

**REMOVAL PROGRAM
AFTER ACTION REPORT
FOR THE
FORMER SQUANNA COOK SPORTSMANS CLUB SITE
GROTON, MIDDLESEX COUNTY, MASSACHUSETTS
12 SEPTEMBER 2022 THROUGH 4 DECEMBER 2023**

REVISION 1.0

Prepared For:

U.S. Environmental Protection Agency
Region I
Emergency Planning and Response Branch
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3912

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Submitted By:

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1.0 INTRODUCTION

The following report, entitled *Removal Program After Action Report for the Former Squannacook Sportsmans Club Site, Groton, Middlesex County, Massachusetts, 12 September 2022 through 4 December 2023*, is a chronological summary of the response actions taken by the U.S. Environmental Protection Agency (EPA), Region I, Emergency Planning and Response Branch (EPRB). The report details the situation as it developed, actions taken, and resources committed.

Site activities included: mobilizing Weston Solutions, Inc. (Weston), EPA's Superfund Technical Assessment and Response Team (START) contractor, and Environmental Restoration, LLC, EPA's Emergency and Rapid Response Services (ERRS) contractor to the site. START was tasked with conducting daily air monitoring using four DustTrak DRXs and two DustTrak IIs; gridding out the property in 50-foot grids; conducting soil screening in each grid with an X-Ray Fluorescence (XRF) analyzer; delineating the Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), and Support Zone (SZ); providing health and safety monitoring; and documenting and photo-documenting site conditions and activities. ERRS was tasked with clearing brush and vegetation from the area surrounding the buildings; conducting excavation of grids on the property; conducting transportation and disposal (T&D) activities; and performing site restoration.

2.0 SITE CONDITIONS AND BACKGROUND

2.1 Site Location and Description

The Former Squannacook Sportsmans Club Site is comprised of the Source Property – a former gun range located at 159 West Main Street in Groton, Middlesex County, Massachusetts – and impacted abutting properties, specifically the Groton Senior Center and a private residence (see Appendix A, Figure 1) [1]. The Source Property consists of a 7.09-acre parcel of land identified by the Groton Assessor's Office on Tax Map 106 as Lot 33-0. Its geographic coordinates, as measured from the approximate center of the property, are 42° 36' 6.023" North, 71° 37' 0.172" West. The Source Property contains forest, wetland, a pond, a segment of Wrangling Brook, a vacant 1,466-square-foot single-story building, and northeast of it, the former outdoor shooting range. The Source Property is bordered by the Groton Senior Center to the north and northeast; forested and wetland areas to the west and southwest; and by West Main Street and residential properties to the south, southeast, and east (see Appendix A, Figure 2) [2].

2.2 Site History/Previous Actions

The Source Property formerly operated as the Squannacook Sportsmans Club from July 1959 until October 2002, and included outdoor and indoor shooting ranges. The indoor shooting range was located in a 1,466-square foot single-story building, which still stands. On 6 May 2021, the Massachusetts Department of Environmental Protection (MassDEP) referred the Site to EPA. Based on the sampling and analysis from an assessment that was performed by the Town of Groton in 2021 under an EPA Brownfields Assessment grant, the Licensed Site Professional (LSP) indicated there was an increased presence of lead in surface soil (0 - 1 foot depth).

On 17-20 August 2021 and 28-29 September 2021, EPA and START collected soil samples from the former shooting range as well as from the Groton Senior Center property and two adjacent residential properties. Surface water samples, as well as groundwater samples, were also collected on the former shooting range property. The soil samples were screened on site for lead and arsenic

by the EPA Mobile Laboratory, and a subset of those samples were then sent to the EPA New England Regional Laboratory for confirmatory metals and polycyclic aromatic hydrocarbon (PAH) analysis [3].

Field screening and laboratory confirmation results indicated the presence of lead and arsenic in soil samples above the EPA Removal Management Levels (RMLs) for residential properties on the former shooting range property, the Groton Senior Center property, and one of the adjacent residential properties. Based on the sampling results, a time-critical removal action was recommended in the Site Investigation Closure Memorandum dated 6 April 2022.

A total of 201 soil samples from 100 borings or locations across the Site and Groton Senior property were collected in August 2021 and a total of 201 soil samples from 93 borings or locations were collected on two adjacent residential properties in September 2021. Sampling analysis by EPA determined that lead and arsenic, both hazardous substances as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §9601(14), and 40 CFR § 302.4, have been released or threatened to be released into the environment on the former shooting range property, Groton Senior Center property, and one adjacent residential property. EPA RMLs Cleanup Standards for Residential Areas are provided for comparison:

	Lead in Soil (ppm)	Arsenic in Soil (ppm)
EPA RML - Residential	400	68
Range in Site Soil Concentration	17-12,000	ND-960

ppm = parts per million

3.0 **SUMMARY OF FEDERAL RESPONSE ACTIONS**

3.1 **Organization of the Response**

ORGANIZATION OF THE RESPONSE		
Organization	Representatives	Responsibilities
U.S. Environmental Protection Agency (EPA) Emergency Planning and Response Branch (EPRB) 5 Post Office Square, Suite 100 Boston, Massachusetts 02109-3912 (617) 918-1359 Bowden (617) 918-1217 Young	Allyson Bowden Catherine Young Nico James	EPA On-Scene Coordinator (OSC) responsible for the initiation, oversight, and completion of all removal activities. The OSC coordinated with State and local officials.
Weston Solutions, Inc. (Weston) Superfund Technical Assessment and Response Team (START) 101 Billerica Ave, Bldg 5, Ste 103 N. Billerica, Massachusetts 01862 (978) 621-1208 Evans (978) 621-1210 Dupree (978) 621-1202 LePage (978) 621-1211 Mahany (978) 621-8804 Kelly (978) 621-1214 Burton (978) 621-1203 Callahan (978) 228-8110 Klinger	Tyler Evans Chris Dupree Tara Lepage Bill Mahany John Kelly John Burton Paul Callahan Amy Klinger	START Site Personnel that provided the OSC with technical assistance, site documentation, site health and safety monitoring, air monitoring, and draft and final report preparation.

ORGANIZATION OF THE RESPONSE		
Organization	Representatives	Responsibilities
Environmental Restoration, LLC Emergency Rapid Response Services (ERRS) (314) 347-9825 Jones (802) 557-2540 Comolli (860) 881-7749 Ramuglia (860) 769-7356 May	Tim Jones David Comolli Rick Ramuglia Chris May Chris McGuire Billy Bennett	Response Manager (RM) for the ERRS contractor that performed removal activities. The RM was responsible for oversight and organization of mobilization, demobilization, and waste removal activities.
Massachusetts Department of Environmental Protection (DEP) Central Regional Office (CERO) 8 New Bond Street Worcester, Massachusetts 01606 (508) 767-2841	Stephanie Kelly	State representative that provided support for removal activities.

3.2 Mobilization and Site Preparation

The site-specific removal health and safety plan (HASP) was reviewed and signed by all personnel before any work commenced. In addition, emergency telephone numbers and directions to the hospital were posted and work zones were delineated. All activities were performed in appropriate personal protective equipment (PPE) in accordance with the HASP. The HASP was prepared by START personnel as a separate document, entitled *Health and Safety Plan for the Former Squannacook Sportsmans Club Site, Groton, Middlesex County, Massachusetts* [4]. On 12 September 2022, the mobilization and staging of Emergency Rapid Response Services (ERRS) equipment was initiated.

3.3 Chronology of Removal Activities

Week of 27 June 2022

On 30 June 2022, EPA Superfund and Emergency Management Division (SEMD) Director Bryan Olson signed the Action Memorandum approving the proposed removal action.

Week of 12 September 2022

Personnel on site:

OSC – EPA	Allyson Bowden Catherine Young
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	1 operator 1 laborer

Equipment on site:

Type	Quantity
Portable Toilet	2
Handwash Station	1

Type	Quantity
Generator	1
Conex Box	1
Mini Excavator	1

Activities for the week included:

- Mobilizing crew and equipment.
- Reviewing and signing the site-specific health and safety plan (HASP).
- Conducting brush and vegetation removal.
- Establishing 50-foot grids on the property to conduct soil screening and future excavation activities.

Key dates:

For the duration of the removal action, START photo-documented site activities (see Appendix B, Photodocumentation Log).

Week of 19 September 2022

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	1 operator 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Mini Excavator	1
Woodchipper	1

Activities for the week included:

- Continuing brush and vegetation removal activities.
- Conducting wood chipping and tree removal activities.
- Erecting silt fence along the border of the shooting range.
- Creating staging area for soil material from future removal excavation activities.
- Conducting set up of site trailers and organizing supplies for site activities.
- Conducting zone delineation into support, contamination reduction, and exclusion zones.

Week of 26 September 2022

Personnel on site:

OSC – EPA	Allyson Bowden Catherine Young
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Woodchipper	1
Skid Steer	1
Dump Truck	1

Activities for the week included:

- Continuing brush and vegetation removal activities.
- Conducting wood chipping and tree removal activities.
- Erecting silt fence along the border of the shooting range.
- Continuing creation of staging area for soil debris.
- Continuing to establish 50-foot grids on the property to conduct soil screening and future excavation activities.
- Continuing to set up site trailers and organize supplies for site activities.
- Continuing to conduct zone delineation into support, contamination reduction and exclusion zones.
- Creating a road through the site for removal activities.

Key dates:

- On 28 September 2022, West Groton Water Supply/Department was on site to supply water to the property for removal activities.
- For the duration of this removal action, START conducted perimeter air monitoring via VIPER.

