



# NAVAL AIR STATION JOINT RESERVE BASE (NAS JRB) WILLOW GROVE Restoration Advisory Board (RAB) Meeting Minutes

Meeting Date: September 19, 2019  
Meeting Time: 6:00 p.m.  
Meeting Place: Horsham Township Library

<u>Name</u>	<u>Organization</u>
Attendance: Willington Lin (R)	Department of Navy (Navy) Base Realignment and Closure (BRAC) Program Management Office (PMO)
Brian Helland (R)	Navy BRAC PMO
Jason Speicher	Navy, Naval Facilities Engineering Command (NAVFAC) Atlantic
Jennifer Good	Navy BRAC PMO
Sarah Kloss (R)	Environmental Protection Agency (EPA) Region 3
Linda Watson	EPA Region 3
Deborah Goldblum	EPA Region 3
Larry Brown	EPA Region 3
Mark Leipert	EPA Region 3
Roger Reinhart	EPA Region 3
Colin Wade (R)	Pennsylvania Department of Environmental Projection (PADEP) Southeast (SE)
Rob Fogel	PADEP SE
Bonnie McClennen	PADEP SE
Jessica Kasmari (R)	PADEP SE
Bill Burger	Tetra Tech
Tricia Moore	Tetra Tech
Chris Botzum	Air National Guard (ANG)
Major Lydia Stefanik	ANG
Claudia Malone	ANG
Will Acosta	ANG
Lt. Col. Jacqueline Siciliano	ANG
Lora Werner	Agency for Toxic Substances and Disease Registry (ATSDR)
Kyle Shmeck	Montgomery County Health Department
Mike Pickel	Horsham Water and Sewer Authority (HWSA)
Tina O'Rourke	HWSA
Tom Ames	Horsham Land Redevelopment Authority (HLRA)
Mike McGee	HLRA
Larry Burns	HLRA
Bill Walker	Horsham Township
Greg Nesbitt	Horsham Township Council

Lara Flynn	U.S. Senator Casey's Office
Shea Baversmith	Pennsylvania Rep. Stephen's Office
Correne Kristiansen	Pennsylvania Senator Collett's Office
Jenny Wagner	The Intelligencer
Rocco Mercuri	Gilmore Associates, Inc.
Dave Sherman	Geosyntec Consultants
Chris Crockett	Aqua America
Lisa Senior	United States Geological Survey (USGS)
Dan Goode	USGS
Joseph McGrath (R)	Restoration Advisory Board (RAB), former employee and veteran
Jane Smith	Resident
Ed Stevens	Resident
Garth Glenn	Resident
David Fennimore	Resident
Hope Grosse	Resident
Joanne Stanton	Resident
Patricia Leaney	Resident
Mark McCouch	Resident
Joseph Feliciani	Resident
Mark Cuker	Resident
Other Unidentified Attendees	

(R) Designates RAB Member

Willie Lin, the Navy's BRAC Environmental Coordinator and RAB Co-Chair, opened the meeting by greeting the attendees. Mr. Lin noted that the meeting will include presentations from the Navy, ANG, USGS, EPA, and PADEP. Mr. Lin asked RAB members and government representatives to introduce themselves.

Mr. Lin informed the attendees that the handouts with the presentations and an EPA fact sheet are available. Mr. Lin also noted that representatives from the ATSDR are scheduled after the RAB meeting to discuss health concerns. Mr. Lin also noted changes to the format of the Navy presentation in response to comments received during the previous RAB meeting. The presentation format identifies the most current actions while background information has been moved to the back of the handout.

Brian Helland commenced with the Navy presentation. Mr. Helland provided an update on the cleanup sites, including landfill Sites 3 and 12, and Site 5, the former Fire Training Area. Mr. Helland provided background on Sites 3 and 12 stating that they were former landfills used by the Public Works Department. Remedial investigations (RIs) at both Sites 3 and 12 have been completed. Feasibility studies have been submitted for both sites to present various clean-up alternatives. The final feasibility studies are now available at the Horsham Library. The next step is to prepare the Proposed Remedial Action Plan and Record of Decision (ROD) selecting the cleanup remedy for the sites. A public comment period will occur later in the year.

Mr. Helland discussed the remediation for Site 5 groundwater. The site was a former fire training area where solvents were stored and burned. An active anaerobic bioremediation system is in place to reduce the parent compounds trichloroethene (TCE) and perchloroethylene (PCE). The annual monitoring sampling concluded in May 2019. Monitoring results show good conditions for bioremediation and a reduction in concentrations of volatile organic compounds (VOCs). Additional injections of amendments for the treatment system are currently underway. Reduction of VOCs have continued to be observed.

