



RAB MEETING MINUTES

Date/Time: Thursday, August 11, 2022, 6:30 p.m. to 8:15 p.m.

Location: Virtual meeting via Microsoft Teams

Attendees: Thomas Lineer, Steve Cardon, Bill Millar (U.S. Army)
Penny Reddy, Peter Phillips (U.S. Army Corps of Engineers [USACE])
Diane Baxter (Massachusetts Department of Environmental Protection [MassDEP])
Chris Brady (Massachusetts Development Finance Agency [MassDevelopment])
RAB Board Members: Chris Mitchell (Harvard Board of Health), Laurie Nehring and Julie Corenzwit (People of Ayer Concerned about the Environment [PACE]), Amy McCoy, Dave McCoy, Alix Turner
Richard Doherty (PACE)
Martha Morgan (Nashua River Watershed Association)
Frank O'Connor (Town of Harvard)
Chris Turner (Haley & Aldrich, Inc.)
Libby Levison (Harvard Board of Health)
Andy Vitolins, Steven Perry, Amy Henschke, Mark Pasquarello, Dawn Penniman, Whitney Plasket (SERES-Arcadis 8(a) Joint Venture 2, LLC [S-A JV])
Immaculate McHome, Morgan Cedwyn, Omar Hamoda, Jack Adgate, Dale Levandier, Pat, Ron, and other attendees participating by phone or otherwise unidentified (citizens and guests)

Slides: RAB meeting slides are available on the project website at:

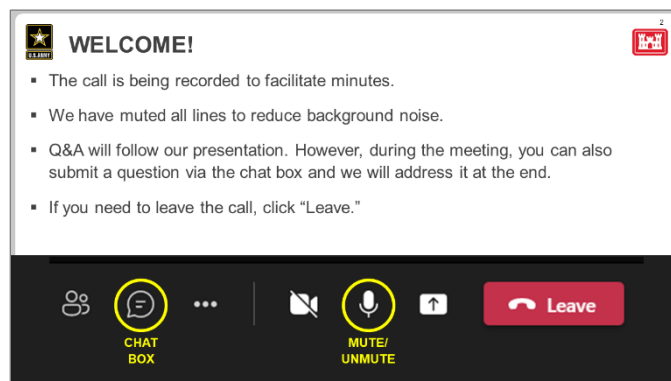
<https://www.nae.usace.army.mil/missions/projects-topics/former-fort-devens-environmental-cleanup/>.

Please Note: Discussions described in these minutes have been paraphrased as needed for clarity. The invitation for this meeting is provided for reference at the end of these meeting minutes.

WELCOME & OPENING COMMENTS



Steven Perry (S-A JV Community Involvement Specialist) opened the meeting and welcomed the attendees to the meeting.



Steven Perry indicated that the meeting was being recorded to generate minutes, which will be available after the meeting. He noted that a PDF file of the slides had been sent out and could be used by those attending by phone to follow along if needed. He reminded everyone that microphones will be muted to avoid background noise. He noted that attendees can use the mute/unmute button at the bottom of their screen to talk or they can enter comments in the chat box. He noted that there would be a presentation by Peter Phillips (USACE Project Manager) and that there would be time for questions after this presentation. Then, the meeting would resume to discuss the rest of the project activities, and there would be another period for questions after that.

Former Fort Devens Army Installation Restoration Advisory Board (RAB) Meeting Minutes



WELCOME!

Thank you for joining us tonight.

Thomas Lineer U.S. Army HQDA/ODCS G-8 Base Realignment and Closure (BRAC) Environmental Coordinator (BEC)	Our Invited Speaker: Peter Phillips, P.G. Project Manager, Military Section, Environmental & Munitions Design Center USACE - Baltimore District
Penny Reddy U.S. Army Corps of Engineers (USACE) - New England District	Our Community Board Members: Julie Corenzwit Amy McCoy Dave McCoy Chris Mitchell Laurie Nehring Alix Turner
Andy Vitolins, Amy Henschke, Steven Perry, Mark Pasquarello, and Dawn Penniman SERES-Arcadis JV Team	
ZaNetta Purnell U.S. Environmental Protection Agency (USEPA) Region 1 Public Affairs Specialist	
Diane Baxter Massachusetts Department of Environmental Protection (MassDEP)	

Steven Perry announced the list of the leaders and contributors for the call: Tom Lineer (U.S. Army); Penny Reddy (USACE New England District Project Manager); Steven Perry (S-A JV Community Involvement Specialist); Andy Vitolins (S-A JV Project Manager); Mark Pasquarello (S-A JV Community Outreach Manager); Amy Henschke (S-A JV Meeting Coordinator); Dawn Penniman (S-A JV Digital Administrative Record [AR] Coordinator); Diane Baxter (MassDEP); Peter Phillips (USACE Baltimore District Project Manager) and community Restoration Advisory Board (RAB) members Julie Corenzwit, Amy McCoy, Dave McCoy, Chris Mitchell, Laurie Nehring, and Alix Turner.

Steven mentioned that he visited Fort Devens this week and was able to meet in person with some of the RAB members. He expressed his

appreciation for them taking the time to do that this week.

WELCOME!

Tonight's topics

- 1 Community Involvement & RAB Update
- 2 Nashua River Military Munitions Overview
- 3 Community Board Member Presentation
- 4 Project Updates
- 5 Next Steps & Meeting
- 6 Questions & Answers

Steven Perry summarized the topics to be covered: updates about community involvement and the RAB members, a Nashua River military munitions overview, a presentation by Laurie Nehring about the testing of water sediments and the pulling of water chestnuts, project updates from Andy Vitolins, a Q&A session, and next steps.