Week of 3 October 2022

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans

Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1

Activities for the week included:

- Removal and disposal of the vent on top of the indoor shooting range.
- Removal of sand/soil in the indoor shooting range with a Vector truck.
- Continuing brush and vegetation removal activities.
- Conducting wood chipping and tree removal activities.

Key Dates:

- On 6 October 2022, Lagasse Trucking delivered two loads of gravel for staging area and road material.

Week of 11 October 2022

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1

Activities for the week included:

- Erecting additional silt fence along the border of the western side of the property and the residential property to the north of the Sportsmans Club Property.
- Continuing brush and vegetation removal activities.
- Continuing wood chipping and tree removal activities.
- Spreading gravel in staging area for road maintenance.
- Installing a temporary electrical pole for electricians to install power into site trailers.
- Excavating outdoor shooting range berm area.

Key Dates:

- On 12 October 2023, ERRS Health and Safety Officer (HSO) John Lorenzo was on site to conduct a site walk and observe site activities. Pete's Electric was on site to conduct a site walk and install electricity from a temporary pole to the site trailers.
- On 13 October 2023, EPA HSO Tony Honnellio was on site to conduct a site walk and audit the site. Senior Wildlife/Wetland Scientist Daniel Wells of LEC Environmental Consultants, Inc, was on site to conduct a site walk and determine if the erected silt fence was adequate at keeping the Blanding's Turtles off the site during removal activities.

Week of 17 October 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans Chris Dupree
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	1 operator 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	

Activities for the week included:

- Continuing excavation of the outdoor shooting range berm.
- Removing and staging tires found in the outdoor shooting range berm.

Week of 24 October 2022

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	1 operator 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1

Activities for the week included:

- Continuing excavation of the outdoor shooting range berm.
- Continuing to remove and stage tires found in outdoor shooting range berm.
- Conducting additional removal of sand and soil from indoor shooting range.
- Conduct sifting of sand and soil from indoor shooting range to collect lead bullets.

Key dates:

- On 27 October 2022, Lagasse Trucking was on site to deliver an additional two loads of gravel for the staging area and road for removal activities.

Week of 31 October 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	1 operator 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1

Type	Quantity
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Continuing silt fencing installation activities on western side of the Sportsman Club property and the residential property to the north.
- Continuing excavation of the outdoor shooting range berm.
- Continuing to remove and stage tires found in the outdoor shooting range berm.
- Conducting sifting of sand and soil from indoor shooting range to consolidate lead material.
- Receiving two roll-off containers from the Town of Groton to stage tires found on site.

Week of 7 November 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones David Comolli
Crew – Environmental Restoration	1 operator 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Erecting snow fence along the border of the Sportsman Club property.
- Continuing excavation of the outdoor shooting range berm.
- Continuing to remove and stage tires found in the outdoor shooting range berm.
- Removing additional sand and soil from indoor shooting range with the vactor truck.
- Receiving two roll-off containers from the Town of Groton to stage tires found on site.
- Conducting dust suppression during excavation activities.
- Conducting post-excavation screening with the XRF in the indoor shooting range.

Key Dates:

- On 8 November 2022, Moran Environmental Recovery (MER) Energy Industrial Services (EIS) was on site to operate the vactor truck for indoor shooting range removal activities. START member Evans screened the indoor shooting range with the XRF after the sand and soil had been vactored (see Appendix C, Table 1A).
- On 10 November 2022, Heritage Environmental Strategic Account Manager, Pete Long, was on site to observe site activities.

Week of 14 November 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Tim Jones
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Continuing to erect snow fence along the western border of the Sportsman Club property.
- Continuing to stage soil from the berm of the outdoor shooting range.
- Conducting cleaning of tires from the berm.
- Conducting lining of roll-off containers dropped off by the Town of Groton.

Key Dates:

- On 14 November 2022, Heritage Environmental Strategic Account Manager, Pete Long, was on site to collect samples for T&D activities.

Week of 21 November 2022

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans

Response Manager – Environmental Restoration	David Comolli
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Crew – Environmental Restoration	2 operators 2 laborers
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Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Continuing to erect snow fence along the western border of the Sportsman Club property.
- Continuing staging of tires from the berm area of the outdoor shooting range.
- Continuing to stage soil from the berm of the outdoor shooting range.
- Continuing to create a road through the site for removal activities.

Week of 28 November 2022

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	David Comolli Rick Ramuglia
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Continuing to erect silt fence along the western border of the Sportsman Club property and residential property.
- Continuing staging of tires from the berm area of the outdoor shooting range.
- Continuing to create a road through the site for removal activities.
- Conducting brush and vegetation removal activities on low-lying vegetation on the residential property north of the site.

Key Dates:

- On 28 November 2022, Lagasse Trucking delivered one load of gravel material for road construction activities.
- On 29 November 2022, EPA OSC Young, ERRS RM Comolli, and START Member Evans mobilized to the residential property north of the site. START member Evans took photographs of the basement of the property to determine if future excavation work would damage the property.
- On 30 November 2022, MassDEP representative Stephanie Kelly was on site to observe site activities.

Week of 5 December 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Rick Ramuglia
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Continuing to erect silt fence along the western border of the Sportsman Club property and residential property.
- Continuing brush and vegetation removal of low-lying vegetation on the residential property north of the site.

- Marking trees to keep on the residential property that are above 6 inches in diameter.

Week of 12 December 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Rick Ramuglia
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	2

Activities for the week included:

- Continuing brush and vegetation removal of low-lying vegetation on the residential property north of the site.
- Conducting snow removal activities on the site.

Week of 19 December 2022

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Rick Ramuglia
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1

Type	Quantity
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	1

Activities for the week included:

- Continuing brush and vegetation removal of low-lying vegetation on the residential property north of the site.
- Continuing to clean and count tires for recycling.
- Conducting snow removal activities on the site.

Key Dates:

- On 21 December 2022, West Groton Water Supply was on site to shut down water to the site. EPA HSO Honnellio was on site to observe site activities.

Week of 3 January 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Rick Ramuglia
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	1

Activities for the week included:

- Continuing brush and vegetation removal of low-lying vegetation on the residential property north of the site.
- Continuing to clean and count tires for recycling.
- Conducting snow removal activities on the site.

Key Dates:

- On 5 January 2023, Goulet Trucking was on site to pick up and recycle two loads of tires.

Week of 17 January 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Rick Ramuglia
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	1
Portable Toilet	2
Handwash Station	1
Generator	1
Conex Box	1
Excavator	1
Mini Excavator	1
Dump Truck	1
Trenching Machine	1
Roll-off Container	1

Activities for the week included:

- Continuing brush and vegetation removal of low-lying vegetation on the residential property north of the site.
- Continuing to clean and count tires for recycling.
- Conducting snow removal activities on the site.
- Conducting site close down activities.
- Demobilizing personnel and equipment from the site.

Key Dates:

- On 17 and 18 January 2023, Goulet Trucking was on site to pick up and dispose of 12 loads of soil debris from the previously staged soil from the outdoor shooting range berm (see Appendix D, Waste Disposal Summary Table).

Week of 3 April 2023

Personnel on site:

OSC – EPA	Nico James
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Remobilizing to the site to continue removal activities.
- Conducting vegetation and brush removal from winter activities.
- Conducting repairs to existing silt fence along the border of the site.
- Erecting a new silt fence along the western border of the site.

Key Dates:

- On 6 April 2023, Senior Wildlife/Wetland Scientist Daniel Wells of LEC Environmental Consultants, Inc., was on site to conduct a site walk and determine if the erected silt fence was adequate at keeping the Blanding's Turtles off the site during removal activities over winter and where to erect new silt fence on the western side of the property.

Week of 10 April 2023

Personnel on site:

OSC – EPA	Allyson Bowden Nico James
START – Weston	Tyler Evans Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Conducting vegetation and brush removal from winter activities.
- Continuing to conduct repairs to existing silt fence and erecting new silt fence along the border of the site.
- Establishing grids on the residential property and conducting screening with X-Ray Fluorescence (XRF) instrumentation [5].
- Conducting preparations for excavation activities on the residential property.

Key Dates:

- On 12 April 2023, START member Tara LePage was on site to assist START member Evans with establishing grids on the residential property for future excavation activities (see Appendix C, Table 1). MassDEP representative Kelley was on site to conduct a site walk and view site activities. Senior Wildlife/Wetland Scientist Daniel Wells of LEC Environmental Consultants, Inc., was on site to conduct a site walk to determine if the erected silt fence was adequate at keeping the Blanding's Turtles off the site during removal activities over winter and where to erect new silt fence on western side of the property.

Week of 17 April 2023

Personnel on site:

OSC – EPA	Nico James Catherine Young
START – Weston	Tyler Evans Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct repairs to existing silt fence and to erect new silt fence along the border of the site.
- Continuing to conduct preparations for excavation activities on the residential property, including removal of leaf litter.

Week of 24 April 2023

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct repairs to existing and to erect new silt fence along the border of the site.
- Continuing to conduct preparation for excavation activities on the residential property, including removal of leaf litter.
- Conducting excavation activities on the northern section of the residential property.
- Conducting dust suppression during excavation activities.
- Conducting perimeter air monitoring around the residential property during removal activities.

Week of 1 May 2023

Personnel on site:

OSC – EPA	Catherine Young
START – Weston	Tyler Evans Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1

Type	Quantity
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct excavation activities on the northern section of the residential property.
- Continuing to conduct dust suppression during excavation activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal activities.

Key Dates:

- On 4 May 2023, MassDEP representatives, Mark Matys and Reem Freij, were on site to observe removal activities.

Week of 8 May 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct excavation activities on the northern section of the residential property.
- Continuing to conduct dust suppression during excavation activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal activities.

