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

MEETING DATE:	April 23, 2025
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; Meeting Structure and Guidelines

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 to the tenth RAB meeting for NRL-CBD. The first RAB meeting was held in 2019, and meetings are held twice a year. Ryan informed the attendees that the Navy needs the input provided by the community and discusses this with the project team, management, and the Base. Ryan then introduced the RAB community co-chair, David Harris.

Ryan introduced Caitlyn (Cait) Dugan (NAVFAC), Andy Bogdanski (Jacobs), Sarah-Jane O'Brien (Jacobs), Windy Campbell (Jacobs), Linda Gustafson (Maryland Department of the Environment [MDE]), Anna Lesichar (NRL), David Harris (RAB Community Co-Chair), Robin Harris (RAB Member) and Vivian Cawood (RAB Member). A full list of attendees is provided in **Table 1**.

The agenda (**Attachment 1**) was reviewed and Ryan noted that the meeting would be recorded via audio to aid in preparation of the meeting minutes.

Windy provided an overview of the ground rules for the RAB meeting.

Site 10 On-Base Remedial Investigation Approach

Ryan provided an overview of the Site 10 – Fire Testing Area (FTA) background, geology and hydrogeology, including a description of the regional groundwater aquifers, the surficial aquifer and the Piney Point aquifer, which are separated by the Calvert Formation (**Attachment 2**, Slides 7-8).

Andy provided a summary of the Site Inspection (SI) that was finalized in 2022. PFAS was detected in all media (soil, groundwater, surface water and sediment) and additionally, Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO) and TPH-Gasoline Range Organics (GRO) were detected in groundwater in a subset of wells at the FTA. The SI recommended collection of additional data through a Remedial Investigation (RI) to define the nature and extent of PFAS. As there is a fuel component in groundwater, the RI will also look at individual fuel-related constituents including volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs).

Andy indicated that the RI objectives for soil are to determine the nature and extents (lateral and vertical) of PFAS in soil and evaluate the potential for risks to human health and ecological receptors. He

provided an overview of the general sampling approach for soil (**Attachment 2**, Slide 10). A figure was provided showing the 16 proposed soil sample locations (**Attachment 2**, Slide 11).

Andy indicated that the RI objectives for groundwater are to determine the nature and extent of PFAS and fuel-related VOCs and SVOCs in the surficial aquifer, evaluate temporal PFAS trends and refine groundwater flow direction in both the surficial and Piney Point aquifers, and evaluate the potential for risks to human health and ecological receptors. Nine new surficial monitoring wells are to be installed. A total of 32 monitoring wells (9 new and 23 existing) are to be sampled for PFAS to get a comprehensive picture of groundwater conditions in the surficial aquifer. In addition, groundwater samples from seven existing monitoring wells screened in the surficial aquifer will be sampled for fuel-related VOCs and SVOCs located near the FTA as identified in the SI.

Andy indicated that groundwater samples for PFAS will be collected from four existing monitoring wells in the deeper Piney Point aquifer to get a second round of data to evaluate if there are any changes in PFAS concentrations since the first round of data. Ryan also added that the sampling suite and the analytical method for PFAS have changed since the first sampling event (sampling conducted in the SI). These changes include an update to EPA Method 1633 which adds additional PFAS constituents that will be analyzed during the RI.

Andy added that slug testing will be completed at six monitoring well locations to evaluate hydraulic conductivity in the surficial aquifer. He explained that a slug test performed by pushing a polyvinyl chloride (PVC) pipe (the slug) into a monitoring well to displace the groundwater within the well column. The water displacement is measured over time to determine the hydraulic conductivity of the groundwater; this helps to understand the rate of groundwater flow through the aquifer.

The surficial groundwater focus on the north side of the FTA is to see how the groundwater in that area is interacting with the North Pond Stream and to determine if any PFAS are migrating offsite and to better delineate the PFAS plume. The additional wells will help map this. The new monitoring wells to be installed on the south side of the FTA are to assist in helping to bound the PFAS plume to the east and southwest and refine the PFAS concentrations in that area. Sampling all new and existing wells at the facility at the same time will give a snapshot of the overall extent of PFAS in the surficial aquifer. New and existing monitoring well locations to be sampled in both aquifers were shown (**Attachment 2**, Slide 13).

The RI objectives for surface water and sediment are to determine the nature and lateral extent of PFAS in those media and to evaluate potential risks to human health and ecological receptors. Surface water data will be used in conjunction with the groundwater data to further refine the hydrologic connection between these media.

In the vicinity of the North Pond Stream, the sampling approach is to collect eight surface water and four sediment samples for PFAS. The RI will collect two surface water samples at a new area - an upgradient ephemeral stream - to see what the concentrations are in that stream and to characterize that stream. Regarding sediment in the North Pond Stream, Andy noted that the SI sediment sampling did detect PFAS and that sampling during the RI will be completed at the same sediment locations used in the SI to gather additional data. Sample locations for the North Pond Stream were shown (**Attachment 2**, Slide 15).

The general approach for the South Pond Stream is to collect 12 surface water and nine sediment samples in the vicinity of the South Pond and the Stream. Seven co-located surface water and sediment samples will be collected along the South Pond Stream at the same sample locations collected in the SI. Co-located surface water and sediment samples will be collected at two new locations within the unnamed drainage ditch. Sample locations were shown on (**Attachment 2**, Slide 17).

The overall approach for surface water and sediment sampling during the RI will provide a singular snapshot in time, looking at PFAS coming on and off the facility and it includes sampling the WWTP

discharge due to the interaction of the sanitary sewer lines with groundwater. This will be beneficial compared to the previous sampling events conducted in 2020 (SI) and in 2021 (Supplemental SI), which were a year apart, which makes it hard to draw conclusions from the data due to the dynamic environments in surface water and sediment.

Windy asked the RAB group if they had any questions.

David asked if the timeline of the RI would be completed at the end of 2025. Andy indicated that the Sampling and Analysis Plan (SAP) will be finalized soon, and sampling is anticipated to commence in late spring or early summer. It is anticipated that the fieldwork will have a duration of approximately a month. Ryan indicated that a lot of sampling will be performed this summer and it will be next year (2026) for the completion of the RI due to the turnaround time (TAT) of analytical data from the laboratories. Andy added that typically the TAT for the laboratory is a month before Jacobs receives analytical data and then another couple of weeks for data validation. At that point the Navy can begin to analyze the data and start the report preparation.

David noted that there are a lot of sampling points to be completed this summer. Andy indicated that a minimum of two people will be completing the sampling, and we may add an additional person as geographically it is a large area to cover. Ryan indicated that when transitioning to RI from SI sampling events, there is a lot more data that is to be gathered for RIs versus the SI phase of investigations. At NRL-CBD, we will have a lot of sampling data from this RI and with other ongoing RIs, could cause potential delays from the laboratories to analyze the data. However, unlike the SI phase, currently there are no hard deadlines by Congress for RIs and their turnaround times. David suggested a public release of the RI report at the April 2026 RAB meeting. Andy indicated that analytical data would likely be ready mid-fall and it takes about six months to prepare the report. The RI Report will likely not be ready for public release by the spring, but it will be released as soon as possible.

