

Raytheon Company

Partial Permanent Solution With Conditions

Former Hamlen Property
Wayland, MA

Release Tracking No: 3-13302

15 December 2016

ERM Project No. 0321744

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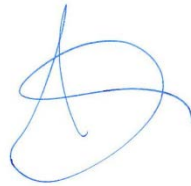
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ACRONYM AND ABBREVIATION LIST

ACOE	Army Corps of Engineers
amsl	above mean sea level
ARAH	Area of Readily Apparent Harm
AUL	activity and use limitation
AWQC	Ambient Water Quality Criteria
CAC	Continental Assurance Company
CFR	Code of Federal Regulations
CMO	Code of Massachusetts Regulation
COC	contaminants of concern
CSA	Comprehensive Site Assessment
yd ³	cubic yards
DO	dissolved oxygen
ERM	Environmental Resources Management
ft ²	square feet
GMNWR	Great Meadows National Wildlife Refuge
GIS	Geographic Information System
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
Mass GIS	Massachusetts Geographic Information System
MCP	Massachusetts Contingency Plan
MEPA	Massachusetts Environmental Protection Act
NAPL	non-aqueous phase liquid
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OHM	oil and/or hazardous material
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
ppm	parts per million
QA/QC	quality assurance / quality control
REDUA	Representativeness Evaluations and Data Usability Assessments Guidance
RIP	Remedy Implementation Plan
RTN	Release Tracking Number
TSCA	Toxic Substances Control Act
TSS	total suspended solids
UCL	Upper Concentration Limits
U.S./US	United States
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WBC	Wayland Business Center, LLC

1.0

INTRODUCTION

On behalf of Raytheon Company (Raytheon), Environmental Resources Management (ERM) has prepared this Partial Permanent Solution With Conditions report for a 5.5-acre parcel located on Boston Post Road in Wayland, Massachusetts (herein referred to as the “Site”) (see Figure 1). The property is the Former Hamlen property. Figure 2 shows the Disposal Site Boundary. Figure 3 shows the Disposal Site Area relative to the adjacent former Raytheon facility, which is the source of impacts to the Site.

This Partial Permanent Solution With Conditions report documents the presence and potential current and future risks of polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and metals in wetland soil/sediment at the Site where concentrations were detected above the applicable Reportable Concentrations.

This report has been prepared in accordance with the provisions set forth in 310 CMR 40.1056, which present the requirements for content of a Permanent Solution. In accordance with 310 CMR 40.1403, the Chief Municipal Officer and Board of Health Commission were notified of the submission of this Partial Permanent Solution With Conditions report. Copies of the letter that was sent to these officials are provided in Appendix A.

The descriptions in this report of the comprehensive response actions taken at the Site include the entire impacted wetland area, not solely the area(s) within the Disposal Site Boundary, which is the subject of this Partial Permanent Solution With Conditions.

1.1

PROPERTY LOCATION AND DESCRIPTION

Based on the property deed, the former Hamlen property is located at 433 Boston Post Road, and is identified as parcel 22-10 according to the Wayland Assessor’s Office, in Wayland, Massachusetts. The Site location is shown in Figure 1. For purposes of this document, the Site is defined as a portion (western portion) of the Former Raytheon Property covered under Release Tracking Number (RTN) 3-13302, related RTN 3-22408, and Tier IB Permit Number 133939. This address associated with the RTNs is 430 Boston Post Road. The tier classification permit number is provided for historical context but it not active under current MCP regulations. The site is classified as Tier 1 under the new MCP; however, tier classification

permits are no longer issued. The portion of the property that is the subject of this Partial Permanent Solution With Conditions report is a 5.5-acre parcel of Limited Commercial zoned land located off of Route 20, abutting the Sudbury River. The parcel is approximately 90 percent wetlands and floodplain. The property is bounded to the west by the Sudbury River, to north by undeveloped land including the Great Meadows National Wildlife Refuge (GMNWR), to the east by the former Raytheon facility, and to the south by Route 20.

An activity and use limitation (AUL) was placed on the land in 2006 following remediation of a northeast corner of the property. The AUL limits the use of the site to passive recreation and open space. Section 3.6 describes the AUL in more detail.

A detailed description of the Site topography, hydrogeology, geology, and hydrogeology is provided in Section 3.1.

1.2 *PERSON UNDERTAKING THE PARTIAL PERMANENT SOLUTION WITH CONDITIONS*

Responsible Party: Raytheon Company
50 Apple Hill Drive
Tewksbury, Massachusetts 01876
Attn: Louis J. Burkhardt
978-858-1885

Licensed Site Professional: John C. Drobinski, P.G., LSP
LSP Registration No. 2196
Environmental Resources Management
One Beacon Street
Boston, Massachusetts 02108
617-646-7800

1.3 *OBJECTIVE*

ERM completed this Partial Permanent Solution With Conditions report per 310 CMR 40.1000 to document the comprehensive actions taken to determine that a Condition of No Significant Risk exists at the Site and that the requirements of a Partial Permanent Solution With Conditions have been met.

2.0 *BACKGROUND*

2.1 *SITE DESCRIPTION*

The general location of the Site and the physiographic features of the surrounding area are shown on Figure 1. Prior to 1955, the Site was a wetland and floodplain. Subsequent to 1955, the Site remained the same but was bordered by an engineering research and development facility that was decommissioned in 1995 which is now developed as a mixed use residential and commercial property.

The Site is currently a wetland and floodplain subject to the restrictions of the Wetlands Protection Act. The Site is located within a Massachusetts Department of Environmental Protection (MassDEP)-Approved Zone II Wellhead Protection Area. Groundwater is, therefore, considered a current and future source of drinking water. However, there is no current withdrawal of groundwater as a source of drinking water on or surrounding the Site. Groundwater is not subject to this Partial Permanent Solution With Conditions report.

The Sudbury River abuts the Site and is classified as a Class B Surface Water Body. Predominant use of the river is recreational. The river has been posted with signage prohibiting consumption of fish due to mercury impacts associated with the Nyanza Superfund site located approximately six miles (straight-line distance) upstream of the Site.

Raytheon utilized their property from 1955 to 1995 for electronic testing and chemical process research to support in-house prototype manufacturing. In 1995, Raytheon ceased operations and decommissioned the facility. All research, design, and light manufacturing equipment was removed from the Site. Remaining buildings and structures were evaluated by Raytheon's Environmental Health & Safety Division and decontaminated, if necessary.

Sale of the Hamlen Parcel (assessor's map/lot 22-10) to Raytheon was recorded at the Middlesex South Registry of Deeds on 24 September 2003. The adjacent property was owned by Continental Assurance Company (CAC) between 1968 and 1997 and leased to Raytheon. Wayland Meadows Limited Partnership (Wayland Meadows) purchased the property from CAC on 1 October 1997 and subsequently sold the Site to Wayland Business Center, LLC (WBC) on 1 December 1997.

In 2005, redevelopment activities on the property were initiated. However, none of the Raytheon former operations, buildings, or current development is within the area subject to this Partial Permanent Solution With Conditions report.

2.2 ***SURROUNDING LAND USE***

The Site is bounded to the west by the Sudbury River, to north by undeveloped land including the GMNWR, to the east by the former Raytheon Facility (currently Wayland Town Center), and to the south by Route 20.

The Site and surrounding area are shown on Figure 3.

2.3 ***CONCEPTUAL SITE MODEL***

Historical data suggest that inadvertent releases of PCBs, PAHs, and metals may have occurred via the stormwater and sanitary conveyance system, resulting in a discharge to the wetland at outfall OF-1. The organic contaminants were deposited in the wetland sediments near the outfall, and were immobilized as a result of high organic content in the sediment. The metals are more widely dispersed within the wetland, and the highest levels are detected near the outfall.

2.4 ***RELEASE BACKGROUND***

Releases of oil and/or hazardous materials (OHMs) to soil and groundwater were discovered on the abutting Raytheon property during decommissioning of the former manufacturing facility. Concentrations of OHM were also discovered on the Site subsequent to the above investigation. The primary source of impact to the wetland soil/sediment at the Site is believed to be historic releases of OHM to the stormwater conveyance system on the former Raytheon facility, discharging at the stormwater outfall OF-1 (Figure 2). The primary contaminants of concern (COCs) identified in source structures (e.g., dry wells and manholes) connected to the stormwater conveyance system included PAHs, PCBs, and heavy metals (i.e., chromium, copper, silver, arsenic, and lead).

Evaluation of the average concentrations of primary COCs versus distance from the outfall indicated that concentrations were highest near the

outfall, decreasing sharply within 200 feet from the outfall, and then approaching background near the Sudbury River. The vertical extent of impact appeared to be largely limited to the top 18 inches of sediment, although local variations were noted. The sediment layer is confined by an underlying, silt/clay unit beneath the wetland.

The descriptions in this report of the comprehensive response actions that were taken at the Site include the entire impacted wetland area – not solely the area(s) within the Disposal Site Boundary, which is the subject of this Partial Permanent Solution With Conditions.

An inclusive list of supporting information regarding the release and subsequent response actions is included below.

- Phase I, Initial Site Investigation, May 1996
- Environmental Risk Characterization of the Wetlands Adjacent to the Former Raytheon Facility, Wayland, Massachusetts 09 November 2001
- Phase II, Comprehensive Site Assessment, Vol I, 28 November 2001
- Phase II, Comprehensive Site Assessment, Vol II – Appendix 27 November 2001 " Phase II, Comprehensive Site Assessment, Vol III - Appendix F-G, 27 November 2001
- Phase II, Comprehensive Site Assessment, Vol IV – Appendix H, 27 November 2001
- Phase II, Comprehensive Site Assessment, Vol V – Appendix H, 27 November 2001
- Phase II, Comprehensive Site Assessment, Vol VI – Appendix H, 27 November 2001
- Phase III, Remedial Action Plan, 28 November 2001
- Phase IV, Remedy Implementation Plan, Vol 1, 30 December 2002
- Phase IV, Remedy Implementation Plan, Vol 2 – Appendix A-F, 30 December 2002
- Phase IV, Remedy Implementation Plan, Vol 3 – Appendix G-L, 30 December 2002
- Response to Public Comment, 19 December 2002
- Application for Risk-Based Disposal Approval, 23 December 2002
- Information Supplement - Application for Risk-Based Disposal Approval, 3 April 2003

- Response to Comments, 25 July 2003
- Response to Comments, 31 July 2003, and Revised Application for Risk-Based Disposal Approval, July 2003
- Response to Comments #4, 6 August 2003
- Response to USEPA Comment – 13 August 2003 Letter, 25 August 2003
- Response to USEPA Comment - August 13, 2003 Letter, 28 August 2003
- Revised Application for Risk-Based Disposal Approval, September 2003
- Revised QA/QC Plan, 4 September 2003
- Response to Comments, 26 September 2003
- Phase IV Completion Report, 24 November 2004
- Notice of Activity and Use Limitation, Recorded 8 February 2006
- Toxics Substances Control Act Risk-Based Polychlorinated Biphenyls Remediation Final Report, 14 May 2008
- Remedy Operation Status Reports
 - May 2005 through May 2016

2.4.1 *Wetland Soil/Sediment*

The correlation of areas of COCs in sediment with the results of vegetative mapping and analysis of plant tissue defined an area of stunted vegetation approximately 0.6-acre in size. This condition constituted an Area of Readily Apparent Harm (ARAH)¹ (Figure 4).

This quantitative evaluation of the potential risk posed by COCs in wetland soil/sediment indicated that PCBs, PAHs, and metals in wetland soil/sediment posed a condition of “significant risk” to human health and the environment which required abatement. The condition of “significant risk” was attributed to the 0.6-acre ARAH and an estimated 0.9 acres of adjacent wetland where COC concentrations were similar to those within the ARAH. Therefore, to achieve a condition of “no significant risk”

¹ ARAH is defined by 310 CMR 40.0955(3) as “stressed vegetation attributable to Site OHM” and is interpreted to reflect the toxicity of heavy metals (e.g., chromium) to plants.

consistent with Massachusetts Contingency Plan (MCP) performance standards for a Permanent Solution, abatement of an estimated 1.5 acres of wetland soil/sediment was required.

2.4.2 *Surface Water*

No evidence of adverse impact to the Sudbury River has been detected. The Phase II Comprehensive Site Assessment (CSA) (ERM, 2001a-e) provided a detailed description of the surface water assessments that were completed at the Site. The Phase II concluded that the extent of surface water impact within the wetland appears to be largely associated with areas of residual impact to wetland sediments near the outfall, and is reduced to levels protective of the environment before migrating to the Sudbury River.

Surface water analyses indicate that the only metal that maintains a potential to impact aquatic receptors in surface water during periods of flooding is copper at locations within 200 feet of the outfall. Dissolved concentrations of copper drop below both acute and chronic Ambient Water Quality Criteria (AWQC) at greater distances to the Sudbury River.

Review of available data obtained from the Town of Wayland Water Commission as part of the Phase II work (ERM, 2001a-e) indicated that the low pH of the town water supply (less than 6.5) resulted in widespread leaching of copper from the distribution supply lines. Based on these findings, a portion of the copper in surface water appears to be related to “local conditions”, and portions of copper in sediment are possibly related to “anthropogenic background” as defined in MassDEP guidance and regulations, respectively.

2.5 *REMEDIATION OF RELEASE*

Excavation and off-site disposal of wetland soil/sediment was selected as the preferred remedial action for abatement of the impacted wetlands. Remedial activities included:

- Excavation of wetland soil/sediment;
- Off-site transport and disposal of excavated wetland soil/sediment at an appropriately permitted disposal facility; and
- Habitat restoration, which included:
 - Re-soiling and grading to pre-construction contours,

- Replanting with similar species, and
- Ecological monitoring.

2.5.1 *Permitting and Regulatory Approvals*

Prior to initiating remediation, regulatory and permitting approvals were secured. The reach of the Sudbury River adjacent to the wetland remediation area is designated Wild and Scenic under the Wild and Scenic Rivers Act approved 2 October 1968. The wetland remediation area is adjacent to part of the GMNWR, owned and operated by the U.S. Fish and Wildlife Service (USFWS). Because the remediation area is a wetland and is located in a regulated area, a rigorous permitting process was required to satisfy the various governing regulatory agencies. The following regulations and corresponding permits and approvals were obtained for the Site, and maintained on-site throughout the remediation activities:

- The Wetlands Protection Act (310 CMR 10.000) – An Order of Conditions (Order), dated 26 September 2003 and an addendum dated 10 February 2004, was issued by the Town of Wayland Conservation Commission (Commission) in response to the Notice of Intent (NOI) submitted on 15 May 2003 (revisions and addendums to the NOI sent 2 June 2003, 26 June 2003, 9 July 2003, 18 July 2003, and 23 September 2003);
- The Clean Waters Act, Section 401 (Water Quality Criteria) and Section 404 (Wetlands Regulations) – A Water Quality Certification, dated 15 September 2003, was issued by the Department in response to the Major Project Certification - 401 Water Quality Certification Application submitted on 7 February 2003;
- Army Corps of Engineers (ACOE) Regulations (33 CFR 200-399) – A Department of the Army Permit, dated 19 September 2003, was issued by the ACOE in response to an Application for the Department of the Army Permit submitted 7 February 2003;
- The Massachusetts Environmental Protection Act (MEPA) (301 CMR 11.00) – A Certificate of the Secretary of Environmental Affairs on the Single Environmental Impact Report, dated 17 July 2003, was issued by the Office of Environmental Affairs in response to the Single Environmental Impact Report submitted on 19 May 2003;
- The Toxic Substance Control Act (TSCA) (40 CFR 750 and 761) – An Approval for Risk-Based PCB Remediation, dated 2 October

2003, was issued by the USEPA in response to an Application for Risk-Based Disposal Approval submitted on 23 December 2002 (revision and additional information submitted on 3 April 2003, 8 May 2003, and 28 August 2003); and

- National Pollution Discharge Elimination System (NPDES) Permit – A NPDES Letter of Approval (Authorization # MA 03I-123), dated 27 October 2003, was issued by the USEPA in response to a Request for a NPDES Permit Exclusion submitted on 23 October 2003.

Copies of the permits filed for the wetland remedial activities have been provided to the Department and the Commission in previous submittals.

2.5.2 *Target Cleanup Goals for Wetland Soil/Sediment*

Results of the human health and environmental risk characterizations presented in the Phase II indicated that PAHs, PCBs, and metals in wetland soil/sediment pose a potential risk of harm to human health and the environment. Development of target cleanup goals for wetland soil and sediment were developed and were based on consideration of the estimated potential risk posed by PAHs, PCBs and metals to human health and the environment, applicable state and federal regulations governing wetlands remediation, applicable state and federal regulations governing the management of remediation wastes and consideration of the feasibility of abatement to background.

An ARAH was identified during Phase II activities as an area that would likely require remedial abatement. Results of the human health risk characterization indicated that OHM in areas of the wetland outside of the ARAH did not pose a condition of “significant risk” to human health. Therefore, abatement of the ARAH met MassDEP risk management criteria for protection of human health for “reasonably foreseeable” future uses of the wetland.

Similarly, results of the Stage II indicated that OHM in areas of the wetland outside of ARAH do not pose a condition of “significant risk” to the environment. Therefore, abatement of the ARAH would meet MassDEP risk management criteria for protection of the environment.

Development of target cleanup goals for wetland soil/sediment presented in the Risk-Based Plan and approved by the United States (U.S.) Environmental Protection Agency (USEPA) were based on the following criteria:

- Consideration of the estimated potential risk posed by PAHs, PCBs and metals to human health and the environment;

- Applicable state and federal regulations governing wetlands remediation;
- Applicable state and federal regulations governing the management of remediation wastes;
- Consideration of net benefits to the environment to be gained by various remedial scenarios; and
- Consideration of the feasibility of abatement to background.

Target cleanup goals presented in the following table represent the arithmetic average residual concentration of each compound allowed in the remediation area following excavation.

Compound	Cleanup Goal Arithmetic Average Concentration (mg/kg)
Total PCBs	2.0
Total PAHs	9.0
Arsenic	11
Chromium (trivalent)	332
Copper	372
Lead	210
Silver	13

2.5.3 *Wetland Soil/Sediment Excavation*

Comprehensive Remedial Actions were completed from October 2003 through September 2008 on the property. Wetland soil/sediment excavation activities were conducted in three areas as shown on Figure 5. Each area was excavated to an average depth of 2.4 feet, totaling approximately 8,076 cubic yards (yd³) of wetland soil/sediment removed. According to the final excavation area survey, the square footage of each excavated area was as follows:

- Area A = 3,151.5 ft²
- Area B = 9,623.9 ft²
- Area C = 76,052.6 ft²

The total area excavated is 88,828 ft², which is 2.04 acres. As shown in Figure 4, Area A is outside of the Disposal Site Boundary and a portion of

Areas B and C are outside of the Disposal Site Boundary. This section describes the remediation of the Site COCs in the entire wetland area, not solely the portion of the area within the Disposal Site Boundary.

2.5.4 *Verification Sampling*

Wetland verification sampling focused on satisfying TSCA cleanup requirements in accordance with 40 CFR 761, Subpart O for PCBs and MCP risk management criteria for PAHs and metals. The Risk-Based Plan to meet TSCA requirements was approved on 2 October 2003.

Two types of verification samples were collected:

- Grid samples – five-point composite samples taken within 20-foot by 20-foot grid cells from the pattern surveyed onto the remediation areas (Figure 2); and
- Perimeter samples – grab samples collected along the sidewall boundaries of the three excavation areas (Figure 2).

The analytical results for the wetland soil/sediment samples were compared to the applicable cleanup goals, as stated in the USEPA approved Risk-Based Remediation Plan and are presented in Tables 1a through 1f. If composite verification samples indicated that cleanup goals were not achieved, an additional 6 inches was removed and the cell re-sampled. If perimeter verification samples indicated that cleanup goals were not achieved, the cell to the outside of the sample location was excavated and both the newly excavated grid cell and the perimeter location were re-sampled. As grid cells were re-sampled, the sampling round number of the sample identification was changed (i.e., -01 to -02 to -03). Sample results for the verification samples, which were in compliance with the cleanup goals, are presented in Tables 1a through 1f. Table 2 details which contaminants were in exceedance and which cells were re-sampled.

Post-excavation total PCB minimum and maximum concentrations in the wetland were 0.116 and 3.1 parts per million (ppm), respectively. The total PCB concentration was calculated by summing analytical detections of PCBs and one-half the method detection limit for non-detect PCBs.

2.5.5 *Surface Water*

2.5.5.1 *Surface Water Monitoring During Remediation*

At the request of the Conservation Commission, ERM prepared and instituted a surface water monitoring plan in December 2003. Four

surface water monitoring locations were established along the Sudbury River and monitored on a weekly basis during excavation activities. The surface water monitoring locations are shown on Figure 4.

Surface water was monitored for temperature, specific conductance, dissolved oxygen (DO), pH, oxidation-reduction potential (ORP), and turbidity using a YSI 6820 multi-parameter sensor.

Surface water monitoring results are tabulated in Table 3. Surface water locations were monitored on 31 December 2003 and 6 January 2004. Subsequent surface water monitoring was not conducted due to a frozen Sudbury River resulting from cold weather conditions.

2.5.5.2 *NDPES Monitoring*

During remedial activities, surface water and precipitation in the wetland excavation and staging area were managed using a collection sump and dewatering. Dewatering was performed in accordance with the Phase IV Remedy Implementation Plan (RIP) (ERM, 2002a-c) and subsequent planning. ERM submitted a request for a NPDES Permit Exclusion to the USEPA on 23 October 2003. The NPDES Letter of Approval (Permit Authorization #MA 03I-123) was issued on 27 October 2003, allowing conditional discharge of treated water into the Sudbury River.

In accordance with the NPDES Permit application, influent and effluent samples were collected on the first, third, and fifth day of the first week of operation and then weekly thereafter. This sampling protocol was followed until January 2004, when samples were collected on a monthly basis in accordance with written notification to the USEPA. Flow was monitored daily and water samples were collected for the following monitoring parameters:

- PAHs;
- PCBs;
- Arsenic, copper, chromium, lead, silver;
- pH; and
- Total suspended solids (TSS).

A summary and discussion of monitoring results are presented in the Phase IV Completion Report (ERM, 2004). No permit exceedances of the Site COCs were detected in the treatment system effluent during the discharge to the Sudbury River. Infrequent exceedances of TSS and pH were noted.

2.5.6 *Waste Management*

Off-site transportation of wetland soil/sediment occurred from October 2003 to January 2004 and June 2004 to July 2004. Details regarding waste disposal are included in the Phase IV Completion Report (ERM, 2004).

2.5.7 *Restoration*

Restoration of wetland areas and upland access roads was completed by October 2004. Five years of ecological monitoring concluded in September 2008. The results of the last required monitoring in 2008 indicated that the restoration area was stable, and provides valuable habitat and flood storage capacity in the Sudbury River floodplain (ERM, 2008b). The goal of the restoration was to restore the area to an emergent marsh community with native herbaceous species consistent with the conditions historically found in the Sudbury River floodplain. This goal was achieved.

3.0 *PERMANENT SOLUTION MINIMUM CONTENT INFORMATION - 310 CMR 40.1056(1)*

3.1 *DISPOSAL SITE INFORMATION - 310 CMR 40.1056(1)(A)*

3.1.1 *Location*

The former Hamlen property is located on Boston Post Road in Wayland, Massachusetts and identified as parcel 22-10 by the Wayland Assessor's Office. The Site location is shown in Figure 1. For purposes of this document, the Site is defined as a portion (western portion) of the Former Raytheon Property covered under Release Tracking Number (RTN) 3-13302 and related RTN 3-22408. The portion of the property that is the subject of this Partial Permanent Solution With Conditions report is a 5.5-acre parcel of Limited Commercial zoned land located off of Route 20, abutting the Sudbury River.

3.1.2 *Physical Background*

3.1.2.1 *Topography and Hydrology*

The Sudbury River abuts the western boundary of the Site and is classified as a Class B Surface Water Body. The stream gradient adjacent to the Site is estimated at approximately 1 foot per 12 miles (Bickford and Dymon, 1990). Based on review of Massachusetts Geographic Information System (Mass GIS) map (Mass GIS, 2000) no Zone A areas for a reservoir are currently located within 500 feet of the Site. The Sudbury River has been posted with signage prohibiting consumption of fish due to mercury impacts associated with the Nyanza Superfund site located approximately 6 miles (straight-line distance) upstream of the Site.

On 9 April 1999, a 14.9-mile segment of the Sudbury River, including the reach adjacent to the Site, was added to the national list of Wild and Scenic Rivers and designated as "scenic" status. As such, a conservation plan that relies on local and private initiatives is being implemented by the SuAsCo River Stewardship Council to ensure long-term protection of this portion of the Sudbury River.

Based on the results of the Zone II delineation, the Sudbury River represents the main discharge zone for groundwater beneath, and in the vicinity of, the Site. Site well gauging results also suggests that the majority of groundwater flow beneath the Site discharges directly to the Sudbury River. The portion of the Site groundwater flow regime located

to the east of the inferred groundwater flow divide may discharge to the unnamed brook/drainage swale located along the eastern boundary of the Site. This unnamed brook/swale flows south to a confluence with Pine Brook, located approximately 1,000 feet to the south of the Site. Pine Brook in turn flows southwest to a confluence with the Sudbury River, approximately 0.5 mile to the southwest of the Site (Figure 1).

3.1.2.2 *Geology and Hydrogeology*

Bedrock beneath the Site was mapped by the United States Geologic Survey (USGS, 1975) as crystalline metamorphic rock, primarily gneiss, of the Claypit Hill formation. The area to the northeast of the Site is underlain by undifferentiated gabbro and diabase of Carboniferous to Precambrian age.

The Bloody Bluff Fault is the closest mapped fault to the Site, located within one mile, trending southwest-northeast and dipping to the west. Northwest of the Bloody Bluff Fault lies the Dedham Granodiorite formation.

Bedrock mapping by Fortin (January 1981), shows that bedrock elevations range from 20 feet above mean sea level (ASL) at the Sudbury River west of the Site and along the Boston and Maine rail line to 70 feet ASL at the northwestern edge of the Site. Bedrock was encountered in Site borings at a depth of 60 feet to 80 feet bgs.

The Site is located in a zone of Wisconsin-aged glaciolacustrine (i.e., lake bottom) deposits. Field observations indicate that the deposits are primarily stratified fine sands and silt. Recent swamp and alluvial deposits occur west and south of the Site, along the Sudbury River. The Site itself, a wetland, is underlain by a silty-clay layer.

