edward S Roy F. Weston, Inc.	138
17 Apr 92	Letter Report, Tolerance Limits for Background Soils	dePersia, Lee R Roy F. Weston, Inc.	139
19 Aug 92	Base Letter to EPA Concerning Results of Background Surface Water/Sediment Location Walkover	Ditto, Arthur L AFBDA/OL-A	141
21 Aug 92	Weston Letter to Base Concerning Haven Well Test	Spratt, James G Roy F. Weston, Inc.	142
25 Aug 92	Letter Report, Maximum Detected Concentrations for Unfiltered Groundwater	dePersia, Lee R Roy F. Weston, Inc.	143
16 Sep 92	Weston Letter to Base Concerning Haven Well Pumping Test Data	Spratt, James G Roy F. Weston, Inc.	144
21 Sep 92	NHDES Letter to Resident Confirming No VOCs Found in Well from Water Quality Sampling on 18 Jul 92	Doane, Scott E Regan, John M New Hampshire Department of Environmental Services	145

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
09 Oct 92	Base Letter to EPA and NHDES Transmitting Letter Report, Tissue Sample, SD-021, SD-027	Ditto, Arthur L AFBDA/OL-A	146
23 Nov 92	Base Letter to Resident Confirming No VOCs Found in Well Sampled on 09 Nov 92	Ditto, Arthur L AFBDA/OL-A	147
15 Jan 93	Base Letter to Newington Board of Selectmen Confirming No VOCs Found in Residential Well	Ditto, Arthur L AFBDA/OL-A	148
Aug 89	Stage 3, RI/FS, Work Plan	Roy F. Weston, Inc.	150
May 91	Stage 3C, Treatability Study Work Plan, FT-008, OT-023	Roy F. Weston, Inc.	151
29 Oct 98	TN & Associates Letter to Base Concerning Field Activities Report, ST-049	Clite, Nova Voight, David S TN & Associates, Inc.	152
Jan 91	Stage 4, Draft Final Work Plan	Roy F. Weston, Inc.	153
Sep 87	Phase II Stage 2, Final Work Plan	Roy F. Weston, Inc.	154
Sep 91	Stage 4, Draft Work Plan, Addendum 1	Roy F. Weston, Inc.	155
May 91	Stage 3C, Operations Plan	Roy F. Weston, Inc.	157
Jun 92	Stage 4, Work Plan, Addendum 3	Roy F. Weston, Inc.	158
08 Sep 92	Weston Letter to Base Concerning Conversion of Well 06-608 to Fractured Bedrock Monitor Well	dePersia, Lee R Roy F. Weston, Inc.	160
02 Oct 92	Weston Letter to Base Concerning Groundwater Modeling Process Outline	dePersia, Lee R Roy F. Weston, Inc.	161
Jan 94	Interim Monitoring Plan	AFCEE/ERB	164

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27 Oct 93	Work Plan to Evaluate Sediments of McIntyre Brook and Flagstone Brook, SD-021, SD-026	Roy F. Weston, Inc.	165
Oct 94	Draft SOP for Well Abandonment	Roy F. Weston, Inc.	167
13 Jun 95	Weston Letter to Base Concerning Aquifer Test Work Plan, OT-023, OT-031	Soukup, James J Roy F. Weston, Inc.	169
11 Aug 97	Bechtel Letter to Base Concerning Draft Work Plan for Site Characterization and Technology Evaluation, ST-073	Taylor, Stewart W Bechtel Environmental, Inc.	170
21 Aug 97	Bechtel Letter to Base Transmitting Draft Work Plan for Assessment of Chlorinated Solvent Contamination, ST-049	Taylor, Stewart W Bechtel Environmental, Inc.	171
21 Aug 97	Draft Work Plan for Assessment of Chlorinated Solvent Contamination, ST-049	Bechtel Environmental, Inc.	172
22 Aug 97	Base Letter to NHDES and EPA Transmitting Draft Work Plan for Assessment of Chlorinated Solvent Contamination, ST-049	Flagg, Jay AFBCA/DB Pease	173
08 Oct 97	Base Facsimile to EPA, NHDES, and PDA Concerning Methods to be Used for Installing Elevator Jack, ST-049	Ditto, Arthur L AFBCA/DB Pease	174
10 Oct 97	Bechtel Letter to Base Transmitting Draft Final Work Plan for Site Characterization and Technology Evaluation, ST-073	Taylor, Stewart W Bechtel Environmental, Inc.	175
Oct 97	Draft Final Work Plan, ST-073	Bechtel Environmental, Inc.	176
Mar 92	Stage 4, Draft SAP, Addendum 2	Roy F. Weston, Inc.	177
Feb 88	Stage 2, Interim Technical Report No. 1, Vol I	Roy F. Weston, Inc.	178

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Jan 88	Stage 2, Draft Interim Technical Report No. 1, Vol II, Appendices	Roy F. Weston, Inc.	179
Aug 88	Stage 2, Interim Technical Report No. 2, Vol I of V	Roy F. Weston, Inc.	180
Aug 88	Stage 2, Interim Technical Report No. 2, Vol II of V, Appendices	Roy F. Weston, Inc.	181
Aug 88	Stage 2, Interim Technical Report No. 2, Vol III of V, Appendices	Roy F. Weston, Inc.	182
Aug 88	Stage 2, Interim Technical Report No. 2, Vol IV of V, Appendices	Roy F. Weston, Inc.	183
Aug 88	Stage 2, Interim Technical Report No. 2, Vol V of V, Appendices	Roy F. Weston, Inc.	184
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol I of VII	Roy F. Weston, Inc.	187
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol II of VII, Appendices	Roy F. Weston, Inc.	188
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol III of VII, Appendices	Roy F. Weston, Inc.	189
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol IV of VII, Appendices	Roy F. Weston, Inc.	190
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol V of VII, Appendices	Roy F. Weston, Inc.	191
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol VI of VII, Appendices	Roy F. Weston, Inc.	192
Apr 89	Stage 2, Draft Interim Technical Report No. 4, Vol VII of VII, Appendices	Roy F. Weston, Inc.	193

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Jul 90	Stage 2, Draft Final Report, Vol I of II	Roy F. Weston, Inc.	194
Jul 90	Stage 2, Draft Final Report, Vol II of II	Roy F. Weston, Inc.	195
Jul 90	Stage 2, Draft Final Report, Appendices, Vol I of V	Roy F. Weston, Inc.	196
Jul 90	Stage 2, Draft Final Report, Appendices, Vol II of V	Roy F. Weston, Inc.	197
Jul 90	Stage 2, Draft Final Report, Appendices, Vol III of V	Roy F. Weston, Inc.	198
Jul 90	Stage 2, Draft Final Report, Appendices, Vol IV of V	Roy F. Weston, Inc.	199
Jul 90	Stage 2, Draft Final Report, Appendices, Vol V of V	Roy F. Weston, Inc.	200
Jul 90	Stage 2, Summary Analytical Tables	Roy F. Weston, Inc.	201
09 Jan 90	Weston Letter to HSD Transmitting Letter Report, OT-023	Barnes, Edward S Roy F. Weston, Inc.	203
17 Aug 90	Weston Letter to HSD Transmitting Letter Report, Geophysical Survey, Stage 3B, Areas of Concern, ST-030, OT-023, OT-024	Barnes, Edward S Roy F. Weston, Inc.	205
14 Sep 90	Weston Letter to HSD Transmitting Letter Report, Recovery Well Selection, ST-030/OT-024	Barnes, Edward S Roy F. Weston, Inc.	206
01 Oct 90	Weston Letter to HSD Transmitting Letter Report, Recovery Well Selection, OT-023	Barnes, Edward S Roy F. Weston, Inc.	207
Jul 91	Stage 3C, Site Characterization Summary, ST-030/OT-024	Roy F. Weston, Inc.	212

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Jul 91	Stage 3C, Draft Site Characterization Summary, OT-023	Roy F. Weston, Inc.	213
Jul 91	Stage 3C, Draft Site Characterization Summary, Analytical Data Addendum, OT-023	Roy F. Weston, Inc.	214
07 Aug 92	Monitor Well Inventory and Inspection Report	Roy F. Weston, Inc.	215
26 Feb 93	Letter Report, Background Values for Soil, Groundwater, Surface Water, and Sediment	dePersia, Lee R Roy F. Weston, Inc.	216
17 Sep 92	Weston Letter to AFCEE Transmitting Letter Report, Off-Base Well Inventory	dePersia, Lee R Roy F. Weston, Inc.	217
Apr 94	Regional Groundwater Model	Roy F. Weston, Inc.	219
May 94	Test Pit Investigations, Zone 2	Roy F. Weston, Inc.	220
04 Oct 94	Weston Letter to AFCEE Transmitting Letter Report, Monitor Well Inventory and Inspection	dePersia, Lee R Roy F. Weston, Inc.	221
Jul 95	Letter Report, McIntyre Brook Sediment Excavation, SD-021	Roy F. Weston, Inc.	222
10 Nov 95	Multi-Layer Sampling, Method Review and Data Summary, ST-030, ST-073	Roy F. Weston, Inc.	223
Dec 95	Groundwater Modeling Report, Zone 3	Roy F. Weston, Inc.	225
May 92	Stage 4, Site Characterization Summary, Vol I of II, Technical Report, Zone 3	Roy F. Weston, Inc.	232
May 92	Stage 4, Site Characterization Summary, Appendices, Vol II of II, Zone 3	Roy F. Weston, Inc.	233
May 92	Stage 4, Site Characterization Summary, Vol II of II, Appendices, Zone 4	Roy F. Weston, Inc.	234

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
May 92	Stage 4, Site Characterization Summary, Vol I of II, Technical Report, Zone 4	Roy F. Weston, Inc.	235
May 92	Stage 3C, RI, Draft Final Source Area Report, Vol I of V, Technical Report, OT-023	Roy F. Weston, Inc.	236
May 92	Stage 3C, RI, Draft Final Source Area Report, Vol II of V, Appendices A-H, OT-023	Roy F. Weston, Inc.	237
May 92	Stage 3C, RI, Draft Final Source Area Report, Vol III of V, Appendices I, J, OT-023	Roy F. Weston, Inc.	238
May 92	Stage 3C, RI, Draft Final Source Area Report, Vol IV of V, Appendices K-M, OT-023	Roy F. Weston, Inc.	239
May 92	Stage 3C, RI, Draft Final Source Area Report, Vol V of V, Figures, OT-023	Roy F. Weston, Inc.	240
May 92	Letter Report, Drainage Area	Roy F. Weston, Inc.	241
Jun 92	Stage 3C, RI, Draft Final Source Area Report, Vol IV of IV, Figures, ST-030/OT-024	Roy F. Weston, Inc.	242
Jun 92	Stage 3C, RI, Draft Final Source Area Report, Vol III of IV, Appendices D-G, L-N, ST-030/OT-024	Roy F. Weston, Inc.	243
Jun 92	Stage 3C, RI, Draft Final Source Area Report, Vol II of IV, Appendices A-C, ST-030/OT-024	Roy F. Weston, Inc.	244
Jun 92	Stage 3C, RI, Draft Final Source Area Report, Vol I of IV, Technical Report, ST-030/OT-024	Roy F. Weston, Inc.	245
Oct 92	Stage 4, Site Characterization Summary, Vol I of IV, Text, Zone 2	Roy F. Weston, Inc.	260
Oct 92	Stage 4, Site Characterization Summary, Vol II of IV, Appendices A-C, Zone 2	Roy F. Weston, Inc.	261

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Oct 92	Stage 4, Site Characterization Summary, Vol III of IV, Appendix D, Parts 1 and 2, Zone 2	Roy F. Weston, Inc.	262
Oct 92	Stage 4, Site Characterization Summary, Vol IV of IV, Appendices E-F, Zone 2	Roy F. Weston, Inc.	263
08 Jan 93	Weston Letter to AFCEE Transmitting Letter Report, Haven Well Pumping Test	dePersia, Lee R Roy F. Weston, Inc.	268
Sep 93	RI, Draft Final Report, Vol I of VI, Text, Zone	Roy F. Weston, Inc.	269
Sep 93	RI, Draft Final Report, Vol II of VI, Figures, Zone 4	Roy F. Weston, Inc.	270
Sep 93	RI, Draft Final Report, Vol III of VI, Appendices B-I, Zone 4	Roy F. Weston, Inc.	271
Sep 93	RI, Draft Final Report, Vol IV of VI, Appendices J, L, O, Zone 4	Roy F. Weston, Inc.	272
Sep 93	RI, Draft Final Report, Vol V of VI, Appendix K, Part 1 of 2, Zone 4	Roy F. Weston, Inc.	273
Sep 93	RI, Draft Final Report, Vol VI of VI, Appendix K, Part 2 of 2, Zone 4	Roy F. Weston, Inc.	274
Mar 93	RI, Draft Report, Appendices K and O, Zone 4	Roy F. Weston, Inc.	275
Mar 93	RI, Report, Appendix J, Part 1 of 4, Zone 4	Roy F. Weston, Inc.	276
Mar 93	RI, Report, Appendix J, Part 2 of 4, Zone 4	Roy F. Weston, Inc.	277
Mar 93	RI, Report, Appendix J, Part 3 of 4, Zone 4	Roy F. Weston, Inc.	278
Mar 93	RI, Report, Appendix J, Part 4 of 4, Zone 4	Roy F. Weston, Inc.	279

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Nov 93	RI, Draft Final Report, Vol I of XIII, Text, Zone 2	Roy F. Weston, Inc.	299
Nov 93	RI, Draft Final Report, Vol II of XIII, Figures, Zone 2	Roy F. Weston, Inc.	300
Nov 93	RI, Draft Final Report, Vol III of XIII, Appendices A, C, D, E, F, G, Zone 2	Roy F. Weston, Inc.	301
Nov 93	RI, Draft Final Report, Vol IV of XIII, Appendix B, Part 1 of 2, Zone 2	Roy F. Weston, Inc.	302
Nov 93	RI, Draft Final Report, Vol V of XIII, Appendix B, Part 2 of 2, Zone 2	Roy F. Weston, Inc.	303
Nov 93	RI, Draft Final Report, Vol VI of XIII, Appendix H, Zone 2	Roy F. Weston, Inc.	304
Nov 93	RI, Draft Final Report, Vol VII of XIII, Appendix I, Part 1 of 3, Zone 2	Roy F. Weston, Inc.	305
Nov 93	RI, Draft Final Report, Vol VIII of XIII, Appendix I, Part 2 of 3, Zone 2	Roy F. Weston, Inc.	306
Nov 93	RI, Draft Final Report, Vol IX of XIII, Appendix I, Part 3 of 3, Zone 2	Roy F. Weston, Inc.	307
Nov 93	RI, Draft Final Report, Vol X of XIII, Appendix J, Part 1 of 2, Zone 2	Roy F. Weston, Inc.	308
Nov 93	RI, Draft Final Report, Vol XI of XIII, Appendix J, Part 2 of 2, Zone 2	Roy F. Weston, Inc.	309
Nov 93	RI, Draft Final Report, Vol XII of XIII, Appendix K, Zone 2	Roy F. Weston, Inc.	310
Nov 93	RI, Draft Final Report, Vol XIII of XIII, Appendices L, M, N, Zone 2	Roy F. Weston, Inc.	311

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May 93	RI, Draft Report, Appendix I, Part 1 of 2, Zone 2	Roy F. Weston, Inc.	312
May 93	RI, Draft Report, Appendix I, Part 2 of 2, Zone 2	Roy F. Weston, Inc.	313
Sep 93	RI, Draft Final Report, Text, Zone 3	Roy F. Weston, Inc.	. 314
Sep 93	RI, Draft Final Report, Tables, Zone 3	Roy F. Weston, Inc.	315
Sep 93	RI, Draft Final Report, Figures, Zone 3	Roy F. Weston, Inc.	316
Sep 93	RI, Draft Final Report, Appendices A, C, D, Zone 3	Roy F. Weston, Inc.	317
Apr 93	RI, Draft Final Report, Appendix B, Part 1 of 2, Zone 3	Roy F. Weston, Inc.	318
Apr 93	RI, Draft Final Report, Appendix B, Part 2 of 2, Zone 3	Roy F. Weston, Inc.	319
Sep 93	RI, Draft Final Report, Appendices B, E, F, G, H, L, M, Zone 3	Roy F. Weston, Inc.	320
Apr 93	RI, Draft Final Report, Appendix H, Part 1 of 3, Zone 3	Roy F. Weston, Inc.	321
Apr 93	RI, Draft Final Report, Appendix H, Part 2 of 3, Zone 3	Roy F. Weston, Inc.	322
Apr 93	RI, Draft Final Report, Appendix H, Part 3 of 3, Zone 3	Roy F. Weston, Inc.	323
Apr 93	RI, Draft Report, Appendix I, Part 1 of 2, Zone 3	Roy F. Weston, Inc.	324
Apr 93	RI, Draft Report, Appendix I, Part 2 of 2, Zone 3	Roy F. Weston, Inc.	325

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Sep 93	RI, Draft Final Report, Appendices I and J, Part 1 of 2, Zone 3	Roy F. Weston, Inc.	326
Sep 93	RI, Draft Final Report, Appendix J, Part 2 of 2, Zone 3	Roy F. Weston, Inc.	327
Sep 93	RI, Draft Final Report, Appendix K, Zone 3	Roy F. Weston, Inc.	328
Apr 93	RI, Draft Report, Section 6, Zone 4	Roy F. Weston, Inc.	329
Apr 93	RI, Draft Report, Appendix L, Zone 4	Roy F. Weston, Inc.	330
Sep 93	RI/FS, Draft Report, Text, Zone 7	Roy F. Weston, Inc.	333
Nov 93	RI/FS, Draft Final Report, Zone 3	Roy F. Weston, Inc.	339
Apr 94	RI, Report, SI, Addendum 1, Zone 3, ST-065	Roy F. Weston, Inc.	340
Mar 94	Cumulative Risk Evaluation for Zone 1 through Zone 5	Roy F. Weston, Inc.	342
May 94	RI, Report, SI, Addendum 2, Text, Appendices A, B, C, Zone 3, ST-073	Roy F. Weston, Inc.	344
May 94	RI, Report, SI, Addendum 2, Appendix D, Zone 3, ST-073	Roy F. Weston, Inc.	345
03 Aug 94	Base Letter to NHDES and EPA Concerning Water Hardness, Zone 3	Ditto, Arthur L AFBCA/OL-A	347
05 Aug 94	Weston Letter to AFCEE Concerning Basewide Interim Monitoring Report No. 2	dePersia, Lee R Roy F. Weston, Inc.	348
30 Sep 94	EPA Facsimile to Base Concerning Sediment Toxicity Test Report, SD-021, SD-026	Daly, Michael J EPA Region I	349
23 Nov 94	Summary of Revisions to Basewide Interim Monitoring Plan	Roy F. Weston, Inc.	350

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16 Dec 94	Weston Letter to AFCEE Concerning Basewide Interim Monitoring Report No. 4	dePersia, Lee R Roy F. Weston, Inc.	351
Feb 92	Stage 3C, RI, Draft Source Area Report, Appendices H, I, K, ST-030/OT-024	Roy F. Weston, Inc.	353
Nov 94	DDT Sediment Evaluation Report	Roy F. Weston, Inc.	355
Apr 94	Basewide Interim Monitoring Report No. 1 for Oct through Dec 93, Vol I of II	Roy F. Weston, Inc.	356
Apr 94	Basewide Interim Monitoring Report No. 1 for Oct through Dec 93, Vol II of II	Roy F. Weston, Inc.	357
Jul 94 .	Basewide Interim Monitoring Report No. 2 for Jan through Mar 94	Roy F. Weston, Inc.	358
Oct 94	Basewide Interim Monitoring Report No. 3 for Apr and May 94	Roy F. Weston, Inc.	359
Sep 96	Supplemental Groundwater Monitoring Report, ST-073	The Johnson Company, Inc.	360
Nov 96	Phase I, KMNO4 Field Trials, Site Characterization, ST-030	University of Waterloo The Johnson Company, Inc.	361
Jan 97	Phase II, Supplemental Groundwater Quality Profiling, ST-073	The Johnson Company, Inc.	362
27 Jul 87	NHDES Letter to USAF OEHL Concerning Stage 2, Work Plan	Minichiello, John A  New Hampshire Department of Environmental Services	365
12 Nov 87	NHDES Letter to Base Concerning Conformance of Stage 2, QAPP With AF Practices	Baxter, Carl W New Hampshire Department of Environmental Services	367

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
14 Jun 88	Weston Letter to USAF OEHL Concerning Short Duration Pumping Tests of Haven and Harrison Water Supply Wells	Cook, George W Roy F. Weston, Inc.	369
20 Oct 88	Weston Letter to USAF OEHL Concerning Drilling Program	Marks, Peter J Roy F. Weston, Inc.	370
16 Dec 96	Base Letter to Clean Water Action Transmitting RI/FS, Consolidated Report, Brooks/Ditches	Ditto, Arthur L AFBCA/DB Pease	371
03 May 89	NHDES Letter to Base Concerning Technical Review of Building 244 Solvent Tank Removal and Off-Site Contaminant Migration, ST-018	Baxter, Carl W New Hampshire Department of Environmental Services	372
02 Oct 89	Weston Letter to Base Concerning Disposal of Drill Cuttings from Stage 2 Investigations	Kolvites, Bette L Cunningham, Arthur J Roy F. Weston, Inc.	373
28 Feb 90	NHDES Letter to Base Concerning Review Comments, Phase II Stage 2, Draft Final Report	Baxter, Carl W New Hampshire Department of Environmental Services	374
07 Mar 90	EPA Letter to Base Concerning Review Comments, Phase II Stage 2, Draft Final Report	Hunter, Johanna M EPA Region I	375
15 Mar 90	USAF YAQ Letter to Weston Transmitting Review Comments, Stage 2, RI/FS, Draft Report	dePersia, Lee R, Capt USAF/YAQB	377
29 Oct 90	NHDES Letter to Base Concerning Split Sampling Results, FT-008, OT-023	Pease, Richard H New Hampshire Department of Environmental Services	381
08 Mar 89	USAF OEHL Letter to Base Concerning Schedule for Interim Technical Report No. 4, Work Plan, and SOW	dePersia, Lee R, Capt USAF OEHL	383

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
03 Apr 89	USAF OEHL Letter to Base Concerning Stage 3, Work Plan and Interim Technical Report No. 4	dePersia, Lee R, Capt USAF OEHL	384
01 Jun 89	USAF OEHL Letter to Weston Concerning Consolidated Comments to Stage 3, Work Plan	dePersia, Lee R, Capt USAF OEHL	385
16 Jun 89	NHDES Letter to Base Concerning Work Plan and Stage 3, QAPP	Baxter, Carl W New Hampshire Department of Environmental Services	386
29 Jun 89	Weston Letter to USAF OEHL Concerning Response to Comments, Stage 3, Work Plan	Sheedy, Katherine A Roy F. Weston, Inc.	387
29 Jun 89	USAF OEHL Letter to Weston Concerning Consolidated Comments to Stage 3, QAPP	dePersia, Lee R, Capt USAF OEHL	388
07 Jun 90	EPA Letter to Base Transmitting Review Comments, Stage 3, Work Plan	Hunter, Johanna M EPA Region I	393
12 Jun 90	Weston Letter to Base Concerning Stage 3B Proposed Drilling Locations	Barnes, Edward S Roy F. Weston, Inc.	394
05 Jul 90	Weston Letter to HSD Concerning Well Installation Modification	Bruckner, Amy E Roy F. Weston, Inc.	395
08 Aug 90	Weston Letter to HSD Concerning Procedures Used in Installing and Abandoning Monitor Well 632	Barnes, Edward S Roy F. Weston, Inc.	396
25 Sep 90	Weston Letter to Base Concerning Disposal of Clean Water, Drilling Mud and Soil and No VOCs Found in Water from Stage 3B Well Installation	Barnes, Edward S Roy F. Weston, Inc.	398

