

**Restoration Advisory Board (RAB) Meeting
Former Fort Devens Army Installation
Project Status Update
25 April 2019**

Location: Ayer Town Hall, 1 Main St, Ayer, MA 01432

Time: 6:30 PM – 9:00 PM

Attendees: please see attached RAB sign in sheet

Introductory Remarks:

- Bob Simone welcomed all and indicated that questions could be asked at any time.
- All attendees gave personal introductions.

Presentation: See PowerPoint slides/PDF dated 25 April 2019, which discussed:

1. Processes and Programs: DERP, CERCLA, RI/FS
2. Update on Ayer & Devens Public Supply Wells
3. MassDEP Updates
4. Community Involvement Plan Status
5. Remedial Investigation Results
6. Grove Pond Wellfield Investigation
 - a. Time Critical Removal Action
 - b. Well #8 Treatment
 - c. Permanent Upgrades
7. Next steps

Questions during or following presentation:

1. **Can you give us idea of what that time frame is for a remedial investigation? (Ayer DPW)**
 - a. It's usually a couple of years. The minimum amount of time under the federal facilities agreement is two years, however it can take considerably longer. (Army)
 - b. Within the remedial investigation is the risk assessment, which can lengthen the process. (EPA)
2. **Since PFAS are emerging contaminants, does the EPA or Army have a clearinghouse where all data can be deposited, so we can have a better idea of fate and transport, risk assessments, etc.? (Ayer DPW)**

- a. Nationally, EPA (at headquarters) is keeping track of all sites at the Superfund/Federal level where sampling for PFAS has taken place with particular regard to the lifetime health advisory (LHA). The data are not necessarily available in one place to the public, but EPA will ask about availability. (EPA)
- 3. What do we know about the fate and transport of PFAS? Is it a sinker or a floater? (Ayer DPW)**
- a. The Army has a couple of PFAS working groups across the country and there's a clearinghouse for all data collected. ITRC has a team of ~500 members working on PFAS, which is about 10 times more than most. Trading information and determining best practices are active and on-going. (Army)
 - b. PFAS float when they reach the water table. (Army)
- 4. Is there enough funding for PFAS research at the federal level? (PACE)**
- a. There is a lot, but potentially not as much as some people would like. However, EPA has prioritized PFAS research while pulling back in some other areas, e.g., mining, chlorinated solvents, etc. PFAS research has been getting the lion share of funding in the past few years. (Army)
 - b. In 2019, DOD is pushing \$60 million into PFAS research and has spent more than \$200 million in the last five years on PFAS investigations. (Army)
 - c. If parties are interested in learning more, Australia has done a lot of work on PFAS. (Army)
 - d. States like Minnesota and New Jersey have useful information on their public websites. (EPA)
- 5. Point of clarification, Ayer's Well number 8 is above 70 ppt. (Ayer DPW)**
- a. Well 8 is pumping, but the water is not being consumed at this time. (Army)
- 6. Are we monitoring the water that is flowing into Grove Pond from Well 8? Have you sampled Grove Pond? (PACE)**
- a. Well 8 water sampled quarterly. (Ayer DPW)
 - b. The Army has sampled Grove Pond and the results are the same. There has been no apparent change to Grove Pond and concentrations similar to nearby ponds. (Army)
 - c. The Army will look into sampling Grove Pond more frequently. (Army)
- 7. EPA has requested from Army a fish analysis for Grove Pond because people fish from the pond. (EPA)**
- a. Fishing is allowed from the pond, but Ayer DPW has signs up stating do not eat the fish. (Ayer DPW)
 - b. The signs are old, worn out, and faded. (PACE)
 - c. The signs should be replaced. (EPA)
- 8. What is the status of the MacPherson Well? It's hard to get information on its status. (Shirley Resident)**
- a. The MacPherson Well is currently not operating and has been offline since the beginning of 2018. The sum of the five PFAS compounds exceeded the level set by MassDEP, so it was suggested that the well be taken offline, and it was. (Army)
 - b. Within eight months (the end of the calendar year), MacPherson Well should be remediated to non-detect levels. (Devens Utilities)