COMMUNITY INVOLVEMENT & RAB UPDATE

1 | COMMUNITY INVOLVEMENT & RAB

Implementing the Community Involvement Plan (CIP)

Next fact sheet is being prepared and will be distributed in fall 2022

Information repository is at the Ayer Library and being updated with PFAS project documents

CIP is available on the Fort Devens Environmental Cleanup website at: <https://www.nae.usace.army.mil/missions/projects-topics/former-fort-devens-environmental-cleanup/>

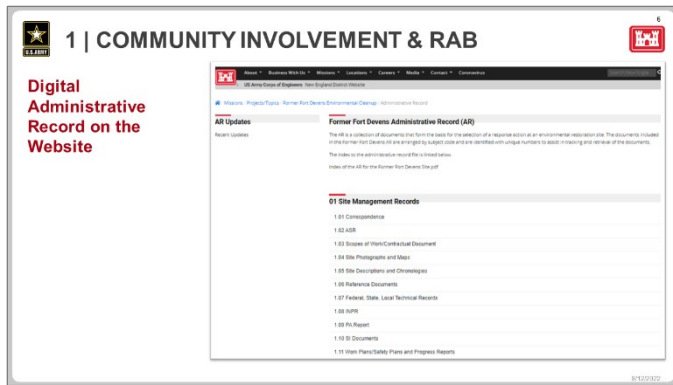
RAB meetings will continue on the second Thursday of the month through 2022

Military munitions outreach efforts continue through summer/fall 2022

Digital Administrative Record (AR) being updated (demo today)

Steven Perry started with an update on community involvement:

- The Community Involvement Plan is on the website indicated on the slide: <https://www.nae.usace.army.mil/missions/projects-topics/former-fort-devens-environmental-cleanup/>.
- Fact sheets are being distributed every quarter or so to provide more information to the public; the latest one is underway. One possible topic for the next fact sheet could be to describe interim remedial measures (IRMs) and how they work relative to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. Another possible topic could be a site-specific topic such as the fire training area (FTA) where there is sampling getting underway for per- and polyfluoroalkyl substances (PFAS).
- The information repository is available at the Ayer Library. It is being updated. There is a small number of physical documents there, but the librarian indicated that they have cleared several shelves to prepare for an expansion. Alternatives to Ayer Library are also being considered for suitability in terms of public access, hours, and control of the documents.
- The RAB meetings are continuing every 3 months, on the second Thursday of the month.
- Another activity going on is outreach efforts about military munitions. There was a significant push of information in June to distribute critical information to stakeholders, bait and tackle stores, etc. Steven Perry and Andy Vitolins were at the boat launch this week and were able to see the sign there giving information about munitions.
- Steven Perry stated that there would be an update from Dawn Penniman about the digital AR on the project website next.



Dawn Penniman (S-A JV Digital AR Coordinator) has been working to get paper documents digitized so that they can be stored and sorted in the digital AR. Dawn gave a demonstration of the work that has been done so far on the digital AR, which is still a work in progress and is not fully live yet.

The categories listed on the AR website are based on United States Environmental Protection Agency (USEPA) guidance for ARs. Not every category will be used. For example, Site Photographs and Maps may not be populated right now. Dawn showed examples of documents that have been uploaded for viewing like the Community Relations Plan under 8.06, CRP. Also, she showed where the RAB meeting minutes will be uploaded under 8.10, Public Meeting Minutes/Transcripts.

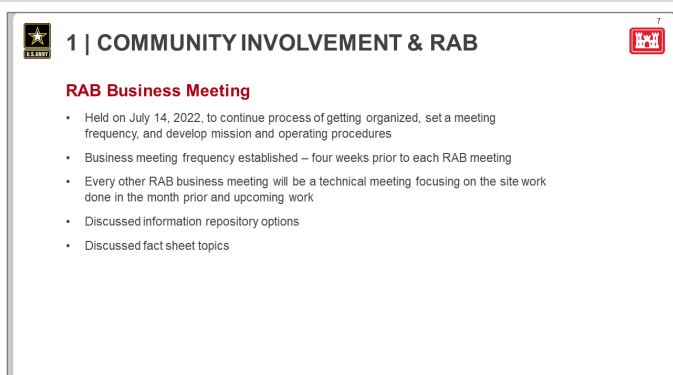
Steven Perry noted that the category numbers follow the order of the CERCLA Superfund process. There are remedial investigation (RI) files at the front, followed by feasibility studies (FSs), records of decisions (RODs), remedial actions, etc. These represent the main steps of the CERCLA process. Dawn noted that the items with uploaded documents have a plus sign to the right side of the line. After clicking on the plus sign, the document names will appear below. The focus so far has been on Shepley's Hill Landfill (SHL) and PFAS documents. Currently, the file names of the uploaded documents start with the site abbreviation followed by the date, an abbreviation of the document name, and an abbreviation of the location.

Dawn also showed the index, which will be available on website as well. The index is a spreadsheet, and the columns are named according to USEPA guidance. The file name, area, date, full title, authors, type of document, and document size will be shown for each document. There will be links from the file names in the spreadsheet to the documents themselves.

Dawn also demonstrated clicking on a document name in the digital AR to open the PDF file. She clarified that the spreadsheet will be searchable as an Excel file and will be able to be filtered by document type and keyword, etc. Steve noted that someone using the index does not need to know the full title of a document, they can search for it by keyword. If people have difficulties with the website or are not able to use Excel, there is an email that can be used to request help: FormerFortDevensRAB@arcadis.com.

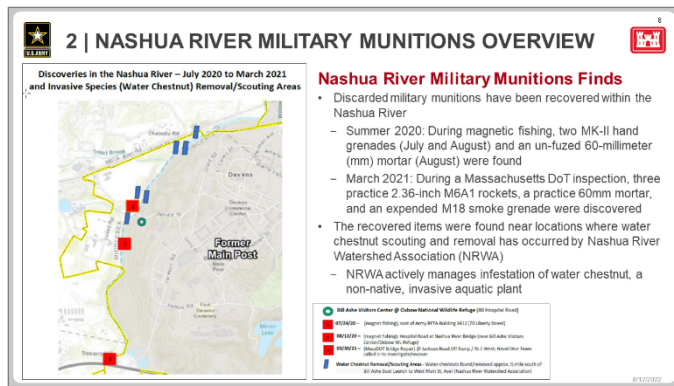
Dawn noted that the first wave of documents should be available online in the next couple of weeks. This will be starting with two areas first, then RI documents, RODs, action memos, etc. Work plans and drafts of documents will not be uploaded; only final documents will be uploaded. Steve added that this digital AR will provide for easy public access to the documents. He noted that an email will be sent out when it's ready for viewing, even though progress will continue to be made after that point.

