



WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

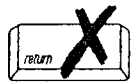
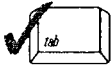
Provided by DEP

Wayland

Town

A. General Information

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

1. Applicant:

Raytheon Company

Name

E-Mail Address

528 Boston Post Road

Mailing Address

Sudbury

City/Town

MA

State

01776

Zip Code

978-440-1813

Phone Number

978-440-2176

Fax Number (if applicable)

2. Representative (if any):

Environmental Resource Management,

Firm

John Drobinski, LSP, PG

Contact Name

E-Mail Address

399 Boylston Street, 6th Floor

Mailing Address

Boston

City/Town

MA

State

02116

Zip Code

617-267-8377

Phone Number

617-267-6447

Fax Number (if applicable)

3. Property Owner (if different from applicant):

See attached list

Name

Mailing Address

City/Town

State

Zip Code

4. Total Fee:

\$1,770

(from Appendix B: Wetland Fee Transmittal Form)

5. Project Location:

See Attached

Street Address

Wayland

City/Town

Assessors Map/Plat Number

Parcel /Lot Number

6. Registry of Deeds:

See Attached

County

Book

Page

Certificate (if Registered Land)



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A. General Information (cont.)

7. Summary of Project Impacts:

a. Is any work being proposed in the Buffer Zone?

Yes If yes, how many square feet?

Approximately 27,600 sq. ft. of temporary impact
Square Feet

No

b. List the impacts of proposed activities on each wetland resource areas (temporary and permanent impacts, prior to restoration and mitigation):

Resource Area	Size of Impact (e.g., sq. ft.)
Within Wetland: Drilling monitoring wells; Access to and work area around wells using mats as temporary access roads and staging area.	8,800 sq. ft. temporary impact
Well standpipe	3 sq. ft permanent impact
Within Wetland: Access to GW profiling locations.	2,800 sq. ft. temporary impact
Bordering vegated wetlands (buffer zone): Conduct vertical profiling; Access to and work area around profiling	25,200 sq. ft. temporary impact
Bordering vegated wetlands (buffer zone): Access to monitoring well locations.	2,400 sq. ft. temporary impact

B. Project Description

1. General Project Description:

Please review supporting applicaiton materials. The project consists of the conducting vertical profiling and advancing soil borings and installing monitoring wells.

2. Plan and/or Map References:

Please see supporting application materials for Exhibits and Appendices

September
2003

Title

Title

Date



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C. Activities Subject to Regulation

1. a. Check the applicable resource areas if work is to be conducted in an associated Buffer Zone:

Inland Resource Areas

- Inland Bank
- Bordering Vegetated Wetland (BVW)

Coastal Resource Areas

- Coastal Beach
- Rocky Intertidal Shore
- Salt Marsh
- Barrier Beach
- Coastal Dune
- Coastal Bank

b. Complete for all proposed activities located, in whole or in part, in Wetland Resource Area(s).

Inland Resource Areas:

Bordering Vegetated Wetlands:

Approximately 39,200 sq. ft. of temporary impact
Square Feet altered

Square Feet replaced

Land Under Water Bodies:

Square Feet altered

Cubic Yards dredged

Bank:

Linear Feet altered

Bordering Land Subject to Flooding:

Volume of Flood Storage Lost (cubic feet)

Volume of Flood Storage Compensation (cubic feet)

Isolated Land Subject to Flooding:

Volume of Flood Storage Lost (cubic feet)

Volume of Flood Storage Compensation (cubic feet)

Coastal Resource Areas:

Coastal Dune:

Square Feet altered

Cubic Yards/Volume removed

Salt Marsh:

Square Feet altered

Coastal Bank:

Linear Feet altered

Land Under Salt Pond:

Square Feet altered

Cubic Yards dredged

Rocky Intertidal Zone:

Square Feet altered

Designated Port Area:

Square Feet altered



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C. Activities Subject to Regulations (cont.)

Fish Run:

Linear Feet altered

Land Subject to Coastal Storm Flowage:

Square Feet altered

Land Under Ocean:

Square Feet altered

Cubic Yards dredged

Land Containing Shellfish:

Square Feet altered

Beach:

Square Feet altered

Riverfront Area:

a. Name of Waterway (if available):

Sudbury River

b. Width of Riverfront Area (check one):

25 ft. - Designated Densely Developed Areas only

100 ft. - New agricultural projects only

200 ft. - All other projects

c. Describe how the Mean Annual High-Water Line was determined:

Bankfull discharge indicators were assessed in the field. A natural berm that represented an obvious change from the aquatic system to a terrestrial system and represents a point bar depositional feature. Furthermore this elevation represents a change in slope from the river's channel going landward into the wetland system and is slightly landward of the change from unconsolidated material to a consolidated soil. This elevation is approximately 110 ft NGVD based on several survey points.

d. Distance of proposed activity closest to the Mean Annual High-Water line:

400 feet landward of the Mean Annual High-Water Line along the Sudbury River.

