Restoration Advisory Board Meeting Minutes, Naval Research Laboratory – Chesapeake Bay Detachment, Chesapeake Beach, Maryland

 MEETING DATE:
 April 17, 2024

 LOCATION:
 Northeast Community Center, 4075 Gordon Stinnett Avenue, Chesapeake Beach, Maryland 20732

Note: This meeting summary is based on informal notes taken at the meeting. It is not intended as a verbatim transcript. Rather, it is intended to summarize the overall discussions.

Welcome and Introductions

Ryan Mayer from Naval Facilities Engineering Systems Command (NAVFAC) – Washington introduced himself as the Department of the Navy (Navy) Remedial Project Manager (RPM) for Naval Research Laboratory – Chesapeake Bay Detachment (NRL-CBD). He welcomed the Restoration Advisory Board (RAB) members and the public to the eighth RAB meeting for NRL-CBD and informed the attendees that the meeting would be recorded via audio to aid in preparation of the meeting minutes. Ryan informed the RAB meeting attendees of the new community co-chair, David Harris, and of the passing of Ira May of the Maryland Department of the Environment (MDE).

Ryan introduced Amy Brand (Jacobs), Andy Bogdanski (Jacobs), Peggy Williams (MDE), Jessica Shulman (MDE), Sarah-Jane O'Brien (Jacobs), Zoe Johnson (NSA Annapolis), Matt Klimoski (NSA Annapolis), Windy Campbell (Jacobs), Anna Lesichar (NRL) and David Harris (RAB Community Co-Chair). A full list of attendees is provided in **Table 1**.

Ryan went through the introductions and meeting Agenda (**Attachment 1**) and the general meeting presentation. He asked attendees to hold general questions until the end of the meeting.

Meeting Logistics

Amy Brand, a community involvement specialist from Jacobs and facilitator for the meeting, reviewed the meeting logistics with the attendees and reminded the attendees of the mission of the RAB which is to keep an open dialogue of environmental investigations. Amy highlighted the partnership with the Navy, MDE, and public and reminded RAB members of their responsibility to serve as liaisons for their community, bringing questions to and from RAB meetings. She noted that at end of each discussion topic, RAB members can ask questions, followed by questions from public attendees at the end of the meeting. She presented a brief summary of ground rules (Attachment 2, Slide 7).

Review and Approve Draft October 2023 RAB Meeting Minutes

Amy indicated that she had sent out the draft October meeting minutes to the RAB and on the Navy website on March 27, 2024, for the RAB's review. And if no changes, the meeting minutes will be changed to final. Amy noted that during preparation of the October meeting minutes, it was hard to hear the guests in the recording and suggested that everyone speak up so it's easier to hear the questions. No objections on the October 2023 meeting minutes were received and the RAB members in

attendance agreed to approve the minutes for finalization. Amy indicated that the minutes now will be finalized (**Attachment 2**, Slide 8).

The final May 2023 RAB meeting minutes have been posted to the NRL-CBD website.

Site 9 Supplemental Expanded Site Inspection

Ryan Mayer, the Navy RPM for NRL-CBD, indicated that Site 9 – Photo-Processing Waste Discharge – is recommended for no further action and the site is being moved to site closure. As shown on the Overview of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Process slide (Attachment 2, Slide 11), this site remained in the Site Inspection (SI) phase and never moved to a Remedial Investigation (RI) phase. The site has undergone three rounds of investigations under the SI phase - a SI completed in 2012, an Expanded SI (ESI) completed in 2018 and a supplemental ESI (SESI) completed in 2023. All three rounds of sampling remained under the SI phase and the conceptual site model (CSM) was updated after each event.

Former Building 43, which was associated with the photo processing lab, is no longer present. The photo lab was inside the building where wastewater from the photo-processing operation was disposed of through a drain, which discharged immediately to the ground surface outside of the building. The photo processing lab was used once or twice during each year of operation, generating about 10 to 15 gallons of waste (containing sodium thiosulfate and hydroquinone). Photo processing occurred in the late-1950s until the early-1960s and again from the late-1960s through 1975. Ryan reviewed the CERCLA process (Attachment 2, Slide 11).

Andy Bogdanski provided an overview of the soil and groundwater sampling activities and the results of the SI and ESI. He indicated that there were different iterations of SI fieldwork at Site 9 which included risk evaluations. MDE responded with comments on the ESI Report requesting additional sampling for hydroquinone and sodium thiosulfate, which are compounds used in the film developer solution. Photoprocessing activities typically produce silver which is removed from the film as a byproduct of the development process; therefore, silver is the contaminant most commonly encountered at photography labs.

Hydroquinone and sodium thiosulfate weren't chemicals that we previously sampled for, or chemicals that are typically included in our volatile organic compounds (VOCs) or semi-VOCs (SVOCs) analysis groups. The team agreed to go back and take a look at those two compounds. It was determined that hydroquinone did have regulatory screening levels, but that sodium thiosulfate did not have a screening level. There was no comparison that could be completed with the data; therefore, sodium thiosulfate was removed from further investigation. The team agreed to resample for hydroquinone because there was a screening level. This moved us into the SESI. The sampling strategy included pairing up the new soil sample locations with those locations previously sampled in the SI and ESI, as well as collecting groundwater from three temporary wells. The results of the data showed no detections of hydroquinone in the surface soil, subsurface soil, or in groundwater above the detection limit.

Andy indicated that there is limited uncertainty in the data due to limitations in the laboratory detection limits, which were reported above screening levels. The partnering team discussed these limitations during the development of the workplan and determined that having some sample data would be better than no data. Andy further discussed the short half-life of hydroquinone which is approximately 14 days. Since the concentrations are breaking down by half every two weeks and coupled with the fact that it's been 50+ years since a release, the chances that there is residual contamination is small. Based on the no detections, no further action was recommended for the site, and the path forward is to move Site 9 through site closure. Andy then asked if there were any questions.

