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SITE MANAGEMENT PLAN REVISION 12 NAS SOUTH WEYMOUTH MA
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TETRA TECH

Site Management Plan
Revision 12

for

Former Naval Air Station South Weymouth
Weymouth, Massachusetts

Naval Facilities Engineering Command
Mid-Atlantic

Contract Number N62470-08-D-1001
Contract Task Order WE11

August 2012

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SITE MANAGEMENT PLAN - REVISION 12

FOR

FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION - NAVY (CLEAN) CONTRACT

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ACRONYMS AND ABBREVIATIONS

ABTFSA	Abandoned Bladder Tank Fuel Storage Area
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Chemical of concern
COPC	Chemical of potential concern
CY	Cubic yard(s)
DDT	Dichlorodiphenyltrichloroethane
EBS	Environmental Baseline Survey
EFANE	Engineering Field Activity Northeast
EPA	U.S. Environmental Protection Agency
ERA	Ecological Risk Assessment
ESD	Explanation of Significant Differences
FFA	Federal Facilities Agreement
FFTA	Fire Fighting Training Area
GIS	Geographic Information System
HHRA	Human Health Risk Assessment
IR	Installation Restoration
ISCO	*in-situ* chemical oxidation
LNAPL	Light Non-Aqueous Phase Liquid
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MNA	Monitored Natural Attenuation
MWRA	Massachusetts Water Resource Authority
NACIP	Navy Assessment and Control of Installation Pollutants
NAS	Naval Air Station
NAVY	U.S. Department of Navy
NCP	National Contingency Plan
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OWS	oil-water separator
PA	Preliminary Assessment
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PDI	Pre-Design Investigation
PFC	Perfluorinated compounds
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PMO	Program Management Office
PRAP	Proposed Remedial Action Plan
PRG	Preliminary Remediation Goals
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RDA	Rubble Disposal Area
RIA	Review Item Area
RI/FS	Remedial Investigation/ Feasibility Study
ROD	Record of Decision

ACRONYMS AND ABBREVIATIONS (cont.)

RTN	Release Tracking Number
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SL	Small Landfill
SMP	Site Management Plan
SSA	Site Screening Area
SSP	Site Screening Process
STP	Sewage Treatment Plant
SVOC	Semi-volatile organic compound
TAL/TCL	Target Analyte List/Target Compound List
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TLF	Tile Leach Field
TPH	Total petroleum hydrocarbons
UST	Underground storage tank
VOC	Volatile organic compound
WGL	West Gate Landfill

1.0 INTRODUCTION

This Site Management Plan (SMP), Revision 12, for the former Naval Air Station (NAS) South Weymouth National Priorities List (NPL) site was prepared for the benefit of the NAS South Weymouth Base Closure and Realignment Act of 1990 (BRAC) Cleanup Team (BCT). The SMP serves as a management tool for planning, reviewing, and setting priorities for environmental investigative and remedial response activities conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The SMP establishes the schedule for implementation of these investigative and remedial response activities at former NAS South Weymouth in accordance with the Federal Facility Agreement (FFA) between the U.S. Environmental Protection Agency (EPA) New England Region and the U.S. Department of the Navy (Navy), effective April 7, 2000. The FFA establishes the roles and responsibilities of the Navy and the EPA in the performance of investigations and completion of necessary remedial actions at NAS South Weymouth. The EPA placed NAS South Weymouth on the NPL in 1994.

The SMP is revised annually in accordance with the FFA to adjust priorities and schedules, as additional information (including funding availability) becomes available. This revision of the SMP has been prepared by Tetra Tech, Inc. (Tetra Tech) under Contract No. N62470-08-D-1001, Contract Task Order WE11 as authorized by the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic and under the direction of the BRAC Program Management Office (PMO), Northeast.

The Installation Restoration (IR) Program at the former NAS South Weymouth is funded by the BRAC account. The SMP is appended to the FFA and sets priorities and the schedules for investigations and remedial actions required pursuant to the FFA. The FFA allows for annual adjustment in scheduled activities for reasons such as federal budgetary constraints, changes in scope, or other unanticipated events. The rationale for the sequence of future investigation and remediation activities and the estimated schedule for completion of these activities, with detailed schedules for funded activities in federal Fiscal Year 2013, are included in this revision of the SMP.

1.1 BACKGROUND

NAS South Weymouth was administratively closed on September 30, 1997 under the Defense BRAC, Public Law 101-510, as part of the BRAC Commission's 1995 Base Closure List (BRAC IV). Operational closure of the NAS South Weymouth airfield (through transfer of aircraft to other Navy facilities and personnel reduction) commenced on September 30, 1996.

As a result of the operational closure, the facility was placed in caretaker status under the supervision of Northern Division, NAVFAC, also known as Engineering Field Activity Northeast (EFANE). The facility is now under the supervision of BRAC PMO, Northeast, Philadelphia, Pennsylvania.

1.1.1 Installation Description

The Main Base of the former NAS South Weymouth installation is located approximately 15 miles southeast of Boston, Massachusetts, in Norfolk and Plymouth counties in the Towns of Weymouth, Abington, and Rockland. The Main Base encompasses approximately 1,444 acres, as shown in Figure 1-1.

The facility is located in an urban area and is partially developed although wetlands and forested areas remain. The topography is relatively flat and characterized by bedrock outcrops, wetland areas, and small stream channels. The topography has been altered and regraded throughout its operational history by the Navy during construction of the runways, taxiways, and related facilities. Portions of the Base property have been transferred to the local redevelopment authority, and are undergoing redevelopment.

1.1.2 Installation History

NAS South Weymouth originated with the Naval Expansion Act of 1940, which authorized construction of 48 non-rigid airships (blimps) to be used for coastal anti-submarine patrols. In September 1941, the Navy purchased a largely undeveloped tract of land in the Towns of Weymouth, Rockland, and Abington, Massachusetts and began construction. NAS South Weymouth was commissioned on March 1, 1942.

The immediate strategic need for NAS South Weymouth disappeared with the end of World War II. On August 8, 1945, the station was reduced to the status of a naval aviation facility and designated as an aircraft storage site. The station was deactivated in June 1949 and remained idle until early 1951 when Congress appropriated more than $5 million for the construction of runways, hangars, buildings, fuel storage areas, and other facilities at the station. A naval air development unit designed to develop and test anti-submarine and air defense equipment moved to the station in July 1953.

The station regained its status as a Naval Air Station in December 1953 when training facilities from Squantum NAS (Quincy, MA) were transferred to South Weymouth. The increased use of jet aircraft and the lack of adequate space for runway expansion precipitated the transfer of Squantum's activities to South Weymouth.

NAS South Weymouth became the home base for the blimps of Airship Early Warning Squadron One in 1954. In January 1957, the squadron's airships operated continuous radar patrols in extreme weather conditions off the New England coast, demonstrating the blimps' capacity for all-weather operations. The Navy withdrew blimps from active service in 1961, and NAS South Weymouth became solely a Naval Air Reserve facility. The buildings and structures that had supported the airship operations were demolished during the mid-1960s and replaced with facilities designed to accommodate fixed-wing aircraft.

In September 1996 aircraft from the Naval Air Reserve facility were moved to Brunswick NAS in Maine. Between 1996 and 1997, NAS South Weymouth provided facilities, ground training, and limited surface training to Marine and Naval reserve units. Administrative closure was completed in September 1997.

1.1.3 Installation Restoration Program History

The Navy conducted a Preliminary Assessment (PA) under the IR Program in March 1988. The PA consisted of a records search, site visit, and interviews with facility personnel. The PA report, prepared by Argonne National Laboratory, identified five potential hazardous waste sites based on past practices: Site 1, the West Gate Landfill (WGL); Site 2, the Rubble Disposal Area (RDA); Site 3, the Small Landfill (SL); Site 4, the Former Fire Training Area (FFTA); and Site 5, the Tile Leach Field (TLF).

The Navy completed a Site Inspection (SI), prepared by Baker Environmental, Inc., in December 1991. The SI investigated the five potential sites identified in the PA, as well as three additional sites the Navy added to the program: Site 6, the Fuel Farm; Site 7, the former Sewage Treatment Plant (STP); and Site 8, the Abandoned Bladder Tank Fuel Storage Area (ABTFSA). The SI included site walkovers; geophysical surveys; installation of monitoring wells; and laboratory analysis of soil, sediment, surface water, and groundwater samples.

The SI report identified no imminent hazards to human health or the environment due to the sites. It recommended No Further Action (NFA) for Sites 5 and 7, and that Remedial Investigation/Feasibility Studies (RI/FS) be conducted for Sites 1, 2, 3, 4, 6, and 8. In response to concerns from EPA and the State, the Navy proposed to conduct a Supplemental SI for Sites 5 and 7 during the completion of the RI. Subsequently, the Navy, EPA, and the State agreed that Site 6 (the Fuel Farm) could best be addressed in a manner consistent with provisions of the Massachusetts Contingency Plan (MCP) and, as such, Site 6 was not included in the RI.

The Navy conducted the field investigation for the Phase I RI from December 1995 through June 1996. The investigation included collection and analysis of surface water, groundwater, soil, and sediment; assessment of the nature and extent of contamination; an evaluation of the fate and transport of the

constituents of concern; and the assessment of risk to human and ecological receptors. The investigation addressed the following seven IR sites:

1. Site 1 – West Gate Landfill
2. Site 2 – Rubble Disposal Area
3. Site 3 – Small Landfill
4. Site 4 – Fire Fighting Training Area
5. Site 5 – Tile Leach Field
6. Site 7 – Sewage Treatment Plant
7. Site 8 – Abandoned Bladder Tank Fuel Storage Area.

The Phase I RI addressed the original seven IR Program sites and was finalized in July 1998 following extensive reviews and comments by the EPA and the Massachusetts Department of Environmental Protection (MassDEP). The Navy, EPA, and MassDEP agreed that the Navy would conduct a Phase II RI. The primary goals of the Phase II RI were as follows:

- To further characterize the sites by investigating the bedrock groundwater migration pathway; collect a replacement set of groundwater data; and add site-specific parameters including ethylene dibromide, methyl tertiary-butyl ether, 1,4-dioxane, and ammonium perchlorate.

- To refine the Base Conceptual Site Models (CSMs) and update the ongoing Geographic Information System (GIS) program.

- To revise the Human Health Risk Assessment (HHRA) to include the Phase II data and implement procedural changes identified during review of the Phase I HHRA.

- To refine the Tier I Ecological Risk Assessment (ERA) and prepare a Tier II ERA.

Since that time, the Navy added three more sites to the IR Program: Site 9 – Building 81; Site 10 – Building 82; and Site 11 – Solvent Release Area. Brief descriptions of these sites are provided below.

- Site 9 – Building 81 (Marine Air Reserve Training Building) was previously investigated as a petroleum site in a manner consistent with the MCP. After completion of an *in-situ* chemical oxidation (ISCO) pilot study designed to reduce concentrations of chlorinated solvents and petroleum derivatives in groundwater, the Navy conducted an RI for the site. The RI/FS process is underway at this site. Further details on IR Site 9 are provided in Section 2.9.

- Site 10 – Building 82 (Hangar 2) was previously investigated as a petroleum site in a manner consistent with the MCP. Two areas originally investigated as part of the Phase II Environmental Baseline Survey (EBS), Review Item Areas (RIAs) 30A and 107, both of which were related to spills

on the Hangar 2 aircraft parking apron, are also now included in Site 10. The RI/FS process is underway at this site. Further details on IR Site 10 are provided in Section 2.10.

- Site 11 – The Solvent Release Area was previously investigated as part of the Phase II EBS and then as CERCLA Area of Concern (AOC) 108 due to the presence of chlorinated solvents in groundwater. The Navy conducted a geophysical investigation and source delineation in fall 2004. The RI/FS process is underway at this site. Further details on IR Site 11 are provided in Section 2.11.

In accordance with the FFA, the Navy is managing the CERCLA RI/FS and Remedial Design/Remedial Action (RD/RA) process (as necessary) at the 10 IR Program sites. Former IR Site 6, the former Fuel Farm, was transferred out of the IR Program and was addressed as a petroleum site under the underground storage tank (UST) program and in a manner consistent with the MCP.

1.2 ORGANIZATION OF THE SMP

This SMP is divided into six chapters, figures, tables, and one appendix. Chapter 1 includes an introduction to the scope and purpose of the SMP, a description of the installation, a brief history of its development, and an introduction to the IR Program and the IR Program sites. Chapter 2 describes the individual IR Program sites. Chapter 3 contains a synopsis of the CERCLA remedial process. Chapter 4 discusses the development of the sequence of activities and target dates for primary and secondary documents. Chapter 5 discusses the role of the South Weymouth BCT. Chapter 6 identifies the location of relevant documents. Appendix A contains the site schedules.

2.0 SITE DESCRIPTIONS

The following sections provide a brief description and history of each IR site at former NAS South Weymouth.

2.1 SITE 1: WEST GATE LANDFILL

IR Program Site 1, the WGL, comprises approximately 5.23 acres located near the mid-point of the western border of former NAS South Weymouth, as shown in Figure 2-1. The WGL was an active landfill from the 1940s until 1972; prior to that time, it was a swamp. During the period of its use, domestic waste was burned and buried in an unlined area at the site. Small amounts of flammable materials were also burned at this site according to Base personnel as reported in the SI. Due to insufficient information regarding the nature of materials that were disposed at the WGL, it was assumed that all types of waste from the Main Base went to the landfill during the period of use. Materials noted during the investigations included metal, asphalt, bricks, concrete, plastics, wires, bottles, cans, rubber tubes and hoses, and other debris. The approximate fill thickness is 10 feet; the volume of fill is estimated to be approximately 85,000 cubic yards (CY).

2.1.1 Site Inspection

The Navy conducted geophysical studies as part of the SI in order to identify the extent of the disposal area and also collected surface water, sediment, soil, and groundwater samples for Target Analyte List/Target Compound List (TAL/TCL) laboratory analysis and reporting. The major conclusions of the SI were as follows: the extent of the landfill was smaller than anticipated based on results of the geophysical survey and advancement of soil borings; and volatile organic compounds (VOCs) were not detected in surface water or groundwater. However, no wells were actually installed hydraulically downgradient of the landfill. Pesticides/polychlorinated biphenyls (PCBs) were not detected except in an upstream sediment sample. Trace to low levels of several VOCs and semi-volatile organic compounds (SVOCs) were detected in soil. The 1988 SI report recommended further investigation including installation of additional monitoring wells, evaluation of potential upstream sources, and a soil gas survey.

2.1.2 Remedial Investigation Phase I

Soil, groundwater, and sediment samples were collected at the WGL during the Phase I RI in May 1996. Test pit and borehole observations during the RI revealed a variety of debris to a depth of approximately 8 feet below ground surface (bgs). Organic compounds (polycyclic aromatic hydrocarbons [PAHs], pesticides, and PCBs) were detected in shallow soil samples. Relatively few organic compounds were

detected in groundwater, surface soil, or sediment samples. Inorganic compounds were detected in all sampled media. PAHs and pesticides were detected in potential leachate and leachate-stained soils. Subsurface soil samples were also analyzed for Resource Conservation and Recovery Act (RCRA) characteristics; i.e., Toxicity Characteristic Leaching Procedure (TCLP), ignitability, reactivity, and corrosivity. No subsurface soil samples exhibited chemical characteristics that would cause them to be classified as a RCRA-hazardous waste.

Risks to human health posed by chemicals of concern (COCs) at the WGL site were within the EPA acceptable risk range for industrial use. Under a future residential use scenario, the risks associated with exposure to the concentrations of PCBs and inorganics were not within acceptable risk ranges. The Tier I ERA results indicated no significant risk associated with surface water or sediment.

2.1.3 Remedial Investigation Phase II

The Phase II RI at the WGL focused on the following: evaluation of PCBs in surface soil through collection of approximately 40 surface soil samples for PCB immunoassay screening, with approximately 10 samples for laboratory analyses; collection of approximately 10 subsurface soil samples for analysis for non-Contract Laboratory Program parameters of interest; installation of several new groundwater monitoring wells screened in deep overburden and bedrock; sampling of the new and several existing wells; collection of additional surface water and sediment samples; and further ecological characterization. The characterization included tissue sampling, toxicity testing, and a benthic macro-invertebrate community survey.

The results of the Phase II RI are summarized as follows: several compounds including PAHs, PCBs, dioxins, arsenic, chromium, lead, and mercury were detected at levels exceeding background, primarily in surface soil. These compounds contribute to exceedances of human health risk thresholds for all exposure scenarios that were assessed. Ecological risk thresholds for terrestrial invertebrate and wildlife receptors were also exceeded. However, there were no exceedances for terrestrial plants or French Stream aquatic receptors. The Final RI was issued in April 2002.

2.1.4 Feasibility Study

The Final FS to develop and evaluate remedial alternatives was completed in January 2003. The FS document indicated that if groundwater were extracted from the aquifer, the influent aquifer condition would not necessitate treatment beyond standard municipal-type treatment used by drinking water treatment facilities. As such, the FS document focused on reducing or eliminating potential exposure to COCs on the surface of the landfill through either removal or capping of impacted materials.

2.1.5 Proposed Plan

The Navy issued the final Proposed Plan on May 21, 2007. The preferred alternative in the Proposed Plan included constructing a soil cover over the landfill, long-term monitoring of environmental media, and institutional controls to limit access to the area.

2.1.6 Record of Decision

The Record of Decision (ROD) which documents the selected remedy – soil cover, long-term monitoring, and institutional controls, was signed by the Navy on September 21, 2007 and the EPA on September 28, 2007 respectively. The MassDEP issued a letter of concurrence dated September 28, 2007.

2.1.7 Post-ROD Activities

The WGL remedial action activities commenced in December 2008. A pre-design investigation (PDI) was completed in 2010 per the ROD to provide additional information for the remedial design. A Memorandum for the Record, issued in May 2010, documented a minor design change to the cover materials for the use of a flexible membrane liner material for the landfill cover instead of clay or soil. The remedial design was completed and construction of the landfill cover system began in the summer of 2010. The remedial design for the landfill cover system follows guidance provided in federal regulations in 40 CFR 761.1(a)(7) and the Massachusetts Solid Waste regulations in 310 CMR 19.000. The design goal for the cover system stated in the ROD is to eliminate direct contact with the landfill materials. The landfill cover system complies with the general performance standards in 310 CMR 19.112.

An Explanation of Significant Differences (ESD) was signed by the Navy on August 30, 2010 and by EPA on September 2, 2010 respectively. The ESD modified the remedy specified in the ROD to allow soils excavated from the STP and AOC 55C sites to be used as common fill in the subgrade layer of the cover system. Following completion of the ESD, the soil stockpiles were moved from the STP and AOC 55C sites to the WGL and used to construct the subgrade layer. The subgrade layer with the consolidated soil from the STP and AOC 55C sites was completed in September 2010.

The Navy completed construction of the landfill cover system in the summer of 2011. A land use control implementation plan (LUCIP) for the site was completed and implemented in 2011. The first annual land use control compliance inspection was conducted in November 2011. Post-closure activities, including long term monitoring and operations and maintenance, commenced in December 2011.

2.2 SITE 2: RUBBLE DISPOSAL AREA

IR Program Site 2 comprises approximately 3.8 acres and is situated approximately 1,000 feet east of the eastern end of Runway 8-26, along the western bank of the Old Swamp River as illustrated in Figure 2-2. Much of the RDA was created by filling in the low swampy area along the western bank. The RDA principally received building debris from onsite sources. In 1978 The Gymnasium/Movie Theater (Building No. 21) was destroyed by fire in 1978. Debris from the fire was disposed of at the RDA. Disposal of materials to the RDA ceased in the mid-1980s. According to the SI report, NAS South Weymouth personnel indicated that hazardous waste also might have been disposed at this site. The exact nature of this waste was unknown, although the wastes were reported to possibly include transformers containing PCBs. The material observed during investigations included glass, concrete, metal, asphalt, wires, wood, and boulders.