Feet

e. Total area of Riverfront Area on the site of the proposed project:

940,000 square feet (4,700'x200').

Square Feet

f. Proposed alteration of the Riverfront Area:

0 square feet

Total Square Feet

0 square feet

Square Feet within 100 ft.

0 square feet

Square Feet between 100 ft. and 200 ft.



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C. Activities Subject to Regulation (cont.)

2. Check all methods used to delineate the Bordering Vegetated Wetland (BVW) boundary:

- Final Order of Resource Area Delineation issued by Conservation Commission or DEP (attached)
- DEP BVW Field Data Form (attached)
- Final Determination of Applicability issued by Conservation Commission (attached)
- Other Methods for Determining the BVW boundary (attach documentation):
 - 50% or more wetland indicator plants
 - Saturated/inundated conditions exist
 - Groundwater indicators
 - Direct observation
 - Hydric soil indicators
 - Credible evidence of conditions prior to disturbance.

3. a. Is any portion of the proposed project located in estimated habitat as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program?

- Yes If yes, include proof of mailing or hand delivery of NOI to :

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

- No

1998 NHESP Atlas

Date of Map

b. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

- Yes If yes, provide name of ACEC (see Appendix D for ACEC locations):

ACEC

- No

c. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

- Yes

- No



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Provided by DEP

Wayland
Town

D. Performance Standards

1. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 or 310 CMR 10.53?

Yes If yes, describe which limited project applies to this project:

Assessment of a release of oil and/or hazardous material under MCP (310 CMR 40.0000).

No

2. Is any activity within any Resource Area or Buffer Zone exempt from performance standards of the wetlands regulations, 310 CMR 10.00.

Yes If yes, describe which exemption applies to this project:

Exemption

No

3 a. Is the project located in the Riverfront Area?

Yes If yes, indicate the proposed project purpose:

- Single Family House Industrial Development
- Residential Subdivision Commercial Development
- Transportation Other (describe)

b. Was the lot where the activity is proposed created prior to August 1, 1996?

Yes

No

4. a. Describe how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location. Attach narrative and supporting documentation.

b. Is this project exempt from the DEP Stormwater Policy?

Yes If yes, explain why the project is exempt::

No If no, stormwater management measures are required. Applicants are encouraged to complete Appendix C: Stormwater Management Form and submit it with this form.



WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by DEP

Wayland

Town

E. Additional Information

Applicants must include the following with this Notice of Intent (NOI):

- USGS or other map of the area (along with a narrative description, if necessary), containing sufficient information for the Conservation Commission and the Department to locate the site.
- Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland (BVW) replication area or other mitigating measure) relative to the boundaries of each affected resource area.
- Other material identifying and explaining the determination of resource area boundaries shown on plans (e.g., a DEP BVW Field Data Form).
- List the titles and final revision dates for all plans and other materials submitted with this NOI.

F. Fees

The fees for work proposed under each Notice of Intent must be calculated and submitted to the Conservation Commission and the Department (see Instructions and Appendix B. Wetland Fee Transmittal Form).

No fee shall be assessed for projects of the federal government, the Department, or cities and towns of the Commonwealth.

Applicants must submit the following information (in addition to pages 1 and 2 of Appendix B) to confirm fee payment:

<u>1058,1059</u>	<u>September 26, 2003</u>
Check Number	Check date
<u>Jeremy Picard</u>	<u>Raytheon Company</u>
Payor name on check	Applicant name (if different from payor)

G. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

<u>[Signature]</u>	<u>9/25/03</u>
Signature of Applicant	Date

<u>[Signature] U.S. Fish & Wildlife Service</u>	<u>9/25/2003</u>
Signature of Property Owner (if different)	Date

<u>[Signature]</u>	<u>9/25/03</u>
Signature of Representative (if any)	Date



WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

Wayland

Town

G. Signatures and Submittal Requirements (cont.)

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents; two copies of pages 1 and 2 of Appendix B; and the city/town fee payment must be sent to the Conservation Commission by certified mail or hand delivery.