Site 11 Site Inspection Approach

Ryan provided the background, geology and hydrogeology of Site 11 (**Attachment 2**, Slides 21 and 22). Site 11 is located to the west side of Building 76. Ryan indicated that during the SI, the interior of the building will not be investigated, but the environment around is investigated. Site 11 was discovered when construction debris was observed along steep hillside slopes to the west of Building 76. Due to the steep nature of the slopes, eroded soils had exposed the buried construction debris, and it was suspected that the area was a former construction debris disposal area.

Andy provided a summary of the results of the site assessment (SA) performed in November 2020. Originally the site area was a valley but became flatter as the sides were filled in with debris and a soil cover. Fill material encountered in subsurface borings completed during the SA included metal, wood, coal and asphalt. Surface soil samples detected SVOCs, pesticides, polychlorinated biphenyls (PCBs), and metals above screening criteria. Subsurface soil samples detected PCBs and metals above screening criteria. Soil to groundwater screening indicated that soil could be a potential source to groundwater contamination.

The objectives of the SI are to determine if site-related chemicals present in soil are at levels above the project action limits (PALs) and if exposure to site-related chemicals pose potentially unacceptable risk to human or ecological receptors.

Surface and subsurface soil samples will be collected from 16 co-located locations. Surface soil will be collected from 0 to 6 inches below ground surface (bgs). Subsurface soil samples will be collected from the depth interval displaying evidence of contamination based on visual observations like soil staining or readings from a photoionization detector (PID) reading, which is a detector that measures VOC gases. If no evidence of contamination is found, a subsurface soil sample will be collected from the soil interval immediately below debris or immediately above the water table, whichever is encountered first.

Collection of a soil sample immediately above the water table would help determine if there are chemicals leaching into groundwater. All samples will be analyzed for VOCs, SVOCs including polyaromatic hydrocarbons (PAHs), metals, pesticides, PCBs, and pH. Measurement of pH is used in the ecological risk screening. A subset of samples from eight of the soil sample locations will also be analyzed for hexavalent chromium. Andy indicated that there is a wide range of metals that are analyzed including total chromium, which includes the hexavalent chromium constituent. During the SI, hexavalent chromium will be analyzed independently, in addition to total chromium, as part of the risk screening for human and ecological receptors.

Groundwater was not evaluated during the SA. During the SI, four monitoring wells will be installed in the surficial aquifer, and groundwater will be sampled to determine if site-related chemicals are present at levels above the PALs and if exposure to site-related chemicals pose potentially unacceptable risk to human or ecological receptors. Groundwater samples from the four new and one nearby existing monitoring well location (CBD-AOA-MW09) will be collected and analyzed for VOCs, SVOCs, pesticides, PCBs, total and dissolved metals. A subset of three groundwater samples will also be analyzed for hexavalent chromium for use in the risk screening for human and ecological receptors. Ryan indicated since it is not known what debris was buried there, the Navy could not focus on one chemical of concern so a full suite of analysis will be completed, including VOCs because there are petroleum storage tanks nearby. PFAS is not part of the analysis, as this is not a PFAS site. Andy provided a figure showing the sample locations (**Attachment 2**, Slide 26).

Windy asked the RAB group if they had any questions.

David asked why would surface soil at the 0-6 inch sample interval be sampled, as the surface soil would have been new soil that was used to cover the debris and any contamination. Andy indicated he understands that the surface soil should be relatively clean. He would anticipate seeing more detections in the subsurface soil samples below the debris. Ryan indicated that sampling the surface of the soil is for accessing risk for human health and ecological receptors. Andy indicated that the extent of the waste is not known at this time. If we do not find any waste in a boring, but there are indications of a release (any soil staining or PID readings), then a sample will be collected in that depth interval and if not, then a sample will be collected from the depth interval above the groundwater. Groundwater at this site is anticipated to be 20 to 30 feet bgs.

Site Status Updates

Ryan provided an overview and updates of other sites at NRL-CBD.

UXO-001 (Hypervelocity Low-pressure Gun) – The Decision Document (DD) received signature from the Commanding Officer and was submitted to MDE for finalization. Linda indicated that she received the DD this morning and will be sending a final acceptance letter from MDE. The Remedial Action (RA) for the planned soil removal will be awarded in fiscal year 2025 (FY25) and the request for proposal (RFP) has been submitted.

AOC D (Water Tower) – Sampling for lead in soil has been completed around the tower. The Pre-Engineering Evaluation/Cost Analysis (EE/CA) Results Technical Memorandum is currently under review. The soil removal is going to be completed as an interim removal action which will be a quicker process than the UXO-001 remedial action. The removal action for this site is going to be combined with the UXO-001 remedial action; both are small sites and have the same scope so they will be awarded together. The Removal Actions are planned to be awarded in FY25.

Sites 3, 4, and 5 (Landfills No. 1, 2, and 3)

The RI report is under Navy review and is anticipated to be submitted for regulatory review in Spring 2025.

Site 10 (Fire Testing Area)

On-Base RI SAP – Finalized

Off-Base RI SAP – Jacobs is currently working on responding to comments on the off-base SAP. The path forward is that once the SAP is finalized and the On-Base sampling is completed then the Navy will move on to the Off-Base sampling.

Interim Action PFAS Treatment System – Most of the construction approvals have been completed. The remaining approval is related to effluent discharge concentrations which is coordinated through the MDE Water Administration. Once MDE decides the discharge limits, those numbers will need to be added into the Action Memo along with the new PFAS screening level concentrations. Construction on the treatment units has already started and the plan is to have it up and running in summer 2025.

Site 11 (Construction Waste and Rubble West Side of Building 76) – Jacobs is responding to regulatory comments on the SI SAP with fieldwork anticipated to be completed in summer 2025.

Site 12 – Former Fire House – The RI SAP was submitted for regulatory review in March 2025 with fieldwork anticipated to be completed in summer 2025.

Ryan indicated there will be a lot of fieldwork completed this summer with Sites 10, 11 and 12. The remedial/removal action work for UXO-001 and AOC D will not start until later in the year. Ryan asked if there were any questions on the status updates. There were no questions on the site status updates.

Questions & Comments from RAB Members

Windy asked if there were any other questions in general. The meeting was opened to questions and comments from the RAB members.

- David Harris asked Andy and Ryan when the Navy is going to inform the three homeowners, whose private drinking wells that were sampled in 2018, now have exceedances of PFAS based on the new EPA maximum contaminant levels (MCLs). Ryan responded the Navy is prioritizing responses at the bases with the highest PFAS concentrations and are currently conducting public meetings at those bases.

  David indicated that he is not talking about completing additional sampling. His question is related to the results from the prior drinking water testing. There were three residences with PFAS detections that now exceed the revised EPA MCLs. David was not sure if two of the residences have been sold since the 2018 sampling event. David then asked Linda when the MDE is going to request that the Navy notify the owners of those private drinking water wells to not drink the water. Ryan informed David that that the EPA MCLs do not apply to private wells as they are only applicable to public drinking water supplies. David asked why do the MCLs not apply to private wells. The MCLs are established under the Safe Drinking Water Act which regulates public water supply. Ryan added that where there have been previous impacts to the community, the Navy's policy is to go out and re-sample some of those areas and possibly even 'step out'. Back in 2018, the action level was 70 parts per trillion (ppt) and the Navy took action providing bottled water or other actions. Ryan noted that the 70 ppt is not a MCL but was a health advisory level and the Navy did take action then.