Laurie Nehring requested that abbreviations be written out in the index because some people may not know what they mean. Dawn noted that the file names can't be too long or there may be technical issues. Steve commented that instructions or an acronyms list could possibly be provided to help with this. Andy Vitols added that most plans have an acronym list and glossary so those could be posted as well for convenience.



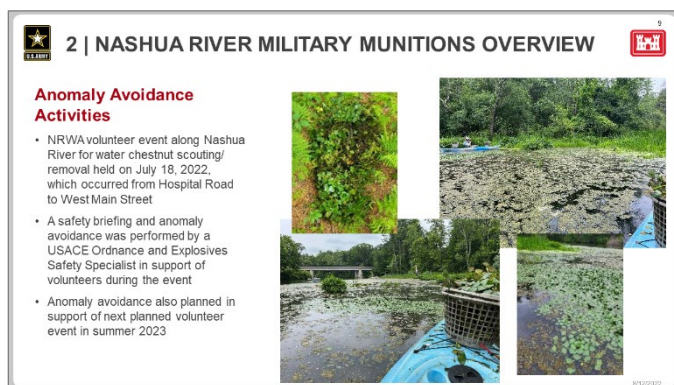
Steven Perry stated that the RAB had a business meeting on July 14, 2022, to prepare for this RAB meeting and to get more organized. It was decided that the business meetings will be held about 4 weeks before the quarterly public meetings. The value of having the RAB business meeting be a technical meeting was also discussed. This could provide a deeper dive into selected topics and locations. The physical AR location was also discussed as well as topics for the next fact sheet.

NASHUA RIVER MILITARY MUNITIONS OVERVIEW



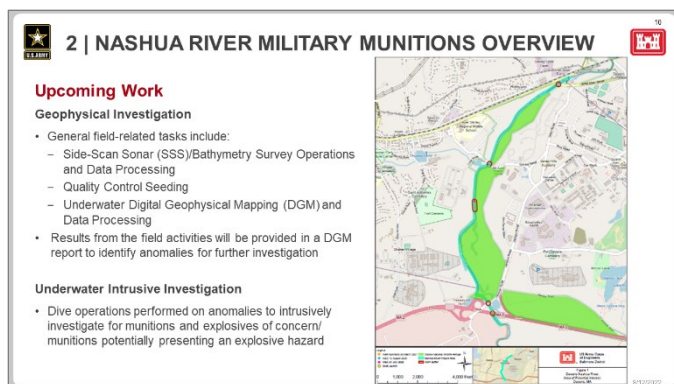
has occurred by the Nashua River Watershed Association (NRWA).

The figure on the left of the slide shows in red where munitions items were located. The blue rectangles show the locations of the water chestnut scouting and removal areas. The NRWA has actively managed the water chestnut growth because it is a non-native aquatic plant. The water chestnut scouting and removal activities are performed annually from late June to July. Although there is a low probability of encountering military munitions, anomaly avoidance activities were performed during the recent volunteer event.



running aground. No anomalies were observed or detected during screening. During the safety briefing, the three Rs of explosives safety were identified: recognize, retreat, and report. Anomaly avoidance will also be provided in the volunteer event in the summer of 2023.

Peter noted that Martha Morgan, the NRWA Water Programs Director, was attending the RAB meeting as well.



towed array, which will scan the bottom of the river for metal anomalies. Prior to the DGM survey, dummy metal objects will be seeded as part of a quality control measure. After the quality control measure is completed, the actual DGM survey can be conducted. After the data is processed, the results will be used to identify targets in the river. Those targets will be investigated during the underwater intrusive investigation, which would confirm whether there is a concern about explosive hazards.

Steven Perry introduced Peter Phillips as the next presenter.

Peter introduced himself as a project manager with USACE Baltimore District in the Environmental Munitions Design Center working on the military munitions investigation at the Nashua River.

Peter described the discarded military munitions that were recovered in 2020 and 2021 along a portion the Nashua River from the Route 2 bridge, north to Hospital Road. Items found in summer of 2020 were located by magnet fishing, which is now prohibited in the river. Items found in March 2021 were identified during a Massachusetts Department of Transportation bridge inspection. The recovered items were found near locations where water chestnut scouting and removal



Peter Phillips described the photos from the recent event on July 18, 2022. During this event, an ordnance and explosives safety specialist from the USACE Baltimore District performed a safety briefing and anomaly avoidance to support the volunteer effort of the NRWA. The event occurred from Hospital Road to W Main Street.

The water chestnuts are shown in the photos on the slide. They were collected in kayaks and placed in laundry baskets. The plants were offloaded near the boat launch where they were dried and composted. The volunteers did not need to leave their kayaks to collect the plants. The safety specialist did use a detector in shallow areas where there was a risk of

Peter Phillips noted the upcoming work related to the munitions investigation. Along the 3-mile stretch of the river shown in blue on the figure, there will be a geophysical investigation and an underwater intrusive investigation. To start, a side-scan sonar and bathymetry survey will be performed. It will involve the use of underwater equipment to look for obstructions in the river that could impeded the collection of digital geophysical mapping (DGM) data.

The underwater DGM will be focused on five areas of potential interest. Those areas are shown in red on the figure. However, it will also include the 3-mile stretch shown in blue. The DGM will involve the use of an underwater



**2 | NASHUA RIVER MILITARY MUNITIONS OVERVIEW**

Upcoming Work Sequence

- **Project Plan**
 - Draft Munitions Response Quality Assurance Project Plan (MR-QAPP) submitted to USEPA/MassDEP on July 18, 2022, under review
- **Geophysical Investigation**
 - Survey activities to commence dependent on approval of the MR-QAPP
- **Underwater Intrusive Investigation**
 - Investigation of underwater anomalies to begin as soon as practical following approval of anomaly list resulting from geophysical investigation
- **Removal Site Evaluation (RSE) Addendum**
 - Addendum to RSE to be prepared following conclusion of the underwater intrusive investigation

8/10/2022

Peter Phillips explained the upcoming work sequence. The project is currently in the project planning phase. The Draft Munitions Response Quality Assurance Project Plan (MR-QAPP) is under review. The agencies are working to expedite the review and approval of the plan. After approval, the geophysical and intrusive investigations can proceed. The investigations results will be included in the Removal Site Evaluation Addendum.