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DOC. DATE	SUBJECT OR TITLE		FILE NUMBER
25 Sep 90	NHDES Letter to Base Concerning Procedures for Handling Soils and Liquids During Well Construction and Soil Borings	Pease, Richard H New Hampshire Department of Environmental Services	399
27 Sep 90	Weston Letter to HSD Concerning Testing of ST-030/OT-024 Well	Barnes, Edward S Roy F. Weston, Inc.	401
29 Oct 90	Weston Letter to HSD Concerning Discussions on 25 Oct 90	Barnes, Edward S Roy F. Weston, Inc.	402
14 Dec 98	Base Letter to PDA Transmitting Soil Gas Sampling Results, ST-049	Ditto, Arthur L AFBCA/DA Pease	405
28 Sep 90	Weston Letter to HSD Transmitting Response to Comments, Stage 4, Work Plan and SAP	Barnes, Edward S Roy F. Weston, Inc.	409
16 Oct 90	NHDES Letter to Base Transmitting Review Comments, Stage 4, Work Plan and SAP	Pease, Richard H New Hampshire Department of Environmental Services	410
29 Oct 90	Newington Board of Selectmen Letter to Base Concerning Review Comments, Stage 4, Work Plan	Lamson, Margaret F Newington Board of Selectmen an Town Health Officer	411 d
02 Nov 90	EPA Letter to Base Transmitting Technical Review of Stage 4, Draft Work Plan and SAP	Brown, James M EPA Region I	412
03 Dec 90	NHDES Letter to Base Concerning Response to Questions on Stage 4, Work Plan Comments	Pease, Richard H New Hampshire Department of Environmental Services	413
10 Dec 90	HSD Facsimile to Base Transmitting Response to EPA Comments, Stage 4, Work Plan/SAP	Montgomery, James, LtCol HSD/YAQ	414
07 Feb 91	Weston Letter to HSD Transmitting Response to Comments, Stage 4, Draft Final Work Plan and SAP	Barnes, Edward S Roy F. Weston, Inc.	415

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
13 Mar 91	EPA Letter to Base Concerning Initial Approval of Stage 4, Work Plan and SAP	Hunter, Johanna M EPA Region I	416
91	Base Letter to EPA Concerning Response to Comments, Stage 4, Work Plan and SAP	AFBDA/OL-A	417
08 Apr 91	HSD Letter to Base Concerning EPA and NHDES Requests for Information	HSD/YAQ	418
10 Apr 91	EPA Letter to Base Concerning Issues Needing Resolution Prior to Upcoming Field Efforts	Hunter, Johanna M EPA Region I	419
23 Apr 91	Base Facsimile to HSD Transmitting EPA Concerns with Weston Proposed Analytical Methods	McKenzie, Mark A AFBDA/OL-A	421
24 Apr 91	Base Letter to EPA Concerning Surface Water and Sediment Sampling Locations	Ditto, Arthur L AFBDA/OL-A	422
29 Apr 91	EPA Letter to Base Concerning Field Oversight Coordination	Hunter, Johanna M EPA Region I	423
02 May 91	Base Facsimile to EPA and NHDES Transmitting Preliminary Sampling Schedule for Stage 3C Sites through Nov 91	Ditto, Arthur L AFBDA/OL-A	424
08 May 91	EPA Letter to Base Concerning Review of 25 Apr 91 Revised Analytical Methods	Hunter, Johanna M EPA Region I	425
14 May 91	MITRE Letter to HSD Concerning Field Performance Review of Weston Activities	Rice, George F The MITRE Corporation	426
31 May 91	HSD Letter to EPA Concerning Revised Analytical Methods	VanLeigh, Logan, Capt HSD/YAQ	427

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
03 Jun 91	Weston Letter to HSD Concerning Procedure for Establishing Background Metal Concentrations for Groundwater and Soil	Barnes, Edward S Roy F. Weston, Inc.	428
06 Jun 91	Base Facsimile to NHDES and Earth Technology Transmitting Resolution Letter for Procedures for 8260, VOC Analysis of Water	McKenzie, Mark A AFBDA/OL-A	430
07 Jun 91	Base Letter to EPA Concerning Background Determination Protocols	Ditto, Arthur L AFBDA/OL-A	431
07 Jun 91	Base Letter to NHDES Concerning Background Determination Protocols	Ditto, Arthur L AFBDA/OL-A	432
11 Jun 91	Weston Letter to HSD Concerning Revised Analytical Methods for GC/MS Method 8260 for VOA	Barnes, Edward S Roy F. Weston, Inc.	433
13 Jun 91	NHDES Letter to Base Concerning Proposed Use of Versar for Laboratory Services	Pease, Richard H New Hampshire Department of Environmental Services	434
27 Jun 91	EPA Letter to Base Concerning Pump Test Information Request	Hunter, Johanna M EPA Region I	436
02 Jul 91	MITRE Letter to HSD Concerning Weston Proposed Methods for Determining Background Concentrations	Rice, George F The MITRE Corporation	437
18 Jul 91	Base Letter to NHDES Transmitting Protocols for Baseline Risk Assessments	Ditto, Arthur L AFBDA/OL-A	438
18 Jul 91	Base Letter to EPA Transmitting Protocols for Baseline Risk Assessments	Ditto, Arthur L AFBDA/OL-A	439
18 Jul 91	Base Letter to NHDES and EPA Transmitting Secondary Document, Draft Site Characterization Summary, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	440

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
26 Jul 91	Weston Letter to AFCEE Concerning	Barnes, Edward S	441
	Exploratory Boring Soil Sampling Procedures	Roy F. Weston, Inc.	
31 Jul 91	NHDES Letter to Base Concerning Vented Monitoring Wells	Doane, Scott E  New Hampshire Department of	442
	Womtoring Wond	Environmental Services	
02 Aug 91	EPA Letter to Base Transmitting Review of	Hunter, Johanna M	443
	Proposed Procedure for Background Determination Protocols	EPA Region I	
26 Aug 91	Base Letter to NHDES Concerning Vented	Ditto, Arthur L	444
•	Monitoring Wells, Response to 31 Jul 91 Letter	AFBDA/OL-A	
09 Sep 91	Base Letter to EPA and NHDES Concerning	Ditto, Arthur L	445
-	Split Sampling Results	AFBDA/OL-A	
28 Oct 91	NHDES Letter to Base Concerning Field Oversight, Sep 91	Pease, Richard H	446
		New Hampshire Department of Environmental Services	
02 Dec 91	EPA Letter to Weston Transmitting Data	Hunter, Johanna M	447
	Collected on Surface Water and Sediment Background Concentration	EPA Region I	
02 Dec 91	EPA Letter to Base Concerning Regional	Hunter, Johanna M	448
	Literature Search to Assist Development of Sediment and Surface Water Background Determination	EPA Region I	
03 Jan 92	Base Letter to EPA Concerning Fugitive Dust	Ditto, Arthur L	449
	Pathway in Baseline Risk Assessment	AFBDA/OL-A	
11 Feb 92	Base Letter to EPA Concerning Evaluation of	Ditto, Arthur L	450
	Air Pathway in Baseline Risk Assessment	AFBDA/OL-A	

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
11 Feb 92	Base Letter to NHDES Concerning Evaluation of Air Pathway in Baseline Risk Assessment	Ditto, Arthur L AFBDA/OL-A	451
14 Feb 92	Weston Letter to AFCEE Transmitting RI, Source Area Report, ST-030/OT-024	Barnes, Edward S Roy F. Weston, Inc.	452
14 Feb 92	Weston Letter to NHDES Transmitting RI, Source Area Report, ST-030/OT-024	Barnes, Edward S Roy F. Weston, Inc.	453
14 Feb 92	Weston Letter to EPA Transmitting RI, Source Area Report, ST-030/OT-024	Barnes, Edward S Roy F. Weston, Inc.	454
25 Feb 92	Base Letter to NHDES Concerning Submittal of Draft Primary Document, RI, Draft Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	455
25 Feb 92	Base Letter to NHDES Concerning Submittal of Baseline Risk Assessment Protocols	Ditto, Arthur L AFBDA/OL-A	456
25 Feb 92	Base Letter to EPA Concerning Submittal of Revised Baseline Risk Assessment Protocols	Ditto, Arthur L AFBDA/OL-A	457
25 Feb 92	Base Letter to EPA Concerning Submittal of Draft Primary Document, RI, Draft Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	458
09 Mar 92	Base Letter to EPA Concerning Request for EPA Split Sampling Results	Ditto, Arthur L AFBDA/OL-A	459
09 Mar 92	Letter Report, Results of Statistical Comparison of Stage 3C Samples to 66 Other Background Samples	Roy F. Weston, Inc.	460
26 Mar 92	Weston Letter to Base Requesting Data Useful for Developing Conceptual Model, Zone 3	Marks, Thomas R Roy F. Weston, Inc.	463

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
13 Apr 92	NHDES Letter to Base Concerning Evaluation of Air Pathway in Baseline Risk Assessments	Pease, Richard H New Hampshire Department of Environmental Services	464
07 May 92	Weston Letter to AFCEE, NHDES, and EPA Transmitting RI, Draft Final Source Area Report, OT-023	Barnes, Edward S Roy F. Weston, Inc.	465
08 May 92	Weston Letter to AFCEE, NHDES, and EPA Transmitting Draft Site Characterization Summary, Zone 4	Barnes, Edward S Roy F. Weston, Inc.	466
26 May 92	EPA Letter to Base Concerning Oversight Role of Regulatory Agencies	Daly, Michael J EPA Region I	467
26 May 92	Base Letter to EPA and NHDES Concerning Submittal of Draft Secondary Document, Draft Site Characterization Summary, Zone 3	Ditto, Arthur L AFBDA/OL-A	468
05 Jun 92	Weston Letter to AFCEE Transmitting RI Draft Final Source Area Report and Response to Comments for RI, Draft Report, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	469
16 Jun 92	Base Letter to EPA Concerning Submittal of Draft Final Primary Document, RI, Draft Final Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	470
16 Jun 92	Base Letter to NHDES Concerning Submittal of Draft Final Primary Document, RI, Draft Final Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	471
08 Jul 92	Base Letter to EPA Concerning Additional Field Oversite	McKenzie, Mark A AFBDA/OL-A	474
29 Jul 92	Weston Letter to AFCEE, TRC, EPA, and NHDES Transmitting Letter Report, Groundwater Modeling	dePersia, Lee R Roy F. Weston, Inc.	476

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
11 Aug 92	Base Letter to EPA and NHDES Transmitting Groundwater Treatment Plant Influent/Effluent Results	Ditto, Arthur L AFBDA/OL-A	479
18 Aug 92	Base Letter to EPA and NHDES Transmitting Monitor Well Inventory and Inspection Report	Ditto, Arthur L AFBDA/OL-A	480
21 Aug 92	Base Letter to James Winder, Pat Hamel, and E.L. Hamm Concerning Base Support Requirements for Haven Well Pumping Test	McKenzie, Mark A AFBDA/OL-A	481
27 Aug 92	NHDES Letter to Base Concerning Results of Background Surface Water/Sediment Location Walkover	Pease, Richard H New Hampshire Department of Environmental Services	482
28 Aug 92	Weston Letter to Base Concerning Risk Assessment Issues Status	dePersia, Lee R Roy F. Weston, Inc.	483
01 Sep 92	Base Letter to NHDES and EPA Transmitting Letter Report, Maximum Detected Concentrations for Background Unfiltered Groundwater	Ditto, Arthur L AFBDA/OL-A	484
09 Sep 92	Base Letter to NHDES and EPA Concerning Policy on Data Transfer During Pumping Tests	Ditto, Arthur L AFBDA/OL-A	487
16 Sep 92	EPA Letter to Base Concerning Summary of Risk Issues Meeting of 19 Aug 92	Hunter, Johanna M EPA Region I	488
07 Oct 91	NHDES Letter to Base Concerning Field Oversight, Mid-August to Mid-September 1991	Pease, Richard H New Hampshire Department of Environmental Services	490
22 Oct 92	Weston Letter to AFCEE Transmitting Site Characterization Summary, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	493

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
22 Oct 92	Weston Letter to NHDES Transmitting Site Characterization Summary, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	494
22 Oct 92	Weston Letter to TRC Transmitting Site Characterization Summary, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	495
22 Oct 92	Weston Letter to EPA Transmitting Site Characterization Summary, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	496
26 Oct 92	Base Letter to NHDES Concerning Submittal of Draft Secondary Documents, Draft Site Characterization Summaries, Zones 1, 2, and 5	Ditto, Arthur L AFBDA/OL-A	497
26 Oct 92	Base Letter to EPA Concerning Submittal of Draft Secondary Documents, Site Characterization Summaries, Zones 1, 2, and 5	Ditto, Arthur L AFBDA/OL-A	498
01 Dec 92	Base Letter to NHDES Concerning Application of Reasonable Maximum Exposure in Risk Assessments	Ditto, Arthur L AFBDA/OL-A	506
23 Dec 92	Base Letter to EPA and NHDES Concerning Request for Deadline Extension for Stage 4, RI/FS, Reports, Work Effort	Ditto, Arthur L AFBDA/OL-A	509
29 Dec 92	Base Letter to EPA and NHDES Transmitting EPA Maximum Risk Calculation Addenda to RI, Draft Final Reports, LF-005, FT-008, ST-030/OT-024, OT-023	Ditto, Arthur L AFBDA/OL-A	510
11 Mar 93	Weston Letter to Base Concerning MULTIMED as Replacement for Summers Model	dePersia, Lee R Roy F. Weston, Inc.	512
09 Mar 93	Base Letter to NHDES Concerning Submittal of Draft Primary Document, RI, Draft Report, Zone 4	Ditto, Arthur L AFBDA/OL-A	513

#### Pease AFB, NH - AR DOCUMENTS Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
09 Mar 93	Base Letter to EPA Concerning Submittal of Draft Primary Document, RI, Draft Report, Zone 4	Ditto, Arthur L AFBDA/OL-A	514
03 Mar 93	NHDES Letter to Base Concerning Contaminant Levels, OT-023	Pease, Richard H New Hampshire Department of Environmental Services	515
19 Feb 93	Base Letter to EPA and NHDES Concerning Request for Deadline Extension for Section of RI, Report, Zone 4	Ditto, Arthur L AFBDA/OL-A	516
18 Feb 93	Base Letter to EPA and NHDES Concerning Submittal of Responses to Comments of Site Characterization Summary, Zone 4	Ditto, Arthur L AFBDA/OL-A	517
21 Apr 93	Base Letter to NHDES Concerning Submittal of Draft Documents During Apr 93	Ditto, Arthur L AFBDA/OL-A	521
21 Apr 93	Base Letter to EPA Concerning Submittal of Draft Documents During Apr 93	Ditto, Arthur L AFBDA/OL-A	522
21 May 93	Base Letter to EPA Concerning Submittal of Draft Primary Document, RI, Draft Report, Zone 2	Ditto, Arthur L AFBDA/OL-A	526
05 Nov 93	NHDES Letter to Base Concerning RI, Draft Final Report, Zone 3, and Outstanding Risk Assessment Concern	Pease, Richard H New Hampshire Department of Environmental Services	528
08 Nov 93	EPA Letter to Base Concerning Review of RI, Draft Final Report, Zone 3	Daly, Michael J EPA Region I	529
16 Nov 93	Base Letter to NHDES Concerning Locations of Surface Waters of the State of New Hampshire in Vicinity of Base	Ditto, Arthur L AFBDA/OL-A	530

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
30 Nov 93	EPA Letter to Base Concerning RI, Draft Final Reports, Zones 3, 4, and 5	Daly, Michael J EPA Region I	532
06 Dec 93	Weston Letter to Base Concerning Work Plan, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	533
08 Dec 93	Base Letter to EPA and NHDES Transmitting Work Plan for RECLAIM Pilot Test, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	534
20 Dec 93	NHDES Letter to Base Concerning Potential Issues of Dispute, RI/FS, Draft Final Report, SD-020, SD-021	Pease, Richard H New Hampshire Department of Environmental Services	536
28 Feb 94	NHDES Letter to Base Concerning UST Phase I, Removal and Closure Report, OT-023	Karnaukh, Slava New Hampshire Department of Environmental Services	537
26 Apr 94	Base Letter to EPA and NHDES Transmitting RI, Report, Addendum 1, Zone 3, ST-065	Ditto, Arthur L AFBCA/OL-A	538
24 May 94	Base Letter to EPA and NHDES Transmitting RI, Report, Addendum 2, Zone 3, ST-073	Ditto, Arthur L AFBCA/OL-A	539
25 Apr 94	Base Letter to NHDES Concerning Interim Monitoring Plan, NHDES Review Comments	Ditto, Arthur L AFBCA/OL-A	540
12 Jul 94	Weston Letter to AFCEE Transmitting Quarterly Report, Second Quarter 1994	dePersia, Lee R Roy F. Weston, Inc.	541
15 Jul 94	Letter Report, Sediment Toxicity	dePersia, Lee R Roy F. Weston, Inc.	542
21 Jul 94	NHDES Letter to Base Concerning Test Pit Investigation Report, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	543

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
07 Sep 94	Base Letter to AFCEE Concerning Treatability Study Proposal, ST-030	McKenzie, Mark A AFBCA/OL-A	545
08 Nov 94	Base Letter to EPA and NDHES Transmitting Quarterly Report, Third Quarter 1994	McKenzie, Mark A AFBCA/OL-A	547
24 Feb 95	Base Letter to NHDES Concerning Additional AF Responses to NHDES RI, Addenda 1 and 2 Comments, Zone 3	McKenzie, Mark A AFBCA/OL-A	549
24 Feb 93	Base Letter to National Sea Products Concerning Results of Sampling NSP Production Well	McKenzie, Mark A AFBDA/OL-A	550
02 May 94	Weston Letter to Base Transmitting Letter Report, Regional Groundwater Modeling	dePersia, Lee R Roy F. Weston, Inc.	552
28 Mar 95	Base Letter to Metcalf & Eddy Concerning Removal/Closure Reports	Ditto, Arthur L AFBCA/OL-A	554
30 Mar 95	Base Letter to EPA Concerning EBS	Ditto, Arthur L AFBCA/OL-A	555
26 Jul 95	Base Letter to EPA and NHDES Transmitting Basewide Interim Monitoring Report No. 6	Ditto, Arthur L AFBCA/OL-A	556
16 Nov 95	Weston Letter to AFCEE, EPA, EPA Lexington Lab, TRC, and NHDES Transmitting RI/FS, Draft Report, Ditches	dePersia, Lee R Roy F. Weston, Inc.	558
30 Nov 95	Weston Letter to AFCEE, NHDES, TRC, EPA, and EPA Lexington Lab Transmitting Letter Report, Multi-Level Sampler	dePersia, Lee R Roy F. Weston, Inc.	559
05 Dec 95	NHDES Letter to Base Concerning RI/FS, Draft Consolidated Report, Brooks/Ditches	Lynn, Gary S New Hampshire Department of Environmental Services	560

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
18 Dec 95	Weston Letter to Base Concerning Final Groundwater Model, Zone 3	dePersia, Lee R Roy F. Weston, Inc.	561
06 Jan 99	TN & Associates Letter to Base Concerning Response to Comments and Work Plan Revisions, ST-049	Clite, Nova Voight, David S TN & Associates, Inc.	562
28 Dec 95	NHDES Letter to Base Concerning RI/FS, Draft Report, ST-073	Lynn, Gary S New Hampshire Department of Environmental Services	564
02 Feb 96	EPA Letter to Base Concerning RI/FS, Draft Report, ST-073	Daly, Michael J EPA Region I	566
06 Feb 9.6	Weston Letter to AFCEE Transmitting Natural Attenuation Estimate, RI/FS, Draft Report, ST-073	dePersia, Lee R Roy F. Weston, Inc.	567
15 Feb 96	NHDES Letter to Base Concerning RI/FS, Draft Report Modeling Comments, ST-073	Lynn, Gary S New Hampshire Department of Environmental Services	568
08 May 96	Weston Letter to AFCEE, TRC, EPA Lexington Lab, EPA and NHDES Transmitting RI/FS, Draft Final Consolidated Report, Brooks/Ditches, and Response to Comments	dePersia, Lee R Roy F. Weston, Inc.	569
16 May 96	Weston Letter to AFCEE, EPA, and NHDES Transmitting Response to Comments, RI/FS, Draft Report, ST-073	dePersia, Lee R Roy F. Weston, Inc.	570
02 Oct 96	Johnson Company Letter to Base Transmitting Investigation of Supplemental Groundwater Quality Profiling	Pitkin, Seth E The Johnson Company, Inc.	571
07 Oct 96	Base Letter to EPA and NHDES Concerning Submission of RI/FS, Draft Final Report, and SI, Report, ST-073	Ditto, Arthur L AFBCA/DB Pease	572

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
01 Nov 96	NHDES Letter to Base Concerning Supplemental Groundwater Quality Profiling, ST-073	Hilton, Scott New Hampshire Department of Environmental Services	573
22 Nov 96	EPA Letter to Base Concerning Supplemental Groundwater Quality Profiling Investigation, ST-073	Daly, Michael J EPA Region I	574
04 Aug 97	Base Letter to EPA Concerning Comments, Supplemental Groundwater Quality Profiling Report, ST-073	Ditto, Arthur L AFBCA/DB Pease	575
14 Aug 97	Base Letter to EPA and NHDES Transmitting Draft Characterization Work Plan, ST-073	Ditto, Arthur L AFBCA/DB Pease	576
29 Aug 97	EPA Letter to Base Concerning Review of Draft Characterization Work Plan, ST-073 and Draft Site Assessment Work Plan, ST-049	Daly, Michael J EPA Region I	577
31 Dec 91	EPA Letter to Base Concerning Additional Comments Following 12 Dec 91 Meeting with Base and NHDES on Background Protocols	Hunter, Johanna M EPA Region I	578
13 Apr 92	NHDES Letter to Base Transmitting New Hampshire ARAR List Update, Feb 92 Compilation	Pease, Richard H New Hampshire Department of Environmental Services	579
Jan 93	Stage 4, Draft Basewide ARARs	Roy F. Weston, Inc.	580
21 Dec 93	Base Letter to NHDES Concerning Waiverability of Env-Ws 430, Surface Water Quality Regulations, as an ARAR	Ditto, Arthur L AFBDA/OL-A	581
23 Dec 93	NHDES Letter to Base Transmitting New Hampshire ARAR List Update, Dec 93 Compilation	Pease, Richard H New Hampshire Department of Environmental Services	582

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
30 Jun 94	Documentation of ARARs for Groundwater, Zone 1	Roy F. Weston, Inc.	584
11 May 95	EPA Letter to Base Concerning Resolution of Env-Ws 410 ARARs Issue	Miles, Joan EPA Region I	585
Jan 92	Stage 3C, Draft Initial Screening of Alternatives Report, OT-023	Roy F. Weston, Inc.	587
Jan 92	Stage 3C, Draft Initial Screening of Alternatives Report, ST-030/OT-024	Roy F. Weston, Inc.	588
Nov 92	Stage 3C, FS, Draft Final Report, Vol II of III, Figures, OT-023	Roy F. Weston, Inc.	598
Nov 92	Stage 3C, FS, Draft Final Report, Vol III of III, Appendices, OT-023	Roy F. Weston, Inc.	599
Nov 92	Stage 3C, FS, Draft Final Report, Vol I of III, Technical Report, OT-023	Roy F. Weston, Inc.	600
Oct 93	Stage 3C, FS, Revised Draft Final Report, Vol II of III, Figures, ST-030/OT-024	Roy F. Weston, Inc.	601
Oct 93	Stage 3C, FS, Revised Draft Final Report, Vol I of III, Text, ST-030/OT-024	Roy F. Weston, Inc.	602
Oct 93	Stage 3C, FS, Revised Draft Final Report, Vol III of III, Appendices, ST-030/OT-024	Roy F. Weston, Inc.	603
May 93	Draft Initial Screening of Alternatives Report, Zone 3	Roy F. Weston, Inc.	609
Jun 93	Draft Initial Screening of Alternatives Report, Zone 2	Roy F. Weston, Inc.	611
Apr 93	Draft Initial Screening of Alternatives Report, Zone 4	Roy F. Weston, Inc.	612

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DOC. DATE	SUBJECT OR TITLE		FILE NUMBER
Nov 93	FS, Draft Final Report, Vol I of II, Text, Zone 4	Roy F. Weston, Inc.	614
Nov 93	FS, Draft Final Report, Vol II of II, Appendices, Zone 4	Roy F. Weston, Inc.	615
Nov 93	FS, Draft Final Report, Vol I of II, Text, Zone 3	Roy F. Weston, Inc.	616
Nov 93	FS, Draft Final Report, Vol II of II, Appendices, Zone 3	Roy F. Weston, Inc.	617
Jul 93	Treatability Test Final Report, OT-031	The Earth Technology Corporation	n 618
11 Nov 93	Performance of Pilot Groundwater Treatment Plant Modified Interim Remedial Measure Between 26 Jul and 16 Sep 93, ST-030/OT-024	Roy F. Weston, Inc.	624
20 Dec 93	Letter Report, DNAPL Detection Well, ST-030/OT-024	Roy F. Weston, Inc.	625
Dec 93	FS, Draft Final Report, Vol I of II, Text, Zone 2	Roy F. Weston, Inc.	629
Dec 93	FS, Draft Final Report, Vol II of II, Appendices, Zone 2	Roy F. Weston, Inc.	630
Jul 95	Revised Technical Impracticability Evaluation, ST-030	Roy F. Weston, Inc.	631
Mar 95	Revised Technical Impracticability Evaluation, ST-030	Roy F. Weston, Inc.	632
22 Oct 93	Weston Letter to AFCEE Transmitting Pages 4-47, 4-48, 4-49, Figure 4.2-1, 4.2-2, of FS, Draft Report, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	634
01 Jul 94	Weston Letter to AFCEE Transmitting Letter Report, Groundwater Extraction Assessment, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	635