• Michael Rooney (RAB Member) asked if the team looked at the sodium thiosulfate degradation products (hydrogen sulfide). Michael indicated that he was looking at the MSDS for that and

seeing that hydrogen sulfide levels would be something to be thinking about and was just curious if you screen for that.

Andy indicated no; hydrogen sulfide is not something we typically analyze. Andy explained that hydrogen sulfide is a gas and typically it would naturally permeate through the soil.

 Michael asked what kind of workers are in the area and has a time weighted average (TWA) for this compound been looked at.

Andy indicated the site is an open area with no buildings; it is used for open storage. Workers in this area would be transient. TWAs are typically calculated based on OSHA regulations to calculate protective measures for workers based for short-term exposure, which is based on an 8-hr work schedule. The risk evaluations we conducted are based on chronic long-term exposure and typically are more conservative than those for OSHA.

• Michael asked if there is a separate operational unit (OU) monitoring groundwater wells around this site that are being used for sampling of PFAS.

Ryan indicated that there are no OUs but just 'sites'. If monitoring wells at the sites are needed to investigate for PFAS, we will look at sampling for PFAS.

Andy indicated that for this site, the three monitoring wells were temporary wells, and we didn't need PFAS data from those wells for what we're looking at. PFAS is being looked at separately from a different set of monitoring wells installed across the facility.

• David indicated that the monitoring wells at Site 9 are close to PFAS areas. He questioned closure of the site with all the PFAS around and closing wells, and whether they are contributing to transport of PFAS.

Amy suggested that Andy explain bentonite and well abandonment activities.

Andy indicated that the three wells at Site 9 did get abandoned with bentonite. He explained what bentonite is and the abandonment procedures for temporary wells. During monitoring well construction, a hole is drilled down through the ground like you would drill a hole for a fence post. This then intersects the water table. We insert a plastic polyvinyl chloride (PVC) pipe, which is the well casing, and place a metal casing cover over top of it. This protects the plastic from getting hit by a car or something else. For temporary wells, the plastic casing gets pulled out and then the hole is backfilled with bentonite (once sampling is completed). Bentonite is a type of clay which swells when it encounters water; it expands and seals off the hole, making it water tight.

• Amy asked David if his concern is that by having multiple wells at this site and around the Base which have been abandoned, that this may create additional ways for PFAS to move.

David is concerned that PFAS is entering into the Piney Point aquifer, which is a drinking water aquifer, and asked how it is getting there. He thinks that the numerous shallow wells here could be causing contamination in the deeper aquifer. David questioned the geology across the site and the wells that were installed into the Piney Point aquifer. Could the installation of these wells pull PFAS into that aquifer?

Ryan asked how deep were the wells at Site 9.

Andy indicated that the three temporary wells installed at Site 9 were shallow wells. They were only into the top layer (approximately 15 to 20 feet below ground surface [bgs]) and were not advanced into the Piney Point aquifer.

 David asked while collecting water samples for the sodium thiosulfate, why not also sample for PFAS? Andy indicated that Site 9 is upgradient from Site 10, and there are other wells in the area used for monitoring PFAS. Additionally, PFAS is not part of the conceptual site model for Site 9. The focus for Site 9 is contaminants related to the photo processing solution, for which PFAS was not used. The investigation procedure is to sample for site-specific compounds, which in this case did not include PFAS.

• Michael Rooney asked if this site (NRL-CBD) was governed by a federal facility agreement (FFA).

Ryan indicated that the larger federal installations entered into facility agreements. However, NRL-CBD is not on the National Priority List (NPL), so it does not have EPA involvement or an FFA.

Amy Brand went over NPL sites and that since NRL-CBD is not an NPL site, the Environmental Protection Agency (EPA) is not involved.

PFAS Site Updates

Ryan provided an overview of PFAS at NRL-CBD. Ryan indicated that because NRL-CBD is a small facility, there are not a lot of sites. He went over the Basewide history including Site 10, which is the primary PFAS source for the Base. A PFAS Preliminary Assessment (PA) was conducted at the Base and a new site - Site 12 - resulted from the PA. Ryan provided brief background for Site 12 - Fire House and discussed the SI results. Site 10 and Site 12 are moving into the Remedial Investigation (RI) phase.

Site 10

Ryan indicated the team is completing an on-Base and off-Base remedial investigation and the fieldwork will be conducted in two separate investigations. The off-Base investigation will be expanding on previous investigations including areas north of the Base and areas south of the Base. For Site 10, two separate (on-Base and off-Base) Sampling and Analysis Plans (SAPs) are under development and the Navy will inform the RAB once the SAPs are finalized. The sampling plans include provisions for sampling groundwater and other environmental media on- and off-Base. The SAPs do not include off-site drinking water; drinking water sampling was completed in 2018. The SAPs are for the nature and extent of PFAS in environmental media (soil, groundwater, surface water, sediment).

Andy provided an overview of the Site 10 on-Base RI SAP and summarized the RI objectives. He discussed conducting risk assessments in the RI phase and an evaluation of fate and transport (how PFAS is breaking down in the environment, moving through the environment and its interaction between soil and groundwater and between groundwater and surface water). Also to be completed will be a more in-depth human health risk assessment. A risk screening was completed in the SI phase, which is a more conservative quicker risk evaluation. The Navy will be re-sampling the streams at previous locations and as well as at new stream locations. The tentative schedule of completion of the SAPs is Fall 2024.

• Michael Rooney asked if the evaluation includes assessing ecological receptors. Andy indicated human health and environmental risk assessments will be completed.