  David indicated that his concern is the way the detections were presented. The numbers were okay because this is what the EPA decided. David felt we all knew that new concentration limits were coming from the EPA, and they were going to be lower values and more PFAS chemicals would be added. David indicated that his concern is for the people to the north of the base that may not be aware of what is going on. At the time of the 2018 off-base drinking water sampling event, all the wells sampled to the north were under 70 ppt. So, there is the perception that all is fine as the letters that were issued to the residents indicated that at that time, but we now

know it is not fine. David indicated that the Navy should be informing the residents and that the MDE should look into this further as the state is not protecting the citizens of Maryland with this information. Linda indicated that during the last RAB meeting there was a discussion of revisiting offsite private well sampling. Ryan indicated that the Navy is evaluating resampling but not ready to make any announcements. David asked if the state knows the addresses of the two wells that had reported PFAS concentrations or does the MDE have the same information as the public. Ryan indicated that the MDE does not know the exact addresses due to privacy concerns but they do know the general area. David indicated that his opinion is that MDE does need to know the addresses and notify those residents.

David asked for confirmation for his understanding, in 2018, when the PFAS concentrations (which PFOA and PFOS could be combined together) were above 70 ppt, there would have been action initiated by the Navy. He is aware that there are at least two private wells north of the base that had detection levels, but they did not exceed 70 ppt. But the new regulations are only for public drinking water and not for private wells. Ryan indicated that is correct. David then further stated now that the MCLs, which are established by the EPA and lower than the health advisory levels, are for public wells only, and the Navy is not willing to notify those two homeowners, even though it's a year later. Nor is the Navy willing to provide drinking water as the Navy was willing to do before. David indicated that the Navy was ready to do this for any wells that reported above 70 ppt. Ryan said no, it is not DoD policy. The Navy is prioritizing sampling at the bases with highest concentrations and will provide treatment as needed. The results reported at CBD did not warrant prioritization. For response actions, the Navy is moving away from supplying bottled water and instead focusing on treatment options.

David indicated that the RAB team has talked about that in the past, but his concern is the people that with the exceedances have not been notified regarding the new EPA public water supply levels and now they have exceedances. David indicated that he feels that the RAB team should show the data to those property owners. Robin indicated that you (the Navy) already have the data, so you do not need to do additional sampling. Ryan indicated the homeowners have the data too. David indicated they do have but may not be educated regarding the revised screening values. He recalls that one of the three homeowners stating that they should sell their house, and they may have sold to someone else who may not be aware of this. David said he's doing his best to get information out there. David indicated his frustration for the property owners and suggested he might generate a mass flyer with his own money to homeowners suggesting they check their wells because there were previous things reported. Ryan indicated that he thought the State of Maryland had a program for private well testing. David indicated he had a private test completed and was not aware that the MDE was providing sampling.

David apologized for his tone; it's just his frustration over this. David stated that this RAB team is doing the best they can under the guidelines they're given, and he appreciates everything the team is doing. David indicated that he will put more pressure on the State and State delegates and try to get Calvert County involved in order to protect the citizens because there are at least two families affected.

Future Meeting Planning and Adjournment

Windy thanked everyone for attending the meeting. Windy indicated that we will have the meeting minutes ready for your review in the next few weeks. Windy stated that the next RAB meeting is proposed for October 22, 2025, and asked if the 6 pm start time works instead of the previous time at 5 pm to accommodate attendees' schedules. Additionally, the Navy is proposing to hold the meeting at the Calvert County Library's Twin Beaches Branch. Windy indicated that the RAB team heard a lot of

good feedback and that we will have some more updates by the time October rolls around. But as you know, you can send us any ideas/topics for the next RAB meeting.

Ryan indicated that Caitlyn will be the RAB co-chair for the Navy and will be taking over his position. Caitlyn has been with the Navy for several months now and previously worked for the United States Geological Survey (USGS). She will be working at this base and is working with other larger bases as well. Ryan provided her e-mail address and indicated to feel free to reach out to Caitlyn. Ryan further stated that he feels good that the treatment system will be up and running and is the first one in Maryland. David spoke on behalf of the RAB members and thanked Ryan for being involved from the beginning of the RAB meetings.

Windy then reviewed websites available for additional information the RAB, Navy's Environmental Restoration Program, PFAS, and NRL-CBD webpage which includes the meeting minutes (**Attachment 2**, Slide 35). Ryan noted that on the NRL-CBD webpage, the Administrative Record link includes all NRL-CBD final documents, and that the first link under PFAS includes the Office of the Secretary of Defense guidance for PFAS and the recent Department of Defense memo dated September 3, 2024.

Table 1. List of Attendees
Restoration Advisory Board Meeting April 23, 2025

Name	Affiliation
Ryan Mayer	NAVFAC Washington; Co-Chair
Caitlyn Dugan	NAVFAC Washington
Zoe Johnson	NSA Annapolis
Anna Lesichar	NRL
David Harris, II	RAB member; Community Co-Chair
Robin Harris	RAB member
Vivian Cawood	RAB member
Will Hager	RAB member
Linda Gustafson	MDE
Alex Nawotka	MDE
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 23, 2025

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

April 23, 2025, 6:00-7:30 pm
Northeast Community Center
4075 Gordon Stinnett Ave, Chesapeake Beach, MD 20732

Meeting Facilitator: Windy Campbell - Jacobs

Meeting Agenda		
Time	**Topic**	**Presenter**
6:00-6:10 pm	Welcome and Introductions	Ryan Mayer and David Harris
6:10-6:30 pm	Site 10 On-Base RI Approach	Andy Bogdanski
6:30-6:40 pm	Questions & Comments from RAB Members	RAB Members
6:40-7:00 pm	Site 11 SI Approach	Andy Bogdanski
7:00-7:10 pm	Questions & Comments from RAB Members	RAB Members
7:10-7:15 pm	Site Status Updates	Ryan Mayer
7:15-7:25 pm	Questions & Comments from RAB Members and the Public	RAB Members
7:25-7:30 pm	Future Meeting Planning and Adjournment	Ryan Mayer

Attachment 2
Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting Presentation, April 23, 2025

Naval Facilities Engineering Systems Command
NAVFAC Washington

Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting

April 23, 2025

6:00 - 7:30 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**	Cait Dugan NAVFAC Washington	Anna Lesichar NRL-CBD
Linda Gustafson Maryland Department of the Environment (MDE)	Alex Nawotka MDE	
Andy Bogdanski Jacobs	Windy Campbell Jacobs	Sarah-Jane O'Brien Jacobs

Agenda

- Welcome and Introductions
  - Meeting Structure and Guidelines
- Site 10 On-Base RI Approach
  - Questions and Comments
- Site 11 SI Approach
  - Questions and Comments
- Site Status Updates
  - Questions and Comments
- Future Meeting Planning and Adjournment

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**.