3.1.2.3 *Wetland and Habitats*

The area that is the subject of this Partial Permanent Solution With Conditions is occupied by a wetland (Figure 3). This wetland is part of a large floodplain encompassing approximately 3,000 acres that are part of the GMNWR. The GMNWR includes federally protected woodlands, fields, and freshwater wetlands, and is designated as a high-density area for nesting wood ducks.

The Site wetland/floodplain is primarily influenced by the water levels of the Sudbury River. Regular inundation of the wetland prevents it from developing into forested or scrub-shrub wetland.

According to the Mass GIS Map (Figure 5), the Site wetland is classified under the National Heritage Endangered Species Program as Estimated Habitats of Rare Wetlands Wildlife. Additional details regarding Site wetland communities and characteristics are documented in a report entitled, *Raytheon Project Area Ecological Characterization*, prepared by Woodlot dated December 2000 and included in the Phase IV RIP (ERM, 2002a-c).

3.2 *PERMANENT SOLUTION WITH OR WITHOUT CONDITIONS - 310 CMR 40.1056(1)(B)*

As a result of assessment and remediation activities conducted at the Site, ERM determined that with the existing AUL, a Condition of No Significant Risk exists and, therefore, no further response actions are necessary. A Partial Permanent Solution With Conditions is appropriate to the portion of the Site which this document addresses.

3.3 *RISK CHARACTERIZATION METHOD EMPLOYED - 310 CMR 40.1056(1)(C)*

In December 2002, on behalf of Raytheon, ERM submitted an application for Risk-Based Disposal Approval to the United States Environmental Protection Agency (USEPA), Region I, in accordance with the requirements of 40 CFR 761.61(a)(3) of the Toxic Substance Control Act (TSCA). The application was submitted to obtain USEPA approval of risk-based remedial actions involving the management of remediation waste, specifically wetland soil/sediment, containing PCBs and thereby classified under 40 CFR 40.761.3 as "PCB remediation waste". As described in Section 2.5.1, target cleanup goals were developed for wetland soil/sediment and presented in the Risk-Based Plan, approved by USEPA.

To meet the requirements of CFR 761.61(a)(3), a Method 3 Risk Characterization was prepared, in accordance with 310 CMR 40.0991, to evaluate the risk of harm to human health, safety, public welfare, and the environment. The risk characterization was prepared consistent with available MassDEP and USEPA guidance.

The risk characterization considered current and reasonably foreseeable Site activities and uses, excluding consideration of the existing deed restrictions on the Site (i.e., Notice of Activity & Use Limitation (AULs)). The risk characterization considered all available soil, groundwater, sediment, surface water and biota analytical data generated during the course of Phase II - CSA investigation activities as well as previous Site investigations and remedial activities.

Results of the Stage II indicated that OHM, in areas of the wetland outside of the Expanded ARAH, do not pose a condition of “significant risk” to the environment. Therefore, abatement of the Expanded ARAH would meet MassDEP risk management criteria for protection of the environment.

Details regarding the Method 3 Risk Characterization are included in Section 4.6.

3.4

RELATIONSHIP TO OTHER PERMANENT OR TEMPORARY SOLUTION STATEMENTS – 310 CMR 40.1056(1) (D)

A summary of MassDEP RTNs for the Site is presented below.

RTN	Release Condition	Date Issued	Status
3-1783	MA DEP lists Site on LTBI (List of Locations to be Investigated) per USEPA referral. Also included a historic release of butyl cellulose due to a cross-connection of wastewater treatment lines.	15 January 1987	Closed 31 July 1995 LSP Evaluation Opinion Filed
3-13302	Chlorinated hydrocarbons and petroleum hydrocarbons (No. 6 fuel oil) to soil and groundwater.	2 January 1996	Open - ROS (Partial Class A-3 RAO Statement Filed 14 May 1999 for Petroleum Hydrocarbons)
3-13574	Release of chlorinated hydrocarbons (TCE, PCE) to groundwater.	28 March 1996	Open – Linked to 3-13302
3-14042	Release of PCBs to soil and at TP-3. RAM completed to abate impact.	25 July 1996	Open – Linked to 3-13302
3-19482	Release of PCBs and metals to wetland sediments.	9 May 2000	Open – Linked to 3-13302
3-22408	Release of chlorinated hydrocarbons to soil and groundwater (Northern Site)	17 December 2002	Open – Linked to 3-13302

3.5

ACTIVITY AND USE LIMITATION SUMMARY – 310 CMR 40.1056(1) (E)

An AUL was recorded for the parcel in January 2006. Figure 6 shows the boundaries of the AUL. The AUL is required to ensure the existence or maintenance of a Condition of No Significant Risk at the Site and was required under Condition 13 of the Approval for Risked-Based Remediation dated 2 October 2003. A copy of the AUL is included in Appendix B.

The following activities and uses are permitted on the property:

1. Passive recreation such as fishing, boating, etc.;
2. Such other activities or uses that, in the Opinion of the Licensed Site Professional (LSP), shall present no greater risk of harm to health, safety, public welfare, and the environment than the activities and uses set forth in this paragraph; and
3. All activities and uses consistent with those set forth in this paragraph and not expressly prohibited by this notice.

The following activities and uses are inconsistent with the AUL Opinion:

1. Residential, childcare, daycare, commercial, industrial, agricultural, horticultural, or gardening activities, unless previously approved by the LSP in accordance with the obligations and conditions set forth in the AUL Opinion;
2. Groundwater use except for assessment or remedial purposes;
3. Other activities or uses that, in the Opinion of the LSP, would likely result in significant risk from exposures to OHM if site activities or uses were to take place on the property.

3.6 *ASSUMPTIONS OF CURRENT OR FUTURE SITE ACTIVITIES, USES OR CONDITIONS NOT REQUIRING AUL – 310 CMR 40.1056(1) (F)*

An AUL is required at the Site to ensure the existence or maintenance of a Condition of No Significant Risk at the Site.

3.7 *ACTIVE EXPOSURE PATHWAY MITIGATION MEASURES – 310 CMR 40.1056(1) (G)*

No Active Exposure Pathway Mitigation Measures are required to achieve or maintain the Partial Permanent Solution With Conditions for this Site.

3.8 *LICENSED SITE PROFESSIONAL (LSP) OPINION – 310 CMR 40.1056(1) (H)*

The LSP Opinion provided on Form BWSC-104, the Permanent and Temporary Solution Statement Transmittal Form, accompanies this submittal (Appendix C).

3.9 *CERTIFICATION OF SUBMITTAL – 310 CMR 40.1056(1) (I)*

The Certification of Submittal on Form BWSC-104, the Permanent and Temporary Solution Statement Transmittal Form, accompanies this submittal (Appendix C).

3.10 *UPPER CONCENTRATION LIMITS – 310 CMR 40.1056(1) (J)*

No constituent concentrations detected at the Site were above the MCP Upper Concentration Limits (UCLs).

3.11 *ANALYTICAL DATA AND COMPENDIUM OF ANALYTICAL METHODS – 310 CMR 40.1056(1) (K)*

The MCP requires that all Permanent Solutions include a Representative Evaluation and a Data Usability Assessment. Section 5.0 of this report includes a description and details of the activities completed to comply with this requirement.

4.0 *PERMANENT SOLUTION SUPPORTING DOCUMENTATION INFORMATION - 310 CMR 40.1056(2)*

4.1 *DISPOSAL SITE LOCATION DESCRIPTION - 310 CMR 40.1056(2) (A)*

In accordance with 310 CMR 40.0006, the Site is defined to include areas where OHM has come to be located. The former Hamlen property is located on Boston Post Road in Wayland, Massachusetts (parcel 22-10). The Site location is shown in Figure 1. For purposes of this document, the Site is defined as a portion (western portion) of the Former Raytheon Property covered under Release Tracking Number (RTN) 3-13302, related RTN 3-22408, and Tier IB Permit Number 133939. The portion of the property that is the subject of this Partial Permanent Solution With Conditions report is a 5.5-acre parcel of Limited Commercial zoned land located off of Route 20, abutting the Sudbury River. The Site boundary is shown in Figure 2. More information regarding the property boundaries is included in the AUL provided in Appendix B.

The Phase II Comprehensive Site Assessment (ERM, 2001a) provided a detailed description of Background conditions at the Site. Site-specific background concentrations of COCs were developed using river samples collected upstream of the Site and compared the results to local conditions and MassDEP guidance.

4.2 *CONCEPTUAL SITE MODEL - 310 CMR 40.1056 (2) (B)*

Historical data suggest that inadvertent releases of PCBs, PAHs, and metals may have occurred via the stormwater and sanitary conveyance system resulting in a discharge to the wetland at outfall OF-1. The organic contaminants were deposited in the wetland sediments near the outfall, and were immobilized as a result of high organic content in the sediment. The metals are more widely dispersed within the wetland, and the highest levels are detected near the outfall.

4.3 *ELIMINATION OR CONTROL OF UNCONTROLLED SOURCES - 310 CMR 40.1056(2) (C)*

There are no known uncontrolled sources of impacts at the Site that are resulting or are likely to result in an increase in constituent concentrations in an environmental medium. The stormwater and sanitary conveyance

system that discharged to the wetland was removed and the impacted wetland soil/sediment was adequately remediated.

4.4 CONTROL MIGRATION OF OHM - 310 CMR 40.1056(2) (D)

Response actions were completed that adequately assessed and controlled the migration of OHM remaining at the Site. Wetland soil/sediment containing OHM above the risk-based target cleanup objectives was removed as part of remedial response actions. Migration, through erosion by wind or water, of remaining OHM above background levels in wetland soil/sediment was minimized due to the full restoration of the wetland area.

4.5 CONTROL OF NON-AQUEOUS PHASE LIQUIDS (NAPLS) - 310 CMR 40.1056(2) (E)

No NAPLs were detected at the Site.

4.6 LEVEL OF NO SIGNIFICANT RISK - 310 CMR 40.1056(2) (F)

A Method 3 Risk Characterization was completed in accordance with 310 CMR 40.0991 and was presented in the application for risk-based disposal approval submitted to USEPA in October 2003. Results of the human health risk characterization indicated that OHM in areas of the wetland outside of the ARAH do not pose a condition of “significant risk” to human health. Similarly, results of the Stage II indicated that OHM, in areas of the wetland outside of the ARAH, do not pose a condition of “significant risk” to the environment. Impacted wetland soil/sediment from within the ARAH was removed and the risk-based target cleanup goals were achieved, as presented in the Phase IV Completion Report (ERM, 2004).

The risk-based target cleanup goals were developed as part of the Phase II (ERM, 2001a-e). Based on a 2016 review, direct contact toxicity values for PAHs and PCBs for effects on human health have not changed since the target cleanup concentrations were derived in 2000. The target cleanup goals for chromium and copper were developed using scientific literature that is still regarded as valid.

Therefore, ERM will rely on the previously completed Method 3 Risk Characterization to conclude that a level of No Significant Risk to health,

safety, public welfare, and the environment exists for all current and foreseeable future use of the Site, relying on an AUL both inside and outside of the previous ARAH.

4.7 *ACHIEVEMENT OF BACKGROUND – 310 CMR 40.1056(2) (G)*

The MCP (310 CMR 40.0860(6) (a)) states that achieving background should be considered feasible unless "the incremental cost of conducting the remedial alternative is substantial and disproportionate to the incremental benefit of risk reduction, environmental restoration, and monetary and non-pecuniary values." Using a benchmark comparison approach, ERM evaluated the cost of additional remediation to approach or achieve background to the cost of achieving a condition of "no significant risk" at the Site.

Based on the results of the detailed cost evaluation provided in the Phase III (ERM, 2001f), the cost to complete wetland soil/sediment excavation and off-site disposal was estimated at \$4.2 million to achieve a condition of "no significant risk." The volume of soil/sediment requiring removal and disposal was estimated at 3,700 yd³ (actual volume removed was 8,076 yd³). Abatement of wetland soil/sediment to background would require removal of soil/sediment at all sample locations where the concentration of total PCBs are greater than 1.8 ppm (i.e., the maximum background concentration detected). Using a target cleanup goal of 2 ppm total PCBs to "achieve or approach" background, the volume of remediation waste was estimated, as part of the Phase III evaluation, to increase from 3,700 yd³ to approximately 12,000 yd³. Assuming that the previous estimate of the volume of soil that would require removal to achieve or approach background remains the same, this represents an approximately 30 percent increase in volume and cost from the work already completed. Available MassDEP guidance regarding the use of benchmark comparisons in determining the feasibility of abatement to background indicates that if the additional costs to remediate beyond a condition of "no significant risk" to levels that approach background exceed 20 percent of the cost to remediate to a condition of "no significant risk", then remediation to approach background should be considered infeasible. Therefore, based on the above benchmark comparison, remediation of wetland soil/sediment to approach or achieve background is considered infeasible.

In addition, the Massachusetts Wetland Protection Act, 310 CMR 10.53, prohibits approval of remedial measures that would abate OHM in a wetland below a level necessary to achieve a condition of "no significant

risk.” Therefore, abatement to background would not be possible under current state regulations.

4.8 *ACTIVITY AND USE LIMITATION – 310 CMR 40.1056(2)(H)*

Section 3.5 includes a description of the AUL placed on the Site. A copy of the AUL is included in Appendix B.

4.9 *UPPER CONCENTRATION LIMITS – 310 CMR 40.1056(2)(I)*

No constituent concentrations detected at the Site were above the MCP UCLs.

4.10 *ASSUMPTIONS OF CURRENT OR FUTURE SITE ACTIVITIES, USES OR CONDITONS NOT REQUIRING AUL – 310 CMR 40.1056(2)(J)*

An AUL was implemented at the Site; therefore, this Section does not apply to this Site.

4.11 *DATA USABILITY ASSESSMENT – 310 CMR 40.1056(2)(K)*

The Data Usability Assessment is provided in Section 5.0.

4.12 *DESCRIPTION OF OPERATION, MAINTENANCE, AND/OR MONITORING – 310 CMR 40.1056(2)(L)*

No operation, maintenance, and/or monitoring is required to maintain this Partial Permanent Solution With Conditions. Remedial activities at the Site involved wetland soil/sediment removal and off-site disposal and wetland restoration. Remedial activities and restoration were completed in 2008.

5.0

DATA REPRESENTATIVENESS EVALUATION AND USABILITY ASSESSMENT

Pursuant to 310 CMR 40.1056(2)(k) and in accordance with the MassDEP Policy #WSC-07-350 MCP Representativeness Evaluations and Data Usability Assessments Guidance (REDUA) (MassDEP, September 2007), an evaluation of representativeness and an assessment of the data quality shall be conducted for the data collected at this Site.

The Representativeness Evaluation determines whether the data set in total sufficiently characterizes conditions at the disposal site and supports a coherent Conceptual Site Model. An Analytical Data Usability Assessment is used to evaluate whether analytical data points are scientifically valid and defensible and of a sufficient level of precision, accuracy and sensitivity to support this Partial Permanent Solution With Conditions. A Data Usability Assessment has both a laboratory analytical component and a field sampling component.

Prior to implementation of remedial actions, ERM prepared a Quality Assurance/Quality Control (QA/QC) Plan using USEPA Region 1 Quality Assurance Project Plan (QAPP) Guidance and was included in the Risk Based Disposal Application (ERM, 2002d). The QA/QC Plan described project Data Quality Objectives, Analytical Methods and Performance Criteria for cleanup verification data, data quality control and quality assurance measures and data validation methods. A detailed discussion of the sampling design and the type, number, location, and depth of proposed samples was included in the Risk Based Disposal Application (ERM, 2002d). USEPA approved the Risk Based Disposal Application and associated QA/QC Plan in 2003. Development of and compliance with this QA/QC Plan supports REDUA.

5.1

CONCLUSION OF REPRESENTATIVENESS EVALUATION

The TSCA Risk-Based PCB Remediation Final Report (ERM, 2008a) documented that sampling collection procedures were performed in accordance with the QA/QC Plan, as provided to the USEPA in the Application for Risk-Based Disposal Approval. The Sampling locations and analytical parameters were appropriate to support Site decisions and provided a representative dataset to support this Partial Permanent Solution With Conditions.

The TSCA Risk-Based PCB Remediation Final Report (ERM, 2008a) provided details of the assessment of data usability and documents that procedures followed were in accordance with the QA/QC Plan, as provided to the USEPA in the Application for Risk-Based Disposal Approval. The Final Report also includes a copy of the Tier II data validation performed by ERM.

ERM performed a Tier II review of the laboratory data packages consistent with USEPA Region 1 requirements for organic and inorganic parameters. The data were validated according to the protocols and quality control requirements of the analytical methods and the New England Data Validation Functional Guidelines for Evaluating Environmental Analysis (December 1996).

The data verification reports indicated which lab results were considered non-compliant when compared to the requirements set forth in the relevant documents. The majority of these non-compliant results represented minor quality control problems and do not affect data usability. In most cases, these problems were typical analytical difficulties or were the result of sample matrix problems. A full discussion of the data usability evaluation is included as Appendix B of the TSCA Final Report (ERM, 2008a).

In accordance with the MCP requirements, the data were scientifically valid and defensible and of a sufficient level of accuracy, precision, and completeness to support this Partial Permanent Solution With Conditions report.

The following summarizes the findings of this Partial Permanent Solution With Conditions:

- A level of No Significant Risk to health, safety, public welfare, and the environment will be maintained for all current and foreseeable future use of the Site, relying on an AUL;
- All sources of OHM have been eliminated;
- All threats of release have been eliminated;
- OHM concentrations do not exceed an applicable UCL; and
- The level of OHM concentrations in the environment have been reduced to as close to background levels as feasible.

The only media subject to this Partial Permanent Solution With Conditions is wetland soil/sediment.

The response actions described in this report have been performed in accordance with the MCP. Based on analytical results from samples collected during site investigation activities and remediation activities, ERM concludes that the Site meets the requirements for a Partial Permanent Solution per 310 CMR 40.1040 of the MCP. The Partial Permanent Solution Statement Transmittal Form (BWSC-104) was submitted concurrently with this report through eDEP.

This document was presented to the Public Involvement Plan (PIP) group on 17 November 2016 and a 20-day public comment period was held. Comments were received and are incorporated into this document as applicable. Formal responses to comments will be published and distributed to the PIP group. Additional public involvement documentation, as required by 310 CMR 40.1403(3), is included as Appendix A.

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Tables

Table 1a
Summary of Wetland Soil/Sediment Analytical Results - Area A Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	Upper Concentration Limit	BC-C113-01	BC-C114-01	BC-C117-01	BC-C118-01	BC-C121-01	BC-C122-01	Average
Date Sampled			29-Jan-04	29-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	
Total Metals (mg/kg)									
Arsenic	11	500	2.3	2.3	2.1	2.6	2.2	1.9	2.2
Chromium	332	2,000	7.6	7.5	6.0	7.4	6.7	7.3	7.1
Copper	372	-	9.7	13	9.9	10	10	11	11
Lead	210	6,000	2.9	2.7	2.8	3.0	2.5	2.5	2.7
Silver	13	2,000	0.17	0.17	0.16	0.16	0.17	0.17	0.16
SVOC/PAHs (µg/kg)									
1-Methyl phenanthrene		-	65	65	60	65	65	65	64
1-Methylnaphthalene		-	65	65	60	65	65	65	64
2-Methylnaphthalene		5,000,000	65	65	60	65	65	65	64
Acenaphthene		10,000,000	65	65	60	65	65	65	64
Acenaphthylene		10,000,000	65	65	60	65	65	65	64
Anthracene		10,000,000	65	65	60	65	65	65	64
Benz[a]anthracene		3,000,000	65	65	60	65	65	65	64
Benzo[a]pyrene		300,000	65	65	60	65	65	65	64
Benzo[b]fluoranthene		3,000,000	65	65	60	65	65	65	64
Benzo[ghi]perylene		10,000,000	65	65	60	65	65	65	64
Benzo[k]fluoranthene		10,000,000	65	65	60	65	65	65	64
Biphenyl		10,000,000	65	65	60	65	65	65	64
Chrysene		10,000,000	65	65	60	65	65	65	64
Dibenzo[a,h]anthracene		300,000	65	65	60	65	65	65	64
Fluoranthene		10,000,000	65	65	60	65	65	65	64
Fluorene		10,000,000	65	65	60	65	65	65	64
Indeno[1,2,3-cd]pyrene		3,000,000	65	65	60	65	65	65	64
Naphthalene		10,000,000	65	65	60	65	65	65	64
Perylene		-	65	65	180	200	160	260	155
Phenanthrene		10,000,000	65	65	60	65	65	65	64
Pyrene		10,000,000	65	65	60	65	65	65	64
Total SVOC/PAHs	9,000	-	1,365	1,365	1,380	1,500	1,460	1,560	1,438
PCBs (µg/kg)									
Aroclor® 1016 and 1242 - combination		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1221		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1232		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1248		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1254		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1260		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1262		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Aroclor® 1268		-	41.7	41.7	39.1	40.3	41.7	41.7	41.0
Total PCBs	2,000	100,000	333.2	333.2	312.4	322.4	333.2	333.2	327.9

Notes: Detected values are displayed in bold.

Non-detects are shown as half the method detection limit.

- no UCL

Table 1b
Summary of Wetland Soil/Sediment Analytical Results - Area A Perimeters
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	Upper Concentration Limit	BC-P121-01	BC-P118-01	BC-P113-01	Average
Date Sampled			28-Jan-04	28-Jan-04	29-Jan-04	
Total Metals (mg/kg)						
Arsenic	11	500	3.7	1.7	4.0	3.1
Chromium	332	2,000	11	6.2	23	13
Copper	372	-	17	7.4	34	19
Lead	210	6,000	6.2	2.1	13	7.1
Silver	13	2,000	0.19	0.17	0.99	0.45
SVOC/PAHs (µg/kg)						
1-Methyl phenanthrene		-	75	65	70	70
1-Methylnaphthalene		-	75	65	70	70
2-Methylnaphthalene		5,000,000	75	65	70	70
Acenaphthene		10,000,000	75	65	70	70
Acenaphthylene		10,000,000	75	65	70	70
Anthracene		10,000,000	75	65	70	70
Benz[a]anthracene		3,000,000	75	65	70	70
Benzo[a]pyrene		300,000	75	65	70	70
Benzo[b]fluoranthene		3,000,000	75	65	70	70
Benzo[ghi]perylene		10,000,000	75	65	70	70
Benzo[k]fluoranthene		10,000,000	75	65	70	70
Biphenyl		10,000,000	75	65	70	70
Chrysene		10,000,000	75	65	70	70
Dibenzo[a,h]anthracene		300,000	75	65	70	70
Fluoranthene		10,000,000	75	65	70	70
Fluorene		10,000,000	75	65	70	70
Indeno[1,2,3-cd]pyrene		3,000,000	75	65	70	70
Naphthalene		10,000,000	75	65	70	70
Perylene		-	75	65	70	70
Phenanthrene		10,000,000	75	65	70	70
Pyrene		10,000,000	190	65	70	108
Total SVOC/PAHs	9,000	-	1,690	1,365	1,470	1,508
PCBs (µg/kg)						
Aroclor® 1016 and 1242 - combination		-	48.1	41.7	44.7	44.8
Aroclor® 1221		-	48.1	41.7	44.7	44.8
Aroclor® 1232		-	48.1	41.7	44.7	44.8
Aroclor® 1248		-	48.1	41.7	44.7	44.8
Aroclor® 1254		-	48.1	41.7	44.7	44.8
Aroclor® 1260		-	48.1	41.7	44.7	44.8
Aroclor® 1262		-	48.1	41.7	44.7	44.8
Aroclor® 1268		-	48.1	41.7	44.7	44.8
Total PCBs	2,000	100,000	384.8	333.2	357.2	358.4

Notes: Detected values are displayed in bold.

Non-detects are shown as half the method detection limit.