Amy went over the labels and features on the presentation figures including identifying the different buildings at Site 10, the stormwater pond to the north, and the stream to the south. Ryan indicated that most of these building structures are still present. Andy indicated that the wastewater storage tanks were no longer there; they were demolished in 2020 and disposed of offsite. Most of the soil contamination is in the center (of Site 10).

Andy provided an overview of the off-Base RI SAP. The two sampling plans (on-Base and off-Base) are being prepared in parallel, which is not typical (in the CERCLA process). Usually, the process would be to complete the on-Base investigation first and then complete the off-Base investigation based on the results of the on-Base investigation. However, there is more lag time with that approach, and conducting the SAPs in parallel speeds up the field work. Results from both investigations will be combined into one RI report.

Andy presented the PFAS map and indicated that the concerns are to the northeast (NE) and southeast (SE). The Navy wants to add additional monitoring wells to better evaluate concentrations of PFAS in those areas.

• Michael Rooney asked if there are monitoring wells on the other side of road (east of Rt. 261).

Andy indicated there are three monitoring wells that have delineated the eastern extent of the PFAS plume. Groundwater flow follows topography and generally groundwater flow direction is pushing northeast to the stream, and then it pushes southeast following the hill side into the southern stream.

• Michael Rooney asked the density of monitoring wells at the site.

Andy indicated that they have not calculated the density of monitoring wells and that the well network is focused on determining the spatial distribution of PFAS. Currently, there are approximately 30 monitoring wells onsite.

Amy and Andy confirmed that the number of wells will be provided in the SAPs and that the current well count is based on the SI.

• Michael Rooney asked if the monitoring wells are nested and if the wells represent aquifer quality.

Andy stated that there are four monitoring well sets onsite that have nested pairs. Andy indicated that most wells are screened in the surficial aquifer. He further explained the geology of the site. Shallow wells are placed in the overburden which is where the shallow aquifer is located. At approximately 30 feet below ground surface (bgs) a clay layer is encountered which is the top of the confining unit. The monitoring wells installed in the Piney Point aquifer are located approximately 200-300 feet bgs. The Piney Point aquifer was assessed as off-base drinking water wells are tapped into that aquifer. However, the shallow aquifer is the primary focus.

Site 12

Andy provided a background and overview of the SAP for Site 12 – Former Firehouse. The SAP for Site 12 is also under development based on the results of the SI phase. The Navy is looking at sampling multiple media (soil, groundwater, surface water, sediment) here as well.

Andy indicated that the Navy is in the workplan phase this year with fieldwork anticipated for late-2024 or early-2025.

Site 10 - Interim Measures

Ryan provided an overview of Interim Measures (IMs) for Site 10. He explained that groundwater is discharging into the north pond as well as entering the sanitary system. The interim measure is a removal action which consists of designing two treatment systems, one for the north pond and a second for the wastewater treatment plant (WWTP). The WWTP was not designed for PFAS treatment so the PFAS treatment system will be added to the current WWTP system. The PFAS treatment systems will be located in CONEX boxes (at each of the two locations). The north pond will have an intake structure installed to convey water to the treatment system. The PFAS treatment system at the WWTP will be inserted at the end of the existing WWTP system to remove PFAS before the water is discharged.

The PFAS treatment system for the WWTP is currently in permitting with MDE. The north pond is not a permitted activity; however, the PFAS treatment system for the north pond still has to go through a

process review with MDE. The Basis of Design (BOD) is 100% complete and the PFAS treatment systems are already built and awaiting permitting and completion of the Action Memorandum prior to being installed at the site. An Action Memorandum will be posted in Summer 2024 and will provide an overview description of the treatment, the removal levels to meet. There will be a public comment period.

Questions & Comments from RAB Members on the Site 10 SAPs/ Site 12 SAP / PFAS Update / Interim Action

Amy then opened the meeting to questions and comments from RAB members regarding the Site 10 SAPs, Site 12 SAP, PFAS Update and Interim Action topics.

• Greg Morris indicated that during the last meeting (in October 2023), when reviewing Site 10, it was projected that the PFAS treatment systems were to be in place by now.

Ryan indicated that it was planned to have them in place by this time, and the Navy did test the systems; however, regulatory review and site preparation slowed the timeline. Greg asked what the current projection is to have the systems running. Ryan indicated Fall 2024. Greg asked if these were the first systems in the state. Ryan confirmed that to his knowledge, they are the first.

• Greg asked how working through the permits with the state of Maryland (MDE) has been, and if the Navy is getting any priority from the MDE.

Ryan explained that he and Peggy Williams meet regularly; there are others from MDE that are also involved for permitting. The Navy has to go through the permitting process, and it has been 'an education' as there are two different regulatory programs. The north pond does not have a permit, but other information is required by the MDE for that system. The WWTP PFAS treatment system is different. This is new to MDE, the Navy, and the NRL-CBD team. The treatment systems being developed are using systems that are treating contaminants that never have been treated before in Maryland under CERCLA.

Peggy indicated that although permits may not be required (for the North Pond), the Navy still needs to have approval of the design, the plans, and be in compliance with determined levels, which will likely be non-detection levels.

• Greg asked what has the MDE has been working on regarding establishing guidelines for PFAS?

Amy indicated that this question is a broader question that can be addressed at the end of the meeting.

Michael asked if a pilot test was completed for the treatment process.

Ryan indicated that a presentation was prepared regarding the treatment process. The treatment systems are based off systems used at a site in Pennsylvania, which has high levels of PFAS, and their pilot test. The Navy is adapting the design of those systems and applying it to NRL-CBD.

• Michael asked if there will be primary and secondary treatment units plumbed in-series so that when you recognize the point of breakthrough, you could just switch from unit 1 to unit 2.