Week of 15 May 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct excavation activities on the northern section of the residential property.
- Continuing to conduct dust suppression during excavation activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal activities.

Week of 22 May 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Chris Dupree Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1

Type	Quantity
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct excavation activities on the northern section of the residential property.
- Continuing to conduct dust suppression during excavation activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal activities.

Week of 29 May 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tara LePage Chris Dupree
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct excavation activities on the northern section of the residential property.
- Continuing to conduct dust suppression during excavation activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal activities.

Key Dates:

- On 1 June 2023, ERRS crew reported damage to the ERRS skid steer. The front glass panel was broken and would be repaired effective immediately.

Week of 5 June 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct excavation activities on the northern section of the residential property.
- Conducting hand excavation activities around the remaining trees on site to reduce damage to the root systems.
- Continuing to conduct dust suppression during excavation activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal activities.

Key Dates:

- On 6 June 2023, air quality was reported due to Canadian wildfire smoke reaching the site area.
- On 8 June 2023, START member LePage conducted post-excavation screening with the XRF analyzer to determine contamination level remaining before geotextile fabric was installed (see Appendix C, Table 1). Heritage Environmental Services (HES) Project Manager Lee Hetrich was on site to observe site activities. EPA Community Involvement Coordinator (CIC) Charlotte Gray was on site to observe site activities and be familiar with the site.

Week of 12 June 2023

Personnel on site:

OSC – EPA	Allyson Bowden Jacques Elias
START – Weston	Tara LePage John Kelly

Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Conducting load out of staged excavated soil from the residential property.
- Transferring excavated soil from the residential property to the staging area for loadout activities.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Key Dates:

- On 12 June 2023, HES representatives, Pete Sorel and Lee Hetrich, were on site to observe site activities.
- On 12, 13, 14, and 15 June 2023, Goulet Trucking and Heritage Environmental Services were on site to pick up and dispose of 36 loads of soil debris from the previously staged soil from the outdoor shooting range berm (see Appendix D, Waste Disposal Summary Table).

Week of 19 June 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1

Type	Quantity
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Conducting installation of geotextile fabric for backfill activities on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Week of 26 June 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tara Lepage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct installation of geotextile fabric for backfill activities on the residential property.
- Expanding the staging area to prepare for delivery of backfill material for the residential property.
- Receiving backfill material to be used on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Key Dates:

- On 27 June 2023, EPA OSC Bowden and START member LePage completed gridding the town-owned property for future removal activities.
- On 28 June 2023, Conservation Administrator Nik Gualco and Town of Groton representative, Peter Cunningham, were on site to observe site activities.

Week of 3 July 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tara Lepage Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Conducting backfilling activities on the residential property.
- Continuing to receive backfill material to be used on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Week of 10 July 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans Bill Mahany
Response Manager – Environmental Restoration	Billy Bennett
Crew – Environmental Restoration	2 operators 1 laborer

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1

Type	Quantity
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct backfilling activities on the residential property.
- Continuing to receive backfill material to be used on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Week of 17 July 2023

Personnel on site:

OSC – EPA	Allyson Bowden Jacques Elias
START – Weston	Tyler Evans Chris Dupree
Response Manager – Environmental Restoration	William Deaton
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct backfilling activities on the residential property.
- Continuing to receive backfill material to be used on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Key Dates:

- From 17 July 2023 through 20 July 2023, DustTraks had elevated readings due to high humidity.

Week of 24 July 2023

Personnel on site:

OSC – EPA	Allyson Bowden
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START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris McGuire Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct backfilling activities on the residential property.
- Continuing to receive backfill material to be used on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Key Dates:

- On 24 July 2023, an adjacent residential property owner notified EPA OSC Bowden about their sump pump being blocked by soil due to backfilling activities. ERRS personnel removed soil blocking the sump pump from working.
- On 25 July 2023, EPA OSC Bowden and START member Evans met with an adjacent residential property owner about site remediation activities.

Week of 31 July 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tara LePage
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1

Type	Quantity
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct backfilling activities on the residential property.
- Continuing to receive backfill material to be used on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Key Dates:

- On 3 August 2023, an adjacent residential property owner notified EPA OSC Bowden about removing soil from the sump pump area again and tearing up geotextile fabric the previous night.

Week of 7 August 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct backfilling activities on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during removal and loadout activities.

Key Dates:

- On 7 August 2023, EPA OSC Bowden, EPA CIC Gray, ERRS RM May, and START member Evans met with an adjacent residential owner to discuss possible options to fix the drainage system for the sump pump on their property, and EPA OSC Bowden would also

be reaching out to an ecological specialist to determine needs and species in the residential owner's backyard.

- On 9 August 2023, START Project Leader, Bonnie Mace, was on site to conduct a site audit and observe site activities.
- On 10 August 2023, Senior Wildlife/Wetland Scientist Daniel Wells of LEC Environmental Consultants, Inc, was on site to conduct a site walk and determine if the erected silt fence was still adequate at keeping the Blanding's Turtles off the site during removal activities.

Week of 14 August 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Paul Callahan
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 1-2 laborers
U.S. Coast Guard (USCG) Atlantic Strike Team (AST)	Claudio Gualiano Justin Hansen

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct limited backfilling activities on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during backfill activities.
- Beginning to conduct brush and tree clearing in the town-owned area south of the residential property.

Key Dates:

- No site work other than administrative tasks were conducted on Tuesday, 15 August 2023, due to heavy rains. The rains and their aftermath limited any site restoration work on the residential property for the remainder of the week.
- On 16 August 2023, START Program Manager Mark McDuffee was on site to conduct a site safety audit.
- On 17 August 2023, Nick Navarro, Wildlife/Wetland Scientist of Essex Horticulture was on site to view the residential property and to review the proposed inventory and quantity of plants to be used for site restoration of the residential property.

- Two U.S. Coast Guard (USCG) Atlantic Strike Team (AST) members began providing additional contractor oversight and Federal presence on Monday, 14 August 2023, due to the limited availability of OSC Bowden to be on site the next 2 weeks.

Week of 21 August 2023

Personnel on site:

OSC – EPA	USCG AST Covering
START – Weston	Bill Mahany John Burton
Response Manager – Environmental Restoration	Chris May/Josue
Crew – Environmental Restoration	2 operators 1-2 laborers
U.S. Coast Guard (USCG) Atlantic Strike Team (AST)	Claudio Gualiano Justin Hansen

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct limited backfilling activities on the residential property.
- Continuing to conduct perimeter air monitoring around the residential property during backfill activities.
- Beginning to conduct brush and tree clearing in the town-owned area south of the residential property.
- Beginning construction of a drainage swale adjacent to the residential property and the rear of the Senior Center.

Week of 28 August 2023

Personnel on site:

OSC – EPA	Allyson Bowden USCG AST Covering
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May/Josue
Crew – Environmental Restoration	2 operators 1-2 laborers

U.S. Coast Guard (USCG) Atlantic Strike Team (AST)	Claudio Gualiano Justin Hansen
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Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct perimeter air monitoring around the residential property during excavation activities.
- Continuing to conduct excavation activities on the Senior Center property.
- Continuing construction of a drainage swale adjacent to the residential property and the rear of the Senior Center.

Week of 4 September 2023

Personnel on site:

OSC – EPA	Allyson Bowden USCG AST Covering
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 1-2 laborers
U.S. Coast Guard (USCG) Atlantic Strike Team (AST)	George Ramirez Shari Guerra

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct perimeter air monitoring around the residential property during excavation activities.

- Continuing to conduct excavation activities on the Senior Center property.
- Continuing construction of a drainage swale adjacent to the residential property and the rear of the Senior Center.

Week of 11 September 2023

Personnel on site:

OSC – EPA	Allyson Bowden USCG AST Covering
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 1-2 laborers
U.S. Coast Guard (USCG) Atlantic Strike Team (AST)	George Ramirez Shari Guerra

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct perimeter air monitoring around the residential property during excavation activities.
- Continuing to conduct excavation activities on the Senior Center property.

Key Dates:

- On 12 September 2023, ERRS personnel received a load of seeding straw for the residential property planting activities.
- On 14 September 2023, ERRS personnel received 524 plants for the residential property. Plants received included the following: Highbush Blueberry (200), Low Bush Blueberry (25), Witch Hazel (75), Gray Dogwood (25), American Hazelnut (25), Hay Scented Fern (75), New York Fern (50), Northern Arrowwood (25), and New England Logging Road Seed Mix.

Week of 18 September 2023

Personnel on site:

OSC – EPA	Allyson Bowden USCG AST Covering
START – Weston	Tyler Evans

Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	3 operators 4 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1
Conex Box	1
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct perimeter air monitoring around the residential property during backfill and load-out activities.
- Conducting T&D of material excavated from the Squannacook Sportsmans Club and Senior Center properties.
- Receiving backfill material for both the Squannacook Sportsmans Club and Senior Center properties.

Key Dates:

- On 18 through 20 September 2023, a total of 24 loads of material excavated from the Squannacook Sportsmans Club and Senior Center properties was loaded out from the site (see Appendix D, Waste Disposal Summary Table).
- A total of five loads of gravel material was delivered for backfill material.

Week of 25 September 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	3 operators 4 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	1
Dump Truck	1

Type	Quantity
Conex Box	1
Scissor Lift	2
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Continuing to conduct perimeter air monitoring around the residential property during backfill and load-out activities.
- Completed T&D of material excavated from the Squannacook Sportsmans Club and Senior Center properties.
- Receive backfill material for both the Squannacook Sportsmans Club and Senior Center properties.
- Completion of planting activities on the residential property.