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DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
21 Jul 94	Base Letter to NHDES and EPA Transmitting Groundwater Treatment Plant Influent/Effluent Results, Quarterly Reporting	Ditto, Arthur L AFBCA/OL-A	636
29 Jun 98	Base Letter to TRC/RAB Members Concerning Notification of 14 Jul 98 Meeting	Ditto, Arthur L AFBCA/DA Pease	638
29 Sep 94	Base Letter to EPA and NHDES Transmitting Source Area Modeling, ST-030/OT-024	Ditto, Arthur L AFBCA/OL-A	639
06 Oct 94	Weston Letter to Base Concerning Seismic Refraction Survey Results, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	640
Feb 95	FS, Draft Final Report, Addendum 1, Text, Appendices A and B, Zone 2	Roy F. Weston, Inc.	643
May 95	FS, Final Report, Addendum 1, ST-030/OT-024	Roy F. Weston, Inc.	646
25 Oct 94	Weston Letter to Base Concerning Results of Groundwater Withdrawal System Performance Test, ST-073	Stevens, Anthony J Moran, Chris Roy F. Weston, Inc.	649
06 Mar 95	FS, Report, Supplement, Zone 2	AFCEE	650
May 95	Natural Attenuation Modeling, Zone 2, Zone 3, OT-041	Roy F. Weston, Inc.	652
Feb 95	Letter Report, Source Area Control Options, ST-030	Roy F. Weston, Inc.	653
Feb 95	Letter Report, Treatability Study, OT-041	Roy F. Weston, Inc.	654
23 May 95	EPA Letter to Base Transmitting FS, Draft Final Report, Final Supplement, Zone 3	Daly, Michael J EPA Region I	655
24 May 95	EPA Letter to Base Transmitting Revised ARARs Tables for FS, Draft Final Report, ST-030/OT-024	Daly, Michael J EPA Region I	656

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Nov 95	RI/FS, Draft Report, ST-073	Roy F. Weston, Inc.	657
Aug 96	RI/FS, Draft Final Report, ST-073	Roy F. Weston, Inc.	658
Nov 96	RI/FS, Revised Draft Final Consolidated Report	Roy F. Weston, Inc.	659
Mar 93	Draft Final Proposed Plan, ST-030/OT-024, OT-023	AFCEE	662
Jan 94	Draft Proposed Plan, ST-030/OT-024	Roy F. Weston, Inc.	663
Jan 94	Proposed Plan, Zone 3	Roy F. Weston, Inc.	664
Apr 94	Draft Final Proposed Plan, Zone 4	Roy F. Weston, Inc.	666
Mar 95	Proposed Plan, Zone 2	Roy F. Weston, Inc.	668
Jun 95	Proposed Plan, Zone 3	Roy F. Weston, Inc.	670
Jun 95	Proposed Plan, ST-030/OT-024	Roy F. Weston, Inc.	671
Feb 97	Fact Sheet, Proposed Plan, Brooks/Ditches OU	AFBCA/DB Pease	672
06 Oct 98	Base Letter to TRC/RAB Members Concerning Notification of 20 Oct 98 Meeting	Ditto, Arthur L AFBCA/DA Pease	677
25 Nov 91	NHDES Letter to Base Concerning ARARs	Pease, Richard H New Hampshire Department of Environmental Services	678
09 Jan 92	Base Letter to EPA Concerning Submittal of Secondary Document, Initial Screening of Alternatives Report, ST-030/OT-024, OT-023	Ditto, Arthur L AFBDA/OL-A	679
09 Jan 92	Base Letter to NHDES Concerning Submittal of Secondary Document, Initial Screening of Alternatives Report, ST-030/OT-024, OT-023	Ditto, Arthur L AFBDA/OL-A	680

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
04 May 92	Weston Letter to AFCEE, NHDES, and EPA Transmitting FS, Source Area Report, OT-023	Barnes, Edward S Roy F. Weston, Inc.	682
15 May 92	Weston Letter to AFCEE, NHDES, and EPA Transmitting FS, Source Area Report, ST-030/OT-024	Barnes, Edward S Roy F. Weston, Inc.	683
19 May 92	Base Letter to EPA Concerning Submittal of Draft Primary Document, FS, Draft Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	684
19 May 92	Base Letter to NHDES Concerning Submittal of Draft Primary Document, FS, Draft Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	685
26 May 92	Base Letter to EPA and NHDES Transmitting ISA Comments, OT-023, and Letter Report, Exploratory Well, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	687
28 May 92	Base Letter to EPA and NHDES Concerning Selection of RA Alternative, OT-023	Ditto, Arthur L AFBDA/OL-A	688
10 Aug 92	Base Letter to EPA and NHDES Concerning FS, Reports, LF-005, OT-023, OT-024, ST-030	Ditto, Arthur L AFBDA/OL-A	691
20 Nov 92	Weston Letter to AFCEE Transmitting FS, Draft Final Report, OT-023	Barnes, Edward S Roy F. Weston, Inc.	701
24 Nov 92	Base Letter to EPA Concerning Submittal of Draft Final Primary Document, FS, Draft Final Report, OT-023	Ditto, Arthur L AFBDA/OL-A	702
24 Nov 92	Base Letter to NHDES Concerning Submittal of Draft Final Primary Document, FS, Draft Final Report, OT-023	Ditto, Arthur L AFBDA/OL-A	703

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
02 Dec 92	Base Letter to EPA and NHDES Concerning Determination of Site Boundaries at Time of RA Implementation	Ditto, Arthur L AFBDA/OL-A	704
04 Dec 92	Base Letter to EPA and NHDES Concerning Request for Deadline Extension for Proposed Plan, OT-023	Ditto, Arthur L AFBDA/OL-A	705
09 Dec 92	Base Letter to EPA and NHDES Transmitting ITIR, Pilot Groundwater Treatment Plant, Text and Analytic Appendix, OT-023	Ditto, Arthur L AFBDA/OL-A	706
10 Dec 92	Weston Letter to AFCEE Transmitting FS, Draft Final Report, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	707
14 Dec 92	Base Letter to NHDES Concerning Submittal of Draft Final Primary Document, FS, Draft Final Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	708
14 Dec 92	Base Letter to EPA Concerning Submittal of Draft Final Primary Document, FS, Draft Final Report, ST-030/OT-024	Ditto, Arthur L AFBDA/OL-A	709
16 Dec 92	Base Letter to NHDES Transmitting Draft Proposed Plan, ST-030/OT-024 and OT-023	Ditto, Arthur L AFBDA/OL-A	710
16 Dec 92	Base Letter to EPA Transmitting Draft Proposed Plan, ST-030/OT-024 and OT-023	Ditto, Arthur L AFBDA/OL-A	711
09 Mar 93	Base Letter to EPA and NHDES Concerning Submittal of Draft Final Proposed Plan, ST-030, OT-023, OT-024	Ditto, Arthur L AFBDA/OL-A	715
03 Feb 93	Base Letter to EPA and NHDES Transmitting Draft Final Proposed Plan and Response to Comments, Draft Proposed Plan, ST-030/ OT-024, OT-023	Ditto, Arthur L AFBDA/OL-A	717

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
12 Feb 93	NHDES Letter to Base Concerning Draft Final Proposed Plans, ST-030, OT-023, OT-024	Pease, Richard H New Hampshire Department of Environmental Services	720
05 Apr 93	Base Letter to EPA Concerning Submittal of Draft Secondary Document, Draft Initial Screening of Alternatives Report, Zone 4	Ditto, Arthur L AFBDA/OL-A	721
05 Apr 93	Base Letter to NHDES Concerning Submittal of Draft Secondary Document, Draft Initial Screening of Alternatives Report, Zone 4	Ditto, Arthur L AFBDA/OL-A	722
17 May 93	Base Letter to EPA Concerning Submittal of Draft Secondary Document, Draft Initial Screening of Alternatives Report, Zone 3	Ditto, Arthur L AFBDA/OL-A	723
17 May 93	Base Letter to NHDES Concerning Submittal of Draft Secondary Document, Draft Initial Screening of Alternatives Report, Zone 3	Ditto, Arthur L AFBDA/OL-A	724
29 Nov 93	NHDES Letter to Base Concerning Surface Water Issues	Pease, Richard H New Hampshire Department of Environmental Services	731
09 Dec 93	Base Letter to EPA and NHDES Transmitting Groundwater Treatment Plant Influent/Effluent Results, Quarterly Reporting, ST-030, OT-023, OT-024	Ditto, Arthur L AFBDA/OL-A	734
24 Jan 94	Base Letter to EPA and NHDES Transmitting Groundwater Treatment Plant Influent/Effluent Results, Quarterly Reporting, ST-030, OT-023, OT-024	Ditto, Arthur L AFBCA/OL-A	735
03 Feb 94	Base Letter to EPA and NHDES Concerning Request for Deadline Extension, Proposed Plan, Zone 2	Ditto, Arthur L AFBCA/OL-A	736

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
23 Dec 93	NHDES Letter to Base Concerning Informal Dispute Resolution, FS, Draft Final Report, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	737
03 Jun 94	Base Letter to NHDES Concerning Regional Groundwater Model	Ditto, Arthur L AFBCA/OL-A	738
22 Jun 94	Weston Letter to Base Concerning Performance Testing of Groundwater Withdrawal System, ST-073	Stevens, Anthony J Soukup, James J Roy F. Weston, Inc.	740
07 Jul 94	Base Letter to EPA and NHDES Transmitting Letter Report, Groundwater Extraction Assessment, ST-030/OT-024	McKenzie, Mark A AFBCA/OL-A	741
18 Jul 94	NHDES Letter to Base Concerning AF Proposal for Disposal of Soil Excavated from WP-029	Pease, Richard H New Hampshire Department of Environmental Services	742
27 Sep 94	Base Letter to EPA and NHDES Concerning Continued Discussion on the Technical Impracticability Waiver, ST-030	McKenzie, Mark A AFBCA/OL-A	745
30 Nov 94	EPA Letter to Base Concerning Technical Impracticability Issues, ST-030	Daly, Michael J EPA Region I	748
06 Dec 94	Base Letter to EPA and NHDES Concerning Submittal of FS, Report, Addendum, Zone 2	McKenzie, Mark A AFBCA/OL-A	751
04 Jan 95	EPA Letter to Base Concerning EPA's Outstanding Issues on RI/FS, Draft Final Report, Zone 2	Miniuks, Andrew F EPA Region I	752
20 Jan 95	EPA Letter to Base Transmitting EPA Comments, Draft Proposed Plan, Zone 2	Miniuks, Andrew F EPA Region I	755

#### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
25 Jan 95	NHDES Letter to Base Concerning FS, Report, Addendum 1, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	756
30 Jan 95	EPA Comments, Proposed Plan, ST-030/OT-024	Daly, Michael J EPA Region I	757
01 Feb 95	EPA Letter to Base Transmitting EPA Comments, FS, Report, Addendum 1, Zone 2	Miniuks, Andrew F EPA Region I	758
02 Feb 95	Base Letter to EPA and NHDES Transmitting Draft Proposed Plan, ST-030/OT-024	McKenzie, Mark A AFBCA/OL-A	760
08 Feb 95	Base Letter to EPA and NHDES Transmitting FS, Report, Supplement, Zone 2	McKenzie, Mark A AFBCA/OL-A	764
10 Feb 95	Weston Letter to AFCEE Transmitting Letter Report, Source Area Control Options, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	765
10 Feb 95	EPA Letter to Base Transmitting FS, Draft Final Report, Supplement, Zone 3	Daly, Michael J EPA Region I	766
13 Feb 95	EPA Letter to Base Concerning Draft Proposed Plan, Zone 3	Daly, Michael J EPA Region I	767
16 Feb 95	Weston Letter to Base, NHDES, and EPA Transmitting Draft Final Proposed Plan, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	768
16 Feb 95	Weston Letter to AFCEE, EPA, TRC, EPA Lexington Lab, and NHDES Transmitting FS, Draft Final Report, Addendum 1, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	769
16 Feb 95	Weston Letter to Base Concerning Natural Attenuation Modeling, Zone 2, Zone 3	dePersia, Lee R Roy F. Weston, Inc.	770

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
24 Feb 95	Base Letter to EPA and NHDES Transmitting Letter Report, Source Area Control Options, ST-030	McKenzie, Mark A AFBCA/OL-A	771
27 Feb 95	Base Letter to EPA Concerning Review Comment Inconsistencies	Ditto, Arthur L AFBCA/OL-A	772
28 Feb 95	Base Letter to SCOPE Transmitting Letter Report, Extended SVE Treatability Study, FT-008; Letter Reports, Treatability Study, OT-022, OT-041; Letter Report, Source Area Control Options, ST-030	Ditto, Arthur L AFBCA/OL-A	773
30 Jul 98	TRC/RAB Meeting Minutes Transcript, 30 Jul 98	Ditto, Arthur L AFBCA/DA Pease	775
02 Mar 95	EPA Letter to Base Concerning EPA Comments, FS, Draft Final Report, Addendum 1, Zone 2	Miniuks, Andrew F EPA Region I	776
01 Mar 95	EPA Letter to Base Concerning Evaluation of FS, Report, Supplement, Zone 2	Daly, Michael J EPA Region I	777
03 Mar 95	Letter Report, Recovery Well Work Plan, Zone 3	dePersia, Lee R Roy F. Weston, Inc.	782
16 Mar 95	Weston Letter to AFCEE Concerning Drilling Activities, ST-073, ST-076	dePersia, Lee R Roy F. Weston, Inc.	784
27 Apr 95	Base Letter to EPA Concerning Technical Impracticability Waiver, ST-030	Ditto, Arthur L AFBCA/OL-A	788
24 May 95	Weston Letter to AFCEE Transmitting FS, Final Report, Addendum 1, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	791

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
02 Jun 95	Base Letter to EPA and NHDES Transmitting Technical Impracticability Document Page Changes, ST-030	McKenzie, Mark A AFBCA/OL-A	793
31 May 95	Weston Letter to Base Concerning Extraction Well 32-6014 Damage Assessment and Recommendations	dePersia, Lee R Roy F. Weston, Inc.	794
26 Jun 95	Base Letter to EPA and NHDES Transmitting Basewide Interim Monitoring Report No. 5, Vol II	Ditto, Arthur L AFBCA/OL-A	799
27 Jun 95	Base Letter to EPA and NHDES Concerning Request for Construction Approval for Renovation of Building 120, OT-035	Ditto, Arthur L AFBCA/OL-A	800
30 Jun 95	Weston Letter to AFCEE Transmitting Final Proposed Plans, ST-030/OT-024 and Zone 3	dePersia, Lee R Roy F. Weston, Inc.	801
13 Jul 95	Weston Letter to AFCEE, EPA, and NHDES Transmitting Technical Impracticability Evaluation Report, ST-030	dePersia, Lee R Roy F. Weston, Inc.	803
14 Jul 95	Base Letter to EPA and NHDES Concerning Response to Comments, Letter Report, Source Area Control Options, ST-030, and Technical Impracticability Evaluation Report, ST-030	Ditto, Arthur L AFBCA/OL-A	805
18 Jul 95	Base Letter to SCOPE Transmitting Technical Impracticability Evaluation Report, ST-030	Ditto, Arthur L AFBCA/OL-A	806
18 Jul 95	NHDES Letter to Base Concerning Water Reuse Request	Lynn, Gary S  New Hampshire Department of Environmental Services	807
25 Jul 95	Base Letter to MITRE Transmitting Technical Impracticability Evaluation Report, ST-030	Ditto, Arthur L AFBCA/OL-A	808

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
19 Dec 95	EPA Letter to Base Concerning Comments on RI/FS, Draft Consolidated Report, Brooks/Ditches	Daly, Michael J EPA Region I	811
10 Jun 98	Official Transcript of 10 Jun 98 Public Hearing, Remedial Activities Review	Butler, L Rossi, M APEX Reporting	812
10 Jun 98	Summary of 10 Jun 98 Public Meeting on the Future of AFBCA Office at Base	Dynamac Corporation	813
Jan 99	Draft Final Work Plan, EE/CA, ST-049	TN & Associates, Inc.	814
14 Dec 98	EPA Letter to Base Concerning Technical Memorandum for Aquifer Pumping Test, ST-073	Daly, Michael J EPA Region I	815
25 Jun 96	EPA Letter to Base Transmitting Comments on RI/FS, Draft Final Consolidated Report, Brooks/Ditches	Daly, Michael J EPA Region I	816
28 Jun 96	NHDES Letter to Base Concerning RI/FS, Draft Final Consolidated Report, Brooks/Ditches	Pease, Richard H New Hampshire Department of Environmental Services	817
03 Sep 96	Weston Letter to Base Transmitting RI/FS, Draft Final Report, ST-073	dePersia, Lee R Roy F. Weston, Inc.	818
25 Feb 97	Base Letter to EPA and NDHES Concerning Concentration of PAHs, Brooks/Ditches	Ditto, Arthur L AFBCA/DB Pease	819
05 Mar 97	SCOPE Letter to Base Concerning Position on Proposed Plan, Brooks/Ditches	Bresciano, Peter P Seacoast Citizens Overseeing Pease Environment	820
Sep 93	ROD, Source Area RA, OT-023	Roy F. Weston, Inc.	821

#### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Jan 95	ROD, Zone 4	Roy F. Weston, Inc.	825
Sep 95	Final ROD, Zone 2	Roy F. Weston, Inc.	828
Sep 95	Final ROD, ST-030/OT-024	Roy F. Weston, Inc.	829
Sep 95	Final ROD, Zone 3	Roy F. Weston, Inc.	830
Sep 97	ROD, Brooks/Ditches OU	Bechtel Environmental, Inc.	831
04 Jan 95	Base Letter to EPA and NHDES Concerning Preparation of an Explanation of Significant Difference Document for RA, OT-023	Ditto, Arthur L AFBCA/OL-A	832
19 Jan 95	Base Letter to EPA and NHDES Transmitting Draft Explanation of Significant Difference, OT-023	McKenzie, Mark A AFBCA/OL-A	833
May 95	Fact Sheet, Explanation of Significant Differences for RA, OT-023	AFBCA/OL-A	834
22 Jun 95	Base Letter to EPA and NHDES Concerning Explanation of Significant Differences, OT-023, LF-005	Ditto, Arthur L AFBCA/OL-A	835
17 Jun 93	Base Letter to EPA Concerning Submittal of Draft Primary Document, Draft ROD, OT-023	Ditto, Arthur L AFBDA/OL-A	837
17 Jun 93	Base Letter to NHDES Concerning Submittal of Draft Primary Document, Draft ROD, OT-023	Ditto, Arthur L AFBDA/OL-A	838
15 Dec 93	Base Letter to AFBCA Concerning ROD Review Process	Ditto, Arthur L AFBDA/OL-A	839
04 Feb 94	Base Letter to EPA and NHDES Concerning Getting to ROD, Revised Milestones	Ditto, Arthur L AFBCA/OL-A	840

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
15 Aug 94	Base Letter to EPA and NHDES Concerning Comments and Items Needed to Finish RODs	Ditto, Arthur L AFBCA/OL-A	847
21 Sep 94	Base Letter to AFBCA Concerning Draft Final ROD, Zone 4	Ditto, Arthur L AFBCA/OL-A	856
26 Sep 94	Base Letter to EPA and NHDES Concerning Submittal of Draft Final ROD, Zone 4	Ditto, Arthur L AFBCA/OL-A	857
14 Nov 94	Base Letter to EPA and NHDES Concerning Document Review Schedule	Ditto, Arthur L AFBCA/OL-A	859
12 Dec 94	Base Letter to EPA Concerning Additional Requests for Additional Documents for EPA Review	Ditto, Arthur L AFBCA/OL-A	860
20 Dec 94	NHDES Letter to AFBCA Concerning Declaration of Concurrence, ROD, Zone 4	Varney, Robert W New Hampshire Department of Environmental Services	861
24 Jan 95	EPA Letter to Base Concerning RA, Letter Report, OT-023	Daly, Michael J EPA Region I	862
30 Jan 95	Base Letter to NHDES Concerning Declaration of Concurrence, ROD, Zone 4	Ditto, Arthur L AFBCA/OL-A	863
02 Mar 95	EPA Letter to AFBCA Concerning Project Status and Schedule	Sanderson, Mary EPA Region I	865
16 Mar 95	NHDES Letter to AFBCA Concerning Summary of Sampling and Analysis of Soils at Base of Building 222 Foundation, OT-023	Pease, Richard H New Hampshire Department of Environmental Services	870
04 Apr 95	Base Letter to AFBCA Transmitting Draft RODs, Zone 2, OT-041	Ditto, Arthur L AFBCA/OL-A	872

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
27 Jun 95	Base Letter to EPA and NHDES Concerning ROD Schedule, Zone 3 and ST-030/OT-024	Ditto, Arthur L AFBCA/OL-A	874
14 Jul 95	Weston Letter to AFCEE Transmitting Revisions to Draft Final ROD, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	878
31 May 95	Weston Letter to AFCEE, EPA, EPA Lexington Lab, and NHDES Transmitting Draft Final ROD, Zone 2, and Response to Comments	dePersia, Lee R Roy F. Weston, Inc.	879
14 Jul 95	Weston Letter to EPA Transmitting Revisions to Draft Final ROD, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	880
14 Jul 95	Weston Letter to NHDES Transmitting Revisions to Draft Final ROD, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	881
14 Jul 95	Weston Letter to EPA Lexington Lab Transmitting Revisions to Draft Final ROD, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	882
31 May 95	Base Letter to AFBCA Transmitting Final Explanation of Significant Difference Document, OT-023	McKenzie, Mark A AFBCA/OL-A	883
22 Jun 95	Base Letter to AFBCA Transmitting Draft ROD, Zone 3	Ditto, Arthur L AFBCA/OL-A	885
05 Jul 95	Base Letter to AFBCA Transmitting Draft ROD, ST-030/OT-024	Ditto, Arthur L AFBCA/OL-A	886
11 Jul 95	EPA Letter to Base Concerning Explanation of Significant Differences for RA at Building 222, OT-023	Murphy, Linda M EPA Region I	887
14 Jul 95	Base Letter to EPA and NHDES Concerning Submittal of Draft RODs, Zone 3 and ST-030/OT-024	Ditto, Arthur L AFBCA/OL-A	892

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
17 Jul 95	NHDES Letter to Base Concerning Declaration of Concurrence, Explanation of Significant Differences for RA, OT-023	Varney, Robert W New Hampshire Department of Environmental Services	893
14 Aug 95	Base Letter to EPA and NHDES Concerning RA, Zone 3	Ditto, Arthur L AFBCA/OL-A	902
02 Aug 95	EPA Letter to Base Transmitting Comments on Draft ROD, Zone 3	Daly, Michael J EPA Region I	903
04 Aug 95	NHDES Letter to Base Concerning Review Comments, ROD, ST-030/OT-024	Lynn, Gary S New Hampshire Department of Environmental Services	904
04 Aug 95	NHDES Letter to Base Concerning Review Comments, ROD, Zone 3	Lynn, Gary S New Hampshire Department of Environmental Services	905
10 Aug 95	NHDES Letter to Base Concerning Declaration of Concurrence, ROD, Zone 2	Varney, Robert W New Hampshire Department of Environmental Services	906
14 Aug 95	EPA Letter to Base Transmitting Comments on Draft ROD, ST-030/OT-024	Daly, Michael J EPA Region I	907
15 Aug 95	Base Letter to AFBCA Transmitting Signature Ready Copies of Final ROD, Zone 2	Ditto, Arthur L AFBCA/OL-A	908
23 Aug 95	Weston Letter to AFCEE, EPA, EPA Lexington Lab, and NHDES Transmitting Draft Final ROD, Zone 3, and Responses to Comments	dePersia, Lee R Roy F. Weston, Inc.	909
24 Aug 95	Base Letter to AFBCA Transmitting Draft Final ROD, Zone 3	Ditto, Arthur L AFBCA/OL-A	910

#### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
30 Aug 95	Weston Letter to AFCEE, EPA, EPA Lexington Lab, and NHDES Transmitting Draft Final ROD, ST-030/OT-024, and Responses to Comments	dePersia, Lee R Roy F. Weston, Inc.	911
07 Sep 95	EPA Facsimile to Base Transmitting Comments on Draft Final ROD, ST-030/OT-024	Daly, Michael J EPA Region I	912
08 Sep 95	Base Letter to NHDES Concerning Declaration of Concurrence, ROD, Zone 2	Ditto, Arthur L AFBCA/OL-A	913
08 Sep 95	EPA Facsimile to Base Transmitting Comments on ROD, Zone 3	Daly, Michael J EPA Region I	914
12 Sep 95	NHDES Letter to Base Concerning Review Comments, Draft Final ROD, ST-030/OT-024	Lynn, Gary S New Hampshire Department of Environmental Services	915
12 Sep 95	NHDES Letter to Base Concerning Review Comments, Draft Final ROD, Zone 3	Lynn, Gary S New Hampshire Department of Environmental Services	916
15 Sep 95	Weston Letter to Base Transmitting Signature Copies of RODs, Zone 3 and ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	917
18 Sep 95	EPA Letter to Base Concerning Approval for RA, Source Area Report, OT-023	Daly, Michael J EPA Region I	918
27 Sep 95	Weston Letter to AFCEE, EPA, and NHDES Transmitting Signed Final ROD, Zone 2	dePersia, Lee R Roy F. Weston, Inc.	919
12 Oct 95	Weston Letter to AFCEE, NHDES, and EPA Transmitting Signed Final ROD, ST-030/OT-024	dePersia, Lee R Roy F. Weston, Inc.	920

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE		FILE NUMBER
29 Nov 95	Weston Letter to AFCEE, EPA, NHDES, TRC, and EPA Lexington Lab Transmitting RI/FS, Draft Report, ST-073	dePersia, Lee R Roy F. Weston, Inc.	921
28 Feb 97	Weston Letter to Base Transmitting Draft ROD, Brooks/Ditches	dePersia, Lee R Roy F. Weston, Inc.	922
03 Sep 97	Base Letter to AFBCA Transmitting Draft ROD, Brooks/Ditches	Ditto, Arthur L AFBCA/DB Pease	923
24 Sep 97	NHDES Letter to AFBCA Concerning Declaration of Concurrence, ROD, Brooks/Ditches	O'Brien, Philip J New Hampshire Department of Environmental Services	924
24 Oct 97	Base Letter to EPA and NHDES Transmitting ROD, Brooks/Ditches	Ditto, Arthur L AFBCA/DB Pease	925
10 Dec 98	TN & Associates Letter to Base Concerning Soil Gas Sampling Results, ST-049	Clite, Nova TN & Associates, Inc.	926
31 Jul 87	USAF OEHL Letter to Base Concerning Memorandum of Understanding Relating to Procedures	Styles, Jerald E, 1Lt USAF OEHL/TS	928
14 Dec 92	DoD Letter to NHDES Transmitting Defense and State Memorandum of Agreement	Baca, Thomas E Office of the Assistant Secretary o Defense	929 f
24 Apr 91	Federal Facility Agreement Under CERCLA Section 120	EPA Region I State of New Hampshire AFBDA/OL-A	930
20 Feb 91	RPM Meeting Minutes Transcript, 16 Jan 91	Ditto, Arthur L 509 CSG/DEEV	931
20 Mar 91	RPM Meeting Minutes Transcript, 20 Feb 91	Ditto, Arthur L 509 CSG/DEEV	932

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
18 Apr 91	RPM Meeting Minutes Transcript, 20 Mar 91	Ditto, Arthur L AFBDA/OL-A	933
22 May 91	RPM Meeting Minutes Transcript, 17 Apr 91	Ditto, Arthur L AFBDA/OL-A	934
24 Jun 91	RPM Meeting Minutes Transcript, 21 May 91	Ditto, Arthur L AFBDA/OL-A	935
26 Jul 91	RPM Meeting Minutes Transcript, 24 Jun 91	Ditto, Arthur L AFBDA/OL-A	936
08 Sep 93	Base Letter to EPA and NHDES Concerning Modification 1 to Federal Facilities Agreement	Ditto, Arthur L AFBDA/OL-A	937
23 May 95	Base Letter to EPA and NHDES Transmitting Quarterly Report, First Quarter 1995	McKenzie, Mark A AFBCA/OL-A	938
11 Mar 87	Meeting Minutes Transcript, 05 and 09 Mar 87, Base Meetings with NHDES Concerning Phase II Stage 1, Report and Phase II Stage 2, Report	McCoy, Richard P, Capt USAF Hosp/SGPB	939
26 Apr 90	Agenda for Meeting with NHDES, Base, and EPA Technical Team	509 CSG/DEEV	940
21 Nov 89	Agenda and Notes for 21 Nov 89 Working Meeting with EPA and NHDES	509 CSG/DEEV	944
03 Oct 90	USACE Letter to Base Concerning CERCLA Remedial Actions, 404 Permit Not Required	Cole, Victor U.S. Army Corps of Engineers, New England Division	945
31 Mar 89	Point Paper on IRP and Attachments	509 CSG/DEEV	946
27 Jun 89	Base Letter to HQ SAC Concerning Recommendation to Place Base on National Priority List	Jones, Richard A 509 CSG/DEEV	947

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
22 Feb 91	Base Letter to EPA, HQ USAF, and AFRCE Transmitting RPM Meeting Minutes Transcript, 16 Jan 91	Ditto, Arthur L 509 CSG/DEEV	948
21 Mar 91	Base Letter to EPA, AFESC, and AFRCE Transmitting RPM Meeting Minutes Transcript, 20 Feb 91	Ditto, Arthur L 509 CSG/DEEV	949
23 Apr 91	Base Letter to EPA, AFESC, and AFRCE Transmitting RPM Meeting Minutes Transcript, 20 Mar 91	Ditto, Arthur L AFBDA/OL-A	950
23 May 91	Base Letter to EPA, AFESC, and AFRCE Transmitting RPM Meeting Minutes Transcript, 17 Apr 91	Ditto, Arthur L AFBDA/OL-A	951
26 Jun 91	Base Letter to EPA, AFESC, and AFRCE Transmitting RPM Meeting Minutes Transcript, 21 May 91	Ditto, Arthur L AFBDA/OL-A	952
14 Jun 91	Base Letter to NHDES Concerning Notification of Additional Investigative Work in a Wetland	Jones, Richard A AFBDA/OL-A	953
26 Jul 91	Base Letter to EPA, AFBDA, and AFRCE Transmitting RPM Meeting Minutes Transcript, 24 Jun 91	Ditto, Arthur L AFBDA/OL-A	954
26 Aug 91	Base Letter to EPA, AFESC, AFRCE, and AFCEE Transmitting RPM Meeting Minutes Transcript, 24 Jul 91	Ditto, Arthur L AFBDA/OL-A	955
30 Sep 91	Base Letter to EPA, AFESC, AFRCE, and AFCEE Transmitting RPM Meeting Minutes Transcript, 21 Aug 91	Ditto, Arthur L AFBDA/OL-A	956
01 Nov 91	Base Letter to EPA, AFESC, and AFCEE Transmitting RPM Meeting Minutes Transcript, 26 Sep 91	Ditto, Arthur L AFBDA/OL-A	957

#### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
21 Nov 91	Base Letter to EPA, AFESC, and AFCEE Transmitting RPM Meeting Minutes Transcript, 27 Oct 91	Ditto, Arthur L AFBDA/OL-A	958
23 Dec 91	Base Letter to EPA, AFESC, and AFCEE Transmitting RPM Meeting Minutes Transcript, 20 Nov 91	Ditto, Arthur L AFBDA/OL-A	959
28 Jan 92	Base Letter to EPA, AFBDA, and AFCEE Transmitting RPM Meeting Minutes Transcript, 19 Dec 91	Ditto, Arthur L AFBDA/OL-A	960
26 Feb 92	Base Letter to EPA, AFBDA, and AFCEE Transmitting RPM Meeting Minutes Transcript, 27 Jan 92	Ditto, Arthur L AFBDA/OL-A	961
09 Apr 92	Base Letter to EPA, AFBDA, and AFCEE Transmitting RPM Meeting Minutes Transcript, 25 Feb 92	Ditto, Arthur L AFBDA/OL-A	962
24 Apr 92	Base Letter to EPA, AFBDA, and AFCEE Transmitting RPM Meeting Minutes Transcript, 07 Apr 92	Ditto, Arthur L AFBDA/OL-A	963
08 Jun 92	RPM Meeting Minutes Transcript, 22 Apr 92	Ditto, Arthur L AFBDA/OL-A	965
03 Jun 92	RPM Meeting Minutes Transcript, 03 Jun 92	Ditto, Arthur L AFBDA/OL-A	966
09 Dec 98	Bechtel Letter to Base Transmitting Technical Memorandum for Aquifer Pumping Test at ST-073	Cange, Jeffrey B Bechtel Environmental, Inc.	967
22 Oct 92	RPM Meeting Minutes Transcript, 10 Sep 92	Ditto, Arthur L AFBDA/OL-A	968

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
20 Oct 92	RPM Meeting Minutes Transcript, 20 Oct 92	Ditto, Arthur L AFBDA/OL-A	970
22 Oct 92	NHDES Letter to Base Concerning Application of Reasonable Maximum Exposure in Risk Assessments	Pease, Richard H New Hampshire Department of Environmental Services	971
04 Nov 92	NHDES Letter to Base Concerning Guidebook for Environmental Permits in New Hampshire	Pease, Richard H New Hampshire Department of Environmental Services	972
19 Jul 91	Weston Letter to Base Transmitting Quarterly Report, Second Quarter 1991	Boxwell, Mimi A Roy F. Weston, Inc.	974
24 Oct 91	Base Letter to EPA and NHDES Transmitting Quarterly Report, Third Quarter 1991	Ditto, Arthur L AFBDA/OL-A	975
14 Jan 92	Weston Letter to Base Transmitting Quarterly Report, Fourth Quarter 1991	Boxwell, Mimi A Roy F. Weston, Inc.	976
15 Apr 92	Quarterly Report, First Quarter 1992	Roy F. Weston, Inc.	977
14 Jul 92	Weston Letter to Base Transmitting Quarterly Report, Second Quarter 1992	Boxwell, Mimi A Roy F. Weston, Inc.	978
20 Oct 92	Weston Letter to Base Transmitting Quarterly Report, Third Quarter 1992	Boxwell, Mimi A Roy F. Weston, Inc.	979
19 Jan 93	Base Letter to EPA and NHDES Transmitting Quarterly Report, Fourth Quarter 1992	Ditto, Arthur L AFBDA/OL-A	980
26 Apr 93	Base Letter to EPA and NHDES Transmitting Quarterly Report, First Quarter 1993	Ditto, Arthur L AFBDA/OL-A	981
15 Nov 94	Base Letter to EPA and NHDES Transmitting Groundwater Treatment Plant Influent/Effluent Results, Quarterly Reporting	Ditto, Arthur L AFBCA/OL-A	983

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	•	FILE NUMBER
05 Apr 94	RPM Meeting Minutes Transcript, 05 Apr 94	Ditto, Arthur L AFBCA/OL-A	984
31 May 94	RPM Meeting Minutes Transcript, 31 May 94	Ditto, Arthur L AFBCA/OL-A	985
16 Dec 94	RPM Meeting Minutes Transcript, 16 Dec 94	Ditto, Arthur L AFBCA/OL-A	986
19 Jun 95	Base Letter to EPA and NHDES Transmitting RPM Meeting Minutes Transcript, 03 May 95	Ditto, Arthur L AFBCA/OL-A	987
29 Oct 98	TN & Associates Letter to Base Concerning Confirmation of Field Changes, ST-049	Clite, Nova Voight, David S TN & Associates, Inc.	988
26 Jul 95	Base Letter to EPA and NHDES Concerning RPM Meeting Minutes Transcript, 06 Jun 95	Ditto, Arthur L AFBCA/OL-A	990
14 Aug 95	Base Letter to NHDES and EPA Transmitting Groundwater Treatment Plant Influent/Effluent Results, Quarterly Reporting, ST-030, OT-023, OT-024	Ditto, Arthur L AFBCA/OL-A	991
04 Sep 97	Base Letter to EPA and NHDES Concerning Designation of New Site, ST-049	Ditto, Arthur L AFBCA/DB Pease	992
07 Mar 90	NOAA Letter to EPA Concerning Stage 2, Draft Final Report	Finkelstein, Kenneth National Oceanic and Atmospheri Administration	997 c
Oct 93	Quarterly Report, Third Quarter 1993	Roy F. Weston, Inc.	1001
11 Feb 94	NHDES Letter to HQ USEPA Concerning Appropriateness of CERCLA Versus State or Other Authorities for Closing Military	Varney, Robert W New Hampshire Department of Environmental Services	1002

Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Jan 94	Quarterly Report, Fourth Quarter, 1993	Roy F. Weston, Inc.	1004
Apr 94	Quarterly Report, First Quarter, 1994	Roy F. Weston, Inc.	1005
16 Mar 94	NHDES Letter to Base and EPA Concerning Informal Dispute Resolution Meeting, Final Meeting Minutes Transcript, 13 Jan 94	Pease, Richard H New Hampshire Department of Environmental Services	1006
07 Oct 94	Base Letter to NHDES Concerning Ditch Maintenance Work, Excavation Material Disposal	Ditto, Arthur L AFBCA/OL-A	1008
02 Nov 94	NHDES Letter to Base Concerning Request for Approval to Place Excavated Materials from Ditch Maintenance Work at LF-005	Pease, Richard H New Hampshire Department of Environmental Services	1009
Jul 94	Quarterly Report, Second Quarter 1994	Roy F. Weston, Inc.	1010
Feb 95	Quarterly Report, Fourth Quarter 1994	Roy F. Weston, Inc.	1011
13 Jan 95	NHDES Letter to Base Concerning SOP for Well Abandonment	Regan, John M Hilton, Scott New Hampshire Department of Environmental Services	1012
30 Jan 95	Base Letter to NHDES Transmitting Newspaper Articles on Background Contamination	Ditto, Arthur L AFBCA/OL-A	1014
02 Mar 95	Base Letter to NHDES and EPA Transmitting Groundwater Treatment Plant Influent/Effluent Results, Quarterly Reporting, ST-030, OT-023, OT-024	Ditto, Arthur L AFBCA/OL-A	1018
20 Mar 95	Base Letter to EPA, AFBCA, and AFCEE Concerning RAB/TRC Meeting Notification	Ditto, Arthur L AFBCA/OL-A	1019

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
Oct 95	Quarterly Report, Third Quarter 1995	Roy F. Weston, Inc.	1021
12 Jan 96	Base Letter to EPA and NHDES Transmitting RPM Meeting Minutes Transcript, 09 Jan 96	Ditto, Arthur L AFBCA/OL-A	1022
Jan 93	Federal Facilities Agreement Modification	AFBDA/OL-A	1023
Sep 91	Stage 3C, Draft Health Assessment, Vol I	Roy F. Weston, Inc.	1024
Jan 93	Stage 4, Toxicity Profiles	Roy F. Weston, Inc.	1025
26 Jul 91	NHDES Letter to Base Concerning Health Assessment Split Sample	Pease, Richard H New Hampshire Department of Environmental Services	1026
26 Jun 92	Base Letter to ATSDR Concerning Health Assessment Report	Jones, Richard A AFBDA/OL-A	1027
07 Feb 91	Weston Letter to HSD Transmitting Response to Comments, Draft Final Community Relations Plan	Barnes, Edward S Roy F. Weston, Inc.	1031
30 Nov 90	NHDES Letter to Base Concerning Draft Community Relations Plan Comments	Pease, Richard H New Hampshire Department of Environmental Services	1032
07 Dec 90	EPA Letter to Base Concerning Comments on Draft Community Relations Plan	Gutro, Douglas S EPA Region I	1033
Jan 91	Letter Report, EPA Comments and Base Responses on Community Relations Plan	EPA Region I 509 CSG/DEEV	1034
Jan 91	Letter Report, NHDES Comments and Base Responses on Community Relations Plan	New Hampshire Department of Environmental Services 509 CSG/DEEV	1035

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
25 Mar 91	EPA Letter to Base Concerning Review of Draft Final Community Relations Plan	Hunter, Johanna M EPA Region I	1036
17 Apr 92	NHDES Letter to Base Concerning PA/SI, Draft Fact Sheet	Pease, Richard H New Hampshire Department of Environmental Services	1039
28 Apr 92	NHDES Letter to Base Concerning Monitoring Well Installation Modifications, Zone 2	Pease, Richard H Doane, Scott E New Hampshire Department of Environmental Services	1040
22 Sep 92	Response to Comments on Site Characterization Summary, Zone 4	Roy F. Weston, Inc.	1041
02 Jun 92	NHDES Letter to Base Concerning Review Comments, Site Characterization Summary, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1044
11 Jun 92	NHDES Letter to Base Concerning Site Characterization Summary, Zone 3, Review Comments	Pease, Richard H New Hampshire Department of Environmental Services	1045
11 Jun 92	EPA Letter to Base Concerning Review of Site Characterization Summary, Zone 3	Daly, Michael J EPA Region I	1046
15 Jun 92	NHDES Letter to Base Concerning Letter Report, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1047
18 Jun 92	EPA Letter to Base Concerning Review of Stage 3C, FS, Report, OT-023	Daly, Michael J EPA Region I	1048
01 Jul 92	EPA Facsimile to Base Transmitting Stage 3C, FS, Draft Report Comments, ST-030/OT-024	Daly, Michael J EPA Region I	1049

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
08 Jul 92	NHDES Letter to Base Concerning Review Comments, RI, Draft Final Report, AOC, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1050
01 Aug 92	EPA Letter to Base Concerning Review of Draft Site Characterization Summary Report, Zone 4	Hunter, Johanna M EPA Region I	1052
07 Aug 92	NHDES Letter to Base Concerning Comments on Haven Pump Test Design and Piezometer Installations	Doane, Scott E Pease, Richard H New Hampshire Department of Environmental Services	1053
11 Aug 92	EPA Letter to Base Concerning Haven Well Pump Test	Hunter, Johanna M EPA Region I	1055
17 Aug 92	Weston Letter to Base Concerning Haven Well Test Response to Comments	Spratt, James G Roy F. Weston, Inc.	1057
01 Sep 92	Weston Letter to AFCEE Transmitting Response to Comments on Site Characterization Summary, Zone 3	dePersia, Lee R Roy F. Weston, Inc.	1058
22 Sep 92	EPA Letter to Base Concerning Review of Letter Report, Addition of Bedrock Wells to Groundwater Extraction System, ST-030/OT-024	Hunter, Johanna M EPA Region I	1060
30 Sep 92	Base Letter to EPA and NHDES Concerning Response to Comments, Site Characterization Summary, Zone 4	Ditto, Arthur L AFBDA/OL-A	1061
01 Oct 92	NHDES Letter to Base Concerning Review Comments on Stage 3C, Letter Report. Ground Water Remediation System, OT-023	Pease, Richard H New Hampshire Department of Environmental Services	1063

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
22 Oct 92	NHDES Letter to Base Concerning Response to Comments to SI, Final Report, OT-038	Pease, Richard H New Hampshire Department of Environmental Services	1067
05 Nov 92	EPA Letter to Base Concerning Review of Stage 4, No Further Action Decision Document, LF-003	Hunter, Johanna M EPA Region I	1069
12 Nov 92	NHDES Letter to Base Concerning Letter Report, Off-Base Well Inventory	Pease, Richard H New Hampshire Department of Environmental Services	1070
13 Nov 92	NHDES Letter to Base Concerning Stage 3B, Draft ITIR, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1071
24 Nov 92	EPA Comments on Site Characterization Summary, Zone 2	Daly, Michael J EPA Region I	1073
30 Nov 92	NHDES Letter to Base Concerning Stage 4, Site Characterization Summary, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1074
04 Dec 92	EPA Letter to Base Concerning Review of Site Characterization Summaries, Zone 2 and Zone 5	Daly, Michael J EPA Region I	1077
20 Oct 98	Bechtel Letter to Base Transmitting Technical Memorandum for Design Support of Permeable Reactive Wall at ST-073	Cange, Jeffrey B Bechtel Environmental, Inc.	1078
10 Dec 92	EPA Letter to Base Concerning Letter Report, Pumping Test, Zone 2	Daly, Michael J EPA Region I	1080
11 Jan 93	NHDES Letter to Base Concerning Stage 3C, FS, Draft Final Report, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1084

#### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
14 Jan 93	NHDES Letter to Base Concerning Review Comments on Draft Proposed Plans, ST-030/OT-024 and OT-023	Pease, Richard H New Hampshire Department of Environmental Services	1085
19 Jan 93	EPA Letter to Base Concerning Review of FS, Draft Final Report, ST-030/OT-024	Hunter, Johanna M EPA Region I	1086
21 Jan 93	EPA Letter to Base Concerning Review of Draft Proposed Plans, ST-030/OT-024 and OT-023	Hunter, Johanna M EPA Region I	1087
25 Jan 93	NHDES Letter to Base Concerning Additional Review Comments on Draft Proposed Plans, ST-030/OT-024 and OT-023, FS, Draft Final Reports, ST-030/OT-024 and OT-023	Pease, Richard H New Hampshire Department of Environmental Services	1088
21 Jan 93	NHDES Letter to Base Concerning Preliminary Findings, Fish and Shellfish Tissue Analysis, SD-021, SD-027	Pease, Richard H New Hampshire Department of Environmental Services	1089
10 Feb 93	EPA Letter to Base Concerning Review of Revised Draft Final Proposed Plans, ST-030/OT-024 and OT-023	Hunter, Johanna M EPA Region I	1092
04 Feb 93	Base Letter to EPA and NHDES Transmitting Response to EPA and NHDES Comments to Site Characterization Summary, Zone 2	Ditto, Arthur L AFBDA/OL-A	1093
02 Feb 93	Response to EPA Comments, Site Characterization Summary, Zone 2	AFBDA/OL-A	1094
02 Feb 93	Response to NHDES Comments, Site Characterization Summary, Zone 2	AFBDA/OL-A	1095
25 Jan 93	NHDES Letter to Base Concerning Stage 3B, Draft ITIR, Groundwater Treatment Plant, OT-023	Pease, Richard H New Hampshire Department of Environmental Services	1096

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
29 Mar 93	Department of State Letter to Base Concerning Proposed Plans, ST-030/OT-024 and OT-023	Mack, Robert J U.S. Department of State	1106
15 Apr 93	PDA Letter to Base Concerning Draft Final Proposed Plans, ST-030/OT-024 and OT-023	Jones, George C Pease Development Authority	1107
26 Apr 93	SCOPE Letter to Base Concerning Proposed Plans, ST-030/OT-024 and OT-023	Lown, Bradley M Seacoast Citizens Overseeing Pease Environment	1108
09 Jul 93	EPA Letter to Base Concerning Review of RI, Draft Report, Zone 2	Daly, Michael J EPA Region I	1116
30 Nov 93	Response to EPA Comments, RI, Draft Report, Zone 2	AFBDA/OL-A	1117
30 Nov 93	Response to NHDES Comments, RI, Draft Report, Zone 2	AFBDA/OL-A	1118
13 Sep 93	Response to EPA Comments, Initial Screening of Alternatives Report, Zone 2	AFBDA/OL-A	1119
13 Sep 93	Response to NHDES Comments, Initial Screening of Alternatives Report, Zone 2	AFBDA/OL-A	1120
02 Dec 93	Response to EPA Comments, FS, Draft Report, Zone 2	AFBDA/OL-A	1121
02 Dec 93	Response to NHDES Comments, FS, Draft Report, Zone 2	AFBDA/OL-A	1122
13 Sep 93	Response to EPA Comments, RI, Draft Report, Zone 4	AFBDA/OL-A	1123
13 Sep 93	Response to NHDES Comments, RI, Draft Report, Zone 4	AFBDA/OL-A	1124

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
03 Nov 93	Response to EPA Comments, FS, Draft Report, Zone 4	AFBDA/OL-A	1125
02 Nov 93	Response to NHDES Comments, FS, Draft Report, Zone 4	AFBDA/OL-A	1126
28 Sep 93	Response to EPA Comments, RI, Draft Report, Zone 3	AFBDA/OL-A	1131
29 Sep 93	Response to NHDES Comments, RI, Draft Report, Zone 3	AFBDA/OL-A	1132
09 Nov 93	Draft Response to EPA Comments, RI/FS, Draft Report, McIntyre Brook/Lower Newfields Ditch	AFBDA/OL-A	1140
08 Nov 93	Draft Response to NHDES Comments, RI/FS, Draft Report, McIntyre Brook/Lower Newfields Ditch	AFBDA/OL-A	1141
07 May 93	MITRE Letter to AFCEE Concerning Peer Review of Initial Screening of Alternatives Report, Zone 4	Price, Fred T The MITRE Corporation	1143
11 Jun 93	MITRE Letter to AFCEE Concerning Review of EPA Comments on Background Data	Price, Fred T The MITRE Corporation	1144
02 Jul 93	MITRE Letter to AFCEE Concerning Peer Review of Initial Screening of Alternatives Report, Zone 3	Price, Fred T The MITRE Corporation	1145
10 Aug 93	MITRE Letter to AFCEE Concerning Peer Review of Initial Screening of Alternatives Report, Zone 2	Price, Fred T The MITRE Corporation	1147
02 Oct 98	NHDES Letter to Base Concerning Field Investigation Tasks, ST-049	Hilton, Scott New Hampshire Department of Environmental Services	1148