Peter noted that Martha Morgan had clarified in the chat box that the recent water chestnut event was primarily done by staff members and that they did not go all the way to W Main Street.

Diane Baxter (MassDEP) asked if the geophysics was limited to the red areas and what the difference was between the red and the blue markings on the figure. Peter replied that the red circles are areas of potential interest where the geophysical investigation will be more focused. The grid spacing will be tighter so there is more coverage there. These are areas where there is more potential for anomalies to be present. The blue line represents the area that will be part of the survey at a less tightly spaced grid.

A community member, Pat, asked if the river would be closed to kayakers during the testing. Peter replied that kayaks would probably be redirected if possible. However, the survey should go quickly, so it shouldn't completely shut down this section of the river so that folks couldn't use it. Measures may be able to be taken to allow kayakers to share the river.

Steven Perry noted that there is a public outreach effort regarding military munitions, and as dates become clear, information could be provided to stakeholders and others on the project's contact list.

Marth Morgan asked what would be the earliest the geophysical studies could be performed once the MR-QAPP is approved. Peter replied that it is dependent on approval and the earliest would be the fall. He noted the challenge is that during the winter months, frozen water could prevent completion of the investigation. Steven noted that the RAB meetings occur every quarter, so more updates could be given along the way.

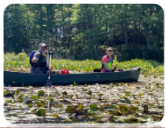
THIRD PARTY PFAS SAMPLING UPDATE

**3 | THIRD-PARTY PFAS SAMPLING UPDATE**

This presentation is being given by People of Ayer Concerned for the Environment (PACE) as information to the RAB members. This presentation is provided by PACE without input, or review of the HQDA G-9 (BRAC).

8/10/2022

Steven Perry introduced Laurie Nehring. He noted that this presentation is provided by Laurie, representing PACE, and has not been reviewed by the Army.



Water Chestnut PULL Campaign:
Grove Pond, Ayer, MA
2022

Funded by a grant from
Nashua River Wild & Scenic Stewardship Council.
Additional funding provided by
Ayer DPW, Nashua River Watershed Association and PACE

The problem:
Invasive European Water Chestnuts



May 31, 2022



June 30, 2022



Rosette



Known and Suspected Contamination of Grove Pond

- **Arsenic**
- Chromium
- Lead
- **PFAS Compounds.**

Timeline:
April 30, 2022

Turtles Everywhere!



Phase I: Field Work on May 12, 2022. Sampled 3 different sites.

- **At each site we collected**
 - (A) Surface water sample
 - (B) Sediment sample
- Metals: Arsenic, Chromium, Lead
- List of 24-PFAS



A photograph of a pond with lily pads and a small wooden structure in the background. The pond is filled with green lily pads, and a small wooden structure is visible in the background. The water is dark and reflects the surrounding environment.



A photograph showing a pond almost completely covered by a dense layer of green lily pads. A narrow, clear channel of water runs through the center of the pond, reflecting the sky. The background is filled with a thick forest of tall, green trees under a clear blue sky. The edge of a boat is visible in the bottom right corner.

[illegible]

Phase I: 24- PFAS		Samples taken 6/12/2022 from 3 sites.			EPA Lifetime Health Advisory for Drinking Water: PFAS=PFDA		MA DEP PFAS-4 for Drinking Water
24-PFAS in SURFACE WATER from KRIZZ	Site One (µg/l)	Site Two (µg/l)	Site Three (µg/l)				
PFBA	2.152	3.66	3.09				
PFHxA	5.06	5.02	5.51				
PFHxA	0.08	0.02	0.80				
PFHpA	0.04	4.80	4.79			20	
PFHxO	7.86	7.60	8.41			20	
PFOn	14.7	14.4	14.3		70	20	
PFOD	6.46	6.44	6.32			20	
TOTAL: 24- PFAS	49.3	49.00	48.260		NA	NA	
*Total for MA DEP PFAS-4	34.08	33.660	33.600		NA	20	
EPA-LHM DOI (PFAS=PFDA)	21.15	20.94	20.6		70		
24-PFAS in SEWAGE TREATMENT	ND	ND	ND				



Alpha Analytical Test Results

Laboratory Test Results for Water Chestnut Plants
(Roots/Stems/Rosettes)

Phase II Metals: Samples taken 6/5/2022. Combined								MA DEP Concentration in "Natural" Soils (ppm)	
	Combined ROOTS: (mg/kg)	Combined STEMS: (mg/kg)	Combined ROSETTES: (mg/kg)	EPA Action Level		MA DEP Action Level (ppm)			
Arsenic Total	6.92	3.18	0.753			50		50	
Chromium	Did not test for this.	NA	NA						
Lead Total	2.37	1.34	0.366					100	
Phase II - 24: PFAS.									
Samples taken 6/5/2022 from TWO sites.									

Pull Campaign Began June 30, 2022.
Pat Lynch, retired 3rd grade teacher.



Anne Gagnon & Marion Stoddart



The Gang!



John Fisher, Nashua NH



Becky Miller &
Laurie Sabol



First Year.. Paved the Way!






PROJECT UPDATES & UPCOMING WORK



4 | PROJECT UPDATES & UPCOMING WORK



Final Documents Posted Since Last RAB Meeting

- N/A

Draft Documents Submitted to Agencies Since Last RAB Meeting

- Draft In-Situ Air Sparge Pilot Test Implementation Report – Shepley's Hill Landfill (SHL)
- Revised Draft Post-ROD AOC 69W Supplemental Remedial Investigation (RI) Work Plan – Main Post
- Revised Draft Post-ROD AOC 43G Supplemental RI Work Plan – Main Post
- Spring 2022 Long-Term Monitoring Data (unvalidated) – SHL, Main Post, Former Moore Army Airfield (MAAF)
- Draft Land Use Control Implementation Plan (LUCIP) AOCs 44 and 52 – Main Post
- Draft LUCIP AOC 69W – Main Post
- Draft MR-QAPP – Nashua River

Comments / Responses to Comments / Draft Final Documents Since Last RAB Meeting

- USEPA Comments Received: Draft PFAS Area 1 Phase 2 RI Work Plan, 2021 Annual Reports, Draft LUCIP AOC 44/52
- MassDEP Comments Received: Draft In-Situ Air Sparge Pilot Test Implementation Report, Revised Draft Post-ROD AOC 69W and 43G Supplemental RI Work Plans, Draft LUCIPs (AOCs 44/52 and 69W), 2021 Annual Reports

Andy Vitols introduced himself as the Project Manager for the environmental work being done at Fort Devens by SERES-Arcadis JV. He is located in Albany, New York, but visits Fort Devens quite often.