Mr. Lin discussed the next agenda item, per- and polyfluoroalkyl substances (PFAS). Mr. Lin provided a summary of Navy's funding support for the HWSA. Mr. Lin provided a summary of the Navy's private well sampling activities. Tetra Tech., a Navy contractor, has assumed sampling responsibilities previously conducted by EPA. Slides were discussed comparing the private drinking water wells from February 2017 to ones showing the current wells that have been most recently sampled. A few additional wells above the EPA Lifetime Health Advisory Level (HAL) have been identified since that time; however, the number of locations where connections to the public water supply are still needed have been reduced to seven. Resampling of private wells below health standards in the sampling area is also occurring to get updated information and ensure protectiveness.

Mr. Helland began to discuss the RI for PFAS. A draft report was submitted in November 2016 summarizing the data collected and identifying data gaps and strategies to collect additional needed data. Additional data was collected and presented in the draft Phase I Remedial Investigation (RI) report which was submitted to the regulators in December 2018. Comments were provided by the regulators in April and May of 2019. The draft RI is available in the information repository at the library, and the final report will be issued around the end of September 2019.

As part of the Phase I RI, a storm water and stream sampling investigation were conducted. The outfalls were sampled with results showing concentrations are lower during storm events. A contract has also been awarded to rebuild sections of the storm sewer to prevent contaminated groundwater from leaving the base.

Tricia Moore discussed the Phase II PFAS investigation that is now in preparation. Project scoping sessions were conducted, and work plans are in development. The source areas that were identified in the Phase I RI, particularly the aircraft maintenance facilities and Site 5 will be investigated further. The Phase II RI will include the installation of additional onsite and offsite monitoring wells to evaluate the extent of the contamination. Surface water discharge monitoring and additional soil samples will also be conducted. The first round of sampling of surface water and sediment sampling was performed in July 2019. The sampling was performed in conjunction with the USGS and also that the local water purveyors were invited to participate. Surface water samples are being validated. The Navy will continue quarterly sampling for one year. The Navy will coordinate future events with the ANG. The Navy is funding the USGS to install additional stream gauges to assess mass loading.

Ms. Moore discussed the upcoming pilot test for groundwater treatment in the aircraft maintenance facility area around Hangar 680 where the highest PFAS levels were identified. The final work plan as well as construction of the system have been completed. Approval to discharge was received earlier in the month. Full-time operations of the pilot test are tentatively scheduled to

begin at the end of September 2019. Once startup testing begins, routine sampling should occur almost daily at the beginning and then move to biweekly as the project continues. An example of the treatment system was shown on a slide. The slide shows a container with a series of treatment vessels. Ms. Moore explained that the treatment vessels will contain carbon and ion exchange resin to treat PFAS to concentrations below the HAL. The system will be operated for a six-month period.

Ms. Moore discussed the Site 5 pilot test for PFAS. The wells will be located away from the bioremediation system. Lessons learned from the Hangar 680 pilot test will be applied. The work plan is anticipated to be completed in December 2019.

Mr. Lin briefly discussed the environmental research programs funded by the Department of Defense (DoD) with relation to PFAS. Mr. Lin explained the DoD has funded millions of dollars into research related to PFAS, including, toxicology, chemistry, assessment, and remediation. Research is being conducted for soil, groundwater, and stormwater treatment, and assessment of transport of PFAS in waterways. Mr. Lin finished by giving a short recap of the current progress that had just been discussed including the removal of soil. Soils were transported to a Resource Conservation Recovery Act (RCRA) Title D landfill, which is a lined nonhazardous waste landfill.

Mr. Lin introduced Major Lydia Stefanik for the Air National Guard (ANG) presentation.

Maj. Stefanik gave a brief update on changes that have occurred since the last RAB meeting. The PFAS remedial investigation contract is expected to be awarded by September 30, 2019. The Phase 2 system to treat surface water is continuing to operate, and the Phase 3 system is in the procurement stage.

Maj. Stefanik began the discussion on PFAS at the facility. A preliminary assessment conducted in 2015 identified ten potential PFAS source areas. These include areas where PFAS may have been used or stored, such as hangars, or where firefighting foam may have flowed to, such as the storm basin and waste water treatment plant. A treatment system has been put in at the storm basin outfall. The current system treats 60 to 100 gallons per minute. An improved system is in design now with the target of treating 250 gallons per minute. Improvements were made to the stormwater basin to retain precipitation runoff to allow more time to process at the treatment system.