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
10 Nov 93	Base Letter to EPA Concerning FS, Draft Report, Zone 4	Ditto, Arthur L AFBDA/OL-A	1153
16 Nov 93	EPA Letter to Base Concerning Review of Sediment Evaluation Work Plan, SD-021, SD-026	EPA Region I	1154
22 Nov 93	Response to EPA Comments, FS, Draft Report, Zone 3	AFBDA/OL-A	1155
22 Nov 93	Response to NHDES Comments, FS, Draft Report, Zone 3	AFBDA/OL-A	1156
29 Nov 93	NHDES Letter to Base Concerning Work Plan to Evaluate Sediments, SD-021, SD-026	Pease, Richard H New Hampshire Department of Environmental Services	1159
30 Dec 93	NHDES Letter to Base Concerning RI, Draft Final Report, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1160
30 Sep 98	Base Facsimile to EPA and NHDES Concerning Comments on Draft Work Plan, EE/CA, ST-049	Ditto, Arthur L AFBCA/DA Pease	1163
29 Sep 98	TN & Associates Letter to NHDES Transmitting Draft Work Plan, EE/CA, ST-049	Voight, David S TN & Associates, Inc.	1164
20 Dec 93	NHDES Letter to Base Concerning Draft Proposed Plan, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1165
03 Jan 94	NHDES Letter to Base Concerning FS, Draft Final Report, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1166

#### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
05 Jan 94	NHDES Letter to Base Concerning FS, Draft Final Report, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1167
07 Feb 94	NHDES Letter to Base Concerning Draft Proposed Plan, Zone 3, and Draft Proposed Plan, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1170
14 Mar 94	NHDES Letter to Base Concerning Meeting to Discuss NHDES Issues, Draft Meeting Minutes Transcript, 10 Feb 94	Pease, Richard H New Hampshire Department of Environmental Services	1173
16 May 94	Response to NHDES Comments, Draft Proposed Plan, Zone 2	AFBCA/OL-A	1177
26 May 94	NHDES Letter to Base Concerning Review Comments, Draft Final Proposed Plan, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1178
02 Jun 94	NHDES Letter to Base and EPA Concerning Technical Impracticability Evaluation Review Comments, ST-030	Pease, Richard H New Hampshire Department of Environmental Services	1179
14 Jun 94	Base Letter to NHDES Concerning Response to Comments, Treatability Study Work Plan, Zone 2	McKenzie, Mark A AFBCA/OL-A	1180
15 Jun 94	NHDES Letter to Base Concerning RI, Addendum 1, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1181
21 Jun 94	Base Letter to NHDES and EPA Concerning Response to EPA Comments and Additional Responses to NHDES Comments, Basewide Interim Monitoring Plan	McKenzie, Mark A AFBCA/OL-A	1182
26 Aug 93	Response to EPA and NHDES Comments	AFBDA/OL-A	1183

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
94	EPA Facsimile to Base Transmitting Comments, Draft ROD, Zone 4	Daly, Michael J EPA Region I	1201
01 Jul 94	NHDES Letter to Base Concerning Comments on RI, Addendum 2, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1202
12 Sep 94	NHDES Letter to Base Concerning Review Comments, Draft ROD, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1206
13 Sep 94	EPA Facsimile to Base Transmitting Comments on Draft ROD, FT-008	Daly, Michael J EPA Region I	1208
15 Sep 94	EPA Facsimile to Base Transmitting Comments on Draft ROD, FT-008	Daly, Michael J EPA Region I	1209
19 Sep 94	NHDES Letter to Base Concerning Letter Report, Groundwater Extraction Assessment, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1210
07 Oct 94	EPA Facsimile to Base Transmitting Comments, Draft Final ROD, Zone 4	Daly, Michael J EPA Region I	1212
11 Oct 94	NHDES Letter to Base Concerning Review Comments, Draft Final ROD, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1213
08 Nov 94	Base Letter to NHDES Concerning Response to Comments, RI, Report, Addendums 1 and 2, Zone 3	McKenzie, Mark A AFBCA/OL-A	1214
17 Nov 94	EPA Letter to Base Transmitting Comments, Draft Final ROD, Zone 4	Daly, Michael J EPA Region I	1216
07 Dec 94	Response to NHDES Comments, Basewide Interim Monitoring Plan	AFBCA/OL-A	1217

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
05 Jan 95	NHDES Letter to Base Concerning Review Comments, Letter Report, XRF, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1218
10 Jan 95	EPA Letter to Base Concerning Comments on RI/FS, Draft Final Report, OT-041 and Zone 2	Miniuks, Andrew F EPA Region I	1219
11 Jan 95	EPA Letter to Base Concerning DDT Sediment Evaluation Report	Daly, Michael J EPA Region I	1220
12 Jan 95	NHDES Letter to Base Concerning Sediment Bioassay and Hardness Letter Reports Evaluation Review Comments	Pease, Richard H New Hampshire Department of Environmental Services	1222
19 Jan 95	NHDES Letter to Base Concerning Response to NHDES Comments on RI, Report, Addendums 1 and 2, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1224
24 Jan 95	NHDES Letter to Base Concerning Comments on Letter Report, Treatability Study, OT-022, and FS, Report, Addendum 1, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1226
02 Mar 95	Response to EPA Comments, FS, Draft Report, Addendum 1, ST-030/OT-024	AFBCA/OL-A	1229
02 Mar 95	Response to NHDES Comments, FS, Draft Report, Addendum 1, ST-030/OT-024	AFBCA/OL-A	1230
16 Feb 95	Response to NHDES Comments, FS, Draft Report, Addendum 1, Zone 2	AFBCA/OL-A	1231
15 Feb 95	Response to EPA Comments, FS, Draft Report, Addendum 1, Zone 2	AFBCA/OL-A	1232
21 Apr 94	NHDES Letter to Base Concerning Review Comments, Draft Proposed Plan, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1233

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
29 Sep 98	TN & Associates Letter to EPA Transmitting Draft Work Plan, EE/CA, ST-049	Voight, David S TN & Associates, Inc.	1236
29 May 98	EPA Letter to Base Concerning Review of Conceptual Design Report for Zero-Valent Iron Permeable Reactive Wall Technology Demonstration, ST-073	Daly, Michael J EPA Region I	1238
24 Jan 95	EPA Letter to Base Concerning FS, Draft Report, Addendum 1, ST-030/OT-024	Daly, Michael J EPA Region I	1240
02 Mar 95	EPA Letter to Base Concerning Comments on Draft Final Proposed Plan, Zone 2	Daly, Michael J EPA Region I	1241
03 Mar 95	EPA Letter to Base Concerning Review of Natural Attenuation Modeling, Zone 2 and Zone 3	Daly, Michael J EPA Region I	1242
13 Mar 95	Weston Letter to Base, EPA, and NHDES Transmitting Draft Final Proposed Plan, Zone 3	dePersia, Lee R Roy F. Weston, Inc.	1244
17 Mar 95	NHDES Letter to Base Concerning Revised Draft Proposed Plan, ST-030/OT-024	Pease, Richard H New Hampshire Department of Environmental Services	1246
17 Mar 95	EPA Letter to Base Concerning Revised Draft Proposed Plan, ST-030/OT-024	Daly, Michael J EPA Region I	1247
30 Mar 95	EPA Letter to Base Concerning FS, Draft Final Report, Addendum 1, ST-030/OT-024	Daly, Michael J EPA Region I	1248
30 Mar 95	EPA Letter to Base Concerning Draft Proposed Plan Fact Sheets, Zone 3 and ST-030/OT-024	Daly, Michael J EPA Region I	1249
17 Apr 95	NHDES Letter to Base Concerning Review Comments, Draft Final Proposed Plan, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1252

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
18 Apr 95	EPA Letter to Base Concerning Review of Draft Final Proposed Plan, Zone 3	Daly, Michael J EPA Region I	1253
19 Apr 95	EPA Letter to Base Concerning Review of Draft Explanation of Significant Difference, OT-023	Daly, Michael J EPA Region I	1254
20 Apr 95	NHDES Letter to Base Concerning Technical Impracticability Evaluation, ST-030	Pease, Richard H New Hampshire Department of Environmental Services	1255
20 Apr 95	NHDES Letter to Base Concerning Review of Recovery Well Work Plan, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1256
20 Apr 95	EPA Letter to Base Concerning AF Revisions to Sections 9 and 10 of Draft Proposed Plan, ST-030/OT-024	Daly, Michael J EPA Region I	1257
27 Apr 95	Base Letter to NHDES Concerning Response to Review Comments, Pesticides, Proposed Plan, Zone 3	Ditto, Arthur L AFBCA/OL-A	1260
28 Apr 95	Base Letter to NHDES Concerning Response to Review Comments, Summary of Risks, Proposed Plan, Zone 3	Ditto, Arthur L AFBCA/OL-A	1261
28 Apr 95	EPA Letter to Base Concerning Review of Draft ROD, OT-041 and Review of Draft ROD, Zone 2	Beling, Christine S EPA Region I	1262
03 May 95	NHDES Letter to Base Concerning Review Comments, Draft ROD, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1264
08 May 95	EPA Letter to Base Concerning Review Comments on Draft RODs, OT-041 and Zone 2	Beling, Christine S EPA Region I	1265

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
08 May 95	NHDES Letter to Base Concerning Additional Review Comments, Draft ROD, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1266
10 May 95	NHDES Letter to Base Concerning Letter Report, Source Area Control Options, ST-030	Pease, Richard H New Hampshire Department of Environmental Services	1267
01 May 95	EPA Letter to Base Concerning Review of Revised Technical Impracticability Evaluation, ST-030	Daly, Michael J EPA Region I	1268
09 Jun 95	NHDES Letter to Base Concerning Technical Impracticability Evaluation Report Changes	Pease, Richard H New Hampshire Department of Environmental Services	1269
29 Jun 95	Weston Letter to Base, NHDES, and EPA Transmitting Revised Technical Impracticability Evaluation Document, Changed Pages	dePersia, Lee R Roy F. Weston, Inc.	1270
19 Jun 95	Revised Technical Impracticability Evaluation Document, Changed Pages	EPA Region I	1271
20 Jun 95	EPA Letter to Base Concerning Review Comments on Draft Final ROD, OT-041 and Draft Final ROD, Zone 2	Beling, Christine S EPA Region I	1272
29 Jun 95	NHDES Letter to Base Concerning Review Comments, Draft Final ROD, Zone 2	Pease, Richard H New Hampshire Department of Environmental Services	1274
22 Jun 95	NHDES Letter to Base Concerning Review Comments, Proposed Plan, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1276

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
06 Jul 95	Weston Letter to Base Transmitting Response to EPA Comments, Letter Report, Source Area Control Options, ST-030, and Technical Impracticability Evaluation Report, ST-030	dePersia, Lee R Roy F. Weston, Inc.	1278
18 Jul 95	Base Letter to EPA and NHDES Transmitting Response to EPA Comments, Revised Technical Impracticability Evaluation, ST-030	Ditto, Arthur L AFBCA/OL-A	1281
11 Jul 95	NHDES Letter to Base Concerning Clarification of NHDES Comments to Proposed Plan, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1282
Jan 91	Draft Final Community Relations Plan	Roy F. Weston, Inc.	1284
Oct 94	Revised Community Relations Plan	Dynamac Corporation	1285
11 Jul 97	Dynamac Letter to Base Transmitting Revisions to 1994 Community Relations Plan	Jackson, Cody  Dynamac Corporation	1286
28 Mar 93	Public Notice in Portsmouth Herald Concerning Public Hearing on Proposed Plan, ST-030/OT-024 and OT-023	AFBDA/OL-A	1289
27 Mar 93	Public Notice in Foster's Daily Democrat Concerning Public Hearing on Proposed Plan, ST-030/OT-024 and OT-023	AFBDA/OL-A	1290
08 May 94	Public Notice in Portsmouth Herald Concerning Public Hearing on Proposed Plan, Zone 4	AFBCA/OL-A	1295
07 May 94	Public Notice in Foster's Daily Democrat Concerning Public Hearing on Proposed Plan, Zone 4	AFBCA/OL-A	1296

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
04 Oct 93	Public Notice in Portsmouth Herald Concerning Signing of RODs, LF-005 and OT-023	AFBDA/OL-A	1297
08 Apr 95	Public Notice in Foster's Daily Democrat Concerning Public Hearing on Proposed Plans, Zone 2 and OT-041	AFBCA/OL-A	1300
09 Apr 95	Public Notice in Portsmouth Herald Concerning Public Hearing on Proposed Plans, Zone 2 and OT-041	AFBCA/OL-A	1301
30 Jul 95	Public Notice in Portsmouth Herald Concerning Public Hearing on Proposed Plans, Zone 3 and ST-030/OT-024	AFBCA/OL-A	1302
29 Jul 95	Public Notice in Foster's Daily Democrat Concerning Public Hearing on Proposed Plans, Zone 3 and ST-030/OT-024	AFBCA/OL-A	1303
31 May 95	Base Letter to NHDT and PDA Concerning Application for Permit to Alter Wetlands Adjacent to Grafton Ditch and Beaver Pond	Ditto, Arthur L AFBCA/OL-A	1304
02 Mar 97	Public Notice in Portsmouth Herald Concerning Public Hearing on Proposed Plan, SD-021/SD-034	AFBCA/DB Pease	1305
01 Mar 97	Public Notice in Foster's Daily Democrat Concerning Public Hearing on Proposed Plan, SD-021/SD-034	AFBCA/DB Pease	1306
08 Nov 97	Public Notice in Foster's Daily Democrat Concerning Signing of ROD for Brooks/Ditches OU	AFBCA/DA Pease	1307
09 Nov 97	Public Notice in Portsmouth Herald Concerning Signing of ROD for Brooks/Ditches OU	AFBCA/DA Pease	1308

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
06 Jun 98	Public Notice in Foster's Daily Democrat Concerning Public Meeting on Environmental Restoration at Base	AFBCA/DA Pease	1309
07 Jun 98	Public Notice in Portsmouth Herald Concerning Public Meeting on Environmental Restoration at Base	AFBCA/DA Pease	1310
12 Jan 93	Summary of 12 Jan 93 Public Workshop and Information Meeting, Installation Restoration Program	Dynamac Corporation	1312
30 Mar 93	Official Transcript of 30 Mar 93 Public Hearing, Proposed Plan, ST-030, OT-023, OT-024	Rasmussen, Victor C R & R Associates	1313
30 Mar 93	Summary of 30 Mar 93 Public Hearing, Proposed Plans, ST-030, OT-023, OT-024	Dynamac Corporation	1314
12 May 94	Official Transcript of 12 May 94 Public Hearing, Proposed Plan, Zone 4	Rasmussen, Victor C R & R Associates	1319
12 May 94	Summary of 12 May 94 Public Hearing, Proposed Plan, Zone 4	Dynamac Corporation	1320
11 Apr 95	Official Transcript of 11 Apr 95 Public Hearing, Proposed Plans, Zone 2 and OT-041	French, S Sullivan, P APEX Reporting	1322
11 Apr 95	Summary of 11 Apr 95 Public Hearing, Proposed Plans, Zone 2 and OT-041	Dynamac Corporation	1323
03 Aug 95	Summary of 03 Aug 95 Public Hearing. Proposed Plans, Zone 3 and ST-030/OT-024	Dynamac Corporation	1324
03 Aug 95	Official Transcript of 03 Aug 95 Public Hearing, Proposed Plans, Zone 3 and ST-030/OT-024	Rasmussen, Victor C Bruce, M APEX Reporting	1325

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
14 Oct 95	Summary of Base Environmental Open House	Dynamac Corporation	1326
05 Mar 97	Official Transcript of 05 Mar 97 Public Hearing, Proposed Plan, Brooks/Ditches OU	Rasmussen, Victor C Nelligan, P APEX Reporting	1327
05 Mar 97	Summary of 05 Mar 97 Public Hearing, Proposed Plan, Brooks/Ditches OU	Dynamac Corporation	1328
22 Feb 90	TRC Meeting Minutes Transcript, 22 Feb 90	Ditto, Arthur L 509 CSG/DEEV	1329
30 Mar 90	TRC Meeting Minutes Transcript, 30 Mar 90	Ditto, Arthur L 509 CSG/DEEV	1330
27 Apr 90	TRC Meeting Minutes Transcript, 27 Apr 90	Ditto, Arthur L 509 CSG/DEEV	1331
30 May 90	TRC Meeting Minutes Transcript, 30 May 90	Ditto, Arthur L 509 CSG/DEEV	1332
27 Jun 90	TRC Meeting Minutes Transcript, 27 Jun 90	Ditto, Arthur L 509 CSG/DEEV	1333
25 Jul 90	TRC Meeting Minutes Transcript, 25 Jul 90	Ditto, Arthur L 509 CSG/DEEV	1334
29 Aug 90	TRC Meeting Minutes Transcript, 29 Aug 90	Ditto, Arthur L 509 CSG/DEEV	1335
26 Sep 90	TRC Meeting Minutes Transcript, 26 Sep 90	Ditto, Arthur L 509 CSG/DEEV	1336
31 Oct 90	TRC Meeting Minutes Transcript, 31 Oct 90	Ditto, Arthur L 509 CSG/DEEV	1337

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
29 Nov 90	TRC Meeting Minutes Transcript, 29 Nov 90	Ditto, Arthur L 509 CSG/DEEV	1338
31 Jan 91	TRC Meeting Minutes Transcript, 31 Jan 91	Ditto, Arthur L 509 CSG/DEEV	1339
27 Mar 91	TRC Meeting Minutes Transcript, 27 Mar 91	Ditto, Arthur L 509 CSG/DEEV	1340
24 Apr 91	TRC Meeting Minutes Transcript, 24 Apr 91	Ditto, Arthur L AFBDA/OL-A	1341
28 May 91	TRC Meeting Minutes Transcript, 28 May 91	Ditto, Arthur L AFBDA/OL-A	1342
25 Jun 91	TRC Meeting Minutes Transcript, 25 Jun 91	Ditto, Arthur L AFBDA/OL-A	1343
30 Jul 91	TRC Meeting Minutes Transcript, 30 Jul 91	Ditto, Arthur L AFBDA/OL-A	1344
27 Aug 91	TRC Meeting Minutes Transcript, 27 Aug 91	Ditto, Arthur L AFBDA/OL-A	1345
01 Oct 91	TRC Meeting Minutes Transcript, 01 Oct 91	Ditto, Arthur L AFBDA/OL-A	1346
29 Oct 91	TRC Meeting Minutes Transcript, 29 Oct 91	Ditto, Arthur L AFBDA/OL-A	1347
26 Nov 91	TRC Meeting Minutes Transcript, 26 Nov 91	Ditto, Arthur L AFBDA/OL-A	1348
07 Jan 92	TRC Meeting Minutes Transcript, 07 Jan 92	Ditto, Arthur L AFBDA/OL-A	1349

Sorted by: Zone 3, Site 49, Site 65, Site 73
Date of Report: 5/23/2002

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
31 Mar 92	TRC Meeting Minutes Transcript, 31 Mar 92	Ditto, Arthur L AFBDA/OL-A	1350
28 Apr 92	TRC Meeting Minutes Transcript, 28 Apr 92	Ditto, Arthur L AFBDA/OL-A	1351
20 May 92	TRC Meeting Minutes Transcript, 20 May 92	Ditto, Arthur L AFBDA/OL-A	1352
28 Jul 92	TRC Meeting Minutes Transcript, 28 Jul 92	Ditto, Arthur L AFBDA/OL-A	1353
29 Sep 92	TRC Meeting Minutes Transcript, 29 Sep 92	Ditto, Arthur L AFBDA/OL-A	1354
16 Dec 92	TRC Meeting Minutes Transcript, 16 Dec 92	Ditto, Arthur L AFBDA/OL-A	1355
27 Oct 92	TRC Meeting Minutes Transcript, 27 Oct 92	Ditto, Arthur L AFBDA/OL-A	1356
17 Feb 93	TRC Meeting Minutes Transcript, 17 Feb 93	Ditto, Arthur L AFBDA/OL-A	1357
23 Mar 93	TRC Meeting Minutes Transcript, 23 Mar 93	Ditto, Arthur L AFBDA/OL-A	1358
27 Apr 93	TRC Meeting Minutes Transcript, 27 Apr 93	Ditto, Arthur L AFBDA/OL-A	1359
25 May 93	TRC Meeting Minutes Transcript, 25 May 93	Ditto, Arthur L AFBDA/OL-A	1360
29 Jun 93	TRC Meeting Minutes Transcript, 29 Jun 93	Ditto, Arthur L AFBDA/OL-A	1361

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
27 Jul 93	TRC Meeting Minutes Transcript, 27 Jul 93	Ditto, Arthur L AFBDA/OL-A	1362
31 Aug 93	TRC Meeting Minutes Transcript, 31 Aug 93	Ditto, Arthur L AFBDA/OL-A	1363
28 Sep 93	TRC Meeting Minutes Transcript, 28 Sep 93	Ditto, Arthur L AFBDA/OL-A	1364
26 Oct 93	TRC Meeting Minutes Transcript, 26 Oct 93	Ditto, Arthur L AFBDA/OL-A	1365
30 Nov 93	TRC Meeting Minutes Transcript, 30 Nov 93	Ditto, Arthur L AFBDA/OL-A	1366
11 Jan 94	TRC Meeting Minutes Transcript, 11 Jan 94	Ditto, Arthur L AFBCA/OL-A	1367
01 Mar 94	TRC Meeting Minutes Transcript, 01 Mar 94	Ditto, Arthur L AFBCA/OL-A	1368
19 Jan 99	Bechtel Letter to Base Transmitting Response to EPA Comments, Draft Conceptual Design Report for Zero-Valent Iron Permeable Wall Technology Demonstration, ST-073	Burnell, Suzanne L Bechtel Environmental, Inc.	1369
11 Apr 94	Base Letter to AFBCA Transmitting Informal Dispute Resolution Meeting, Final Meeting Minutes Transcript, 13 Jan 94	Ditto, Arthur L AFBCA/OL-A	1370
26 Apr 94	TRC/RAB Meeting Minutes Transcript, 26 Apr 94	Ditto, Arthur L AFBCA/OL-A	1371
28 Jun 94	TRC/RAB Meeting Minutes Transcript, 28 Jun 94	Ditto, Arthur L AFBCA/OL-A	1372

# Sorted by: Zone 3, Site 49, Site 65, Site 73

	DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
	26 Jul 94	TRC/RAB Meeting Minutes Transcript, 26 Jul 94	Ditto, Arthur L AFBCA/OL-A	1373
	30 Aug 94	TRC/RAB Meeting Minutes Transcript, 30 Aug 94	Ditto, Arthur L AFBCA/OL-A	1374
	04 Oct 94	TRC/RAB Meeting Minutes Transcript, 04 Oct 94	Ditto, Arthur L AFBCA/OL-A	1375
	31 Jan 95	TRC/RAB Meeting Minutes Transcript, 31 Jan 95	Ditto, Arthur L AFBCA/OL-A	1376
	28 Feb 95	Base Letter to TRC/RAB Members Concerning TRC/RAB Meeting Cancellation	Ditto, Arthur L AFBCA/OL-A	1377
)	28 Mar 95	TRC/RAB Meeting Minutes Transcript, 28 Mar 95	Ditto, Arthur L AFBCA/OL-A	1378
	21 Apr 95	Base Letter to TRC/RAB Members Concerning Notification of 02 May 95 Meeting	Ditto, Arthur L AFBCA/OL-A	1380
	02 May 95	TRC/RAB Meeting Minutes Transcript, 02 May 95	Ditto, Arthur L AFBCA/OL-A	1381
	06 Jun 95	TRC/RAB Meeting Minutes Transcript, 06 Jun 95	Ditto, Arthur L AFBCA/OL-A	1382
	11 Jul 95	TRC/RAB Meeting Minutes Transcript, 11 Jul 95	Ditto, Arthur L AFBCA/OL-A	1383
	14 Aug 95	Base Letter to TRC/RAB Members Concerning Notification of 22 Aug 95 Meeting	Ditto, Arthur L AFBCA/OL-A	1384
	22 Aug 95	TRC/RAB Meeting Minutes Transcript, 22 Aug 95	Ditto, Arthur L AFBCA/OL-A	1385