Key Dates:

- On 28 September 2023, a total of six loads of material excavated from the Squannacook Sportsmans Club and Senior Center properties was loaded out from the site.
- A total of five loads of gravel material and 13 loads of soil material was delivered for backfill activities on the Squannacook Sportsmans Club and Senior Center properties.

Week of 2 October 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Tyler Evans Amy Klinger
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	2 operators 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	2
Dump Truck	1
Conex Box	1
Scissor Lift	2
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Conducting load out of metal debris and tires from the property.
- Completion of seeding activities on the residential property.

- Conducting site restoration and backfilling operations on the Squannacook Sportsmans Club and Senior Center Properties.
- Conducting seeding activities on the Squannacook Sportsmans Club and Senior Center Properties.

Key Dates:

- On 6 October 2023, Groton Department of Public Works was on site to pick up any remaining tires for recycling, approximately 30 tires were shipped offsite.
- A total of 19 loads of soil material was delivered for backfill activities on the Squannacook Sportsmans Club and Senior Center properties.

Week of 9 October 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Amy Klinger
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	1 operator 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Excavator	1
Mini Excavator	1
Skid Steer	2
Dump Truck	1
Conex Box	1
Scissor Lift	2
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Decontamination of the excavator and mini excavator.
- Conducting site restoration and backfilling operations on the Squannacook Sportsmans Club and Senior Center Properties.
- Conducting seeding activities on the Squannacook Sportsmans Club and Senior Center Properties.

Key Dates:

- On 10 October 2023, ERRS crew of two were on site to move mini excavator off site.
- On 11 October 2023, Tinio Trucking Company was on site to move the excavator off site.
- On 12 October 2023, ERRS crew of three began removing silt fence from site.

Week of 16 October 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Amy Klinger
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	1 operator 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Skid Steer	2
Dump Truck	1
Conex Box	1
Scissor Lift	2
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Completed backfilling operations on the Squannacook Sportsmans Club and Senior Center Properties.
- Completed seeding activities on the Squannacook Sportsmans Club and Senior Center Properties.
- Completed removal of silt fence on Squannacook Sportsmans Club and Senior Center Properties.

Key Dates:

- On 16 October 2023, backfilling of the town property was completed.

Week of 23 October 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Amy Klinger
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	1 operator 2 laborers

Equipment on site:

Type	Quantity
Office Trailer	2
Skid Steer	2
Dump Truck	1
Conex Box	1

Type	Quantity
Scissor Lift	2
Portable Toilet	3
Handwashing Station	1

Activities for the week included:

- Removed all waste from the building and site property.
- Decontamination of the dump truck, skid steers, and scissor lift.
- Cleaned out and decontaminated office trailers and Conex to prepare for pick up.
- Disconnected power to office trailers to prepare for the hard power line removal.
- Removed silt and leaf debris from the swale.
- Disposed of all silt fence in cubic-yard boxes.

Key Dates:

- On 25 October 2023, Eagle transported one office trailer off site.
- On 25 October 2023, Groton Electric Light was on site to remove the hard power line.
- On 26 October 2023, Mobile Mini transported the second office trailer and Conex off site.
- On 26 October 2023, EPA OSC Allyson Bowen lead a final site walk with EPA Section Chief Bill Lovely, MassDEP representatives Amy Sullivan and Kevin Doust, and Town of Groton representatives Peter Cunningham, Mark Haddad, and Kara Crukshank.

Week of 4 December 2023

Personnel on site:

OSC – EPA	Allyson Bowden
START – Weston	Bonnie Mace
Response Manager – Environmental Restoration	Chris May
Crew – Environmental Restoration	1 laborer

Equipment on site:

Type	Quantity
Skid Steer	1

Activities for the week included:

- Removed all cubic yard boxes containing the contaminated silt fence.
- Demobilized all equipment from the Site.

Key Dates:

- On 4 December 2023, Tradebe was on site to ship the final cubic yard box of hazardous material from the site (see Appendix D, Waste Disposal Summary Table).

4.0 ESTIMATED COSTS OF THE REMOVAL ACTION

EPA resources committed under this Removal Action are summarized below:

Cost Category	Ceiling	Costs Incurred	Remainder
Regional Removal Allowance Costs			
ERRS	\$3,400,000.00	\$1,905,585.98	\$1,494,414.02
START Contractor	\$458,655.45	\$450,255.45	\$8,400
Interagency Agreement	\$23,274.82	\$23,274.82	\$0.00
Other Extramural Costs Not Funded from the Regional Allowance			
Extramural Contingency	\$355,000.00	\$331,930.27	\$23,069.73
Total Removal Project Costs	\$3,905,000.00	\$2,379,116.25	\$1,525,833.75

This accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

REFERENCES

- [1] MicroPath/USGS/USA Topo Maps. 2011. Quadrangle Name: Groton, MA
- [2] Esri, i-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP. 2019. ArcGIS.com World Imagery Map. April.
- [3] Weston Solutions, Inc. March 2022. Removal Program Preliminary Assessment/ Site Investigation Report for the Former Squannacook Sportsmans Club Site, Groton, Middlesex County, Massachusetts, 17-20 August 2021, and 28-29 September 2021.
- [4] Weston Solutions, Inc. September 2022. Health and Safety Plan (HASP) for the Squannacook Sportsmans Club Site, Groton, Middlesex County, Massachusetts.
- [5] Weston Solutions, Inc. July 2020. Standard Operating Procedure for Field Screening of Metals in Soil Samples using the INNOV-X-XRF Analyzer, SOP No. WSI/S5-021.

Appendices

Appendix A

Figures

- Figure 1 – Site Location Map
- Figure 2 – Site Diagram
- Figure 3 – Former Sportsman Club Property Contaminated and Non-contaminated Grids
- Figure 4 – Contaminated Grids on Residential Property

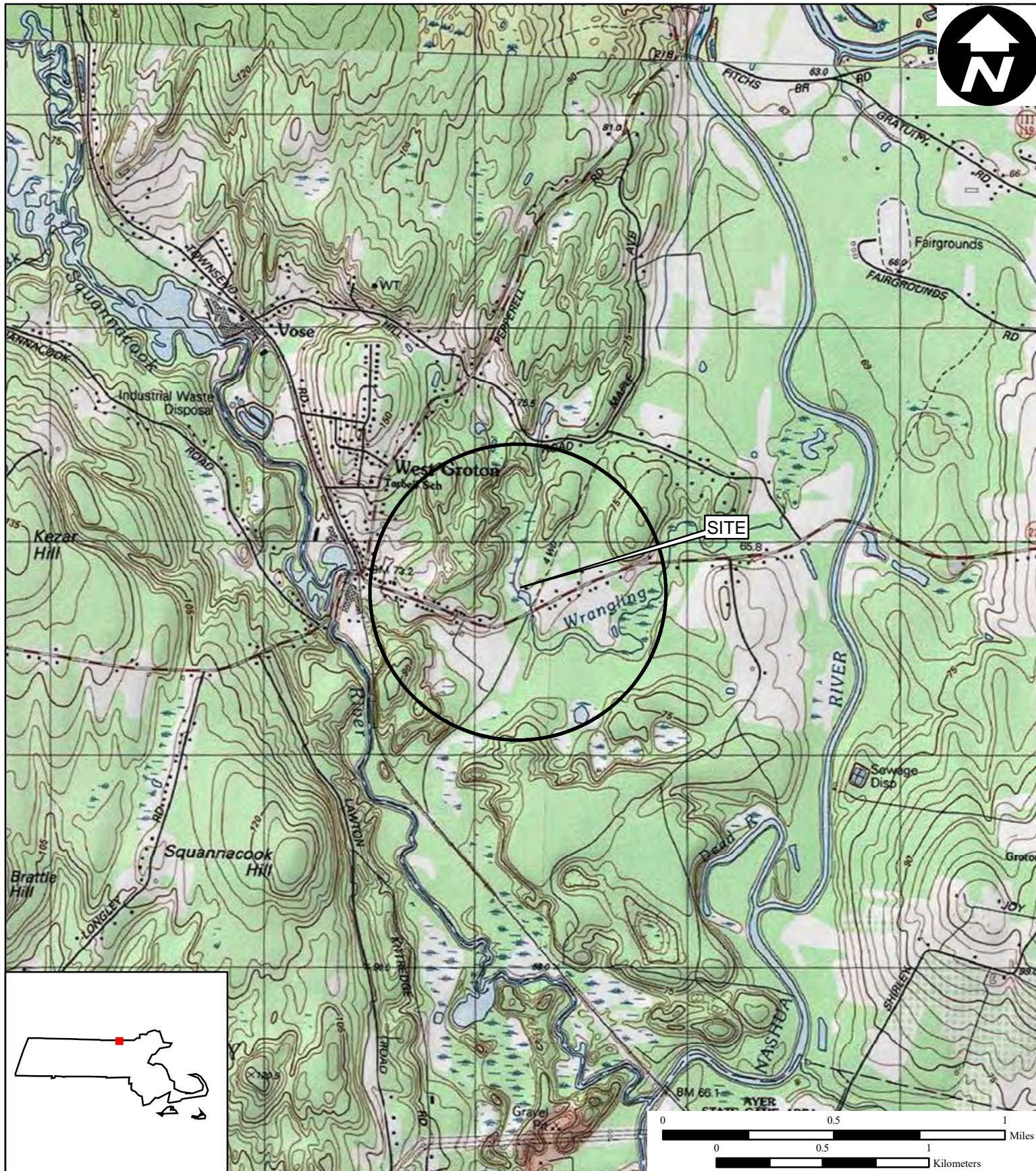


Figure 1

Site Location Map

**Former Squannacook Sportsmans Club
159 West Main Street
Groton, Massachusetts**

**EPA Region I
Superfund Technical Assessment and
Response Team (START) V
Contract No. 68HE0120D0001**

AD Number: TOFP-01-22-07-0001
Created by: T. Evans
Created on: 19 October 2022
Modified by: T. Evans
Modified on: 19 October 2022