Naval Facilities Engineering Systems Command
NAVFAC Washington

Site 10 On-Base Remedial Investigation Approach

April 23, 2025

Site 10 Remedial Investigation Approach

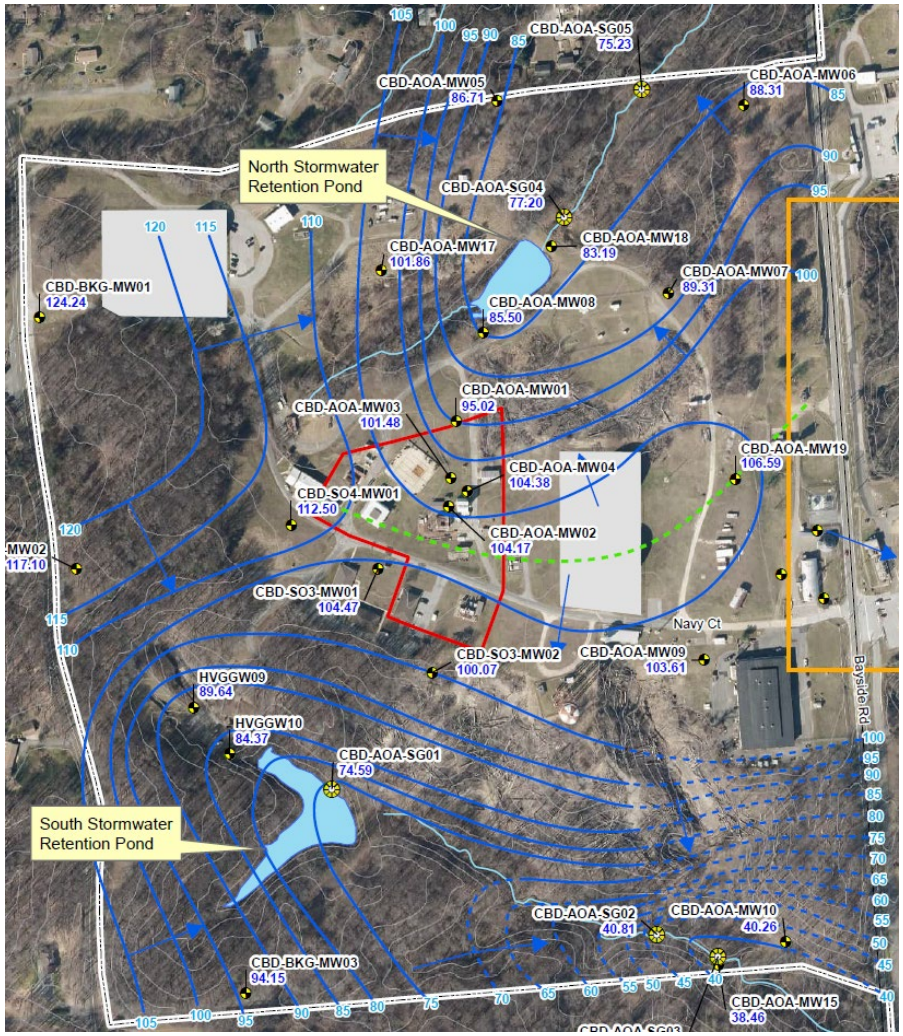
- Site Background
- Geology and Hydrogeology
- SI Results Summary
- RI Objectives and Approach

Site 10 Background

- Site 10 known as the Fire Testing Area (FTA)
- Site is located on the western side of NRL-CBD and approximately 3.4 acres
- Site is used for fire suppressant testing, including use of aqueous film-forming foam (AFFF), since 1968 resulting in release of PFAS to environmental media (soil, groundwater, surface water, sediment)

Site 10 Geology and Hydrogeology

- **Geology**
  - Topography slopes to the east
  - Surficial geology is composed of clayey silt, poorly-graded silty sands, and silty clays underlain by silty lean-to-fat clays
- **Hydrogeology**
  - Underlain by two aquifers: surficial and Piney Point
    - Calvert Formation is a lean-to-fat clay that acts as a confining layer between aquifers
  - Depth to surficial groundwater ranges from approx. 5 to 37 feet below ground surface
  - Surficial groundwater flow radial with components to the north-northeast and south-southeast



SI Results Summary

- SI Report was finalized in 2022
- PFAS detected in soil, groundwater, surface water and sediment
  - Recommended additional data collection to define the nature and extent of release in environmental media
- TPH-DRO and TPH-GRO detected in a subset of monitoring wells near the site
  - Recommended additional data collection for fuel-related constituents (VOCs and SVOCs)