2.2.1 Site Inspection

The Navy conducted geophysical studies at the RDA as part of the SI activities in order to identify the extent of the disposal area and also collected surface water, sediment, soil, and groundwater samples for TAL/TCL laboratory analyses and reporting. The SI report concluded that the extent of the RDA was smaller than anticipated; however, it was confirmed that large amounts of construction debris, including metal, were present in the disposal area. The extent of debris in the northeast corner was not fully delineated.

Although only trace to low levels of VOCs and elevated levels of iron and manganese were detected in groundwater, the wells were not located downgradient of the main portion of the RDA. No pesticides/PCBs, VOCs, or SVOCs were detected in surface water, and only several organic compounds were detected in sediment. VOCs and SVOCs (primarily PAHs associated with asphalt) were detected in soil in the RDA. The 1991 SI report recommended further investigation.

2.2.2 Remedial Investigation Phase I

Soil, groundwater, and sediment samples were collected during the Phase I RI in May 1996 at the RDA. Boulders and concrete rubble were observed in test pits and boreholes. Organic compounds (PAHs, pesticides, and PCBs) were detected in shallow soil and sediment samples. Relatively few organic compounds were detected in groundwater and surface soil samples. Inorganic compounds were detected in all sampled media. Subsurface soil samples were also analyzed for RCRA characteristics; i.e., TCLP, ignitability, reactivity, and corrosivity. No subsurface soil samples exhibited chemical characteristics that would cause them to be classified as a RCRA-hazardous waste.

Risks to human health posed by COCs at the RDA site were found to be within the EPA acceptable risk range for industrial usage. Under a hypothetical future residential use scenario, the risks associated with exposure to concentrations of PCBs, pesticides, and inorganics were not within acceptable risk ranges. The Tier I ERA results indicated that there was no significant risk associated with surface water and sediment.

2.2.3 Remedial Investigation Phase II

The focus of the Phase II RI for the RDA was to further characterize the site in the regionally downgradient (southeastern) direction. Several surface soil samples were collected to support the ecological characterization. Additional soil borings were installed to further characterize the geology and to collect soil samples for dioxin analyses. New wells were installed and screened in the deep overburden and competent bedrock. Groundwater from the new and existing wells was sampled; the primary focus was to characterize inorganics in groundwater at the site.

Extensive immunoassay screening for PCBs was conducted to further delineate the distribution of PCBs in sediment and hydric soil in the forested swamp adjacent to the Old Swamp River. Screening data were used to select surface water and sediment samples for confirmatory laboratory analyses.

Additional samples were collected to support a Tier II ecological characterization which included tissue sampling, toxicity testing, and a benthic macro-invertebrate community survey within the Old Swamp River.

The Final RI Report was issued in January 2001. Results of the Phase II RI indicated that the depth to groundwater was 2 to 7 feet bgs, and that groundwater flows to the east, towards Old Swamp River. Arsenic and manganese in groundwater were reported at concentrations that exceeded background, but did not exceed the applicable drinking water standards. An area of hydric soil at the northeast edge of the landfill contained PCBs concentrations which posed potential risk to ecological receptors.

2.2.4 Feasibility Study

The Final FS was issued in March 2002. Remedial objectives identified for the RDA included: minimize erosion and deposition into adjacent wetlands; achieve state landfill closure requirements; and eliminate or minimize ecological exposure to PCBs in the northeastern portion of the site. Seven alternatives were identified: no action; limited action (surface restoration); soil cap; low permeability cap; a combination alternative including excavation and offsite disposal for PCBs with a soil cap for remaining solid waste; excavation and offsite disposal; and relocation to a new, onsite landfill.

The Final FS indicated that if groundwater were extracted from the aquifer, the influent aquifer condition would not necessitate treatment for arsenic or manganese beyond the typical solids removal processes inherent within water supplies (such as sequestration, sedimentation, and/or filtration). As such, the Final FS focused on reducing or eliminating potential exposure to PCBs in the nearby hydric soil through removal. The Final FS also included capping and removal options for the landfill if compliance with state solid waste landfill closure requirements is desired under the CERCLA program.

2.2.5 Proposed Plan

The Navy issued the final Proposed Plan on February 24, 2003. The preferred alternative in the Proposed Plan included removal and off-site disposal of PCB-impacted soil from the wetland area, constructing a soil cover on the former disposal area, long-term monitoring, and institutional controls.

2.2.6 Record of Decision

The Navy and EPA signed the Final ROD in December 2003. The selected remedy was removal and off-site disposal of PCB-impacted soil from the wetland area, constructing a soil cover on the former disposal area, long-term monitoring, and institutional controls.

2.2.7 Post-ROD Activities

The Navy completed construction of the soil cover in 2005. Post-closure activities, including long-term monitoring and operations and maintenance, began in 2007 and continue currently in accordance with the approved post-closure plans. A LUCIP for the site has been completed and implemented. The first five-year review for former NAS South Weymouth completed in July 2009 included a detailed review of the RDA remedy and evaluation of its long-term protectiveness of human health and the environment. An ESD was completed in 2010 to clarify the intent of the ROD and establish Monitored Natural Attenuation (MNA) as the remedy for groundwater. The Navy agreed to calculate a site-specific background manganese concentration in conjunction with the MNA groundwater remedy established in the ESD. The site-specific manganese background study is currently underway.

A supplemental landfill gas investigation report was issued in the summer of 2011. The Navy is designing a corrective action to mitigate the off-site migration of landfill gas. A second ESD was completed in early 2012 to allow the construction of a portion of the East West Parkway abutting the RDA as part of the re-development of the former Base. This ESD included alterations to the post and rail fence and perimeter drainage swale as well as removal and replacement of some monitoring wells and sampling locations.

2.3 SITE 3: SMALL LANDFILL

IR Program Site 3 is an approximately 0.8-acre capped landfill located east of the Old Swamp River as depicted in Figure 2-3. The Small Landfill is approximately 9 feet deep, containing an estimated 12,000 CY of fill. The Small Landfill is located on the western side of a ridge which trends northwest-southeast. According to information gathered during the PA, the Small Landfill received concrete rubble and tree stumps for a brief period of time ending in the mid-1980s. The Small Landfill reportedly was not used as extensively as the WGL. Materials found during the investigations included aluminum, steel, rubber tubing, metal pipes and rods, bottles and cans, electrical wires, concrete, boulders, wood debris, asphalt, railroad ties, and plastic materials.

2.3.1 Site Inspection

The Navy conducted geophysical studies as part of the SI in order to identify the extent of the Small Landfill and also collected soil and groundwater samples for TAL/TCL laboratory analyses and reporting. Only trace levels of VOCs and low levels of SVOCs were reported in soil. In addition, PCBs and pesticides were not detected, and inorganics in soil did not exceed regulatory standards. In groundwater, several inorganics, including manganese, antimony, cadmium, and silver, were reported at levels slightly exceeding regulatory standards. The 1991 SI report recommended that a preliminary risk assessment be performed.

2.3.2 Remedial Investigation Phase I

Soil and groundwater samples were collected during the Phase I RI in May 1996. Concrete and other debris were observed in test pits and boreholes to a depth of approximately 12 feet. Organic compounds (PAHs and pesticides) were detected in shallow soil samples. Relatively few organic compounds were detected in groundwater and subsurface soil samples. Inorganic compounds were detected in all sampled media. Subsurface soil samples were also analyzed for RCRA characteristics; i.e., TCLP, ignitability, reactivity, and corrosivity. No subsurface soil samples exhibited chemical characteristics that would cause them to be classified as a RCRA-hazardous waste.

Risks to human health posed by COCs at the Small Landfill site were found to be within the EPA acceptable risk range for industrial use. Under a hypothetical future residential usage scenario, the risks associated with exposure to the concentrations of several inorganics in groundwater were not within acceptable risk ranges. No significant risk was identified during the Tier I ERA.

2.3.3 Remedial Investigation Phase II

The Phase II RI field work at the Small Landfill was intended to further characterize surface soil and confirm groundwater flow direction while also providing data for an ecological characterization. Several surface soil samples were collected for chemical characterization and toxicity testing. Water level data were collected to confirm static water levels and the groundwater flow direction.

The Final RI Report was issued in December 2000. Compounds were reported in soil and groundwater at low levels, generally near the laboratory's instrument detection limits and typically at levels similar to background conditions documented at the former NAS. Thallium was reported in one groundwater sample at a concentration close to the detection limit but was not reported in any other groundwater or soil samples at the site. Thallium was not likely present as a result of site-related activities. Its detection was found to be questionable and more likely attributable to the laboratory analytical method or artifact.

The risk assessment performed at this site concluded that cleanup of environmental media was not warranted to protect human health or the environment from excess risk associated with exposure to these compounds. As such, an FS was not required and the Navy was able to proceed to the next step under CERCLA.

2.3.4 Proposed Plan

The Navy issued a Proposed Plan for the Small Landfill in April 2001. The preferred alternative was for No Action with Groundwater Monitoring. The EPA agreed that under CERCLA, cleanup of soil and groundwater was not necessary based on the results of the Phase II RI and associated risk analyses. The groundwater monitoring component (quarterly monitoring for 1 year) was included to evaluate potential seasonal variability of chemical concentrations in groundwater and, specifically, to confirm the results of the RI with respect to the presence and concentration of thallium.

2.3.5 Record of Decision

The ROD for the Small Landfill was signed by the EPA and Navy in March 2002. The ROD specified No Action with groundwater monitoring under CERCLA and required closure of the landfill under provisions of the Massachusetts Solid Waste Regulations.

2.3.6 Post-ROD Activities

In accordance with the ROD, four quarters of groundwater monitoring were completed to confirm the results of the RI with respect to thallium. No thallium was detected in any of the four quarters of sampling. The Navy issued the groundwater monitoring report in October 2002 to supplement the Administrative Record for the SL. The Navy is working with the MassDEP Office of Solid Waste to close the landfill. The landfill cover system was constructed in summer 2010, consistent with the approved Corrective Action Design. Post-closure long-term monitoring activities consistent with state requirements began in fall 2010 and are on-going.

2.4 SITE 4: FIRE FIGHTING TRAINING AREA

IR Program Site 4 comprises approximately 3.8 acres located south of Runway 8-26 and east of Taxiway C, as shown in Figure 2-4. This site consisted of a cracked asphalt pad and concrete containers (burn pits) which were installed in 1988. Fire fighting training operations began at Site 4 in the mid-1950s. NAS South Weymouth personnel indicated that fire fighting exercises were temporarily suspended between 1986 and 1988 as reported in the SI. Prior to 1986, a maximum of 500 gallons per month of waste oil and 1,500 gallons per month of other fuels were placed in old vehicles and burned for firefighting training purposes. In 1988, concrete burn pits were installed to contain jet fuel, and the fire fighting exercises resumed. During training, the containers were partially filled with water and JP-5 fuel was placed on top of the water. The fuel was ignited and then extinguished to provide fire fighting practice. Reportedly, the only spill or release to the pad would have occurred if water or foam splashed out of the containers during training exercises.

2.4.1 Site Inspection

The Navy conducted geophysical studies as part of the SI, to identify the extent of the FFTA and also collected surface water, sediment, soil, and groundwater samples for TAL/TCL laboratory analyses and reporting. Groundwater was shown to flow from east to west across the site. Elevated levels of metals were not reported in soil at this site. Pesticides/PCBs were not detected in soil; however, trace levels of VOCs and SVOCs were detected. Groundwater samples contained elevated levels of manganese, iron, antimony, cadmium, and silver. Total petroleum hydrocarbons (TPH), oil and grease, and a phthalate were reported in sediment samples from a drainage ditch. Xylene, naphthalene, iron, and lead were detected in surface water samples from the drainage ditch. The ditch discharges to French Stream. The 1988 SI report recommended further evaluation of the FFTA.

2.4.2 Remedial Investigation Phase I

Soil, groundwater, and surface-water samples were collected at the FFTA during the Phase I RI in May 1996. No subsurface storage structures (tanks) or debris were observed in test pits or boreholes. Organic compounds (primarily PAHs and pesticides) were detected in shallow soil and sediment samples. Some petroleum-like seeps were observed, but few petroleum-related VOCs were detected in any media. Relatively few organic compounds were detected in groundwater or surface-water samples. Inorganic compounds were detected in all sampled media. Subsurface soil samples were also analyzed for RCRA characteristics; i.e., TCLP, ignitability, reactivity, and corrosivity. No subsurface soil samples exhibited chemical characteristics that would cause them to be classified as a RCRA-hazardous waste.

Risks to human health posed by COCs at the FFTA site were found to be within the EPA acceptable risk range for industrial use. Under a hypothetical future residential use scenario, the risks associated with exposure to metals were not within acceptable risk ranges. No significant risk was identified in the Tier I ERA due to the lack of ecological receptors.

2.4.3 Remedial Investigation Phase II

A focus of the Phase II RI was to sample locations south of the FFTA adjacent to the east branch of French Stream and the FFTA to ensure it had been adequately characterized. Piezometers were also installed to confirm whether there is a local northeastern groundwater flow component in the area northeast of the site. Several surface soil samples were collected for TAL/TCL and dioxin analysis. Additional subsurface soil samples were also collected. Monitoring wells were installed in shallow overburden, deep overburden, and bedrock. Several additional surface water and sediment samples were collected. In addition, toxicity testing and tissue sampling were conducted to reduce uncertainty associated with the ERA.

The results of the Phase II RI are summarized as follows: Groundwater flow is generally toward the west. PAHs and pesticides were detected in soil at expected concentrations; however, few fuel/petroleum-related compounds were reported. Aluminum, lead, manganese, and vanadium were reported in surface-water samples at levels exceeding ambient water quality criteria; however, the presence of these metals is not thought to be site-related because elevated levels of these compounds were not reported in site soil. There were no exceedances of human health or ecological risk thresholds for the current and future use scenarios that were evaluated. The Final RI Report was submitted in April 2001.

2.4.4 Proposed Plan

The Navy was in the process of preparing a No Action Proposed Plan when MassDEP requested the excavation and sampling of test pits due to the potential presence of petroleum residuals. The Navy excavated and sampled the test pits in April 2002. Visual results indicated that residual petroleum staining was present immediately below the existing asphalt, but free-flowing petroleum product was not present and the residual petroleum did not appear to be impacting adjacent soil. Analytical results indicated that some petroleum constituents were present in the stained material that had similar properties to petroleum constituents associated with the existing asphalt. Petroleum constituents were not present in the adjacent soil. The EPA and Navy concluded that no further action was warranted to further investigate or respond to the petroleum staining under CERCLA. The Navy issued an Opinion letter from a Massachusetts Licensed Site Professional (LSP) in February 2003 regarding the test pit results. The Navy issued the Proposed Plan for public comment on September 4, 2003. The preferred alternative was no further action under CERCLA.

2.4.5 Record of Decision

In September 2004, the Navy and EPA signed the Final ROD, which specified No Action under CERCLA. The Navy has addressed the petroleum residuals at the site pursuant to applicable Massachusetts state law. All site activities under the state program were completed in July 2008.

2.4.6 Post-ROD Activities

Additional work was conducted at the FFTA between 2010 and 2012 to determine the presence or absence of perfluorinated compounds (PFCs) in site groundwater and soil and nearby surface water and sediment. While there are no regulatory standards established for PFCs, EPA has established provisional health advisory values for PFCs in drinking water. Concentrations of two PFCs, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), in some FFTA groundwater monitoring wells exceeded these provisional values. Calculated risk-based values for PFOA and PFOS in soil, surface water, and sediment were not exceeded.

2.5 SITE 5: TILE LEACH FIELD

IR Program Site 5 comprises approximately 0.3 acres and is situated in the southwest part of the Base along a drainage ditch as illustrated in Figure 2-5. As presented in the SI, site personnel reported that

sanitary waste from former (demolished) Building No. 59[1] (the lighter-than-air dirigible hangar), was discharged to the TLF located south-southwest of the building. Building 59 was used as an anchor pad for dirigibles, and later as the Ground Control Avionics stand. The PA/SI did not identify the specific materials used in the maintenance of the dirigibles; however, it is likely that gasoline, fuels, and lubricants may have been used. The TLF was in active use from 1945 until its closure in 1956. The PA reported that the leach field may have received battery acid wastes, which likely contained lead. No other information exists on the nature or quantity of the liquid material disposed at this site.

2.5.1 Site Inspection

During implementation of the SI a measurable hydraulic gradient was not observed indicating a flat water table that did not allow for a determination of groundwater flow direction across the site. Groundwater flow at the site is thought to be in a south/southwest direction. Surface water, sediment, groundwater, and soil samples were collected as part of the SI. VOCs were not detected in surface water, sediment, or groundwater. Trace to low levels of VOCs were detected in soil samples. Aluminum, iron, and manganese were detected in groundwater at levels exceeding regulatory standards. Aldrin was detected in both upstream and downstream sediment samples. The SI stated that the analytical data did not indicate that the TLF was a disposal site. The recommended action included supplementary SI work to analyze media for nitrates that might be associated with the leach field.

2.5.2 Remedial Investigation Phase I

Soil, groundwater, and sediment samples were collected during the Phase I RI in May 1996. The Phase I RI confirmed the location of the leach field and identified the orientation of the abandoned distribution lines. Trace concentrations of organic compounds (PAHs and pesticides) were detected in shallow soil samples. Relatively few organic compounds were detected in groundwater and surface water samples. Inorganic compounds were detected in all sampled media. Subsurface soil samples were also analyzed for RCRA characteristics; i.e., TCLP, ignitability, reactivity, and corrosivity. No subsurface soil samples exhibited chemical characteristics that would cause them to be classified as a RCRA-hazardous waste.

Risks to human health posed by COCs at the TLF site were found to be within the EPA acceptable risk range for industrial usage. Under a hypothetical future residential usage scenario, the risks associated with exposure to the concentrations of inorganics in groundwater were not within acceptable risk ranges. The ERA results indicated that there was no significant risk associated with the site COCs.

[1] Former Building 59 was also known as Hangar 2, not to be confused with the current Hangar 2 (Building 82). Work completed in 2004 confirmed a connection from the Building 59 sanitary system to the TLF.

2.5.3 Remedial Investigation Phase II

The Phase II RI for the TLF focused on the downgradient sampling locations to the southwest of the site. The RI further investigated subsurface soil, groundwater, surface water, sediment, and ecological conditions. Soil borings were installed to collect soil samples. Additional monitoring wells were installed in shallow overburden, deep overburden, and competent bedrock. Groundwater samples were analyzed for VOCs, including 1,4-dioxane, as well as other parameters. Three additional surface water/sediment locations were proposed for further characterization. Also, toxicity testing and a benthic macro-invertebrate community survey in French Stream were planned to support the Tier II ERA.

The results of the Phase II RI are summarized as follows: The leach field is composed of a sand bed. Groundwater flow is toward the southwest. Very few compounds, with the exception of some PAHs, were detected in site media at levels above background levels established for former NAS South Weymouth. The risk analyses indicated no exceedances of human health risk thresholds for all exposure scenarios that were assessed (current and future use). There were no exceedances of ecological risk thresholds for the receptors that were assessed. The Final RI Report was submitted in May 2002.

2.5.4 Proposed Plan

A draft final No Action Proposed Plan was submitted in October 2002. In response to comments from the regulators on the Proposed Plan, the Navy completed a focused groundwater investigation in April 2005 to address concerns with the 1,4-dioxane results reported in the RI. The Navy issued the Proposed Plan in October 2005. The preferred remedy was No Action.

2.5.5 Record of Decision

The Navy and EPA signed the Final ROD in May 2006 that specified No Action under CERCLA. MassDEP provided a letter of concurrence dated April 27, 2006.