Andy mentioned that people had commented in the past that they would like to hear more than just one-line updates on what has been going on. So, he was going to attempt to provide that level of information tonight.

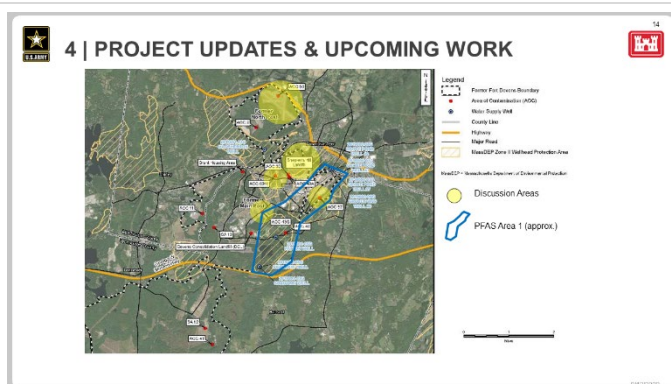
Andy reminded the attendees that the process under the federal facility agreement and CERCLA is as follows.

Documents such as work plans, reports, etc., undergo a

review during which a draft is submitted, the agencies comment on them, a response to comments is submitted, and then a draft final report is submitted that incorporates those comments. The last stage is then a final document. Final documents get uploaded to a document repository, public website, or AR.

There have been no final documents posted for this project in the last 3 months. However, there have been quite a few documents that have been submitted to the agencies since the last RAB meeting:

- There has been pilot testing at SHL for air sparging that has been discussed in the past. This involves air injection for potential arsenic treatment.
- There have been draft post-ROD supplemental remedial investigation (SRI) work plans for two sites: Area of Concern (AOC) 69W and AOC 43G. These are historical sites that have RODs and where there is more investigation being done to see how long-term remedies are performing.
- Long-term monitoring (groundwater sampling) continues to be conducted twice a year, once in the spring and once in the fall. After the spring sampling, the data is submitted to the agencies. After the fall sampling, the annual reports are prepared.
- Land use control implementation plans (LUCIPs) have been prepared for two sites: AOCs 44 and 52 and AOC 69W [next to the Parker Charter School, which is the former Fort Devens Elementary School]. These are CERCLA documents that discuss the administrative controls that are present before, during, or after remediation happens. These could include restrictions on certain uses.
- The MR-QAPP for the Nashua River has also been submitted and is under review.
- Comments have been received from the USEPA and MassDEP on the PFAS Area 1 Work Plan, the annual reports, the LUCIPs, and the other various work plans listed above on the slide. There are timelines that go along with those. USEPA and MassDEP submit their comments separately but they both review and respond to all the documents.



Andy Vitols reviewed the map of Fort Devens on the slide and pointed out the important locations that will be discussed. He noted the location of the Main Post and North Post. He pointed out Nashua River and Grove Pond, which Laurie Nehring had discussed earlier in her presentation.

Andy pointed out areas that would be discussed in the upcoming slides such as AOC 50 (the former Moore Army Airfield and the former FTA), SHL, AOCs that have SRI work plans (AOC 69W [Parker Charter School], AOC 43G [a former gas station], and AOC 57 [along Barnum Road and Cold Spring Brook (CSB), a former petroleum release

from the motor pool], PFAS Area 1 (outlined in blue, covered under the work plan mentioned above), Area 2 (not shown), and Area 3 (not shown).





4 | PROJECT UPDATES & UPCOMING WORK

Former Moore Army Airfield Updates

Current Concerns

- PFAS in soil and groundwater at Former Fire Training Area (FTA)
- PFAS discharge to surface water (Nashua River)
- Remnant perchloroethylene (PCE) in groundwater (post-remediation)

FTA Pre-IRM Investigation and Pilot Study

Objectives: Collect data to support IRM at FTA.

Tasks: Collect soil and groundwater samples to evaluate PFAS concentrations with depth; conduct bench-scale pilot study of potential in-situ remedial technologies for soil.

Updates: Soil and groundwater sampling began in June 2022 and is ongoing; soil samples for bench-scale study have been collected.



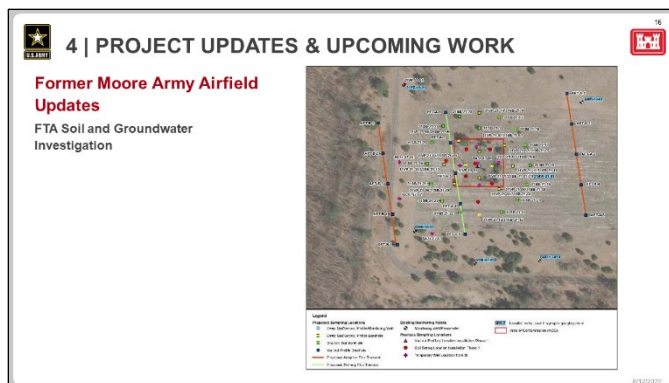
Andy Vitolins gave updates on the former Moore Army Airfield. The picture on the slide shows a zoomed in view of the airfield. Andy noted that a previous comment from the RAB attendees was that they wanted to know more about what things are being addressed or what the objectives are, so on this slide, he indicated what the concerns are at the airfield.

The primary concern is PFAS in the soil and groundwater from the former FTA (shown with a red dashed line on the slide). This area is a documented source of PFAS, and there is known groundwater transport of PFAS towards the Nashua River here.

There was also a release of dry-cleaning fluids (perchloroethylene) from a parachute drying area nearby. There has been remediation going on for almost 15 years for that. The remnants of the plume are all that remains, and it is something that is still monitored.