RI Objectives and Approach - Soil

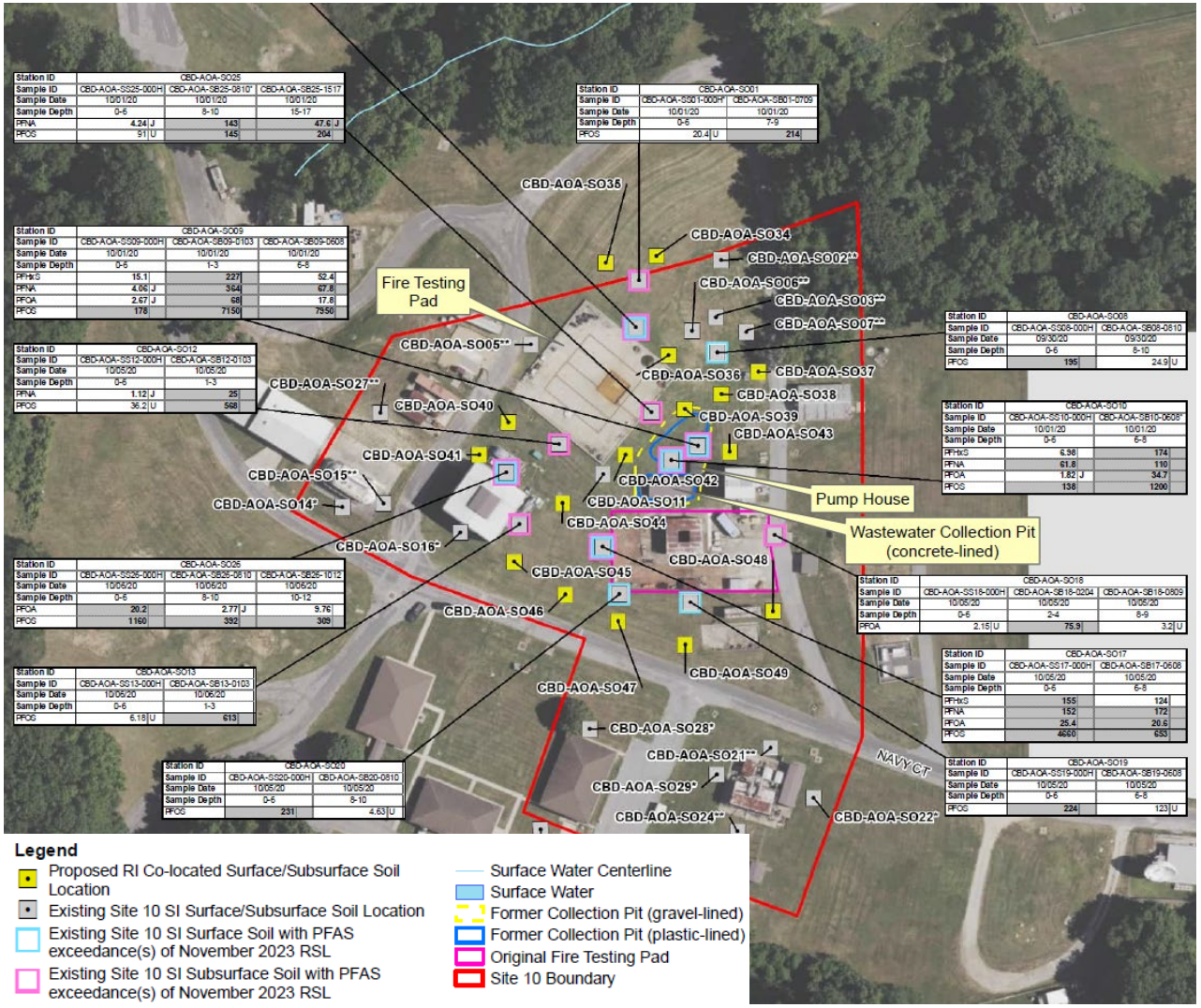
Objectives

- Determine the nature and lateral and vertical extents of PFAS in soil
- Evaluate potential for risks to human health and ecological receptors

General Approach

- Collect surface and subsurface soil samples from 16 co-located locations
  - Surface soil (16 total) will be collected from 0 to 6 inches below ground surface (bgs)
  - Subsurface soil (up to 32 total):
    - Depth of subsurface interval(s) is dependent upon groundwater depth:
      - If depth to groundwater is shallow (<15ft bgs) collect 1 sample
      - If depth to groundwater is deeper (>15ft bgs) collect 2 samples

Soil Sample Locations



RI Objectives and Approach - Groundwater

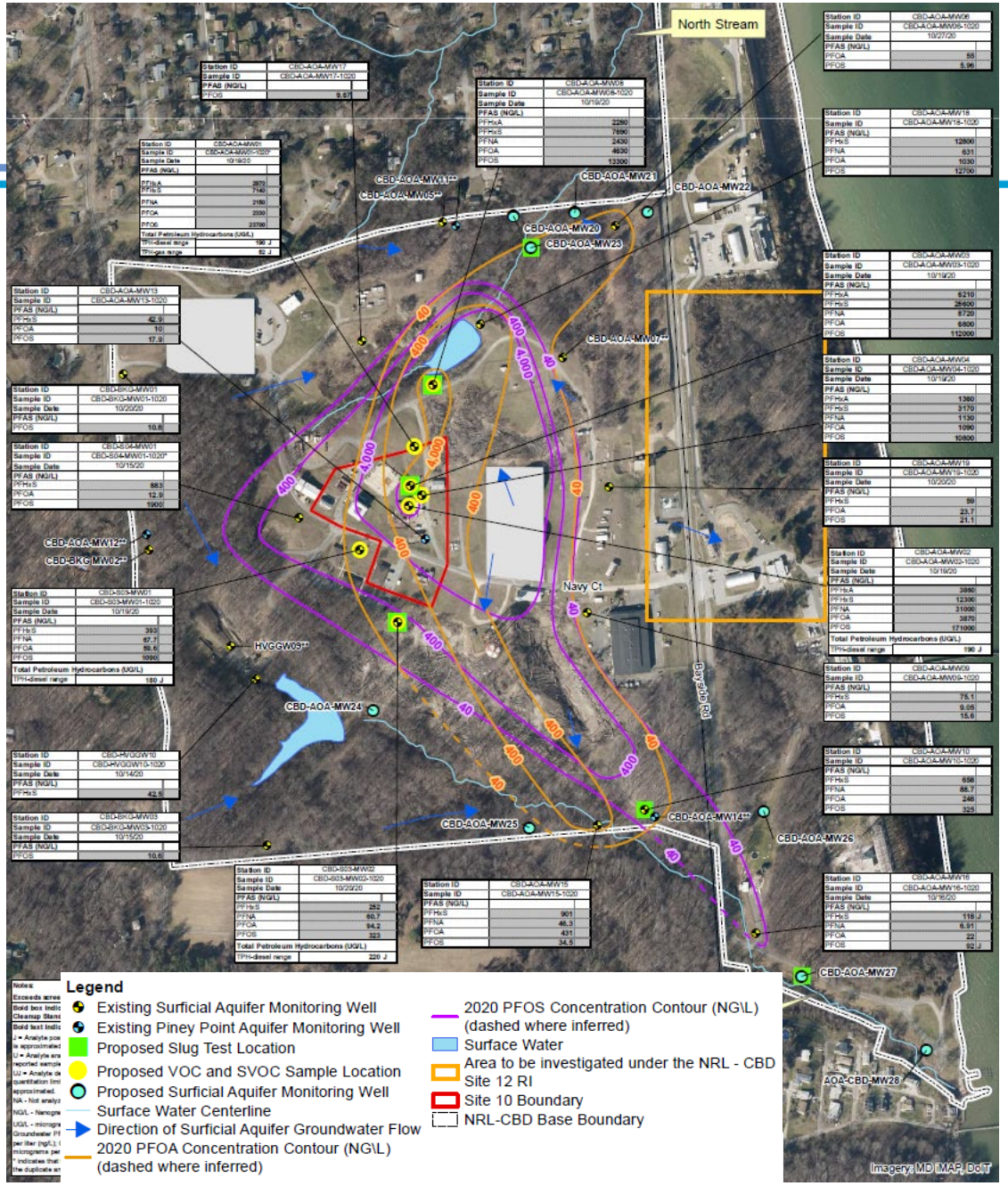
Objectives

- Determine the nature and extent of PFAS and fuel-related VOCs and SVOCs in the surficial aquifer
- Evaluate temporal PFAS trends and refine groundwater flow direction in the surficial and Piney Point aquifers
- Evaluate potential for risks to human health and ecological receptors

General Approach

- Install 9 new surficial monitoring wells
- Collect groundwater samples (total 32; 9 new and 23 existing monitoring wells) from the surficial aquifer, for PFAS
- Collect groundwater samples (total 7), from 7 existing monitoring wells in the surficial aquifer, for VOCs and SVOCs
- Collect groundwater samples (total 4), from 4 existing monitoring wells in the Piney Point aquifer, for PFAS
- Conduct slug tests at 6 locations to evaluate hydraulic conductivity in the surficial aquifer