Maj. Stefanik discussed perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in drinking water. There is an agreement with Warrington Township to install carbon filtration on five of their supply wells and extend water mains for connections. Private well locations with detections above 70 parts per trillion (ppt) are being connected to the public supply. Maj. Stefanik presented a slide showing the number of private wells sampled with the number above the 70 ppt health advisory level and number of connections completed.

Maj. Stefanik presented the actions that are planned for the following three months from the RAB meeting. The contract to conduct a remedial investigation is expected to be awarded. The Phase 3 system is expected to be built, and the draft National Pollutant Discharge Elimination System (NPDES) storm water permit will be under review. Quarterly sampling of private wells will continue.

Dan Goode commenced the USGS's discussion. Mr. Goode gave a brief overview of the function of the USGS and how they cooperate with other government agencies. Mr. Goode began an overview of how the groundwater contamination in the Willow Grove and Warminster areas is affected by multiple factors. One possible factor was the change in the using fractured rock areas for the groundwater supply. Over the last few decades, there has been a dramatic decrease in the pumping of water from this type of source. The discharges are large compared to the recharge of the system which has a strong effect on the migration of the water as well as any that the water is carrying with it. A conceptual model of how groundwater moves was shown to all those in attendance.

Mr. Goode continued by explaining the different methods for which groundwater can move through an area. Diagrams showing permeable and less permeable layers, the effect of dip on the layers, and fractures in bedrock were explained to the audience. A brief flowchart explaining how the models the USGS prepares was displayed before Mr. Goode continued with an update on the USGS models of Willow Grove.

Mr. Goode clarified that they are not able to release their current results as the reports have yet to get final approval. Modeling has been completed, and the steps taken to create the model were then shown. The extent of the model was explained followed by examples of data that has been collected. Over 1,000 water levels as well as continuous stream gauge readings were used to help calibrate the model and estimate flow rates. The geology of the area was then discussed to show the effects that the different formations have on the spread of groundwater.

Mr. Goode concluded the USGS section of the presentation with the next steps the USGS will be taking. The modeling has been completed, and field data will continue to be collected. A report will be prepared using the model and what it suggests is occurring with the groundwater flow paths. Two technical colleague reviews will need to occur prior to the report being approved by the USGS. Once it has been approved, slides showing the results will be made available.

Sarah Kloss commenced EPA's discussion. Ms. Kloss covered the EPA's role in the project. A broad overview of the proposed goal of the pilot test study was presented.

Ms. Kloss stated that the EPA is responsible for oversight of both the Navy and the ANG. The EPA is tasked with reviews of the data that has been collected and providing input on what needs to be investigated further. The primary role is to oversee the cleanup and make sure that the Navy and ANG are protecting human health and the environment.

Ms. Kloss proceed the presentation by recapping from the previous meeting the ways in which surface water can infiltrate to groundwater. The potential exposure pathways that can affect human health were then covered. A brief description ingestion, dermal absorption, and inhalation were described. Ms. Kloss then clarified the difference between screening levels and cleanup levels. Currently Region 3 has no screening levels for surface water for recreational purposes. As a result, the screening levels used at the site are the Navy screen values.

Ms. Kloss continued with a short explanation of the Superfund process. A slide with the general steps of the process was given followed by a brief description of each of the steps.

The EPA presentation concluded with Ms. Kloss detailing the short-term actions that are currently being taken for the protection of human health and the environment. The Navy has begun pumping groundwater following the previous RAB meeting to attempt to contain more of the onsite contamination. Additional monitoring of the streams surrounding the base have also occurred. The Navy will also install more monitoring wells offsite to ensure that conditions are stable. A second pilot test extraction and treatment will occur in the fire training area.

Mr. Lin opened the floor to questions from those in attendance.

Patricia Leaney inquired about the number of compounds being tested and the availability of the results. An unidentified EPA representative stated that 18 different PFAS compounds are being tested, and that the analytical results are available once the report is issued.

Correne Kristiansen asked about the potential testing of the corn that is next to the base due to the impact it could have on the food stream. Linda Watson of EPA explained that currently there is no way to analyze that in the form of food. There is currently not enough research to determine if it is safe or not.