2.6 SITE 6: FUEL FARM

IR Program Site 6 was removed from the IR Program (since only virgin petroleum products were being addressed) in the summer of 1994 and has been addressed under the Navy's UST Program and as a petroleum site in a manner consistent with provisions of the MCP.

2.7 SITE 7: SEWAGE TREATMENT PLANT

IR Program Site 7 comprises approximately 3.2 acres and is located in the northern portion of former NAS South Weymouth as shown in Figure 2-6. The site includes the former STP itself, an adjacent former Tile Bed Area (leaching field), and some of the adjacent wetland area.

The Tile Bed Area (0.9 acres) was installed in the 1940s as part of a wastewater treatment system during the original construction of the Base. The original wastewater treatment plant was constructed near Hangar 1 (referred to as the Sewage Lift Station, Building 7) and was the subject of assessment under the EBS program. The former plant consisted of primary settling and chlorination tanks. From the 1940s to sometime prior to 1953, treated wastewater from Building 7 was pumped to the Tile Bed Area for final treatment (filtration, biodegradation) and disposal.

In 1953, the Navy constructed the STP adjacent (north) to the Tile Bed Area. Use of the Tile Bed Area was discontinued and the STP was used as the wastewater treatment facility for the Base from 1953 to 1978. The wastewater treated by the plant was primarily comprised of wash water from drains, restrooms, and sanitary sewer inlets. The original construction of the STP included a primary settling basin and a trickling filter. The treated wastewater discharge was directed to an outfall located along the northwest corner of the STP, which eventually discharged to French Stream. During the plant's 25-year operation, a number of upgrades were completed, including the expansion of the secondary treatment system (trickling filter and secondary settling tank) and the installation of a simple aerobic digestion system and drying beds to treat the wastewater sludge.

NAS South Weymouth obtained a National Pollutant Discharge Elimination System (NPDES) permit in 1975, which required quarterly testing of French Stream by an independent, State-certified laboratory. The drainage ditches that connected the STP to French Stream were also tested. The permit was obtained in response to regulations promulgated under the Clean Water Act of 1972. Permits were issued by the Massachusetts District Commission until 1975, when the Massachusetts Water Resources Authority (MWRA) was formed. NPDES quarterly testing results and information regarding the types of COCs that may have been disposed through the sewage system were not available for the 1999 SI. Results from the past 18 sampling events were in compliance with the permit requirements; records are available at the former NAS South Weymouth Caretaker Site Office.

In 1978, the STP was dismantled and wastewater from the Base was connected to the Town of Weymouth municipal sanitary sewer system. A site inspection on January 29, 1991 confirmed that the tanks had been thoroughly cleaned. The Navy removed and/or demolished most of the STP structures to approximately 2 feet below ground surface by 1992.

2.7.1 Site Inspection

No field sampling was conducted as part of the SI.

2.7.2 Remedial Investigation Phase I

Soil, groundwater, surface water, and sediment samples were collected at the STP during the Phase I RI in May 1996. Organic compounds (PAHs and pesticides) were detected in surface soil and sediment samples. Relatively few organic compounds were detected in subsurface soil, groundwater, and surface water samples. Inorganics were detected in all sampled media.

Risks to human health posed by COCs at the STP site were within the EPA acceptable risk range for industrial use. Under a hypothetical future residential use scenario, there was no significant risk associated with the COCs in surface soil; however, the risks associated with concentrations of inorganics in groundwater and PCBs in surface water were not within acceptable risk ranges. Additional risk assessment was recommended for surface water and sediment.

2.7.3 Remedial Investigation Phase II

The Phase II RI included further investigation of surface soil, subsurface soil, groundwater, surface water and sediment, and ecological conditions at the STP. Borings and new wells were installed in shallow overburden, deep overburden, and competent bedrock. The investigation also included surface water and sediment sampling, tissue sampling, and toxicity testing to support the ERA.

The results of the Phase II RI are summarized as follows: The Tile Bed Area comprises a 4-foot thick, constructed gravel layer under a vegetated surface. Groundwater generally flows toward the southwest. Very few compounds were detected in samples at levels in excess of background conditions. Those included pesticides (dichlorodiphenyltrichloroethane [DDT] and dieldrin) in surface soil and sediment, and inorganics (arsenic and chromium) in surface soil and groundwater. There were no exceedances of human health risk thresholds for current site use. Human health risk thresholds for future site use scenarios (residential and recreational) were exceeded due to concentrations of dieldrin in surface soil, arsenic in groundwater, and/or PCB in surface water. Ecological risk thresholds were exceeded, primarily because of DDT, DDD, DDE, and arsenic in sediment (hydric soil). The Final RI Report was submitted in April 2002.

2.7.4 Feasibility Study

The Navy issued the draft final FS to address risks in surface soil and sediment (hydric soil) in December 2002. During review of the draft final FS, the lack of soils data from the former sludge drying bed area was identified as a data gap. Navy completed a sampling event in March 2006 to supplement the soil and groundwater data collected during the Phase II RI for use in finalizing the FS. The 2006 results indicated that soil concentrations at the former sludge drying bed were generally consistent with those found in other areas of the site.

The Final FS, Revision 1 was issued in April 2007. Remedial action objectives identified in the FS include: eliminate potential human and ecological receptor exposure to COCs present in Site soil at concentrations above the selected preliminary remediation goals (PRGs); and eliminate potential human and ecological receptor exposure to COCs present in Site sediment at concentrations above the selected PRGs. Four remedial alternatives were developed: no action; *in situ* bioremediation and phytoremediation; selective excavation and offsite disposal/recycling (asphalt batching); and selective excavation and *ex situ* solvent extraction.

2.7.5 Proposed Plan

Navy issued the Proposed Plan for the STP in August 2007. The preferred alternative included excavation of contaminated surface soil and sediment and off-site disposal or recycling by asphalt batching.

2.7.6 Record of Decision

The ROD, which documents the selected remedy, was signed by the Navy on April 7, 2008 and the EPA on April 20, 2008. MassDEP issued a letter of concurrence dated April 17, 2008.

2.7.7 Post-ROD Activities

A PDI was completed in March 2009 followed by the Remedial Design and Remedial Action Work Plan (RD/RA Work Plan). Remedial action activities commenced in July 2009 and were completed in November 2009, consistent with the ROD and RD/RA Work Plan. An ESD was completed in 2010 to modify the STP remedy from off-site disposal of the excavated soils and sediment to beneficial reuse as subgrade layer materials for the WGL landfill cover system. The remedial goals were achieved in many areas of the site; however, volume limits were exceeded and petroleum was found at depth. Additional

soil sampling to address apparent petroleum contamination in an upland area of the STP site (remediation area A-2) was conducted in the spring of 2011.

A draft supplemental PDI Project Report was issued in May 2012. The analytical results indicated that the contamination was not strictly petroleum-related. The report documented contamination beyond the previously defined excavation boundary for Area A-2. A risk-screening evaluation further characterized the potential threat to human health from exposure to site soils and identified COCs for hypothetical residents, industrial workers, and adolescent trespasser exposure scenarios. Since the COCs, media, and exposure scenarios are different from those in the ROD, site-specific PRGs were calculated for all COCs based on the new exposure scenarios for surface soil, subsurface soil, and headwall soil. Due to potential health impacts for a hypothetical resident or industrial worker, additional CERCLA actions have been recommended. A ROD Amendment or Explanation of Significant Differences will be prepared to document changes to the site remedy. Once all remedial activities have been completed, post-remediation monitoring will be performed.

2.8 SITE 8: ABANDONED BLADDER TANK FUEL STORAGE AREA

IR Program Site 8 comprises approximately 0.46 acres northwest of Building No. 82 (Hangar 2) as shown in Figure 2-7. The site was used for the temporary storage of JP-5, a type of aviation gasoline, from approximately 1982/1983 to 1987. The fuel was stored in four 10,000-gallon fabric bladders (tanks) contained within an earthen berm. The tanks were used to support refueling operations for active aircraft.

2.8.1 Site Inspection

Soil, surface water, sediment, and groundwater samples were collected and analyzed for TAL/TCL parameters as part of the SI. The SI reported low concentrations of inorganics, and that PCBs, pesticides, oil and grease, and TPH were not detected in soil samples. Several VOCs and SVOCs were reported at low levels in soil. Inorganics and one SVOC were reported in groundwater samples, but not above federal Maximum Contaminant Levels (MCLs). Inorganics were reported in surface water and sediment samples. Aldrin, acetone, trace TPH, and SVOCs, including PAHs, were reported in sediment samples. The SI recommended further investigation of the ABTFSA.

2.8.2 Remedial Investigation Phase I

Soil, groundwater, and sediment samples were collected during the Phase I RI in May 1996. Trace concentrations of organic compounds (PAHs and pesticides) were detected in surface soil and sediment samples. Relatively few organic compounds were detected in subsurface soil, groundwater, and surface

water samples. Inorganic compounds were detected in all sampled media. Subsurface soil samples were also analyzed for RCRA characteristics; i.e., TCLP, ignitability, reactivity, and corrosivity. No subsurface soil samples exhibited chemical characteristics that would cause them to be classified as a RCRA-hazardous waste.

Risks to human health posed by COCs at the ABTFSA site were found to be within the EPA acceptable risk range for industrial and residential use. No significant risk was identified from COCs in surface soil for the ERA. The Phase I RI recommended further risk assessment for surface water and sediment.

2.8.3 Remedial Investigation Phase II

The Phase II field investigations focused on the groundwater flow direction and further characterization of surface soil, subsurface soil, groundwater, surface water and sediment, and ecological conditions. The investigation included collection of surface soil samples; installation of soil borings; construction of additional monitoring wells screened in shallow overburden, deep overburden, and competent bedrock; collection of additional surface water and sediment samples; and toxicity testing to support the ERA.

The results of the Phase II RI are summarized as follows: The groundwater flow is generally to south, with both southwesterly and southeasterly components at different times of the year. Very few compounds were reported in excess of background conditions (these were primarily PAHs). No unacceptable human health risks were identified except for a slight risk to hypothetical future residents consuming aluminum and manganese from site groundwater. However, the presence of aluminum and manganese in groundwater is consistent with regional conditions, and calculated risks do not exceed risks associated with background concentrations. No significant ecological risks were identified at the site. The sampling results were generally consistent with background levels. There is no documentation or evidence from the investigations of any past fuel releases at the site. The RI report was finalized in March 2002.

2.8.4 Proposed Plan

The Navy issued a final No Action Proposed Plan in October 2002. The EPA, MassDEP, and the public agreed with the Proposed Plan.

2.8.5 Record of Decision

The Navy and EPA signed the final No Action ROD in May 2003. MassDEP provided a letter of concurrence with the No Action decision, dated March 21, 2003.

2.9 SITE 9: BUILDING 81

IR Program Site 9, the Marine Air Reserve Training Building and former vehicle maintenance garage, is located in the central building area of the Base as shown in Figure 2-8. The Building 81 site initially contained a 500-gallon UST for the storage of waste oil. The UST, associated piping, and a small quantity of surrounding soil (estimated at less than 30 cubic yards) were removed in 1991.

The site was originally investigated under the MCP program after Release Tracking Number (RTN) 3-10628 and RTN 3-11622 were assigned to the site due to releases from the former UST. A series of assessment activities were performed to investigate evidence of a release from the UST. In 1994, approximately 170 cubic yards of soil were excavated from the vicinity of the UST. After light non-aqueous phase liquid (LNAPL) was detected in a monitoring well, an additional 500 cubic yards of soil were removed from the area in 1998. According to post-excavation documentation provided under the MCP program, the LNAPL and associated petroleum-impacted soil were successfully removed. However, in addition to petroleum-related compounds, chlorinated VOCs were detected in groundwater at the site at concentrations of up to 1 part per million (ppm).

In 2000-2001, the Navy conducted a pilot study using ISCO, an innovative technology, to address residual contamination. The pilot study, using Fenton's reagent (a chemical solution using hydrogen peroxide) to reduce concentrations of chlorinated VOCs in groundwater, was started in the fall of 2000. The results from the 60-day post-treatment sampling showed significant contaminant concentration rebound in the central area of the plume. An additional polishing step (re-injection of Fenton's reagent) was completed in late March and early April 2001. The results of 45-day and 100-day sampling showed significant rebounding in 6 to 8 wells along the axis of the plume. A remediation performance report for the ISCO work was prepared in March 2002.

Once the ISCO pilot test was complete, the site was moved to the CERCLA program as IR Site 9. The CERCLA petroleum exclusion policy was no longer applicable to the site due the continued presence of chlorinated VOCs in the groundwater. Under the IR Program, the Navy used the ISCO results, combined with the analytical data compiled from the MCP program investigations, to characterize the Building 81 site and to develop an RI Work Plan. The final RI Work Plan was submitted in June 2003. The regulators did not accept the June 2003 RI Work Plan as a final document. The Navy significantly revised the

document and issued the Final RI Work Plan in October 2006. The RI field activities commenced in June 2006 and were completed in December 2006. The draft RI Report was issued in May 2008.

The RI Report assessed contamination in soil and groundwater at the Site. The predominant contaminants present are VOCs in groundwater. The overall groundwater flow direction at the Site is generally toward the west-southwest. The draft RI Report documented no human health risks from contaminants in soil but identified potential unacceptable risks for future residents from use of groundwater as drinking water and for future construction workers from inhalation of volatile contaminants in trench air.

In response to comments on the draft RI report, a supplemental RI investigation work plan was developed in 2009. The supplemental field program was completed in early 2010; the draft final RI report was issued in December 2010. The final RI report was issued in October 2011; the draft FS was issued in April 2012. A Proposed Plan and ROD are anticipated in the spring of 2013.

2.10 SITE 10: BUILDING 82, HANGAR 2

IR Program Site 10 is located in the central building area of the Base as shown on Figure 2-9. A removal action was conducted at this site in September 1998 as part of Base closure activities. The removal action included emptying and cleaning the floor drain systems and gas trap manholes, and disassembling, cleaning, and removing the oil-water separator (OWS). All outlets to and from the OWS and gas trap manholes, including connections to the storm water system, were plugged with brick and hydraulic cement. One borehole was advanced in November 1998 adjacent to each of the four gas trap manholes and the OWS vault. Site 10 became the subject of environmental investigation in December 1998, when petroleum related compounds were detected in the vicinity of one of the gas trap manholes in excess of MCP Reportable Concentrations for S-1 soils. Upon notification, the MassDEP assigned RTN 3-18110 to the site.

Additional investigations were conducted under the MCP program, including a Phase I Initial SI and a subsequent removal action in 2001. Soil and groundwater samples collected during the SI identified the floor drain system as a possible source of contamination. The Navy then removed the four floor drain systems to the extent possible, without removing piping from below weight-bearing structures. Once the floor drain systems were removed, the soils beneath the floor drains were sampled.

Other parcels within the former NAS South Weymouth property were already undergoing environmental activities under the federal Superfund program, the EPA and MassDEP directed the Navy to cease activities under the MCP program and continue activities under the Superfund program. The detection of

chlorinated solvents (1,1,1-trichloroethane) at Building 82 made the CERCLA petroleum exclusion policy no longer applicable to the site. Areas within the Building 82 footprint and concrete apron which were previously evaluated under the EBS (RIAs 30A and 107) were also incorporated into IR Site 10.

In 2003, the Navy performed a limited due diligence assessment in order to provide preliminary environmental data to the contractor for the master developer of the former NAS property. Work conducted included seismic refraction work outside the building; two levels each of ground-penetrating radar and terrain ground conductivity; subsurface soil samples under and outside of the hangar; and the installation and sampling of eight monitoring wells.

The Navy submitted a final RI Work Plan in November 2003. The regulators did not accept the November 2003 RI Work Plan as a final document. The Navy significantly revised the document and issued the Final RI Work Plan in October 2006. The RI field activities commenced in June 2006 and were completed in December 2006. In response to regulator comments on the draft RI Report, an RI Work Plan Addendum was developed. Additional field investigation activities were completed in May 2009, including collection of groundwater samples for VOC analysis. The final RI report was issued in February 2010.

The Building 82 RI Report assessed contamination in soil, groundwater, surface water, and sediment. The RI Report concluded that generally low concentrations of VOCs, SVOCs, pesticides, PCBs, and metals were detected in site soil, groundwater, surface water, and sediment. The RI determined that localized overburden groundwater flow is influenced by the two 42-inch storm sewers that bisect the site. A human health risk assessment evaluated potential risks from contaminants in soil, groundwater, drainage ditch sediment, and surface water at the Building 82 Site. The RI Report documented potential unacceptable risks for future residents primarily from use of groundwater as drinking water, and for future construction workers from inhalation of dust and inhalation of volatile contaminants in trench air. Ecological risks to terrestrial plants and invertebrates, sediment invertebrates, aquatic organisms, and terrestrial receptors at the Site were evaluated and were determined to not warrant further evaluation.

After the final RI report was issued, and in conjunction with preparation of the FS, additional delineation of the groundwater contaminant plume was conducted. The additional groundwater profiling focused on the area with elevated trichloroethylene (TCE) concentrations to the south and southeast of the Site. An RI Addendum issued in July 2010 documented the larger TCE plume; there was no change to the risk assessments. Following a comprehensive water level measurement round, the final RI Addendum was issued in July 2011. The draft final FS, issued in September 2010 evaluated remedial alternatives based on the larger TCE plume. In October 2010 Navy completed a maintenance action separate from the FS to remove additional drainage piping, manholes, and some impacted soil near the new access road. The

final maintenance action report was issued in July 2011. The Navy completed the FS in July 2012 and the Proposed Plan in August 2012. The Navy anticipates completion of the ROD in September 2012.

2.11 SITE 11: SOLVENT RELEASE AREA

Site 11 is located in the northeast portion of the Base as shown in Figure 2-10. As part of the Phase II EBS, subsurface soil sample BG-05, intended to assess background soil conditions, was collected in the area. A trace level of tetrachloroethene (PCE) (below regulatory standards) was detected in the soil sample. It was determined through conversations with Navy personnel that Navy reservists used this area of the Base to conduct weekend field activities. Based on the potential that gun cleaning or other activities may have occurred, the area was added to Phase II EBS program and was designated as RIA 108. Additional samples were collected to confirm that the PCE result was valid. The Navy subsequently sampled a downgradient well at the former Pistol Range and found PCE concentrations exceeding screening criteria.

In the late fall of 2003, the Navy conducted a field screening study using a Geoprobe; based on those results, seven monitoring wells were installed in early 2004. Preliminary results from those wells confirmed the presence of chlorinated solvents, primarily PCE, in the groundwater, with the most elevated concentrations near the original BG-05 location. In the fall of 2004, the Navy conducted a geophysical investigation and source delineation. Based on the available information, the Navy determined that further investigation under CERCLA was necessary and the site was therefore moved to the IR Program as Site 11 and identified as the SRA. The Navy developed an RI Work Plan for the SRA under the IR Program in accordance with CERCLA. The Navy issued the Final RI Work Plan in October 2006. The RI field activities commenced in May 2006 and were completed in January 2007. The draft RI Report was issued in September 2008. In response to regulator comments on the draft RI Report, an RI Work Plan Addendum was developed in 2009. The additional field investigation activities were completed in 2009. The results of the supplemental field investigation were incorporated into the RI Report. The final RI Report was issued in August 2010.

The SRA RI Report assessed contamination in soil, groundwater, surface water, and sediment. The RI Report concluded that VOCs and five metals were the predominant contaminants at the SRA and that in general SVOCs, pesticides, and PCBs were detected infrequently in site soil, groundwater, surface water, and sediment. A human health risk assessment evaluated potential risks from contaminants in soil, groundwater, drainage ditch sediment, and surface water at the SRA. The RI Report concluded that there are no unacceptable human health risks under current exposure scenarios. However, potential unacceptable risks were identified for future residents, primarily from use of groundwater as drinking water, and for future construction workers from ingestion, dermal contact, and inhalation of volatile

organic contaminants in trench air and exposure to elevated concentrations of vanadium in dust. The RI Report concluded that ecological risks to terrestrial plants and invertebrates, aquatic organisms, and terrestrial receptors at the Site do not warrant further evaluation. Some slight impacts to sediment invertebrates were identified but are limited in extent.