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
14 Sep 95	Base Letter to TRC/RAB Members Concerning Notification of 26 Sep 95 Meeting	Ditto, Arthur L AFBCA/OL-A	1386
03 Oct 95	TRC/RAB Meeting Minutes Transcript, 03 Oct 95	Ditto, Arthur L AFBCA/OL-A	1387
06 Nov 95	Base Letter to TRC/RAB Members Concerning Notification of 14 Nov 95 Meeting	Ditto, Arthur L AFBCA/OL-A	1388
14 Nov 95	TRC/RAB Meeting Minutes Transcript, 14 Nov	Ditto, Arthur L AFBCA/OL-A	1389
02 Jan 96	Base Letter to TRC/RAB Members Concerning Notification of 09 Jan 96 Meeting	Ditto, Arthur L AFBCA/OL-A	1390
09 Jan 96	TRC/RAB Meeting Minutes Transcript, 09 Jan 96	Ditto, Arthur L AFBCA/OL-A	1391
22 Jan 96	Base Letter to TRC/RAB Members Concerning Notification of 30 Jan 96 Meeting	Ditto, Arthur L AFBCA/OL-A	1392
30 Jan 96	TRC/RAB Meeting Minutes Transcript, 30 Jan 96	Ditto, Arthur L AFBCA/OL-A	1393
18 Mar 96	Base Letter to TRC/RAB Members Concerning Notification of 26 Mar 96 Meeting	Ditto, Arthur L AFBCA/OL-A	1394
26 Mar 96	TRC/RAB Meeting Minutes Transcript, 26 Mar 96	Ditto, Arthur L AFBCA/OL-A	1395
05 Apr 96	Base Letter to EPA and NHDES Transmitting RPM Meeting Minutes Transcript, 26 Mar 96	Ditto, Arthur L AFBCA/OL-A	1396
22 Apr 96	Base Letter to TRC/RAB Members Concerning Notification of 30 Apr 96 Meeting	Ditto, Arthur L AFBCA/OL-A	1397

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
30 Apr 96	TRC/RAB Meeting Minutes Transcript, 30 Apr 96	Ditto, Arthur L AFBCA/OL-A	1398
30 May 96	Base Letter to TRC/RAB Members Concerning Notification of 11 Jun 96 Meeting	Ditto, Arthur L AFBCA/OL-A	1399
25 Jan 99	Base Letter to EPA and NHDES Transmitting Response to Comments, Draft Conceptual Design Permeable Reactive Wall, ST-073	Ditto, Arthur L AFBCA/DA Pease	1400
26 Jul 96	Base Letter to TRC/RAB Members Concerning Notification of 06 Aug 96 Meeting	Ditto, Arthur L AFBCA/OL-A	1401
08 Aug 96	TRC/RAB Meeting Minutes Transcript, 08 Aug 96	Ditto, Arthur L AFBCA/OL-A	1402
17 Sep 96	TRC/RAB Meeting Minutes Transcript, 17 Sep 96	Ditto, Arthur L AFBCA/OL-A	1403
18 Oct 96	Base Letter to TRC/RAB Members Concerning Notification of 29 Oct 96 Meeting	Ditto, Arthur L AFBCA/DB Pease	1404
29 Oct 96	TRC/RAB Meeting Minutes Transcript, 29 Oct 96	Ditto, Arthur L AFBCA/DB Pease	1405
20 Dec 96	Base Letter to TRC/RAB Members Concerning Notification of 07 Jan 97 Meeting	Ditto, Arthur L AFBCA/DB Pease	1406
17 Jan 97	Base Letter to TRC/RAB Members Transmitting Proposed Rule for Technical Assistance for Public Participation for RABs	Ditto, Arthur L AFBCA/DB Pease	1407
07 Jan 97	TRC/RAB Meeting Minutes Transcript, 07 Jan 97	Ditto, Arthur L AFBCA/DB Pease	1408
18 Feb 97	Base Letter to TRC/RAB Members Concerning Notification of 04 Mar 97 Meeting	Ditto, Arthur L AFBCA/DB Pease	1409

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
11 Jun 96	TRC/RAB Meeting Minutes Transcript, 11 Jun 96	Ditto, Arthur L AFBCA/OL-A	1410
04 Mar 97	TRC/RAB Meeting Minutes Transcript, 04 Mar 97	Ditto, Arthur L AFBCA/DB Pease	1411
09 May 97	Base Letter to TRC/RAB Members Concerning Notification of 20 May 97 Meeting	Ditto, Arthur L AFBCA/DB Pease	1412
20 May 97	TRC/RAB Meeting Minutes Transcript, 20 May 97	Ditto, Arthur L AFBCA/DB Pease	1413
10 Jul 97	Base Letter to TRC/RAB Members Concerning Notification of 22 Jul 97 Meeting	Ditto, Arthur L AFBCA/DB Pease	1414
22 Jul 97	TRC/RAB Meeting Minutes Transcript, 22 Jul 97	Ditto, Arthur L AFBCA/DB Pease	1415
17 Sep 97	Base Letter to TRC/RAB Members Concerning Notification of 30 Sep 97 Meeting	Ditto, Arthur L AFBCA/DB Pease	1416
30 Sep 97	TRC/RAB Meeting Minutes Transcript, 30 Sep 97	Ditto, Arthur L AFBCA/DB Pease	1417
01 Dec 97	Base Letter to TRC/RAB Members Concerning Notification of 16 Dec 97 Meeting	Ditto, Arthur L AFBCA/DA Pease	1418
02 Feb 98	Base Letter to TRC/RAB Members Concerning 16 Dec 97 Meeting	Ditto, Arthur L AFBCA/DA Pease	1419
30 Mar 98	Base Letter to TRC/RAB Members Concerning Notification of 14 Apr 98 Meeting	Ditto, Arthur L AFBCA/DA Pease	1420
14 Apr 98	TRC/RAB Meeting Minutes Transcript, 14 Apr 98	Ditto, Arthur L AFBCA/DA Pease	1421

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
30 Sep 87	Press Release, Investigation of 22 Sites	509 CSG/DEEV	1422
21 Sep 88	Press Release, Presentation of Second Interim Technical Report	509 CSG/DEEV	1423
29 Nov 88	Press Release, Underground Water Sampling Program	509 CSG/DEEV	1424
22 Mar 89	Press Release, Presentation of Third Interim Technical Report	509 CSG/DEEV	1425
07 Jun 89	Press Release, Off-Base Well Water Sampling Results	509 CSG/DEEV	1426
89	Press Release, Drum Removal, LF-005	509 CSG/DEEV	1427
Dec 90	Fact Sheet, Superfund Program Draft Interagency Agreement	EPA Region I	1428
Oct 91	Fact Sheet, Remedial Investigation/Feasibility Study	AFBDA/OL-A	1429
Dec 92	Fact Sheet, Information Update	AFBDA/OL-A	1430
Jan 93	Fact Sheet, Interim Groundwater Treatment, FT-008, ST-030/OT-024, and OT-023	AFBDA/OL-A	1431
Jan 93	Fact Sheet, UST Program Overview	AFBDA/OL-A	1432
Jan 93	Fact Sheet, Preliminary Assessment/Site Investigation	AFBDA/OL-A	1434
Mar 93	Fact Sheet, Proposed Plan, OT-023	AFBDA/OL-A	1436
Mar 93	Fact Sheet, Proposed Plan, ST-030/OT-024	AFBDA/OL-A	1437
16 Mar 93	Press Release, Opening of Comment Period for Proposed Plan, ST-030/OT-024 and OT-023	AFBDA/OL-A	1438

# Sorted by: Zone 3, Site 49, Site 65, Site 73 Date of Report: 5/23/2002

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
27 Sep 93	Press Release, Final Plans Issued for Cleanup of Two Sites	AFBDA/OL-A	1440
Jan 94	Newsletter, Environmental Reporter, Vol 1, No. 1	AFBCA/OL-A	1441
Apr 94	Newsletter, Environmental Reporter, Vol 1, No. 2	AFBCA/OL-A	1445
Apr 94	Fact Sheet, Proposed Plan, Zone 4	AFBCA/OL-A	1446
15 Feb 95	Press Release, Signing of ROD, Zone 4	AFBCA/OL-A	1452
Mar 95	Fact Sheet, Proposed Plan, Zone 2	AFBCA/OL-A	1453
Mar 95	Press Release, Public Hearing and Comment Period Announcement, Proposed Plans, Zone 2 and OT-041	AFBCA/OL-A	1455
22 Jan 99	TN & Associates Letter to EPA and NHDES Transmitting Draft Final Work Plan, EE/CA, and Response to Comments, ST-049	Voight, David S Clite, Nova TN & Associates, Inc.	1457
Jun 95	Fact Sheet, Proposed Plan, Zone 3	AFBCA/OL-A	1459
Jun 95	Fact Sheet, Proposed Plan for Source Area, ST-030/OT-024	AFBCA/OL-A	1460
01 Aug 95	Newspaper Article in Foster's Daily Democrat, "Hearing Thursday on Cleanup Plans"	Foster's Daily Democrat	1461
Aug 95	Newsletter, Environmental Reporter, Vol 2, No. 2	AFBCA/OL-A	1462
15 Sep 95	Press Release, Final Cleanup Plans Announced for Zone 2	AFBCA/OL-A	1468

### Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
12 Oct 95	Press Release, Air Force to Host Environmental Open House	AFBCA/OL-A	1471
21 Oct 95	Press Release in Portsmouth Herald, Signing of ROD, Zone 3 and ST-030/OT-024	AFBCA/OL-A	1472
21 Oct 95	Press Release in Foster's Daily Democrat, Signing of ROD, Zone 3 and ST-030/OT-024	AFBCA/OL-A	1473
Dec 95	Newsletter, Environmental Reporter, Vol 2, No. 3	AFBCA/OL-A	1474
10 Jan 96	Press Release in Foster's Daily Democrat, Signing of Explanation of Significant Differences for RA, OT-023	AFBCA/OL-A	1475
12 Jan 96	Press Release in Foster's Daily Democrat, Signing of Explanation of Significant Differences for RA, OT-023	AFBCA/OL-A	1476
Apr 96	Newsletter, Environmental Reporter, Vol 3, No. 1	AFBCA/OL-A	1477
Jul 96	Newsletter, Environmental Reporter, Vol 3, No. 2	AFBCA/OL-A	1478
Oct 96	Fact Sheet, Summary of Environmental Construction Activities	AFBCA/OL-A	1479
Sep 96	Newsletter, Environmental Reporter, Vol 3, No. 3	AFBCA/OL-A	1480
22 Jan 99	TN & Associates Letter to Base Transmitting Draft Final Work Plan, ST-049	Voight, David S Clite, Nova TN & Associates, Inc.	1481

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
04 Mar 97	Press Release, Information Session and Public Hearing Announced for Proposed Cleanup Plans, SD-021, SD-034	AFBCA/DB Pease	1482
Nov 97	Newsletter, Environmental Reporter, Vol 4, No. 2	AFBCA/OL-A	1484
28 Oct 97	Press Release, ROD Signed for Books/Ditches OU	AFBCA/DB Pease	1485
08 Jun 98	Press Release, Public Meeting on Environmental Restoration	AFBCA/DA Pease	1486
Apr 98	Newsletter, Environmental Reporter, Vol 5, No. 1	AFBCA/OL-A	1487
Sep 93	Responsiveness Summary, Appendix D of ROD for a Source Area RA, OT-023	Roy F. Weston, Inc.	1490
Jun 94	Responsiveness Summary, Appendix C to ROD for a RA, Zone 4	Roy F. Weston, Inc.	1493
May 95	Responsiveness Summary, Zone 2	Roy F. Weston, Inc.	1495
Aug 95	Responsiveness Summary, Zone 3	Roy F. Weston, Inc.	1497
Aug 95	Responsiveness Summary, ST-030/OT-024	Roy F. Weston, Inc.	1498
13 Apr 97	Resident Letter to Base Concerning Proposed Plan, SD-021	Resident	1499
11 Jan 90	TRC Charter	509 CSG/DEEV	1500
24 Mar 89	Senator Letter to Secretary of AF Concerning Hazardous Waste Sites at Base	Humphrey, Gordon J US Senate	1501

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
11 May 90	Newington Board of Selectmen Letter to Pease Redevelopment Commission Concerning Migration of Hazardous Waste Beyond Base Perimeter	Newington Board of Selectmen	1502
19 Jun 90	EPA Letter to Weston Transmitting Draft Joint Community Relations Plan for Massachusetts Military Reservation	Gutro, Douglas S EPA Region I	1504
27 Aug 90	EPA Letter to Base Concerning Impact of Base Closure on Personnel Responsible for IRP and Public Affairs	Hohman, Merrill S EPA Region I	1505
11 Oct 90	Base Letter to EPA Concerning Impact of Base Closure on Personnel Responsible for IRP and Public Affairs	Butterfield, Hugh G, Col 509 CSG/DEEV	1506
24 Oct 90	Base Letter to EPA Transmitting Draft Community Relations Plan	Butterfield, Hugh G, Col 509 CSG/DEEV	1507
24 Oct 90	Base Letter to NHDES Transmitting Draft Community Relations Plan	Butterfield, Hugh G, Col 509 CSG/DEEV	1508
17 Jan 91	Base Letter to EPA Concerning Draft Final Community Relations Plan Development Extension	Ditto, Arthur L 509 CSG/DEEV	1509
17 Jan 91	Base Letter to NHDES Concerning Draft Final Community Relations Plan Development Extension	Ditto, Arthur L 509 CSG/DEEV	1510
05 Feb 91	Base Letter to NHDES Concerning Submittal of Draft Final Primary Documents	Ditto, Arthur L 509 CSG/DEEV	1511
05 Feb 91	Base Letter to EPA Concerning Submittal of Draft Final Primary Documents	Ditto, Arthur L 509 CSG/DEEV	1512

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
12 Apr 91	Base Letter to EPA Concerning Community Relations Plan	Ditto, Arthur L AFBDA/OL-A	1513
01 Apr 93	NHDES Letter to Base Concerning Review Comments, Draft Basewide ARARs	Pease, Richard H New Hampshire Department of Environmental Services	1514
16 Apr 93	NHDES Letter to Base Concerning RI, Draft Report, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1516
29 Apr 93	NHDES Letter to Base Concerning RI, Draft Report, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1518
20 May 93	NHDES Letter to Base Concerning RI, Draft Report, Zone 3	Pease, Richard H New Hampshire Department of Environmental Services	1522
24 May 93	NHDES Letter to Base Concerning RI/FS, Draft Report, SD-021/SD-020	Pease, Richard H New Hampshire Department of Environmental Services	1523
24 May 93	NHDES Letter to Base Concerning Draft Initial Screening of Alternatives Report, Zone 4	Pease, Richard H New Hampshire Department of Environmental Services	1524
25 May 93	EPA Letter to Base Concerning Review of RI, Draft Report, Zone 4	Daly, Michael J EPA Region I	1525
25 May 93	EPA Letter to Base Concerning Review of Initial Screening of Alternatives Report, Zone 4	Daly, Michael J EPA Region I	1526
26 May 93	EPA Letter to Base Concerning Review of RI, Draft Report, Zone 3	Daly, Michael J EPA Region I	1527

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
 26 May 93	EPA Letter to Base Concerning Review of RI/FS, Draft Report, SD-021/SD-020	Daly, Michael J EPA Region I	1528
14 Jan 94	Base Letter to EPA and NHDES Transmitting Draft Fact Sheet, Proposed Plan, Zone 4	Ditto, Arthur L AFBCA/OL-A	1529
18 Mar 94	Base Letter to SCOPE Transmitting Draft Proposed Plan, Zone 2	Ditto, Arthur L AFBCA/OL-A	1530
23 Mar 94	Base Letter to SCOPE Transmitting SVE Treatability Study, FT-008 and Technical Impracticability Evaluation, ST-030	Ditto, Arthur L AFBCA/OL-A	1531
24 May 94	Base Memorandum for the Record Concerning Extension of Proposed Plan, Zone 4, Comment Period	Ditto, Arthur L AFBCA/OL-A	1534
13 Jul 94	Base Letter to EPA and NHDES Transmitting Draft Final Revised Community Relations Plan	Ditto, Arthur L AFBCA/OL-A	1535
13 Jul 94	Base Letter to SCOPE Transmitting Letter Report, Groundwater Extraction Assessment, ST-030/OT-024	Ditto, Arthur L AFBCA/OL-A	1536
01 Mar 95	SCOPE Letter to SCOPE Members Concerning 23 Mar 95 Meeting	Lown, Bradley M Seacoast Citizens Overseeing Pease Environment	1542
07 Mar 95	Base Letter to Newington Board of Selectmen Concerning Request for Permission to Host OT-041/Zone 2 Public Hearing in Newington Town Hall	Ditto, Arthur L AFBCA/OL-A	1543
08 Mar 95	Base Letter to SCOPE Transmitting Revised Technical Impracticability Evaluation Report, ST-030	Ditto, Arthur L AFBCA/OL-A	1544

### Pease AFB, NH - AR DOCUMENTS Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
30 Mar 95	Dynamac Letter to Base Transmitting Copies of Environmental Reporter, Vol 2, No. 1	Rigatti, Mary Jane Dynamac Corporation	1545
07 Apr 95	EPA Letter to Base Concerning GIS Maps Showing Location of Minority and Low Income Populations Within Four Miles of Base	Sanderson, Mary EPA Region I	1546
01 May 95	Base Letter to NHDES Concerning Proposed Plan Public Comment Period, Zone 3 and ST-030/OT-024	Ditto, Arthur L AFBCA/OL-A	1547
16 May 95	Base Letter to SCOPE Concerning Technical Impracticability Evaluation, ST-030	Ditto, Arthur L AFBCA/OL-A	1548
Sep 93	Fact Sheet, EPA Superfund Technical Assistance Grants	HQ USEPA	1552
4/3/02	Zone 3, 2001 Annual Report, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1579
March 2002	Zone 3, 2001 Annual Report	Montgomery Watson Harza	1580
11/04/99	Site 73, Permeable Reactive Wall Construction Report	Ditto, Arthur Lnmental, Inc. AFBCA/DA Pease	1581
10/99	Site 73, Permeable Reactive Wall Technology Demonstration; Construction Report, Vol I	Bechtel Environmental, Inc.	1582
10/99	Site 73, Permeable ReactiveWall Technology Demonstration; Construction Report, Volume II	Bechtel Environmental, Inc.	1583
12/14/99	Zone 3; Site 65 Closure	Ditto, Arthur L AFBCA/DA Pease	1584
12/16/99	Pease AFB, Site 65, (Building 213), No Further Action/Site Closure	Hilton, Scott AFBCA/DA Pease	1585

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
12/22/99	Zone 3; Site 65 Closure, Pease AFB, NH	Daly, Michael J EPA Region I	1586
08/02/02	Site 73,Permeable Reactive Wall Construction Work Plan	Ditto, Arthur L AFBCA/DA Pease	1587
08/99	Site 73, Permeable Reactive Wall Construction Work Plan	Bechtel Environmental, Inc.	1588
02/14/00	Site 73, Permeable Reactive Wall Performance Monitoring Status Report	Ditto, Arthur L AFBCA/DA Pease	1589
02/07/00	Site 73, Permeable Reactive Wall Performance Monitoring Status Report	Bechtel Environmental, Inc.	1590
02/28/00	Site 73, PRW Performance Monitoring Status Report, Revised Table 4	Ditto, Arthur L AFBCA/DA Pease	1591
05/23/00	Site 73, Permeable Reactive Wall, Performance Monitoring Status Report	Ditto, Arthur L AFBCA/DA Pease	1592
05/00	Site 73, Permeable Reactive Wall, Technology Demonstration, Second Quarterly Status Report	Bechtel Environmental, Inc.	1593
06/13/00	Site 73, Permeable Reactive Wall, 2nd Quarter Performance Monitoring Status Report, Follow-on Sampling Results	Ditto, Arthur L AFBCA/DA Pease	1594
08/02/00	Site 73, Permeable Reactive Wall, Performance Monitoring Status Report	Ditto, Arthur L AFBCA/DA Pease	1595
07/00	Site 73, Permeable Reactive Wall Technology Demonstration, 3rd Quarterly Status Report	Bechtel Environmental, Inc.	1596
07/17/00	Site 73, Long Term Monitoring Plan Development	Ditto, Arthur L AFBCA/DA Pease	1597

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
07/13/00	Technical Memorandum for the Investigation of the Downgradient Portion of the Site 73 Chlorinated Solvent Plume at the Pease AFB	Bechtel Environmental, Inc.	1598
01/09/01	Draft Site 73 Technology Evaluation Report	Strainge, David AFBCA/DA Pease	1599
01/01	Site 73, Permeable Reactive Wall Technology Demonstration Technology Evaluation Report	Bechtel Environmental, Inc.	1600
03/14/01	Site 73, Long-Term Monitoring Plan, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1601
03/01	Site 73, Long-Term Monitoring Plan	Bechtel Environmental, Inc.	1602
06/18/01	Site 73, Draft Long-Term Monitoring Plan, Pease AFB, NH	Daly, Michael J EPA Region I	1603
08/08/01	Site 73, Interim Sampling and Analysis Plan, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1604
08/29/01	Pease AFB: Site 73 Draft Interim SAP	Daly, Michael J EPA Region I	1605
09/20/01	Site 73, Performance Sampling and Analysis Plan, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1606
02/22/02	Site 73 2001 Status Report and Revised Draft Long-Term Monitoring Plan, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1607
02/02	Site 73 2001 Status Report and Revised Draft Long-Term Monitoring Plan	Montgomery Watson Harza	1608
10/21/99	Site 46, Preliminary Draft Final Engineering Evaluation/Cost Analysis, Pease AFB, NH	Daly, Michael J EPA Region I	1609

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
10/26/99	Pease AFB, Site 49 Engineering Cost Evaluation/Cost Analysis Report, Preliminary Draft Final, October 1999	Hilton, Scott New Hampshire Department of Environmental Services	1610
11/04/99	Site 49, Supplemental Fieldwork Pease AFB, NH	Daly, Michael J EPA Region I	1611
11/04/99	Pease AFB, Site 49 Draft Work Plans	Hilton, Scott New Hampshire Department of Environmental Services	1612
11/17/99	Site 49, Draft Final Engineering Evaluation/Cost Analysis Report	Ditto, Arthur L AFBCA/DA Pease	1613
11/17/99	Site 49, Engineering Evaluation/Cost Analysis Report	TN & Associates, Inc.	1614
11/17/99	Pease AFB, Site 49 Engineering Evaluation/Cost Analysis Report, Draft Final, November 1999	Hilton, Scott New Hampshire Department of Environmental Services	1615
12/03/99	Site 49, Draft Fact Sheet and Newspaper Announcement	Ditto, Arthur L AFBCA/DA Pease	1616
11/99	Proposed Action for Site 49, Pease AFB, NH	Bechtel Environmental, Inc.	1617
01/08/00	Public Comment Period Announcement	Foster's Daily Democrat Portsmouth Herald	1618
01/27/00	Site 49, Draft Action Memorandum	Ditto, Arthur L AFBCA/DA Pease	1619
02/24/00	Site 49, Technical Memorandum, Supplemental Site Characterization	Ditto, Arthur L AFBCA/DA Pease	1620
02/00	Site 49, Technical Memorandum Supplemental Site Characterization	Versar, Inc.	1621

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
02/28/00	Site 49, Draft Final Action Memorandum	Ditto, Arthur L AFBCA/DA Pease	1622
02/29/00	Review of the Draft Final Action Memorandum for a Non-Time Critical removal Action at Site 49, Pease AFB, NH	Daly, Michael J EPA Region I	1623
02/29/00	Pease AFB Site 49, Draft Final Action Memorandum	Hilton, Scott New Hampshire Department of Environmental Services	1624
03/03/00	Site 49, Action Memorandum	Ditto, Arthur L AFBCA/DA Pease	1625
02/00	Site 49, Action Memorandum for a Non-Time Critical Removal Action	TN & Associates, Inc.	1626
06/16/00	IRP Site 49, Remedial Action Decision, Consensus Statement	AFBCA/DA Pease	1627
08/27/99	Zone 3, 1998 Annual Report	Ditto, Arthur L AFBCA/DA Pease	1628
08/99	Zone 3, 1998 Annual Report	Bechtel Environmental, Inc.	1629
09/16/99	Zone 3 Revised Long Term Monitoring Plan, Draft Final	Ditto, Arthur L AFBCA/DA Pease	1630
09/99	Zone 3, Revised Long Term Monitoring Plan	Bechtel Environmental, Inc.	1631
01/14/00	IRP Zone 3, Operating Properly and Successfully Approval Request	Ditto, Arthur L AFBCA/DA Pease	1632
01/00	Zone 3, Demonstration of Remedial Action Operating Properly and Successfully	Bechtel Environmental, Inc.	1633

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
04/18/00	Zone 3 Groundwater Model	Ditto, Arthur L AFBCA/DA Pease	1634
04/00	Zone 3, Groundwater Model Update	Bechtel Environmental, Inc.	1635
04/24/00	Pease AFB, Zone 3 Groundwater Model Update Report	Hilton, Scott New Hampshire Department of Environmental Services	1636
04/26/00	Pease AFB, Site 34/39 Treatability Study	Hilton, Scott New Hampshire Department of Environmental Services	1637
05/12/00	Zone 3, Groundwater Model	Ditto, Arthur L AFBCA/DA Pease	1638
06/14/00	Zone 3, Optimization Evaluation	Ditto, Arthur L AFBCA/DA Pease	1639
06/00	Zone 3, Optimization Evaluation	Bechtel Environmental, Inc.	1640
06/21/00	DO#0047-Addendum to Groundwater Model Update Report of April 2000	Cange, Jeffrey B Bechtel Environmental, Inc.	1641
07/06/00	Zone 3, Groundwater Model	Ditto, Arthur L AFBCA/DA Pease	1642
09/26/00	Zone 3, Meeting Minutes, August 16,2000	Forbes, Peter AFBCA/DA Pease	1643
09/29/00	Zone 3 Annual Report, September 2000	Forbes, Peter AFBCA/DA Pease	1644
09/00	Zone 3, 1999 Annual Report	Bechtel Environmental, Inc.	1645
01/05/01	Zone 3 Status Report, May-October 2000	Forbes, Peter AFBCA/DA Pease	1646

# Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
01/05/01	Zone 3, Status Report, May-October 2000	Bechtel Environmental, Inc.	1647
02/12/01	Zone 3, Status Report, May-October 2000	Hilton, Scott New Hampshire Department of Environmental Services	1648
02/21/01	Zone 3, OPS Demonstration	Daly, Michael J EPA Region I	1649
02/22/01	Zone 3, Status Report, May-October 2000	Daly, Michael J EPA Region I	1650
04/17/01	Zone 3, 2000 Annual Report	Forbes, Peter AFBCA/DA Pease	1651
04/01	Zone 3, 2000 Annual Report	Bechtel Environmental, Inc.	1652
06/21/01	Zone 3, 2000 Annual Report, Pease AFB, NH	Daly, Michael J EPA Region I	1653
07/30/01	US EPA Letter dated 21 Feb 01; Zone 3 OPS Demonstration	Strainge, David AFBCA/DA Pease	1654
08/10/01	Air Force Letter dated 30 July 01; Zone 3 CERCLA OPS Demonstration	Hilton, Scott New Hampshire Department of Environmental Services	1655
08/10/01	Air Force Letter dated 30 July 01; Zone 3 CERCLA OPS Determination	Daly, Michael J EPA Region I	1656
08/20/01	EPA/DES 10 August Letter(s)	Strainge, David AFBCA/DA Pease	1657
08/24/01	DES and EPA Letters, 10 Aug 01, Dispute Resolution	Strainge, David AFBCA/DA Pease	1658

## Sorted by: Zone 3, Site 49, Site 65, Site 73

DOC. DATE	SUBJECT OR TITLE	AUTHOR or CORP. AUTHOR	FILE NUMBER
09/07/01	Pease AFB, FLRS Remedial Action Plan	Hilton, Scott New Hampshire Department of Environmental Services	1659
10/03/01	Minutes 28 Aug 01, Pease BCT, Informal Dispute Resolution	Strainge, David AFBCA/DA Pease	1660
10/24/01	Zone 3, Annual Report	Forbes, Peter AFBCA/DA Pease	1661
02/15/02	Site 39, Investigation Report, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1662
02/02	Site 39, Groundwater Investigation Report	Montgomery Watson Harza	1663
04/03/02	Zone 3, 2001 Annual Report, Pease AFB, NH	Forbes, Peter AFBCA/DA Pease	1664
03/02	Zone 3, 2001 Annual Report	Montgomery Watson Harza	1665

# APPENDIX B FIGURES





Source: 7.5 minute U.S.G.S. quadrangle of Portsmouth, NH-ME; dated 1956 and revised 1993.