Andy then described what an interim remedial measure (IRM) is and how it fits into the regulatory process. In the CERCLA process, normally there will be a preliminary assessment and a site inspection (SI) as the first steps. After that is the RI, followed by an FS and the decision document (ROD). Then the remediation happens if it is needed. An IRM happens at places where there is known contamination and where it is better if that remediation takes place sooner rather than later. An IRM can happen before or during the RI or even during the FS phase (any time before the ROD). Here the FTA is a known area of PFAS contamination and a source of PFAS to groundwater, so the Army is evaluating doing an IRM. The work that is going on is meant to characterize the extent of the PFAS in soil and groundwater so they can plan the IRM going forward.

Steven Perry added that an IRM is not a substitute for the full CERCLA process; they run in parallel. The IRM is a way to move faster and to address the known area. Meanwhile, the full regulatory process goes on as well. Andy added that sometimes the IRM becomes the final remedy; however, sometimes it does not and additional remediation happens. This varies depending on the site.



Andy Vitolins described the data collection that is happening at the former Moore Army Airfield. The image is zoomed in on the FTA. The area shown is not huge, maybe 100 feet by 100 feet.

Every point on the map is a soil sampling location, a groundwater sampling location, or a groundwater monitoring well. The wells are shown with a different symbol from the sampling locations and blue labels. The lines on the map are transects. Groundwater flows from right to left on the map, with the Nashua River to the left. At the transects, soil and groundwater samples are collected at different depths. The water table is very deep here, about

60 or 100 feet down, and the samples are collected even deeper than that.

The samples give an idea of how much PFAS is entering the site and how much is leaving the site to determine if the site contributes to the amount of PFAS. All the collected data will go into forming an IRM, which could involve things like preventing surface water infiltration during the remedy process or other things like shallow excavation. Andy pointed out the magnitude of the investigation and the number of samples being taken.

The Army started the investigation in June, and it is still ongoing. The drilling rig is out there every day, and the sampling probably will not be finished until next month. The timeline includes additional sampling for groundwater and data evaluation throughout the fall and winter.



4 | PROJECT UPDATES & UPCOMING WORK

Area 1 Phase 2 PFAS RI Update

Current Concerns

- Horizontal and vertical extent of PFAS in soil and groundwater (overburden and bedrock)
- Sources of PFAS in drinking water supply wells at former Fort Devens (Grove Pond, Patton, and Shabokin wells)
- PFAS discharge to surface water bodies
- Source of PFAS in private wells in Harvard
- Potential for PFAS migration beyond surface water bodies (Cold Spring Brook, Grove Pond)
- Risks to human health and the environment from PFAS presence in environmental media

Andy Vitolins gave an update on the Area 1 PFAS RI. He pointed out several locations on the map including Grove Pond, the eastern end of Area 1 (defined by CSB and the former installation boundary), and the western side. In the image, the yellow area is where known existing groundwater samples exceed the Massachusetts PFAS6 20 parts per trillion (ppt) level. The orange color is where perfluorooctane sulfonic acid (PFOS) or perfluorooctanoic acid (PFOA) or the sum exceeds the USEPA lifetime health advisory of 70 ppt.

The Area 1 investigation includes investigation within Area 1 and also within off-site areas across CSB to the east and in

private drinking water wells in Harvard. The Army has done sampling of the wells in past, and PFAS was detected. The investigation will determine where the contamination could be coming from and if it is associated with Fort Devens.

The SI identifies if PFAS is present or absent and the RI defines the nature and extent of what is found. That plays into what the sources of PFAS are for the supply wells at Grove Pond and also the Patton and Shabokin wells, which are located further south. There will also be surface water sampling as part of the RI.

Andy mentioned that there are concerns present regarding the risks to human health and the environment from PFAS.

4 | PROJECT UPDATES & UPCOMING WORK

Area 1 Phase 2 PFAS RI Update

Draft Work Plan Summary (Pre-USEPA/MassDEP Comment)

Task	Concern/Area Addressed	Quantity (as presented in draft document)
Surface Geophysics (Seismic profiling)	Bedrock surface depth	30,000 linear feet
Vertical Aquifer Profiling	Horizontal and vertical extent of PFAS in overburden groundwater	15 locations (8 intervals each)
Overburden Monitoring Well Installation	Horizontal and vertical extent of PFAS in overburden groundwater	30 wells (in addition to 37 existing)
Bedrock Monitoring Well Installation	Presence of PFAS in bedrock aquifer	11 wells (in addition to 3 existing)
Stream Gauge Installation	Groundwater/surface water discharge patterns	6 locations (in addition to 8 existing)
Surface Water and Sediment Sampling	Presence and concentrations of PFAS in surface water and sediment	40 locations in 7 surface water bodies (CSB, CSB Pond, Mirror Lake, Robbins Pond, Grove Pond, Plow Shop Pond, Balch Pond)
Fish Tissue Sampling	Presence and concentration of PFAS in edible portions of fish (human health consumption risk)	6 surface water bodies, 10 fish per location (CSB, Mirror Lake, Robbins Pond, Grove Pond, Plow Shop Pond, Nashua River)
Groundwater Sampling	Presence and concentrations of PFAS in overburden and bedrock groundwater. Groundwater flow direction	2 events – fall/spring, 92 locations per event
Human Health Risk Assessment	Potential human exposure pathways and risk associated with PFAS in the environment	Human Health Risk Assessment (HHRA) per EPA guidance
Ecological Risk Screening	Potential ecological exposure pathways and risk associated with PFAS in the environment	Screening Level Ecological Risk Assessment (SLERA) per EPA guidance

Andy Vitolins presented the highlights of the Area 1 Draft Work Plan as submitted to USEPA and MassDEP in an effort to address previous comments for more information on what is proposed in the current work plan. The work plan will be revised based on comments and discussions with the regulators.