- c. The project website, ftdevens.org, has data on samples collected from all locations including MacPherson Well. (Army)
- 9. For clarification, is it correct that Well 1 is offline, but Army did collect a sample in February? (EPA)**
- a. Yes, that is correct. The well was turned on for two hours prior to collecting the sample. The water was not going into the water supply when samples were collected. (Army)
- 10. To Ayer DPW, is Well 1 truly offline? (Army)**
- a. We don't need to use all our wells year round, so Well 1—because it's very high in iron and manganese, which puts stress on the iron-manganese removal plant—is considered the last on, first off well. When samples were taken in February, Ayer didn't need to use that well. Ayer will need to use Well 1 during the summer. (Ayer DPW)
- 11. Could you clarify what a "Reference Dose of 5E-06 mg/kg/day" means? (PACE)**
- a. This is scientific notation, 5×10^{-6} in other words means very small. The reference dose is a measure of how toxic a chemical is based upon how much water you drink per day and how much you weigh. Lower values equate to more stringent requirements. (MassDEP)
- 12. With respect to the 20 ppt Method GW-1 Standard, what if you have a source that is not currently being used for drinking water, but it's a potential source in the future? (PACE)**
- a. The GW-1 standard applies to any groundwater categorized as GW-1. GW-1 includes criteria for water quality as well as the potential yield of the aquifer. (MassDEP)
- 13. With respect to the ORSG (the drinking water guideline) that MassDEP established (70 ppt for the five PFAS compounds) about a year ago, is the predominant difference between the basis for the 70 ppt and the basis for the 20 ppt MCL number due to the change in the reference does (5E-06 mg/kg/day)? (EPA)**
- a. There's no MCL number yet. The goal for a new MCL is early 2020. MassDEP is accepting public comment, and the reference dose is a topic for discussion. The modified reference dose was chosen to underlay potential PFAS standards while giving special attention to the impacts on infants and fetuses. (MassDEP)
 - b. We hope everyone in the audience and member of the public will submit comments on these topics. (MassDEP)
 - c. MassDEP hopes to have the new GW-1 standard by the beginning of July 2019. (MassDEP)
 - d. Ultimately, MassDEP hopes to have the MCL, ORSG, and GW-1 standard numerically equivalent. If it appears that the numbers will not line up with each other, we will seek public comment again. (MassDEP)
- 14. The ORSG right now primarily impacts those public drinking water sites with known PFAS detection, correct? And the MCL would apply to any public water supplier. At the point the new MCL is in place, will that require the community water suppliers to test for PFAS? (Resident)**
- a. The ORSG does apply to all public water suppliers (PWS), it's just that because of UCMR 3 and sampling related to sites like the ones at Devens; i.e., it's just happenstance. MassDEP has a guideline now where every new well that comes online at a PWS is sampled for the six PFAS compounds. Until there's a new MCL, new sampling requirements are not mandated. (MassDEP)