An FS is underway to develop and evaluate potential remedial alternatives to address the potential unacceptable risks identified in the HHRA in the SRA RI Report. The draft FS was submitted in August 2010. To support the FS decision-making process, Navy performed additional groundwater sampling: two additional groundwater sampling rounds were completed in spring and fall of 2011 at key locations at the fringe of the PCE plume. The Navy anticipates completing the FS in fall 2012 and issuing a Proposed Plan and a ROD in winter 2012/2013.

3.0 REGULATORY PROCESS ACTIVITIES

The Navy implemented the Navy Assessment and Control of Installation Pollutants (NACIP) Program in 1980. The NACIP Program was renamed the IR Program with the passage of the Superfund Amendments and Reauthorization Act (SARA) in 1986.. Phases of the NACIP Program were changed to ensure procedural consistency between the IR Program and CERCLA and the National Oil and Hazardous Substance Pollution Contingency Plan (NCP). The IR Program terminology and phases in accordance with the NCP are as follows:

- PA/SI – Preliminary Assessment/Site Inspection
- RI/FS – Remedial Investigation/Feasibility Study
- PRAP/ROD – Proposed Remedial Action Plan (Proposed Plan)/Record of Decision
- RD/RA – Remedial Design/Remedial Action.

At former NAS South Weymouth, the PA and SI were conducted under the IR program. The PA was completed in 1988 and the SI was issued in December 1991. The IR Program parallels CERCLA/SARA, informally known as Superfund. Under the CERCLA/SARA Program, abandoned waste sites that potentially contain hazardous substances that may endanger public health, welfare, or the environment undergo several phases of environmental investigation. Completion of these phases ultimately determines the need for a remedy and, if necessary, the selection and implementation of the remedy for the site.

A description of the general CERCLA remedial process is provided below. The history of the IR Program at former NAS South Weymouth is summarized in Section 1.1.3 of the SMP.

3.1 INITIAL ASSESSMENT/SCREENING PROCESS

The PA is the initial study conducted under CERCLA at a site in response to an actual release or threat of release of a hazardous substance. The PA relies heavily on existing information and is limited in scope. If the PA identifies sites or study areas as potentially posing a threat to human health or the environment, an SI is conducted.

The SI usually consists of a site walkover, file reviews, interviews with appropriate personnel, and limited sampling of environmental media. If further investigation is warranted under CERCLA after the SI phase, the study area becomes an IR Program site, and an RI/FS is completed.

At federal facilities where the responsible federal agency has entered into an FFA with the EPA, the Site Screening Process (SSP) investigation is the initial study under CERCLA in response to a suspected hazardous substance release or threat of release. The SSP is the mechanism for determining whether the sites of such suspected releases or threats of releases, called Site Screening Areas (SSAs), require further study through the RI/FS process (or as part of a CERCLA removal action) because they pose a threat or potential threat to human or ecological receptors. At former NAS South Weymouth, the Navy identified a number of SSAs before signing the FFA. Those SSAs are listed in the FFA. EBS Review Item Area Decision Documents meet the substantive requirements of an SSP report and have been issued in lieu of SSP reports. Any newly identified SSAs will proceed through the SSP in accordance with the FFA.

Upon the conclusion of an SSP investigation/EBS Phase II investigation, an SSP report/EBS Decision Document will be reviewed by the BCT and will document the decision whether or not to address the site under the IR Program.

3.2 REMEDIAL INVESTIGATION/FEASIBILITY STUDY

The RI/FS is the next phase of the CERCLA remedial process. Extensive sampling and analyses are performed for the RI. The RI is designed to determine the nature and extent of contamination at the site by collecting and analyzing information about chemicals of potential concern (COPCs), potential migration pathways, toxicity and persistence of COPCs, and potential (risk) for adverse impacts to human health and/or the environment. HHRAs and ERAs are completed as part of the RI.

The FS is used to develop remedial action objectives, identify Applicable or Relevant and Appropriate Requirements (ARARs) and develop, screen, and analyze remedial alternatives. The FS evaluates the alternatives relative to the first seven CERCLA criteria (protection of human health and the environment; compliance with ARARs; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; long-term effectiveness; implementability; and cost). The last two criteria, support agency acceptance and community acceptance, are established during the proposed remedial action plan (PRAP) and ROD stages.

3.3 PROPOSED REMEDIAL ACTION PLAN/RECORD OF DECISION

After completion of the RI/FS, a Proposed Plan is prepared and issued to the public, and a notice of availability published in local newspapers. The Proposed Plan presents the Navy's preferred alternative for the site. The NCP mandates a minimum 30-day public comment period and provides for a minimum

30-day extension if requested. Typically, a public informational meeting is held, followed by a public hearing to receive transcribed comments.

Following the end of the public comment period, the BCT reviews the public comments. If the BCT concurs that there are no significant changes warranted for the Proposed Plan based on the public comments, the Navy prepares a Responsiveness Summary. The Responsiveness Summary, which provides written responses to the public comments, is issued as an appendix to the ROD. The ROD is the formal, legally enforceable document that identifies the chosen remedial alternative(s).

3.4 REMOVAL ACTION

A removal action may be completed prior to or during the RI/FS to reduce the threat to human health or the environment by removing released hazardous substances or reducing potential exposure pathways. There are two types of removal actions: time critical and non-time critical. Time critical removal actions are taken when there is an imminent and substantial threat to human health or the environment. Non-time critical removal actions can be used whenever a planning period of at least 6 months exists before a removal action can be initiated.

To enable the selection of the best remedial alternative for non-time critical removal actions, an Engineering Evaluation/Cost Analysis (EE/CA) is prepared. Unlike the FS, the EE/CA focuses only on the material to be removed, and analyzes the effectiveness, implementability, and costs of removal. An Action Memorandum is completed prior to a formal public comment period. It is the primary decision document that substantiates the need for the removal action, identifies the proposed response and explains the rationale for the removal action.

Subsequent to a removal action, the RI/FS may conclude that no further action (NFA) is required to reduce the threat to human health and the environment. In this case, an NFA ROD would be issued and the CERCLA remedial process would be concluded. A removal action may be media-specific and not address all risks posed by a site. Risks not addressed by the removal action are addressed by the RI/FS.

3.5 INTERIM REMOVAL ACTION

An Interim Remedial Action (IRA) may be completed prior to or during the RI/FS to reduce the threat to human health or the environment by removing released hazardous substances or reducing potential exposure pathways. To facilitate selection of the best remedial alternative for an interim remedial action, a Focused FS is prepared. An interim ROD is issued, and interim RD/RA activities are initiated. After implementation of the interim remedial action, the RI/FS may conclude that NFA is required to reduce the

threat to human health and the environment. In this case, an NFA ROD would be issued and the CERCLA remedial process would be concluded.

3.6 REMEDIAL DESIGN/REMEDIAL ACTION

The ROD establishes the type of remedy and the performance standards to be obtained during the RD/RA. The RD often proceeds in a stepped process and addresses detailed design issues not addressed during the FS. The RA involves implementation of the RD. The RA Design Schedule, as agreed to by all parties to the FFA, will result in commencement of the Remedial Action; i.e., substantial physical onsite activity, within 15 months of the execution and signature of the ROD.

4.0 SCHEDULE DEVELOPMENT

The schedules included in this document were developed using the current status of activity for each site at former NAS South Weymouth, anticipated activities, and projected funding availability. The due dates are based on durations of project activities that were developed in consultation with the BCT. The deliverables required during the remedial process are separated into two categories: primary and secondary. The Navy has proposed accelerated schedules in some cases. Detailed schedules for the IR sites described in this SMP are provided in Appendix A. Also included in Appendix A are detailed schedules for CERCLA AOCs, EBS RIAs, and for post-ROD activities for the RDA.

4.1 PRIMARY DOCUMENTS

Primary documents are developed by the Navy and initially provided as a draft. The draft primary documents are subject to a review period by EPA and MassDEP.

Following the Navy response to, and resolution of, comments on draft primary documents, a draft final version of a primary document is prepared. Following a regulator concurrence period, the final primary document is prepared and issued. In accordance with FFA Section 10.2, primary documents include the following:

- Site Screening Process Work Plans
- Site Screening Process Reports
- RI/FS Work Plans
- RI/FS Reports (including Baseline Risk Assessments)
- FS Reports
- Proposed Plans
- Final Remedial Designs
- Remedial Action Work Plans (to include the following as appropriate for the RA selected):

  - Schedules for Remedial Action
  - Remedial Action Sampling Plan
  - Remedial Action Construction Quality Assurance Plan
  - Remedial Action Environmental Monitoring Plan
  - Contingency Plan

- Long-Term Monitoring Plans
- Interim Remedial Action Reports
- Remedial Action Reports
- Operation and Maintenance Plans
- Preliminary Closeout Reports
- Final Closeout Reports

4.2 SECONDARY DOCUMENTS

Secondary documents include those documents that are discrete portions of the primary documents and are typically input or feeder documents. Secondary documents are issued by the Navy in draft subject to review and comment by EPA and MassDEP. Although the Navy will respond to comments received, the draft secondary documents may be finalized in the context of the corresponding draft final primary documents. Secondary documents include:

- Community Relations Plan Updates
- Engineering Evaluation/Cost Analysis Reports
- Removal Action Memoranda
- Non-Time Critical Removal Action Plans (40 CFR 300.415[b][4][ii])
- Pilot/Treatability Study Work Plans
- Pilot/Treatability Study Reports
- Well Closure Methods and Procedures
- Preliminary/Conceptual Remedial Designs, or equivalents
- Pre-Final Remedial Designs
- Periodic Review Assessment Reports
- Sampling and Data Results
- Initial Screening of Alternatives

4.3 DURATIONS

The BCT has agreed to the following response and revision timeframes for primary and secondary documents:

- Draft EPA/MassDEP review: 30 days (15-day extension)
- Navy response letter: 30 days (15-day extension)

- BCT consensus on comment response: 30 days (15-day extension)
- Navy draft final: 30 days (20-day extension)
- Draft final becomes final within 30 days if no dispute resolution

The FFA provides a provision to extend a timetable, deadline, or schedule for good cause. Proposed Plans and Action Memoranda schedules are contingent upon a minimum 30-day public comment period and, if requested, a minimum 30-day extension to the public comment period.

The SMP is reviewed and revised as necessary each year. The review cycle is as follows:

- Discussion within 90 days of budget with EPA/MassDEP, Natural Resources Trustees, and Restoration Advisory Board and community members; amended SMP submitted by 15 June of the following year
- 30-day review/comment period
- 30 days to develop draft final
- 21-day review

The final SMP is submitted within 30 days after the BRAC PMO receives official notification of its BRAC funding allocation for that fiscal year. If funding is less than proposed in the draft final SMP, there will be a 30-day consultation period to develop the final SMP.

5.0 FORMER NAS SOUTH WEYMOUTH BRAC CLEANUP TEAM

Pursuant to placement of NAS South Weymouth on the NPL, the BCT was established to facilitate implementation of the IR Program in accordance with CERCLA/SARA and the NCP. The core of the Project Team is the BCT, which is led by the BRAC Environmental Coordinator and includes representatives from EPA and MassDEP. Supporting the BCT are members of the Project Team, which includes technical specialists from EPA, MassDEP, NAS South Weymouth Caretaker Site Office, NAVFAC, Navy BRAC PMO Northeast, and contractors, as discussed in Table 5-1. The BCT and Project Team meetings provide a forum for addressing environmental cleanup matters and related reuse issues.

The BCT has participated in the development of this SMP and will use it as a management tool for implementation of the IR Program. The BCT will update the SMP on an annual basis to adjust priorities and schedules as new information becomes available.

6.0 RELEVANT DOCUMENTS

Documents that are relevant to the IR Program sites are listed in the Administrative Record Index for former NAS South Weymouth. A list of these documents has been compiled and is included as Table 6-1. The documents are available at the local information repositories which include the public libraries in Abington, Hingham, Rockland, and Weymouth, and the Caretaker Site Office, Building 11, on Shea Memorial Drive at former NAS South Weymouth.

TABLES

TABLE 5-1
CURRENT BCT/PROJECT TEAM MEMBERS
SITE MANAGEMENT PLAN REVISION 12
FORMER NAS SOUTH WEYMOUTH, WEYMOUTH, MASSACHUSETTS

Name	Title	Phone/Fax	Role/Responsibility
BCT MEMBERS			
David Barney	Environmental Engineer BRAC Environmental Coordinator	Tel (617) 753-4656 Fax (617) 753-4851	Navy, BRAC PMO, Caretaker Site Office, RAB Co-Chairperson
David Chaffin	BCT Representative	Tel (617) 348-4005 Fax (617) 292-5530	MassDEP – Federal Facilities
Carol Keating	BCT Representative	Tel (617) 918-1393 Fax (617) 918-0383	EPA Region I – Federal Facilities
OTHER KEY PARTICIPANTS			
Brian Helland	Remedial Project Manager BRAC PMO, Northeast	Tel (215) 897-4912 Fax (215) 897-4902	Navy, RPM, BRAC PMO Northeast
Bill Brandon	Hydrologist	Tel (617) 918-1391	EPA Technical Representative
Ann Malewicz	Section Chief	Tel (617) 292-5659 Fax (617) 292-5530	MassDEP Federal Facilities Section Chief
Pamela Harting-Barrat	Public Affairs Specialist	Tel (617) 918-1318	EPA Community Relations Support
Greg Preston, Esq.	Deputy Director/Base Closure Manager, BRAC PMO, Northeast	Tel (215) 897-4910	Navy, Deputy Director/Base Closure Manager, BRAC PMO Northeast
Dale Young	Natural Resources Trustees Coordinator	Tel (617) 626-1134	MassDEP
CONTRACTORS/CONSULTANTS			
Phoebe Call	Base Coordinator, CTO Manager	Tel (978) 474-8403	Tetra Tech, Inc. – CLEAN IV
Brian Corbett	CTO Manager	Tel (617) 457-8246	Tetra Tech EC, Inc.– Remedial Action Contractor (RAC)
Roxanne Clarke	Project Manager	Tel (215) 860-7700	Watermark, Inc. – RAOMAC

TABLE 6-1
ADMINISTRATIVE RECORD INVENTORY
(CERCLA DOCUMENTS FOR THE IR PROGRAM SITES)
SITE MANAGEMENT PLAN REVISION 12
FORMER NAS SOUTH WEYMOUTH, WEYMOUTH, MASSACHUSETTS

File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
1.0 Site Assessment									
1.2	Preliminary Assessment								
1.2		1.2-1	R	Preliminary Assessment, NAS South Weymouth, Massachusetts	1998	Argonne National Laboratory	U. S. Dept. of the Navy	A.R. File	1,2,3,4,5, 7,8,9
1.3	Site Inspection/Investigation								
1.3		1.3-1	R	Work Plan Site Investigation at NAS South Weymouth, Massachusetts	Mar-90	Baker Environmental Inc	U. S. Dept. of the Navy	A.R. File	1,2,3,4,5, 7,8,9
1.3		1.3-2	R	Site Investigation at Naval Air Station South Weymouth, Massachusetts	Dec-91	Baker Environmental Inc	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.0 Remedial Investigation (RI)									
3.2	Sampling and Analysis Data								
3.2		3.2-1	R	Data Validation Addenda Remedial Investigation South Weymouth Naval Air Station Weymouth, Massachusetts Addenda Volumes I, II, III, IV, V, & VI	Jan-97	Brown & Root Environmental (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.2		3.2-2	R	Final Summary Report of Background Data Summary Statistics for NAS South Weymouth	Feb-00	Stone & Webster	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10
3.6	Remedial Investigation Reports								
3.6		3.6-1	R	Phase I Remedial Investigation, Naval Air Station, South Weymouth, Massachusetts Volumes I, II, III, & IV	July-98	Brown & Root Environmental (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.6		3.6-2	R	Turtle Investigation Report for CY 1999	Apr-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10
3.6		3.6-3	R	Phase II Remedial Investigation Report and Appendices, Small Landfill, NAS South Weymouth, Weymouth, Massachusetts	Dec-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	3
3.6		3.6-4	R	Basewide Groundwater Flow Assessment Phase II Remedial Investigation (secondary document, supplement to the Phase II RI)	Dec-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10
3.6		3.6-5	R	Final Phase II Remedial Investigation Report, Rubble Disposal Area, NAS South Weymouth, Weymouth, Massachusetts (no appendices were re-issued)	Jan-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	2,9
3.6		3.6-6	R	Phase II Remedial Investigation Appendices (AD-A), RDA, NAS South Weymouth	Jul-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	2,9
3.6		3.6-7	R	Phase II Remedial Investigation Appendices (HH, ECO & RI), RDA, NAS South Weymouth	Nov-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	2,9
3.6		3.6-8	R	Turtle Investigation Report for CY 2000	Apr-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10
3.6		3.6-9	R	Phase II Remedial Investigation FFTA, NAS South Weymouth, Weymouth, Massachusetts (no appendices were re-issued)	Apr-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	4
3.6		3.6-10	R	Phase II Remedial Investigation Appendices, FFTA, NAS South Weymouth (AD-A)	Oct-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	4
3.6		3.6-11	R	Phase II Remedial Investigation Appendices, FFTA, NAS South Weymouth (HH, ECO & RI)	Feb-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	4

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File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
3.6		3.6-12	L	Potential Effects of Elevated pH Values on the Representativeness of Groundwater Samples, NAS South Weymouth (secondary document, supplement to Phase II RI)	Feb-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10,11
3.6		3.6-13	R	Phase II Remedial Investigation, Abandoned Bladder Tank Fuel Storage, NAS South Weymouth, Weymouth, Massachusetts (no appendices were re-issues)	Mar-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	8
3.6		3.6-14	R	Phase II Remedial Investigation Appendices (AD-A & RI), ABTFSA, NAS South Weymouth	Dec-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	8
3.6		3.6-15	R	Phase II Remedial Investigation Appendices (HH & ECO), ABTFSA, NAS South Weymouth	Apr-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	8
3.6		3.6-16	R	Phase II Remedial Investigation, West Gate Landfill, NAS South Weymouth, Weymouth, Massachusetts (no appendices were re-issued)	Apr-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1
3.6		3.6-17	R	Phase II Remedial Investigation Appendices, WGL, NAS South Weymouth (AD-A)	Oct-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1
3.6		3.6-18	R	Phase II Remedial Investigation Appendices, WGL, NAS South Weymouth (HH, ECO, RI & AD-B)	Feb-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1
3.6		3.6-19	R	Phase II Remedial Investigation, Sewage Treatment Plant, NAS South Weymouth, Weymouth, Massachusetts (no appendices were re-issued)	Apr-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	7
3.6		3.6-20	R	Phase II Remedial Investigation Appendices, STP, NAS South Weymouth (AD-A)	Nov-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	7
3.6		3.6-21	R	Phase II Remedial Investigation Appendices, STP, NAS South Weymouth (HH, ECO, RI & AD-B)	Mar-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	7
3.6		3.6-22	R	Navy Addenda for the Final Phase II Remedial Investigation (April 2002), STP, South Weymouth Naval Air Station, Massachusetts (missing and replacement pages)	Nov-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	7
3.6		3.6-23	R	Phase II Remedial Investigation, Tile Leach Field, NAS South Weymouth, Weymouth, Massachusetts (no appendices were re-issued)	May-02	Tetra Tech	U.S. Dept of the Navy	A.R. File	5
3.6		3.6-24	R	Phase II Remedial Investigation Appendices (AD-A & RI), TLF, NAS South Weymouth	Dec-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	5
3.6		3.6-25	R	Phase II Remedial Investigation Appendices (HH & ECO), TLF, NAS South Weymouth	Mar-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	5
3.6		3.6-26	R	Turtle Investigation Report for CY 2001	Jun-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10,11
3.6		3.6-27	R	Turtle Investigation Report for CY 2002	Oct-03	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10,11
3.6		3.6-28	R	Turtle Investigation Report for CY 2003	May-04	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10,11
3.6		3.6-29	R	Turtle Investigation Report for CY 2004	May-05	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9,10,11
3.6		3.6-30	R	Final Remedial Investigation, Building 82, NAS South Weymouth	Feb-10	Tetra Tech	U.S. Dept of the Navy	A.R. File	11