Groundwater Sample Locations



RI Objectives and Approach – Surface Water and Sediment

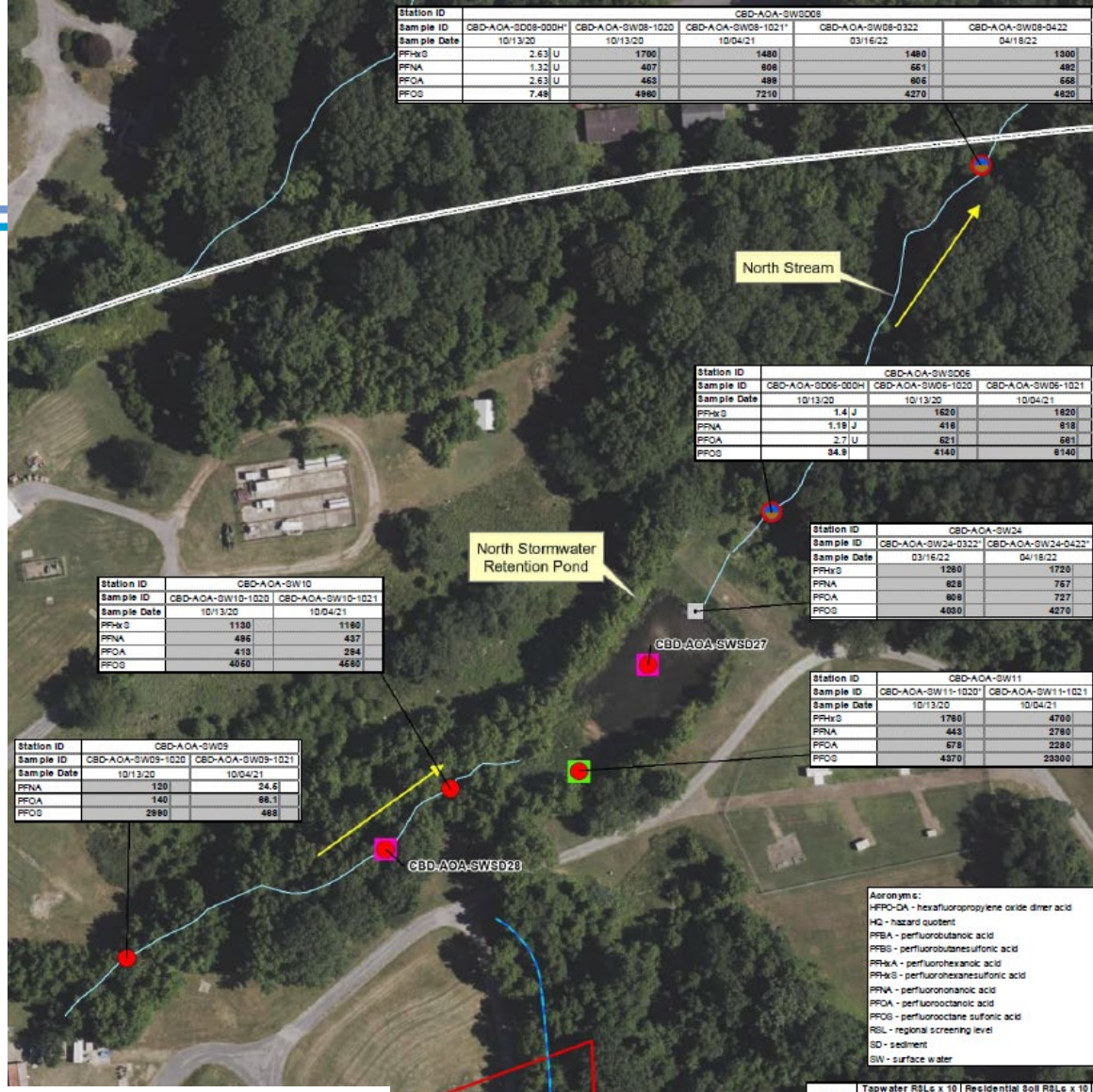
Objectives

- Determine the nature and lateral extent of PFAS in surface water and sediment
- Surface water and sediment data will be used in conjunction with the groundwater and soil data to further refine the hydrologic connection to evaluate fate & transport of PFAS
- Evaluate potential for risks to human health and ecological receptors

General Approach – North Pond Stream

- Collect 8 surface water and 4 sediment samples for PFAS in vicinity of the north pond

Surface Water and Sediment Sample Locations – North Pond Stream



Station ID	CBD-AOA-SWSD08				
Sample ID	CBD-AOA-SD08-000H*	CBD-AOA-SW08-1020	CBD-AOA-SW08-1021*	CBD-AOA-SW08-0322	CBD-AOA-SW08-0422
Sample Date	10/13/20	10/13/20	10/04/21	03/16/22	04/18/22
PFHxS	2.63 U	1700	1480	1480	1300
PFNA	1.32 U	407	606	551	482
PFOA	2.63 U	453	499	605	558
PFOS	7.49	4960	7210	4270	4820

Station ID	CBD-AOA-SWSD06		
Sample ID	CBD-AOA-SD06-000H	CBD-AOA-SW06-1020	CBD-AOA-SW06-1021
Sample Date	10/13/20	10/13/20	10/04/21
PFHxS	1.4 J	1620	1620
PFNA	1.18 J	418	618
PFOA	2.7 U	621	681
PFOS	34.9	4140	6140

Station ID	CBD-AOA-SW24	
Sample ID	CBD-AOA-SW24-0322*	CBD-AOA-SW24-0422*
Sample Date	03/16/22	04/18/22
PFHxS	1280	1720
PFNA	628	767
PFOA	606	727
PFOS	4030	4270

Station ID	CBD-AOA-SW10	
Sample ID	CBD-AOA-SW10-1020	CBD-AOA-SW10-1021
Sample Date	10/13/20	10/04/21
PFHxS	1130	1160
PFNA	486	437
PFOA	413	284
PFOS	4050	4580

Station ID	CBD-AOA-SW11	
Sample ID	CBD-AOA-SW11-1020*	CBD-AOA-SW11-1021
Sample Date	10/13/20	10/04/21
PFHxS	1780	4700
PFNA	443	2780
PFOA	678	2280
PFOS	4370	23300

Station ID	CBD-AOA-SW09	
Sample ID	CBD-AOA-SW09-1020	CBD-AOA-SW09-1021
Sample Date	10/13/20	10/04/21
PFNA	120	24.6
PFOA	140	68.1
PFOS	2990	468

PFAS Analyte	Tapwater RSLs x 10 November 2023 (HQ = 0.1)	Residential Soil RSLs x 10 November 2023 (HQ = 0.1)
HFPO-DA	15	230
PFBA	18000	78000
PFBS	6000	19000
PFHxA	3900	32000
PFHxS	390	1300
PFNA	59	190
PFOA	60	190
PFOS	40	130