- no UCL

Table 1c
Summary of Wetland Soil/Sediment Analytical Results -
Area B Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-Up Goals	Upper Concentration Limit	BC-C092-01	BC-C093-01	BC-C094-01	BC-C096-01	BC-C097-01	BC-C098-01	BC-C100-01	BC-C101-01	BC-C102-01	BD-C085-01
Date Sampled			22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03
Total Metals - Inorganics (mg/kg)												
Arsenic	11	500	5.1	3.0	5.1	4.6	2.4	5.8	9.9	3.9	7.8	2.2
Chromium	332	2,000	120	6.7	54	120	6.9	62	710	87	360	8.5
Copper	372	-	170	8.9	110	170	5.7	120	730	98	330	9.2
Lead	210	6,000	45	2.3	77	49	2.1	90	150	53	150	2.4
Silver	13	2,000	7.6	0.15	3.7	5.4	0.16	4.2	26	3.9	33	0.16
PAHs - Organics (µg/kg)												
1-Methyl phenanthrene		-	70	60	70	70	65	70	90	70	75	65
1-Methylnaphthalene		-	70	60	70	70	65	70	90	70	75	65
2-Methylnaphthalene		5,000,000	70	60	70	70	65	70	90	70	75	65
Acenaphthene		10,000,000	70	60	70	70	65	70	90	70	75	65
Acenaphthylene		10,000,000	70	60	70	70	65	70	90	70	75	65
Anthracene		10,000,000	70	60	70	70	65	70	90	70	75	65
Benz[a]anthracene		3,000,000	70	60	70	70	65	180	90	70	75	65
Benzo[a]pyrene		300,000	70	60	70	70	65	200	180	70	75	65
Benzo[b]fluoranthene		3,000,000	70	60	70	70	65	340	300	70	220	65
Benzo[ghi]perylene		10,000,000	70	60	70	70	65	70	90	70	75	65
Benzo[k]fluoranthene		10,000,000	70	60	70	70	65	340	280	70	190	65
Biphenyl		10,000,000	70	60	70	70	65	70	90	70	75	65
Chrysene		10,000,000	70	60	70	70	65	350	350	70	220	65
Dibenzo[a,h]anthracene		300,000	70	60	70	70	65	70	90	70	75	65
Fluoranthene		10,000,000	70	60	70	70	65	430	370	70	260	65
Fluorene		10,000,000	70	60	70	70	65	70	90	70	75	65
Indeno[1,2,3-cd]pyrene		3,000,000	70	60	70	70	65	70	90	70	75	65
Naphthalene		10,000,000	70	60	70	70	65	70	90	70	75	65
Perylene		-	70	60	70	70	65	70	90	70	75	65
Phenanthrene		10,000,000	70	60	70	70	65	190	90	70	75	65
Pyrene		10,000,000	70	60	70	70	65	460	420	70	300	65
Total PAHs	9,000	-	1,470	1,260	1,470	1,470	1,365	3,400	3,250	1,470	2,390	1,365
PCBs - Organics (µg/kg)												
Aroclor® 1016 and 1242 - combination		-	44.7	36.8	43.1	44.7	40.3	44.7	57.0	43.1	48.1	40.3
Aroclor® 1221		-	44.7	36.8	43.1	44.7	40.3	44.7	57.0	43.1	48.1	40.3
Aroclor® 1232		-	44.7	36.8	43.1	44.7	40.3	44.7	57.0	43.1	48.1	40.3
Aroclor® 1248		-	44.7	36.8	43.1	44.7	40.3	44.7	57.0	43.1	48.1	40.3
Aroclor® 1254		-	425	36.8	129	251	40.3	195	585	129	950	40.3
Aroclor® 1260		-	102	36.8	43.1	126	40.3	44.7	583	124	293	40.3
Aroclor® 1262		-	44.7	36.8	43.1	44.7	40.3	44.7	57.0	43.1	48.1	40.3
Aroclor® 1268		-	44.7	36.8	43.1	44.7	40.3	44.7	57.0	43.1	48.1	40.3
Total PCBs	2,000	100,000	794.9	294.0	430.7	644.9	322.4	507.6	1,510	511.6	1,532	322.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1c
Summary of Wetland Soil/Sediment Analytical Results -
Area B Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-Up Goals	BD-C086-01	BD-C087-01	BD-C089-01	BD-C090-01	BD-C091-01	BD-C093-01	BD-C094-01	BD-C095-01	BD-C097-01	BD-C098-01
Date Sampled		22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	21-Oct-03	22-Oct-03
Total Metals - Inorganics (mg/kg)											
Arsenic	11	2.4	3.2	2.6	2.4	2.7	2.5	2.9	2.7	4.9	3.1
Chromium	332	9.5	8.7	17	7.8	8.4	7.3	6.9	7.2	12	8.5
Copper	372	10	13	18	8.8	7.7	7.1	6.4	6.8	14	6.4
Lead	210	2.7	3.6	4.2	2.8	3.0	2.2	2.4	2.3	4.5	2.9
Silver	13	0.16	0.2	0.54	0.15	0.15	0.15	0.15	0.16	0.14	0.15
PAHs - Organics (µg/kg)											
1-Methyl phenanthrene		60	60	60	60	60	60	60	60	55	60
1-Methylnaphthalene		60	60	60	60	60	60	60	60	55	60
2-Methylnaphthalene		60	60	60	60	60	60	60	60	55	60
Acenaphthene		60	60	60	60	60	60	60	60	55	60
Acenaphthylene		60	60	60	60	60	60	60	60	55	60
Anthracene		60	60	60	60	60	60	60	60	55	60
Benz[a]anthracene		60	60	60	60	60	60	60	60	55	60
Benzo[a]pyrene		60	60	60	60	60	60	60	60	55	60
Benzo[b]fluoranthene		60	60	60	60	60	60	60	60	55	60
Benzo[ghi]perylene		60	60	60	60	60	60	60	60	55	60
Benzo[k]fluoranthene		60	60	60	60	60	60	60	60	55	60
Biphenyl		60	60	60	60	60	60	60	60	55	60
Chrysene		60	60	60	60	60	60	60	60	55	60
Dibenzo[a,h]anthracene		60	60	60	60	60	60	60	60	55	60
Fluoranthene		60	60	60	60	60	60	60	60	55	60
Fluorene		60	60	60	60	60	60	60	60	55	60
Indeno[1,2,3-cd]pyrene		60	60	60	60	60	60	60	60	55	60
Naphthalene		60	60	60	60	60	60	60	60	55	60
Perylene		60	60	60	60	60	60	60	60	150	60
Phenanthrene		60	60	60	60	60	60	60	60	55	60
Pyrene		60	60	60	60	60	60	60	60	55	60
Total PAHs	9,000	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,250	1,260
PCBs - Organics (µg/kg)											
Aroclor® 1016 and 1242 - combination		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1221		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1232		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1248		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1254		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1260		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1262		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Aroclor® 1268		39.1	37.9	37.9	36.8	37.9	36.8	37.9	39.1	35.7	36.8
Total PCBs	2,000	312.4	303.2	303.2	294.0	303.2	294.0	303.2	312.4	285.6	294.0

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1c
Summary of Wetland Soil/Sediment Analytical Results -
Area B Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-Up Goals	BD-C099-01	BD-C101-01	BD-C102-01	BD-C103-01	BD-C105-01	BD-C106-01	BD-C107-01	BD-C109-01	BD-C110-01	BD-C111-01	BD-C113-01
Date Sampled		22-Oct-03	21-Oct-03	21-Oct-03	22-Oct-03	21-Oct-03	21-Oct-03	21-Oct-03	21-Oct-03	21-Oct-03	21-Oct-03	21-Oct-03
Total Metals - Inorganics (mg/kg)												
Arsenic	11	3.7	6.0	4.3	5.4	7.6	6.4	4.4	19	7.0	6.0	8.7
Chromium	332	8.5	20	7.7	9.1	10	7.2	8.8	160	8.8	21	130
Copper	372	8.7	24	6.9	7.0	4.5	3.3	4.1	190	2.3	33	130
Lead	210	3.4	5.3	3.3	3.6	3.6	2.9	2.6	100	3.0	27	110
Silver	13	0.16	0.39	0.14	0.16	0.13	0.13	0.13	6.0	0.12	0.28	2.5
PAHs - Organics (µg/kg)												
1-Methyl phenanthrene		60	55	55	60	50	50	50	75	49	55	65
1-Methylnaphthalene		60	55	55	60	50	50	50	75	49	55	65
2-Methylnaphthalene		60	55	55	60	50	50	50	75	49	55	65
Acenaphthene		60	55	55	60	50	50	50	75	49	55	65
Acenaphthylene		60	55	55	60	50	50	50	75	49	55	65
Anthracene		60	55	55	60	50	50	50	75	49	55	65
Benz[a]anthracene		60	55	55	60	50	50	50	75	49	55	65
Benzo[a]pyrene		60	55	55	60	50	50	50	75	49	55	65
Benzo[b]fluoranthene		60	55	55	60	50	50	50	190	49	55	210
Benzo[ghi]perylene		60	55	55	60	50	50	50	75	49	55	65
Benzo[k]fluoranthene		60	55	55	60	50	50	50	170	49	55	190
Biphenyl		60	55	55	60	50	50	50	75	49	55	65
Chrysene		60	55	55	60	50	50	50	190	49	55	190
Dibenzo[a,h]anthracene		60	55	55	60	50	50	50	75	49	55	65
Fluoranthene		60	55	55	60	50	50	50	250	49	55	240
Fluorene		60	55	55	60	50	50	50	75	49	55	65
Indeno[1,2,3-cd]pyrene		60	55	55	60	50	50	50	75	49	55	65
Naphthalene		60	55	55	60	50	50	50	75	49	55	65
Perylene		60	130	55	60	150	50	110	75	100	55	65
Phenanthrene		60	55	55	60	50	50	50	75	49	55	65
Pyrene		60	55	55	60	50	50	50	270	49	55	250
Total PAHs	9,000	1,260	1,230	1,155	1,260	1,150	1,050	1,110	2,270	1,080	1,155	2,120
PCBs - Organics (µg/kg)												
Aroclor® 1016 and 1242 - combination		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	40.3
Aroclor® 1221		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	40.3
Aroclor® 1232		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	40.3
Aroclor® 1248		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	40.3
Aroclor® 1254		39.1	34.7	35.7	39.1	32.9	32.9	32.9	172	30.5	35.7	231
Aroclor® 1260		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	108
Aroclor® 1262		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	40.3
Aroclor® 1268		39.1	34.7	35.7	39.1	32.9	32.9	32.9	46.3	30.5	35.7	40.3
Total PCBs	2,000	312.4	277.6	285.6	312.4	263.2	263.2	263.2	496.1	244.0	285.6	580.8

Notes: Detected values are displayed in bold.

Non-detects are shown as half the method detection limit

- no UCL

Table 1c
Summary of Wetland Soil/Sediment Analytical Results -
Area B Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-Up Goals	BD-C114-01	BD-C115-01	Average
Date Sampled		21-Oct-03	21-Oct-03	
Total Metals - Inorganics (mg/kg)				
Arsenic	11	16	8.3	5.5
Chromium	332	340	30	72
Copper	372	150	31	74
Lead	210	80	66	32
Silver	13	3.2	0.4	3.0
PAHs - Organics (µg/kg)				
1-Methyl phenanthrene		65	60	62
1-Methylnaphthalene		65	60	62
2-Methylnaphthalene		65	60	62
Acenaphthene		65	60	62
Acenaphthylene		65	60	62
Anthracene		65	60	62
Benz[a]anthracene		65	60	65
Benzo[a]pyrene		65	60	69
Benzo[b]fluoranthene		260	60	95
Benzo[ghi]perylene		65	60	62
Benzo[k]fluoranthene		190	60	90
Biphenyl		65	60	62
Chrysene		220	60	95
Dibenzo[a,h]anthracene		65	60	62
Fluoranthene		240	60	103
Fluorene		65	60	62
Indeno[1,2,3-cd]pyrene		65	60	62
Naphthalene		65	60	62
Perylene		65	60	74
Phenanthrene		65	60	66
Pyrene		260	60	108
Total PAHs	9,000	2,210	1,260	1509
PCBs - Organics (µg/kg)				
Aroclor® 1016 and 1242 - combination		41.7	37.9	39.3
Aroclor® 1221		41.7	37.9	39.3
Aroclor® 1232		41.7	37.9	39.3
Aroclor® 1248		41.7	37.9	39.3
Aroclor® 1254		556	37.9	135
Aroclor® 1260		347	37.9	80.6
Aroclor® 1262		41.7	37.9	39.3
Aroclor® 1268		41.7	37.9	39.3
Total PCBs	2,000	1,152.9	303.2	452

Notes: Detected values are displayed in bold.

Non-detects are shown as half the method detection limit

- no UCL

Table 1d
Summary of Wetland Soil/Sediment Analytical Results -
Area B Perimeters
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-Up Goals	Upper Concentration	BC-P092-01	BC-P094-01	BC-P100-01	BC-P102-01	BD-P087-01	BD-P089-01	BD-P095-01	BD-P097-01	BD-P103-01	BD-P105-01	BD-P111-01	BD-P114-01	Average
Date Sampled		Limit	21-Oct-03	21-Oct-03	21-Oct-03	21-Oct-03	22-Oct-03	22-Oct-03	22-Oct-03	20-Oct-03	22-Oct-03	20-Oct-03	17-Oct-03	17-Oct-03	
Total Metals - Inorganics (mg/kg)															
Arsenic	11	500	5.7	5.1	4.4	5.4	3.4	6.5	7.1	6.2	6.6	12	6.5	65	11
Chromium	332	2,000	210	16	32	10	12	15	64	16	12	15	21	9.1	21
Copper	372	-	390	38	42	10	18	27	67	25	14	12	31	4.0	25
Lead	210	6,000	70	28	18	6.7	5.8	11	36	7.5	12	8.8	54	6.8	18
Silver	13	2,000	7	0.79	0.88	0.15	0.16	0.34	2.4	0.17	0.15	0.15	0.16	0.13	0.5
PAHs - Organics (µg/kg)															
1-Methyl phenanthrene		-	75	70	70	60	60	60	75	70	60	60	65	50	62.5
1-Methylnaphthalene		-	75	70	70	60	60	60	75	70	60	60	65	50	62.5
2-Methylnaphthalene		5,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Acenaphthene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Acenaphthylene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Anthracene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Benz[a]anthracene		3,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Benzo[a]pyrene		300,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Benzo[b]fluoranthene		3,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Benzo[ghi]perylene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Benzo[k]fluoranthene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Biphenyl		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Chrysene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Dibenzo[a,h]anthracene		300,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Fluoranthene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Fluorene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Indeno[1,2,3-cd]pyrene		3,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Naphthalene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Perylene		-	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Phenanthrene		10,000,000	75	70	70	60	60	60	75	70	60	60	65	50	62.5
Pyrene		10,000,000	160	70	70	60	60	60	75	140	60	60	65	50	71.3
Total PAHs	9,000	-	1,660	1,470	1,470	1,260	1,260	1,260	1,575	1,540	1,260	1,260	1,365	1,050	1,321.3
PCBs - Organics (µg/kg)															
Aroclor® 1016 and 1242 - combination		-	46.3	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1221		-	46.3	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1232		-	46.3	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1248		-	46.3	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1254		-	171	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1260		-	276	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1262		-	46.3	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Aroclor® 1268		-	46.3	43.1	43.1	37.9	39.1	37.9	46.3	43.1	37.9	37.9	40.3	32.9	39.4
Total PCBs	2,000	100,000	724.8	344.8	344.8	303.2	312.4	303.2	370.4	344.8	303.2	303.2	322.4	263.2	315.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit.
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	Upper Concentration Limit	AC-C001-01	AC-C002-01	AC-C003-01	AC-C004-01	AC-C005-01	AC-C006-01	AC-C008-01	AC-C009-01	AC-C010-01	AC-C011-01	AC-C012-01
Date Sampled			28-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	28-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04
Total Metals (mg/kg)													
Arsenic	11	500	7.8	7.5	9.2	8.3	11	4.2	6.4	6.2	11	22	10
Chromium	332	2,000	7.2	8.2	11	9.1	6.9	4.4	31	44	27	67	17
Copper	372	-	11	11	13	12	13	6.9	31	81	39	70	21
Lead	210	6,000	2.8	3.7	4.8	10	13	3.8	6.7	8	16	18	9.9
Silver	13	2,000	0.14	0.13	0.15	0.08	0.07	0.06	1.4	4.6	1.2	2.7	0.36
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		-	55	50	60	34	27	25	60	60	60	50	28
1-Methylnaphthalene		-	55	50	60	34	27	25	60	60	60	50	28
2-Methylnaphthalene		5,000,000	55	50	60	34	27	25	60	60	60	50	28
Acenaphthene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Acenaphthylene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Anthracene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Benz[a]anthracene		3,000,000	55	50	60	34	27	25	60	60	60	50	28
Benzo[a]pyrene		300,000	55	50	60	34	27	25	60	60	60	50	28
Benzo[b]fluoranthene		3,000,000	55	50	60	34	27	25	60	60	200	50	78
Benzo[ghi]perylene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Benzo[k]fluoranthene		10,000,000	55	50	60	34	27	25	60	60	160	50	59
Biphenyl		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Chrysene		10,000,000	55	50	60	34	27	25	60	60	150	50	62
Dibenzo[a,h]anthracene		300,000	55	50	60	34	27	25	60	60	60	50	28
Fluoranthene		10,000,000	55	50	60	34	27	25	140	60	210	50	100
Fluorene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Indeno[1,2,3-cd]pyrene		3,000,000	55	50	60	34	27	25	60	60	60	50	28
Naphthalene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Perylene		-	55	50	180	34	27	25	60	60	60	50	28
Phenanthrene		10,000,000	55	50	60	34	27	25	60	60	60	50	28
Pyrene		10,000,000	55	50	60	34	27	25	150	120	210	50	97
Total SVOC/PAHs	9,000	-	1,155	1,050	1,380	703.5	556.5	514.5	1,430	1,320	1,890	1,050	844
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Aroclor® 1221		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Aroclor® 1232		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Aroclor® 1248		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Aroclor® 1254		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Aroclor® 1260		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	92.2	95	59.4
Aroclor® 1262		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Aroclor® 1268		-	33.8	32.9	151.5	20.85	66	15.25	36.75	37.9	36.75	32.05	17.6
Total PCBs	2,000	100,000	270.4	263.2	1212	166.8	528	122	294	303.2	349.45	319.35	182.6

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit.
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AC-C015-01	AC-C016-01	AC-C017-01	AC-C018-01	AC-C019-01	AC-C022-01	AC-C023-01	AC-C024-01	AC-C025-01	AC-C026-01
Date Sampled		28-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	28-Jan-04	28-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04
Total Metals (mg/kg)											
Arsenic	11	1.9	5.4	9.7	19	12	5.8	3.8	9.3	31	7
Chromium	332	2.7	10	20	95	28	4.6	5.2	16	53	11
Copper	372	2	7.7	21	90	39	2.1	1.5	14	64	22
Lead	210	1.2	4	8	19	16	1.5	2.5	6.1	18	9.4
Silver	13	0.06	0.23	0.75	3.8	2	0.07	0.07	0.45	2.1	0.21
SVOC/PAHs (µg/kg)											
1-Methyl phenanthrene		25	34	41	29	28	27	28	29	35	28
1-Methylnaphthalene		25	34	41	29	28	27	28	29	35	28
2-Methylnaphthalene		25	34	41	29	28	27	28	29	35	28
Acenaphthene		25	34	41	29	28	27	28	29	35	28
Acenaphthylene		25	34	41	29	28	27	28	29	35	28
Anthracene		25	34	41	29	28	27	28	29	35	28
Benz[a]anthracene		25	34	41	29	69	27	28	29	35	28
Benzo[a]pyrene		25	34	41	29	64	27	28	29	35	28
Benzo[b]fluoranthene		25	34	41	78	120	27	28	29	35	28
Benzo[ghi]perylene		25	34	41	29	28	27	28	29	35	28
Benzo[k]fluoranthene		25	34	41	59	90	27	28	29	35	28
Biphenyl		25	34	41	29	28	27	28	29	35	28
Chrysene		25	34	41	58	96	27	28	29	35	28
Dibenzo[a,h]anthracene		25	34	41	29	28	27	28	29	35	28
Fluoranthene		25	34	41	94	160	27	28	29	88	28
Fluorene		25	34	41	29	28	27	28	29	35	28
Indeno[1,2,3-cd]pyrene		25	34	41	29	28	27	28	29	35	28
Naphthalene		25	34	41	29	28	27	28	29	35	28
Perylene		25	130	250	29	28	27	190	150	35	28
Phenanthrene		25	34	41	29	28	27	28	29	35	28
Pyrene		25	34	41	83	150	27	28	29	81	28
Total SVOC/PAHs	9,000	514.5	800	1,070	828	1141	556.5	750	730	834	588
PCBs (µg/kg)											
Aroclor® 1016 and 1242 - combination		15.45	20.85	102	17.85	17.6	16.45	17.6	18.1	21.9	69.5
Aroclor® 1221		15.45	20.85	102	17.85	17.6	16.45	17.6	18.1	21.9	69.5
Aroclor® 1232		15.45	20.85	102	17.85	17.6	16.45	17.6	18.1	21.9	69.5
Aroclor® 1248		15.45	20.85	102	17.85	17.6	16.45	17.6	18.1	21.9	69.5
Aroclor® 1254		15.45	20.85	102	61.3	106	16.45	17.6	18.1	56.1	69.5
Aroclor® 1260		15.45	20.85	233	183	112	16.45	17.6	39.9	102	69.5
Aroclor® 1262		15.45	20.85	102	17.85	17.6	16.45	17.6	18.1	21.9	69.5
Aroclor® 1268		15.45	20.85	102	17.85	17.6	16.45	17.6	18.1	21.9	69.5
Total PCBs	2,000	123.6	166.8	947	351.4	323.6	131.6	140.8	166.6	289.5	556

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AC-C029-01	AC-C030-01	AC-C031-01	AC-C032-01	AC-C036-01	AC-C043-01	AD-C001-01	AD-C002-01	AD-C003-01	AD-C004-01	AD-C005-01
Date Sampled		28-Jan-04	30-Jan-04	30-Jan-04	30-Jan-04	28-Jan-04	23-Jan-04	05-Dec-03	05-Dec-03	05-Dec-03	05-Dec-03	05-Dec-03
Total Metals (mg/kg)												
Arsenic	11	5	7.2	13	9.5	16	20	17	4	7.8	10	2.8
Chromium	332	3.5	6.6	17	9.8	24	11	300	8.2	6	17	9.3
Copper	372	1.7	2.9	14	6.4	24	16	800	9.6	8.9	20	8.9
Lead	210	1.5	3.1	4.4	3.1	5.1	3.6	250	3.4	2.8	7.8	3.1
Silver	13	0.06	0.07	0.49	0.19	1	0.16	22	0.14	0.14	0.08	0.06
SVOC/PAHs (µg/kg)												
1-Methyl phenanthrene		25	26	27	28	41	60	55	55	55	33	25
1-Methylnaphthalene		25	26	27	28	41	60	55	55	55	33	25
2-Methylnaphthalene		25	26	27	28	41	60	55	55	55	33	25
Acenaphthene		25	26	27	28	41	60	55	55	55	33	25
Acenaphthylene		25	26	27	28	41	60	55	55	55	33	25
Anthracene		25	26	27	28	41	60	250	55	55	33	25
Benz[a]anthracene		25	26	27	28	41	60	900	55	55	33	25
Benzo[a]pyrene		25	26	27	28	41	60	1,400	55	55	33	25
Benzo[b]fluoranthene		25	26	27	28	41	60	2,000	55	55	33	25
Benzo[ghi]perylene		25	26	27	28	41	60	1,400	55	55	33	25
Benzo[k]fluoranthene		25	26	27	28	41	60	1,600	55	55	33	25
Biphenyl		25	26	27	28	41	60	55	55	55	33	25
Chrysene		25	26	27	28	41	60	1,800	55	55	33	25
Dibenzo[a,h]anthracene		25	26	27	28	41	60	300	55	55	33	25
Fluoranthene		25	26	27	28	41	60	2,900	55	55	33	25
Fluorene		25	26	27	28	41	60	55	55	55	33	25
Indeno[1,2,3-cd]pyrene		25	26	27	28	41	60	1,300	55	55	33	25
Naphthalene		25	26	27	28	41	60	55	55	55	33	25
Perylene		25	26	27	28	41	290	330	55	55	33	25
Phenanthrene		25	26	27	28	41	60	1,100	55	55	33	25
Pyrene		25	26	27	28	41	60	2,500	55	55	33	25
Total SVOC/PAHs	9,000	514.5	546	556.5	588	861	1,490	18,220	1,155	1,155	693	514.5
PCBs (µg/kg)												
Aroclor® 1016 and 1242 - combination		15.25	16.25	16.65	17.35	25.5	39.05	35.7	35.7	35.7	20.5	15.45
Aroclor® 1221		15.25	16.25	16.65	17.35	25.5	39.05	35.7	35.7	35.7	20.5	15.45
Aroclor® 1232		15.25	16.25	16.65	17.35	25.5	39.05	35.7	35.7	35.7	20.5	15.45
Aroclor® 1248		15.25	16.25	16.65	17.35	25.5	39.05	35.7	35.7	35.7	20.5	15.45
Aroclor® 1254		15.25	16.25	16.65	17.35	25.5	39.05	121	35.7	35.7	20.5	15.45
Aroclor® 1260		15.25	16.25	49.2	37.2	25.5	39.05	558	35.7	35.7	20.5	15.45
Aroclor® 1262		15.25	16.25	16.65	17.35	25.5	39.05	35.7	35.7	35.7	20.5	15.45
Aroclor® 1268		15.25	16.25	16.65	17.35	25.5	39.05	35.7	35.7	35.7	20.5	15.45
Total PCBs	2,000	122	130	165.75	158.65	204	312.4	893.2	285.6	285.6	164	123.6

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AD-C006-02	AD-C008-01	AD-C009-01	AD-C010-01	AD-C011-01	AD-C012-01	AD-C013-01	AD-C015-01	AD-C016-01	AD-C017-01	AD-C018-01
Date Sampled		26-Jan-04	05-Dec-03	04-Dec-03	04-Dec-03	04-Dec-03	04-Dec-03	04-Dec-03	03-Dec-03	03-Dec-03	03-Dec-03	03-Dec-03
Total Metals (mg/kg)												
Arsenic	11	2.4	6	6	5	16	7.9	6.8	8	3.8	12	9.2
Chromium	332	7.2	5.3	7.5	7.1	12	9.7	10	23	20	24	7.1
Copper	372	7.6	1.9	4.8	5.2	9.7	11	13	34	24	25	6.8
Lead	210	3.3	2.1	3.5	2.7	4.6	5.2	8.4	9.1	11	9.1	2.7
Silver	13	0.06	0.07	0.11	0.09	0.12	0.07	0.06	0.75	0.82	1.1	0.14
SVOC/PAHs (µg/kg)												
1-Methyl phenanthrene		25	29	46	37	48	27	100	55	37	46	55
1-Methylnaphthalene		25	29	46	37	48	27	25	55	37	46	55
2-Methylnaphthalene		25	29	46	37	48	27	25	55	37	46	55
Acenaphthene		25	29	46	37	48	27	25	55	37	46	55
Acenaphthylene		25	29	46	37	48	27	720	55	37	46	55
Anthracene		25	29	46	37	48	27	490	55	37	46	55
Benz[a]anthracene		25	29	46	37	48	27	1,700	55	280	46	55
Benzo[a]pyrene		25	29	46	37	48	27	1,300	55	290	95	55
Benzo[b]fluoranthene		25	29	46	37	48	27	1,600	55	340	120	55
Benzo[ghi]perylene		25	29	46	37	48	27	650	55	270	110	55
Benzo[k]fluoranthene		25	29	46	37	48	27	1,600	55	370	130	55
Biphenyl		25	29	46	37	48	27	25	55	37	46	55
Chrysene		25	29	46	37	48	27	1,700	130	420	130	55
Dibenzo[a,h]anthracene		25	29	46	37	48	27	320	55	37	46	55
Fluoranthene		25	29	46	37	48	27	3,200	220	790	210	55
Fluorene		25	29	46	37	48	27	25	55	37	46	55
Indeno[1,2,3-cd]pyrene		25	29	46	37	48	27	750	55	240	91	55
Naphthalene		25	29	46	37	48	27	25	55	37	46	55
Perylene		25	29	46	100	48	27	320	55	190	96	55
Phenanthrene		25	29	46	37	48	27	270	55	350	46	55
Pyrene		25	29	46	37	48	27	3,000	200	680	190	55
Total SVOC/PAHs	9,000	514.5	609	955.5	830	997.5	556.5	17,867	1,540	4,590	1,718	1,155
PCBs (µg/kg)												
Aroclor® 1016 and 1242 - combination		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Aroclor® 1221		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Aroclor® 1232		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Aroclor® 1248		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Aroclor® 1254		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Aroclor® 1260		15.45	18.1	28.4	22.7	29.75	16.45	15.45	577	481	115	34.7
Aroclor® 1262		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Aroclor® 1268		15.45	18.1	28.4	22.7	29.75	16.45	15.45	35.7	23.15	28.4	34.7
Total PCBs	2,000	123.6	144.8	227.2	181.6	238	131.6	123.6	826.9	643.05	313.8	277.6