For DEP:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents; two copies of pages 1 and 2 of Appendix B; and a copy of the state fee payment must be sent to the DEP Regional Office (see Appendix A) by certified mail or hand delivery.

Other:

If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Appendix B – Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important:
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Applicant:

Raytheon Company
 Name
528 Boston Post Road
 Mailing Address
Sudbury MA 01776
 City/Town State Zip Code
978 440-1813
 Phone Number

2. Property Owner (if different):

See attached list
 Name

 Mailing Address

 City/Town State Zip Code

 Phone Number

3. Project Location:

See Attached List
 Street Address City/Town

B. Fees

To calculate filing fees, refer to the category fee list and examples in Section D of this form.

Abbreviated Notice of Resource Area Delineation (Form 4A):

The fee is calculated as follows (check applicable project type):

single family house project
 _____ X \$1.00= _____
 (feet of BVW) Total fee (not to exceed \$100)

all other projects
 _____ X \$1.00= _____
 (feet of BVW) Total fee (not to exceed \$1,000)

State share of filing fee: _____
 (1/2 of total fee less \$12.50)

City/Town share of filing fee: _____
 (1/2 of total fee plus \$12.50)



WPA Appendix B – Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (cont.)

Abbreviated Notice of Intent (Form 4) or Notice of Intent (Form 3):

The fee should be calculated using the following six-step process and worksheet:

Step 1/Type of Activity: Describe each type of activity (see Section D for a list of activities) that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories in Section D.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract \$12.50. To calculate the city/town share of the fee, divide the total fee in half and add \$12.50.

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Monitoring well activities minus roadway	19	55	\$1,045
Oil and/or hazardous material release response actions	1	\$725	\$725

Step 5/Total Project Fee: \$1,770

Step 6/Fee Payments:

Total Project Fee: 1,770
(Total fee from Step 5)

State share of filing fee: \$872.50
(1/2 total fee less \$12.50)

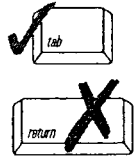
City/Town share of filing fee: \$897.50
(1/2 total fee plus \$12.50)



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Appendix C – Stormwater Management Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Property Information

Important:
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1. The proposed project is:

New development Yes
 No

Redevelopment Yes
 No

Combination Yes (If yes, distinguish redevelopment components from new development components on plans).
 No

Note:
 This November 2000 version of the Stormwater Management Form supersedes earlier versions including those contained in DEP's Stormwater Handbooks.

2. Stormwater runoff to be treated for water quality are based on which of the following calculations:

- 1 inch of runoff x total impervious area of post-development site for discharge to **critical areas** (Outstanding Resource Waters, recharge areas of public water supplies, shellfish growing areas, swimming beaches, cold water fisheries).
- 0.5 inches of runoff x total impervious area of post-development site for other resource areas.

3. List all plans and documents (e.g. calculations and additional narratives) submitted with this form:

B. Stormwater Management Standards

DEP's Stormwater Management Policy (March 1997) includes nine standards that are listed on the following pages. Check the appropriate boxes for each standard and provide documentation and additional information when applicable.

Standard #1: Untreated stormwater

The project is designed so that new stormwater point discharges do not discharge untreated stormwater into, or cause erosion to, wetlands and waters.



B. Stormwater Management Standards (cont.)

Standard #4: 80% TSS Removal

The proposed stormwater management system will remove 80% of the post-development site's average annual Total Suspended Solids (TSS) load.

Identify the BMP's proposed for the project and describe how the 80% TSS removal will be achieved.

If the project is redevelopment, explain how much TSS will be removed and briefly explain why 80% removal cannot be achieved.

Standard #5: Higher potential pollutant loads

See Stormwater Policy Handbook Vol. I, page I-23, for land uses of high pollutant loading

Does the project site contain land uses with higher potential pollutant loads

Yes If yes, describe land uses:

No

Identify the BMPs selected to treat stormwater runoff. If infiltration measures are proposed, describe the pretreatment. (Note: If the area of higher potential pollutant loading is upgradient of a critical area, infiltration is not allowed.)

Standard #6: Protection of critical areas

See Stormwater Policy Handbook Vol. I, page I -25, for critical areas.

Will the project discharge to or affect a critical area?

Yes If yes, describe areas:

Project within Zone II of Baldwin Pond Wellfield, Wayland, MA.