TABLE 6-1
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File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
3.6		3.6-31	R	Final Remedial Investigation. Building 81, NAS South Weymouth	Oct-11	Tetra Tech	U.S. Dept of the Navy	A.R. File	10
3.6		3.6-32	R	Final Remedial Investigation, Solvent Release Area, NAS South Weymouth	Aug-10	Tetra Tech	U.S. Dept of the Navy	A.R. File	12
3.6		3.6-33	R	Final Remedial Investigation Addendum, Building 82, NAS South Weymouth	Jul-11	Tetra Tech	U.S. Dept of the Navy	A.R. File	11
3.7	Work Plans and Progress Reports								
3.7		3.7-1	R	Final Remedial Investigation Work Plan (Phase I), Naval Air Station, South Weymouth, Massachusetts	Jul-95	Brown & Root Environmental (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.7		3.7-2	R	Final Remedial Investigation Work Plan (Phase I) FSP, QAPP, HASP; Volumes I and II	Nov-95	Brown & Root Environmental (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.7		3.7-3	L	Ecological Technical Memorandum Work Plan, Naval Air Station, South Weymouth, MA	Jul-98	Brown & Root Environmental (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.7		3.7-4	R	Phase II RI Work Plan NAS South Weymouth, MA (7 volumes including appendices)	Apr-99	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
3.7		3.7-5	L	Groundwater Sampling Program Work Plan Addendum, Small Landfill, NAS South Weymouth, Massachusetts	Sep-01	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	3
3.7		3.7-6	L	Proposed Scope of Work - Focused Test Pitting Program, FFTA, NAS South Weymouth	Jan-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	4
3.7		3.7-7	R	Final Remedial Investigation Work Plan, Naval Air Station South Weymouth, Building 81 Site, Weymouth, Massachusetts	Jun-03	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	9
3.7		3.7-8	R	Final Remedial Investigation Work Plan, Naval Air Station South Weymouth, Building 82 Site, Weymouth, Massachusetts	Nov-03	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	10
3.7		3.7-9	L	Groundwater Sampling Plan, Tile Leach Field, Naval Air Station South Weymouth, Weymouth, Massachusetts	Apr-05	Tetra Tech	U.S. Dept of the Navy	A.R. File	5
3.7		3.7-10	R	Groundwater Sampling Field Report, Tile Leach Field, Naval Air Station South Weymouth, Weymouth, Massachusetts	Jun-05	Tetra Tech	U.S. Dept of the Navy	A.R. File	5
3.7		3.7-11	R	Soil and Groundwater Sampling Plan, Sewage Treatment Plant, Naval Air Station South Weymouth, Weymouth, Massachusetts	Feb-06	Tetra Tech	U.S. Dept of the Navy	A.R. File	7
3.7		3.7-12	R	Final Remedial Investigation Work Plan, Naval Air Station South Weymouth, Building 81 Site, Weymouth, Massachusetts	Oct-06	Tetra Tech	U.S. Dept of the Navy	A.R. File	10
3.7		3.7-13	R	Final Remedial Investigation Work Plan, Naval Air Station South Weymouth, Building 82 Site, Weymouth, Massachusetts	Oct-06	Tetra Tech	U.S. Dept of the Navy	A.R. File	11
3.7		3.7-14	R	Final Remedial Investigation Work Plan, Naval Air Station South Weymouth, Solvent Release Area Site, Weymouth, Massachusetts	Oct-06	Tetra Tech	U.S. Dept of the Navy	A.R. File	12
3.7		3.7-15	R	Draft Final Remedial Investigation Work Plan Addendum, Naval Air Station South Weymouth, Building 81 Site, Weymouth, Massachusetts	Jul-09	Tetra Tech	U.S. Dept of the Navy	A.R. File	10

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File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
3.7		3.7-16	R	Final Remedial Investigation Work Plan Addendum, Naval Air Station South Weymouth, Building 82 Site, Weymouth, Massachusetts	Mar-09	Tetra Tech	U.S. Dept of the Navy	A.R. File	11
3.7		3.7-17	R	Final Remedial Investigation Work Plan, Naval Air Station South Weymouth, Solvent Release Area Site, Weymouth, Massachusetts	Oct-09	Tetra Tech	U.S. Dept of the Navy	A.R. File	12
3.9	Health Assessments								
3.9		3.9-1	R	Public Health Assessment for USNAS South Weymouth CERCLIS No. MA2170022022	Mar-98	U.S. Dept of Health & Human Services	Public	A.R. File	1,2,3,4,5, 7,8,9
3.9		3.9-2	R	Public Health Assessment for USNAS South Weymouth, CERCLIS no. MA2170022022	Sep-99	U.S. Dept of Health & Human Services	Public	A.R. File	1,2,3,4,5, 7,8,9
3.9		3.9-3	R	Public Health Assessment for USNAS South Weymouth, CERCLIS no. MA2170022022	Aug-01	U.S. Dept of Health & Human Services	Public	A.R. File	1,2,3,4,5, 7,8,9
4.0 Feasibility Study (FS)									
4.2	Feasibility Study								
4.2		4.2-1	R	Consideration of Constructing a New Landfill, NAS South Weymouth (secondary document, supplement to the FSs)	Dec-00	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1,2,3
4.2		4.2-2	R	Feasibility Study, RDA, NAS South Weymouth, Weymouth, Massachusetts	Mar-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	2, 9
4.2		4.2-3	L	Landfill Cover Evaluation Matrix Relative to Groundwater Considerations, Supplemental to RDA Feasibility Study	Jan-03	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	2, 9
4.2		4.2-4	R	Feasibility Study, WGL, NAS South Weymouth, Weymouth, Massachusetts	Jan-03	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	1
4.2		4.2-5	R	Feasibility Study, STP, NAS South Weymouth, Weymouth, Massachusetts	Sep-06	Tetra Tech	U.S. Dept of the Navy	A.R. File	7
4.2		4.2-6	R	Feasibility Study, Revision 1, STP, NAS South Weymouth, Weymouth, Massachusetts	Apr-07	Tetra Tech	U.S. Dept of the Navy	A.R. File	7
4.2		4.2-7	R	Final Feasibility Study, Building 82, NAS South Weymouth, Weymouth, Massachusetts	Jul-12	Tetra Tech	U.S. Dept of the Navy	A.R. File	11
4.2		4.2-8	R	Draft Final Feasibility Study, SRA, NAS South Weymouth, Weymouth, Massachusetts	Jul-12	Tetra Tech	U.S. Dept of the Navy	A.R. File	12
4.2		4.2-9	R	Draft Feasibility Study, Building 81, NAS South Weymouth, Weymouth, Massachusetts	Apr-12	Tetra Tech	U.S. Dept of the Navy	A.R. File	10
4.9	Proposed Plans for Selected Remedial Action								
4.9		4.9-1	P	Proposed Plan, Operable Unit 3, SL, NAS South Weymouth, Weymouth, Massachusetts	Apr-01	Tetra Tech (ENSR)	Public	A.R. File	3
4.9		4.9-2	P	Proposed Plan, Operable Unit 8, ABTFSA, NAS South Weymouth, Weymouth, Massachusetts	Oct-02	EA	Public	A.R. File	8
4.9		4.9-3	P	Proposed Plan, Operable Units 2 and 9, RDA, NAS South Weymouth, Weymouth, Massachusetts	Feb-03	Tetra Tech (ENSR)	Public	A.R. File	2,9
4.9		4.9-4	P	Proposed Plan, Operable Unit 4, FFTA, NAS South Weymouth, Weymouth, Massachusetts	Sep-03	Tetra Tech (ENSR)	Public	A.R. File	4

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File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
4.9		4.9-5	P	Proposed Plan, Operable Unit 5, TLF, NAS South Weymouth, Weymouth, Massachusetts	Aug-05	Tetra Tech	Public	A.R. File	5
4.9		4.9-5	P	Proposed Plan, Operable Unit 1, WGL, NAS South Weymouth, Weymouth, Massachusetts	May-07	Tetra Tech	Public	A.R. File	1
4.9		4.9-6	P	Proposed Plan, Operable Unit 7, STP, NAS South Weymouth, Weymouth, Massachusetts	Aug-07	Tetra Tech	Public	A.R. File	7
5.0 Record of Decision (ROD)									
5.3	Responsiveness Summaries								
5.3		5.3-1		Copy of Public Comments Received on the Proposed Plan for the Small Landfill (Included as Appendix E2 of the Small Landfill Record of Decision)	4/28/01 - 6/7/01	Public	U.S. Dept of the Navy	A.R. File	3
5.3		5.3-2		Transcript of the Public Hearing on the Proposed Plan for the Small Landfill (Included as Appendix E1 of the Small Landfill Record of Decision)	May-01	Public	U.S. Dept of the Navy	A.R. File	3
5.3		5.3-3		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the Small Landfill Record of Decision)	Jan-02	Tetra Tech (ENSR)	Public	A.R. File	3
5.3		5.3-4		Copy of Public Comments Received on the Proposed Plan for the ABTFSA (Included as Appendix E1 of the ABTFSA Record of Decision)	10/05/02 - 11/04/02	Public	U.S. Dept of the Navy	A.R. File	8
5.3		5.3-5		Transcript of the Public Hearing on the Proposed Plan for the ABTFSA (Included as Appendix E2 of the ABTFSA Record of Decision)	Oct-02	Public	U.S. Dept of the Navy	A.R. File	8
5.3		5.3-6		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the ABTFSA Record of Decision)	May-03	EA	Public	A.R. File	8
5.3		5.3-7		Copy of Public Comments Received on the Proposed Plan for the RDA (Included as Appendix E1 of the RDA Record of Decision)	2/24/03 - 4/10/03	Public	U.S. Dept of the Navy	A.R. File	2,9
5.3		5.3-8		Transcript of the Public Hearing on the Proposed Plan for the RDA (Included as Appendix E2 of the RDA Record of Decision)	Feb-03	Public	U.S. Dept of the Navy	A.R. File	2,9
5.3		5.3-9		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the RDA Record of Decision)	May-03	Tetra Tech (ENSR)	Public	A.R. File	2,9
5.3		5.3-10		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the FFTA Record of Decision)	Sep-04	Tetra Tech (ENSR)	Public	A.R. File	4
5.3		5.3-11		Transcript of the Public Hearing on the Proposed Plan for the TLF (Included as Appendix E2 of the TLF Record of Decision)	Nov-05	Public	U.S. Dept of the Navy	A.R. File	5
5.3		5.3-12		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the TLF Record of Decision)	Apr-06	Tetra Tech	Public	A.R. File	5
5.3		5.3-13		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the WGL Record of Decision)	Sep-07	Tetra Tech	Public	A.R. File	1
5.3		5.3-14		Responsiveness Summary (Included as Part 3: The Responsiveness Summary of the STP Record of Decision)	Apr-08	Tetra Tech	Public	A.R. File	7
5.4	Record of Decision								
5.4		5.4-1	R	Record of Decision, Operable Unit 3 - Small Landfill, NAS South Weymouth, Weymouth, Massachusetts	Jan-02	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	3
5.4		5.4-2	R	Record of Decision, Operable Unit 8 - ABTFSA, NAS South Weymouth, Weymouth, Massachusetts	May-03	EA	U.S. Dept of the Navy	A.R. File	8

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File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
5.4		5.4-3	R	Record of Decision, Operable Units 2 and 9 - RDA, NAS South Weymouth, Weymouth, Massachusetts	Dec-03	Tetra Tech (ENSR)	U.S. Dept of the Navy	A.R. File	2,9
5.4		5.4-4	R	Record of Decision, Operable Unit 4, FFTA, NAS South Weymouth, Weymouth, Massachusetts	Sep-04	Tetra Tech (ENSR)	U.S. Dept. of the Navy	A.R. File	4
5.4		5.4-5	R	Record of Decision, Operable Unit 5, TLF, NAS South Weymouth, Weymouth, Massachusetts	May-06	Tetra Tech	U.S. Dept. of the Navy	A.R. File	5
5.4		5.4-6	R	Record of Decision, Operable Unit 1, WGL, NAS South Weymouth, Weymouth, Massachusetts	Sep-07	Tetra Tech	U.S. Dept. of the Navy	A.R. File	1
5.4		5.4-7	R	Record of Decision, Operable Unit 7, STP, NAS South Weymouth, Weymouth, Massachusetts	Apr-08	Tetra Tech	U.S. Dept. of the Navy	A.R. File	7
5.4		5.4-8	R	Explanation of Significant Differences, STP and WGL, NAS South Weymouth, Weymouth, Massachusetts	Aug-10	Tetra Tech	U.S. Dept. of the Navy	A.R. File	1, 7
5.4		5.4-9	R	Explanation of Significant Differences, RDA, NAS South Weymouth, Weymouth, Massachusetts	Sep-10	Tetra Tech	U.S. Dept. of the Navy	A.R. File	2, 9
10.0 Enforcement/Negotiation									
10.16	Federal Facility Agreements								
10.16		10.16-1	L	Federal Facility Agreement for South Weymouth Naval Air Station National Priorities List Site	Apr-00	EPA	U.S. Dept of the Navy	A.R. File	1,2,3,4,5, 7,8,9
13.0 Community Relations									
13.2	Community Relations Plans								
13.2		13.2-1	R	Community Relations Plan Naval Air Station, South Weymouth, MA	Jul-98	U.S. Dept of the Navy	Public	A.R. File	1,2,3,4,5, 7,8,9
13.4	Public Meetings/Hearings								
13.4		13.4-1		Restoration Advisory Board Workshop Guidebook	Jul-94	EPA	Public	A.R. File	1,2,3,4,5, 7,8,9
13.4		13.4-2		Building 81 Site Meeting Invitation, NAS South Weymouth	Jan-00	Tetra Tech (ENSR)	Public	A.R. File	10
13.4		13.4-3		Public Notice: Public Information and Public Hearing for the SL PRAP, AR File, and RI Report	Apr-01	Tetra Tech (ENSR)	Public	A.R. File	3
13.4		13.4-4		Public Notice: Public Information and Public Hearing for the ABTFSA PRAP, AR File, and RI Report	Oct-02	EA	Public	A.R. File	8
13.4		13.4-5		Legal Notice, Record of Decision Available For Operable Unit 3, Small Landfill, Naval Air Station South Weymouth, Weymouth, Massachusetts	Jul-02	Tetra Tech (ENSR)	Public	A.R. File	3
13.4		13.4-6		Public Notice: Notification of Restoration Advisory Board Meeting	1995 - 2005	EA	Public	A.R. File	1,2,3,4,5, 7,8,9,10,11
13.4		13.4-7		Restoration Advisory Board Meeting Minutes	1995 – 2012	U.S. Dept of the Navy	Public	A.R. File	1,2,3,4,5, 7,8,9,10,11,12
13.4		13.4-8		Public Notice: Public Information and Public Hearing for the RDA PRAP, AR File, and RI Report	Feb-03	Tetra Tech (ENSR)	Public	A.R. File	2,9
13.4		13.4-9		Public Notice: Public Information and Public Hearing for the FFTA PRAP, AR File, and RI Report	Aug-03	Tetra Tech (ENSR)	Public	A.R. File	4
13.4		13.4-10		Legal Notice, Record of Decision Available For Operable Units 2 and 9, Rubble Disposal Area, Naval Air Station South Weymouth, Weymouth, Massachusetts	Feb-04	Tetra Tech (ENSR)	Public	A.R. File	2,9

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File Number	Vol.	Doc. Number	Doc. Type	Document Title	Doc. Date	Document Preparer	Document Recipient	Document Location	OU
13.4		13.4-11		Legal Notice: Public Information and Public Hearing for the TLF PRAP	Oct-05	Tetra Tech	Public	A.R. File	5
13.4		13.4-12		Legal Notice, Record of Decision Available For Operable Unit 5, TLF, Naval Air Station South Weymouth, Weymouth, Massachusetts	May-06	Tetra Tech	Public	A.R. File	5
13.4		13.4-13		Legal Notice: Public Information and Public Hearing for the WGL PRAP	May-07	Tetra Tech	Public	A.R. File	1
13.4		13.4-14		Legal Notice: Public Information and Public Hearing for the STP PRAP	Aug-07	Tetra Tech	Public	A.R. File	7
13.4		13.4-15		Legal Notice, Record of Decision Available For Operable Unit 1, WGL, Naval Air Station South Weymouth, Weymouth, Massachusetts	Oct-07	Tetra Tech	Public	A.R. File	1
13.4		13.4-16		Legal Notice, Record of Decision Available For Operable Unit 7, STP, Naval Air Station South Weymouth, Weymouth, Massachusetts	May-08	Tetra Tech	Public	A.R. File	7
13.5	Fact Sheets/Information Updates								
13.5		13.5-1		U.S. Navy Fact Sheet No. 1, NAS South Weymouth	Dec-96	Tetra Tech (ENSR)	Public	A.R. File	1,2,3,4,5, 7,8,9
13.5		13.5-2		The Former Naval Air Station South Weymouth	Feb-98	U.S. Dept of the Navy	Public	A.R. File	1,2,3,4,5, 7,8,9
13.5		13.5-3		Environmental Update, NAS South Weymouth	Mar-98	NSRWA	Public	A.R. File	1,2,3,4,5, 7,8,9
13.5		13.5-4		Groundwater Flow NAS South Weymouth	Oct-98	Tetra Tech (ENSR)	Public	A.R. File	1,2,3,4,5, 7,8,9
13.5		13.5-5		Building 81 Site, NAS South Weymouth	Sep-99	Tetra Tech (ENSR)	Public	A.R. File	10
13.5		13.5-6		Environmental Cleanup Activities NAS South Weymouth Fact Sheet	Apr-00	Tetra Tech (ENSR)	Public	A.R. File	1,2,3,4,5, 7,8,9
13.5		13.5-7		Arsenic Information from the Former Naval Air Station South Weymouth Fact Sheet	Nov-01	Tetra Tech (ENSR)	Public	A.R. File	1,2,3,4,5, 7,8,9
13.6	Mailing List								
13.6		13.6-1		Community Relations Mailing List: State, Federal and Local Agencies (including Media and Public Libraries)	N/A	U.S. Dept of the Navy	N/A	A.R. File	1,2,3,4,5, 7,8,9,10,11
13.6		13.6-2		Community Relations Mailing List: Other Parties (e.g., general public) - CONFIDENTIAL (due to potential Privacy Act violations)	N/A	U.S. Dept of the Navy	N/A	BRAC PMO	1,2,3,4,5,7,8,9, 10,11
17.0 Site Management Records									
17.6	Site Management Plans and Reviews								
17.6		17.6-1	R	Site Management Plan Revision 4.0 NAS South Weymouth, MA	Dec-04	EA	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11
17.6		17.6-2	R	Site Management Plan Revision 5.0 NAS South Weymouth, MA (Draft)	Aug-05	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11
17.6		17.6-3	R	Site Management Plan Revision 6.0 NAS South Weymouth, MA	Oct-06	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11,12
17.6		17.6-4	R	Site Management Plan Revision 7.0 NAS South Weymouth, MA	Sep-07	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11,12
17.6		17.6-5	R	Site Management Plan Revision 8.0 NAS South Weymouth, MA	Sep-08	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11,12
17.6		17.6-6	R	Site Management Plan Revision 9.0 NAS South Weymouth, MA	Nov-09	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11,12
17.6		17.6-7	R	Site Management Plan Revision 10.0 NAS South Weymouth, MA	Oct-10	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11,12