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AD-C019-01	AD-C020-01	AD-C022-01	AD-C023-01	AD-C024-01	AD-C025-01	AD-C026-02	AD-C027-02	AD-C029-01	AD-C030-01	AD-C031-01	AD-C032-01
Date Sampled		12-Nov-03	12-Nov-03	18-Nov-03	14-Nov-03	14-Nov-03	14-Nov-03	04-Dec-03	04-Dec-03	18-Nov-03	14-Nov-03	14-Nov-03	14-Nov-03
Total Metals (mg/kg)													
Arsenic	11	6.6	5.1	7.6	11	4.8	6.6	18	5.2	7.7	16	5	11
Chromium	332	70	10	9.2	30	9.4	14	22	11	19	14	44	13
Copper	372	74	15	34	23	12	20	38	7	16	5.5	30	18
Lead	210	24	6.4	3.8	5.8	16	7.1	26	4.5	5	5.5	26	7.6
Silver	13	5.5	0.12	0.3	0.28	0.09	0.51	0.36	0.08	0.28	0.18	0.5	0.15
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		35	70	34	55	46	46	49	31	34	36	70	30
1-Methylnaphthalene		35	23	34	55	46	46	49	31	34	36	29	30
2-Methylnaphthalene		35	23	34	55	46	46	49	31	34	36	29	30
Acenaphthene		35	23	34	55	46	46	49	31	34	36	66	30
Acenaphthylene		35	200	34	55	46	46	49	64	34	36	29	30
Anthracene		70	180	34	55	160	180	49	85	34	36	220	30
Benz[a]anthracene		260	790	34	55	460	300	49	78	34	36	570	30
Benzo[a]pyrene		280	510	34	55	530	260	49	31	34	36	450	30
Benzo[b]fluoranthene		390	740	34	55	620	270	110	88	34	36	360	30
Benzo[ghi]perylene		260	310	34	55	390	140	49	31	34	36	300	30
Benzo[k]fluoranthene		320	620	34	55	500	290	49	80	34	36	450	30
Biphenyl		35	23	34	55	46	46	49	31	34	36	29	30
Chrysene		400	860	34	55	640	390	100	85	34	36	610	64
Dibenzo[a,h]anthracene		77	140	34	55	94	46	49	31	34	36	100	30
Fluoranthene		680	1,700	34	55	1,200	780	180	120	34	36	1,300	220
Fluorene		35	23	34	55	100	190	99	88	34	36	71	30
Indeno[1,2,3-cd]pyrene		220	340	34	55	350	130	49	31	34	36	260	30
Naphthalene		35	23	34	55	46	46	49	31	34	36	29	30
Perylene		69	120	34	55	160	46	49	31	34	36	120	30
Phenanthrene		230	140	34	55	570	200	49	100	34	36	520	30
Pyrene		590	1,200	34	55	1,000	700	160	120	34	36	1,200	210
Total SVOC/PAHs	9,000	4,122	8,058	714	1,155	7,093	4,240	1,433	1,249	703.5	745.5	6,812	1,034
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		21.55	14.55	21.2	35.7	28.4	28.4	30.5	19.25	20.85	22.3	18.1	18.65
Aroclor® 1221		21.55	14.55	21.2	35.7	28.4	28.4	30.5	19.25	20.85	22.3	18.1	18.65
Aroclor® 1232		21.55	14.55	21.2	35.7	28.4	28.4	30.5	19.25	20.85	22.3	18.1	18.65
Aroclor® 1248		21.55	14.55	21.2	35.7	28.4	28.4	30.5	19.25	20.85	22.3	18.1	18.65
Aroclor® 1254		21.55	14.55	21.2	35.7	28.4	81.7	30.5	19.25	20.85	22.3	18.1	18.65
Aroclor® 1260		444	47.9	21.2	35.7	406	174	153	19.25	20.85	22.3	18.1	18.65
Aroclor® 1262		21.55	14.55	21.2	35.7	28.4	28.4	30.5	19.25	20.85	22.3	18.1	18.65
Aroclor® 1268		21.55	14.55	21.2	35.7	28.4	28.4	30.5	19.25	20.85	22.3	18.1	18.65
Total PCBs	2,000	594.85	149.75	169.6	285.6	604.8	426.1	366.5	154	166.8	178.4	144.8	149.2

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AD-C033-03	AD-C034-02	AD-C036-01	AD-C037-01	AD-C038-01	AD-C039-01	AD-C040-01	AD-C041-01	AD-C043-01	AD-C044-01	AD-C045-01	AD-C046-01
Date Sampled		26-Jan-04	04-Dec-03	18-Nov-03	14-Nov-03	14-Nov-03	14-Nov-03	14-Nov-03	12-Nov-03	19-Nov-03	19-Nov-03	14-Nov-03	14-Nov-03
Total Metals (mg/kg)													
Arsenic	11	9.2	5.3	15	5.8	7.1	3.8	9.9	7.5	25	15	12	6.5
Chromium	332	7.6	14	42	13	380	19	30	8.6	27	18	15	21
Copper	372	1.3	12	34	8	540	130	26	14	550	13	42	17
Lead	210	2.6	5.3	8.2	3.9	110	5	14	7.4	18	6.4	13	7.4
Silver	13	0.06	0.06	0.82	0.09	9.5	0.74	0.36	0.12	0.43	0.23	0.4	0.38
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		25	24	60	44	28	24	27	23	60	37	28	27
1-Methylnaphthalene		25	24	60	44	28	24	27	23	60	37	28	27
2-Methylnaphthalene		25	24	60	44	28	24	27	23	60	37	28	27
Acenaphthene		25	24	60	44	28	24	27	23	60	37	59	27
Acenaphthylene		25	110	60	44	28	24	27	23	60	37	28	27
Anthracene		25	120	60	44	180	76	27	23	60	37	160	27
Benz[a]anthracene		25	340	60	44	440	170	27	98	60	37	280	27
Benzo[a]pyrene		25	220	60	44	400	140	27	82	60	37	240	27
Benzo[b]fluoranthene		25	290	60	44	420	130	27	110	60	37	240	27
Benzo[ghi]perylene		25	94	60	44	190	85	27	57	60	37	150	27
Benzo[k]fluoranthene		25	310	60	44	390	120	27	130	60	37	250	27
Biphenyl		25	24	60	44	28	24	27	23	60	37	28	27
Chrysene		25	360	60	44	490	170	70	140	60	37	360	27
Dibenzo[a,h]anthracene		25	24	60	44	62	24	27	23	60	37	28	27
Fluoranthene		25	700	60	44	1,000	430	100	220	60	37	800	27
Fluorene		25	24	60	44	75	24	27	23	60	37	75	27
Indeno[1,2,3-cd]pyrene		25	110	60	44	180	76	27	61	60	37	140	27
Naphthalene		25	24	60	44	28	24	27	23	60	37	28	27
Perylene		25	65	60	44	98	24	27	23	60	37	28	27
Phenanthrene		25	78	60	44	310	210	27	23	60	37	210	27
Pyrene		25	640	60	44	1,000	370	97	200	60	37	710	27
Total SVOC/PAHs	9,000	514.5	3,629	1,260	913.5	5,428	2,217	744	1,374	1,260	766.5	3,894	556.5
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		15.25	14.9	37.9	27.15	17.1	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Aroclor® 1221		15.25	14.9	37.9	27.15	17.1	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Aroclor® 1232		15.25	14.9	37.9	27.15	17.1	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Aroclor® 1248		15.25	14.9	37.9	27.15	17.1	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Aroclor® 1254		15.25	14.9	37.9	27.15	94.3	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Aroclor® 1260		15.25	70.5	37.9	27.15	17.1	15.05	210	14.55	37.9	22.7	72.2	16.45
Aroclor® 1262		15.25	14.9	37.9	27.15	17.1	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Aroclor® 1268		15.25	14.9	37.9	27.15	17.1	15.05	16.45	14.55	37.9	22.7	17.1	16.45
Total PCBs	2,000	122	174.8	303.2	217.2	214	120.4	325.15	116.4	303.2	181.6	191.9	131.6

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AD-C047-01	AD-C048-02	AD-C050-01	AD-C051-01	AD-C052-01	AD-C053-02	AD-C054-02	AD-C055-02	AD-C057-01	AD-C058-01	AD-C059-02	AD-C060-02
Date Sampled		14-Nov-03	03-Dec-03	19-Nov-03	19-Nov-03	14-Nov-03	03-Dec-03	03-Dec-03	26-Jan-04	19-Nov-03	19-Nov-03	26-Jan-04	26-Jan-04
Total Metals (mg/kg)													
Arsenic	11	8.1	5.9	12	11	41	18	20	9.8	5.8	6.9	8.2	10
Chromium	332	16	9	7	7.1	750	7.3	8.3	9.5	12	10	10	8.8
Copper	372	23	16	1.9	2	850	1	7.1	9	4.4	5.2	2.2	2.3
Lead	210	6.1	7.5	4.1	2.5	110	3.1	8.5	6	3.3	3.2	2.9	3.1
Silver	13	0.45	0.14	0.07	0.06	7	0.06	0.08	0.06	0.07	0.07	0.06	0.07
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		24	86	26	25	47	25	30	25	26	26	25	26
1-Methylnaphthalene		24	25	26	25	47	25	30	25	26	26	25	26
2-Methylnaphthalene		24	25	26	25	47	25	30	25	26	26	25	26
Acenaphthene		24	25	26	25	47	25	30	25	26	26	25	26
Acenaphthylene		24	540	26	25	47	25	30	25	26	26	25	26
Anthracene		24	370	26	25	47	25	30	25	26	26	25	26
Benz[a]anthracene		24	1,500	26	25	47	25	30	25	26	26	25	26
Benzo[a]pyrene		24	1,200	26	25	47	25	30	25	26	26	25	26
Benzo[b]fluoranthene		24	1,600	26	25	100	25	30	25	26	26	25	26
Benzo[ghi]perylene		24	760	26	25	47	25	30	25	26	26	25	26
Benzo[k]fluoranthene		24	1,400	26	25	120	25	30	25	26	26	25	26
Biphenyl		24	25	26	25	47	25	30	25	26	26	25	26
Chrysene		24	1,600	26	25	130	25	30	25	26	26	25	26
Dibenzo[a,h]anthracene		24	320	26	25	47	25	30	25	26	26	25	26
Fluoranthene		82	3,000	26	25	190	25	30	25	26	26	25	26
Fluorene		24	25	26	25	140	25	30	25	26	26	25	26
Indeno[1,2,3-cd]pyrene		24	830	26	25	47	25	30	25	26	26	25	26
Naphthalene		24	25	26	25	47	25	30	25	26	26	25	26
Perylene		24	300	26	25	47	25	30	25	26	26	25	26
Phenanthrene		24	260	26	25	47	25	30	25	26	26	25	26
Pyrene		70	2,900	26	25	160	25	30	25	26	26	25	26
Total SVOC/PAHs	9,000	608	16,813	535.5	514.5	1,538	514.5	619.5	525	535.5	535.5	525	535.5
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1221		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1232		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1248		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1254		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1260		46.7	15.45	15.8	15.45	174	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1262		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Aroclor® 1268		15.05	15.45	15.8	15.45	29.05	15.45	18.4	15.6	16	16	15.6	15.8
Total PCBs	2,000	152.05	123.6	126.4	123.6	377.35	123.6	147.2	124.8	128	128	124.8	126.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	AD-C061-01	AD-C064-01	AD-C065-02	AD-C071-02	AD-C072-02	BC-C001-01	BC-C002-01	BC-C003-01	BC-C004-01	BC-C005-01	BC-C006-01	BC-C008-01
Date Sampled		03-Dec-03	19-Nov-03	27-Jan-04	27-Jan-04	27-Jan-04	28-Jan-04	05-Dec-03	05-Dec-03	05-Dec-03	05-Dec-03	29-Jan-04	28-Jan-04
Total Metals (mg/kg)													
Arsenic	11	16	8.1	5.6	9.4	7.1	4.8	7.6	15	9.4	2.9	4	3.5
Chromium	332	54	13	20	12	11	11	6.9	280	20	11	27	5.1
Copper	372	56	12	9	1.8	3.6	7.9	4.2	260	17	9.7	25	5.3
Lead	210	23	3.2	5.4	3.3	3.6	4	2.1	39	4.2	2.7	4.6	2
Silver	13	3.1	0.07	0.07	0.07	0.07	0.16	0.08	7.7	0.47	0.15	2.4	0.1
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		60	27	27	27	26	32	32	55	49	60	65	40
1-Methylnaphthalene		60	27	27	27	26	32	32	55	49	60	65	40
2-Methylnaphthalene		60	27	27	27	26	32	32	55	49	60	65	40
Acenaphthene		60	27	27	27	26	32	32	55	49	60	65	40
Acenaphthylene		60	27	27	27	26	32	32	55	49	60	65	40
Anthracene		60	27	27	27	26	32	32	55	49	60	65	40
Benz[a]anthracene		180	27	27	27	26	32	32	55	49	60	65	40
Benzo[a]pyrene		230	27	27	27	26	32	32	55	49	60	65	40
Benzo[b]fluoranthene		240	27	27	27	26	32	32	150	49	60	65	40
Benzo[ghi]perylene		290	27	27	27	26	32	32	55	49	60	65	40
Benzo[k]fluoranthene		260	27	27	27	26	32	32	120	49	60	65	40
Biphenyl		60	27	27	27	26	32	32	55	49	60	65	40
Chrysene		290	27	27	27	26	32	32	140	100	60	65	40
Dibenzo[a,h]anthracene		60	27	27	27	26	32	32	55	49	60	65	40
Fluoranthene		390	27	27	27	26	32	32	210	150	60	65	40
Fluorene		60	27	27	27	26	32	32	55	49	60	65	40
Indeno[1,2,3-cd]pyrene		210	27	27	27	26	32	32	55	49	60	65	40
Naphthalene		60	27	27	27	26	32	32	55	49	60	65	40
Perylene		60	27	27	27	26	430	32	130	140	60	290	40
Phenanthrene		150	27	27	27	26	32	32	55	49	60	65	40
Pyrene		350	27	27	27	26	32	32	190	150	60	65	40
Total SVOC/PAHs	9,000	3,250	567	556.5	556.5	535.5	1,060	672	1,765	1,373	1,260	1,590	840
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		19.55	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Aroclor® 1221		19.55	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Aroclor® 1232		19.55	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Aroclor® 1248		19.55	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Aroclor® 1254		19.55	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Aroclor® 1260		19.55	16.9	16.45	16.45	16	19.85	20.15	287	30.5	36.75	41.65	25
Aroclor® 1262		57.6	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Aroclor® 1268		19.55	16.9	16.45	16.45	16	19.85	20.15	34.7	30.5	36.75	41.65	25
Total PCBs	2,000	194.45	135.2	131.6	131.6	128	158.8	161.2	529.9	244	294	333.2	200

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BC-C009-01	BC-C010-01	BC-C011-01	BC-C012-01	BC-C015-01	BC-C016-01	BC-C017-01	BC-C018-01	BC-C022-01	BC-C023-01	BC-C024-01	BC-C029-01
Date Sampled		05-Dec-03	05-Dec-03	05-Dec-03	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04
Total Metals (mg/kg)													
Arsenic	11	7.1	4.2	4.7	5	4	4.8	4.4	5	9.7	7.6	6.9	7.4
Chromium	332	16	13	34	53	5.3	16	13	29	8.1	8.7	12	5
Copper	372	15	14	29	63	4.1	19	16	32	8	14	20	4.3
Lead	210	4.4	3.6	7.1	17	1.8	2.9	3.4	6.2	2.9	2.4	3.2	1.5
Silver	13	0.3	0.14	0.77	1.9	0.08	0.15	0.16	0.77	0.12	0.17	0.19	0.08
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		55	55	60	70	34	60	65	70	48	70	75	33
1-Methylnaphthalene		55	55	60	70	34	60	65	70	48	70	75	33
2-Methylnaphthalene		55	55	60	70	34	60	65	70	48	70	75	33
Acenaphthene		55	55	60	70	34	60	65	70	48	70	75	33
Acenaphthylene		55	55	60	70	34	60	65	70	48	70	75	33
Anthracene		55	55	60	70	34	60	65	70	48	70	75	33
Benz[a]anthracene		55	55	60	70	34	60	65	70	48	70	75	33
Benzo[a]pyrene		55	55	60	70	34	60	65	70	48	70	75	33
Benzo[b]fluoranthene		55	55	60	70	34	60	65	70	48	70	75	33
Benzo[ghi]perylene		55	55	60	70	34	60	65	70	48	70	75	33
Benzo[k]fluoranthene		55	55	60	70	34	60	65	70	48	70	75	33
Biphenyl		55	55	60	70	34	60	65	70	48	70	75	33
Chrysene		55	55	60	70	34	60	65	70	48	70	75	33
Dibenzo[a,h]anthracene		55	55	60	70	34	60	65	70	48	70	75	33
Fluoranthene		55	55	60	70	34	60	65	70	150	70	75	33
Fluorene		55	55	60	70	34	60	65	70	48	70	75	33
Indeno[1,2,3-cd]pyrene		55	55	60	70	34	60	65	70	48	70	75	33
Naphthalene		55	55	60	70	34	60	65	70	48	70	75	33
Perylene		55	55	60	70	34	140	65	70	48	70	75	33
Phenanthrene		55	55	60	70	34	60	65	70	48	70	75	33
Pyrene		55	55	60	70	34	60	65	70	160	70	75	33
Total SVOC/PAHs	9,000	1,155	1,155	1,260	1,470	703.5	1,340	1,365	1,470	1,213	1,470	1,575	693
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1221		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1232		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1248		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1254		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1260		33.8	176	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1262		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Aroclor® 1268		33.8	35.7	36.75	44.65	20.85	37.9	40.3	44.65	29.75	43.1	48.1	20.5
Total PCBs	2,000	270.4	425.9	294	357.2	166.8	303.2	322.4	357.2	238	344.8	384.8	164

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BC-C030-01	BC-C031-01	BC-C036-01	BC-C037-01	BC-C038-01	BC-C043-01	BC-C044-01	BC-C045-01	BC-C050-01	BC-C051-01	BC-C052-01	BC-C057-01
Date Sampled		28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	28-Jan-04	23-Jan-04	23-Jan-04	23-Jan-04	23-Jan-04
Total Metals (mg/kg)													
Arsenic	11	8.4	5.8	6.3	9.5	5.3	5.5	5.3	8.3	5.3	6.3	4.7	6.3
Chromium	332	9.5	91	5.8	7.5	22	8	9.5	12	6.2	29	91	6
Copper	372	13	85	7.3	10	26	11	15	19	10	33	88	13
Lead	210	2.6	18	1.9	2.2	5.4	2.1	2.6	3.4	2.3	5.8	17	2.2
Silver	13	0.15	3.4	0.11	0.15	0.84	0.16	0.17	0.16	0.16	1.1	4.7	0.16
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		60	70	45	60	75	60	65	65	65	65	70	65
1-Methylnaphthalene		60	70	45	60	75	60	65	65	65	65	70	65
2-Methylnaphthalene		60	70	45	60	75	60	65	65	65	65	70	65
Acenaphthene		60	70	45	60	75	60	65	65	65	65	70	65
Acenaphthylene		60	70	45	60	75	60	65	65	65	65	70	65
Anthracene		60	70	45	60	75	60	65	65	65	65	70	65
Benz[a]anthracene		60	70	45	60	75	60	65	65	65	65	70	65
Benzo[a]pyrene		60	70	45	60	75	60	65	65	65	65	150	65
Benzo[b]fluoranthene		60	230	45	60	75	60	65	65	65	65	370	65
Benzo[ghi]perylene		60	70	45	60	75	60	65	65	65	65	140	65
Benzo[k]fluoranthene		60	190	45	60	75	60	65	65	65	65	260	65
Biphenyl		60	70	45	60	75	60	65	65	65	65	70	65
Chrysene		60	160	45	60	75	60	65	65	65	65	240	65
Dibenzo[a,h]anthracene		60	70	45	60	75	60	65	65	65	65	70	65
Fluoranthene		60	260	45	60	75	60	65	65	65	65	300	65
Fluorene		60	70	45	60	75	60	65	65	65	65	70	65
Indeno[1,2,3-cd]pyrene		60	70	45	60	75	60	65	65	65	65	140	65
Naphthalene		60	70	45	60	75	60	65	65	65	65	70	65
Perylene		60	70	45	140	180	230	170	200	210	65	190	270
Phenanthrene		60	70	45	60	75	60	65	65	65	65	70	65
Pyrene		60	230	45	60	75	60	65	65	65	65	310	140
Total SVOC/PAHs	9,000	1,260	2,190	934.5	1,340	1,680	1,430	1,470	1,500	1,510	1,365	2,940	1,645
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Aroclor® 1221		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Aroclor® 1232		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Aroclor® 1248		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Aroclor® 1254		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Aroclor® 1260		36.75	143	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	125	40.3
Aroclor® 1262		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Aroclor® 1268		36.75	44.65	27.8	36.75	48.1	39.05	41.65	40.3	40.3	40.3	43.1	40.3
Total PCBs	2,000	294	455.55	222.4	294	384.8	312.4	333.2	322.4	322.4	322.4	426.7	322.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BC-C058-01	BC-C059-01	BC-C064-01	BC-C065-01	BC-C066-01	BC-C071-01	BC-C072-01	BC-C073-01	BC-C079-01	BD-C001-01	BD-C002-01	BD-C003-01
Date Sampled		23-Jan-04	23-Jan-04	23-Jan-04	23-Jan-04	23-Jan-04	23-Jan-04	23-Jan-04	28-Jan-04	23-Jan-04	05-Dec-03	04-Dec-03	04-Dec-03
Total Metals (mg/kg)													
Arsenic	11	3	4	6.4	5.9	5.4	13	4.8	9.3	7.5	3	4.4	8
Chromium	332	4.6	6.1	8.2	7.3	19	9.9	10	6.4	7.2	17	5.9	7.5
Copper	372	8.8	12	16	15	23	18	16	12	11	40	4.2	2.7
Lead	210	1.9	2.3	3.1	3.1	5.4	11	4	2.1	3.2	3.7	2	2.5
Silver	13	0.16	0.17	0.17	0.17	0.76	0.19	0.19	0.19	0.18	0.53	0.06	0.08
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		60	65	70	65	65	75	75	75	70	33	25	31
1-Methylnaphthalene		60	65	70	65	65	75	75	75	70	33	25	31
2-Methylnaphthalene		60	65	70	65	65	75	75	75	70	33	25	31
Acenaphthene		60	65	70	65	65	75	75	75	70	33	25	31
Acenaphthylene		60	65	70	65	65	75	75	75	70	33	25	31
Anthracene		60	65	70	65	65	75	75	75	70	33	25	31
Benz[a]anthracene		60	65	70	65	65	75	75	75	70	33	25	31
Benzo[a]pyrene		60	65	70	65	65	75	75	75	70	33	25	31
Benzo[b]fluoranthene		60	65	70	65	65	75	75	75	70	33	25	31
Benzo[ghi]perylene		60	65	70	65	65	75	75	75	70	33	25	31
Benzo[k]fluoranthene		60	65	70	65	65	75	75	75	70	33	25	31
Biphenyl		60	65	70	65	65	75	75	75	70	33	25	31
Chrysene		60	65	70	65	65	75	75	75	70	33	25	31
Dibenzo[a,h]anthracene		60	65	70	65	65	75	75	75	70	33	25	31
Fluoranthene		60	65	70	65	65	75	75	75	140	33	25	31
Fluorene		60	65	70	65	65	75	75	75	70	33	25	31
Indeno[1,2,3-cd]pyrene		60	65	70	65	65	75	75	75	70	33	25	31
Naphthalene		60	65	70	65	65	75	75	75	70	33	25	31
Perylene		190	230	150	160	140	75	170	270	70	33	25	31
Phenanthrene		60	65	70	65	65	75	75	75	70	33	25	31
Pyrene		60	65	70	65	65	75	75	75	220	33	25	31
Total SVOC/PAHs	9,000	1,390	1,530	1,550	1,460	1,440	1,575	1,670	1,770	1,690	693	514.5	651
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1221		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1232		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1248		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1254		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1260		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1262		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Aroclor® 1268		39.05	41.65	43.1	41.65	41.65	46.3	48.1	46.3	44.65	20.5	15.45	19.55
Total PCBs	2,000	312.4	333.2	344.8	333.2	333.2	370.4	384.8	370.4	357.2	164	123.6	156.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BD-C004-01	BD-C005-01	BD-C006-01	BD-C008-01	BD-C009-01	BD-C010-01	BD-C011-01	BD-C012-01	BD-C013-01	BD-C015-01	BD-C016-01	BD-C017-01
Date Sampled		05-Dec-03	05-Dec-03	05-Dec-03	05-Dec-03	19-Nov-03	19-Nov-03	04-Dec-03	04-Dec-03	04-Dec-03	18-Nov-03	18-Nov-03	18-Nov-03
Total Metals (mg/kg)													
Arsenic	11	8.3	5.8	6	9.8	40	9.8	5	7.1	6.7	11	19	30
Chromium	332	7.2	14	48	51	20	5.8	17	15	400	7.3	7.6	8.6
Copper	372	3	14	40	51	10	3.4	13	13	240	130	4.2	8
Lead	210	2.2	3.6	7.4	7.8	6	2.4	3.3	3.4	46	2.6	2.5	2.5
Silver	13	0.13	0.14	1	1.8	0.15	0.08	0.33	0.12	8.1	0.27	0.06	0.07
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		50	55	55	34	60	30	35	47	45	27	25	27
1-Methylnaphthalene		50	55	55	34	60	30	35	47	45	27	25	27
2-Methylnaphthalene		50	55	55	34	60	30	35	47	45	27	25	27
Acenaphthene		50	55	55	34	60	30	35	47	45	27	25	27
Acenaphthylene		50	55	55	34	60	30	35	47	45	27	25	27
Anthracene		50	55	55	34	60	30	35	47	45	27	25	27
Benz[a]anthracene		50	55	55	68	60	30	35	47	45	27	25	27
Benzo[a]pyrene		50	55	55	81	60	30	35	47	96	27	25	27
Benzo[b]fluoranthene		50	55	55	110	60	30	35	47	210	27	25	27
Benzo[ghi]perylene		50	55	55	34	60	30	35	47	100	27	25	27
Benzo[k]fluoranthene		50	55	55	94	60	30	35	47	160	27	25	27
Biphenyl		50	55	55	34	60	30	35	47	45	27	25	27
Chrysene		50	55	55	110	60	30	35	47	180	27	25	27
Dibenzo[a,h]anthracene		50	55	55	34	60	30	35	47	45	27	25	27
Fluoranthene		50	55	55	200	60	30	35	47	180	27	25	27
Fluorene		50	55	55	34	60	30	35	47	45	27	25	27
Indeno[1,2,3-cd]pyrene		50	55	55	34	60	30	35	47	100	27	25	27
Naphthalene		50	55	55	34	60	30	35	47	45	27	25	27
Perylene		140	55	140	34	60	30	87	160	45	27	25	27
Phenanthrene		50	55	55	86	60	30	35	47	45	27	25	27
Pyrene		50	55	55	170	60	30	35	47	170	27	25	27
Total SVOC/PAHs	9,000	1,140	1,155	1,240	1,355	1,260	619.5	777	1,090	1,775	556.5	514.5	567
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		32.9	35.7	35.7	20.85	37.9	18.4	21.55	29.05	27.8	16.45	15.45	16.9
Aroclor® 1221		32.9	35.7	35.7	20.85	37.9	18.4	21.55	29.05	27.8	16.45	15.45	16.9
Aroclor® 1232		32.9	35.7	35.7	20.85	37.9	18.4	21.55	29.05	27.8	16.45	15.45	16.9
Aroclor® 1248		32.9	35.7	35.7	20.85	37.9	18.4	21.55	29.05	27.8	16.45	15.45	16.9
Aroclor® 1254		32.9	35.7	35.7	20.85	37.9	18.4	383	29.05	462	16.45	15.45	16.9
Aroclor® 1260		32.9	35.7	79.4	137	37.9	18.4	720	29.05	951	16.45	15.45	16.9
Aroclor® 1262		32.9	35.7	35.7	20.85	37.9	18.4	21.55	29.05	27.8	16.45	15.45	16.9
Aroclor® 1268		32.9	35.7	35.7	20.85	37.9	18.4	21.55	29.05	27.8	16.45	15.45	16.9
Total PCBs	2,000	263.2	285.6	329.3	282.95	303.2	147.2	1,232	232.4	1,580	131.6	123.6	135.2