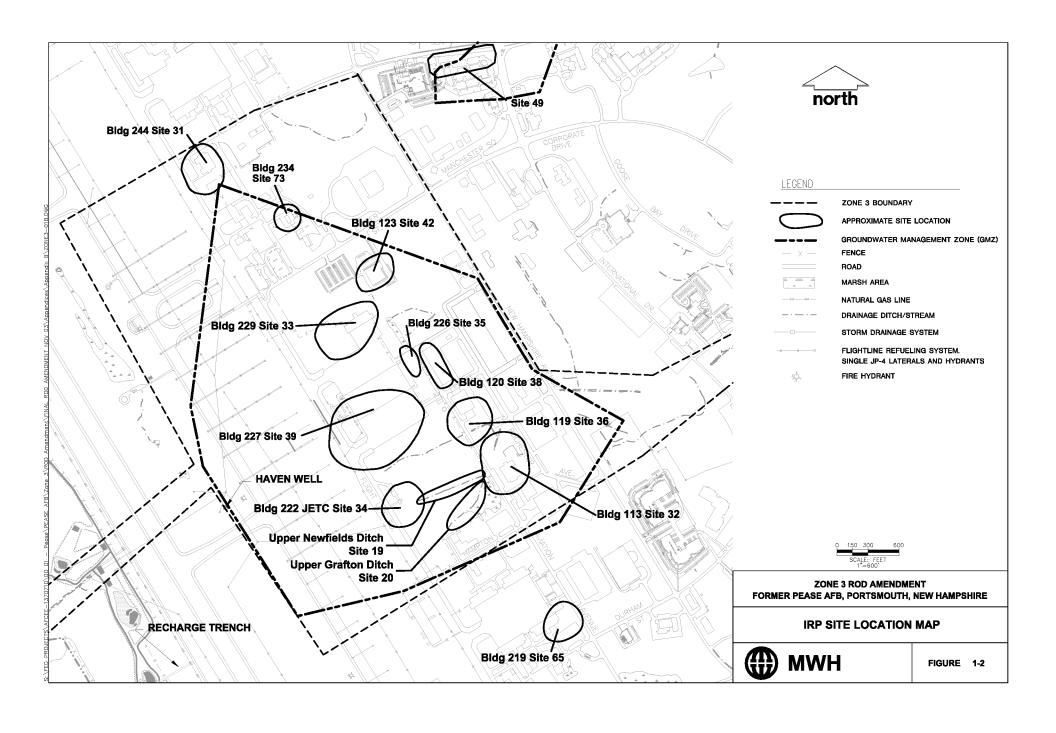


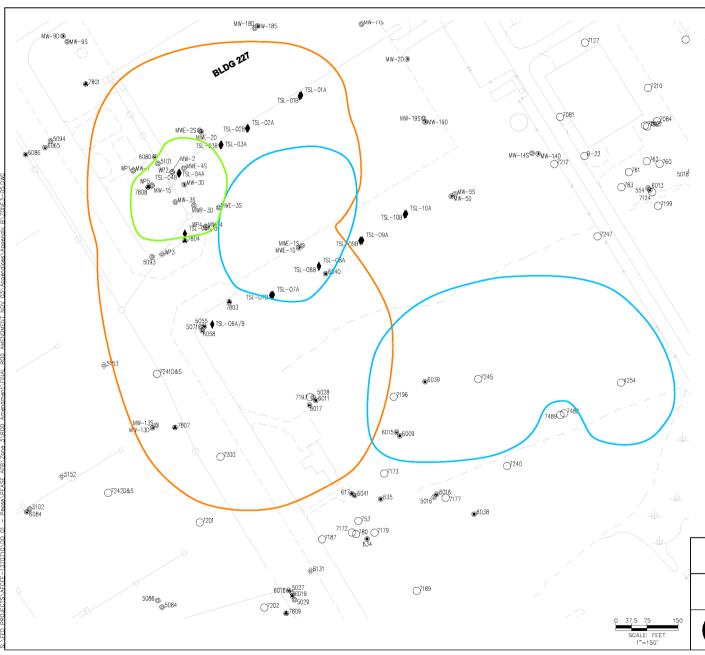
**ZONE 3 ROD AMENDMENT** FORMER PEASE AFB, PORTSMOUTH, NEW HAMPSHIRE

SITE LOCATION MAP



FIGURE 1-1







#### LEGEND

- OVERBURDEN WELL (US)
- DEEP OVERBURDEN WELL (LS)
- O PIEZOMETER
- SHALLOW BEDROCK WELL (SBR)
- DEEP BEDROCK WELL (BR)
- HYDROPUNCH WELL
- ♦ 2001 TEMPORARY SAMPLING LOCATION

DRAINAGE DITCH



SHALLOW OVERBURDEN AREA EXCEEDING CLEAN UP GOALS FOR 1,2-DCE, TCE, TRANS-1,2-DCE OR VINYL CHLORIDE



DEEP OVERBURDEN AREA EXCEEDING CLEAN UP GOALS FOR 1,2-DCE, TCE, TRANS-1,2-DCE OR VINYL CHLORIDE



SHALLOW BEDROCK AREA EXCEEDING CLEAN UP GOALS FOR 1,2-DCE, TCE, TRANS-1,2-DCE OR VINYL CHLORIDE

GROUNDWATER CLEA	ANUP GOALS
ANALYTE	GOAL (µg/L)
TRICHLOROETHENE (TCE) cis-1,2-DICHLOROETHENE (DCE)	5 70
trans-1,2-DICHLOROETHENE	100
VINYL CHLORIDE	2

NOTES:

- 1. ALL AREAS ARE APPROXIMATE.
- AREAS BASED UPON SUMMER 2001 INVESTIGATION SAMPLING RESULTS.

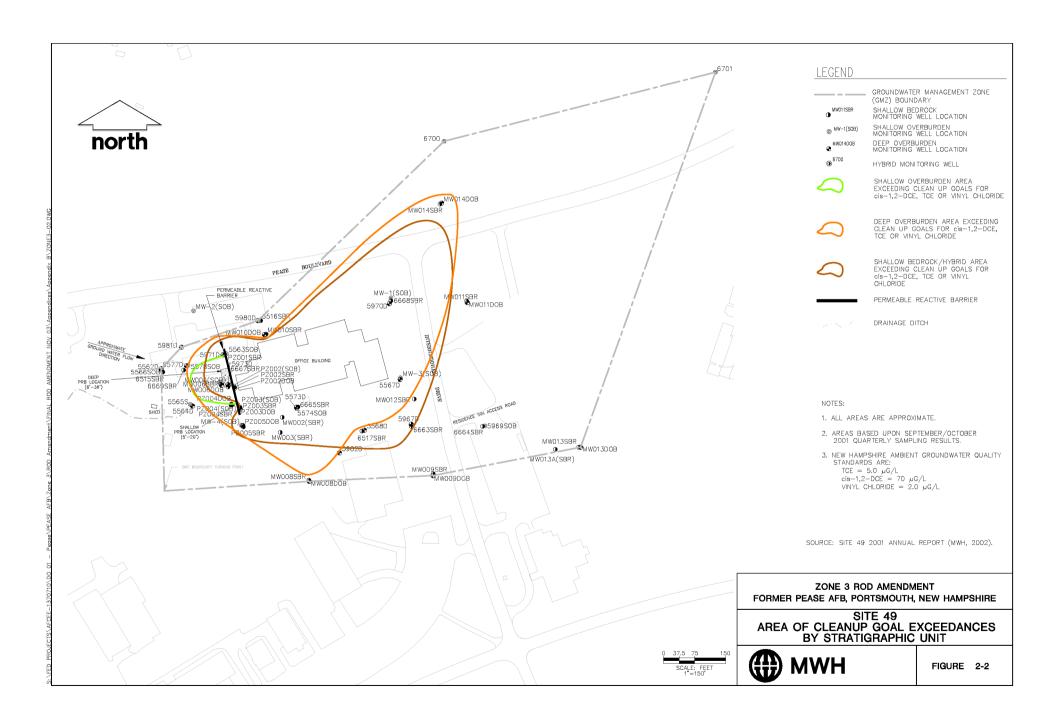
SOURCE: SITE 39 2001 GROUNDWATER INVESTIGATION REPORT (MWH, 2002).

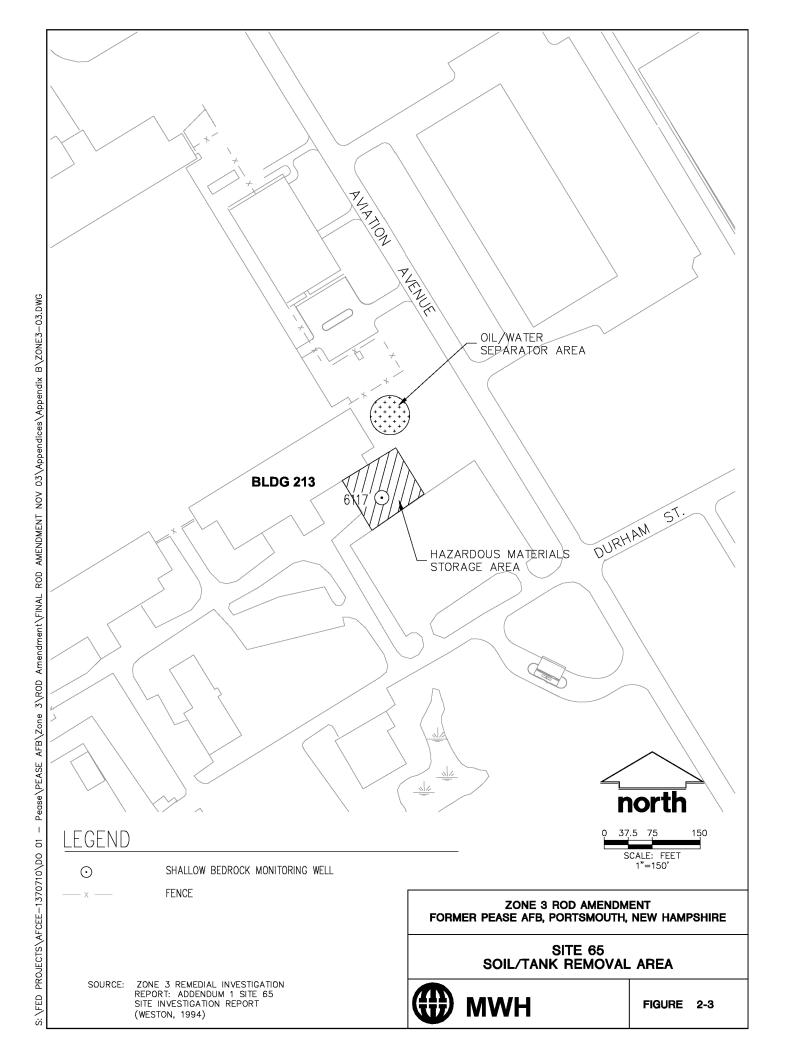
ZONE 3 ROD AMENDMENT FORMER PEASE AFB, PORTSMOUTH, NEW HAMPSHIRE

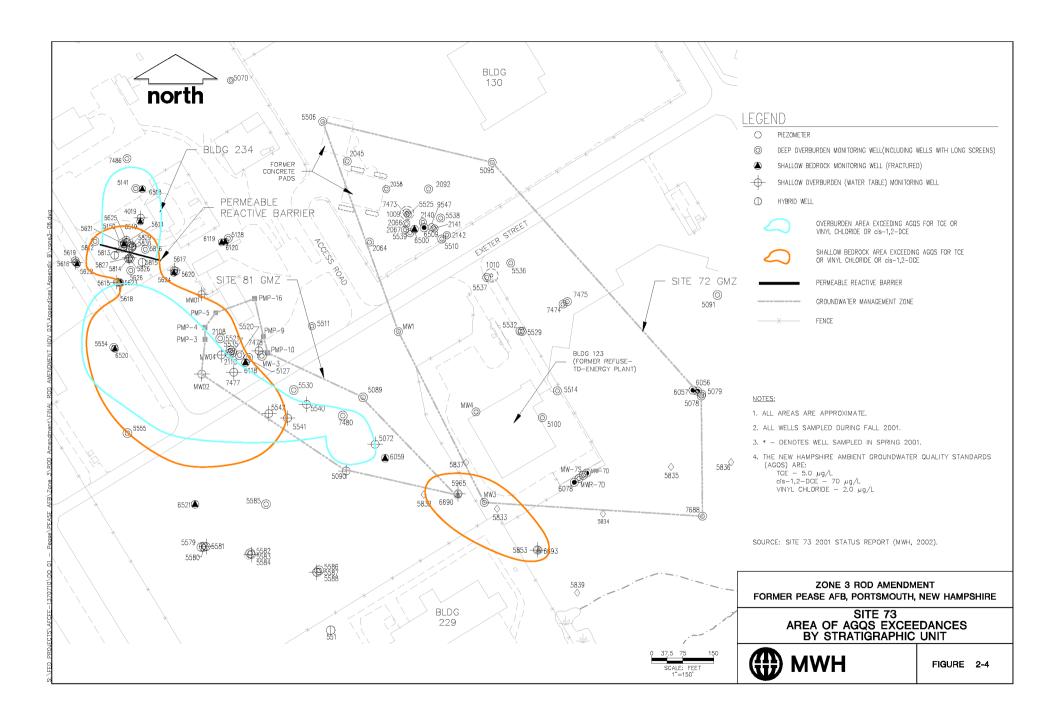
SITE 39
AREA OF CLEANUP GOAL EXCEEDANCES
BY STRATIGRAPHIC UNIT

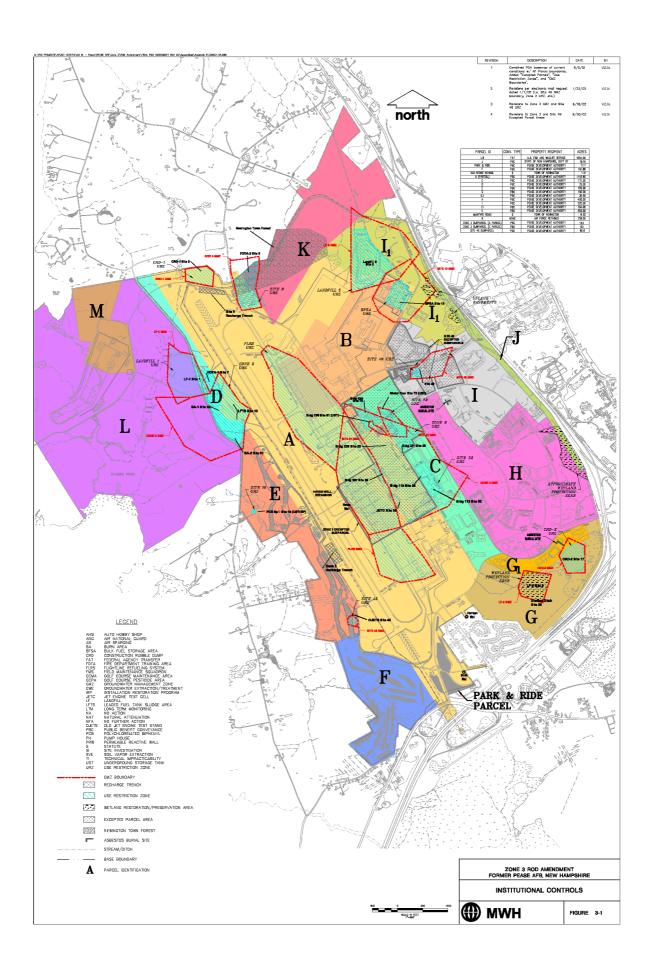


FIGURE 2-1









# APPENDIX C PUBLIC MEETING TRANSCRIPT

#### UNITED STATES AIR FORCE

PEASE AIR FORCE BASE

PORTSMOUTH, NEW HAMPSHIRE

### PROPOSED PLAN TO AMEND RECORD OF DECISION

FOR ZONE 3

#### PUBLIC COMMENTS

DATE:

June 6, 2002

PLACE:

Portsmouth City Hall

PRESENT:

Mr. Peter Forbes, AFBCA Project Manager

Mr. David Strainge, Environmental Coordinator

Mr. Michael Daley, USEPA Mr. Scott Hilton, DES

**REGINA MURTAGH** 

CERTIFIED SHORTHAND REPORTER

795 OCEAN BLVD. RYE, N.H. 03870

(603) 433-1924

brought on line they had some operational problems
with the water quality, it was brought down and met
the drinking water standards. And so with the years
passed, the ten years, the well is within the
drinking water standard.

MR. BROGAN: My understanding it wasn't
zero, there was some residual?

MR. STRAINGE: Most of the time we were

below the text, I don't want to say we never got protection, very very low based on the data.

MR. FORBES: Well, if there aren't any

other questions we're going to take a short little break before we begin the public hearing portion of tonight. I can speak to someone informally after the presentation, after the hearing, if you feel more comfortable with that kind of interaction, I will be available for anyone who wants to speak.

(A break was taken from 7:35 to 7:45 p.m.)

#### PUBLIC HEARING

MR. FORBES: If we can reconvene.

MR. STRAINGE: This is the part of the meeting where we always get real formal. We have

set rules that we have to live by so please forgive us for appearing uptight at this point.

T

MR. FORBES: Welcome to this public hearing to receive comments on the proposed plans to amend the Record of Decision for Zone 3 at Pease Air Force Base. Today's date is June 6, 2002. My name is Peter Forbes. I am one of the Air Force Base Conversion Agency's project managers for the installation, restoration program at Pease.

Joining me tonight are Scott Hilton,

New Hampshire Department of Environment Services,

Michael Daley, U.S. Environmental Protection Agency,
and David Strainge, the Air Force Base Conversion

Agency. They are assisting me tonight in receiving
your comments. This hearing is being held in
accordance with the provisions of the Comprehensive
Environmental Response, Compensation Liability Act,
CERCLA, as amended in 1986, also known as Super

Fund. This act requires federal facilities on the
national priorities list to present clean-up
proposals to the local communities for comment
consideration before the final clean-up decision is
made. The purpose of this hearing is to receive

comments on the proposed plan to amend the Record of Decision for Zone 3.

Regina Murtagh is present here to record the proceedings. The verbatim record that she is preparing will become part of the decision. She will be able to make this record if she is able to hear you and understand you. So if you would please, when it is your opportunity to make a comment, come forward, state your name and address, and speak slowly and clearly to present us with your comments.

Are there any individuals who wish to make a comment at this time? All right.

MR. ALLEN: My name is David Allen, I am with the City of Portsmouth. And as the operator of the water system we'd like to be closely involved in any design of a treatment system that's going to go in here. And we'd also like to have an understanding of who would be responsible for operational costs of that system once it does go. into place.

MR. FORBES: Thank you, David. Are there any other comments or questions which you may

have?

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MR. BROGAN: I'm Doug Brogan, 404 Pleasant Street, Portsmouth. I am also the New Hampshire Program Director for Clean Water Action. I just wanted to say that I think it's really important that we do all we can to protect our water supply in the Seacoast. As I understand it the aquifer that underlies Pease Air Base, the Tradeport now, the former Air Base, is the largest aquifer in the Seacoast region. And it is very important that it continue to be protected for the future. whatever can be done by the Air Force to remediate the existing contamination, prevent transport of these contaminants towards the major existing well, the Haven Well, that's to the good. I think I'll reserve further comments for perhaps written comments later on.

MR. FORBES: Thank you. Well, if there are no further comments, it's 8:00 p.m., June 6, 2002, and I declare this public hearing closed. You still have an opportunity to present written comments until June 24th. I welcome that input. Every comment will be considered in the final

#### THE STATE OF NEW HAMPSHIRE

ROCKINGHAM COUNTY

I, Regina Murtagh, a certified shorthand reporter in and for the State of New Hampshire, do hereby certify that the foregoing 13 pages contain a full, true and correct transcript of all the comments presented at the meeting of the PROPOSED PLAN TO AMEND THE RECORD OF DECISION FOR ZONE 3 AT THE FORMER PEASE AIR FORCE BASE, NEW HAMPSHIRE, to the best of my knowledge and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 12th day of June, 2002.

<u>Gegnia Mustaek</u> Regina Murtagh, C.S.R.

# APPENDIX D RESPONSIVENESS SUMMARY

#### APPENDIX D

#### **RESPONSIVENESS SUMMARY**

#### D.1 OVERVIEW

The Air Force issued the *Proposed Plan to Amend the Record of Decision for Zone 3 at the former Pease Air Force Base, New Hampshire (Proposed Plan)* during May 2002. In the *Proposed Plan,* the Air Force identified proposed modifications to the 1995 *Record of Decision (ROD) for Zone 3.* 

The Air Force has complied with the public participation requirements of 40 CFR 300.435(c)(2)(ii). Copies of the *Proposed Plan* were mailed to all individuals on the Pease AFB mailing list at the beginning of the public comment period (May 24, 2002 through June 24, 2002). Public notice of the availability of the *Proposed Plan* was placed in *Foster's Daily Democrat* and the *Portsmouth Herald* on May 23, 2002 and May 26, 2002. The public notices also announced the Public Meeting, which was held at Portsmouth City Hall on June 6, 2002.

At the public meeting, the Air Force requested verbal and written comments on the proposed modifications to the 1995 *ROD for Zone 3*. The comments that were received, and the Air Force's responses to those comments, are summarized below.