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17.6		17.6-8	R	Site Management Plan Revision 11.0 NAS South Weymouth, MA	Aug-11	Tetra Tech	U.S. Dept of the Navy	A.R. File	1,2,3,4,5,7,8,9, 10,11,12

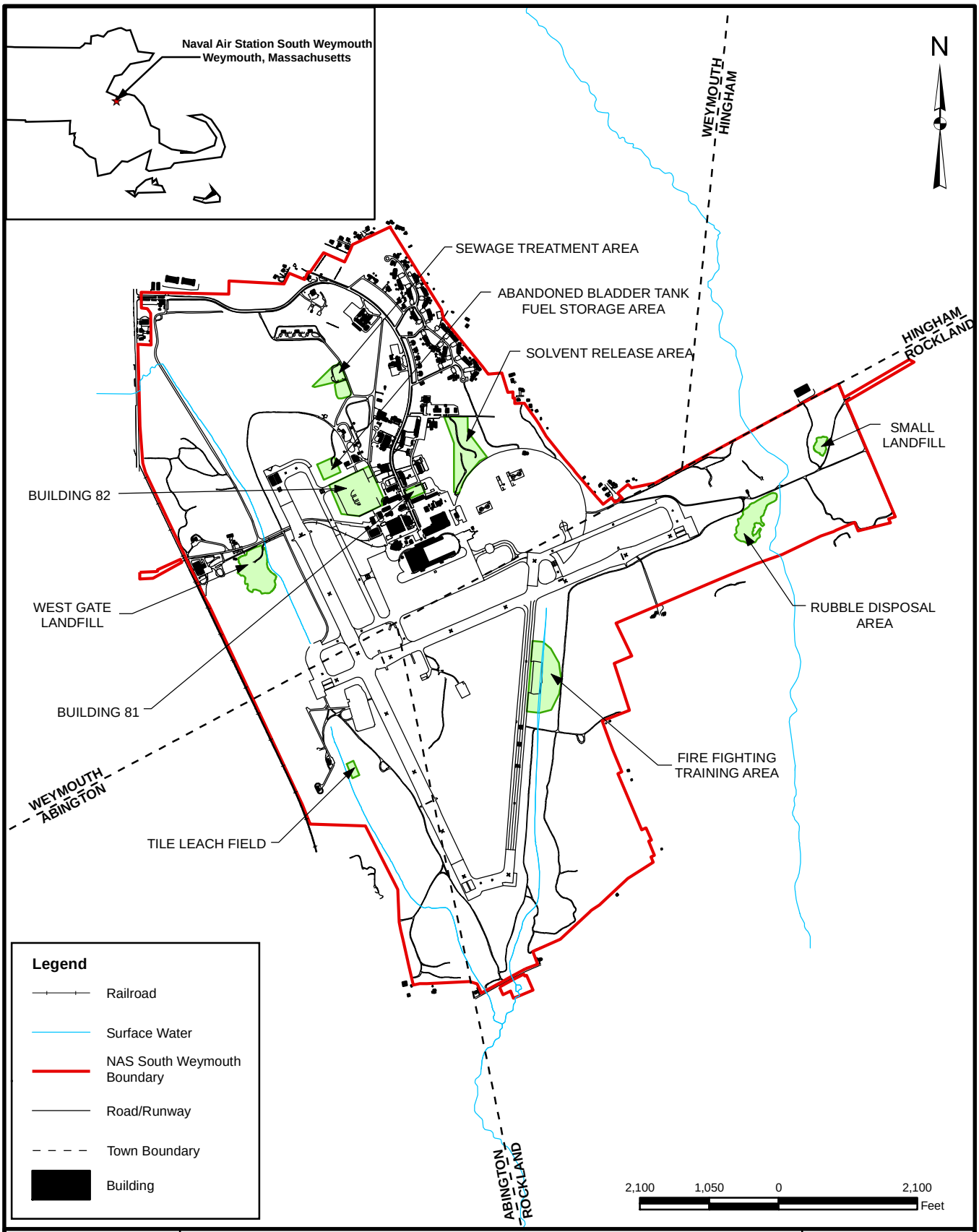
NOTES:

ABTFSA = Abandoned Bladder Tank Fuel Storage Area.
AD-A, AD-B = Analytical Data Appendix.
A.R. File = Administrative Record File.
BRAC PMO = Base Realignment and Closure, Program Management Office.
CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System.
CY = Calendar year.
EA = EA Engineering, Science, and Technology.
ECO = Ecological Risk Appendix
ENSR = ENSR International
EPA = U.S. Environmental Protection Agency.
FFTA = Fire Fighting Training Area.
FS = Feasibility Study.
HASP = Health and Safety Plan.
HH = Human Health Risk Appendix.
L = Letter.
NAS = Naval Air Station (South Weymouth, Massachusetts).
NSRWA = North and South Rivers Watershed Association.
OU = Operable Unit.
P = Proposed Plan.
PRAP = Proposed Remedial Action Plan.
QAPP = Quality Assurance Project Plan.
R = Report.
RDA = Rubble Disposal Area.
RI = Remedial Investigation Appendix.
ROD = Record of Decision.
SL = Small Landfill.
STP = Sewage Treatment Plant.
TLF = Tile Leach Field.
WGL = West Gate Landfill

Brown & Root (ENSR) – Documents produced by ENSR International under subcontract to Brown & Root.
Tetra Tech (ENSR) – Documents produced by ENSR International under subcontract to Tetra Tech.

FIGURES

I:\02073\MS.DR.R12\SMP_SITE_MAP.MXD 07/26/12 SP/DWM



TETRA TECH

FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

SITE MAP

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
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REV	DATE
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FIGURE NUMBER	
FIGURE NO. 1 - 1	

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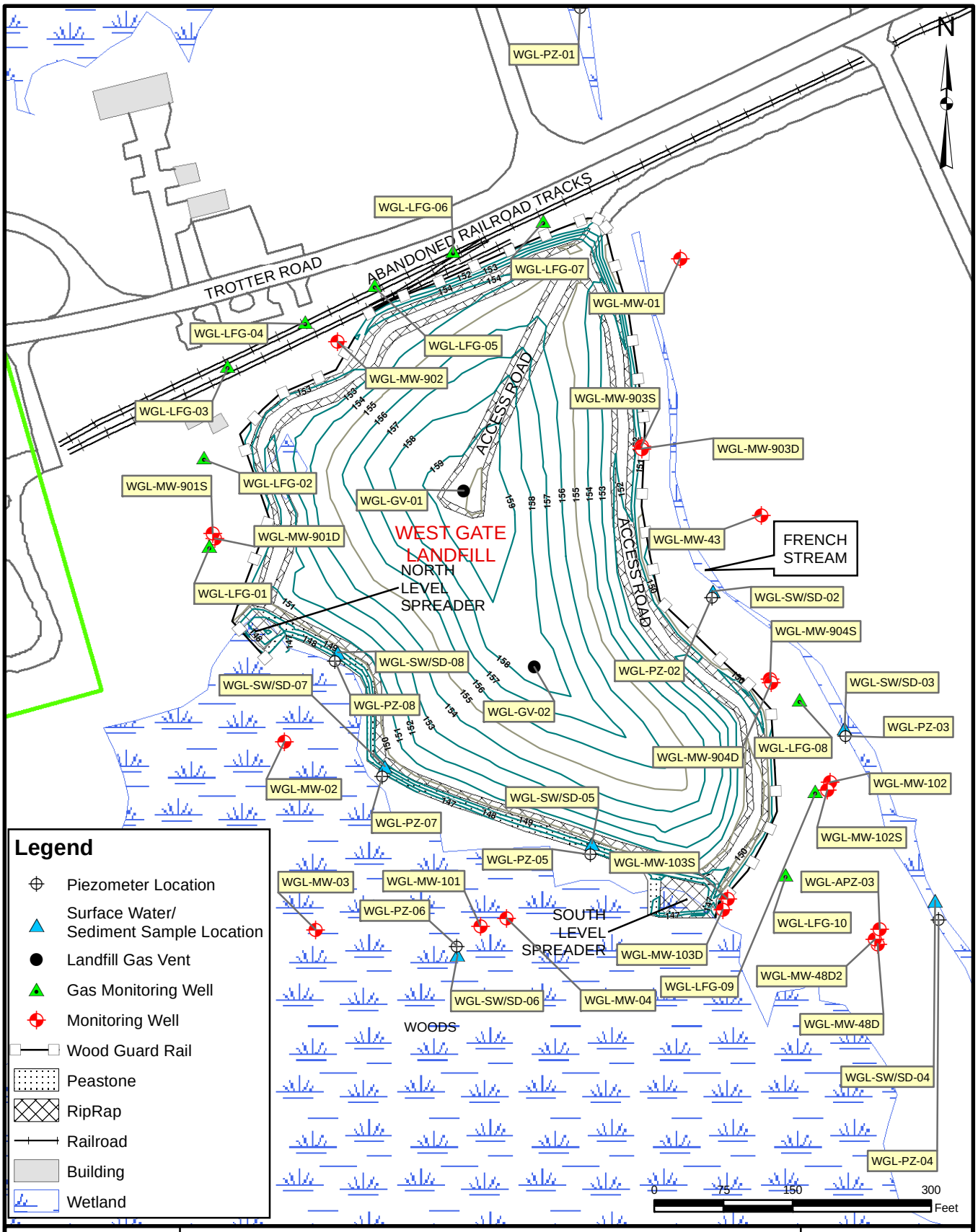

TETRA TECH

FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 1

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
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FIGURE NO. 2-1	

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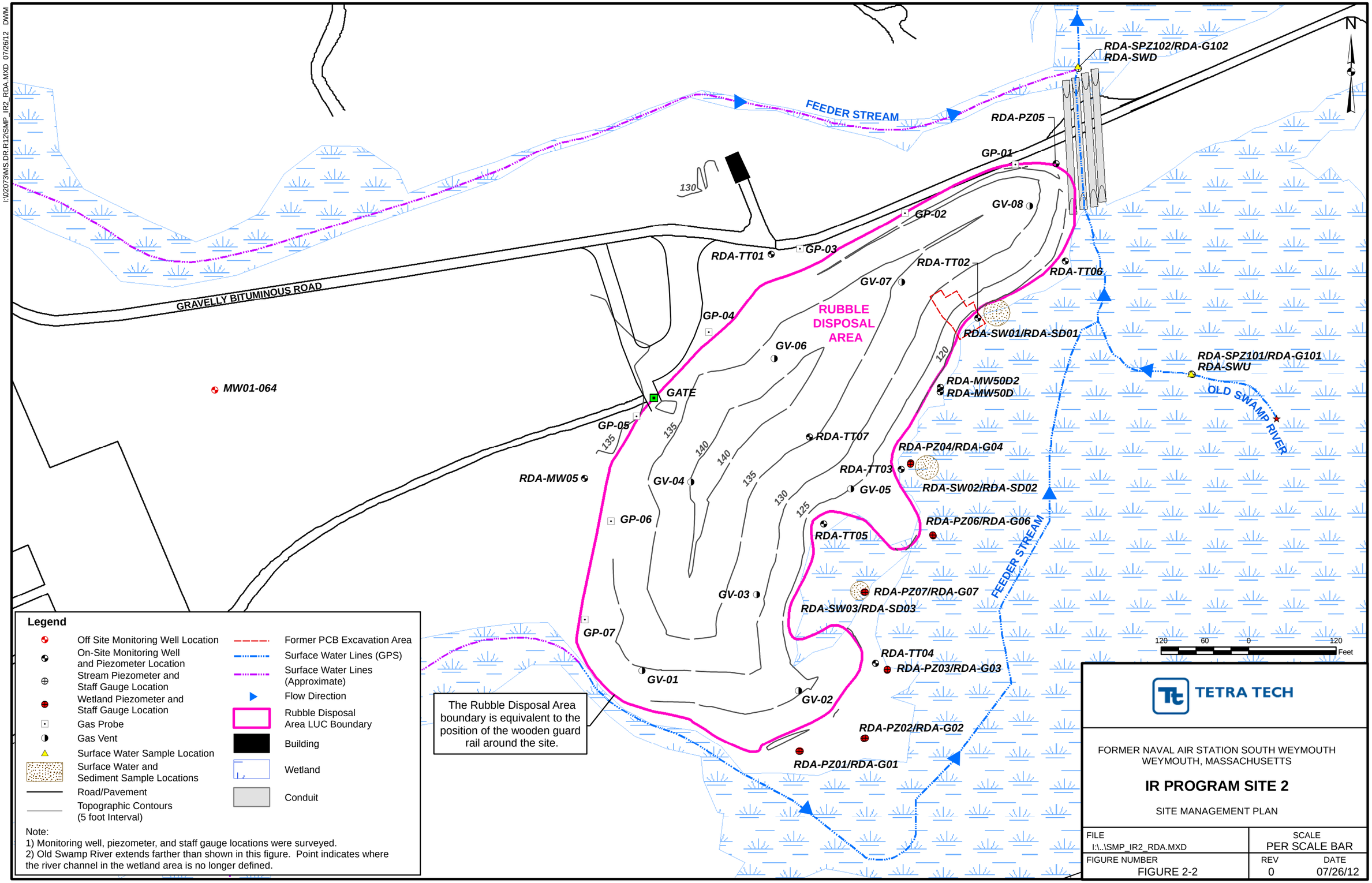

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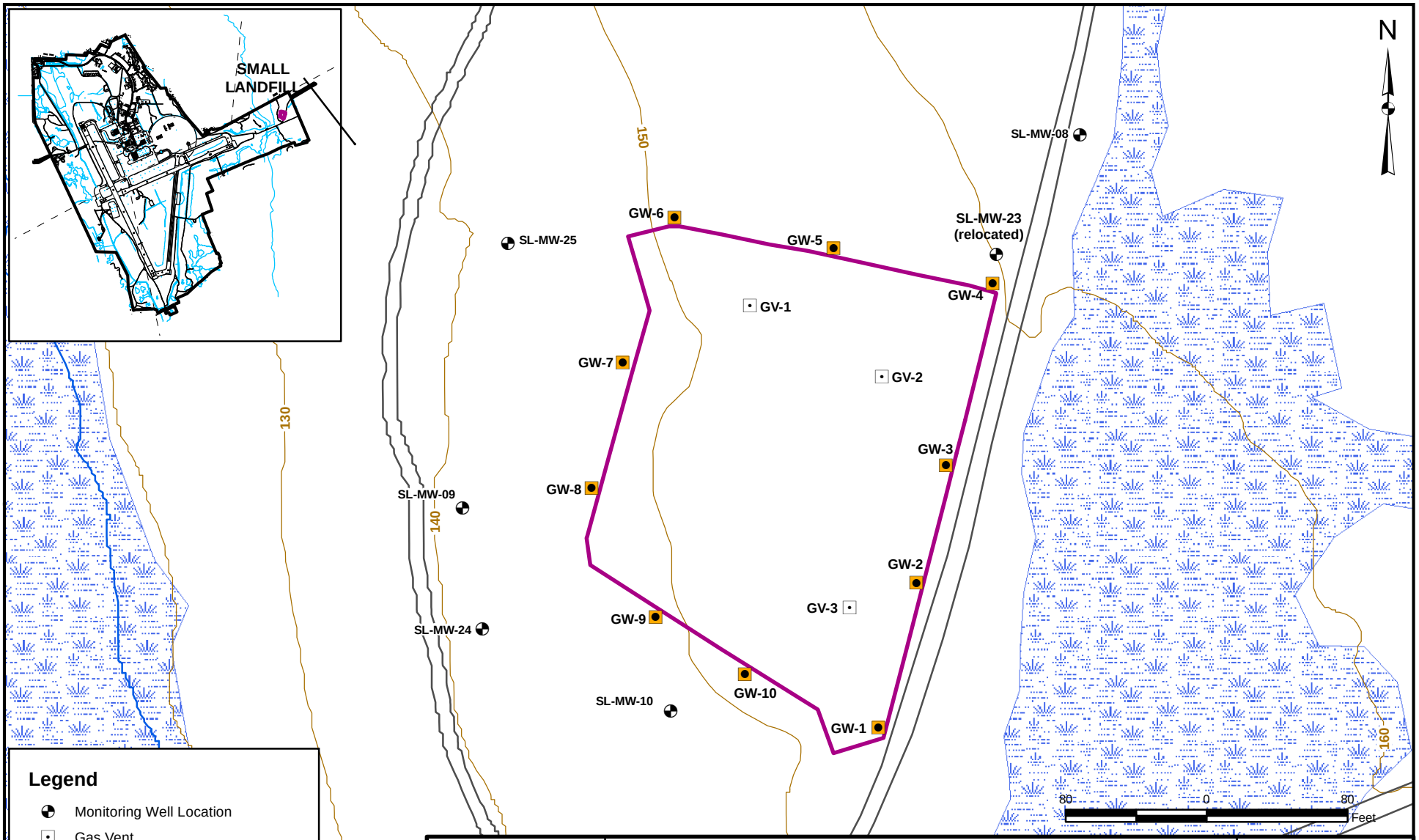


Legend

- Monitoring Well Location
- Gas Vent
- Perimeter Gas Well
- Fenceline
- Road
- Topographic Contour (10-ft interval)
- Wetland Area

TETRA TECH

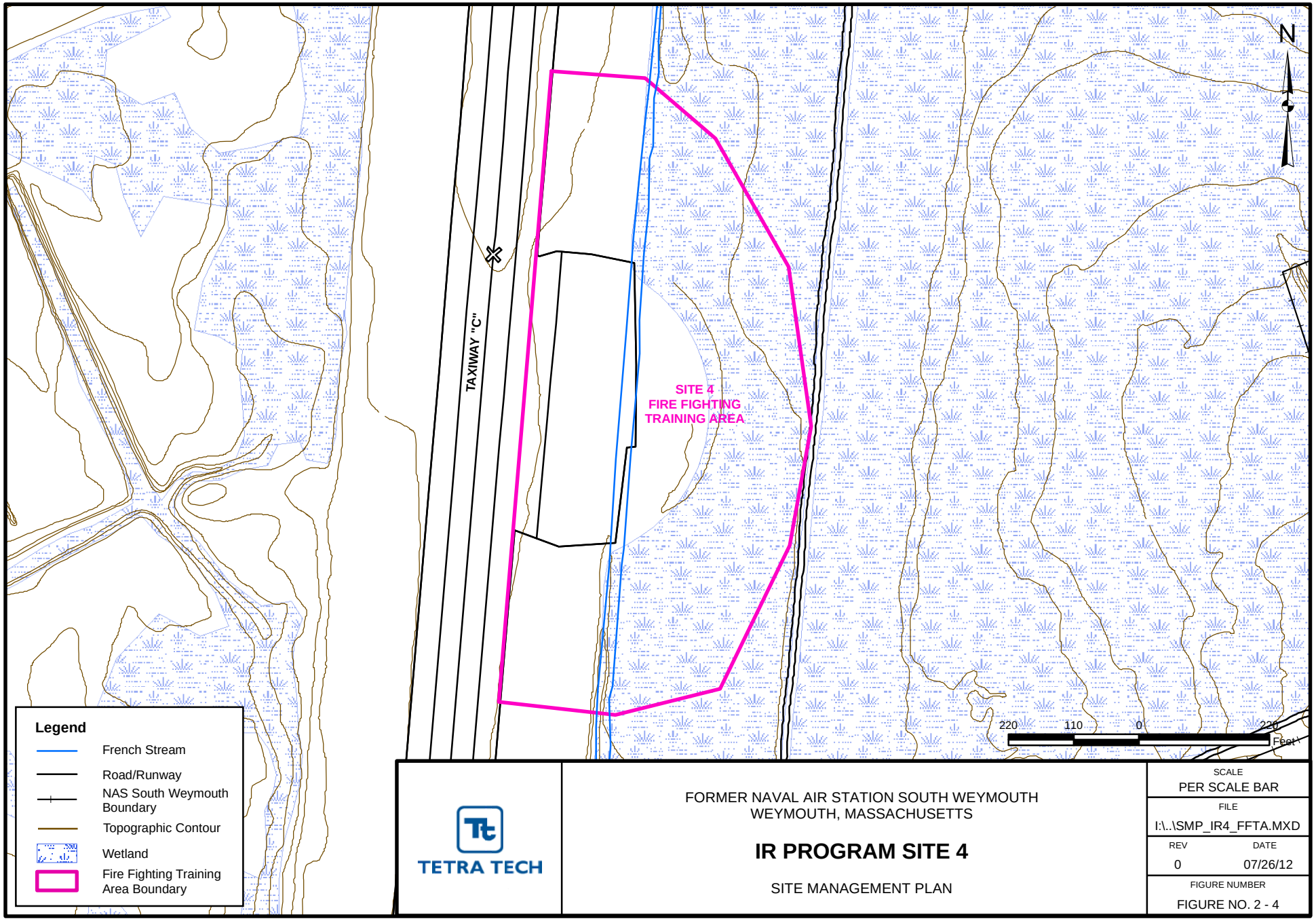
FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 3