Ms. Kristiansen additionally requested to know the method in which residents could be included in the well sampling program. Residents can contact either Wood or Tetra Tech. Mr. Lin added the Navy is resampling wells that were previously sampled. Tetra Tech has sent letters in attempts to contact property owners where property ownership may have transferred. If the property has changed ownership, previous sampling results can be made available to the new owner.

Mark McCouch asked about locations of wells that had been previously tested with results below 70 ppt that are now above 70 ppt. Mr. Lin replied that it is not common for many wells in the monitoring program to go above 70 ppt if they have previously been below that level. Only two wells have gone above 70 ppt since the last round of sampling.

Mr. McCouch followed up by inquiring as to the source of the pumping wells used in the USGS model. Mr. Goode responded that the map that was shown used information for Pennsylvania DEP files that reflected industrial use and large water supply. The pumping of private wells is small comparatively speaking.

Ms. Leaney requested to know the level of PFAS in the surface water leaving the base into the streams. Maj. Stefanik replied that the water going through the filtration system into the streams is non-detect for PFAS.

Joanne Stanton inquired about the actions needed in order to have a private well sampled. Mr. Lin responded that either he or Tetra Tech should be contacted to set up the sampling if the well is within the sampling boundaries.

Ms. Stanton also asked about the possibility of testing the fish tissue for PFAS in areas near the base for the recreational assessment. Ms. Kloss replied that fish tissue will not be used in the recreational number. Currently there are no EPA approved methods to test the fish tissue. Some states have set their own standards, but the EPA has not set a method or standard as of yet.

An unidentified resident requested to know when the feasibility studies would be published online. Mr. Lin answered that the exact date is not known, however a physical copy is available at the library.

An unidentified resident inquired about the effect removing the 4.5 tons contaminated soil has had on the PFAS levels. Mr. Lin explained that to answer that additional sampling will need to occur. An updated sampling plan is anticipated in early 2020 to address that.

An unidentified resident asked about the rationale of beginning the USGS model in 1999. Mr. Goode replied that in 1999 a cooperative project with the Delaware River Basin Commission began to collect GIS data sets for Southeastern Pennsylvania. The USGS began using these data sets to model the Willow Grove and Warminster areas in 2016 or 2017.

Joe Feliciani requested a spreadsheet with all of the onsite monitoring wells, the results, and the dates they were sampled for the next meeting. Mr. Lin responded that sampling figures and sheets of results are available in the reports currently on file at the library.

Mr. Feliciani followed up with an inquiry about testing breast milk in the population around the base. Lora Werner responded that they are working with the health department to do blood and urine analysis. It is unlikely that they will conduct any other tests.

Greg Nesbitt asked about the possibility of testing the soil in Graeme Park. Mr. Lin responded that the request is currently being reviewed by management.

Mr. Nesbitt asked about the possibility of testing the soil in Graeme Park. Ms. Werner responded that they are working with the health department to do blood and urine analysis. It is unlikely that they will conduct any other tests.

Mr. Nesbitt then inquired about the status of the PFAS chemicals being listed under the Superfund section. Ms. Kloss answered that the EPA is moving through the process as quickly as possible to designate PFOS and PFOA as hazardous substances. The reclassification of the PFAS compounds should not affect how the EPA does oversight at Willow Grove as clean up for the contaminants has already been initiated.

Mr. Nesbitt requested a timetable on the final permit so construction can begin renovating the basin on the base. Colin Wade replied that there is currently no specific time range. Permitting and construction of the ANG designs is being done simultaneously in order to not have significant delays.

An unidentified speaker suggested two papers for the USGS to consider implementing into their groundwater model.

Ms. Leaney inquired about the effectiveness of ion exchange being used on drinking water to treat PFAS. Mr. Wade answered that he was unable to say how effective that treatment would be. Ongoing studies are currently being done with the technology.

An unidentified speaker asked about the timeline for DEP to release a standard for PFAS in drinking water and classify PFAS as a hazardous substance. Mr. Wade answered that a drinking water standard under the Pennsylvania Safe Drinking Water Act is in development, but there is no update for the time frame. It was reiterated that PFAS does not need to be classified a hazardous substance in order for the DEP to start an investigation and take action.

Joe McGrath requested to know the cost of moving the soil that had been excavated from the site to the landfill. Mr. Lin answered that a completion report is being prepared that will outline what occurred through the process of the soil removal.

There were no other questions and Mr. Lin adjourned the RAB meeting. After a short break, Lora Werner of the ATSDR led a health discussion with community members.