Data Sources:

Topos: MicroPath/USGS/USA Topo Maps
Quadrangle Name(s):
All other data: START



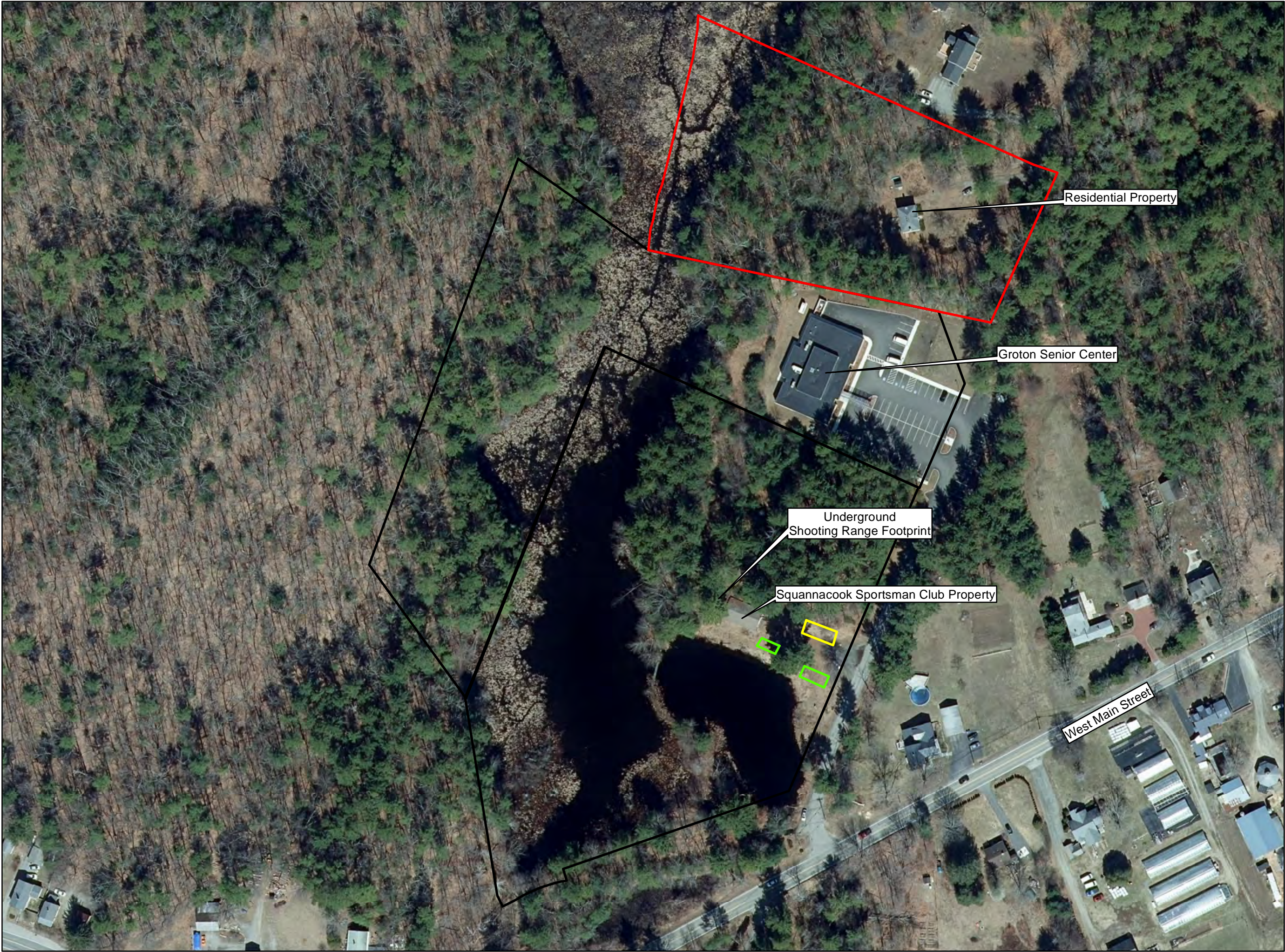


Figure 2

Site Diagram

Former Squannacook Sportmans Club
159 West Main Street
Groton, Massachusetts

EPA Region I
Superfund Technical Assessment and
Response Team (START) V
Contract No. 68HE0120D0001

AD Number: TOFP-01-22-07-0001
Created by: B. Mahany
Created on: 23 August 2021
Modified by: T. Evans
Modified on: 19 October 2022

LEGEND

- Property Boundaries
- Residential Property
- Site Trailers
- Staging Area



0 25 50 100 150 200
Feet

Data Sources:

Imagery: Bing Maps Aerial
Topos: USA TopoMaps
All other data: START



Figure 3
Former Sportsmans Club Property
Contaminated and Non-contaminated
Grids

Former Squannacook Sportsmans Club
159 West Main Street
Groton, Massachusetts

EPA Region I
Superfund Technical Assessment and
Response Team (START) V
Contract No. 68HE0120D0001

AD Number: TOFP-01-22-07-0001
Created by: B. Mahany
Created on: 23 August 2021
Modified by: T. Evans
Modified on: 19 October 2023

LEGEND

- Property Boundaries
- Residential Property
- Contaminated 50-Foot Removal Grid
- Non-contaminated 50-Foot Grids
- Site Trailers
- Staging Area
- Silt Fence
- Perimeter Air Monitoring Station

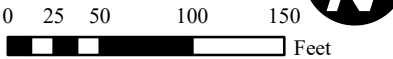
NOTES:

mg/kg- Milligram per kilogram

Grids marked with green hatch indicate non-contaminated grids with lead field screening results below 200 mg/kg.

Grids marked with red cross hatch indicate contaminated grids with lead field screening results above 200 mg/kg.

Field screening conducted with X-Ray Fluorescence Spectrometer (XRF).



Data Sources:
Imagery: Bing Maps Aerial
Topos: USA TopoMaps
All other data: START






Figure 4
Contaminated Grids on Residential
Property Map
Former Squannacook Sportmans Club
159 West Main Street
Groton, Massachusetts

EPA Region I
Superfund Technical Assessment and
Response Team (START) V
Contract No. 68HE0120D0001

AD Number: TOFP-01-22-07-0001
Created by: B. Mahany
Created on: 1 October 2021
Modified by: T. Evans
Modified on: 19 October 2023

LEGEND

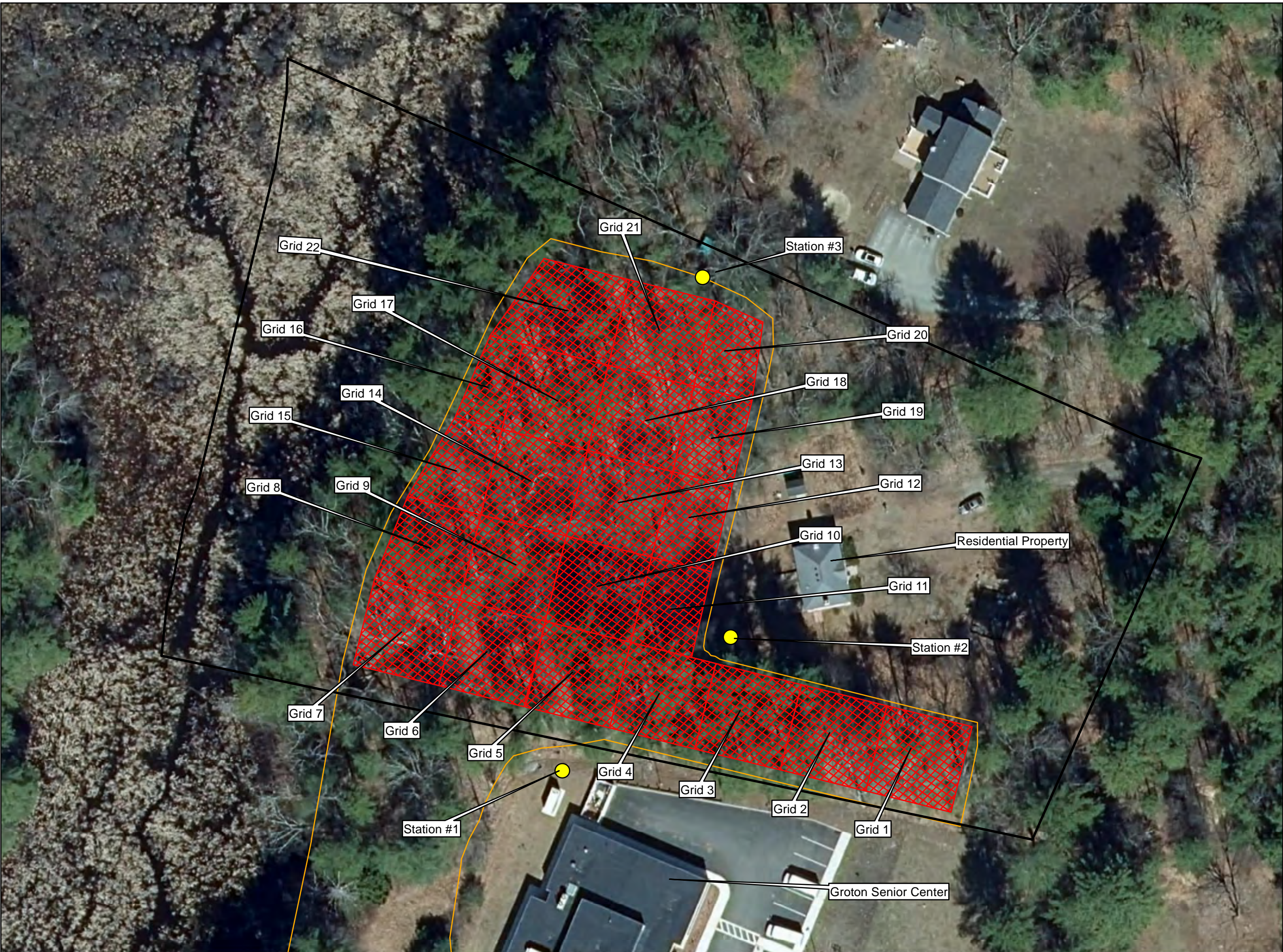
-  Residential Property Boundary
-  Contaminated Residential Grids
-  Silt Fence
-  Perimeter Air Monitoring Station



0 25 50 Feet

Data Sources:

Imagery: Bing Maps Aerial
Topos: USA TopoMaps
All other data: START



Appendix B

Photodocumentation Log

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of the site roadway on the Town of Groton property. Photograph taken facing south.