Ryan indicated that activated carbon systems will be used for organic carbon removal to preserve the ion resin exchange system. This will be used as the primary PFAS removal

technology and located in the last vessel of the treatment system. There will be lead-lag vessels so service to a vessel can be provided.

Amy clarified that these treatment systems are in a piped in-series, so there is testing in between vessels. Amy added that when Ryan was talking about breakthrough, you can tell if you're starting to pick up PFAS in between these systems. That way, you know you may need to change out the carbon and/or resin.

Ryan also indicated that once the systems are in place, there will be reporting requirements.

• David asked to look at the north pond figure to look at the intake location (blue line). Is it shared into the riser, or is it going in the structure or back into the pond?

Ryan indicated that it is going into to the overflow structure. There is an overflow structure there currently, and the pond water level goes up to that structure. It overflows into the structure and conveys through a pipe in the dam wall into the down gradient stream. It acts as a kind of an automatic water level. David was worried that the discharge would go back into the pond. Ryan stated no; that won't be the case.

David was worried with PFAS suspended in the water, that the discharge would stir up anything that might be in the pond. Andy indicated that there will be an initial drawdown in the north pond to bring the water level down below the overflow structure. A float switch will monitor the water level in the pond.

• Michael asked if the RAB members can view the structures in a site visit.

Ryan indicated that a site visit with RAB members may not be possible due to Base security requirements. However, the RAB members may be able view the WWTP system while passing on the highway, but the northern pond system is out of view from publicly accessible areas.

Amy indicated that the next presentation is about a munition site. She reiterated that the environmental restoration program (ERP) at the Base covers sites that have chemicals, as well as sites that have munitions.

UXO-001 Proposed Remedial Action Plan

Ryan Mayer introduced the site Unexploded Ordnance (UXO) 001 - Former Hypervelocity Low-Pressure Gun (HVG) testing facility. Ryan indicated that there are only a few munitions response sites at NRL-CBD and although there is no unexploded ordnance identified at NRL-CBD, those munition response sites retain the UXO designator name. Ryan then provided the background and history of the site.

Ryan provided the status of the site in the CERLCLA process and reminded everyone that UXO-001 is moving into the remedy phase. The Navy just finished the Feasibility Study (FS), and a Proposed Remedial Action Plan (PRAP) has been developed. The PRAP will be available to the public and advertised in the local paper shortly. The PRAP is currently in review with the MDE. Once the PRAP is ready it will be available on the NRL-CBD website along with all previous investigation (FS, SI, RI, etc.) reports in the Administrative Record File site. Amy said that a notice will be sent to the RAB members; Ryan indicated that there is a 30-day period for the public to review.

Ryan then discussed the site and indicated that firing of the gun was completed into a chamber; none of the testing was completed outside. Lead was detected in surface and subsurface soils which was driving potential risk. Lead detected in groundwater, sediment, and surface water was determined to not be an unacceptable risk. MDE requested additional sampling for lead in soil. It was determined that the lead detections were not from firing activities - but from paint chips off the gun-mount structure - and was mainly in the surficial soil.

Remedial Action Objectives (RAOs) will be provided in the PRAP. Typical screening for lead in soil is 400 milligrams per kilograms (mg/kg) by the EPA, but MDE is using 200 mg/kg as the remedial action goal. Ryan then provided an overview of the types of remedial action alternatives. The Navy is choosing Alternative 3 (Excavation and Off-site Disposal) which will remove impacted soil and dispose it offsite at a landfill. The concentrations detected in the soil were not high enough to be considered a hazardous waste. It is estimated that 94 cubic yards will be removed. Once the PRAP is approved by MDE, it will be open to public comments. The Navy will then address public comments, and the Decision Document will be uploaded into the administrative record.

• Michael questioned the risk driver between remediation action alternatives 2 and 3. Michael questioned the cost difference between the alternatives.

Ryan indicated that Alternative 2 (Land Use Controls) is long-term (forever); lead remains in the ground and has to be managed. There can be problems using an alternative where there could be risk of movement of the contaminant with development. With Alternative 3, the cleanup is completed, and site closure will be achieved, unlike with Alternative 2 which will require inspections, plans, become part of the five-year reporting process including sampling. Amy indicated the costs of the alternatives will be in the FFS.

• Michael asked if the Navy is looking to sell that property.

Ryan stated he is not aware of any plans to do so.

PFAS Regulatory Updates and Navy Policy Updates

Peggy William of the MDE provided an overview of the MDE's comprehensive monitoring and sampling program for PFAS in fish. The MDE started the program in Fall 2020 with sampling of fish and shellfish in rivers and other water bodies. Although PFAS has been identified, the only PFAS with an advisory recommendation is PFOS. The water program indicated that surveillance is ongoing as needed. Peggy added that of all the meal recommendations in Maryland, PFOS makes up 16% while the rest are driven by mercury and PCBs.

Peggy provided an overview of PFAS in the 2024 Legislative Session for Maryland as the MDE had to develop the PFAS regulations. She also provided an overview of the EPA's latest Progress Report of December 2024; that fact sheet is available from the EPA. There was nationwide monitoring for 29 PFAS compounds at more than 10,000 public water systems; this has been posted on the EPA website. The EPA has new data (regulations) that will improve the EPA's understanding of the frequency of these 29 PFAS detections in drinking water systems and what levels they are finding it at. The EPA is providing funding (\$10 billion to remove PFAS and other emerging chemicals). Peggy indicated that the state of Maryland is receiving \$120 million for funding.

NAVY UPDATES

Ryan provided the Navy policy update on PFAS. PFAS is constantly changing. As we move through PFAS investigations and a new sampling plan is put together, there generally seems to be either a new analytical method that we're using, or we're reporting new PFAS chemicals. Initially there were three PFAS compounds being investigated; now we're up to 40 compounds. The Department of Defense (DoD) has approved human health screening levels which are based on the EPA Regional Screening Levels (RSLs) but not all PFAS compounds have screening levels. Additionally, the EPA has established RSLs for two compounds which are not currently on the EPA Method 1633, which means that that laboratories cannot test for them. The latest EPA release - for the Maximum Contaminant Levels (MCLs) for drinking water - were released last Wednesday (April 10, 2024).