No



WPA Appendix C – Stormwater Management Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Stormwater Management Standards (cont.)

Identify the BMPs selected for stormwater discharges in these areas and describe how BMPs meet restrictions listed on pages I-27 and I-28 of the Stormwater Policy Handbook – Vol. I:

Note:
components of redevelopment projects which plan to develop previously undeveloped areas do not fall under the scope of Standard 7.

Standard #7: Redevelopment projects

Is the proposed activity a redevelopment project?

 Yes

If yes, the following stormwater management standards have been met:

 No

The following stormwater standards have not been met for the following reasons:

 The proposed project will reduce the annual pollutant load on the site with new or improved stormwater control.

Standard #8: Erosion/sediment control

 Erosion and sediment controls are incorporated into the project design to prevent erosion, control sediments, and stabilize exposed soils during construction or land disturbance.

Standard #9: Operation/maintenance plan

 An operation and maintenance plan for the post-development stormwater controls have been developed. The plan includes ownership of the stormwater BMPs, parties responsible for operation and maintenance, schedule for inspection and maintenance, routine and long-term maintenance responsibilities, and provision for appropriate access and maintenance easements extending from a public right-of-way to the stormwater controls.

There are no post-development discharges proposed.

Plan/Title

Date

Plan/Title

Date



WPA Appendix C – Stormwater Management Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Submittal Requirements

DEP recommends that applicants submit this form, as well as, supporting documentation and plans, with the Notice of Intent to provide stormwater management information for Commission review consistent with the wetland regulations (310 CMR 10.05 (6)(b)) and DEP's Stormwater Management Policy (March 1997). If a particular stormwater management standard cannot be met, information should be provided to demonstrate how equivalent water quality and water quantity protection will be provided. DEP encourages engineers to use this form to certify that the project meets the stormwater management standards as well as acceptable engineering standards. For more information, consult the Stormwater Management Policy.

D. Signatures

Raytheon Company
Applicant

²⁵
9/23/03
Date

Signature

John Drobinski, LSP, PG
Representative (if any)

²⁵
9/23/03
Date

Signature

NOI -Section A5 & A6

Page 1 of 3

1.

Street Address	Wayland, MA
	City/Town

17	5A
Assessors Map/Plat Number	Parcel/Lot Number

Registry of Deeds:		
Middlesex	10839	022
County	Book	Page

Certificate (if Registered Land)

2.

Street Address	Wayland, MA
	City/Town

18	1
Assessors Map/Plat Number	Parcel/Lot Number

Registry of Deeds:		
Middlesex	12725	597
County	Book	Page

Certificate (if Registered Land)

3.

Street Address	Wayland, MA
	City/Town

18	3
Assessors Map/Plat Number	Parcel/Lot Number

Registry of Deeds:		
Middlesex	12725	597
County	Book	Page

Certificate (if Registered Land)

NOI -Section A5 & A6

Page 2 of 3

4.

		Wayland, MA
Street Address		City/Town
18		4
Assessors Map/Plat Number		Parcel/Lot Number
Registry of Deeds:		
Middlesex	12426	127
County	Book	Page
Certificate (if Registered Land)		

5.

		Wayland, MA
Street Address		City/Town
18		5
Assessors Map/Plat Number		Parcel/Lot Number
Registry of Deeds:		
Middlesex	12405	410
County	Book	Page
Certificate (if Registered Land)		

6.

		Wayland, MA
Street Address		City/Town
18		6
Assessors Map/Plat Number		Parcel/Lot Number
Registry of Deeds:		
Middlesex	12405	410
County	Book	Page
Certificate (if Registered Land)		

NOI -Section A5 & A6

Page 3 of 3

7.

		Wayland, MA
Street Address		City/Town
<hr/>		<hr/>
22		11
Assessors Map/Plat Number		Parcel/Lot Number
Registry of Deeds:		
Middlesex	11072	320
County	Book	Page
Certificate (if Registered Land)		

8.

		Wayland, MA
430 Boston Post Road		City/Town
Street Address		<hr/>
23		52
Assessors Map/Plat Number		Parcel/Lot Number
Registry of Deeds:		
Middlesex	1181/99	210249
County	Book	Page
Certificate (if Registered Land)		

9.