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
I:\..\SMP_IR3_SLF.MXD	
REV	DATE
0	07/26/12
FIGURE NUMBER	
FIGURE NO. 2 - 3	

I:\02073\MS.DR.R12\SMP_IR4_FFTA.MXD 07/26/12 SP/DWM



TETRA TECH

FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 4

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
I:\..\SMP_IR4_FFTA.MXD	
REV	DATE
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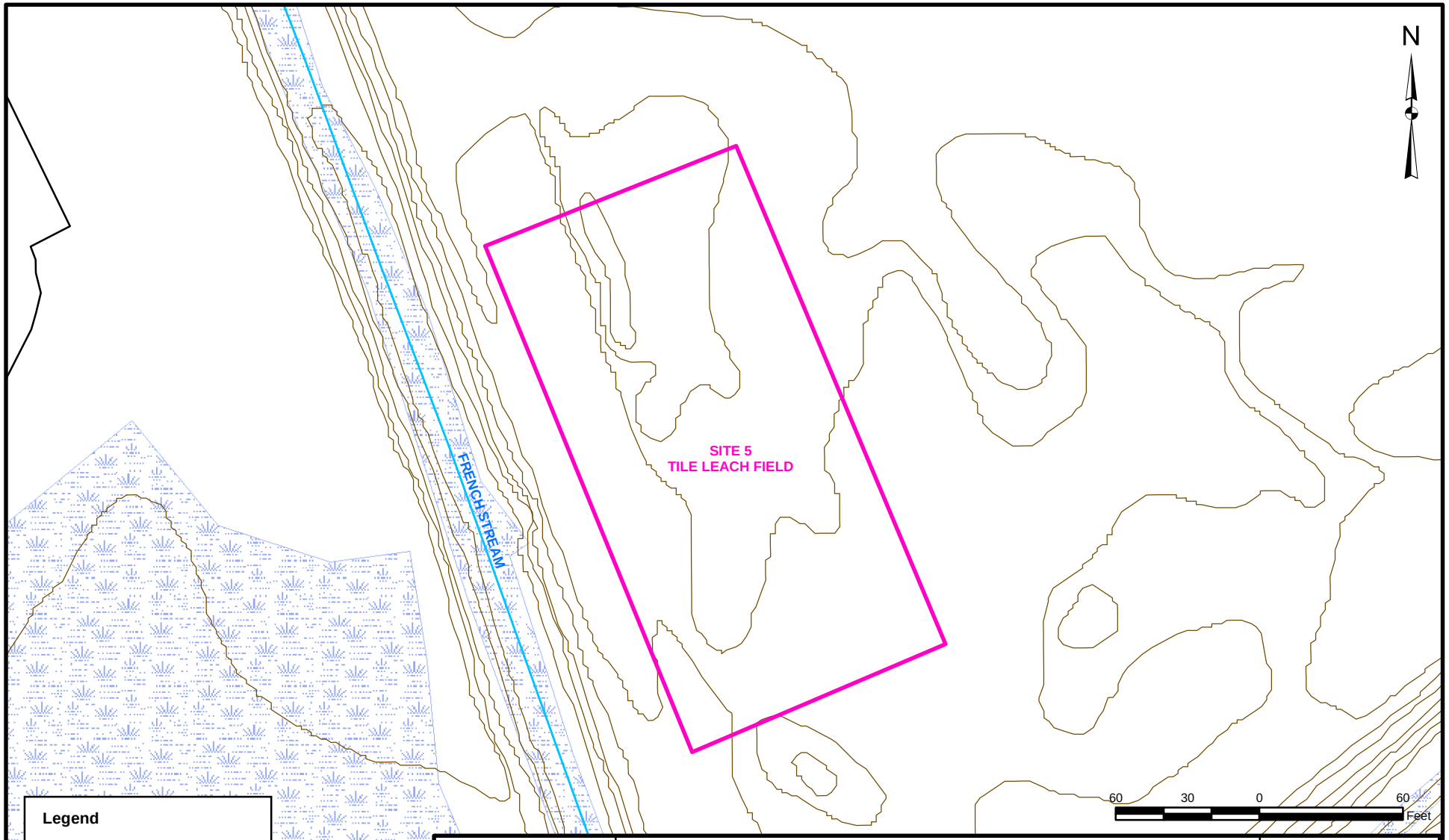
FIGURE NUMBER	
FIGURE NO. 2 - 4	

I:\02073\MS.DR.R12\SMP_IR5_TLF.MXD 07/26/12 SP/DWM



TETRA TECH

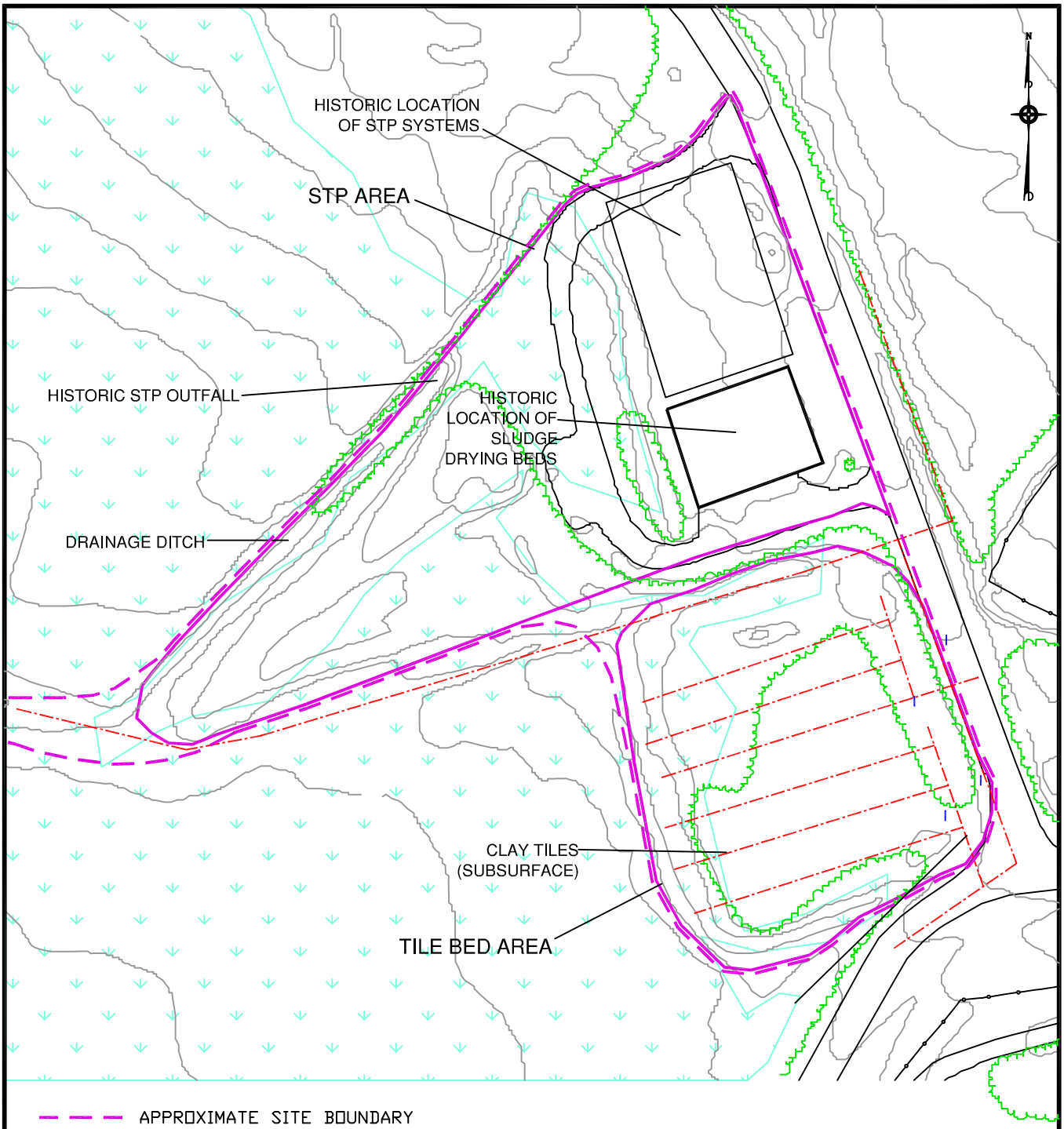
FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 5

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
I:\..\SMP_IR5_TLF.MXD	
REV	DATE
0	07/26/12
FIGURE NUMBER	
FIGURE NO. 2 - 5	

ACAD:I:\02073\MS.DR.R12\SMP_IR7_STP.DWG 7/26/12 DWM



APPROXIMATE SITE BOUNDARY
STP & TILE BED AREA BOUNDARIES
ROADS AND PAVEMENT
2 FOOT CONTOUR LINES
TREE LINE
CLAY TILES (SUBSURFACE)
WETLAND (2007)

GRAPHIC SCALE
0′ 100′

TETRA TECH

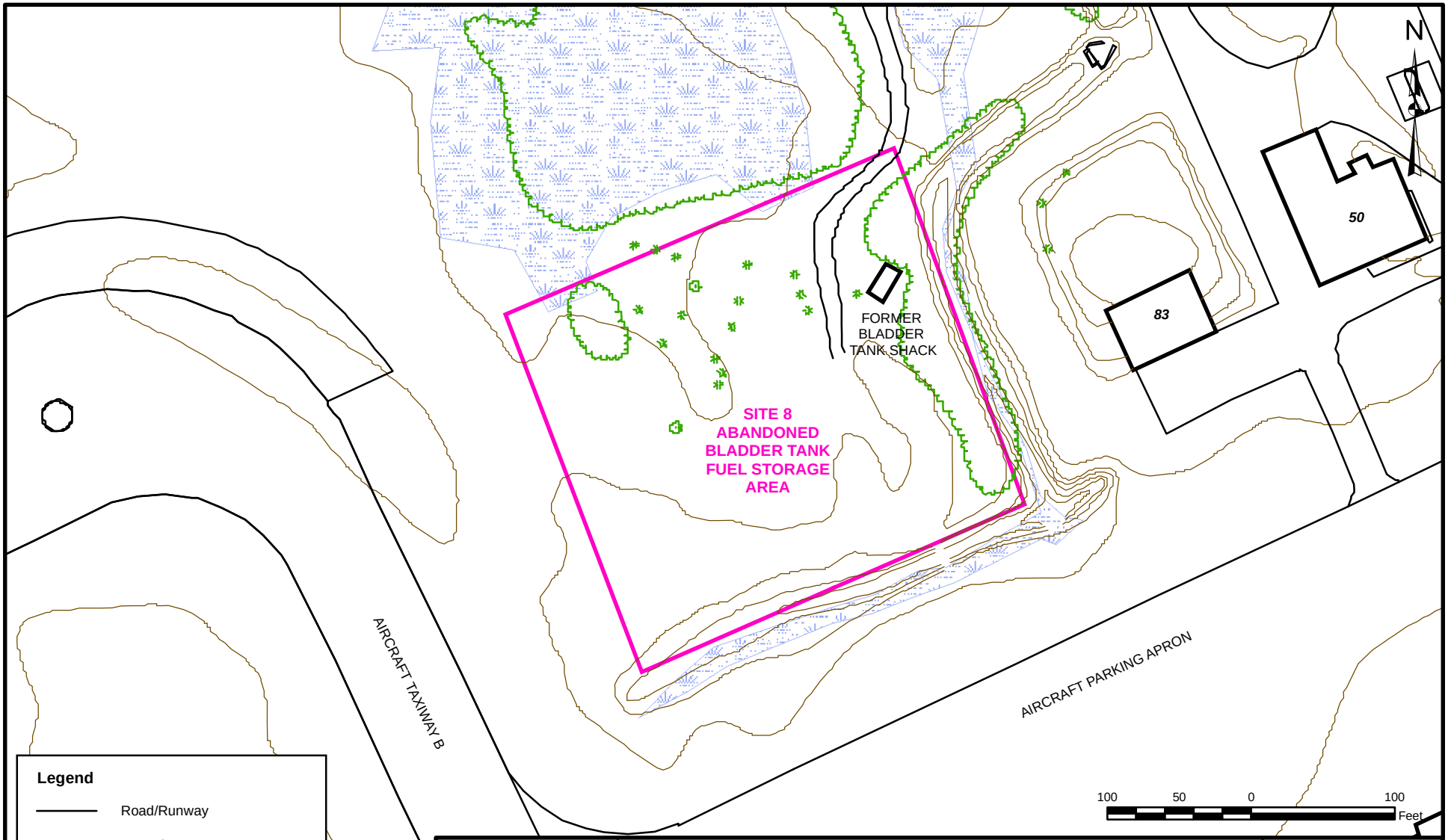
FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 7

SITE MANAGEMENT PLAN

SCALE	PER SCALE BAR
FILE	I:\..\SMP_IR7_STP.DWG
REV	0
DATE	7/26/12
FIGURE NUMBER	2-6

I:\02073\MS.DR.R12\SMP_IR8_ABTFSA.MXD 07/26/12 SP/DWM



TETRA TECH

FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 8

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
I:\..\SMP_IR8_ABTFSA.MXD	
REV	DATE
0	07/26/12
FIGURE NUMBER	
FIGURE NO. 2 - 7	

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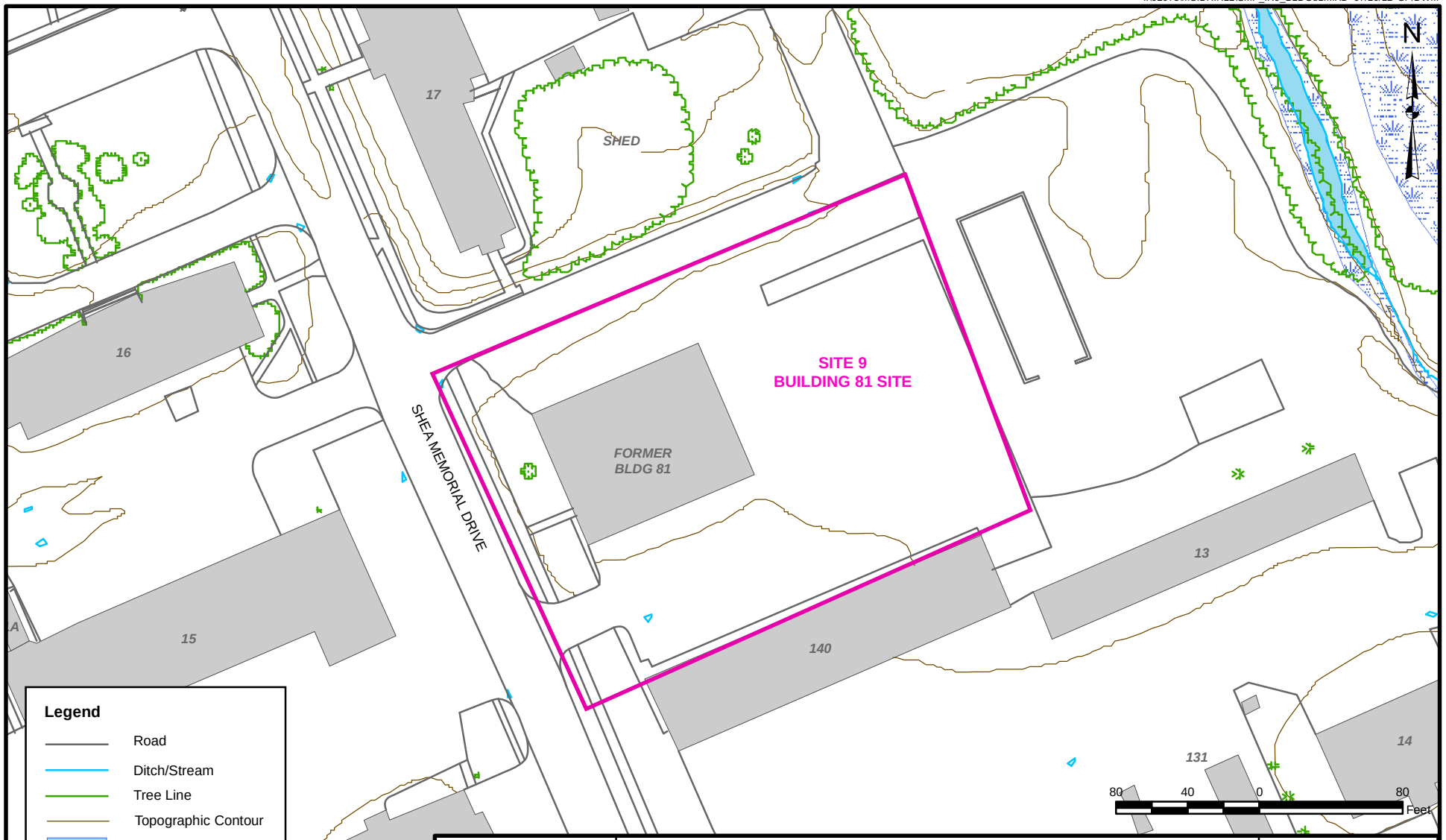