DATE: 27 April 2023

TIME: 0721 hours

PHOTOGRAPHER: T. LePage

CAMERA: iPhone 13



SCENE: View of the residential property before excavation at the end of the site road. Photograph taken facing north.

DATE: 01 May 2023

TIME: 1026 hours

PHOTOGRAPHER: T. LePage

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of perimeter air monitoring on the northern end of the residential property after soil excavation. Photograph taken facing north.

DATE: 16 May 2023

PHOTOGRAPHER: T. LePage

TIME: 0743 hours

CAMERA: iPhone 13



SCENE: View of perimeter air monitoring inside the silt fence on the residential property near the home before excavation of the area. Photograph taken facing northeast.

DATE: 16 May 2023

PHOTOGRAPHER: T. LePage

TIME: 0748 hours

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of perimeter air monitoring on the residential property in front of the Groton Senior Center. Photograph taken facing southeast.

DATE: 18 May 2023

PHOTOGRAPHER: T. LePage

TIME: 1036 hours

CAMERA: iPhone 13



SCENE: View of the residential property post-excavation. Photograph taken facing north.

DATE: 18 May 2023

PHOTOGRAPHER: T. LePage

TIME: 1637 hours

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of the residential property post-excavation with dust suppression equipment. Photograph taken facing south.

DATE: 18 May 2023

TIME: 1637 hours

PHOTOGRAPHER: T. LePage

CAMERA: iPhone 13



SCENE: View of the residential property post-excavation in between the Senior Center building and residential home. Photograph taken facing northwest.

DATE: 31 May 2023

TIME: 0859 hours

PHOTOGRAPHER: T. LePage

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of the residential property post-excavation in between the Senior Center building and residential home. Photograph taken facing southwest.

DATE: 31 May 2023

PHOTOGRAPHER: T. LePage

TIME: 0859 hours

CAMERA: iPhone 13



SCENE: View of the silt fence separating the work zone and the wetlands including the dust suppression equipment. Photograph taken facing southwest.

DATE: 31 May 2023

PHOTOGRAPHER: T. LePage

TIME: 0904 hours

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of the residential property post-excavation with geotextile fabric. Photograph taken facing south.

DATE: 28 June 2023

TIME: 0813 hours

PHOTOGRAPHER: T. LePage

CAMERA: iPhone 13



SCENE: View of the residential property and the Senior Center property after backfilling activities. Photograph taken facing north.

DATE: 14 September 2023

TIME: 0740 hours

PHOTOGRAPHER: T. Evans

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of the water drainage swale on the residential property and in between the residential property and the Senior Center. Photograph taken facing north.

DATE: 21 September 2023

PHOTOGRAPHER: T. Evans

TIME: 1354 hours

CAMERA: iPhone 13



SCENE: View of the site roadway on the Town of Groton property after removal and site restoration was complete. Photograph taken facing south.

DATE: 26 October 2023

PHOTOGRAPHER: A. Klinger

TIME: 1317 hours

CAMERA: iPhone 13

PHOTODOCUMENTATION LOG
Former Squannacook Sportsmans Club • Groton, Massachusetts



SCENE: View of the cubic yard boxes of silt fence and contaminated personal protective equipment (PPE) before transportation and disposal. Photograph taken facing north.

DATE: 4 December 2023

PHOTOGRAPHER: B. Mace

TIME: 0953 hours

CAMERA: iPhone 13



SCENE: View of the cubic yard boxes being loaded out for disposal. Photograph taken facing east.

DATE: 4 December 2023

PHOTOGRAPHER: B. Mace

TIME: 1003 hours

CAMERA: iPhone 13

Appendix C

Table 1 – X-Ray Fluorescence Combined Screening Results

Table 1A – X-Ray Fluorescence Post-Excavation Screening Results for the
Indoor Shooting Range

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
1	MR	9/26/2022	Pre-Excavation	3,217	NR
1	BL			690	
1	TL			5,118	
2	MC	9/26/2022	Pre-Excavation	1,790	
2	TR			1,417	
2	TL			238	
3	TL	9/26/2022	Pre-Excavation	230	
3	TR			3,787	
3	MC			117	
4	BL	9/26/2022	Pre-Excavation	2,439	
4	MR			848	
4	TL			443	
5	BR	9/26/2022	Pre-Excavation	415	
5	MC			436	
5	TL			739	
6	BL	9/26/2022	Pre-Excavation	264	
6	MR			43	
6	TL			260	
7	BC	9/26/2022	Pre-Excavation	142	
7	MC			48	
7	TC			186	
8	TC	9/26/2022	Pre-Excavation	110	
8	MC			44	
8	BC			36	
9	TC	9/26/2022	Pre-Excavation	2	
9	MC			8	
9	BC			14	
10	BL	9/22/2022	Pre-Excavation	7	
10	TL			1	
10	TR			6	
11	BL	9/22/2022	Pre-Excavation	28	
11	RC			6	
11	MC			2	
12	BC	9/26/2022	Pre-Excavation	821	
12	MC			1,900	
12	TC			145	
13	BC	9/26/2022	Pre-Excavation	1,415	
13	MC			987	
13	TC			3,925	

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
14	BR	9/26/2022	Pre-Excavation	108	NR
14	MC			172	
14	TC			204	
15	TC	9/26/2022	Pre-Excavation	161	
15	RC			173	
15	BL			71	
16	BC	9/26/2022	Pre-Excavation	396	
16	MC			187	
16	TC			490	
17	BC	9/26/2022	Pre-Excavation	1,056	
17	BR			113	
17	TR			396	
18	TC	9/26/2022	Pre-Excavation	195	
18	MC			669	
18	BL			727	
19	TL	9/26/2022	Pre-Excavation	144	
19	MC			15	
19	BL			38	
20	BC	9/26/2022	Pre-Excavation	16	
20	TR			168	
20	TL			28	
21	TL	9/22/2022	Pre-Excavation	1	
21	MR			81	
21	BR			14	
22	BL	9/22/2022	Pre-Excavation	21	
22	BR			78	
22	MC			41	
23	TL	9/26/2022	Pre-Excavation	4,619	
23	BL			1,788	
23	MR			25	
24	TL	9/26/2022	Pre-Excavation	7,451	
24	BL			216	
24	MR			27	
25	BC	9/26/2022	Pre-Excavation	17	
25	MC			23	
25	TC			26	
26	BC	9/26/2022	Pre-Excavation	30	
26	LC			21	
26	TC			18	

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
27	TC	9/26/2022	Pre-Excavation	35	NR
27	MC			18	
27	BC			28	
28	LC	9/26/2022	Pre-Excavation	152	
28	MC			59	
28	RC			7	
29	LC	9/26/2022	Pre-Excavation	35	
29	BR			134	
29	TR			133	
30	TL	9/26/2022	Pre-Excavation	57	
30	TR			38	
30	MC			71	
31	TR	9/26/2022	Pre-Excavation	3	
31	BC			37	
31	TL			302	
32	LC	9/26/2022	Pre-Excavation	23	
32	TC			30	
32	BR			19	
33	MC	9/22/2022	Pre-Excavation	109	
33	BL			41	
33	TL			48	
34	TL	9/26/2022	Pre-Excavation	25,400	
34	TR			401	
34	BC			4,434	
35	BR	9/26/2022	Pre-Excavation	27	
35	TC			22	
35	BL			67	
36	TL	9/26/2022	Pre-Excavation	25	
36	MR			43	
36	BL			120	
37	BC	9/26/2022	Pre-Excavation	7	
37	MC			54	
37	TL			165	
38	TC	9/26/2022	Pre-Excavation	33	
38	MC			47	
38	BC			15	
39	BL	9/26/2022	Pre-Excavation	2	
39	MC			45	
39	TC			98	

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
40	TR	9/26/2022	Pre-Excavation	43	NR
40	BC			2	
40	LC			33	
41	MR	9/22/2022	Pre-Excavation	179	
41	BC			70	
41	MC			110	
42	TL	9/26/2022	Pre-Excavation	4,167	
42	TR			2,174	
42	BC			224	
43	TL	9/26/2022	Pre-Excavation	1,789	
43	TR			178	
43	BC			112	
44	TL	9/26/2022	Pre-Excavation	360	
44	TR			108	
44	MR			40	
1	BR	4/12/2023	Post-Excavation	348	17
1	MR			117	ND
1	MC			5,546	358
2	BL	4/12/2023	Post-Excavation	6,470	226
2	TL			8,521	269
2	TR			4,597	ND
3	BR	4/12/2023	Post-Excavation	4,538	ND
3	BL			4,788	165
3	TL			448	ND
4	BR	4/12/2023	Post-Excavation	8,009	416
4	MC			735	ND
4	TL			1,809	ND
5	BR	4/12/2023	Post-Excavation	4,607	73
5	MC			1,011	ND
5	TC			2,635	196
6	BC	4/12/2023	Post-Excavation	15,700	607
6	TR			231	ND
6	TL			1,335	214
7	BR	4/12/2023	Post-Excavation	6,561	544
7	MC			21,800	ND
7	TL			385	ND
8	BR	4/12/2023	Post-Excavation	2,695	135
8	ML			763	54
8	TR			1,735	51