- Geophysics—will look at bedrock surface depth to determine where to place bedrock wells;
- Vertical aquifer profiling—will use temporary wells to collect groundwater samples at different depths, similar to what was described at the FTA;
- Permanent monitoring wells—will install overburden

(anything that is not bedrock) monitoring wells (30 additional, 37 existing) and bedrock monitoring wells (11 additional, 3 existing);

- Surface water and sediment sampling—will occur at 40 locations in 7 surface water bodies: CSB, CSB Pond, Mirror Lake, Robbins Pond, Grove Pond, basically all the ponds surrounding Area 1;
- Fish tissue sampling—will look for PFAS in edible portions of fish in most of the same surface water bodies;
- Groundwater sampling – will conduct two events with each having over 90 wells that are sampled, the numbers may change as the work plan gets revised;
- Human health risk assessment—will be conducted for PFAS; and
- Ecological risk screening—will be conducted; there is not enough toxicology information available to do a full ecological risk assessment, so it is a screening using screening values that the agencies and the Army have agreed upon.




4 | PROJECT UPDATES & UPCOMING WORK

Shepley's Hill Landfill Updates

Current Concerns

- Arsenic in groundwater downgradient (north) of landfill in North Impact Area (NIA)
- Ability of existing groundwater extraction system to meet cleanup goals



Andy Vitolins presented the SHL updates. He pointed out on the image the capped area, Plow Shop Pond, Ayer, and Nonacoicus Brook.

There is a groundwater extraction system that has been operated by the Army for over 15 years. Downgradient of the extraction system is the North Impact Area, north of the SHL, where arsenic is present in groundwater. Part of the remedy that has been implemented is a subsurface barrier wall that prevents groundwater discharge to Plow Shop Pond. The area formerly known as Red Cove is no longer red because the barrier wall is in place.

Current concerns are the arsenic in groundwater downgradient (north) of SHL and the ability of the groundwater extraction system to meet cleanup goals in the downgradient areas. Those goals are USEPA maximum contaminant levels, which are the same as the state values when it comes to arsenic in groundwater. There are ongoing discussions about whether the groundwater extraction system is capable of meeting those goals.

4 | PROJECT UPDATES & UPCOMING WORK

Shepley's Hill Landfill Updates

Groundwater Remedy Evaluation

Objective: Evaluate alternatives to existing groundwater extraction system.

Tasks: In-Situ Air Sparging Pilot Study; Focused Feasibility Study (USEPA 2016 SHL SOW Phase 3).

Updates: Draft Air Sparging Pilot Study Report submitted to USEPA/MassDEP in June 2022; Focused Feasibility Study Outline/List of Alternatives to be submitted August 2022.

Arsenic Treatment Plant (ATP) Pilot Test

Objective: Optimize the post-groundwater extraction treatment process.

Tasks: Replace the chlorine gas treatment with permanganate.

Updates: Draft Design Memo for Metals Removal Systems to be submitted to Agencies in August/September 2022; installation of Alternates Metal Removal System pending approval and availability of materials.

Andy Vitolins continued with the SHL updates.

The groundwater remedy evaluation is meant to determine if the groundwater extraction system is the right remedy and if not, determine if there is a better one or an optimization that can be done to improve it. The main portion of that work is conducting a focused FS.

Andy noted that FSs were discussed in the last fact sheet. They are a way to look at environmental contamination and evaluate technologies that may be appropriate for cleanup and the degree to which that cleanup can be achieved. The Army is starting that process. They will present an outline of

what they propose to be in that FS this month, and the process will continue through the fall.

While that is going on, upgrades have been made at the arsenic treatment plant. The groundwater is extracted and goes through the plant. Geochemistry is used to precipitate the arsenic, iron, and manganese solids out of the groundwater using chlorine gas. The chloring gas will be replaced with permanganate, which is more environmentally friendly. The pilot test was completed, and the replacement will be made within the next year. Upgrades to the plant have been impacted by supply chain issues.

4 | PROJECT UPDATES & UPCOMING WORK

Former Main Post Updates

Supplemental Post-ROD RIs for AOCs 69W, 57, and 43G

Current Concern: Is current groundwater remedy still effective/protective?

Objective: Evaluate fate and transport of remaining contaminants.

Tasks: Temporary and permanent groundwater monitoring well installation, groundwater sampling, groundwater flow evaluation.

Updates: Revised Draft Work Plan for AOC 69W and Draft Work Plan for AOC 43G submitted in June 2022; Draft Work Plan for AOC 57 submitted in August 2022; field work to follow Work Plan Approval.

LUCIPs for AOCs 44/52, AOC 69W, AOC 57, and SA 71

Current Concern: ROD-specified land use controls have been implemented but are not memorialized in CERCLA documents.

Objective: Memorialize requirements for implementing, monitoring and enforcing ROD-specified land use controls.

Tasks: Prepare LUCIPs for USEPA approval.

Updates: Final LUCIP Work Plan issued February 2022; Draft LUCIPs for AOCs 44/52, 69W, and 57 submitted for review; SA 71 LUCIP to be submitted in August 2022.

Andy Vitolins presented the Former Main Post updates.

There are three sites that involve petroleum releases where the Army is checking whether the current groundwater remedies (monitoring remedies because remedial actions were either done in the past or did not need to be done) are effective. AOC 69W is the Parker Charter School. The release there was a diesel fuel release in the 1970s. AOC 57 was a release that happened at some point during the operation of the motor pool. AOC 43G is a release at a former gas station. All have the same concerns about whether the remedy is still protective.

The RODs for the sites were all passed in the 1990s, and there has been a lot of monitoring since then. The USEPA has some concerns, so the Army will do additional investigation to see if the concerns are warranted or if the remedies are working as expected. That will involve permanent and temporary groundwater monitoring well installation, groundwater sampling, and groundwater flow evaluation. The work plans have been submitted, and some comments have been received. They are in the revised draft/comment response phase. The field work (as well as the PFAS work) is scheduled to start next spring or summer.



LUCIPs are being developed to memorialize the land use controls (LUCs) in the CERCLA documents. Several areas have LUCs that were put in place through deed restrictions when they were transferred away from the Army. The process is ongoing, and the work plan about how to go about that process has been approved. Each individual plan is put in going forward.

NEXT STEPS & MEETING

5 | NEXT STEPS & MEETING

Community Involvement & RAB

- Action Item 1** Continue public outreach about hazards of potentially discovering military munitions
- Action Item 2** RAB business meetings and committee work will continue in between quarterly public meetings
- Action Item 3** Continue work on digital AR and updates to document repository and website
- Action Item 4** Continue with fact sheets

Steven Perry discussed the next steps:

- Public outreach—information relevant to military munitions will continue to be shared;
- RAB business meeting—the invite will be sent out for the next meeting, which will have a technical focus;
- Digital AR—a notice will be sent out when the digital AR is available online; and
- Fact sheets—additional fact sheets will continue to be used as educational tools.