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BD-C018-01	BD-C019-01	BD-C020-01	BD-C022-01	BD-C023-01	BD-C024-01	BD-C025-01	BD-C026-01	BD-C027-02	BD-C029-01	BD-C030-01	BD-C031-01
Date Sampled		18-Nov-03	04-Dec-03	04-Dec-03	18-Nov-03	17-Nov-03	17-Nov-03	17-Nov-03	04-Dec-03	27-Jan-04	18-Nov-03	17-Nov-03	17-Nov-03
Total Metals (mg/kg)													
Arsenic	11	12	12	16	6.2	3	10	22	7.6	7.2	5.6	3.1	4.6
Chromium	332	6.7	15	630	7	6.2	8.1	9.4	6.2	5.4	10	4.4	5.9
Copper	372	2.6	12	520	27	9.7	7.9	16	4.2	3.1	230	6.8	3.7
Lead	210	2.5	3.8	100	2.8	1.6	2.7	2.8	2.2	2.3	4.2	1.9	2.7
Silver	13	0.09	0.13	26	0.3	0.14	0.12	0.48	0.08	0.09	1.1	0.13	0.13
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		34	50	70	25	28	25	26	33	36	31	26	26
1-Methylnaphthalene		34	50	70	25	28	25	26	33	36	31	26	26
2-Methylnaphthalene		34	50	70	25	28	25	26	33	36	31	26	26
Acenaphthene		34	50	70	25	28	25	26	33	36	31	26	26
Acenaphthylene		34	50	70	25	28	25	26	33	36	31	26	26
Anthracene		34	50	70	25	28	25	26	33	36	31	26	26
Benz[a]anthracene		34	50	290	25	28	25	26	33	36	31	26	26
Benzo[a]pyrene		34	50	440	25	28	25	26	33	36	31	26	26
Benzo[b]fluoranthene		34	50	900	25	28	25	26	33	36	31	26	26
Benzo[ghi]perylene		34	50	420	25	28	25	26	33	36	31	26	26
Benzo[k]fluoranthene		34	50	640	25	28	25	26	33	36	31	26	26
Biphenyl		34	50	70	25	28	25	26	33	36	31	26	26
Chrysene		34	50	730	25	28	25	26	33	36	31	26	26
Dibenzo[a,h]anthracene		34	50	70	25	28	25	26	33	36	31	26	26
Fluoranthene		34	50	800	25	28	25	26	33	36	31	26	26
Fluorene		34	50	70	25	28	25	26	33	36	31	26	26
Indeno[1,2,3-cd]pyrene		34	50	430	25	28	25	26	33	36	31	26	26
Naphthalene		34	50	70	25	28	25	26	33	36	31	26	26
Perylene		34	170	170	25	28	25	26	33	36	31	26	26
Phenanthrene		34	50	280	25	28	25	26	33	36	31	26	26
Pyrene		34	50	720	25	28	25	26	33	36	31	26	26
Total SVOC/PAHs	9,000	703.5	1,170	6,520	525	577.5	514.5	546	693	745.5	651	535.5	546
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		20.85	31.25	44.65	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1221		20.85	31.25	44.65	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1232		20.85	31.25	44.65	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1248		20.85	31.25	44.65	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1254		20.85	31.25	407	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1260		20.85	31.25	548	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1262		20.85	31.25	44.65	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Aroclor® 1268		20.85	31.25	44.65	15.6	17.1	15.25	16.25	20.5	22.3	19.55	16	16.25
Total PCBs	2,000	166.8	250	1,223	124.8	136.8	122	130	164	178.4	156.4	128	130

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BD-C032-01	BD-C033-01	BD-C034-02	BD-C036-01	BD-C037-01	BD-C038-01	BD-C039-01	BD-C040-01	BD-C041-01	BD-C043-01	BD-C044-01	BD-C045-01
Date Sampled		17-Nov-03	04-Dec-03	27-Jan-04	18-Nov-03	17-Nov-03	17-Nov-03	17-Nov-03	04-Dec-03	04-Dec-03	19-Nov-03	19-Nov-03	02-Dec-03
Total Metals (mg/kg)													
Arsenic	11	12	17	8.5	13	8.5	6.5	7.3	4.2	8.9	22	6.5	5.5
Chromium	332	12	9.6	5.6	31	14	9.9	12	3.1	130	94	9.2	14
Copper	372	17	5.3	3.2	46	21	6	5.2	1.6	210	89	3	10
Lead	210	4	2.3	1.7	5.9	9.9	3.3	4.3	2.2	27	18	3.1	3.8
Silver	13	0.28	0.07	0.07	0.55	0.18	0.14	0.14	0.06	4.2	2	0.07	0.28
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		26	26	26	60	47	28	28	25	32	50	26	27
1-Methylnaphthalene		26	26	26	60	47	28	28	25	32	50	26	27
2-Methylnaphthalene		26	26	26	60	47	28	28	25	32	50	26	27
Acenaphthene		26	26	26	60	47	28	28	25	32	50	26	27
Acenaphthylene		26	26	26	60	47	28	28	25	32	50	26	27
Anthracene		26	26	26	60	47	28	28	25	32	50	26	27
Benz[a]anthracene		26	26	26	60	47	28	28	25	32	50	26	27
Benzo[a]pyrene		26	26	26	60	47	28	28	25	32	50	26	27
Benzo[b]fluoranthene		26	26	26	60	47	28	28	25	32	50	26	27
Benzo[ghi]perylene		26	26	26	60	47	28	28	25	32	50	26	27
Benzo[k]fluoranthene		26	26	26	60	47	28	28	25	32	50	26	27
Biphenyl		26	26	26	60	47	28	28	25	32	50	26	27
Chrysene		26	26	26	60	47	28	28	25	32	50	26	27
Dibenzo[a,h]anthracene		26	26	26	60	47	28	28	25	32	50	26	27
Fluoranthene		26	26	26	60	47	28	28	25	32	50	26	27
Fluorene		26	26	26	60	47	28	28	25	32	50	26	27
Indeno[1,2,3-cd]pyrene		26	26	26	60	47	28	28	25	32	50	26	27
Naphthalene		26	26	26	60	47	28	28	25	32	50	26	27
Perylene		26	26	26	60	47	28	28	25	32	50	26	27
Phenanthrene		26	26	26	60	47	28	28	25	32	50	26	27
Pyrene		26	26	26	60	47	28	28	25	32	50	26	27
Total SVOC/PAHs	9,000	546	546	535.5	1260	976.5	588	577.5	514.5	672	1,050	535.5	556.5
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	20.15	31.25	16	16.45
Aroclor® 1221		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	20.15	31.25	16	16.45
Aroclor® 1232		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	20.15	31.25	16	16.45
Aroclor® 1248		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	20.15	31.25	16	16.45
Aroclor® 1254		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	116	31.25	16	16.45
Aroclor® 1260		16.25	16.25	16	193	29.05	17.35	17.1	15.25	279	31.25	16	16.45
Aroclor® 1262		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	20.15	31.25	16	16.45
Aroclor® 1268		16.25	16.25	16	37.9	29.05	17.35	17.1	15.25	20.15	31.25	16	16.45
Total PCBs	2,000	130	130	128	458.3	232.4	138.8	136.8	122	515.9	250	128	131.6

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BD-C046-01	BD-C047-01	BD-C048-01	BD-C050-01	BD-C051-01	BD-C052-01	BD-C053-01	BD-C054-01	BD-C055-01	BD-C057-01	BD-C058-01	BD-C059-01
Date Sampled		03-Dec-03	03-Dec-03	03-Dec-03	19-Nov-03	02-Dec-03	02-Dec-03	03-Dec-03	03-Dec-03	03-Dec-03	02-Dec-03	02-Dec-03	03-Dec-03
Total Metals (mg/kg)													
Arsenic	11	1.6	1.1	8.3	10	6.2	5.2	2.8	3.2	9.1	17	5.4	3.6
Chromium	332	18	14	150	5.8	7.1	20	140	780	1,600	14	14	960
Copper	372	13	17	250	19	36	9.8	110	500	800	4.4	4.7	690
Lead	210	2.8	3.4	37	3.6	2.5	4.2	17	85	230	4.4	3.6	100
Silver	13	0.44	0.35	4	0.06	0.06	0.29	5.3	12	17	0.07	0.07	31
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		27	29	37	25	25	30	35	70	180	28	28	65
1-Methylnaphthalene		27	29	37	25	25	30	35	70	180	28	28	65
2-Methylnaphthalene		27	29	37	25	25	30	35	70	180	28	28	65
Acenaphthene		27	29	37	25	25	30	35	70	180	28	28	65
Acenaphthylene		27	29	37	25	25	30	35	70	180	28	28	65
Anthracene		27	29	37	25	25	30	35	70	370	28	28	65
Benz[a]anthracene		27	29	37	25	25	30	35	70	1,000	28	28	190
Benzo[a]pyrene		27	29	74	25	25	30	35	220	1,600	28	28	290
Benzo[b]fluoranthene		27	29	180	25	25	30	35	610	3,600	28	28	640
Benzo[ghi]perylene		27	29	79	25	25	30	35	300	1,700	28	28	310
Benzo[k]fluoranthene		27	29	140	25	25	30	35	360	2,400	28	28	500
Biphenyl		27	29	37	25	25	30	35	70	180	28	28	65
Chrysene		27	29	130	25	25	30	35	560	2,600	28	28	510
Dibenzo[a,h]anthracene		27	29	37	25	25	30	35	70	430	28	28	65
Fluoranthene		27	29	130	25	25	30	35	340	2,400	28	28	420
Fluorene		27	29	37	25	25	30	35	70	180	28	28	65
Indeno[1,2,3-cd]pyrene		27	29	75	25	25	30	35	300	1,700	28	28	320
Naphthalene		27	29	37	25	25	30	35	70	180	28	28	65
Perylene		27	29	37	25	25	30	35	70	180	28	28	65
Phenanthrene		27	29	37	25	25	30	35	70	690	28	28	170
Pyrene		27	29	120	25	25	30	35	320	2,200	28	28	410
Total SVOC/PAHs	9,000	556.5	598.5	1,403	514.5	525	619.5	735	3,920	22,310	588	588	4,475
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Aroclor® 1221		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Aroclor® 1232		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Aroclor® 1248		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Aroclor® 1254		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Aroclor® 1260		16.65	17.85	93.7	15.45	15.6	91	66.5	2,030	1,350	17.35	17.35	465
Aroclor® 1262		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Aroclor® 1268		16.65	17.85	22.7	15.45	15.6	18.4	21.9	22.3	57	17.35	17.35	20.85
Total PCBs	2,000	133.2	142.8	252.6	123.6	124.8	219.8	219.8	2,186	1749	138.8	138.8	610.95

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1e
Summary of Wetland Soil/Sediment Analytical Results -
Area C Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BD-C064-01	BD-C065-01	BD-C066-01	BD-C071-02	BD-C072-02	BD-C073-02	Average
Date Sampled		02-Dec-03	02-Dec-03	03-Dec-03	27-Jan-04	27-Jan-04	27-Jan-04	
Total Metals (mg/kg)								
Arsenic	11	7.7	1.3	1.5	6.4	4.1	4.2	8.8
Chromium	332	21	20	540	12	7.6	10	54.3
Copper	372	22	14	470	2	1.1	1.6	56.0
Lead	210	4.8	3.6	50	3.8	3.8	2.8	11.9
Silver	13	0.51	0.44	10	0.07	0.06	0.065	1.3
SVOC/PAHs (µg/kg)								
1-Methyl phenanthrene		28	27	31	27	25	27	42.9
1-Methylnaphthalene		28	27	31	27	25	27	41.6
2-Methylnaphthalene		28	27	31	27	25	27	41.6
Acenaphthene		28	27	31	27	25	27	42.0
Acenaphthylene		28	27	31	27	25	27	50.0
Anthracene		28	27	31	27	25	27	54.4
Benz[a]anthracene		28	27	31	27	25	27	91.6
Benzo[a]pyrene		28	27	80	27	25	27	94.4
Benzo[b]fluoranthene		28	27	220	27	25	27	129.6
Benzo[ghi]perylene		28	27	130	27	25	27	83.2
Benzo[k]fluoranthene		28	27	140	27	25	27	112.4
Biphenyl		28	27	31	27	25	27	41.6
Chrysene		28	27	150	27	25	27	125.7
Dibenzo[a,h]anthracene		28	27	31	27	25	27	49.4
Fluoranthene		28	27	120	27	25	27	180.1
Fluorene		28	27	31	27	25	27	44.6
Indeno[1,2,3-cd]pyrene		28	27	120	27	25	27	82.3
Naphthalene		28	27	31	27	25	27	41.6
Perylene		28	27	31	27	25	27	73.9
Phenanthrene		28	27	31	27	25	27	69.6
Pyrene		28	27	120	27	25	27	167.1
Total SVOC/PAHs	9,000	588	567	1,483	567	514.5	567	1,660
PCBs (µg/kg)								
Aroclor® 1016 and 1242 - combination		17.35	16.9	19.25	16.9	15.45	16.9	27.1
Aroclor® 1221		17.35	16.9	19.25	16.9	15.45	16.9	27.1
Aroclor® 1232		17.35	16.9	19.25	16.9	15.45	16.9	27.1
Aroclor® 1248		17.35	16.9	19.25	16.9	15.45	16.9	27.1
Aroclor® 1254		17.35	16.9	19.25	16.9	15.45	16.9	36.2
Aroclor® 1260		17.35	43.3	199	16.9	15.45	16.9	89.6
Aroclor® 1262		17.35	16.9	19.25	16.9	15.45	16.9	27.3
Aroclor® 1268		17.35	16.9	19.25	16.9	15.45	16.9	27.1
Total PCBs	2,000	138.8	161.6	333.75	135.2	123.6	135.2	288.8

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 1f
Summary of Wetland Soil/Sediment Analytical Results -
Area C Perimeters
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	Upper Concentration Limit	AC-P043-03	AC-P036-03	AC-P031-03	AC-P026-01	AC-P012-01	BC-P006-01	BC-P012-01	BC-P018-01	BC-P031-01	BC-P045-01	BC-P059-01
Date Sampled			12-Feb-04	12-Feb-04	12-Feb-04	30-Jan-04	30-Jan-04	24-Oct-03	24-Oct-03	24-Oct-03	24-Oct-03	24-Oct-03	22-Jan-04
Total Metals (mg/kg)													
Arsenic	11	500	46	31	17	7.8	6.7	4.0	4.5	5.0	4.0	18	6.5
Chromium	332	2,000	250	7.7	11	54	11	9.1	14	34	12	46	27
Copper	372	-	290	6.4	13	73	18	11	26	160	46	73	110
Lead	210	6,000	81	3.9	3.5	15	7.5	3.9	11	51	5.7	14	7.8
Silver	13	2,000	18	0.15	0.44	1.1	0.07	0.15	0.17	1.5	0.17	2.0	1.5
SVOC/PAHs (µg/kg)													
1-Methyl phenanthrene		-	65	60	55	33	55	60	65	65	65	75	75
1-Methylnaphthalene		-	65	60	55	33	27	60	65	65	65	75	75
2-Methylnaphthalene		5,000,000	65	60	55	33	27	60	65	65	65	75	75
Acenaphthene		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Acenaphthylene		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Anthracene		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Benz[a]anthracene		3,000,000	65	60	55	160	27	60	65	65	65	75	75
Benzo[a]pyrene		300,000	65	60	55	170	27	60	65	65	65	75	75
Benzo[b]fluoranthene		3,000,000	140	60	55	370	27	60	65	65	65	170	75
Benzo[ghi]perylene		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Benzo[k]fluoranthene		10,000,000	65	60	55	200	27	60	65	65	65	150	75
Biphenyl		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Chrysene		10,000,000	65	60	55	210	27	60	65	65	65	170	75
Dibenzo[a,h]anthracene		300,000	65	60	55	33	27	60	65	65	65	75	75
Fluoranthene		10,000,000	170	60	55	410	57	60	65	65	65	230	75
Fluorene		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Indeno[1,2,3-cd]pyrene		3,000,000	65	60	55	33	27	60	65	65	65	75	75
Naphthalene		10,000,000	65	60	55	33	27	60	65	65	65	75	75
Perylene		-	65	60	55	33	27	60	65	65	65	75	75
Phenanthrene		10,000,000	65	60	55	150	27	60	65	65	65	75	75
Pyrene		10,000,000	160	60	55	350	57	60	65	65	65	250	180
Total SVOC/PAHs	9,000	-	1,640	1,260	1,155	2,449	646	1,260	1,365	1,365	1,365	2,170	1,680
PCBs (µg/kg)													
Aroclor® 1016 and 1242 - combination		-	40.3	37.9	35.7	20.5	66	37.9	41.65	41.65	41.65	46.3	46.3
Aroclor® 1221		-	40.3	37.9	35.7	20.5	66	37.9	41.65	41.65	41.65	46.3	46.3
Aroclor® 1232		-	40.3	37.9	35.7	20.5	66	37.9	41.65	41.65	41.65	46.3	46.3
Aroclor® 1248		-	40.3	37.9	35.7	20.5	66	37.9	41.65	41.65	41.65	46.3	46.3
Aroclor® 1254		-	40.3	37.9	35.7	79.3	66	37.9	41.65	41.65	41.65	46.3	46.3
Aroclor® 1260		-	40.3	37.9	35.7	228	66	37.9	41.65	154	41.65	46.3	46.3
Aroclor® 1262		-	40.3	37.9	35.7	20.5	66	37.9	41.65	41.65	41.65	46.3	46.3
Aroclor® 1268		-	40.3	37.9	35.7	20.5	66	37.9	41.65	41.65	41.65	46.3	46.3
Total PCBs	2,000	100,000	322.4	303.2	285.6	430.3	528	303.2	333.2	445.55	333.2	370.4	370.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit.
- no UCL

Table 1f
Summary of Wetland Soil/Sediment Analytical Results -
Area C Perimeters
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BC-P073-01	BC-P079-01	BC-P071-01	BC-P057-01	BD-P072-02	BD-P066-01	BD-P053-01	BD-P055-01	BD-P041-01	BD-P034-02	BD-P020-01
Date Sampled		22-Jan-04	22-Jan-04	22-Jan-04	22-Jan-04	27-Jan-04	19-Nov-03	02-Dec-03	24-Oct-03	24-Oct-03	27-Jan-04	24-Oct-03
Total Metals (mg/kg)												
Arsenic	11	8.4	16	43	38	8.2	5.2	4.5	4.4	7.0	37	9.3
Chromium	332	14	120	430	220	49	69	27	27	13	20	16
Copper	372	20	130	540	420	44	1,800	200	120	50	33	42
Lead	210	4.7	27	140	120	25	64	13	36	7.2	9.1	13
Silver	13	0.51	7.1	34	11	0.9	1.9	0.79	0.81	0.77	1.1	0.74
SVOC/PAHs (µg/kg)												
1-Methyl phenanthrene		70	70	95	85	65	65	60	45	41	60	60
1-Methylnaphthalene		70	70	95	85	65	65	60	45	41	60	60
2-Methylnaphthalene		70	70	95	85	65	65	60	45	41	60	60
Acenaphthene		70	70	95	85	65	65	60	45	41	60	60
Acenaphthylene		70	70	95	85	65	65	60	45	41	60	60
Anthracene		70	70	95	85	65	65	60	45	41	60	60
Benz[a]anthracene		70	70	280	210	65	65	60	45	41	60	60
Benzo[a]pyrene		200	70	450	290	65	65	60	45	41	60	60
Benzo[b]fluoranthene		420	70	980	580	150	65	60	45	41	60	60
Benzo[ghi]perylene		170	70	430	270	65	65	60	45	41	60	60
Benzo[k]fluoranthene		290	70	640	390	130	65	60	45	41	60	60
Biphenyl		70	70	95	85	65	65	60	45	41	60	60
Chrysene		300	70	710	470	130	65	60	45	41	60	60
Dibenzo[a,h]anthracene		70	70	95	85	65	65	60	45	41	60	60
Fluoranthene		380	70	840	590	180	65	60	45	41	120	60
Fluorene		70	70	95	85	65	65	60	45	41	60	60
Indeno[1,2,3-cd]pyrene		180	70	440	280	65	65	60	45	41	60	60
Naphthalene		70	70	95	85	65	65	60	45	41	60	60
Perylene		220	70	95	85	65	65	60	45	41	60	60
Phenanthrene		70	70	270	240	65	65	60	45	41	60	60
Pyrene		370	70	770	540	180	65	60	45	41	60	60
Total SVOC/PAHs	9,000	3,370	1,470	6,855	4,795	1,810	1,365	1,260	934.5	861	1,320	1,260
PCBs (µg/kg)												
Aroclor® 1016 and 1242 - combination		43.1	44.65	59.5	52	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1221		43.1	44.65	59.5	52	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1232		43.1	44.65	59.5	52	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1248		43.1	44.65	59.5	52	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1254		97.8	44.65	373	190	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1260		132	44.65	401	241	87.8	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1262		43.1	44.65	59.5	52	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Aroclor® 1268		43.1	44.65	59.5	52	40.3	41.65	37.9	27.8	25.5	36.75	39.05
Total PCBs	2,000	488.4	357.2	1,131	743	369.9	333.2	303.2	222.4	204	294	312.4

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection lin
- no UCL

Table 1f
Summary of Wetland Soil/Sediment Analytical Results -
Area C Perimeters
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Clean-up Goals	BD-P013-01	AD-P006-02	AD-P020-01	AD-P034-02	AD-P048-02	AD-P058-01	AD-P060-01	AD-P065-02	AD-P071-02	Average
Date Sampled		24-Oct-03	26-Jan-04	12-Nov-03	04-Dec-03	03-Dec-03	19-Nov-03	03-Dec-03	27-Jan-04	27-Jan-04	
Total Metals (mg/kg)											
Arsenic	11	11	6	5.1	6.4	7.6	14	20	7.6	9.0	13.5
Chromium	332	20	6.6	12	8.1	11	12	200	10	6.5	57
Copper	372	57	10	12	16	15	55	190	3.6	1.6	148
Lead	210	13	5.9	5.8	5.6	10	4.6	86	3.2	3.4	26
Silver	13	0.16	0.06	0.12	0.05	0.06	0.41	5.4	0.06	0.07	2.9
SVOC/PAHs (µg/kg)											
1-Methyl phenanthrene		65	25	23	21	25	27	49	25	26	54
1-Methylnaphthalene		65	25	23	21	25	27	49	25	26	53
2-Methylnaphthalene		65	25	23	21	25	27	49	25	26	53
Acenaphthene		65	25	23	21	25	27	49	25	26	53
Acenaphthylene		65	25	23	21	25	27	49	25	26	53
Anthracene		65	25	23	21	75	27	210	25	26	60
Benz[a]anthracene		65	25	49	21	180	27	160	25	26	77
Benzo[a]pyrene		65	25	23	21	140	27	170	25	26	87
Benzo[b]fluoranthene		65	25	47	21	170	27	260	25	26	140
Benzo[ghi]perylene		65	25	23	21	100	27	210	25	26	81
Benzo[k]fluoranthene		65	25	57	21	160	27	250	25	26	109
Biphenyl		65	25	23	21	25	27	49	25	26	53
Chrysene		65	25	50	21	230	27	290	25	26	119
Dibenzo[a,h]anthracene		65	25	23	21	25	27	49	25	26	53
Fluoranthene		65	25	72	21	400	27	800	52	26	169
Fluorene		65	25	23	21	25	27	49	25	26	53
Indeno[1,2,3-cd]pyrene		65	25	23	21	95	27	170	25	26	80
Naphthalene		65	25	23	21	25	27	49	25	26	53
Perylene		65	25	23	21	62	27	49	25	26	59
Phenanthrene		65	25	23	21	160	27	140	25	26	75
Pyrene		65	67	70	21	350	27	810	25	26	164
Total SVOC/PAHs	9,000	1,365	567	690	441	2,347	556.5	3,960	552	546	1,699
PCBs (µg/kg)											
Aroclor® 1016 and 1242 - combination		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	35
Aroclor® 1221		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	35
Aroclor® 1232		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	35
Aroclor® 1248		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	35
Aroclor® 1254		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	53
Aroclor® 1260		40.3	15.6	14.35	13.3	15.6	16.65	191	15.6	16.25	72
Aroclor® 1262		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	35
Aroclor® 1268		40.3	15.6	14.35	13.3	15.6	16.65	30.5	15.6	16.25	35
Total PCBs	2,000	322.4	124.8	114.8	106.4	124.8	133.2	404.5	124.8	130	335