		Wayland, MA
Street Address		City/Town
<hr/>		<hr/>
23		52A
Assessors Map/Plat Number		Parcel/Lot Number
Registry of Deeds:		
Middlesex	12770	255
County	Book	Page
Certificate (if Registered Land)		

Molly Reed, MAA
Assistant Assessor
Carol Neidbala, Administrative Assistant
Savitri Ramgoolam, Principal Clerk

Town of Wayland



Board Members
Jeffrey Cohen, Chairman
Francis Aurelio
Thomas Maglione

BOARD OF ASSESSORS
41 COCHITUATE ROAD
WAYLAND MASSACHUSETTS 01778
TEL. 508-358-3788

PLEASE ALLOW 10 BUSINESS DAYS FOR A LIST TO BE CERTIFIED BY ASSESSORS PER MGL CH. 66, S. 10
LISTS ARE CERTIFIED ON A "FIRST COME, FIRST SERVE" BASIS PLEASE PLAN YOUR SUBMISSION ACCORDINGLY
IF LIST IS OVER 5 NAMES, IT MUST BE SUBMITTED IN A WORD FORMAT, EITHER BY EMAIL OR DISK. EMAIL ADDRESS IS
SRAMGOOLAM@WAYLAND.MA.US

Date of request 10/1/03 Telephone: 617-646-7815

Address 399 Boylston St, 6th Floor, Boston, MA 02116

Person requesting certification (PLEASE PRINT) Jeremy Picard, c/o ERM

Signature [Handwritten Signature]

Name Of Applicant Raytheon Company

Address 528 Boston Post Road, Sudbury MA 01776

Location of Property Attached

Map Number _____ Parcel _____ Number of Abutters on list 17

***Please check with the Board/Commission for their guidelines, each Board/Commission has its own regulations for their abutters listing.

For use by Assessors

The attached list has more than three errors - Please submit a corrected list

The attached list is certified to be a correct listing of abutters for the described application, based on the most recent tax bill

Certified By: [Handwritten Signature]
Title _____
Fee _____

Signature: [Handwritten Signature]
Date: 10/9/03

Abuttersrequestform.doc

04/28/03

RECEIVED
OCT 01 2003

WAYLAND
BOARD OF ASSESSORS

List of Abutters
Town of Wayland, MA

Prepared for Raytheon Company for Activities to be conducted on the following parcels:

Plot #	Address	Owner	Mailing Address
17-05A	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
18-1	0 Old Sudbury Road	Town of Wayland Conservation Commission,	41 Cochituate Road, Wayland, MA 01778
18-3	0 Old Sudbury Road	Town of Wayland Conservation Commission,	41 Cochituate Road, Wayland, MA 01778
18-4	0 Old Sudbury Road	Town of Wayland Conservation Commission,	41 Cochituate Road, Wayland, MA 01778
18-5	0 Old Sudbury Road	Town of Wayland Conservation Commission,	41 Cochituate Road, Wayland, MA 01778
18-6	0 Old Sudbury Road	Town of Wayland Conservation Commission,	41 Cochituate Road, Wayland, MA 01778
22-11	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
23-52A	0 Old Sudbury Road	Town of Wayland Conservation Commission,	41 Cochituate Road, Wayland, MA 01778
23-52	400 Boston Post Road	Wayland Business Center, holdings LLC Cambridge MA 02142	40 Congress Group Ventures Inc 1 Memorial Dr., Cambridge MA 02142

Contact Jeremy Picard at 617.646.7815 or Jeremy.picard@erm.com

Abutters subject to activities to be conducted on the above properties is as follows:

Plot #	Address	Owner	Mailing Address
13-1	121 Old Sudbury Road	Quirk Associate LTD	121 Old Sudbury Road Wayland, MA 01778
17-001	92 Old Sudbury Road	William Kiesman, & Kristine A	92 Old Sudbury Road, Wayland, MA 01778
17-002	96 Old Sudbury Road	Pilar M. Boorman, & Pott Allan	96 Old Sudbury Road, Wayland, MA 01778
17-003	100 Old Sudbury Road	Michael R. Ball, & Sally	100 Old Sudbury Road, Wayland, MA 01778
17-004	104 Old Sudbury Road	Shahram Shayan & Jowkar, Shahin	104 Old Sudbury Road, Wayland, MA 01778
17-005	110 Old Sudbury Road	Lynch Landscaping & Tree Service Inc,	12 Prospect Street Upton MA 01568
17-006	124 Old Sudbury Road	Quina Corporation C/O Wayland Country Club,	124 Old Sudbury Road, Wayland, MA 01778
17-20	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
17-24	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
17-24A	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
17-25	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
17-25A	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
17-26	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
17-26A	0 Old Sudbury Road	United States of America Fish and Wildlife Service,	300 Westgate Center Drive, Hadley, MA 01035-9589
18-7	84 Old Sudbury Road	Francis D. & Regina Kennedy,	84 Old Sudbury Road, Wayland, MA 01778
18-8	86 Old Sudbury Road	John C. & Patricia Donahue,	86 Old Sudbury Road, Wayland, MA 01778
18-9	88 Old Sudbury Road	David A & Teresa Hicks,	88 Old Sudbury Road, Wayland, MA 01778