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
9	TL	4/12/2023	Post-Excavation	649	ND
9	MC			3,508	277
9	TR			35	ND
10	BL	4/12/2023	Post-Excavation	1,772	ND
10	BR			1,956	ND
10	BC			739	ND
11	BR	4/12/2023	Post-Excavation	7,198	421
11	MR			356	19
11	TC			56	ND
12	MC	4/12/2023	Post-Excavation	301	13
12	TR			110	17
12	TL			4,484	308
13	TR	4/12/2023	Post-Excavation	2,163	ND
13	TL			4,553	84
13	BC			152	ND
14	BR	4/12/2023	Post-Excavation	330	63
14	MC			1,914	ND
14	BL			509	76
15	LM	4/12/2023	Post-Excavation	375	ND
15	MC			11	ND
15	TC			440	24
16	BC	4/12/2023	Post-Excavation	1,650	101
16	MC			944	85
16	TC			258	53
17	TL	4/12/2023	Post-Excavation	222	ND
17	MC			810	50
17	BR			2,905	63
18	BL	4/12/2023	Post-Excavation	287	70
18	TL			1,273	122
18	MR			2,358	66
19	BC	4/12/2023	Post-Excavation	62	12
19	MC			453	52
19	TC			836	13
20	BC	4/12/2023	Post-Excavation	1,772	374
20	MC			1,956	ND
20	TC			739	69
21	TR	4/12/2023	Post-Excavation	53	ND
21	TL			1,789	197
21	BC			2,218	114

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
22	BR	4/12/2023	Post-Excavation	6,309	86
22	TL			179	40
22	BL			219	ND
N/A	Ground	4/13/2023	Post-Excavation	47	ND
N/A	Ground			18	ND
N/A	Ground with Trash Bag			103	ND
N/A	Leaf Litter on Trash Bag			926	96
N/A	Leaves			15	ND
N/A	Leaves			24	ND
N/A	Tree Bark			1,918	352
N/A	LP-01	4/19/2023	Post-Excavation	123	32
N/A	LP-02			82	20
N/A	LP-03			164	43
N/A	LP-04			91	16
N/A	LP-05			96	23
N/A	LP-06			54	10
N/A	LP-07			67	10
N/A	LP-08			128	28
N/A	LP-09			63	16
N/A	LP-10			43	ND
N/A	WC-01	4/25/2023	Post-Excavation	41	ND
N/A	WC-02			49	ND
N/A	WC-03			35	ND
1	1	not documented	Post-Excavation	116	16
1	2			313	15
1	3			2,092	ND
1	4			690	ND
1	5			476	ND
2	1	not documented	Post-Excavation	214	14
2	2			970	ND
2	3			2,977	ND
2	4			267	15
2	5			1,081	52
3	1	not documented	Post-Excavation	4,065	160
3	2			1,400	38
3	3			7,889	ND
3	4			939	60
3	5			2,116	ND

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
4	1	not documented	Post-Excavation	1,555	ND
4	2			623	30
4	3			281	ND
4	4			17,500	259
4	5			1,757	ND
5	1	not documented	Post-Excavation	472	25
5	2			17,400	300
5	3			469	40
5	4			1,018	59
5	5			5,139	183
6	1	5/25/2023	Post-Excavation	964	119
6	2			1,676	41
6	3			3,116	ND
6	4			3,742	46
6	5			883	ND
7	1	5/25/2023	Post-Excavation	94	15
7	2			1,800	34
7	3			100	27
7	4			1,153	65
7	5			1,153	ND
8	1	5/25/2023	Post-Excavation	29	20
8	2			62	ND
8	3			330	21
8	4			1,235	ND
8	5			71	15
9	1	5/25/2023	Post-Excavation	507	20
9	2			1,816	ND
9	3			1,039	35
9	4			1,387	81
9	5			126	ND
10	1	5/25/2023	Post-Excavation	289	16
10	2			628	70
10	3			5,722	178
10	4			978	ND
10	5			24	116
11	1	5/25/2023	Post-Excavation	47	ND
11	2			7,151	71
11	3			252	17
11	4			890	ND
11	5			1,363	116
12	1	5/25/2023	Post-Excavation	81	10
12	2			513	23
12	3			426	ND
12	4			17	ND
12	5			118	ND

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
13	1	5/25/2023	Post-Excavation	644	ND
13	2			2,282	ND
13	3			540	26
13	4			2,093	248
13	5			175	ND
14	1	5/24/2023	Post-Excavation	37	13
14	2			1,712	ND
14	3			743	ND
14	4			1,636	ND
14	5			1,222	ND
15	1	5/24/2023	Post-Excavation	40	21
15	2			86	20
15	3			183	35
15	4			73	11
15	5			76	22
16	1	5/24/2023	Post-Excavation	67	11
16	2			36	16
16	3			119	14
17	1	5/15/2023	Post-Excavation	77	14
17	2			248	ND
17	3			154	36
17	4			779	39
17	5			89	15
18	1	5/15/2023	Post-Excavation	574	30
18	2			141	13
18	3			89	17
18	4			137	23
18	5			558	ND
19	1	5/9/2023	Post-Excavation	118	14
19	2			461	ND
19	3			588	40
19	4			288	33
19	5			75	ND

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
20	1	5/9/2023	Post-Excavation	102	40
20	2			20	7.5
20	3			2,123	56
20	4			35	10
20	5			1,262	117
21	1	5/9/2023	Post-Excavation	72	22
21	2			73	9
21	3			128	ND
21	4			40	ND
21	5			170	ND
22	1	5/9/2023	Post-Excavation	23	12
22	2			26	12
22	3			158	21
22	4			94	ND
22	5			230	ND
	Dark brown soil	8/3/2023	Post-Excavation	78	ND
	Light brown soil (with orange coloring)			26	ND
1	1	9/20/2023	Post-Excavation	209	ND
1	2			108	ND
1	3			283	41
1	4			189	ND
1	5			42	12
2	1	9/20/2023	Post-Excavation	36	ND
2	2			23	ND
2	3			20	ND
2	4			411	22
2	5			41	ND
3	1	9/20/2023	Post-Excavation	379	34
3	2			58	25
3	3			1,652	102
3	4			349	37
3	5			226	49
4	1	9/20/2023	Post-Excavation	291	12
4	2			418	21
4	3			550	53
4	4			117	13
4	5			70	14

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
5	1	9/20/2023	Post-Excavation	76	21
5	2			221	50
5	3			62	23
5	4			20	14
5	5			663	34
12	1	9/20/2023	Post-Excavation	43	ND
12	2			31	ND
12	3			ND	ND
12	4			29	ND
12	5			27	9
13	1	9/20/2023	Post-Excavation	25	ND
13	2			37	ND
13	3			51	12
13	4			103	ND
13	5			52	17
14	1	9/20/2023	Post-Excavation	1,104	202
14	2			1,372	111
14	3			964	132
14	4			97	ND
14	5			ND	ND
15	1	9/20/2023	Post-Excavation	104	ND
15	2			18	ND
15	3			378	35
15	4			187	ND
15	5			29	ND
16	1	9/20/2023	Post-Excavation	1,483	95
16	2			113	35
16	3			4,721	113
16	4			449	30
16	5			62	ND
17	1	9/20/2023	Post-Excavation	85	19
17	2			45	19
17	3			32	4
17	4			57	15
17	5			78	22
18	1	9/20/2023	Post-Excavation	109	21
18	2			170	40
18	3			19	5
18	4			23	ND
18	5			44	ND
22	1	9/20/2023	Post-Excavation	161	18
22	2			66	ND
22	3			155	24
22	4			1,416	ND
22	5			121	ND

TABLE 1
X-Ray Fluorescence
Combined Screening Results
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Grid Number	Location Description	Date Sampled	Pre- or Post-Excavation	Lead (ppm)	Arsenic (ppm)
MCP S-1 Standard				200	20
EPA RML - Residential				400	68
23	1	9/20/2023	Post-Excavation	1,443	ND
23	2			434	ND
23	3			10,300	403
23	4			1,222	117
23	5			2,441	331

Notes:

ppm = parts per million.

ND = Not Detected.

NR = Not Recorded.

MCP S-1 Standard = Massachusetts Contingency Plan Method 1 Soil Category S-1 Standards.

EPA RML - Residential = EPA Removal Management Levels for Residential Soil, HQ=3.

Results highlighted in YELLOW exceed the MCP S-1 standards.

Results highlighted in RED exceed the EPA RML - Residential standards.