Notes: Detected values are displayed in bold.
Non-detects are shown as half the method detection limit
- no UCL

Table 2
Summary of Resampled Wetland Grid Cells
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample I.D.	Sample Date	Parameters in Exceedance	Resample ID	Resampled Date	Parameters in Exceedance	Resample ID	Resampled Date
AC-P031 -01	30-Jan-04	As	AC-P031 -02	05-Feb-04	As	AC-P031 -03	12-Feb-04
AC-P036 -01	29-Jan-04	As	AC-P036 -02	05-Feb-04	As	AC-P036 -03	12-Feb-04
AC-P043 -01	28-Jan-04	As, Cr, Cu, Ag, PAHs	AC-P043 -02	05-Feb-04	As	AC-P043 -03	12-Feb-04
AD-C006 -01	05-Dec-03	PAHs	AD-C006 -02	26-Jan-04	-	-	-
AD-P006 -01	04-Dec-03	PAHs	AD-P006 -02	26-Jan-04	-	-	-
AD-C026 -01	12-Nov-03	PAHs, PCBs	AD-C026 -02	04-Dec-03	-	-	-
AD-C027 -01	12-Nov-03	PAHs	AD-C027 -02	04-Dec-03	-	-	-
AD-C033 -01	12-Nov-03	PAHs	AD-C033 -02	04-Dec-03	PAHs	AD-C033 -03	26-Jan-04
AD-C034 -01	12-Nov-03	Ag, PAHs, PCBs	AD-C034 -02	04-Dec-03	-	-	-
AD-P034 -01	12-Nov-03	PAHs	AD-P034 -02	04-Dec-03	-	-	-
AD-C048 -01	14-Nov-03	As, PAHs	AD-C048 -02	03-Dec-03	-	-	-
AD-P048 -01	12-Nov-03	PAHs	AD-P048 -02	03-Dec-03	-	-	-
AD-C053 -01	14-Nov-03	As, Cr, Cu, Ag, PAHs, PCBs	AD-C053 -02	03-Dec-03	-	-	-
AD-C054 -01	14-Nov-03	Cr, Cu, Ag, PCBs	AD-C054 -02	03-Dec-03	-	-	-
AD-C055 -01	03-Dec-03	PAHs, PCBs	AD-C055 -02	26-Jan-04	-	-	-
AD-C059 -01	19-Nov-03	As, Cr, Cu, Pb, Ag, PAHs, PCBs	AD-C059 -02	26-Jan-04	-	-	-
AD-C060 -01	03-Dec-03	As, Cr, Cu, Pb, Ag, PAHs, PCBs	AD-C060 -02	26-Jan-04	-	-	-
AD-C065 -01	19-Nov-03	As, Cr, Cu, Pb, Ag, PAHs, PCBs	AD-C065 -02	26-Jan-04	-	-	-
AD-P065 -01	19-Nov-03	As	AD-P065 -02	26-Jan-04	-	-	-
AD-C071 -01	19-Nov-03	NONE ¹	AD-C071 -02	26-Jan-04	-	-	-
AD-P071 -01	19-Nov-03	NONE ¹	AD-P071 -02	26-Jan-04	-	-	-
AD-C072 -01	19-Nov-03	As, Cr, Cu, Ag, PAHs, PCBs	AD-C072 -02	26-Jan-04	-	-	-
BD-C027 -01	04-Dec-03	As, Cu	BD-C027 -02	26-Jan-04	-	-	-
BD-C034 -01	04-Dec-03	As, Cr, Cu, Ag, PCBs	BD-C034 -02	26-Jan-04	-	-	-
BD-P034 -01	24-Oct-03	As	BD-P034 -02	26-Jan-04	-	-	-
BD-C071 -01	02-Dec-03	Cr, Cu, Ag, PAHs, PCBs	BD-C071 -02	26-Jan-04	-	-	-
BD-C072 -01	02-Dec-03	Cr, Cu, Ag, PCBs	BD-C072 -02	26-Jan-04	-	-	-
BD-P072 -01	19-Nov-03	Cu	BD-P072 -02	26-Jan-04	-	-	-
BD-C073 -01	02-Dec-03	As, Cr, Cu, Pb, Ag, PAHs, PCBs	BD-C073 -02	26-Jan-04	-	-	-

Notes:

¹ AD-C071 was resampled due to proximity to AD-C072, AD-C065 and BD-C071.

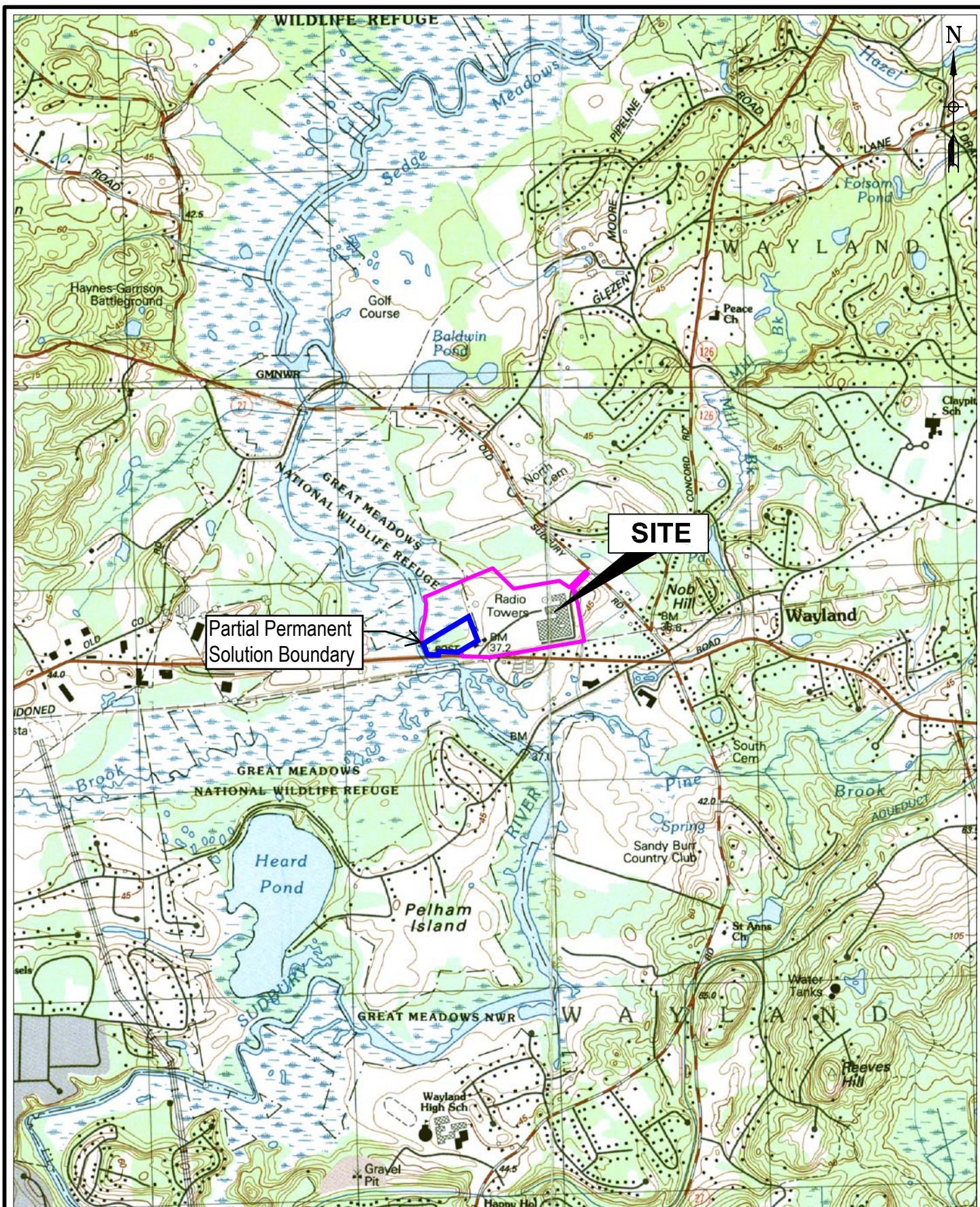
Table 3
Summary of Surface Water Monitoring Data
Former Raytheon Facility
430 Boston Post Road
Wayland, Massachusetts

Sample ID	SW-1	SW-2	SW-3	SW-4	SW-1	SW-2	SW-3	SW-4
Date/Time Sampled	31-Dec-03 11:45	31-Dec-04 12:00	31-Dec-04 12:15	31-Dec-04 12:30	06-Jan-04 13:40	06-Jan-04 13:47	06-Jan-04 14:00	06-Jan-04 14:14
Parameter								
Temperature (°C)	2.4	2.6	2.6	1.5	2.5	2.5	2.2	2.3
Specific Conductivity (uS/cm)	377	377	378	368	384	385	358	383
Conductivity (uS/cm)	215	216	216	202	219	220	203	217
Dissolved Oxygen (mg/L)	12.4	12.3	12.1	10.9	12.9	12.8	12.1	12.8
pH (std. units)	7.3	7.0	7.0	6.9	8.0	7.5	7.3	7.2
ORP (mV)	108	102	106	109	114	87	82	89
Turbidity (NTU)	0.7	0.7	0.5	0.0	0.9	0.7	0.1	0.9

Notes:

- SW-1 located approximately 100 yds downstream of site activities.
- SW-2 located at mouth of swale.
- SW-3 located at intersection of silt fence and swale.
- SW-4 located upstream of Route 20 bridge.

Figures

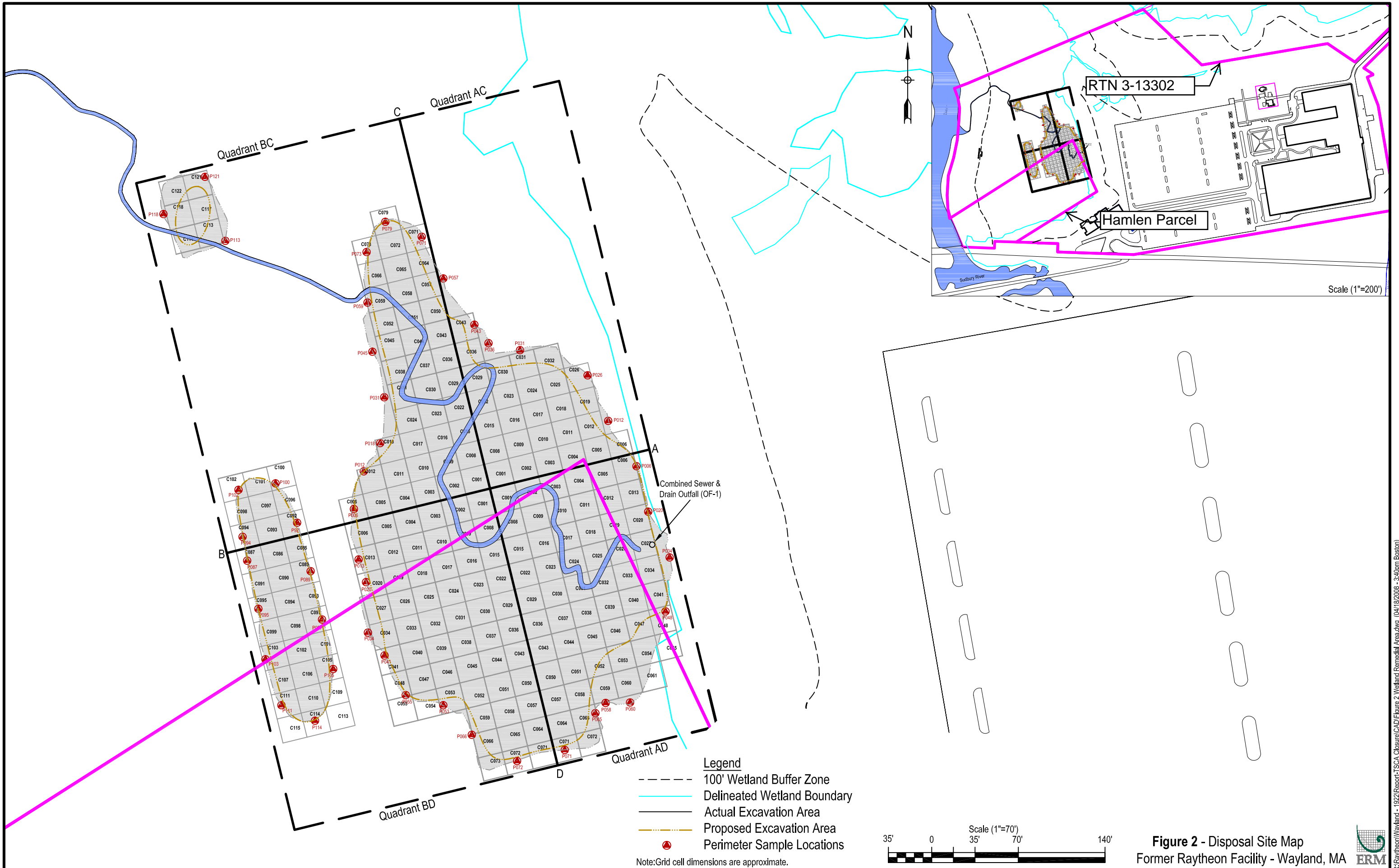


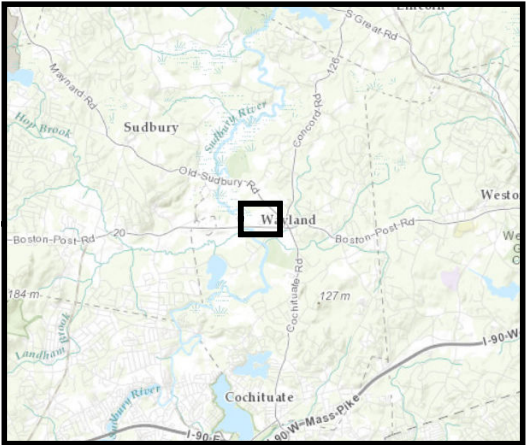
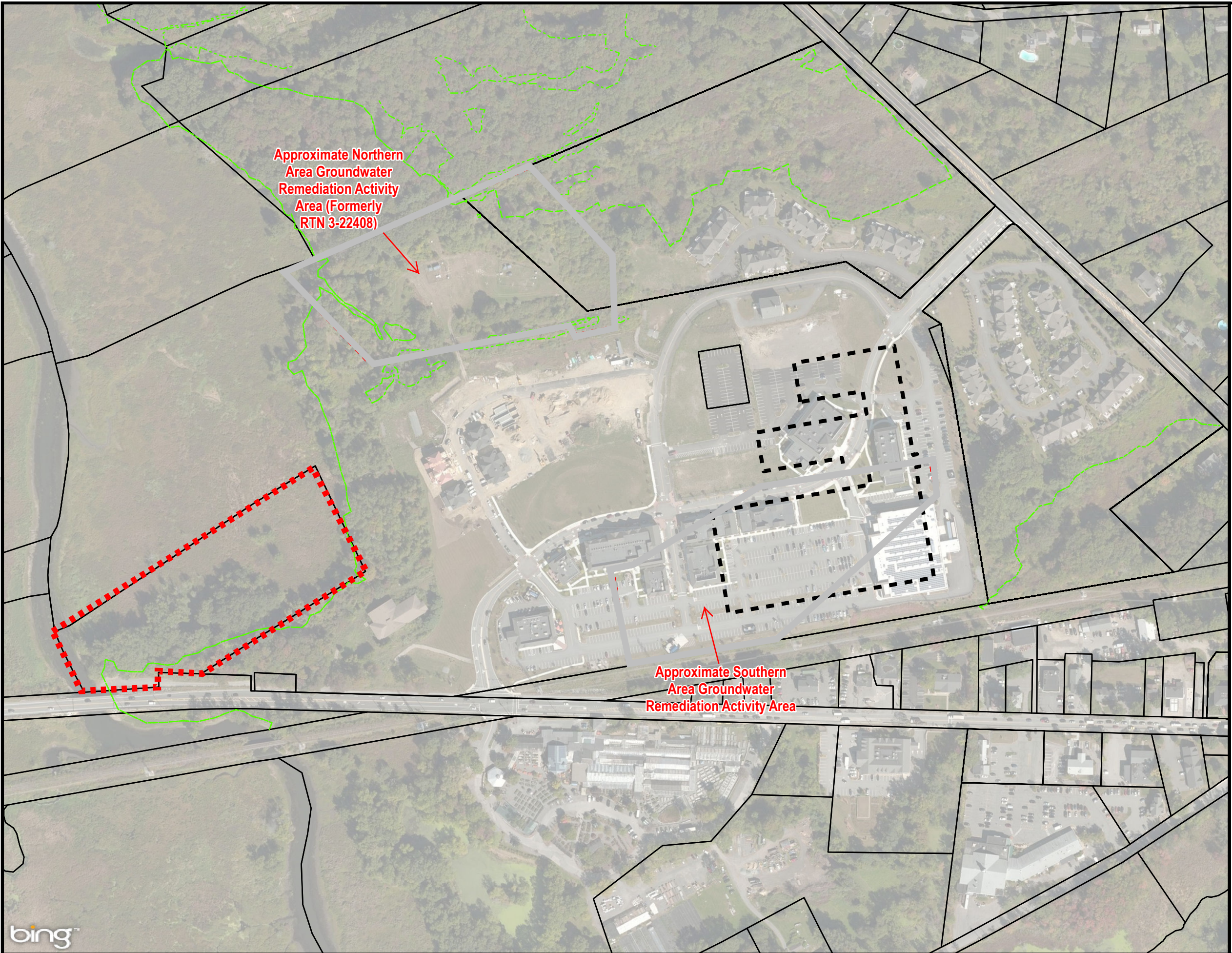
Legend
 Subject Property Line

Scale = 1:25,000

Figure 1 - Locus Map
 Former Raytheon Facility - Wayland, MA







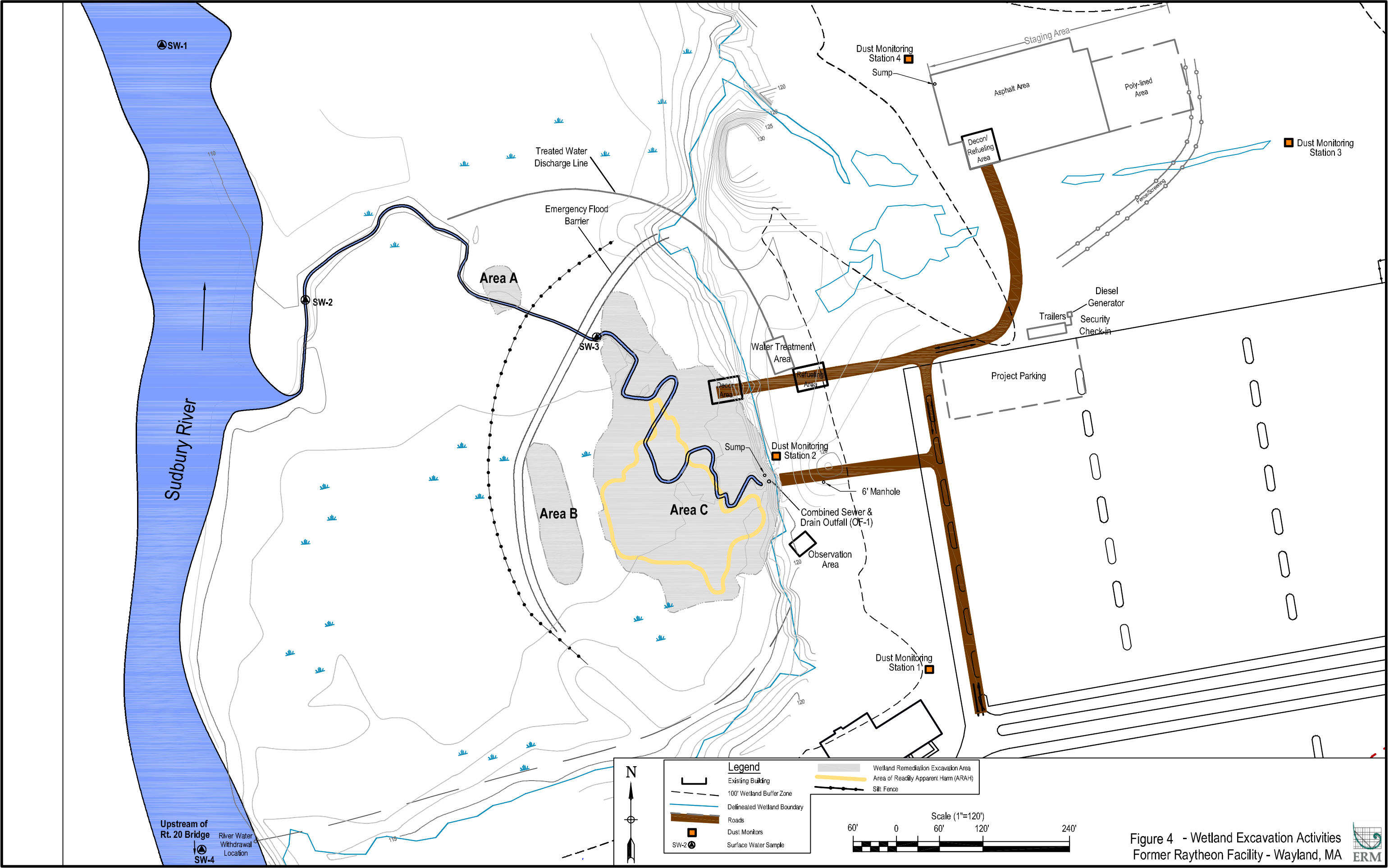
- Legend**
- Disposal Site Boundary
 - Approx. Footprint of Former Raytheon Building
 - Delineated Wetland Boundary
 - Parcel Outlines



0 50 100 200 300 400 500
Feet

Figure 2: Disposal Site Area
Site Plan
Former Raytheon Facility
Wayland, MA
Hamlen Parcel





MassDEP - Bureau of Waste Site Cleanup

Site Information:

HAMLEN PARCEL
BOSTON POST ROAD WAYLAND, MA
3-000013302

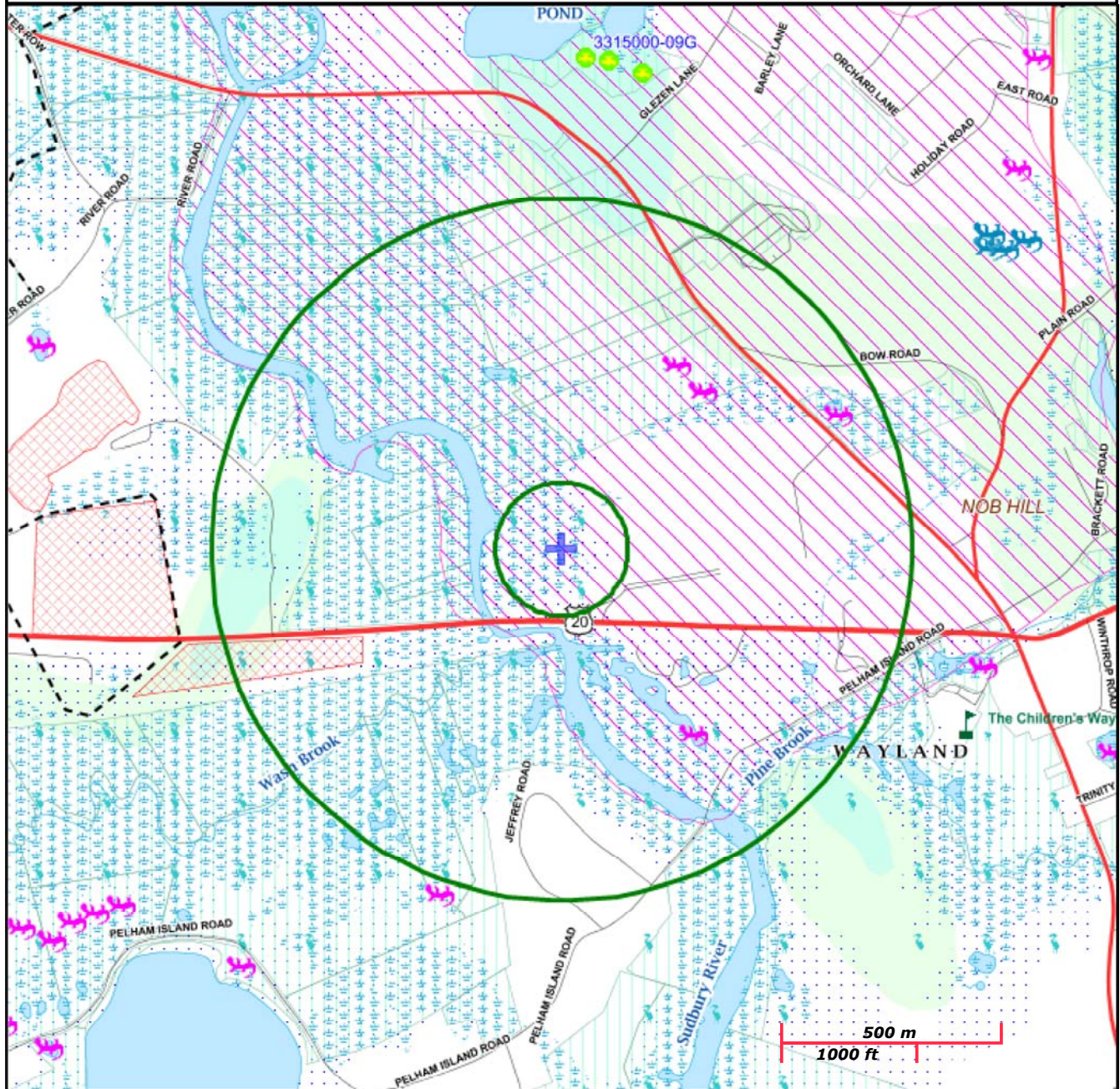
NAD83 UTM Meters:
4693009mN, 304617mE (Zone: 19)
September 16, 2016

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at:
<http://www.mass.gov/mgis/>.



MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

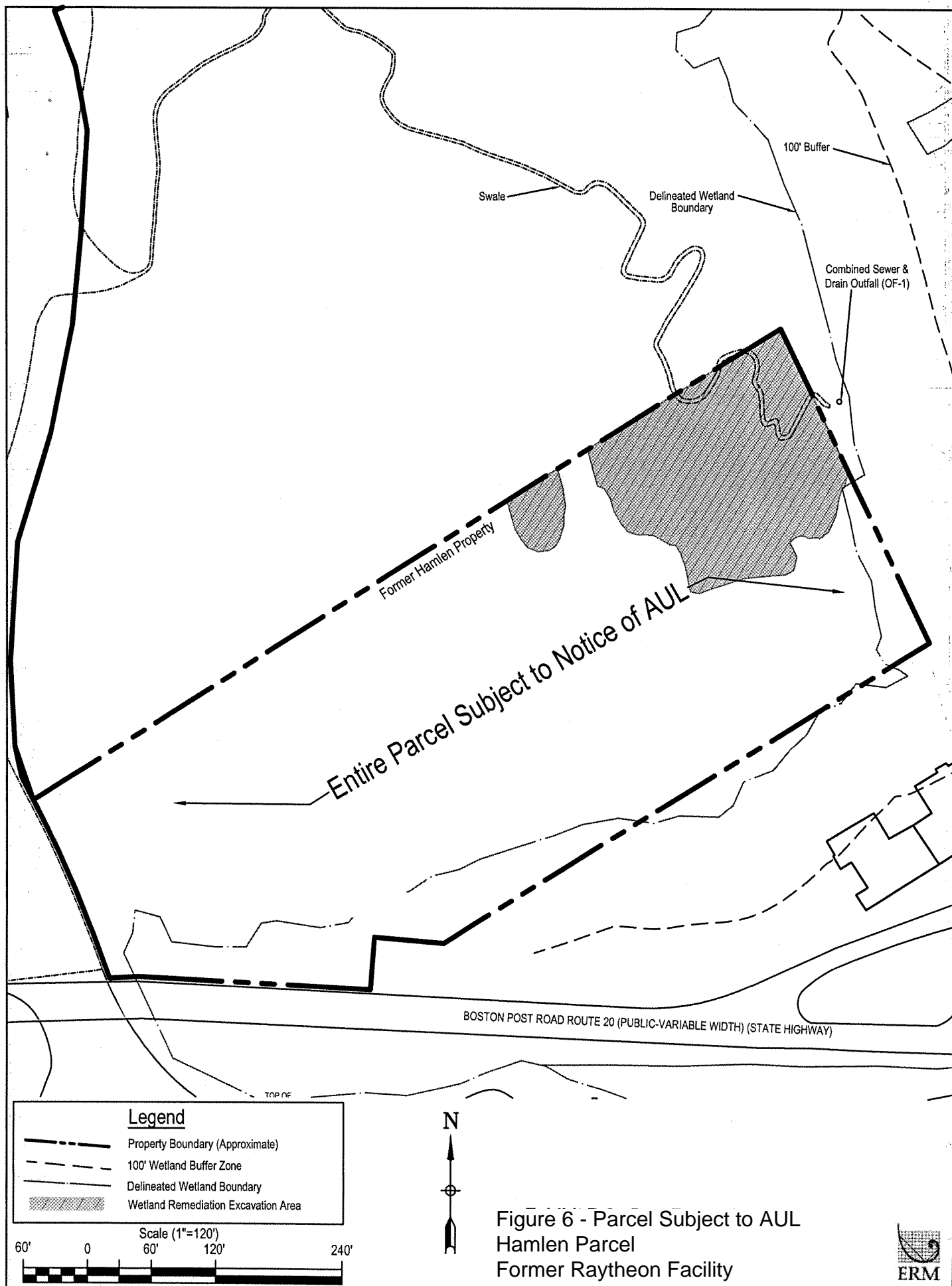
Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com. GW, SW, Emerg., Non-Com.

Figure 5 - Priority Resources Map
Former Raytheon Facility - Wayland, MA
Hamlen Parcel



Appendix A
Public Notification Letters

**Environmental
Resources
Management**

15 December 2016

Board of Selectmen
Town of Wayland
41 Cochituate Rd
Wayland, MA 01778

One Beacon Street, 5th Floor
Boston, MA 02108
(617) 646-7800
(617) 267-6447 (fax)

<http://www.erm.com>

RE: Partial Permanent Solution With Conditions
Parcel 22-10, Boston Post Road
Wayland, Massachusetts
Release Tracking Number (RTN) 3-13302



Board of Selectmen:

On behalf of Raytheon Company (Raytheon), Environmental Resources Management (ERM) has filed a Partial Permanent Solution With Conditions for the above-referenced Site with the Massachusetts Department of Environmental Protection (MassDEP). In accordance with 310 CMR 40.1403(3)(f), the Chief Municipal Officer and the Board of Health of the community in which the Site is located must be notified of the Permanent Solution Statement filing.

Additional information regarding this submittal can be reviewed at the following location:

Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

If you have any questions, please contact me at (617) 646-7800 or Mr. Louis Burkhardt, Raytheon Company, at (978) 858-1885.

Sincerely,

A handwritten signature in blue ink that reads 'Lyndsey Colburn'.

Lyndsey Colburn, P.G.
Principal Consultant

cc: Wayland Board of Health
MassDEP
PIP Group
L. Burkhardt, Raytheon Company

Appendix B
Copy of Activity and Use
Limitation



2006 00025004

Bk: 46945 Pg: 9 Doc: NOT
Page: 1 of 20 02/08/2006 02:39 PM

Form 1075

NOTICE OF ACTIVITY AND USE LIMITATION

M.G.L. c. 21E, §6 and 310 CMR 40.0000

Disposal Site Name: Former Hamlen Property/Raytheon Company (FMR), 433 Boston Post Road, Wayland, MA

DEP Release Tracking Nos.: 3-13302

This Notice of Activity and Use Limitation ("Notice") is made as of this 27th day of January, 2006, by Raytheon Company with an address at 528 Boston Post Road, Sudbury, MA. 01776 together with his/her/its/their successors and assigns (collectively "Owner").

WITNESSETH:

WHEREAS, Raytheon Company, of Waltham, Middlesex County, Massachusetts is the owner in fee simple of that certain parcel of land located at 433 Boston Post Road, in Wayland, Middlesex County, Massachusetts, with the buildings and improvements thereon ("Property"), pursuant to a deed recorded with the Middlesex County Registry of Deeds in Book 41001, Page 463.

WHEREAS, said parcel of land, which is more particularly bounded and described in **Exhibit A**, attached hereto and made a part hereof ("Property") is subject to this Notice of Activity and Use Limitation. The Property is shown on a plan to be recorded herewith in the Middlesex County (South) Registry of Deeds and/ or on a sketch plan attached hereto and filed herewith for registration with the Middlesex County (South) Registry District of the Land Court.

WHEREAS, the Property comprises part of a disposal site as the result of a release of oil and/or hazardous material. Exhibit B-1 and Exhibit B-2 are sketch plans showing the relationship of the Property subject to this Notice of Activity and Use Limitation to the boundaries of said disposal site existing within the limits of the Property and to the extent such boundaries have been established. Exhibit B-1 and Exhibit B-2 are attached hereto and made a part hereof; and

WHEREAS, one or more response actions have been selected for the Property in accordance with M.G.L. c.21E ("**Chapter 21E**") and the Massachusetts Contingency Plan, 310 CMR 40.0000 ("**MCP**"). Said response actions are based upon (a) the restriction of human access to and contact with oil and/or hazardous material in soil and/ or groundwater and/or (b) the restriction of certain activities occurring in, on, through, over or under the Property. The basis for such restrictions is set forth in an Activity and Use

RETURN TO: DJO
SAH - Rackemann, Sawyer & Brewster
One Financial Center - 29th Floor
Boston, MA 02111

Limitation Opinion ("AUL Opinion"), dated 9 January 2006, (which is attached hereto as **Exhibit B** and made a part hereof); and

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Permitted Activities and Uses Set Forth in the AUL Opinion. The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare and the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Property:

- (i) The Property may be used for passive recreation such as fishing, boating, etc; and
- (ii) Such other activities or uses which, in the Opinion of the LSP, shall present no greater risk of harm to health, safety, public welfare and the environment than the activities and uses set forth in this Paragraph; and
- (iii) All activities and uses consistent with those set forth in this Paragraph and not expressly prohibited by this Notice.

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice of Activity and Use Limitation, and which, if implemented at the Property, may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

- (i) Residential, childcare, daycare, commercial, industrial, agricultural, horticultural, or gardening activities, unless previously approved by the LSP in accordance with the obligations and conditions set forth in the AUL Opinion;
- (ii) Groundwater use except for assessment or remedial purposes;
- (iii) Other activities or uses that, in the Opinion of the LSP, would likely result in significant, risk from exposures to oil and/or hazardous material if site activities or uses were to take place on the Property.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations and/or conditions to be undertaken and/or maintained at the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

- (i) Certification in the form of documentation bearing the original signature, date and Seal of the LSP must be obtained by the Owner prior to implementation of the following activities and uses:
 - a) use of the Property for residential, childcare, daycare, recreational, agricultural, horticultural, or gardening activities, or for unrestricted public access;
 - b) land development or construction involving changes in surface conditions (i.e., topography, surface cover, etc.).
- (ii) Parties conducting activities and uses described in 3(i), above, that, in the Opinion of the LSP, may include disturbance of contaminated media, waste or debris, or that could render subsurface contaminated media, waste or debris accessible to exposure, shall submit, for approval by the LSP, a contingency plan for the management of contaminated media, waste or debris, if encountered, including:
 - a) procedures for monitoring of contaminated media, waste or debris;
 - b) procedures for notification to the LSP of the discovery of contaminated media, waste or debris;
 - c) a certification that all response actions will be conducted under the supervision of the LSP;
 - d) a soils management plan including contingencies for handling contaminated soil and/or groundwater if activities may extend below the water table;
 - e) a certification that response personnel will comply with applicable safety regulations, including 29 CFR 1910.120;
 - f) a certification that contaminated waste, debris or media or remediation waste (pursuant to 310 CMR 40.0000) generated by such activities shall be handled, stored, transported and disposed in accordance with the applicable federal, state and local regulations.
- (iii) The responsible parties and their representatives shall be granted unrestricted access to the Property in order to conduct any and all activities associated with the performance of response actions as defined under the MCP, or any other applicable regulation.

4. Proposed Changes in Activities and Uses. Any proposed changes in activities and uses at the Property which may result in higher levels of exposure to oil and/or hazardous material than currently exist shall be evaluated by the LSP who shall render an Opinion, in accordance with 310 CMR 40.1080 *et seq.*, as to whether the proposed changes will present a significant risk of harm to health, safety, public welfare and the environment. Any and all requirements set forth in the Opinion to meet the objective of this Notice shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses and/or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, and the environment, or to create substantial hazards due to exposure to oil and/or hazardous material without the prior evaluation by the LSP in accordance with 310 CMR 40.1080 *et seq.*, and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk or to eliminate substantial hazards.

If the activities, uses, and/or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by the LSP in accordance with 310 CMR 40.1080 *et seq.*, the owner or operator of the Portion of the Property subject to this Notice at the time that the activities, uses and/or exposures change, shall comply with the requirements set forth in 310 CMR 40.0020.

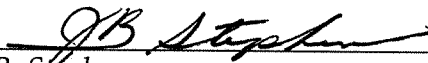
6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in and/or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation and/or registration of this Notice, said Notice to become effective when executed under seal by the undersigned LSP, and recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office(s).

WITNESS the execution hereof under seal this 27th day of January, 2006.

Owner: Raytheon Company

By:


Jay B. Stephens

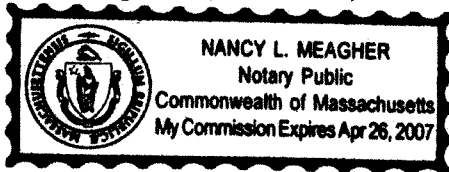
Senior Vice President and General Counsel

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss

January 27, 2006

Then personally appeared the above named Jay B. Stephens as Senior Vice President and General Counsel of Raytheon Company, and acknowledged the foregoing to be their free act and deed, and the free act and deed of said corporation as said general partner, before me,



Nancy L. Meagher
Notary Public Nancy L. Meagher
My Commission Expires: 4-26-07

The undersigned LSP-of-Record hereby certifies that he executed the aforesaid Activity and Use Limitation Opinion attached hereto as Exhibit B and Exhibit C, and made a part hereof and that in his Opinion this Notice of Activity and Use Limitation is consistent with the terms set forth in said Activity and Use Limitation Opinion.

Date: 1/09/06

John C. Drobinski, LSP Reg. No. 2196

[LSP SEAL]



COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss

January 4, 2006

Then personally appeared the above named John C. Drobinski, and acknowledged the foregoing to be his free act and deed before me,

[Signature]
Notary Public
My Commission Expires: 3/24/11

Upon recording, return to:

EXHIBIT A

Property Description

Metes and Bounds Description

That certain parcel of unregistered vacant land in Wayland, Massachusetts, bounded and described in part by reference to plans of abutting land as follows:

Beginning at a drill hole at the southerly end of a 328 foot bound shown on Land Court Plan 17983A filed with South Middlesex District of the Land Court with Certificate of Title No. 49312 in Registration Book 326 at Page 97; thence running

N 11°48'20" W	by land of Raytheon Company, 328 feet to the northeast corner of the parcel; thence
S 71°01'00" W	by the Raytheon land, 842 feet, more or less, to the Sudbury River; thence
SOUTHERLY	by the River, about 200 feet to the Boston Post Road; thence
S 83°14'20" W	about 140 feet by the road as shown on a plan entitled "Plan of Road in the Town of Wayland Middlesex County Laid Out as a State Highway by the Department of Public Works Division of Highways" dated May 20, 1924 and filed with Middlesex South District Deeds in Plan Book 336 as Plan 17; thence
N 09°19'50" E	by the road as shown on the 1924 plan, about 40 feet; thence
S 78°06'00" E	by the road as shown on the 1924 plan, about 160 feet; and thence
N 69°42'20" E	by the Raytheon land, about 540 feet by estimation to the point of beginning.

Containing, according to assessment records, five and a half acres.

EXHIBIT B

LSP-of-Record Notice of AUL Opinion

EXHIBIT B

ACTIVITY & USE LIMITATION OPINION

433 BOSTON POST ROAD, WAYLAND, MASSACHUSETTS

This Activity & Use Limitation Opinion (AUL) Opinion is issued in support of the Notice of Activity and Use Limitation (Notice) filed on a the Property located at 433 Boston Post Road, Wayland Massachusetts. Pursuant to 310 CMR 40.0000, this AUL Opinion describes the basis for restrictions in activities on, and uses of, the Portion of the Property subject to this Notice and obligations and conditions to be undertaken and/or maintained to ensure protection of health, safety, public welfare and the environment. This AUL Opinion is certified by the Licensed Site Professional (LSP)-of-Record for Comprehensive Response Actions conducted in accordance with Permit No. 322-553 issued under the authority of the Massachusetts Department of Environmental Protection (MA DEP), Bureau of Waste Site Cleanup.

1.0

PHYSICAL DESCRIPTION AND LAND USE

The subject Property is an approximately 5.5 acre parcel located at 433 Boston Post Road in Wayland, Massachusetts (Exhibit A). The Property is bounded to the west by the Sudbury River, to north by undeveloped land including the Great Meadows National Wildlife Refuge, to the east by the former Raytheon Facility and to the South by Route 20. The property is the Former Hamlen Property.

Prior to 1955 the Property was a wetland and floodplain. Subsequent to 1955, the Property remained the same but was bordered by an engineering research and development facility that was decommissioned in 1995. The Property is currently a wetland and floodplain subject to the restrictions of the Wetlands Protection Act.

2.0

BACKGROUND

Releases of oil and/or hazardous materials (OHM) to soil and groundwater were discovered on the abutting Raytheon property during decommissioning of the former manufacturing facility. Concentrations of OHM were also discovered on the Property subsequent to the above investigation. Massachusetts General Law, Chapter 21E, requires assessment and, if necessary, remedial actions in accordance with requirements of the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000.

The MCP process allows up to five years for completion of those phases of assessment and/or remediation that are necessary to achieve regulatory closure. Assessment and/or remediation activities are conducted as "Comprehensive Response Actions" under the direction of the Licensed Site Professional (LSP) -of-Record. Upon satisfying all applicable MCP requirements, a Response Action Outcome (RAO) Statement, certified by the LSP, is filed with the MA DEP Bureau of Waste Site Cleanup, officially closing the site out of the MCP process. Once closure is obtained it is binding, subject however, to DEP audit for up to five years from the date of filing.

3.0

PURPOSE AND APPLICABILITY OF THE NOTICE OF ACTIVITY AND USE LIMITATION

The purpose of the Notice is to record on the registered property deed those activities and land uses that are consistent with continued protection of health, safety, public welfare and the environment, those that are specifically prohibited and obligations and conditions necessary to ensure continued protection.

This Notice is applicable to the Property as defined in Exhibit A. This Notice is being filed after completion of assessment and remedial actions required to achieve an RAO.

This Notice of AUL is recorded by the Property owner as a precautionary measure to ensure appropriate use of Property. In all cases, the LSP shall review this Notice of AUL, and if appropriate, terminate or amend this Notice of AUL prior to approval and filing of a RAO for the Property, or any portion thereof. All approvals and opinions required by a Licensed Site Professional to maintain compliance with this Notice and AUL Opinion shall be restricted to the Licensed Site Professional of Record for Comprehensive Response Actions, and any termination or amendment of this Notice of AUL pursuant to the prior sentence shall be based upon an opinion of the LSP of Record, only.

4.0

SUMMARY OF PCB IMPACTS, REMEDIAL ACTION, AND USE RESTRICTIONS ON PROPERTY

Pre-Excavation Extent and Concentrations of Contamination in Remediation Area

The primary source of impact to wetland sediments appeared to be historic releases of oil and/or hazardous material (OHM) to the storm water conveyance system, discharging at the storm water outfall OF-1. The primary contaminants of concern (COCs) identified in source structures (dry wells and manholes) connected to the storm water conveyance system included polyaromatic hydrocarbons (PAHs) and associated petroleum hydrocarbons, polychlorinated biphenyls (PCBs), and heavy metals (chromium, copper, arsenic, silver and lead). Evaluation of the average concentrations of primary COCs versus distance from the outfall indicated concentrations were highest near the outfall, decreasing sharply within 200 feet from the outfall and then approaching background near the Sudbury River. The vertical extent of impact appeared to be largely limited to the top 18 inches of sediment, although local variations were noted. The sediment layer is confined by an underlying, silt/clay unit beneath the wetland.

Correlation of areas of COCs in sediment with the results of vegetative mapping and analysis of plant tissue defined an area of stunted vegetation estimated at approximately 0.6-acre in size. This condition constituted a condition of "readily apparent harm", defined by 310 CMR 40.0955(3) as "stressed vegetation attributable to Site OHM" and is interpreted to reflect the toxicity of heavy metals (e.g., chromium) to plants.

The remediation area was conducted in the Site wetland including the Former Hamlen Property and the Former Raytheon Property at 430 Boston Post Road in Wayland, Massachusetts. Pre-excavation total PCB minimum and maximum concentrations on the Former Hamlen Property

were 1.2 and 129 part per million (ppm), respectively (Figure 1). The total PCB concentration was calculated by summing analytical detections of PCBs and one-half the method detection limit for non-detect PCBs.

Specific details regarding the remediation area for the Toxic Substance Control Act (TSCA) (40 CFR 750 and 761) were presented in the Application for Risk-Based Disposal Approval submitted on 23 December 2002 (revision and additional information submitted on 3 April 2003, 8 May 2003, and 28 August 2003) and the Phase IV Remedy Implementation Plan dated 27 December 2002.

Description of Remedial Actions Undertaken Remediation Area

Comprehensive Remedial Actions were completed from October 2003 through October 2004 on the Property. Remedial Activities required the excavation of approximately 3,494 cubic yards (yd³) of sediment material from a 0.9 acre to a depth of approximately 2.4 ft on the Property. Following verification sampling of the excavated area, engineered soil was brought in as fill and the remediation area was returned to its original grades.

Post-excavation total PCB minimum and maximum concentrations on the Former Hamlen Property were 0.116 and 3.1 ppm, respectively (Figure 2). The total PCB concentration was calculated by summing analytical detections of PCBs and one-half the method detection limit for non-detect PCBs.

Wetland restoration was completed on 20 February 2004 using the planting specifications submitted in the permit applications. Minor substitutions were made based on species availability at that time of year. All substitutions were made using comparable species and were planted in the same zones. Wetlands monitoring will continue for the next five years. Additional plantings and invasive species control will be planned as needed. To date, plantings cover the entire remedial area.

Description of Use Restrictions for the Remediation Area

Remediation and restoration of the wetland area provides a level of protection to human health consistent with EPA guidance. It restores the site to a condition of "no significant risk", meets the Massachusetts Contingency Plan (MCP) performance standards for filing of a Response Action Outcome and represents a Permanent Solution for the site.

The US EPA approval for risk-based PCB remediation contained the provision requiring a Deed Notice be applied to the property. This

Activities and Use Limitations for the Former Hamlen Property includes a description of Permitted Activities and Uses Set Forth in the AUL Opinion (Section 5.0), Activities and Uses Inconsistent with the AUL Opinion (Section 6.0), and Obligations and Conditions Set Forth in the AUL Opinion (Section 7.0).

5.0

***PERMITTED ACTIVITIES AND USES SET FORTH IN THE AUL
OPINION***

The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare and the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Property:

- (i) The Property may be used for passive recreation including boating, fishing, etc; and
- (ii) Such other activities or uses which, in the Opinion of the LSP, shall present no greater risk of harm to health, safety, public welfare and the environment than the activities and uses set forth in this Paragraph; and
- (iii) All activities and uses consistent with those set forth in this Paragraph and not expressly prohibited by this Notice.

6.0

ACTIVITIES AND USES INCONSISTENT WITH THE AUL OPINION

Activities and uses which are inconsistent with the objectives of this Notice of Activity and Use Limitation, and which, if implemented at the Property, may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

- (i) Residential, childcare, daycare, agricultural, horticultural, gardening, commercial or industrial activities, unless previously approved by the LSP in accordance with the obligations and conditions set forth in the AUL Opinion;
- (ii) Groundwater use except for assessment or remedial purposes;

- (iii) Other activities or uses that, in the Opinion of the LSP, would likely result in significant risk from exposures to oil and/or hazardous material if site activities or uses were to take place on the Portion of the Property.

7.0

OBLIGATIONS AND CONDITIONS SET FORTH IN THE AUL OPINION

If applicable, obligations and/or conditions to be undertaken and/or maintained at the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

- (i) Certification in the form of documentation bearing the original signature, date and Seal of the LSP must be obtained by the Owner prior to implementation of the following activities and uses:
 - a) expansion or relocation of existing buildings laterally or vertically;
 - b) use of the Property for residential, childcare, daycare, recreational, agricultural, horticultural, or gardening activities, or for unrestricted public access;
 - c) subsurface activities including; excavation, new construction below grade, and
 - d) land development or construction involving changes in surface conditions (i.e., topography, surface cover, etc.) including installation of pavement, or building foundations,.
- (ii) Parties conducting activities and uses described in 6.0(i) above, that, in the Opinion of the LSP, may include disturbance of contaminated media, waste or debris, or that could render subsurface contaminated media, waste or debris accessible to exposure, shall submit, for approval by the LSP, a contingency plan for the management of contaminated media, waste or debris, if encountered, including:
 - a) procedures for monitoring of contaminated media, waste or debris;

- b) procedures for notification to the LSP of the discovery of contaminated media, waste or debris;
- c) a certification that all response actions will be conducted under the supervision of the LSP;
- d) a soils management plan including contingencies for handling contaminated soil and/or groundwater if activities may extend below the water table;
- e) a certification that response personnel will comply with applicable safety regulations, including 29 CFR 1910.120;
- f) a certification that contaminated waste, debris or media or remediation waste (pursuant to 310 CMR 40.0000) generated by such activities shall be handled, stored, transported and disposed in accordance with the applicable federal, state and local regulations.

- (iii) The responsible parties and their representatives shall be granted unrestricted access to the Property in order to conduct any and all activities associated with the performance of response actions as defined under the MCP, or any other applicable regulation.