Legend

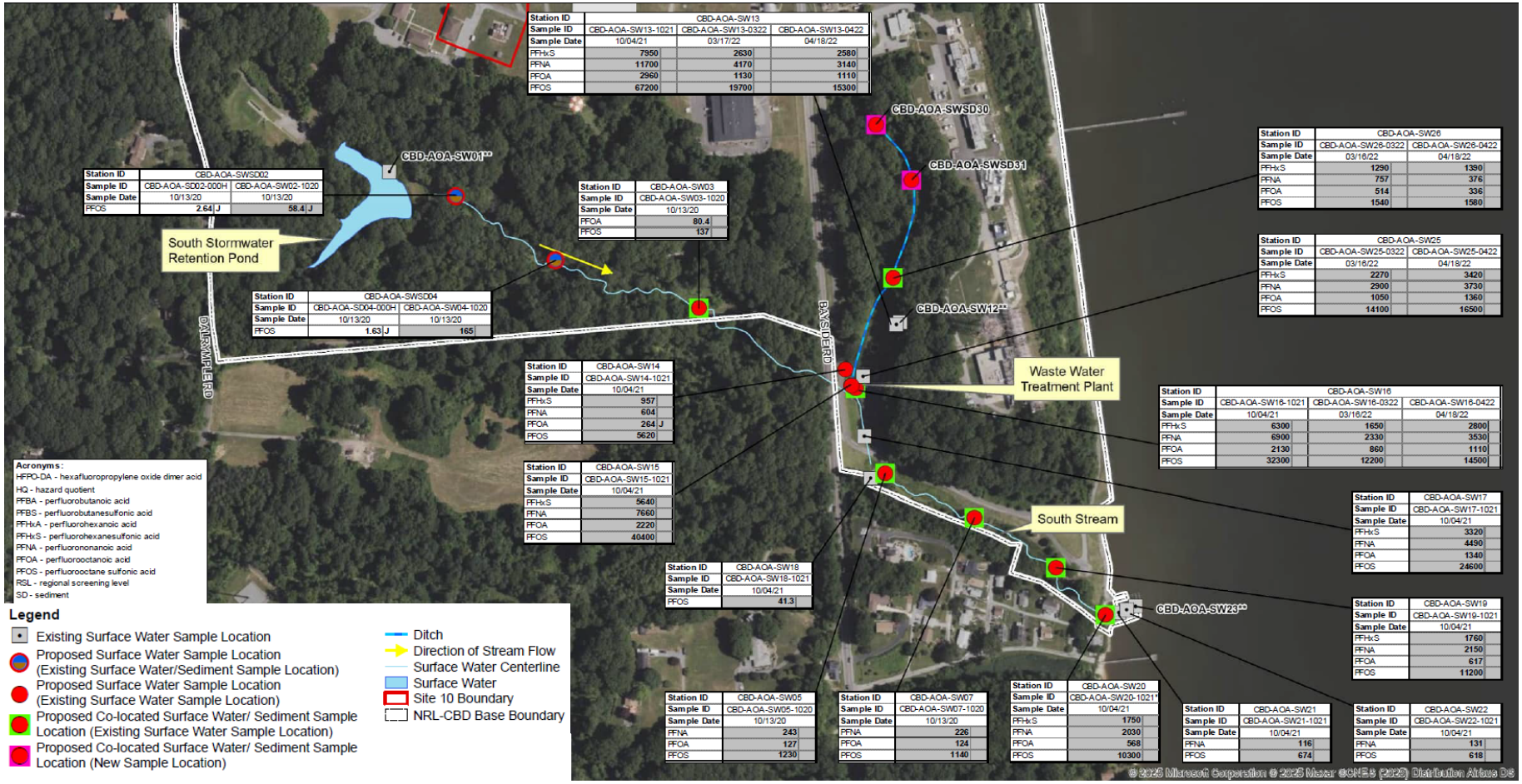
- Existing Surface Water Sample Location
- Proposed Surface Water Sample Location (Existing Surface Water/Sediment Sample Location)
- Proposed Surface Water Sample Location (Existing Surface Water Sample Location)
- Proposed Co-located Surface Water/Sediment Sample Location (New Location)
- Proposed Co-located Surface Water/ Sediment Sample Location (Existing Surface Water Sample Location)
- Ditch
- Direction of Stream Flow
- Surface Water Centerline
- Former Collection Pit (gravel-lined)
- Former Collection Pit (plastic-lined)
- Original Fire Testing Pad
- Site 10 Boundary
- NRL-CBD Base Boundary

RI Approach – Surface Water and Sediment (cont.)

General Approach – South Pond Stream

- For PFAS, collect 12 surface water and 9 sediment samples in the vicinity of the southern pond and stream:
  - 7 co-located surface water and sediment samples will be collected at the following existing sample locations along the South Stream and associated drainage ditch
  - 2 co-located surface water and sediment samples will be collected at the following new locations within the unnamed drainage ditch
  - 3 surface water samples will be collected at the following existing sample locations

Surface Water and Sediment Sample Locations – South Pond Stream



Station ID	CBD-AOA-SW13		
Sample ID	CBD-AOA-SW13-1021	CBD-AOA-SW13-0322	CBD-AOA-SW13-0422
Sample Date	10/04/21	03/17/22	04/18/22
PFHxS	7950	2630	2580
PFNA	11700	4170	3140
PFOA	2960	1130	1110
PFOS	67200	19700	15300

Station ID	CBD-AOA-SWSD02	
Sample ID	CBD-AOA-SD02-000H	CBD-AOA-SW02-1020
Sample Date	10/13/20	10/13/20
PFOS	2.64 J	58.4 J

Station ID	CBD-AOA-SW03
Sample ID	CBD-AOA-SW03-1020
Sample Date	10/13/20
PFOA	80.4
PFOS	137

Station ID	CBD-AOA-SWSD04	
Sample ID	CBD-AOA-SD04-000H	CBD-AOA-SW04-1020
Sample Date	10/13/20	10/13/20
PFOS	1.63 J	165

Station ID	CBD-AOA-SW14
Sample ID	CBD-AOA-SW14-1021
Sample Date	10/04/21
PFHxS	957
PFNA	604
PFOA	264 J
PFOS	5620

Station ID	CBD-AOA-SW15
Sample ID	CBD-AOA-SW15-1021
Sample Date	10/04/21
PFHxS	5640
PFNA	7660
PFOA	2220
PFOS	40400

Station ID	CBD-AOA-SW18
Sample ID	CBD-AOA-SW18-1021
Sample Date	10/04/21
PFOS	41.3

Station ID	CBD-AOA-SW05
Sample ID	CBD-AOA-SW05-1020
Sample Date	10/13/20
PFNA	243
PFOA	127
PFOS	1230

Station ID	CBD-AOA-SW07
Sample ID	CBD-AOA-SW07-1020
Sample Date	10/13/20
PFNA	226
PFOA	124
PFOS	1140

Station ID	CBD-AOA-SW20
Sample ID	CBD-AOA-SW20-1021*
Sample Date	10/04/21
PFHxS	1750
PFNA	2030
PFOA	568
PFOS	10300

Station ID	CBD-AOA-SW21
Sample ID	CBD-AOA-SW21-1021
Sample Date	10/04/21
PFNA	116
PFOS	674

Station ID	CBD-AOA-SW22
Sample ID	CBD-AOA-SW22-1021
Sample Date	10/04/21
PFNA	131
PFOS	618

Station ID	CBD-AOA-SW26	
Sample ID	CBD-AOA-SW26-0322	CBD-AOA-SW26-0422
Sample Date	03/16/22	04/18/22
PFHxS	1290	1390
PFNA	757	376
PFOA	514	336
PFOS	1540	1580

Station ID	CBD-AOA-SW25	
Sample ID	CBD-AOA-SW25-0322	CBD-AOA-SW25-0422
Sample Date	03/16/22	04/18/22
PFHxS	2270	3420
PFNA	2900	3730
PFOA	1050	1360
PFOS	14100	16500

Station ID	CBD-AOA-SW16		
Sample ID	CBD-AOA-SW16-1021	CBD-AOA-SW16-0322	CBD-AOA-SW16-0422
Sample Date	10/04/21	03/16/22	04/18/22
PFHxS	6300	1650	2800
PFNA	6900	2330	3530
PFOA	2130	860	1110
PFOS	32300	12200	14500