NOI – Well Installation and Vertical Profiling

1.0	INTRODUCTION	1
1.1	<i>Background</i>	1
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NOI – Well Installation and Vertical Profiling

1.0 INTRODUCTION

1.1 Background

On behalf of Raytheon Company (Raytheon), Environmental Resources Management (ERM) has prepared this Notice of Intent (NOI) to conduct additional assessment activities related to the northern portion of the approximately 83-acre property located at the former Raytheon Facility, x 430 Boston Post Road in Wayland, Massachusetts (defined as the “Site”, Figure 1). These activities will be conducted as Preliminary Response Actions pursuant to the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000).

As part of ongoing comprehensive response actions at the Site (RTN #3-13302 and Tier IB Permit No. 133939), a series of groundwater characterization activities were conducted during Summer 2002. These activities were presented to the Department in a “Revised Scope of Work: Additional Site Characterization Activities,” dated 20 June 2002. Results of these activities were presented in the Phase IV Remedy Implementation Plan (December 2002) and the Final Scope of Work (June 2003). Chlorinated volatile organic compounds (CVOCs: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC)) were identified in groundwater beneath the northern portion of the Site (hereafter referred to as the Northern Area) in excess of applicable Reportable Concentrations (RCGW-1). On behalf of Raytheon, ERM submitted a Release Notification Form (RNF, BWSC-103) to the Massachusetts Department of Environmental Protection (Department) on 17 December 2002, pursuant to 310 CMR 40.0315(1). The Department issued a Notice of Responsibility and Release Tracking Number (RTN) #3-22408 on 16 January 2003 for the RNF.

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2.0 SCOPE OF WORK

The activities associated with this NOI are designed to further evaluate the following issues associated with RTN # 3-22408:

- potential for CVOCs from the Site to impact the Baldwin Pond Wellfield; and
- downgradient extent of CVOC plume in the Northern Area.

Completion of these activities requires the advancement of up to 19 soil borings in the locations shown on Figure 2. A maximum of three of the boring are located within wetland areas and the majority of the remaining borings are located within wetland buffer zones. Site investigation activities will be conducted in accordance with the Order of Conditions prepared by the Wayland Conservation Commission in response to this NOI.

Conduct Vertical Groundwater Profiling

The purpose of this task is to evaluate the potential for CVOC impacts to groundwater in the Northern Area to impact the Baldwin Pond Wellfield. Based on data collected to date, the Northern Area CVOC plume is generally migrating westward toward the Sudbury River. The Baldwin Pond Wellfield is located approximately 3,250 feet north of and perpendicular to the plume axis. However, as noted in the Conceptual Site Model (Final Scope of Work, June 2003), it is possible that the plume may change direction and travel to the north within the Sudbury River valley. In order for the plume to reach the wellfield, it would have to migrate north within the river valley and be drawn back to the east by the hydraulic influence of the wellfield.

To evaluate this potential scenario, ERM proposes to conduct vertical groundwater profiling using north-south and east-west transects, as shown on [Figure 2](#). These transects are aligned such that they will intersect the plume if it is migrating toward the wellfield. The vertical groundwater profiling will be conducted using a Modified Waterloo Profiler. This is the same technique that was originally used to locate and delineate the CVOC plume in the Northern Area.

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Waterloo Profiler borings will be advanced to refusal at up to 16 locations as shown in [Figure 2](#). ERM has conducted a series of seismic refraction transects to evaluate the depth to bedrock near select proposed drilling locations. These data will be used to ensure that the Waterloo Profiler borings are advanced to the approximate bedrock surface.

The Waterloo Profiler produces a detailed log of relative hydraulic conductivity and allows for collection of multiple groundwater samples from discrete intervals during advancement of the borehole. Groundwater samples will be collected during advancement of the borings from higher hydraulic conductivity zones and analyzed for VOCs. Relative hydraulic head and geochemical parameters will be measured at each sampling interval. The VOC and geochemical data will be used to evaluate vertical variations in aquifer geochemistry. The total number of samples collected from each boring will be based on hydrogeologic conditions encountered at each location.