TL = Top Left

TC = Top Center

TR = Top Right

ML = Middle Left

MC = Middle Center

MR = Middle Right

BL = Bottom Left

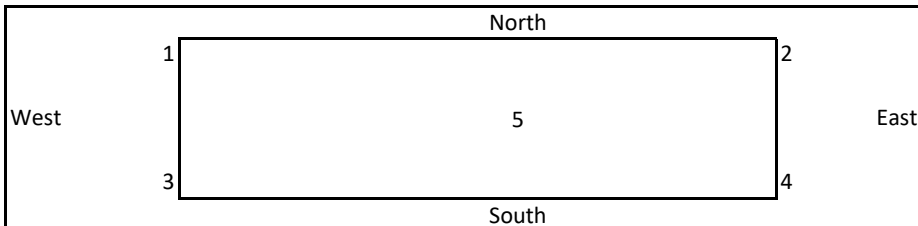
BC = Bottom Center

BR = Bottom Right

Example Grid:

TL	TC	TR
ML	MC	MR
BL	BC	BR

Grid:



Grid:

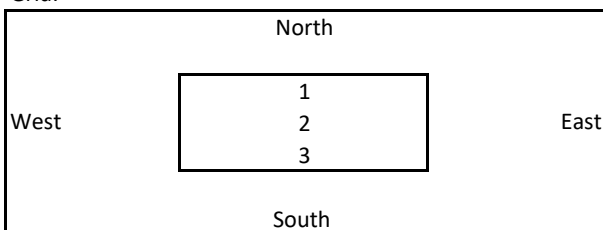


TABLE 1A
X-Ray Fluorescence
Post-Excavation Screening Results
for Indoor Shooting Range
Former Squannacook Sportsmans Club Site
Groton, Massachusetts

Sample Location	Lead (ppm)	Arsenic (ppm)
MassDEP S-1/GW-2 Standard	200	20
EPA RML - Residential	400	68
Far Back Center	76	10
Far Back Left	82	24
Far Back Right	120	15
Middle Center	107	22
Middle Left	102	14
Middle Right	134	17
Entrance Center	57	14
Entrance Left	44	18
Entrance Right	67	19

NOTES:

ppm = parts per million.

MCP S-1 Standard = Massachusetts Contingency Plan Method 1 Soil Category S-1 Standards.

EPA RML - Residential = EPA Removal Management Levels for Residential Soil, HQ=3.

Results bolded and highlighted in YELLOW exceed the MCP S-1 standards.

Results bolded and highlighted in RED exceed the EPA RML - Residential standards.

FBC = Far Back Center

MC = Middle Center

EC = Entrance Center

FBL = Far Back Left

ML = Middle Left

EL = Entrance Left

FBR = Far Back Right

MR = Middle Right

ER = Entrance Right

Example Grid:

FBR	MR	ER
FBC	MC	EC
FBL	ML	EL

Appendix D

Waste Disposal Summary Table

**WASTE DISPOSAL SUMMARY TABLE
FORMER SQUANNACOOK SPORTSMANS CLUB SITE
GROTON, MASSACHUSETTS**

Disposal Facility:		Heritage Environmental Services 7901 W Morris St Indianapolis, IN 46231	
Description of Materials:		SOIL AND DEBRIS CONTAMINATED LEAD	
Date	Manifest No.	Trucking Company	Weight (tons)
1/17/2023	001243818WAS	Goulet Trucking	24.39
1/17/2023	001243805WAS	Goulet Trucking	23.60
1/17/2023	001243806WAS	Goulet Trucking	26.70
1/17/2023	001243807WAS	Goulet Trucking	23.52
1/17/2023	001243809WAS	Goulet Trucking	15.68
1/17/2023	001243810WAS	Goulet Trucking	18.50
1/17/2023	001243811WAS	Goulet Trucking	23.68
1/17/2023	001243812WAS	Goulet Trucking	26.21
1/18/2023	001243813WAS	Goulet Trucking	20.71
1/18/2023	001243814WAS	Goulet Trucking	20.27
1/18/2023	001243815WAS	Goulet Trucking	24.77
1/18/2023	001243816WAS	Goulet Trucking	20.00
6/12/2023	001344269WAS	Goulet Trucking	17.75
6/12/2023	001344270WAS	Goulet Trucking	20.29
6/12/2023	001344271WAS	Goulet Trucking	18.56
6/12/2023	001344272WAS	Goulet Trucking	22.62
6/12/2023	001344273WAS	Heritage Environmental Services	21.5
6/12/2023	001344274WAS	Goulet Trucking	20.88
6/12/2023	001344275WAS	Goulet Trucking	20.89
6/12/2023	001344276WAS	Goulet Trucking	21.6
6/12/2023	001344277WAS	Heritage Environmental Services	23.85
6/12/2023	001344278WAS	Goulet Trucking	24.81
6/12/2023	001344279WAS	Goulet Trucking	25.69
6/13/2023	001344280WAS	Goulet Trucking	21.36
6/13/2023	001344281WAS	Goulet Trucking	19.81
6/13/2023	001344282WAS	Heritage Environmental Services	21.28
6/13/2023	001344283WAS	Goulet Trucking	22.4
6/13/2023	001344284WAS	Goulet Trucking	15.86
6/13/2023	001344285WAS	Goulet Trucking	17.41
6/13/2023	001344286WAS	Heritage Environmental Services	17.45
6/13/2023	001344287WAS	Goulet Trucking	15.79
6/13/2023	001344288WAS	Goulet Trucking	18.77
6/13/2023	001344289WAS	Heritage Environmental Services	21.58
6/14/2023	001344290WAS	Goulet Trucking	19.27
6/14/2023	001344291WAS	Goulet Trucking	20.62
6/14/2023	001344292WAS	Goulet Trucking	22.25
6/14/2023	001344293WAS	Heritage Environmental Services	22.29
6/14/2023	001344294WAS	Goulet Trucking	23.77

**WASTE DISPOSAL SUMMARY TABLE
FORMER SQUANNACOOK SPORTSMANS CLUB SITE
GROTON, MASSACHUSETTS**

Disposal Facility:		Heritage Environmental Services 7901 W Morris St Indianapolis, IN 46231	
Description of Materials:		SOIL AND DEBRIS CONTAMINATED LEAD	
Date	Manifest No.	Trucking Company	Weight (tons)
6/14/2023	001344295WAS	Goulet Trucking	28.33
6/14/2023	001344296WAS	Goulet Trucking	26.62
6/14/2023	001344297WAS	Heritage Environmental Services	18.62
6/14/2023	001344298WAS	Goulet Trucking	23.64
6/14/2023	001344299WAS	Goulet Trucking	20.82
6/14/2023	001344300WAS	Goulet Trucking	25.09
6/14/2023	001344301WAS	Heritage Environmental Services	23.16
6/15/2023	001344302WAS	Goulet Trucking	21.81
6/15/2023	001344303WAS	Goulet Trucking	22.15
6/15/2023	001344304WAS	Goulet Trucking	15.44
9/18/2023	001344305WAS	Heritage Environmental Services	21.09
9/18/2023	001344306WAS	Goulet Trucking	21.55
9/18/2023	001344307WAS	Goulet Trucking	23.08
9/18/2023	001344308WAS	Heritage Environmental Services	25.59
9/18/2023	001344309WAS	Goulet Trucking	25.22
9/18/2023	001344310WAS	Goulet Trucking	25.43
9/18/2023	001344311WAS	Heritage Environmental Services	27.82
9/18/2023	001344312WAS	Goulet Trucking	28.48
9/18/2023	001344313WAS	Goulet Trucking	28.1
9/18/2023	001344314WAS	Heritage Environmental Services	24.77
9/19/2023	001344315WAS	Goulet Trucking	23
9/19/2023	001344316WAS	Heritage Environmental Services	27.62
9/19/2023	001344317WAS	Goulet Trucking	29.31
9/19/2023	001344318WAS	Heritage Environmental Services	28.08
9/19/2023	001344319WAS	Goulet Trucking	24.39
9/19/2023	001344320WAS	Goulet Trucking	27.02
9/19/2023	001344321WAS	Heritage Environmental Services	23.56
9/19/2023	001344222WAS	Goulet Trucking	26.12
9/19/2023	001344323WAS	Goulet Trucking	25.92
9/19/2023	001344324WAS	Heritage Environmental Services	22.16
9/20/2023	001344325WAS	Heritage Environmental Services	19.44
9/20/2023	001344326WAS	Heritage Environmental Services	20.49
9/20/2023	001344327WAS	Heritage Environmental Services	22.31
9/20/2023	001344228WAS	Heritage Environmental Services	22.14
9/28/2023	001344329WAS	Heritage Environmental Services	17.03
9/28/2023	001344330WAS	Heritage Environmental Services	20.33
9/28/2023	001344231WAS	Heritage Environmental Services	16.91
9/28/2023	001344332WAS	Heritage Environmental Services	21.93

**WASTE DISPOSAL SUMMARY TABLE
FORMER SQUANNACOOK SPORTSMANS CLUB SITE
GROTON, MASSACHUSETTS**

Disposal Facility:		Heritage Environmental Services 7901 W Morris St Indianapolis, IN 46231	
Description of Materials:		SOIL AND DEBRIS CONTAMINATED LEAD	
Date	Manifest No.	Trucking Company	Weight (tons)
9/28/2023	001344333WAS	Heritage Environmental Services	21.89
9/28/2023	001344234WAS	Heritage Environmental Services	17.71
9/28/2023	001344235WAS	Heritage Environmental Services	18.35
9/28/2023	001344236WAS	Heritage Environmental Services	19.44
TOTAL			504.23

Disposal Facility:		Tradebe Treatment and Recycling LLC 4343 Kennedy Avenue East Chicago, IN 46312	
Description of Materials:		NA3077 Hazardous Waste Solid, N.O.S. (Lead) 9 III RQ D008	
Date	Manifest No.	Trucking Company	Weight (pounds)
12/4/2023	025579056JJK	Tradebe Transportation, LLC	800.00

IN = Indianapolis

RQ = Reportable Quantity

DOT = Department of Transportation

HC = Hazard Class

WID = Waste ID

PG = Packing Group