• David asked for verification that the new drinking water data from the EPA is only for public drinking water, and asked what will be done with the wells that were sampled in 2018 where private drinking water could be impacted.

Ryan confirmed that the MCLs do not apply to private wells; they apply to public drinking water systems. The MCLs released last week are new to everyone; organizations and their leadership are digesting them right now. The Navy is evaluating what we need to do for those wells with detections (from 2018) with PFAS offsite. The Navy does not have that guidance yet, but it is coming. Ryan further stated that the EPA indicated that all groups/agencies that provide public water must comply with PFAS National Primary Drinking Water Regulation in five years.

 Regarding the five years to comply, David asked if the Navy going to be responsive to the neighbors' PFAS concentrations that are exceeding the public values. Would it be a long, drawnout process where people stop trying to deal with it.

Ryan indicated that the Navy, as a whole across the country, is going to evaluate the need for treatment systems for the higher concentration wells and prioritize that. Amy stated that the Navy has to wait for DoD to determine how to proceed and make a policy; DoD wants a consistent approach from all agencies (Army, Navy, etc.).

• David indicated that a filtration system will be cheaper, and that the Navy can chose to take the simpler way.

Ryan responded that between 2016 and 2018 there were many water samples collected and any sample over 70 ng/L were either provided bottled water or a treatment system. None of the wells near NRL-CBD were over 70 ng/L.

• John Bacon, a guest to the RAB meeting, asked if stormwater gets treated at the WWTP.

Ryan indicated only water from the sanitary sewer system enters into the WWTP and that the team had questioned why the concentrations of PFAS were so high after the treatment plant. Ryan explained that there are sanitary sewer lines that run under Site 10. The sewer lines are near the same elevation as the surficial groundwater, and groundwater has infiltrated into the sanitary sewer. The sanitary sewer was tested at manhole locations; it was confirmed that infiltration is coming into the sewer. The inflow into the sanitary lines cannot be stopped as there will always be some minor amount of groundwater inflow. However, the treatment at the WWTP will remove the PFAS before it leaves the Base.

• John asked if there has been a comparison of samples collected during dry climate versus wet climate.

Ryan indicated that there was a difference in PFAS concentrations between sampling events. It's assumed that a lot of the difference is attributable to when the pump station is on or off, as it impacts the quantity of water coming into the WWTP from the western half of the facility. In a rain event, it's anticipated that the PFAS levels will go down as they will be diluted out by storm water.

Andy indicated that the surface sampling of the streams was not completed during rain events. Typically, sampling has been on nice days, and the data likely represents a more conservative picture as higher concentrations would be expected during baseline conditions vs. sampling conducted during rain which would dilute the concentrations. Regarding the southern stream, during the initial round of sampling the lower portion of the stream had concentrations that were reported 10x higher than the stream's upper portion.

Andy further indicated that David had questioned those changes in concentrations, which led the team to go back and collect additional samples. The WWTP effluent was discovered to be a

source. The two sources are groundwater from Site 10 discharging to the streams and groundwater from Site 10 infiltrating into the sanitary line.

• John asked about the tidal cycle and there has been no sampling in tidal area.

Andy indicated that the current surface water sampling stopped in the area of the beach front. Some sampling was completed in the near shoreline and PFAS was detected in the range of 10,000 parts per trillion (ppt) within the freshwater stream but 75-feet out into the near shore waters. The results were non-detect.

 Michael asked if the treatment system was in operation, and can the team calculate the mass of material from receipt records (as in calculate quantity of the Aqueous Film Forming Foam (AFFF) that was historically purchased stored and used on-site) to quantify the amount in the source zone.

Ryan indicated that there are no records of quantities purchased or used. These releases are related to historical use dating from the late-1960s until the late-1980s, so records are scarce.

The Site 10 treatment system is not installed yet pending regulatory approvals, and finalization of the Navy's Action Memorandum.

Future Meeting Planning and Adjournment

Amy indicated that the next RAB meeting is proposed for October 23, 2024, at 5:00-7:00 pm at the same location (Northeast Community Center). Amy asked the RAB members if there were any concerns with this date. No concerns nor objections were noted.

Amy and Ryan indicated that there will be two public notice events over the summer: the Interim Action Memorandum and the PRAP.

Amy then reviewed websites available for additional information on PFAS and the RAB website which includes the meeting minutes. Ryan indicated that the NAVFAC website links to all the Navy sites/Bases, and that Administrative Records are available there as well for all Navy installations in different states.

RAB members were encouraged to email David or Ryan with any questions or discussions and if they had any ideas on how to share information regarding the RAB meeting to others in the community. David indicated that he does not look at his email every day and he may take a couple of days to respond.

The Meeting was adjourned at 7:02 pm on April 17, 2024.