The Waterloo Profiler borings will be advanced using a combination of drill rigs and drilling techniques, depending on accessibility to the boring location and the depth to bedrock at each drilling location. Initially, each location will be advanced using direct push (Geoprobe) drilling technique, which is the least invasive drilling method appropriate for this investigation. If the Waterloo Profiler boring is refused before top of bedrock, an alternative drilling technique will be used to advance past the obstruction. Drilling techniques may include:

- hollow stem augers with or without the use of drilling mud;
- drive and wash casing; or
- mud rotary.

Both truck-mounted and all terrain vehicle drill rigs may be used. Photographs of a drill rig are shown on Photograph 1. The Waterloo Profiler equipment will be contained within a truck to the extent feasible, as shown on Photograph 2. In areas where truck accessibility is not feasible, the Profiler equipment will be transported by hand or on an all-terrain vehicle. Minor brush clearing and limb removal of trees may be required to provide access to the proposed locations. If possible, access to the proposed locations will be obtained without removal of trees. If tree removal is necessary, no native Middlesex county species will be removed.

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At the completion of the vertical profiling, disturbed ground or exposed areas shall be brought to final finished grade and stabilized with loam and seed. Disturbed ground that cannot be permanently stabilized within one month of project completion shall be stabilized by temporary measures, such as jute netting, or hydroseeding. An effort will be made to prevent damage to the fields where the work will be conducted.

ERM will use straw bales and silt fence to minimize the potential for siltation of wetland areas. These precautions will be used for borings located within mapped wetlands or buffer zones. A straw bale and silt fence drawing is provided as Figure 3. Soil cuttings and drilling fluids will be contained within the working area (i.e., within the silt fence and straw bales) and returned to the borehole following completion or drummed and removed from the work area. Following completion of the borehole, the ground surface will be raked in an effort to minimize visual evidence of the drilling activities.

Advance Soil Borings and Install Monitoring Wells

The purpose of this task is to further delineate the nature and extent of CVOC impacts to groundwater in the Northern Area. ERM proposes to advance up to three borings and install three monitoring well triplets within the wetlands adjacent to the Sudbury River. The proposed locations are approximate and may be modified depending on field conditions (Figure 2). This drilling program will be conducted in conjunction with the upcoming wetland sediment remediation program, due to a series of synergies that can be gained from conducting the two programs simultaneously (e.g., easy access into wetlands via construction roadway, limit potential impact to the wetlands, and wetland restoration activities, if necessary).

A temporary roadway in the upland area, as detailed on Figure 4 and Figure 5, will be prepared to provide access to the wetlands. Brush clearing, removal of vegetation, and grading will be required prior to installation of the temporary roadway. If possible, the temporary roadway will be installed without removal of trees. If tree removal is necessary, no native Middlesex county species will be removed. At the completion of the drilling project, disturbed ground or exposed areas shall be brought to final finished grade and stabilized with loam and seed. Disturbed ground that cannot be permanently stabilized within one month of completion shall be stabilized by temporary measures, such as jute netting, or hydroseeding.

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A temporary roadway will be constructed to each drilling location in the wetland as detailed on Figure 4 and Figure 5. This roadway will be constructed using a combination of temporary roadway support systems including inert plastic geotextiles and various wood and/or metal platform devices. No pressure treated lumber will be used for support systems. This system will be designed to limit the potential damage to the wetlands while providing access for the equipment. Additional details on this type of roadway construction are provided in Photograph 3.

To further mitigate potential wetlands impacts, an all terrain vehicle (ATV) drill rig or truck mounted drill rig will be used to advance each boring to the top of bedrock. This rig will operate using sonic drilling techniques. Sonic drilling uses vibration to advance the borehole into the subsurface (as opposed to more conventional drilling techniques using augers or rotary methods). Sonic was selected specifically for this drilling program so as to minimize potential disturbance to the formation, minimize the cuttings removed from each location, minimize the use of drilling fluids and most importantly, minimize potential impacts to the wetland areas during drilling. If water is required use as a drilling fluid, a “trash pump” or alternative will be used to withdraw water from the Sudbury River to fill a water truck or tank. A screen filter will be used to prevent the intake of suspended solids.