- b. The Consumer Confidence Reports (CCRs) that have found PFAS have included language provided by MassDEP in their annual reports. An unregulated table in the CCR is included. (MassDEP)
15. **What is the situation for private well owners? (Harvard Resident)**
- a. If there is known contamination in private wells, the contamination becomes regulated by the state waste site cleanup program. That said, there are no regulations at the state level requiring sampling for existing private wells like there are for public water suppliers unless regulations from the local community are in place. (MassDEP)
 - b. If a private well owner notifies the state that they have contamination, the state typically does not do cleanups. Instead, the preferred approach is to find a responsible party to take care of the cleanup. (MassDEP)
16. **If the responsible party is a federal agency, will the EPA or DEP standards be used? (unknown)**
- a. Any aspect of the assessment takes into account whether a state has promulgated standards that are applied equally across the state to all situations; typically the MCL would be accepted as such a standard. (MassDEP)
 - b. With the exception of the Grove Pond wells in the town of Ayer, data haven't been collected, which show a direct correlation between any off site contamination and the military facility. However, as part of this investigation, the Army did sample wells (including private wells) within a one-mile radius of the PFAS detections at Devens. To date, data have not been collected to determine which direction—if any—the contamination is heading. The EPA hopes that making this determination and sampling offsite will be part of the next phase of work on the Devens remedial investigation. (EPA)
17. **Did you sample all wells within the one mile radius? (unknown)**
- a. No, only a subset of wells were sampled, approximately 20 wells. (Army)
 - b. Some residents did not want their well(s) sampled and these wells were therefore not sampled. (EPA)
18. **In towns and cities with municipal water supplies, if someone suspects that PFAS may be in the supply because it was found in a neighboring town's water supply, is there any state or federal mandate for the towns or cities to be checking for PFAS? (PACE)**
- a. There is no mandate until there's an MCL. (MassDEP)
 - b. For clarification, there is no legal requirement that water suppliers do such testing. (MassDEP)
 - c. With respect to private wells, MassDEP makes suggestions for testing for all different contaminants, e.g., chlorinated solvents, naturally occurring arsenic, etc. (MassDEP)
19. **With respect to the Community Involvement Plan (CIP), 75-100 people doesn't seem like very many. (PACE)**
- a. The intention is to get a cross section of the communities, but if someone reaches out to the Army and wants to be interviewed, they would be added to the list. (Army)
20. **Will there be an opportunity to comment on the questions given during the interview process? (PACE)**
- a. The questions can be potentially posted digitally on the project website. (Army)
 - b. The current plan was not to do this digitally. The questions were designed to take place in person or over the phone where the interviewer can ask follow-up questions as

necessary. A one-time digital questionnaire would contain different questions than an in-depth interview. Given the interest in the questions, the Army can look into modifications to these plans. (Army)

21. **Have other communities used CIPs in the past? And what is the goal of the plan? (MassDev)**
 - a. The goal of the plan is to understand the community's interest level in the investigation, to provide the community with the opportunity to inform the Army how they prefer to be informed, and to consolidate all this information into a cohesive plan. It will detail what, where, when, and how information will be available to the public. (EPA)
 - b. CERCLA requires that a CIP be created for all sites. However, the prior CIP for Devens was done many years ago and based upon prior investigations. The new CIP is a necessary update. (EPA)
22. **What has stood out so far during the field sampling? (PACE)**
 - a. In general, we can say we're finding broader or more extensive areas of contamination than we originally anticipated. (Army)
23. **When you were doing the investigation for Area 1, were you also in Harvard? (unknown)**
 - a. We have done private well sampling outside of the former Devens boundary. Plans to sample outside the boundary will be discussed. (Army)
24. **Did the two Devens drinking water wells have monitoring wells in place before this ever happened? (Shirley Resident)**
 - a. Yes. (Army)
 - b. Generally, when you develop a groundwater supply, you have to put in a certain number of monitoring wells to assess hydrogeologic conditions. Later on, you pull some of the wells out. For each monitoring well, there might generally be five 2.5 inch monitoring wells stationed around the area. It depends on how old your well is and when it was permitted. (Ayer APW)
 - c. The Army is working outward from the source area, delineating the nature and extent of the PFAS plumes as we go. (Army)
25. **Comment: The focus of the investigation seems to be exclusively on Devens land, which is unsettling. (Shirley Resident)**
 - a. The locations identified during the initial site investigation is what led the Army to focus on specific areas. The data from the remedial investigation lead to further sites as we expand outward from the potential source area. (Army)
 - b. Groundwater sampling (vertical profiling) has been done in neighborhoods of Ayer north of Grove Pond. (Ayer DPW)
26. **During vertical profiling, do you log the hydrogeological profile such as sand, sand and gravel, silty sands, as well as sampling the groundwater?**
 - a. We do not do lithologic characterization as part of the vertical profiling, but during well installation lithologic characterization will be conducted at select locations. (Army)
27. **When choosing which locations to sample, are you being guided by 70 ppt?**
 - a. Yes, we are being guided by the 70 ppt for the sum of PFOA and PFOS. Once data come in from the lab, new locations are proposed, discussed with EPA and MassDEP, and new sampling commences as soon as possible. (Army)
28. **With regard to GW-1 proposal, if it goes into effect, would you have to start over? (unknown)**