Table 1. List of Attendees

Restoration Advisory Board Meeting April 17, 2024

Name	Affiliation
Ryan Mayer	NAVFAC Washington; Co-Chair
Regina Adams	NAVFAC Washington
Anna Lesichar	NRL
David Harris, II	RAB member; Community Co-Chair
Robin Harris	RAB member
Vivian Cawood	RAB member
Michael Rooney	RAB member
Robin Munnikhuysen	RAB member
Greg Morris	RAB member
Zoe Johnson	NSA Annapolis
Matthew Klimoski	Navy Guest
Kelly Hauhn	Public
Elaine Magdirec	Public
John Bacon	Public
Greg Kuntz	Public
Jessica Shulman	MDE
Peggy Williams	MDE
Amy Brand	Jacobs
Andy Bogdanski	Jacobs
Windy Campbell	Jacobs
Sarah-Jane O'Brien	Jacobs

Attachment 1 Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting Agenda, April 17, 2024







Restoration Advisory Board (RAB) Meeting Naval Research Laboratory – Chesapeake Bay Detachment

April 17, 2024, 5:00-7:00 pm Northeast Community Center 4075 Gordon Stinnett Ave, Chesapeake Beach, MD 20732

Meeting Facilitator: Amy Brand - Jacobs

Meeting Agenda			
Time	Торіс	Presenter	
5:00-5:10 pm	Welcome and Introductions	Ryan Mayer and David Harris	
5:10-5:15 pm	Meeting Logistics: review ground rules and meeting logistics	Amy Brand	
5:15-5:20 pm	Review and Approve October 2023 RAB Meeting Minutes	Amy Brand	
5:20-5:35 pm	Site 9 Supplemental Expanded Site Inspection	Ryan Mayer and Andy Bogdanski	
5:35-5:50 pm	Questions & Comments from RAB Members	RAB Members	
5:50-6:05 pm	PFAS Site Updates	Ryan Mayer and Andy Bogdanski	
6:05-6:15 pm	Questions & Comments from RAB Members	RAB Members	
6:15-6:25 pm	UXO-001 Proposed Remedial Action Plan	Ryan Mayer	
6:25-6:35 pm	PFAS Regulatory and Navy Policy Updates	Peggy Williams Ryan Mayer	
6:35-6:50 pm	Open Questions & Comments	RAB Members and Public Meeting Attendees	
6:50-7:00 pm	Future Meeting Planning and Adjournment	Ryan Mayer	

Attachment 2 Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting Presentation, April 17, 2024



Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting

April 17, 2024

5:00 - 7:00 p.m.

Introductions

Community RAB Members		
David Harris, Community Co-Chair	Vivian Cawood	Pat Durbin
Blenda Eckert	Tom Eckert	Mark Fisher
Michael Gilliam	Will Hager	Kevin Britt
Robin Harris	Larry Jaworski	Brendan Lumsden
Greg Morris	Michael Rooney	Allison York
Navy Team		
Ryan Mayer NAVFAC Remedial Project Manager Navy Co-Chair	Anna Lesichar NRL-CBD	
Peggy Williams Maryland Department of the Environment (MDE)	Curtis DeTore MDE	Jessica Shulman MDE
Andy Bogdanski Jacobs	Amy Brand Jacobs	Sarah-Jane O'Brien Jacobs

Agenda

- Welcome and Introductions
- Meeting Structure and Guidelines
- Review and Approve Draft October 2023 Meeting Minutes
- Site 9 Supplemental Expanded Site Inspection
 - Questions & Comments from RAB Members
- PFAS Site Updates
 - Questions & Comments from RAB Members
- UXO-001 Proposed Remedial Action Plan
- PFAS Regulatory and Navy Policy Updates
 - Questions & Comments from RAB Members and the Public
- Future Meeting Planning and Adjournment



Meeting Structure and Guidelines

Amy Brand - Jacobs

Mission and Charter Overview

Mission: To establish and maintain open and interactive dialogue between representatives of the Navy, the Maryland Department of the Environment (MDE), and the local community concerning the Environmental Restoration Program (ERP) activities at NRL-CBD. The RAB:

- Exists to give community access to information about the Navy's Environmental Restoration Program at NRL-CBD.
- Acts as a liaison group to disseminate information to the community and solicit the community for comments.
- Is an advisory group, not a decision-making board.
- Gives community members an opportunity to learn about the ERP; share input, ideas, and concerns; and advise decision-makers.
- Enables the project team to identify and address questions, comments and concerns from the community early and throughout the process.

Structure of an In-Person RAB Meeting

- RAB members sit at the table
- The Navy's contractor, Jacobs, will facilitate the meeting, but the Navy and Community Co-Chairs are in charge of the meeting
- RAB members may ask questions and discuss at the end of each presentation
- Public participants will hold questions until the designated time at the end of the meeting*

Review of Ground Rules

- All remarks or questions will be made in a **courteous and respectful manner**. Profanity, angry or violent outbursts, and other types of disrespectful or rude behavior will not be tolerated.
- RAB members will talk one at a time and wait to be recognized by a Co-Chair.
- RAB members will be patient when **listening to others speak** and will not interrupt.
- RAB members will avoid dominating discussion and will be cognizant of letting others speak.
- Members will **limit side comments** and will not engage in side conversations.
- Comments and questions will be limited to agenda topics except during periods on the agenda for open discussion.
- RAB members will turn cell phones off or to vibrate and will not check messages or otherwise use cell phones during a meeting except to look something up as related to the meeting. (If needed, RAB members will excuse themselves from the room to take urgent calls.)
- RAB members will discuss any concerns about the discussions or the meeting by one-on-one with a **Co-Chair**.



Review and Approval of October 2023 RAB Meeting Minutes

Amy Brand - Jacobs

Previous Meeting Minutes

- The Draft October 2023 RAB meeting minutes were distributed to the RAB via email on March 27 for review and comment
- The Final May 2023 RAB meeting minutes have been posted to the NRL-CBD website
- Approval to finalize?