# D.2 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AIR FORCE RESPONSES

This responsiveness summary addresses comments received by the Air Force during the public comment period from May 24 to June 24, 2002, relative to the *Proposed Plan*. Comments included those received verbally during the public meeting and a letter received during the public comment period. The comments are summarized below, followed by the Air Force responses.

1. <u>Comment</u>: One commenter indicated that the City of Portsmouth would like to be closely involved in the design of a treatment system to be installed.

<u>Air Force Response</u>: The Air Force intends to work closely with the City of Portsmouth during all phases of the treatment system design and construction. The City of Portsmouth will have the opportunity to review all design submittals.

2. <u>Comment</u>: One commenter stated that the City of Portsmouth would like to have an understanding of who would be responsible for operational costs of the treatement system once it is in place.

<u>Air Force Response</u>: The Air Force will work with the City of Portsmouth to determine the most effective method to manage water extraction from the Haven well as well as develop a mutually acceptable plan for the maintainence and operation of the treatment system.

3. <u>Comment</u>: One commenter stated that he thought it was really important to do all that was possible to protect the water supply in the Seacoast. He further stated that it was his understanding that the aquifer that underlies Pease Air Force Base is the largest aquifer in the Seacoast region and it is important that it be protected. Whatever could be done by the Air Force to remediate the existing contamination, and prevent transport of contaminants to the Haven well would be a positive action.

<u>Air Force Response</u>: The modified remedy as described in the *Proposed Plan to Amend the Zone 3 ROD* is intended to prevent exposure to groundwater contamination by minimizing plume migration toward the Haven well and to restore the aquifer within a reasonable timeframe.

4. <u>Comment:</u> One commenter stated that it was his understanding that the goals of the Zone 3 remedial systems were to restore the aquifer to drinking water

standards and prevent migration of contaminants to the Haven well. He also stated that if migration was found to occur, or if contaminants impacted the well, the Air Force would design and construct a wellhead treatment system.

Air Force Response: The Air Force would like to clarify statements made by the commenter. Remedial goals described by the *Proposed Plan to Amend the Zone 3 ROD* include prevention of exposure to contaminated groundwater and restoration of the aquifer to drinking water standards. The revised remedy will shift from preventing plume migration to minimizing plume migration. Some plume migration through the bedrock may occur as the Haven well pumping rates increase to meet the potential increases in demand. In order to prevent exposure to contaminated groundwater, a treatment system will be designed and constructed. Construction is estimated to be complete by the end of 2004.

5. <u>Comment</u>: One commenter requested that the Air Force consider the City of Portsmouth's recommendations regarding operation of the Haven well and design of the wellhead treatment system. The commenter requested that the Air Force's proposal consider all costs associated with the wellhead treatment system, including capital costs and operations and maintenance. The commenter also requested that the City be allowed to review and comment upon design documents for the wellhead treatment system.

Response: See the Air Force response to comments 1 and 2 above.

6. <u>Comment</u>: A commenter indicated that his understanding of the Zone 3 remedial systems was that they were designed to contain contaminant plumes, preventing migration toward the Haven well. He indicated concern with the reliability of the proposed system and the potential for plume migration.

<u>Air Force Response</u>: Under the original remedy, as set forth in the 1995 *Zone 3 Record of Decision*, contaminant plume migration was controlled through a combination of source area groundwater extraction and limited use of the Haven

well. Under the proposed modifications to the remedy, extraction from the Site 39 source area will be optimized to enhance restoration of the aquifer. The optimized source area pumping system will increase contaminant removal rates and exert hydraulic control on the plume in the lower overburden and shallow bedrock emanating from Site 39, such that it does not threaten the Haven well.

7. <u>Comment</u>: A commenter expressed concern with the ability of the monitoring well network to detect contaminant migration toward the well and provide early warning of contaminant migration. The commenter also expressed concern that if contamination was not detected until after it entered the distribution system, considerable liability and damage to public confidence in the system could result.

Response: The Air Force acknowledges and shares the commenter's concern with potential impacts to the Haven well that may result from increased water production. In order to avoid exposure to contaminated water, the long-term monitoring plans for Zone 3 and the flightline area will be revised to provide early warning of potential plume migration to the Haven well. If contaminants are detected at any of the early warning wells, more frequent monitoring at a larger number of locations will be triggered. An extra measure of safety is provided by setting threshold values for initiating the treatment system less than water quality standards.

# APPENDIX E NEW HAMPSHIRE LETTER OF CONCURRENCE

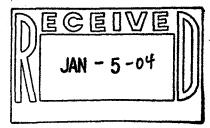


# State of New Hampshire DEPARTMENT OF ENVIRONMENTAL SERVICES

6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095 (603) 271-2900 FAX (603) 271-2456



December 19, 2003



Albert F. Lowas, Jr.
Director
Air Force Real Property Agency
1700 North Moore Street, Suite 2300
Arlington, VA 22209-2802

RE: Pease AFB, Amendment to the Zone 3 Record of Decision.

SUBJECT: Declaration of Concurrence

Dear Mr. Lowas:

The New Hampshire Department of Environmental Services (Department) has reviewed the Amendment to the Zone 3 Record of Decision (Amendment), dated December 2003, for the Pease AFB Superfund Site in Portsmouth, New Hampshire. The United States Air Force (Air Force) prepared the Amendment in accordance with the provisions of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986 (collectively, CERCLA). The Zone 3 ROD Amendment addresses the remedial actions necessary under CERCLA to manage potential threats to human health and the environment in Zone 3.

#### Overview of the 1995 Zone 3 ROD and Justification for Amendment

On September 26, 1995, the Air Force and United States Environmental Protection Agency (EPA), with concurrence from the Department, and in accordance with CERCLA, issued the Record Of Decision (ROD) for Zone 3 at the Pease AFB site. The 1995 Zone 3 ROD addressed both source control and management of migration measures to reduce potential human health and environmental risks identified in the Zone 3 Remedial Investigation/Feasibility Study (RI/FS). Source control activities involved the remediation of contaminated soil and sediments at Site 19 (Upper Newfields Ditch), Site 20 (Upper Grafton Ditch), Site 33 (Building 229), Site 38 (Building 120), and Site 39 (Building 227). Management of contaminated groundwater was required at Site 34 (Building 222), Site 35 (Building 226) and Site 39 (Building 227). The Amendment addresses only those remedial actions associated with the management of contaminated groundwater at Sites 34 and 39. The Amendment also documents the remediation and actions taken at Sites 73, 49 and 65, sites not included in the 1995 Zone 3 ROD.

Letter to Mr. Albert Lowas Re: Pease AFB Zone 3 ROD Amendment - Declaration of Concurrence December 19, 2003 Page 2 of 5

Remedial actions taken under the 1995 Zone 3 ROD to address Site 39 and Site 34 were designed to protect the Haven water supply well while also restoring groundwater quality in both the bedrock and overburden aquifers in a time frame consistent with CERCLA, and the National Contingency Plan (NCP). The Haven well is the main water supply well for the Pease International Tradeport and is an important State resource. The source area remedial actions at Site 39 consisted of a limited soil removal action and the installation of a source area groundwater pump and treat system to remove contaminant mass from the remaining source areas under Building 227 and other locations near the building. At Site 34 the source area soils were removed through a comprehensive soil excavation and removal action. The groundwater management remedial action consisted of a high volume groundwater extraction system installed between the Haven well and Sites 34 and 39 to intercept and contain groundwater contamination before it reached the Haven well (known as Site 34/39 groundwater containment system). The 1995 Zone 3 ROD also placed pumping limitations of 300 gallons per minute (gpm) on the Haven well to prevent higher pumping from interfering with the Site 34/39 groundwater containment system.

Since the Site 34 and 39 remedies were implemented, long-term monitoring data have been collected to evaluate the progress towards restoration of the overburden and bedrock aquifers and performance of the Site 34/39 groundwater containment system. The groundwater analytical data indicates that chemical-specific Applicable or Relevant and Appropriate Requirements (ARARs) have been met at Site 34 and groundwater containment measures for this site are no longer required. However at Site 39, both bedrock and overburden groundwater contaminant plumes are still present. Groundwater models, recalibrated using updated data, indicated that the groundwater containment system would not contain contamination from Site 39 when the Haven well is pumped at 300 gpm. Therefore, it was determined that modification of the Zone 3 remedy was needed to achieve Zone 3 Remedial Action Objectives (RAO's).

A key consideration in selecting a revised remedy required the examination of future water demand from the Haven well. While water demand from the Haven well is currently 100 to 200 gpm, future estimates for water demand predict the Haven well would need to be pumped at rates greater than 300 gpm. The maximum safe yield that can be extracted from the Haven well has been estimated in the range of 500 gpm and it is anticipated that future water demand will require the Haven well to be pumped at this level. Increased usage of the Haven well may occur before Site 39 overburden and bedrock groundwater is restored to Zone 3 ROD groundwater restoration goals. The amended remedy allows full utilization of the Haven well should an increase in demand occur before restoration of contaminated groundwater at Site 39 is achieved.

#### The Zone 3 ROD Amendment

As long-term water demand from the Haven well increases, greater potential exists for groundwater contamination to migrate and threaten water quality at the well. The Amendment

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addresses changes to the 1995 Zone 3 ROD to improve the long-term effectiveness of the groundwater restoration component of the Site 39 remedy while ensuring that water quality from the Haven well is maintained under increased demand. The Amendment accomplishes these objectives by focusing on optimization of the Site 39 source area groundwater extraction remedy and provision of contingency wellhead treatment to address uncertainties associated with contaminant migration pathways in the bedrock aquifer that could potentially threaten groundwater quality at the Haven well.

Low volume groundwater extraction from the overburden and fractured bedrock in the vicinity of the Site 39 source area would achieve greater source removal and hydraulic contaminant of the source area. The previous high volume Site 34/39 groundwater containment system under the 1995 Zone 3 ROD will no longer be required when groundwater extraction efforts at the Site 39 source area are optimized to provide plume control. Contingency wellhead treatment would address uncertainties associated with contaminant migration pathways in the bedrock aquifer that could threaten the Haven well. To achieve these objectives and assure the long-term effectiveness and permanence of the Zone 3 remedy in achieving groundwater RAOs, the amended remedy replaces the current groundwater extraction activities with the following major activities:

- \* Design and construction of a contingency wellhead treatment system for the Haven well;
- \* Optimization of the Site 39 source area groundwater extraction system to enhance source removal and exert hydraulic containment. Monitored natural attenuation of the dissolved-phase groundwater plume down-gradient of Site 39;
- \* Termination of the current Site 34/39 groundwater containment system upon optimization of the Site 39 source area groundwater extraction system.
- \* Modification of the Zone 3 long-term monitoring program to evaluate performance of the amended remedy and establish a decision framework for activating the wellhead treatment system.
- \* Implementation of land use controls that protect human receptors from exposure to contaminants in soils and groundwater at sites in Zone 3 and at Site 49.

The Amendment will also serve to document response actions that have been implemented at three sites since the 1995 Zone 3 ROD was finalized. The three sites include Site 49 (former Building 22), Site 65 (Building 213), and Site 73 (Building 234). Of these sites, Site 49 was not identified and Sites 65 and 73 were under investigation at the time the 1995 Zone 3 ROD was issued. These sites are being added to the Amendment to formally document the implemented remedies for these sites in accordance with CERCLA and the NCP. The following actions have been taken at these sites:

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#### Site 73

- In-situ groundwater treatment with a zero valent iron Permeable Reactive Barrier (PRB);
- Monitored natural attenuation of the groundwater contaminant plume down-gradient of the PRB; and
- Implementation of a long-term performance monitoring plan.

#### Site 49

- In-situ groundwater treatment with a zero valent iron PRB;
- Monitored natural attenuation of the groundwater contaminant plume down-gradient of the PRB;
- Implementation of a long-term performance monitoring plan; and
- Establishment of a Groundwater Management Zone (GMZ) in accordance with New Hampshire regulations.

#### <u>Site 65</u>

No further action.

#### State Concurrence

The Department, in reviewing the Zone 3 ROD Amendment, has determined that the amended remedy is consistent with the Department's requirements for a remedial action plan and meets all of the criteria for remedial action plan approval. The amended remedy establishes remedial actions that will remove, treat or contain the contamination source to prevent the additional release of contaminants to groundwater, surface water and soil, and eliminates the health hazard associated with direct exposure to the contaminant source. The selected remedy will also contain contaminated groundwater within the limits of a Groundwater Management Zone and restore groundwater quality to meet the State's Ambient Groundwater Quality Standards. The proposed remedial actions will provide protection of human health and the environment. Therefore, the Department, acting on behalf of the State of New Hampshire, concurs with the selected remedy, as described in the Amendment.

Because of the dedication and partnership of the Base Clean-up Team (BCT) members from the Air Force, EPA and Department, monitoring data evaluations led to the identification of risks to human health and the environment not addressed in the previous ROD. In this case the BCT developed an amended remedy that will allow increased use of the Haven well for the benefit of the community, while improving the overall protection of human health and

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environment with no significant change in the cost of the 1995 Zone 3 ROD remedy. The ROD Amendment highlights the need for the continued team approach and vigilant evaluation of monitoring data to achieve our mutual environmental goals at the former Pease AFB. We look forward to working with the Air Force and EPA in our continued efforts to clean-up and close former Pease AFB sites.

Sincerely,

Anthony P. Giurta, P.G.

Director

Waste Management Division

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# APPENDIX F ARARS TABLE

# Appendix F APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) MODIFIED ZONE 3 REMEDY

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AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTIONS TO BE TAKEN TO ATTAIN REQUIREMENT
CHEMICAL-SP	ECIFIC			
Groundwater Federal Regulatory Requirements	Safe Drinking Water Act (SDWA)-Maximum Contaminant Levels (MCLs) (40 CFR 141.11-141.14), Revised MCLs (40 CFR 141.61-141.62) and non-zero Maximum Contaminant Level Goals (MCLGs) (40 CFR 141.50-141.51)	Applicable	MCLs have been promulgated for a number of common organic and inorganic contaminants to regulate the concentration of contaminants in public drinking water supply systems. MCLs may be considered applicable to Site groundwater that may be used for drinking water. MCLGs are non-enforceable health-based criteria to be considered for public water supply systems. MCLGs are available for several organic and inorganic contaminants.	MCLs will be attained at the Zone 3 and Site 49 GMZ boundaries. Groundwater extracted from Site 39 will be treated to attain MCLs prior to discharge. Groundwater use within the Zone 3 and Site 49 GMZs will be restricted and an appropriate monitoring program will be conducted until groundwater concentrations attain MCLs. Groundwater extracted from the Haven well will be treated, if necessary, to attain MCLs. Non-zero MCLGs are to be used as goals when MCLs have not been established. Groundwater restoration goals are presented in Section 3 of the Zone 3 ROD Amendment.
Groundwater State Regulatory Requirements	New Hampshire Groundwater Management and Groundwater Release Detection Permits Rules (Env-Wm 1403.03 through 1403.05)	Applicable	These regulations establish State AGQSs. 1403.03 requires that all groundwater of the State be suitable for drinking and not contain regulated contaminants in excess of the 1403.05 requirements, and groundwater discharge to surface water not result in violation of Surface Water Quality Standards. The 1403.05 AGQSs are derived from MCLs and health-based limits to protect quality of ambient groundwater. Exemptions from groundwater quality criteria (1403.04) include areas designated as Groundwater Management Zones (GMZs).	State AGQSs which are more stringent than relevant MCLs apply. AGQSs will be attained at the Zone 3 and Site 49 GMZ boundaries. Groundwater extracted from Site 39 will be treated to attain AGQSs prior to discharge. Groundwater use within the Zone 3 and Site 49 GMZs will be restricted and an appropriate monitoring program will be conducted until groundwater concentrations attain AGQSs. Groundwater extracted from the Haven well will be treated, if necessary, to attain AGQSs. Groundwater restoration goals are presented in Section 3 of the Zone 3 ROD Amendment.
	New Hampshire Drinking Water Quality Standards (Env-Ws 316, 317, 319)	Applicable	State MCLs and MCLGs establish maximum contaminant levels permitted in public water supplies. Secondary Maximum Contaminant Levels (SMCLs) apply to contaminants which primarily affect the aesthetic quality of drinking water. The regulations are generally equivalent to the Federal SDWA. State drinking water quality standards are applicable for Site groundwater because groundwater in Zone 3 is used as a drinking water supply.	MCLs and Ambient Groundwater Quality Standards (AGQSs) (where more stringent) are groundwater restoration goals for the selected remedy. State MCLs, non-zero MCLGs and SMCLs were employed to establish groundwater restoration levels when they were stricter than equivalent federal standards.
Groundwater Federal Regulatory Guidance	United States Environmental Protection Agency (USEPA) Risk Reference Doses (RfDs)	To be Considered	RfDs are dose levels developed by USEPA for evaluating human non-carcinogenic risk from exposure to toxic substances.	Use as guidance to characterize risk from exposure to contaminants in groundwater and to establish ground water restoration goals for contaminants without promulgated standards.
	USEPA Health Advisories, Human Health Risk Assessment Guidance and Ecological Risk Assessment Guidance	To be Considered	These guidance documents and advisories establish criteria and provide guidelines for evaluating human health and ecological risk at Comprehensive Environmental Response Compensation & Liability Act (CERCLA) sites.	The selected remedy addresses potential risk to human health and the environment based on these guidance documents and health advisories. These guidance documents and health advisories were considered when selecting groundwater restoration goals and establishing institutional controls for the selected remedy. Therefore, the selected remedy is consistent with this TBC.
	USEPA Carcinogen Assessment Group Cancer Slope Factors	To be Considered	Cancer Slope Factors (CSFs) represent the most updated information on cancer risk from USEPA's Carcinogen Assessment Group	USEPA CSFs were used as part of the Zone 3 human health risk assessment

# Appendix F APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) MODIFIED ZONE 3 REMEDY

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AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTIONS TO BE TAKEN TO ATTAIN REQUIREMENT
CHEMICAL-SP	ECIFIC (continued)			
Groundwater/ Soil State Regulatory Requirements	New Hampshire Department of Environmental Services (NHDES) Contaminated Sites Risk Characterization and Management Policy (RCMP) (January 1998)	To be Considered	The RCMP provides cleanup standards for soil and groundwater. The RCMP includes NH GW-1 (generally equivalent to AGQSs) and NH GW-2 (vapor inhalation pathway) Method 1 Risk Assessment Groundwater Standards; NH S-1, NH S-2 and NH S-3 Method 1 Risk Assessment Soil Standards; and upper concentration limits for soil. The RCMP also requires the establishment of activity and use restrictions on property to limit exposure to site contaminants that are above groundwater NH GW-1 standards and NH S-1 soil standards.	MCLs/AGQSs (equivalent to RCMP GW-1 Standards) are groundwater restoration goals for the selected remedy. These Groundwater Standards will be used to measure the effectiveness of the selected remedy. Institutional controls established as part of the selected remedy are consistent with the RCMP
ACTION-SPEC	IFIC			
Hazardous Waste Federal Regulatory Requirements	RCRA - Preparedness and Prevention (40 CFR Part 264 Subpart C)	Applicable	These standards include requirements for the safe design and operation of a facility, safety/communication/alarm equipment/systems and arrangements with local/State police/fire/emergency response/hospital organizations/personnel.	Storage of hazardous waste generated by remedial actions will comply with this ARAR if stored volume exceeds 220 pounds.
	RCRA - Use and Management of Containers (40 CFR Part 264 Subpart I)	Applicable	These regulations describe the procedures to be followed regarding the condition, compatibility of wastes with containers, inspection, containment and closure of containers of hazardous waste.	The use of hazardous waste containers as part of the selected remedy would comply with the substantive requirements of this ARAR
	RCRA - Standards applicable to Generation of Hazardous Waste (40 CFR Part 262)	Applicable	RCRA Subtitle C established standards applicable to treatment, storage, transport, and disposal of hazardous waste and the closure of hazardous waste facilities.	Treatment residues will be tested to determine whether they contain characteristic hazardous waste. If so, management of the hazardous waste would comply with substantive requirements of these regulations.
Groundwater Federal Regulatory Requirements	SDWA-MCLs (40 CFR 141.11-141.14), Revised MCLs (40 CFR 141.61- 141.62) and non-zero MCLGs (40 CFR 141.50- 141.51)	Applicable	MCLs have been promulgated for a number of common organic and inorganic contaminants to regulate the concentration of contaminants in public drinking water supply systems. MCLs are applicable for Zone 3 groundwater because groundwater in Zone 3 is used as a drinking water supply.	MCLs will be attained at the Zone 3 and Site 49 GMZ boundaries. Groundwater extracted from Site 39 will be treated to attain MCLs prior to discharge. Groundwater use within the Zone 3 and Site 49 GMZs will be restricted and an appropriate monitoring program will be conducted until groundwater concentrations attain MCLs. Groundwater extracted from the Haven well will be treated, if necessary, to attain MCLs. Non-zero MCLGs are to be used as goals when MCLs have not been established. Groundwater restoration goals are presented in Section 3 of the Zone 3 ROD Amendment
	Underground Injection Control Regulations (40 CFR Parts 144, 145, 146 and 147)	Applicable	These regulations describe standards for underground injection of hazardous wastes and other fluids. "No injection shall be authorizedif it results in the movement of fluid containing any contaminant into Underground Sources of Drinking Water."	Reinjected/reinfiltrated groundwater extracted in Zone 3 as part of the selected remedy would be treated as needed to achieve groundwater restoration goals.
Air Federal Regulatory Requirements	Clean Air Act (CAA) - National Ambient Air Quality Standards (NAAQS) Attainment Areas (40 CFR 52.21)	Relevant and Appropriate	CAA regulations establish NAAQS for carbon monoxide, lead, nitrogen dioxide, particulate matter and sulfur dioxide. Requirements related to attainment of NAAQS are applicable only to "major" sources of air emissions (i.e., >100 to 250 tons per year).	Air-emission controls would be implemented as needed for the Haven wellhead treatment system to comply with this ARAR.

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# Appendix F APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) MODIFIED ZONE 3 REMEDY

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AUTHORITY	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTIONS TO BE TAKEN TO ATTAIN REQUIREMENT			
ACTION-SPECIFIC (continued)							
Groundwater  State Regulatory Requirements	New Hampshire Groundwater Management and Groundwater Release Detection Permits Rules (Env-Wm 1403.03 through 1403.05, and 1403.08)	Applicable	These regulations establish State AGQSs. 1403.03 requires that all groundwater of the State be suitable for drinking, not contain regulated contaminants in excess of the 1403.05 requirements, and groundwater discharge to surface water not result in violation of Surface Water Quality Standards. The 1403.05 AGQSs are derived from MCLs and health-based limits to protect quality of ambient groundwater. Exemptions from groundwater quality criteria (1403.04) include areas designated as Groundwater Management Zones (GMZs). 1403.08 indicates the remedial action for a contaminated site must "remove, treat, or contain the contamination source to prevent the additional release of contaminants to groundwater, surface water and soil, and to eliminate the health hazard associated with direct exposure to the contaminant source."	The selected remedy addresses sources of groundwater contamination in Zone 3 and Site 49 and provides for the treatment Haven well water should it be necessary. Long-term groundwater monitoring would be performed as part of the selected remedy. MCLs/AGQSs would be used to help assess the performance of the selected remedy. Only AGQSs which are more stringent than relevant MCLs apply. Therefore, the selected remedy would comply with the ARAR.			
	New Hampshire Drinking Water Quality Standards (Env-Ws 316, 317, 319)	Applicable	State MCLs and MCLGs establish maximum contaminant levels permitted in public water supplies. SMCLs apply to contaminants which primarily affect the aesthetic quality of drinking water. The regulations are generally equivalent to the Federal SDWA. State drinking water quality standards are applicable for Site groundwater because groundwater in the Site vicinity is used as a drinking water supply.	Long-term groundwater monitoring would be performed under the selected remedy. MCLs/AGQSs would be used to help assess the performance of the selected remedy.			
Air State Regulatory Requirements	New Hampshire Toxic Air Pollutants (Env-A 1300)	Applicable	These regulations present Ambient Air Limits (AALs) and methods for conducting air quality/human health risk assessments. If AALs are not attained, then emission controls in the form of Reasonably Available Control Technology (RACT) or Best Available Control Technology (BACT) are required to attain AALs.	Air-emission controls would be implemented as needed to comply with this ARAR, and prevent exceedances of AALs.			
Air Federal Regulatory Guidance	Office of Solid Waste and Emergency Response (OSWER) Directive 9355.0-28, Control of Air Emissions from Air Strippers at Superfund Groundwater Sites	To be Considered	Guidance regarding use of air emission controls at CERCLA Sites.	Air-emission controls would be implemented as needed for the Haven wellhead treatment system to comply with this TBC.			