- a. No, we would not. We have already collected the data. However, if GW-1 goes into effect, discussions would be held to determine if adjustments to the field sampling plan are warranted. (Army)
 - b. It is important to realize that the Army is sampling for a full suite of PFAS (16 analytes), many more than the six PFAS compounds for which MassDEP has proposed standards. (MassDEP)
 - c. Laboratories report all results above the detection limit, which are often 1 or 2 ppt. In other words, we have all the data. (EPA)
- 29. With respect to Area 1, AOC 75, is the concern the chemicals that were used to extinguish the fire? (unknown)**
- a. Yes, it was reported that aqueous film forming foam (AFFF) was used to extinguish the warehouse fire. (Army)
- 30. Is it correct that a lot of soil was dug up from Area 1 in the past? Why are PFAS in the soil still? (PACE)**
- a. There a number of ways PFAS can get into the soil. We don't know exactly what was done at the former maintenance/repair area that is now AOC 57. Plus, groundwater is flowing through the sediment likely towards Cold Spring Brook. (Army)
 - b. PFAS were found at AOC 57, but they may not be due to AFFF. PFAS are found in many other things like hydraulic oils, fuels, and lubricants, which may have been used at this location. (Army)
 - c. The prior investigation would have partly been for gasoline. Over time, gasoline degrades on its own. Regulatory bodies have risk-based standards for gasoline. Soils would have been excavated, but not to non-detect levels. The remaining gasoline would have had acceptable risk and would have met the standards. At the time, we were not looking for PFAS. What we know now is that it doesn't take much PFAS in the soil to be a source for an aquifer. What we might be seeing here are the residual soils left over from the excavation with the PFAS still in place. (MassDEP)
 - d. It's worth noting that these three areas (AOC 57 Area 1, 2, & 3) were all drainage areas associated with the former petroleum site. Some of the highest numbers in the area are directly where excavation had taken place in the past. (Army)
- 31. Was the fill that was emplaced in AOC 57 tested for PFAS? (PACE)**
- a. At the time, it was not a requirement to sample. (Army)
 - b. The army is also performing soil sampling as part of the groundwater investigation. (Army)
- 32. Do we know how fast PFAS move? (PACE)**
- a. We know that PFAS move with groundwater and adsorb slightly to carbon particles in the overburden. (Army)
- 33. Do you know what the source of the contamination in the locations north of Grove Pond might be? (PACE)**
- a. No, we do not know at present. (Army)
- 34. Is the contamination in that area shallow or deep? (unknown)**
- a. There is very little overburden in that area (implying that contamination would tend to be shallow). We don't recall off hand what the exact depths with highest concentrations were, but all the data are available on the project website. (Army)

35. **Comment: Perhaps future figures could show plume mapping with contours, with red above the 70 ppt and a second color above the 20 ppt, so the public can better understand where we do have detections and where there are non-detects. There seem to be a number of questions along these lines. (EPA)**
36. **Comment: Many of the monitoring wells visible in the figures are existing wells from the previous remedial investigation. During the initial assessment, the Army sampled all long-term monitoring wells. Based on historical information, there was no reason to suspect that PFAS would be in many of the locations, but in many cases it was. Future monitoring wells have been proposed in locations where there are data gaps. (EPA)**
37. **Comment: At AOC 43G, the highest concentration for PFOA+PFOS was ~2500 ppt. It is likely that many of the current black triangles on the figure will become red indicating an expanding area of contamination. (Army)**
38. **Do you have any idea where it's coming from? (PACE)**
- It's a former gas station site as well as a car wash. There could have been spills when gas tanks were filled. Additionally, car washes can have compounds high in PFAS. (Army)
39. **Was there a removal action at AOC 43G? (EPA)**
- Yes, soil was removed, in some cases down to bedrock as part of the petroleum investigation. (Army)
40. **Could you clarify where you found 4000 ppt? (unknown)**
- This was at AOC 76, near the Devens Fire Station. (Army)
41. **Comment: You may want to add that along Jackson Road as it heads towards MacPherson Well, as you get to West Main Street, there used to be a Shell gas station at that intersection, which is a Massachusetts Contingency Plan (MCP) site and is still active. Also, a bit more to the east is another MCP site which had dry cleaning fluid/chlorinated solvents. (unknown)**
- The Army is aware of both businesses. We talked to the property owners about drilling on their property as part of the investigation. The property owners declined the invitation. We are currently talking to an adjacent property owner and are planning to drill vertical profiles if/when the property owner grants permission. (Army)
42. **Wasn't the MacPherson Well taken offline? (PACE)**
- The concentrations on the figure were from the last samples collected in 2017. The samples were below the EPA LHA. The Army will sample MacPherson Well again during the next quarterly round. (Army)
43. **Aren't there sentinel wells at the site of the dry cleaning remediation? (PACE)**
- Yes, we have taken samples and are waiting on results. (Army)
44. **Are PFAS in the groundwater near the school? (PACE)**
- PFAS are not a risk for vapor intrusion. The calculations for 70 ppt or 20 ppt are based on ingestion, i.e., drinking water. (Army)
 - Clarification should be made between drinking water and groundwater. (unknown)
 - Although drinking water and groundwater are different, some of the areas being investigated are in zone II areas, i.e., source areas for drinking water. (EPA)
 - Once all of the data are collected, the fate and extents of plumes are delineated, and all the exposure pathways are identified, a risk assessment is made. From there, a determination is made whether or not action is needed. (EPA)