The ATV rig uses large footprint, low pressure and high flotation tires or wide flotation tracks for movement (Photograph 4). The large tires or tracks provide excellent weight distribution allowing the rig to exert low ground pressures. In combination with the access roadways, ERM anticipates that impacts to the wetlands will be limited to minor sinking during vehicular travel and limited impacts in the immediate work area around each borehole location. It is anticipated that these minor impacts will rapidly recover within one growing season as the vegetation recovers. ERM’s wetlands specialists will visually monitor the wetlands areas following the drilling project. If the visual impairment of the wetland is observed, ERM will plan and implement appropriate remediation activities, which may include resoiling and replanting (ERM will seek Conservation Commission approval for soil and plant type). At the conclusion of each boring, roadway materials will be removed for reuse in other areas of the site. At the conclusion of the drilling, all roadway materials will be removed from the roadway.

The drill rig will be refueled in the wetland as necessary during the drilling project. A support truck will be used to deliver fuel to the drill

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rig. The drilling subcontractor will be required to use the following equipment during fuel transfer:

- Positive pressure pumps and leak proof hoses;
- Non sparking equipment and grounding during transfer; and
- Secondary spill containment berms and/or containers around the fuel storage container;
- Spill kit, if necessary.

ERM will use straw bales and silt fences (Figure 3) to minimize the potential for siltation of wetland areas. Soil cuttings generated as a result of sonic drilling are contained within a plastic sleeve inside the drill pipe. Soil cuttings and drilling fluids will be contained within the working area (i.e., within the silt fence and straw bales) and returned to the borehole following completion or drummed and removed from the work area (drums will be stored outside of the buffer zone. Following completion of the borehole, the ground surface will be raked in an effort to minimize visual evidence of the drilling activities.

Continuous soil samples will be collected and screened in the field for total VOCs using a PID and the jar headspace method. PID screening results were successfully used in the December 2002 Northern Area drilling program to locate the CVOC plume. One shallow soil sample from each boring will be submitted for laboratory analysis of VOCs by EPA Method 8260/5035.

ERM proposes to install three monitoring wells in each boring at the following depths:

- within the upper fine sand and silt unit or the silt and clay unit;
- within the lower fine sand and silt unit at the depth of the highest PID readings; and
- top of till or top of bedrock.

Monitoring wells will be constructed using two-inch ID PVC, 0.010-inch machine slotted, well screen, PVC riser pipe, sand filter pack, bentonite seal, concrete surface seal and locking steel protective standpipes. The deep and shallow well at each location will be installed using a five-foot long well screen. The middle well will be installed using either five-foot or ten-foot long well screens, depending on field screening results.

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Monitoring wells will be developed following installation. All fluids shall be contained in a sedimentation tank and will not be discharged directly into the wetland.

Survey, Gauge and Sample Monitoring Wells

The purpose of this task is to evaluate groundwater elevations and groundwater quality in the Northern Area. ERM proposes to conduct quarterly groundwater elevation gauging rounds across the entire Site and conduct semi-annual groundwater monitoring rounds in the Northern Area.

Groundwater Elevation Gauging

To accurately determine groundwater elevations and flow directions across the Site, ERM recommends conducting quarterly groundwater elevation gauging rounds. ERM will gauge depths to groundwater in all existing Site wells on a single day using electronic water-level indicators. Newly installed monitoring wells will be surveyed relative to mean sea level and locations will be surveyed relative to the existing Site grid. Gauging will be conducted prior to sample collection.

Groundwater Sampling

To evaluate groundwater quality at the Site, ERM recommends conducting semi-annual groundwater monitoring events. Groundwater samples will be collected using low-flow or diffusion bag sampling techniques.

Survey Monitoring Wells

ERM will survey the locations and elevations of newly installed monitoring wells relative to the national geodetic vertical datum (NGVD). ERM will gauge all wells at the Site to determine vertical hydraulic gradients.

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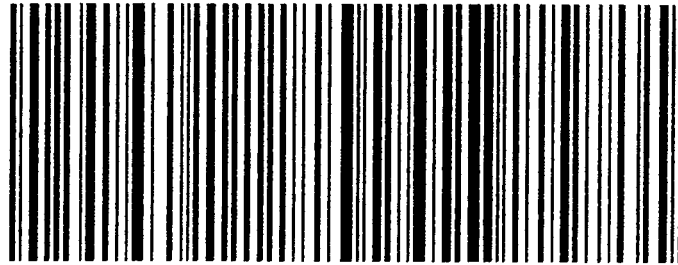
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