TETRA TECH

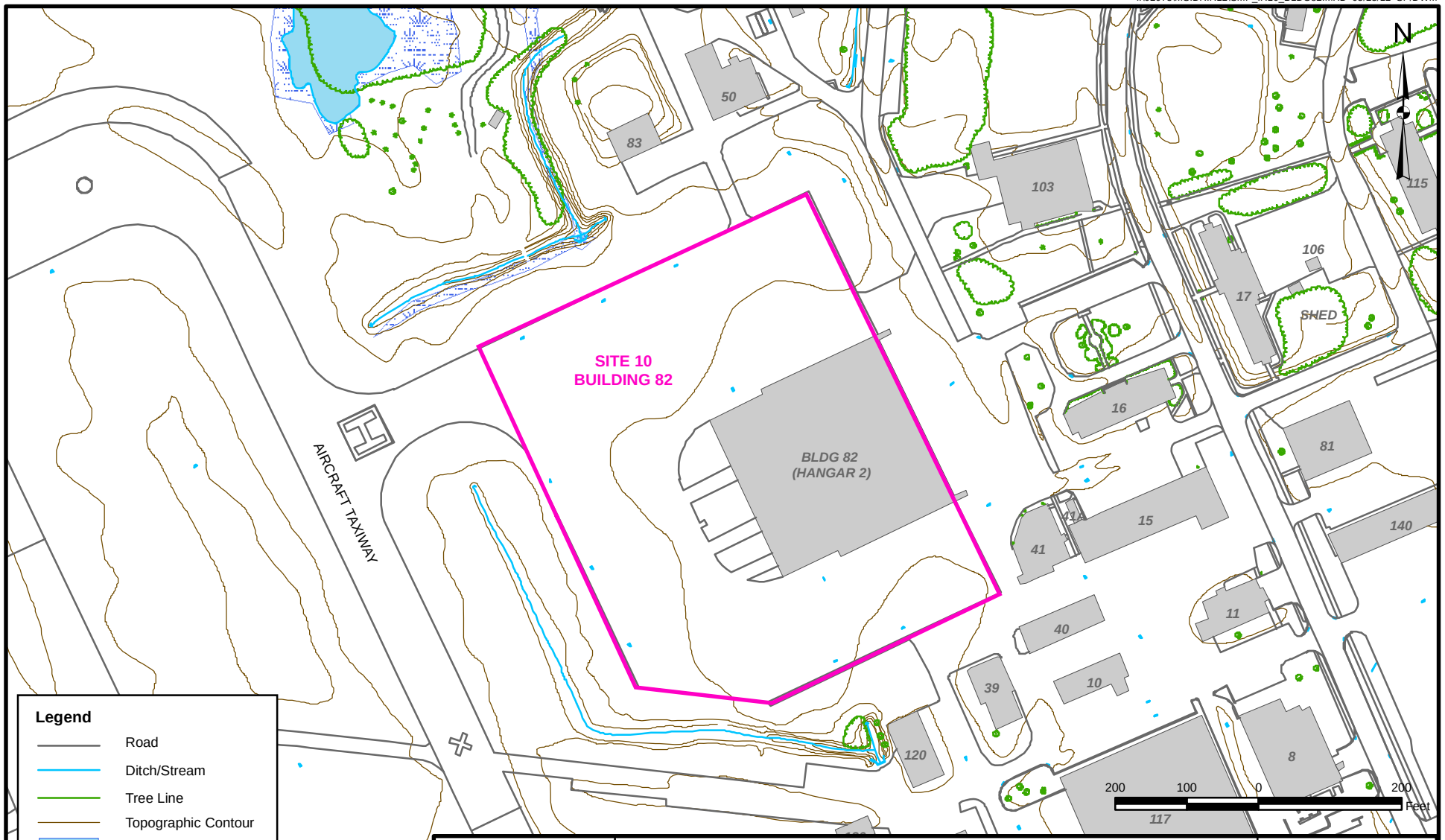
FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 9

SITE MANAGEMENT PLAN

SCALE	
PER SCALE BAR	
FILE	
I:\..\SMP_IR9_BLDG81.MXD	
REV	DATE
0	07/26/12
FIGURE NUMBER	
FIGURE NO. 2 - 8	

I:\02073\MS.DR.R12\SMP_IR10_BLDG82.MXD 05/23/12 SP/DWM



TETRA TECH

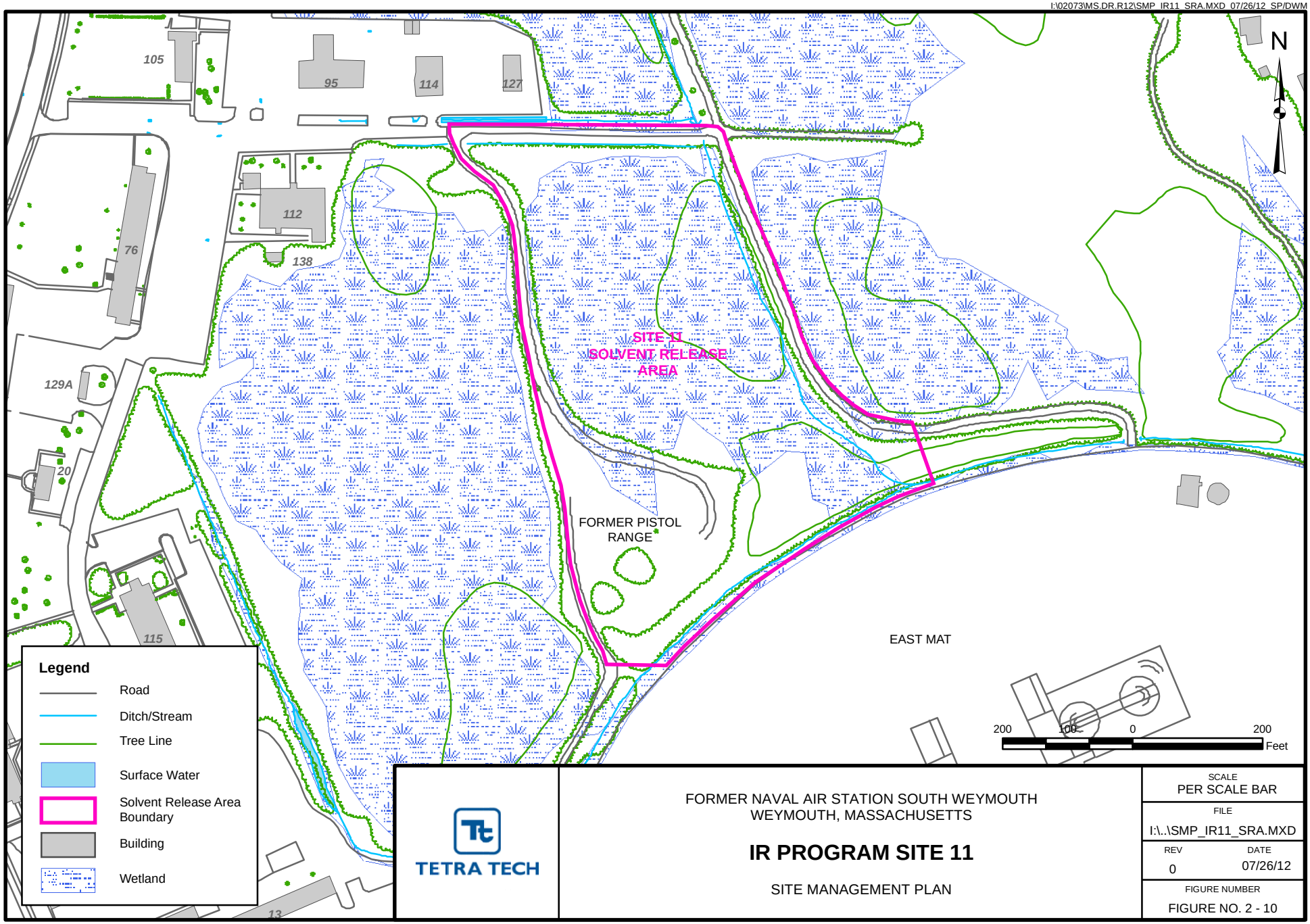
FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 10

SITE MANAGEMENT PLAN

SCALE	PER SCALE BAR
FILE	I:\..\SMP_IR10_BLDG82P.MXD
REV	0
DATE	07/26/12
FIGURE NUMBER	FIGURE NO. 2 - 9

I:\02073\MS.DR.R12\SMP_IR11_SRA.MXD 07/26/12 SP/DWM



TETRA TECH

FORMER NAVAL AIR STATION SOUTH WEYMOUTH
WEYMOUTH, MASSACHUSETTS

IR PROGRAM SITE 11

SITE MANAGEMENT PLAN

SCALE	PER SCALE BAR
FILE	I:\..\SMP_IR11_SRA.MXD
REV	0
DATE	07/26/12
FIGURE NUMBER	FIGURE NO. 2 - 10

APPENDIX A

SITE SCHEDULES

Installation Restoration Site Milestones and Target Dates --
Site Management Plan Rev. 12.0

Site	Site Name	Draft FS	Regulator Comments Due/Rec'd	Rvsd Draft FS	Regulator Comments Due/Rec'd	RTCs Issued	Draft Final FS	Regulator Comments Due/Rec'd	Rvsd Draft Final FS	Regulator Comments Due/Rec'd	RTCs Issued	Final FS	Draft PRAP	Regulator Comments Due/Rec'd	RTCs/ Draft Final PRAP	Agencies Concur on Draft Final PRAP	Prepare/ Print Final PRAP	Public Notice Published/ Public Comment Starts	Proposed Public Hearing Date	Public Comment Period Ends	Draft ROD	Regulator Comments Due/Rec'd	RTCs/Draft Final ROD	EPA Concurs	Navy Issues Signed Final ROD to EPA	EPA Signs ROD
9	Building 81	04/23/12	06/13/12	NA	NA	08/10/12	09/29/12	10/29/12	NA	NA	11/28/12	01/17/13	11/28/12	12/28/12	01/18/13	02/08/13	02/14/13	02/15/13	02/22/13	03/17/13	02/15/13	03/17/13	04/07/13	05/01/13	05/08/13	05/15/13
			Note (7)			Note (7)	Note (1)					Note (1)	Note (3)		Note (5)						Note (4)		Note (5)			
10	Building 82	09/23/09	10/23/09	NA	NA	NA	09/23/10	10/25/10	03/16/12	05/01/12	05/30/12	07/18/12	05/30/12	06/28/12	07/19/12	07/23/12	07/26/12	08/01/12	08/09/12	08/31/12	08/08/12	08/28/12	09/17/12	09/24/12	09/26/12	09/28/12
													Note (2,3)		Note (5)						Note (4)		Note (5)			
11	Solvent Release Area	08/24/10	11/05/10	02/20/12	03/30/12	05/08/12	07/11/12	08/10/12	NA	NA	09/09/12	10/29/12	09/09/12	10/09/12	10/30/12	11/20/12	11/26/12	11/27/12	12/04/12	12/27/12	11/27/12	12/27/12	01/17/13	02/10/13	02/17/13	02/24/13
													Note (3)		Note (5)						Note (4)		Note (5)			

REVIEW CYCLES ARE BASED ON FFA INTERVALS WITH SOME REDUCTIONS BASED ON EXPERIENCE WITH PRAPS AND RODS

Green-shaded areas indicate milestones that have been achieved.

Note (1) Assumes a meeting is scheduled within 3 weeks after RTCs are issued to discuss RTCs and agreement on RTCs is reached 1 week after the meeting. The document will then be revised. Assumes 50 days for these steps to occur.

Note (2) Draft PRAP is an update of the document issued by the Navy on November 8, 2011.

Note (3) Draft PRAP issued at same time as the RTCs on the Draft Final FS as agreed to at the May 22, 2012 BCT Meeting.

Note (4) The draft ROD will not include Part 3, the Responsiveness Summary. Part 3 will be included in the draft final ROD, assuming no change to the standard 30-day public comment period. Typical ROD cycle would add 2 months to the ROD signature date.

Note (5) Assumes one set of comments and responses and that RTCs are issued concurrent with the revised document.

Note (6) Date is dependent on pending receipt of EPA's ARARs comments and may need to be adjusted. Assumes minimal changes and time required to resolve and include in the Draft Final FS.

Note (7) Once EPA ARARs comments are provided the RTCs will be completed.

NA - Not Applicable

Areas of Concern Milestones and Target Dates --
Site Management Plan Rev. 12.0

AOC	Site Name	Implement Field Program	Draft Field Report	Regulator Comments Due	RTCs/Draft Final Field Report	Regulator Comments Due	RTCs/Final Field Report	Draft PRAP	Regulator Comments Due	Draft Final PRAP	Agencies Concur on Draft Final PRAP	Prepare and Print Final PRAP	Public Notice Sent Out, Public Comment Starts	Proposed Public Hearing Date	Public Comment Period Ends	Draft ROD	Regulator Comments Due	Draft Final ROD	EPA Concurs	Navy Issues Signed Final ROD to EPA	EPA Signature of ROD
IOA	Industrial Operations Area	08/08/11	08/20/12	09/19/12	10/19/12	11/18/12	12/18/12	01/01/13	01/31/13	02/21/13	03/14/13	03/21/13	03/21/13	03/28/13	04/20/13	03/21/13	04/20/13	05/11/13	06/04/13	06/14/13	06/21/13
	Note (1)		Note (2)							Note (3)						Note (4)					

Green-shaded areas indicate milestones that have been achieved.

Note (1) Industrial Operations Area comprised of four sites, AOC 14, AOC 83, RIA 33 and RIA 82, and the surrounding areas.

Note (2) Field Report includes a Streamlined Human Health Risk Assessment.

Note (3) Some Navy dates less than FFA intervals based on experience.

Note (4) The draft ROD will not include Part 3, the Responsiveness Summary. Part 3 will be included in the draft final ROD, assuming no change to the standard 30-day public comment period. Typical ROD cycle would add 2 months to the ROD signature date.

RDA Long-Term Monitoring Milestones and Target Dates -- Site Management Plan Rev. 12

Year*	LTM and O&M Round 1	Round 1 Data Report	LTM and O&M Round 2	Round 2 Data Report	Draft Annual Report **	Regulator Comments Due	Final Annual Report **
5	3/7/11	7/21/11	9/12/11	NR	8/23/12	9/22/12	10/22/12
6	4/30/12	7/20/12	9/30/12	11/30/12	1/25/13	2/24/13	3/13/13
7	5/15/13	7/18/13	9/30/13	11/30/13	1/25/14	2/24/14	3/12/14
8	5/15/14	7/18/14	9/30/14	11/30/14	1/25/15	2/24/15	3/12/15

Green-shaded areas indicate milestones that have been achieved. LTM commenced in 2007.

* Semi-annual monitoring began in Year 3 (2009), following 2 years of quarterly events. Reporting in Year 4 included a Round 1 Data Report and Annual Report that combines Rounds 1 and 2 in lieu of a separate Round 2 data report.

** Annual reports cover LTM and O&M activities and include the annual Land Use Control Compliance Inspection checklist.

NR - A separate Data Report was not prepared.

LTM Activities:

Quarterly for first 2 years, then semi-annually:

1. Landfill gas monitoring
2. Groundwater sampling and analysis
3. Surface water sampling and analysis
4. Groundwater elevations and surface water levels

Years 1 & 2 - once; once prior to the 5-year review:

1. Sediment sampling and analysis

O & M Activities:

Quarterly for first 2 years, then semi-annually:

(1) inspection of landfill cap

(2) inspection of stormwater drainage system

(3) gas monitoring vents and probes inspection

(4) inspection of access road, fence, gate, and signage

(5) groundwater monitoring system inspection.

(6) vegetation inspection.

Annually:

(1) settlement survey of gas vents.

(2) wetland monitoring - soils (in the fall)

(3) wetland monitoring - hydrology (during the growing season)

(4) wetland monitoring - functions and values assessment (end of 5th growing season)

Semi-annually:

(1) wetland monitoring - vegetation

Every other year:

(1) vegetation maintenance

RIA Milestones and Target Dates --
Site Management Plan Rev. 12.0

RIA	Site Name	Field Program Completed	Draft DD	Regulator Comments Due	RTCs/Draft Final DD	Regulator comments due	RTCs/Final DD	Final Concurrence
11	Aqueous Fire Fighting Foam	02/16/12	07/12/12	08/11/12	09/10/12	10/10/12	11/09/12	12/09/12
			Note (1)		Note (2)		Note (2, 3)	

RIA	Site Name	Draft Data Gap Investigation Work Plan	Regulator comments due	RTCs/Final Work Plan	Implement Field Program	Prepare Draft Final DD	Regulator comments due	RTCs/pre-final DD	Regulators Concur	RTCs/Final DD	Final Concurrence
111	Old Hangar 2	10/16/12	11/15/12	12/15/12	01/14/13	03/15/13	04/14/13	05/14/13	06/13/13	06/23/13	06/30/13
		Note (4)				Note (5)					

Green-shaded areas indicate milestones that have been achieved.

Note (1) Assumes all outstanding issues resolved by May 22, 2012.

Note (2) Assumes one set of comments and RTCs and that RTCs are issued concurrent with the revised document.

Note (3) Assumes Decision Document will recommend that groundwater actions be taken under CERCLA. Actions will likely include FFTA ESD and ESD or ROD Amendment for AOC Hangar 1 PDWSA.

Note (4) Navy scoping a contractor to prepare a work plan for further investigations. Assume BCT meeting to discuss scope scheduled for September. Completion of UFP SAP on hold until investigations completed.

Note (5) Assumes field program provides sufficient information to complete draft final Decision Document. Possible transfer to MCP. If designated an AOC, a streamlined human health risk assessment or removal action followed by PRAP and ROD would add a minimum of 9 months.

Small Landfill Long-Term Monitoring Milestones and Target Dates -- Site Management Plan, Rev. 12.0

Semi-Annual Groundwater/Landfill Gas Monitoring					
Year	**Semi-Annual Round 1**	**LTM Data Report**	**Semi-Annual Round 2**	**LTM Data Report**	**Annual Report**
1			November 2010	January 2011	
1	April 2011	June 2011	September 2011	*	January 2012*
2	May 2012	July 2012	October 2012	December 2012	February 2013
3	May 2013	July 2013	October 2013	December 2013	February 2014
4	May 2014	July 2014	October 2014	December 2014	February 2015
O&M Inspections					
Year	**1st Quarter**	**2nd Quarter**	**3rd Quarter**	**4th Quarter**	**Annual Report**
1	December 2010	March 2011	July 2011	September 2011	January 2012*
2		May 2012		October 2012	February 2013
3		May 2013		October 2013	February 2014
4		May 2014		October 2014	February 2015

Green-shaded areas indicate milestones that have been achieved. LTM commenced November 2010.

The Data Reports and Annual Reports cover both O&M and LTM activities.

*A separate September 2011 data report was not prepared. The first Annual Report includes the November 2010, April 2011, and September 2011 semi-annual events to adjust schedule to a calendar year basis.

O & M Activities:

Quarterly for first year, then semi-annually:

(1) inspection of landfill cap

(2) inspection of stormwater drainage system

(3) gas monitoring vents and probes inspection

(4) inspection of access road, fence, gate, and signage

(5) groundwater monitoring system inspection

(6) vegetation inspection

Annually:

(1) settlement survey of gas vent pads

West Gate Landfill Long-Term Monitoring Milestones and Target Dates -- Site Management Plan Rev. 12.0

Year	1st Quarter Monitoring	1st Quarter Data Report	2nd Quarter Monitoring	2nd Quarter Data Report	3rd Quarter Monitoring	3rd Quarter Data Report	4th Quarter Monitoring	4th Quarter Data Report	Draft Annual Report	Regulator Comments Due	Final Annual Report
Quarterly Monitoring - Year 1: Long-Term Monitoring and O&M Activities											
1	12/30/11	3/27/12	LTM: 3/20/2012 O&M: 5/1/12	5/21/12	7/9/12	8/31/12	9/30/12	11/30/12	3/18/13	4/17/13	5/13/13
Quarterly Monitoring - Year 2: Long Term Monitoring and O&M Activities											
2	12/30/12	3/27/13	3/30/13	5/30/13	6/30/13	8/30/13	9/30/13	11/30/13	3/18/14	4/17/14	5/13/14
Semi-Annual Monitoring - Year 3: Long Term Monitoring and O&M Activities											
3			3/30/14	5/30/14			9/30/14	11/30/14	3/18/15	4/17/15	5/13/15

Green-shaded areas indicate milestones that have been achieved. LTM commenced December 2011.

Data Reports and Annual Reports cover both O&M and LTM activities with the exception of Year 1, Q2.

LTM Activities:

Quarterly for first 2 years, then semi-annually (spring and fall): groundwater, surface water, and sediment

Quarterly: landfill gas

O & M Activities:

Quarterly for first 2 years, then semi-annually (spring and fall):

(1) inspection of landfill cap

(2) inspection of stormwater drainage system

(3) gas monitoring vents and probes inspection

(4) inspection of access road, fence, gate, and signage

(5) groundwater & surface water monitoring system inspection

(6) vegetation inspection

Annually:

(1) settlement survey of gas vent pads and level spreaders.

Semiannually for 3 years:

(1) post-closure wetland monitoring - spring & late summer