- e. Zone II's are mapped (including drought conditions) to determine that the source of a particular drinking water well is groundwater and the well will pull from a particular area. In other words, any groundwater in that area could be the source for the drinking water. The Army and EPA focused on Zone II's that flow to the Ayer production well and the Devens supply well. (EPA)
 - f. MassDEP has requested that the Army lay out on a map, all the GW-1 areas, so this will be spelled out clearly, i.e., which wells are within a GW-1 area subject to the lowest cleanup numbers and which wells aren't. (MassDEP)
 - g. Zone II is a good guess where the zone of contribution to the well is, but there are many factors that go into it. As a result, the Army may want to look a bit outside the zone of contribution because otherwise you're basing the investigation locations on only one set of data. (Ayer DPW)
45. **Do you have any results for Area 3? (Shirley Resident)**
- a. We do not have any results yet for Area 3, but we have started work there this week. (Army)
 - b. There is Site Inspection (SI) data for Area 3 available on the project website. (EPA)
46. **At the wastewater treatment plan in Area 3, what is the reason there would be PFAS there? (Shirley Resident)**
- a. Any time PFAS enter the waste stream, they can get into the wastewater treatment plant, which is not designed to remove PFAS. (Army)
 - b. Also, contaminated water that comes from the ground goes out through the wastewater treatment plant and gets pumped back into the ground. It's not just from the waste stream. (MassDEP)
47. **Comment: There are private homes to the west of the MacPherson Well (east of the Nashua River) on Walker Road in Shirley. The awareness of PFAS by many people in Shirley only came about due to the Channel 25 news report recently. Nothing on community website (Shirley Resident)**
- a. Shirley tested both of its drinking water wells once for PFAS in 2016. (MassDEP)
48. **Can you explain why the Nashua River plays such a role in separating the Shirley side from MacPherson Well? How can Shirley have ~5ppt while Macpherson has 70 ppt? (Shirley Resident)**
- a. Generally—although geologic conditions play a role—a surface water body such as a river or pond acts as a hydraulic boundary. As the water is flowing to that point, it generally won't cross that boundary. It depends on pumping conditions, groundwater flow conditions, depth of the aquifer, etc. Generally speaking, you can say with the Nashua River, what happens on one side doesn't impact what happens on the other side. If the MacPherson Well is pumping and the Nashua River starts to dry up, then you know there's interaction, but this doesn't happen because the Nashua River has such a high volume and flow velocity. (Ayer DPW)
 - b. Typically, when pump tests are done, the closer a well is to a water body, the less it gets drawn down. The cone of depression will be uneven, but it doesn't get drawn down. In other areas such as kettle ponds on Cape Cod, you'd likely have more of an interaction due to sand through which the water flows. This isn't the case here. (Ayer DPW)