Site 9 – Photo-Processing Waste Discharge Supplemental Expanded Site Inspection

Andy Bogdanski - Jacobs Ryan Mayer - NAVFAC Washington

Overview of the CERCLA Process



Presentation Overview

- Site Description
- Previous Investigations
 - -Expanded Site Inspection Findings
- Supplemental Expanded Site Inspection (SESI) Objectives and Approach
- SESI Results
- Recommended Path Forward

Site 9 – Photo-Processing Discharge



Site 9 Description

- Site 9 associated with a former photo-processing lab that was housed inside the southeast corner of former Building 43.
- Wastewater from the photo-processing lab was reportedly disposed through a drain that discharged to the ground immediately outside the building
 - The photo-processing lab was used once or twice during each year of operation, generating 10 to 15 gallons of waste solution (e.g., sodium thiosulfate, hydroquinone) per event.
- This operation reportedly occurred from the late-1950s until the early-1960s and again from the late-1960s until 1975.
- The building has been demolished and the site is relatively level and covered with grass. The road network that surrounds the former building is still intact.

Previous Investigations

- Site Inspection (SI) Fieldwork (2012)
 - Surface/subsurface soil and groundwater analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals
 - SVOCs identified as contaminant of potential concern (COPC) in surface soil based on ecological risk
- Expanded SI (ESI) Fieldwork (2018)
 - Additional surface/subsurface soil analyzed for SVOCs and Metals
 - Risk screenings updated





- No field observations (soil staining, odors) of photo-processing wastewater discharge
- SI and ESI data were used for Human Health and Ecological Risk Screenings

Media	COF	PCs
	Human Health	Ecological
Surface Soil	None	None
Subsurface Soil	None	N/A
Groundwater	None	N/A

Table 8-3. Human Health and Ecological Risk COPCs for Site 9

- MDE comment during the ESI Report requested additional analysis for hydroquinone and sodium thiosulfate
 - Agreed that further investigation would be conducted for hydroquinone; however, sodium thiosulfate would not be included as comparison criteria were not available to evaluate potential risk

Supplemental ESI Objectives and Approach

Complete presence/absence determination for hydroquinone

- -Collect co-located surface/subsurface soil samples from 10 locations
 - Surface soil collected from 0-6" below ground surface (bgs)
 - Subsurface soil collected from above water table (approx. 10-15 feet bgs)
- -Collect 3 groundwater samples
 - Three temporary wells were installed and screened in the shallow aquifer
- Determine whether there is potential unacceptable risk to human health and/or the environment
 - Updated human health and ecological risk screenings through the Step 3 process

SESI Results

- No detections of hydroquinone in surface/subsurface soil above detection limit
- No detections in groundwater above detection limit
- Limited uncertainty due to detection limits above screening levels
 - Uncertainty discussed and agreed to by regulators during Sampling and Analysis Plan preparation
 - Hydroquinone has short half-life in environmental media and it has been 50+ years since a release



Recommended Path Forward

- Recommendation: No Further Action
- Path Forward: Site closure initiated with regulatory concurrence

Questions and Comments



- Open to RAB Members for discussion of Site 9 – Supplemental Expanded Site Inspection presentation
- Questions from the public should be held to the end of the meeting



Per-and Polyfluoroalkyl Substances (PFAS) Site Updates

Ryan Mayer – NAVFAC Washington

Presentation Overview

- Site 10 Fire Testing Area
 - On-Base Remedial Investigation (RI) Sampling and Analysis Plan (SAP)
- Site 10 Fire Testing Area
 - –Off-Base RI SAP
- Site 12 Building 50 Former Firehouse
 _RI SAP
- Interim Measures
 - -100% Basis of Design and Permitting
 - -Action Memorandum
 - -Treatment Unit Construction

Site 10 On-Base RI SAP

- Objectives
 - Define nature and extent of PFAS in soil, groundwater, surface water, and sediment
 - -Evaluate fate and transport of PFAS in environmental media
 - Evaluate risks to human health and the environment
- Tentative Schedule
 - -Draft SAP for MDE review summer 2024
 - -Final SAP anticipated fall 2024



Site 10 Off-Base RI SAP

- Objectives
 - Define nature and extent of PFAS in surficial groundwater, surface water, and sediment
 - Evaluate fate and transport of PFAS in environmental media
 - Evaluate risks to human health and the environment
- Tentative Schedule
 - Draft SAP for MDE review summer 2024
 - Final SAP anticipated fall 2024



Site 12 RI SAP

Objectives

- Define nature and extent of PFAS in soil, groundwater, surface water, and sediment
- Evaluate fate and transport of PFAS in environmental media
- Evaluate risks to human health and the environment
- Tentative Schedule
 - Draft SAP for MDE review summer 2024
 - Final SAP anticipated fall 2024



Interim Measures

- 100% Basis of Design and Permitting
 - Completing final design and permitting
- Action Memorandum
 - Public comment period anticipated summer 2024
- Treatment Unit Construction
 - Conex treatment units constructed, initial start up testing in-progress



Questions and Comments



- Open to RAB Members for discussion of "PFAS Site Updates" presentation
- Questions from the public should be held to the end of the meeting



UXO-001 Hypervelocity Low Pressure Gun (HVG) Site Proposed Remedial Action Plan

Ryan Mayer – NAVFAC Washington

Overview of the CERCLA Process



UXO-001 Site Background and Risk

- Site of the former hyper-velocity gun (HVG) testing facility
- Studied impact of high-velocity projectiles on various target materials from 1967 to 1995
- HVG and all support structures removed from site
- Detections of lead in surface soil exceeded the MDE residential soil screening level
- Deteriorating paint chips with known elevated lead levels from the former HVG and support structures are present in surface soil and could serve as continuing source of lead in surface soil



Previous Site Investigations



- 2006 Preliminary Assessment
- 2010 Site Inspection
 - Surface soil, subsurface soil, and groundwater samples
- 2016 Remedial Investigation
 - Surface soil, subsurface soil, groundwater, and sediment sampling to develop human health and ecological risk assessments
- 2016 Follow-on Sampling
 - Surface and subsurface soil sampling to confirm and delineate potential lead "hot spot"
- 2022 Additional Delineation Sampling
 - Surface and subsurface soil sampling to delineate extent of lead in soil