8.0

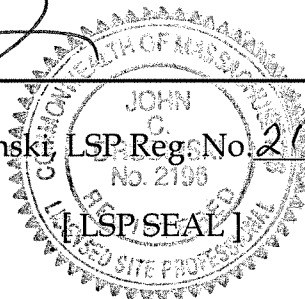
CERTIFICATION

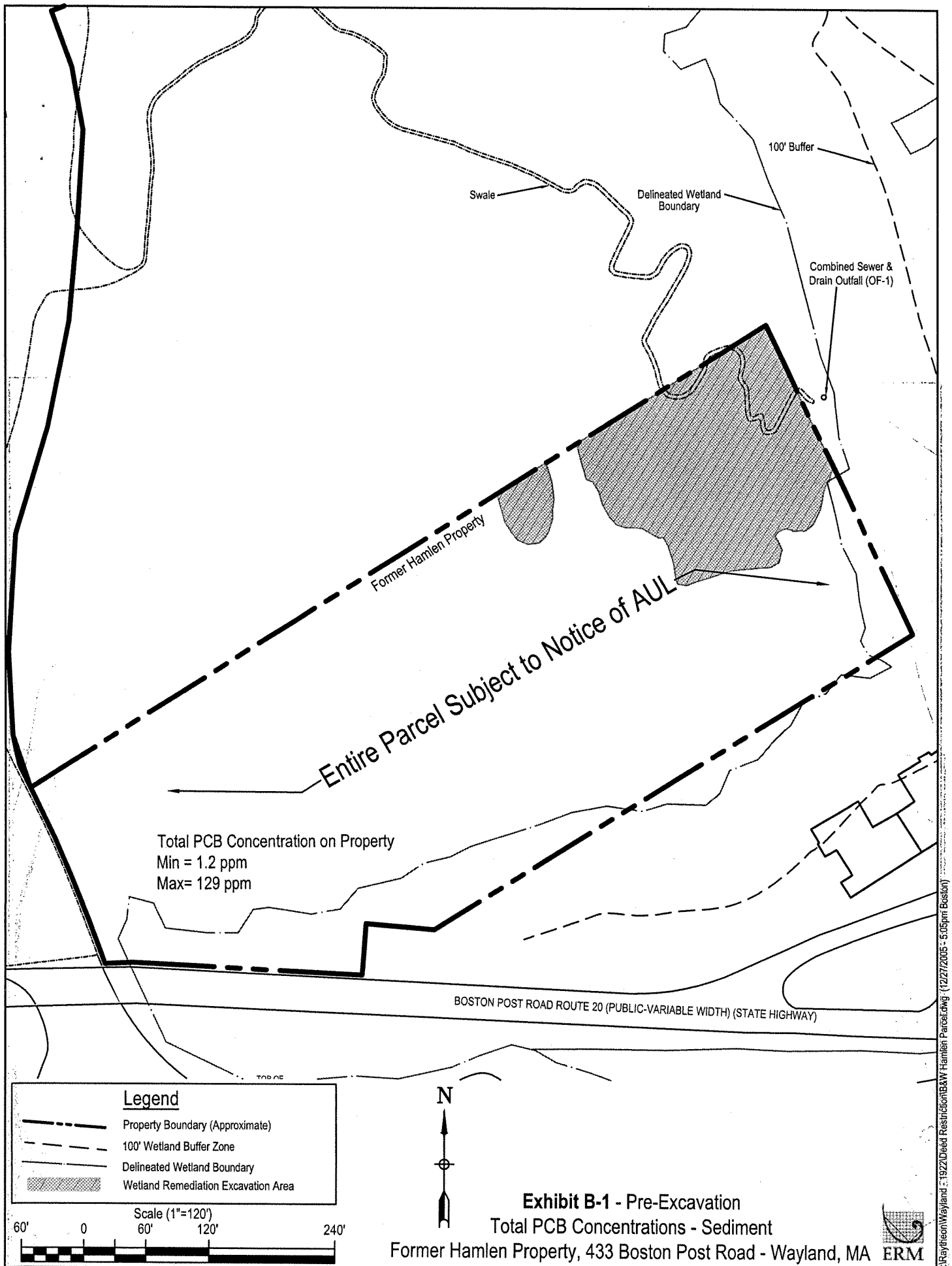
The undersigned LSP-of-Record hereby certifies that the terms of this Activity and Use Limitation Opinion are consistent with those of the Notice for the subject Property located at 433 Boston Post Road, Wayland, Massachusetts.

Date: 1/09/06



John C. Drobinski, LSP Reg. No. 2196





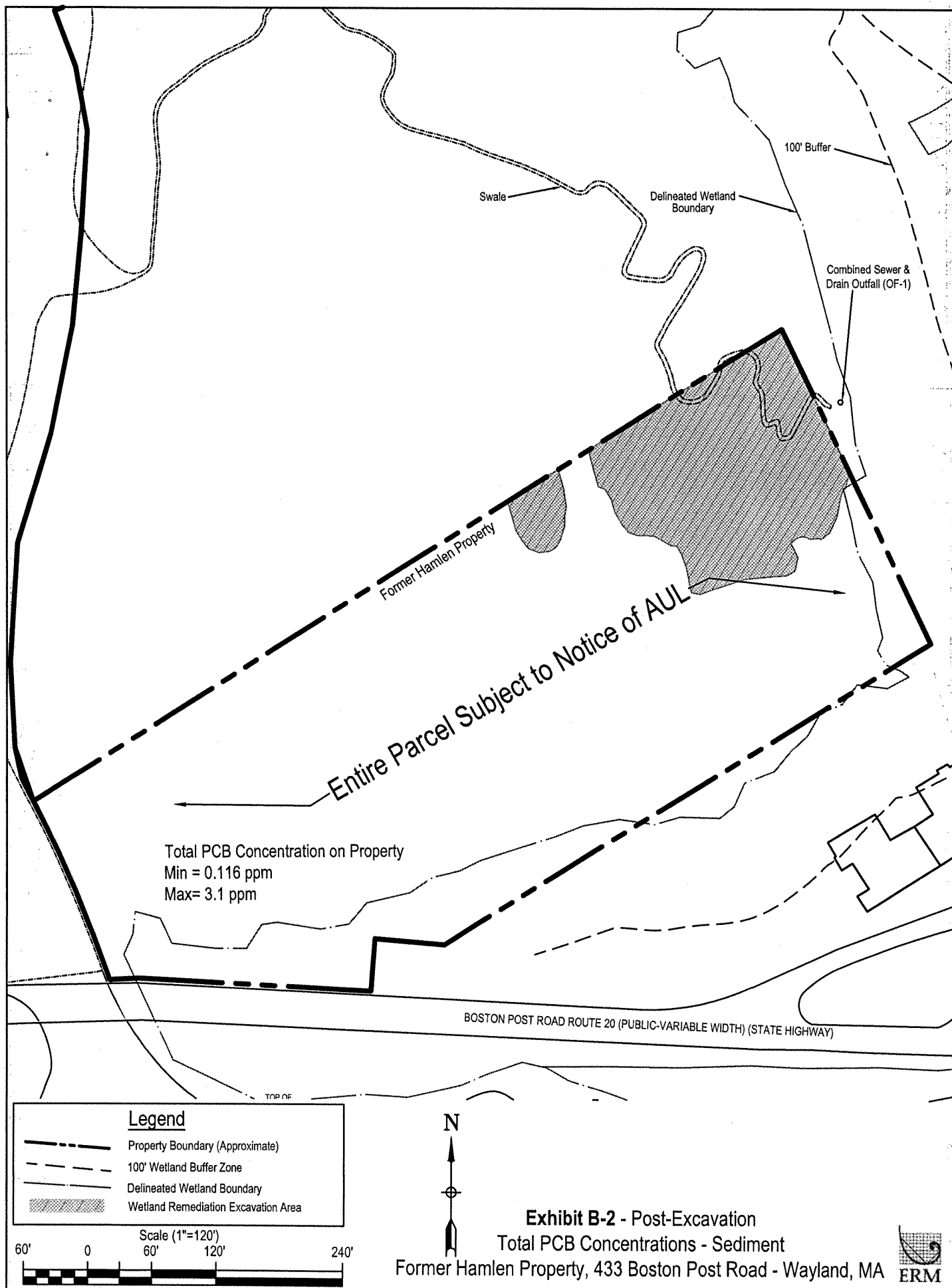


EXHIBIT C

BWSC Form 114, AUL Opinion Transmittal Form



ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1070 - 40.1084 (Subpart J)

3 - 13302

COMPLETE THIS FORM AND ATTACH AS AN EXHIBIT TO THE AUL DOCUMENT TO BE RECORDED AND/OR REGISTERED WITH THE REGISTRY OF DEEDS AND/OR LAND REGISTRATION OFFICE.

A. LOCATION OF DISPOSAL SITE AND PROPERTY SUBJECT TO AUL:

Disposal Site Name: Former Hamlen Property

Street: 433 Boston Post Road

Location

City/Town: Wayland

ZIP Code: 01778

Address of property subject to AUL, if different than above. Street:

City/Town:

ZIP Code:

B. THIS FORM IS BEING USED TO: (check one)

- ☒ Provide the LSP Opinion for a **Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1074 (complete all sections of this form).
- ☐ Provide the LSP Opinion for an **Amended Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1081(4) (complete all sections of this form).
- ☐ Provide the LSP Opinion for a **Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(3) (complete all sections of this form).
- ☐ Provide the LSP Opinion for a **Grant of Environmental Restriction**, pursuant to 310 CMR 40.1071, (complete all sections of this form).
- ☐ Provide the LSP Opinion for an **Amendment of Environmental Restriction**, pursuant to 310 CMR 40.1081(3) (complete all sections of this form).
- ☐ Provide the LSP Opinion for a **Release of Environmental Restriction**, pursuant to 310 CMR 40.1083(2) (complete all sections of this form).

C. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge,

> if Section B indicates that a **Notice of Activity and Use Limitation** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1074(1)(b);

> if Section B indicates that an **Amended Notice of Activity and Use Limitation** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1080(1) and 40.1081(1);

> if Section B indicates that a **Termination of a Notice of Activity and Use Limitation** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1083(3)(a);

> if Section B indicates that a **Grant of Environmental Restriction** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1071(1)(b);

> if Section B indicates that an **Amendment to a Grant of Environmental Restriction** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1080(1) and 40.1081(1);

> if Section B indicates that a **Release of Grant of Environmental Restriction** is being registered and/or recorded, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1083(3)(a).

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

- ☒ Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

See Section 4 of LSP Opinion

SECTION C IS CONTINUED ON THE NEXT PAGE.



ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1070 - 40.1084 (Subpart J)

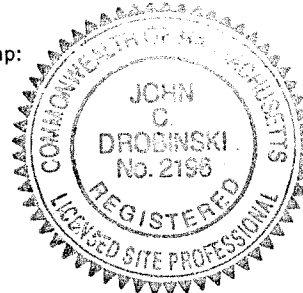
Release Tracking Number

3 - 13302

C. LSP OPINION: (continued)

LSP Name: John C. Drobinski LSP #: 2196

Stamp:



Telephone 617-646-7850 Ext.: _____

FAX: 617-267-6447

LSP Signature: _____

Date: 1/09/06

**YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS
FORM OR DEP MAY FIND THE DOCUMENT TO BE INCOMPLETE.**

RECORDED IN BOOK _____
IS A TRUE COPY OF A PAPER
HEREBY CERTIFY THE FOREGOING
CAMBRIDGE, MA
SOUTH DIST. REGISTRY OF DEEDS
MIDDLESEX S.S.
COMMONWEALTH OF MASSACHUSETTS

FEB 08 2006

COMMONWEALTH OF MASSACHUSETTS.
MIDDLESEX S. S. _____
SOUTH DIST. REGISTRY OF DEEDS
CAMBRIDGE, MA

I HEREBY CERTIFY THE FOREGOING
IS A TRUE COPY OF A PAPER
RECORDED IN BOOK _____

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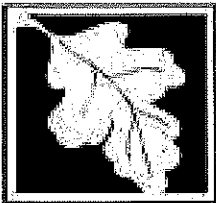
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9

Reg. C. Brown

REGISTER

Appendix C
BWSC-104 Transmittal Form
(Submitted Concurrently via
eDEP)



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 104

PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 13302

For sites with multiple RTNs, enter the Primary RTN above.

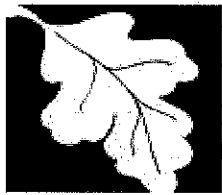
A. SITE LOCATION:

1. Site Name/Location Aid: RAYTHEON COMPANY
2. Street Address: 430 BOSTON POST RD
3. City/Town: WAYLAND 4. ZIP Code: 017780000
5. Coordinates: a. Latitude: N 42.36476 b. Longitude: W 71.37333
- ☒ 6. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category:
- ☒ a. Tier I ☐ b. Tier ID ☐ c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of the Permanent or Temporary Solution Statement, or RAO Statement (if previously submitted): _____ mm/dd/yyyy
- ☐ 2. Submit a **Permanent or Temporary Solution Statement**
- ☐ a. Check here if this Permanent or Temporary Solution Statement covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Tier Classified Primary RTN do not need to be listed here.
- b. Provide the additional Release Tracking Number(s) covered by this Permanent or Temporary Solution Statement. - -
- ☐ 3. Submit a **Revised Permanent or Temporary Solution Statement** (or revised RAO Statement)
- ☐ a. Check here if this Revised Permanent or Temporary Solution Statement covers additional Release Tracking Numbers (RTNs), not listed on the Permanent or Temporary Solution Statement or previously submitted Revised Permanent or Temporary Solution Statements. RTNs that have been previously linked to a Tier Classified Primary RTN do not need to be listed here.
- b. Provide the additional Release Tracking Number(s) covered by this Permanent or Temporary Solution Statement. - -
- ☒ 4. Submit a **Permanent or Temporary Solution Partial Statement**
- Check above box, if any Response Actions remain to be taken to address conditions associated with this disposal site having the Primary RTN listed in the header section of this transmittal form. This Permanent or Temporary Solution Statement will record only a Permanent or Temporary Solution-Partial Statement for that RTN. A final Permanent or Temporary Solution Statement will need to be submitted that references all Permanent or Temporary Solution-Partial Statements and, if applicable, covers any remaining conditions not covered by the Permanent or Temporary Solution-Partial Statements.
- Also, specify if you are an Eligible Person or Tenant pursuant to M.G.L. c. 21 s.2, and have no further obligation to conduct response actions on the remaining portion(s) of the disposal site:
- ☒ a. Eligible Person ☐ b. Eligible Tenant
- ☐ 5. Submit a **Revised Permanent or Temporary Solution Partial Statement** (or revised RAO-Partial Statement)
- ☐ 6. Submit an optional **Phase I Completion Statement** supporting the Permanent or Temporary Solution Statement
- ☐ 7. Submit a **Periodic Review Opinion evaluating the status of a Temporary Solution**, as specified in 310 CMR 40.1051 (Section F is optional)
- ☐ 8. Submit a **Retraction** of a previously submitted **Permanent or Temporary Solution Statement** (or RAO Statement) (Sections E & F are not required)

(All sections of this transmittal form must be filled out unless otherwise noted above)



PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3

- 13302

For sites with multiple RTNs, enter the Primary RTN above.

C. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply; for volumes, list cumulative amounts)

- | | |
|---|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only | <input type="checkbox"/> 2. Temporary Covers or Caps |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Treatment of Water Supplies |
| <input type="checkbox"/> 5. Structure Venting System/HVAC Modification System | <input type="checkbox"/> 6. Engineered Barrier |
| <input type="checkbox"/> 7. Product or NAPL Recovery | <input type="checkbox"/> 8. Fencing and Sign Posting |
| <input type="checkbox"/> 9. Groundwater Treatment Systems | <input type="checkbox"/> 10. Soil Vapor Extraction |
| <input type="checkbox"/> 11. Remedial Additives | <input type="checkbox"/> 12. Air Sparging |
| <input type="checkbox"/> 13. Active Exposure Pathway Mitigation System | <input type="checkbox"/> 14. Passive Exposure Pathway Mitigation System |
| <input type="checkbox"/> 15. Monitored Natural Attenuation | <input type="checkbox"/> 16. In-Situ Chemical Oxidation |

☒ 17. Removal of Contaminated Soils☐ a. Re-use, Recycling or Treatment☐ i. On Site

Estimated volume in cubic yards _____

☐ ii. Off Site

Estimated volume in cubic yards _____

iia. Facility Name: _____ Town: _____ State: _____

iib. Facility Name: _____ Town: _____ State: _____

iii. Describe: _____

☒ b. Landfill☐ i. Cover

Estimated volume in cubic yards _____

Facility Name: _____ Town: _____ State: _____

☒ ii. Disposal

Estimated volume in cubic yards

8,076

Facility Name: CHES LONE MOUNTAIN STORAGE FACILITY Town: WAYNOKA State: OK☐ 18. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

b. Facility Name: _____ Town: _____ State: _____

c. Facility Name: _____ Town: _____ State: _____

☐ 19. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

b. Facility Name: _____ Town: _____ State: _____

c. Facility Name: _____ Town: _____ State: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 104

PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3

13302

For sites with multiple RTNs, enter the Primary RTN above.

C. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply; for volumes, list cumulative amounts)

☐ 20. Other Response Actions:

Describe:

☐ 21. Use of Innovative Technologies:

Describe:

D. SITE USE:

1. Are the response actions that are the subject of this submittal associated with the *redevelopment, reuse* or the *major expansion of the current use* of property(ies) impacted by the presence of oil and/or hazardous materials?

☐ a. Yes ☒ b. No ☐ c. Don't know

2. Is the property a *vacant or under-utilized commercial or industrial* property ("a brownfield property")?

☐ a. Yes ☒ b. No ☐ c. Don't know

3. Will funds from a state or federal brownfield incentive program be used on one or more of the property(ies) within the disposal site?

☐ a. Yes ☒ b. No ☐ c. Don't know If Yes, identify program(s):

4. Has a Covenant Not to Sue been obtained or sought?

☐ a. Yes ☒ b. No ☐ c. Don't know

5. Check all applicable categories that apply to the person making this submittal:

☐ a. Redevelopment Agency or Authority

☐ b. Community Development Corporation

☐ c. Economic Development and Industrial Corporation

☐ d. Private Developer

☐ e. Fiduciary

☐ f. Secured Lender

☐ g. Municipality

☐ h. Potential Buyer (non-owner)

☒ i. Other, describe: OWNER

This data will be used by MassDEP for information purposes only, and does not represent or create any legal commitment, obligation or liability on the part of the party or person providing this data to MassDEP.

E. PERMANENT OR TEMPORARY SOLUTION CATEGORY:

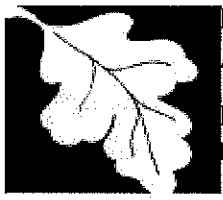
Specify the category of Solution that applies to the Disposal Site, or Site of the Threat of Release. Select either **1, 2, or 3.**

☐ **1. Permanent Solution with No Conditions** (check one)

☐ a. A threat of release has been eliminated.

☐ b. All contamination has been reduced to Natural Background levels.

☐ c. A condition of No Significant Risk exists or has been achieved with no Activity and Use Limitation or other limitations, assumptions, or conditions (310 CMR 40.1013).



PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 13302

For sites with multiple RTNs, enter the Primary RTN above.

E. PERMANENT OR TEMPORARY SOLUTION CATEGORY (cont.):

☒ **2. Permanent Solution with Conditions** (check a and/or b):

☒ **a. An AUL has been implemented** pursuant to 310 CMR 1012(2) (check one)

☒ **i. Required** pursuant to 310 CMR 40.1012(2)

Is the AUL required because the Permanent Solution relies on an Active Exposure Pathway Mitigation Measure pursuant to CMR 310 40.1025?

☐ 1. Yes ☒ 2. No

☐ **ii. Optionally implemented** pursuant to 310 CMR 40.1012(3)

☐ **b. Limitations or conditions apply** pursuant to 310 CMR 40.1013 (check all that apply):

☐ **i. Gardening Best Management Practices (BMPs)** for non-commercial gardening in a residential setting

☐ **ii. Concentrations of Oil and Hazardous Material** consistent with Anthropogenic Background

☐ **iii. Residual contamination** in a Public or Railroad Right-of-Way

☐ **iv. Groundwater contamination** would exceed GW-2 Standards except for the absence of an occupied building or structure

☐ **3. Temporary Solution** (check a or b /and c)

☐ **a. Response actions to achieve a Permanent Solution are not currently feasible**

☐ **b. Response actions to achieve a Permanent Solution are feasible** and are being continued toward a Permanent Solution

☐ **c. Does the Temporary Solution** rely on an Active Exposure Pathway Mitigation Measure pursuant to 310 CMR 40.1026?

☐ **i. Yes** ☐ **ii. No**

F. PERMANENT AND TEMPORARY SOLUTION INFORMATION:

1. Specify the Risk Characterization Method(s) used to achieve the Permanent or Temporary Solution, described above:

☐ **a. Method 1** ☐ **b. Method 2** ☒ **c. Method 3**

☐ **d. Method Not Applicable**-Contamination reduced to or consistent with background, or Threat of Release abated

2. Specify all Soil Category(ies) applicable. More than one Soil Category may apply at a Site. Be sure to check off all **APPLICABLE** categories:

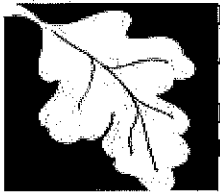
☒ **a. S-1/GW-1** ☐ **d. S-2/GW-1** ☐ **g. S-3/GW-1** ☐ **j. Not Applicable**

☐ **b. S-1/GW-2** ☐ **e. S-2/GW-2** ☐ **h. S-3/GW-2**

☒ **c. S-1/GW-3** ☐ **f. S-2/GW-3** ☐ **i. S-3/GW-3**

3. Specify all Groundwater Category(ies) impacted. A site may impact more than one Groundwater Category. Be sure to check off all **IMPACTED** categories:

☒ **a. GW-1** ☐ **b. GW-2** ☐ **c. GW-3** ☐ **d. No Groundwater Impacted**



PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 13302

For sites with multiple RTNs, enter the Primary RTN above.

F. PERMANENT AND TEMPORARY SOLUTION INFORMATION (cont.):

- ☐ 4. Check here if the risk assessment includes any changes to the groundwater category pursuant to 310 CMR 40.0932(5)(a) through (e). Check all conditions that apply:
- ☐ a. An Interim Wellhead Protection Area does not apply based on a hydrogeologic evaluation (310 CMR 40.0932(5)(a))
 - ☐ b. Groundwater was determined not to be in a Potentially Productive Aquifer or is not feasible to be developed as a drinking water supply (310 CMR 40.0932(5)(b))
 - ☐ c. A Non-Potential Drinking Water Source Area determination was made (310 CMR 40.0932(5)(c))
 - ☐ d. Existing private wells were permanently closed (310 CMR 40.0932(5)(d))
 - ☐ e. Groundwater is located within a Zone A, but is not hydrogeologically connected to a drinking water supply (310 CMR 40.0932(5)(e))
- ☐ 5. Check here if the Permanent or Temporary Solution supports a finding of No Significant Risk for petroleum in a GW-1 area pursuant to 310 CMR 40.0924(2)(b)3.
6. Specify whether remediation was conducted:
- ☐ a. Check here if soil remediation was conducted.
 - ☐ b. Check here if groundwater remediation was conducted.
 - ☐ c. Check here if other remediation was conducted.
Specify: _____
7. Specify whether the analytical data used to support the Permanent or Temporary Solution used the Compendium of Analytical Methods (CAM):
- ☒ a. CAM used to support all analytical data.
 - ☐ b. CAM used to support some of the analytical data.
 - ☐ c. CAM not used.
- ☒ 8. Check here to indicate that the Permanent or Temporary Solution Statement includes a Data Usability Assessment and Data Representativeness Evaluation pursuant to 310 CMR 40.1056.
9. Estimate the number of acres this Permanent or Temporary Solution Statement applies to: 5.5



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 104

PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 13302

For sites with multiple RTNs, enter the Primary RTN above.

G. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B indicates that either a **Permanent or Temporary Solution Statement, Phase I Completion Statement and/or Periodic Review Opinion** is being provided, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

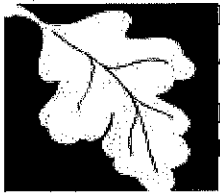
I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP#: 2196
2. First Name: JOHN C 3. Last Name: DROBINSKI
4. Telephone: 6176467800 5. Ext.: 6. Email: john.drobinski@erm.com
7. Signature: JOHN C DROBINSKI
8. Date: 12/15/2016 9. LSP Stamp: mm/dd/yyyy



H. PERSON MAKING SUBMITTAL:

1. Check all that apply: ☐ a. change in contact name ☒ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: RAYTHEON COMPANY
3. Contact First Name: LOUIS J 4. Last Name: BURKHARDT
5. Street: 50 APPLE HILL DR MST3LDL10 6. Title: EH&S MANAGER
7. City/Town: TEWKSBURY 8. State: MA 9. ZIP Code: 018761198
10. Telephone: 9788581885 11. Ext.: 12. Email:



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 104

PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 13302

For sites with multiple RTNs, enter the Primary RTN above.

I. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON MAKING SUBMITTAL:

☐ Check here to change relationship

☒ 1. RP or PRP ☐ a. Owner ☒ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify: _____

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Making Submittal Specify Relationship: _____

J. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Permanent or Temporary Solution on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☐ 2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of a Permanent or Temporary Solution Statement that relies on the public way/rail right-of-way exemption from the requirements of an AUL.

☒ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of a Permanent or Temporary Solution Statement with instructions on how to obtain a full copy of the report.

☒ 4. Check here to certify that documentation is attached specifying the location of the Site, or the location and boundaries of the Disposal Site subject to this Permanent or Temporary Solution Statement. If submitting a Permanent or Temporary Solution Statement for a PORTION of a Disposal Site, you must document the location and boundaries for both the portion subject to this submittal and, to the extent defined, the entire Disposal Site.

☒ 5. Check here to certify that, pursuant to 310 CMR 40.1406, notice was provided to the owner(s) of each property within the disposal site boundaries, or notice was not required because the disposal site boundaries are limited to property owned by the party conducting response actions. (check all that apply)

☐ a. Notice was provided prior to, or concurrent with the submittal of a Phase II Completion Statement to the Department.

☐ b. Notice was provided prior to, or concurrent with the submittal of this Permanent or Temporary Solution Statement to the Department.

☒ c. Notice not required. d. Total number of property owners notified, if applicable: _____

☒ 6. Check here if you are submitting one or more AULs. You must submit an AUL Transmittal Form (BWSC113) and a copy of each implemented AUL related to this Permanent Solution or Temporary Solution Statement. Specify the type of AUL(s) below: (required for Permanent Solution with Conditions Statements where an AUL is being implemented)

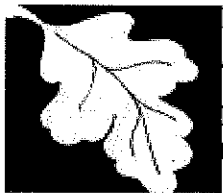
☒ a. Notice of Activity and Use Limitation b. Number of Notices submitted: 1

☐ c. Grant of Environmental Restriction d. Number of Grants submitted: _____

☐ 7. If a Permanent Solution Compliance Fee is required for any of the RTNs listed on this transmittal form, check here to certify that a Permanent Solution Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.

☐ 8. Check here if any non-updatable information provided on this form is incorrect, e.g. Site Address/Location Aid. Send corrections to bwsc.edep@state.ma.us.

☒ 9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 104

PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3

13302

For sites with multiple RTNs, enter the Primary RTN above.

K. CERTIFICATION OF PERSON MAKING SUBMITTAL:

I, LOUIS BURKHARDT, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: LOUIS BURKHARDT 3. Title: EH&S MANAGER
Signature
4. For: RAYTHEON COMPANY 5. Date: 12/15/2016
(Name of person or entity recorded in Section H) mm/dd/yyyy

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section H.

7. Street: _____
8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____
11. Telephone: _____ 12. Ext.: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