QUESTIONS & ANSWERS

6 | QUESTIONS & ANSWERS

Please see the list of questions and answers at the end of these meeting minutes.

THANK YOU!
YOUR PARTICIPATION IS APPRECIATED!

NEXT RAB MEETING IS:
NOVEMBER 10, 2022
(Second Thursday of the month)

Steven Perry thanked everyone for attending. The next RAB meeting will be November 10, 2022.

QUESTIONS AND ANSWERS

Question	Answer
From Laurie Nehring—When will the public be able to comment on Area 1 PFAS?	Andy Vitolins replied that when the work plan is final, everyone will be able to see it. He noted that he hoped the review of what is in the work plan during the presentation was helpful in the meantime.
From Laurie Nehring—What are the levels at the source FTA?	Andy Vitolins commented that the levels are out of the parts per trillion range and into the parts per billion range.



Question	Answer
From Laurie Nehring—What is the timeline?	Andy Vitolins replied that the data collection lasts about 3 months. There will be bench-scale pilot studies that go along with that to look at the soil samples and different options that may work for stabilizing the PFAS so that it doesn't leach. If there is an IRM, they will probably have a draft idea of the plan in the spring. The timing of the actual IRM would depend on the approvals and funding.
From Julie Corenzwit—Is an IRM different from a time-critical removal action?	Andy Vitolins replied that they can be different. There are different levels of response actions in CERCLA. For example, if there is an immediate danger to life and health that will require an emergency response action. That does not happen a lot anymore, but it did in the 1970s and 1980s when CERCLA first came out. The time-critical removal actions and the IRMs are kind of in the same pathway. They are used once a problem is identified but precede the ROD and final remedy. The differences are mainly paperwork differences, and they are different ways of going about the same thing.
From Laurie Nehring—Do we know if Harvard Fire Department used AFFF?	<p>Andy Vitolins commented that he does not know if they used AFFF. Chris Mitchell (RAB member) commented that the answer is no, they did not use aqueous film forming foam (AFFF). Libby Levison (Harvard Board of Health) added that they know that Devens Fire Department helped Harvard at times, and they had AFFF. They do not know if Devens Fire Department ever brought it with them to Harvard.</p> <p>Penny Reddy asked about whether there was a question about AFFF use on the Route 2 Highway. Libby Levison commented that there were so many car fires on Route 2 that there was no way they could have tracked that. Penny Reddy replied that she thought that when they talked to the fire department that is also what they were told. Laurie Nehring commented that PACE did research into historical records of the Fort Devens Fire Department. She said they found little evidence and that it is anecdotal, but it is likely that every time there was a car fire, AFFF was used. She noted that AFFF was the dominant foam used in the early days at Fort Devens because it was too hard to change the tanks and the military was required to use it because it worked better.</p>
From Laurie Nehring—Sounds like a good plan for Area 1. I am wondering if USEPA or MassDEP have concerns? Is there anything not being addressed?	Andy Vitolins commented that USEPA and MassDEP had identified some areas they would like to see, so the Army is evaluating those.
From Laurie Nehring—Who is your contact at Parker School? They have a new principal.	Andy Vitolins commented that the team checks in with the school when they are on the school property. Penny Reddy mentioned she was not sure when the new principal started. Amy Henschke mentioned that Brian Harrigan is the new principal and is now on the project's contact list.
From Amy McCoy—Any sense of how fast PFAS is leaching to Nashua River from the first round of testing at the airfield?	Andy Vitolins replied that PFAS from the FTA is leaching to the Nashua River because it is in the groundwater in between the two. One of the tests that they are doing as a part of the investigation is to get an idea, using lysimeters, about what is leaching to the water table. That will help them decide the best way to address it. Unfortunately, PFAS is pretty soluble, and when it does get into the groundwater, there is not a lot that stops it from moving, especially in sandy places like the airfield. When it gets into the groundwater, it will generally move as fast as the groundwater.



Question	Answer
From Martha Morgan—Are you sampling along a profile in the Nashua River, upstream to downstream?	Andy Vitolins commented that the Nashua River surface water sampling will be happening, and it will be a profile. For all surface water sampling at the 40 locations, sampling will occur upstream and downstream of known release sites on Nashua River, CSB, Grove Pond, etc. Nashua River will be involved in some of the Area 1 surface water sampling, but there will be more during the Area 3 investigation as well.
From Laurie Nehring—I just want to complement Andy on a good presentation. It was super clear and efficient. You hit on a lot of really important topics. I think it was really helpful. This is the kind of discussion I was hoping we could have.	Andy Vitolins replied that they are trying to get the RAB the information they are looking for. Chris Mitchell added that the team did a really nice job responding to the comments from the RAB members on the level of detail. Steven Perry added that a lot is happening at the FTA. He encouraged everyone to review the table that was presented about the Area 1 Work Plan, which showed the magnitude of the work that is being done.



RAB MEETING INVITE

**Former Fort Devens Army Installation
Notification**



**Please join us for the next Former Fort Devens RAB Meeting,
Thursday, August 11, 2022, 6:30 pm**

Our next RAB meeting will be held via Microsoft Teams.

[Click here to join the meeting](#)

Or you can call in to hear the audio only:

+1 213-379-9608

Phone Conference ID:

404 348 396#

We hope you will join us to actively discuss the following topics and share your ideas:

Welcome to existing members and new participants!

Community Involvement & RAB Board Updates

Project Updates & Upcoming Work

Nashua River/Military Munitions Presentation

PACE Presentation

Questions & Answers

Next Steps & Meeting

Bring your thoughts about the RAB and questions about the project. This meeting will be recorded and a meeting summary will be posted on the project website at:

<https://www.nae.usace.army.mil/missions/projects-topics/former-fort-devens-environmental-cleanup/>

If you have any questions, please send an email to and we will reply:

FormerFortDevensRAB@arcadis.com