- Prevent hypothetical current and future residents, construction workers, and industrial workers from exposure to lead in surface soil above the MDE residential screening level of 200 mg/kg
- Prevent the ongoing release of lead, and/or the increase in lead concentrations in surface soil potentially resulting from the presence of residual lead paint chips

Remedial Action Alternatives

- Alternative 1 No Action. This alternative is required by NCP as a baseline. Alternative 1 involves no planned actions for soil.
- Alternative 2 Land Use Controls. This alternative consists of implementing administrative controls to prevent residential development of the site and providing construction worker notifications prior to any intrusive activities at the site.
- Alternative 3 Excavation and Off-Site Disposal. This alternative involves excavation of soil containing lead-based paint chips at or above the screening criterion, and offsite disposal of the soil as nonhazardous waste.

Proposed Remedial Alternative

- The Navy proposes to implement Alternative 3

 Excavation and Off-Site Disposal as the preferred alternative.
- Under this alternative, approximately 94 cubic yards of lead-contaminated surface soil within an area of 5,072 square feet (0.12 acres) will be excavated from UXO-001.
- Excavated soils will be transported offsite for disposal at a CERCLA-approved facility and the excavated areas will be backfilled with clean fill to existing grade.
- The Navy may modify the preferred alternative or select another if public comments or additional data indicate that another alternative will yield more appropriate results.



Questions and Comments



- Open to RAB Members for discussion of "Proposed Remedial Action Plan" presentation
- Questions from the public should be held to the end of the meeting



PFAS Regulatory Updates and Navy Policy Updates

Peggy Williams – Maryland Dept. of the Environment (MDE) Ryan Mayer – NAVFAC Washington

MDE Comprehensive Monitoring and Sampling Program

- Maryland has elevated levels of PFAS in certain fish, but not all species, and not everywhere in the Chesapeake Bay and tributaries
- One compound, PFOS, was identified at greater concentrations and a higher frequency than others
- Crab and oyster PFAS concentrations were below consumption screening criteria; therefore, no advisories are warranted
- Of all the meal recommendations we have in Maryland, PFOS now makes up 16%
- There are no advisory recommendations for other PFAS at this time

Info from "MDE Issues New Fish Consumption Advisory and Guidelines (Dec 2023)" https://www.youtube.com/watch?v=h3RWsN7IYAg

PFAS in the 2024 Legislative Session

- Environment Water Pollution Control Protecting State Waters From PFAS Pollution (Protecting State Waters From PFAS Pollution Act) <u>https://mgaleg.maryland.gov/2024RS/bills/hb/hb1153T.pdf</u> (cross-filed with SB0956)
 - MDE, in collaboration with POTWs and Significant Industrial Users are to develop certain PFAS action levels and mitigation plans, devise reporting requirements, etc.
 - "Significant Industrial User" does not include the Federal, State and local governments
- Pesticides PFAS Chemicals Prohibitions <u>https://mgaleg.maryland.gov/2024RS/bills/hb/hb1190f.pdf</u>
 - Prohibition on the sale of PFAS chemical-containing pesticides, bans use after Dec. 31, 2025
- Environment Playground Surfacing Materials Prohibitions https://mgaleg.maryland.gov/2024RS/bills/hb/hb1147T.pdf
 - Affects installing, supplying, selling, soliciting, or offering for sale PFAS chemical-coated playground surfacing material

Latest EPA Progress Report (Dec 2023)

- EPA has proposed listing of PFOA and PFOS as hazardous substances, tentatively scheduled for issuing of final rule in early 2024
- EPA has proposed drinking water regulation for 6 PFAS, to finalize the rule in early 2024
- Nationwide monitoring for 29 PFAS at more than 10,000 public water systems, results posted publicly each quarter on their website
- Providing \$10 billion to remove PFAS and other emerging contaminants. In 2023, nearly \$1 billion distributed through the Bipartisan Infrastructure Law's State Revolving Fund Emerging Contaminants programs

- Navy guidance to use the USEPA analytical Method 1633 reporting 40 PFAS in environmental media
 - -For use in soil, groundwater, sediment, and surface water
- DoD approved USEPA human health screening levels are available for 8 compounds (November 2023 regional screening level [RSL] update)
 PFOA, PFOS, PFBS, PFHxS, PFNA, PFHxA, PFBA, and HFPO-DA
 - -Updated screening levels
 - -EPA releases RSL table updates generally in May and November
- Navy approved ecological screening values available based on literature review and current state of science

Questions and Comments



Questions from RAB and Public Participants

Future Meeting Planning

- Per the charter, plan to meet 2 times per year
 - -Navy proposes the next meeting for October 23, 2024
 - -Wednesday evenings, 5:00-7:00 p.m.
- RAB agenda topics
 - If there are topics you'd like us to discuss, please communicate them to the RAB Co-Chairs:
 - Navy Co-Chair Ryan Mayer: <u>ryan.e.mayer.civ@us.navy.mil</u>
 - Community Co-Chair David Harris: <u>davidharris2nd@gmail.com</u>

Websites for More Information

About RABs, including the RAB Rule Handbook:

http://www.denix.osd.mil/rab/home/

About the Navy's Environmental Restoration Program:

http://www.navfac.navy.mil/go/erb/

About the Environmental Restoration Program at NRL-CBD:

https://go.usa.gov/xSeKn (note: case-sensitive)

More about PFAS

https://www.acq.osd.mil/eie/eer/ecc/pfas/pfas101/rsl.html

https://www.navfac.navy.mil/products_and_services/ev/products_and_services/env_restoration/pfas_reading_room.html

https://mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx

www.epa.gov/pfas

https://www.atsdr.cdc.gov/pfas/index.html