49. **What is the depth of the MacPherson Well versus the depth of the Nashua River bottom? (EPA)**
- The river bottom is probably around 10 feet with a fair amount of silts on the bottom. (Ayer DPW)
 - The water flowing to Shirley is coming from the northwest while a lot of the water flowing to the MacPherson Well is coming from the south. It's a completely different direction of flow. (Army)
50. **Now that the MacPherson Well is closed and Shirley has been increasing pumping during summer months, is migration of contamination possible? (Shirley Resident)**
- Once the state has an MCL, everyone will have a monitoring schedule. That's when towns and the state will be able to see if there are changes in water quality. (Ayer DPW)
51. **Comment: There is a demand from the public who want the investigation done faster. To their credit, the Army team has worked tirelessly straight through the winter to keep sampling. There is a lot more work to be done, but they should be commended for their efforts. (EPA)**
52. **Is it correct that the temporary treatment facility for the Grove Pond Wellfield isn't going to continue pumping water once the permanent treatment facility is installed? (EPA)**
- Yes, that's correct. Within 30 days, the temporary treatment should be up and running. (Army)
53. **Will Ayer file the permit application for the treatment facility? (MassDEP)**
- Yes. (Ayer DPW)
54. **Is this going into an existing building? (unknown)**
- No, this will be outside. Where necessary, components will be insulated. (Army)
55. **Once the temporary treatment is in place, will Well 8 be back online? Will it be sampled quarterly? (EPA)**
- Yes, Well 8 will be back online. (Army)
 - MassDEP has permitted two other systems in other communities; I think we have weekly sampling for four weeks when the system comes online, then sampling a month later, then back to quarterly sampling. (MassDEP)
 - MassDEP has been turning around permit applications for such treatment facilities in less than a week. This remains the goal. (MassDEP)
56. **Since the treatment system is the first place the water is coming into, do you worry about the system clogging? (PACE)**
- Well 8 has very low iron/manganese compared to the other wells, that's why this particular approach was taken, i.e., treating for PFAS first. (Ayer DPW)
57. **Will the temporary treatment system get concentrations below 20 ppt by mid-June? (Ayer Resident)**
- The system should get concentrations to non-detect by that time. The permanent system will also get to non-detect. (Ayer DPW)
 - MassDEP will require that the permanent treatment system reach non-detect levels. (MassDEP)
 - We anticipate that in a year from now (~April 2020), the permanent treatment system will be online. (Ayer DPW)

- d. In a different watershed not related to Devens at Spectacle Pond we have combined PFAS concentrations over 30 ppt. May design a similar treatment system and discuss at town meeting in Fall (Ayer DPW).

58. Do have a sense of the effectiveness of home water filters with respect to PFAS? (Ayer Resident)

- a. Many filters have been tested by the National Sanitation Foundation (NSF) for PFOS/PFOA, but not down to the 20 ppt level. Ayer is planning to test the effectiveness of PFAS filters in collaboration with MassDEP. (Ayer DPW)
- b. The point of the testing is due to the lack of systems that filter for the five or six PFAS, which the state is lowering to 20 ppt. The plan is to next week run filters through a plant tap 24/7, take periodic samples, then when breakthrough is observed, the local DPW (in this case Ayer) will be able to advise homeowners as to the anticipated volume prior to needing to change the filter. Currently there is no information of this sort available. (MassDEP)
- c. Ayer DPW and CDM Smith are developing a protocol, which will be followed by the pilot test. (MassDEP)

59. Doesn't Vermont have a 20 ppt filter? (Ayer Resident)

- a. Vermont has an under-sink filtration system that gets to below 20 ppt, but doesn't have the official seal of approval on it. That system is produced and installed by Culligan. It costs \$800-1000 to install depending on plumbing and the annual maintenance costs are \$400. (MassDEP)
- b. One unit that Ayer DPW will be testing costs approximately \$30. It includes an indicator light that shows green when filter is good and red when the filter has reached capacity. During testing, Ayer DPW will be determining if the indicator light is accurate. (Ayer DPW)
- c. The need for home use filters is only necessary until the Ayer temporary treatment system is up and running in less than a month. (MassDEP)

Announcement:

The next RAB meeting will be held on July 25, 2019, in Devens, MA.

Exact time and location TBA.

Note:

Questions and responses were paraphrased where appropriate for the sake of clarity.