Station ID	CBD-AOA-SW17
Sample ID	CBD-AOA-SW17-1021
Sample Date	10/04/21
PFHxS	3320
PFNA	4450
PFOA	1340
PFOS	24600

Station ID	CBD-AOA-SW19
Sample ID	CBD-AOA-SW19-1021
Sample Date	10/04/21
PFHxS	1760
PFNA	2150
PFOA	617
PFOS	11200

Questions and Comments

- Open to RAB Members for discussion of "Site 10 On-Base RI Approach" presentation
- Questions from the public should be held to the end of the meeting

Naval Facilities Engineering Systems Command
NAVFAC Washington

Site 11 Site Inspection Approach

April 23, 2025

Site 11 Site Inspection Approach

- Site Background
- Geology and Hydrogeology
- Site Assessment Results Summary
- SI Objectives and Approach

Site Background

- Located on the western side of facility, approx. 0.26 acres
- Site history is limited; thought to be a construction debris disposal area
- Area assumed to be filled to create flat ground for equipment storage

Site 11 Geology and Hydrogeology

- **Geology**
  - Site is flat with steep slopes immediately adjacent to the west and south
  - Surficial geology is composed of clayey silt, poorly-graded silty sands, and silty clays underlain by silty lean-to-fat clays
- **Hydrogeology**
  - Groundwater encountered between 22 and 28 feet bgs, consistent with surficial aquifer
  - Groundwater flow presumed to flow south and southwest following topography, with broader flow component east towards Chesapeake Bay
  - Surficial aquifer underlain by Calvert confining unit

Site Assessment Results Summary

- Site Assessment conducted in November 2020
  - Focused on collection of soil samples to determine if a release occurred
- Fill material (debris) was encountered in subsurface borings
  - Metal, wood, coal, asphalt
- Surface soil samples detected SVOCs, pesticides, PCBs, and metals above screening criteria
- Subsurface soil samples detected PCBs and metals above screening criteria
- Soil to groundwater screening indicated that soil could be a potential source to groundwater contamination

SI Objective and Approach - Soil

Objectives

- Are site-related chemicals present in soil at levels above the project action limits?
- Does exposure to site-related chemicals pose potentially unacceptable risk to human or ecological receptors?

General Approach

- Collect surface and subsurface soil samples from 16 co-located locations
  - Surface soil (16 total) will be collected from 0 to 6 inches below ground surface
  - Subsurface soil (16 total):
    - Collected from depth interval displaying evidence of contamination
    - If no evidence of contamination found, collect sample from interval immediately below debris or immediately above the water table, whichever is encountered first
  - All samples analyzed for VOCs, SVOCs including PAHs, metals, pesticides, PCBs, and pH
    - Subset of samples (8 locations) analyzed for hexavalent chromium

SI Objective and Approach – Groundwater

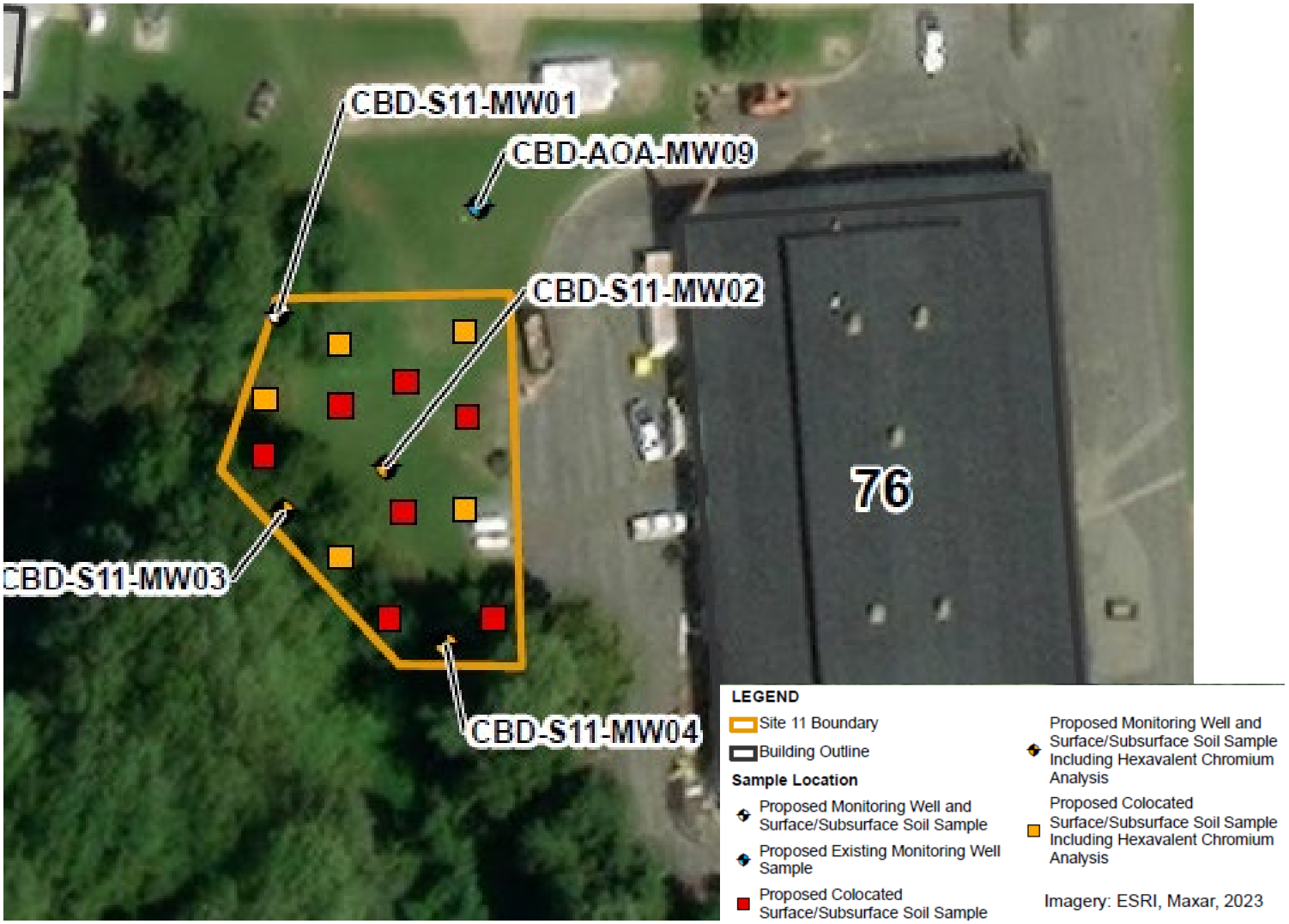
Objectives

- Are site-related chemicals present in groundwater at levels above the project action limits?
- Does exposure to site-related chemicals pose potentially unacceptable risk to human or ecological receptors?

General Approach

- Install 4 new surficial monitoring wells
- Collect groundwater samples from 4 new and 1 existing monitoring well locations
  - Collected from surficial aquifer and analyzed for VOCs, SVOCs, pesticides, PCBs, total and dissolved metals
    - A subset (3 total) will be analyzed for hexavalent chromium

SI Sample Locations



Questions and Comments

- Open to RAB Members for discussion of "Site 11 SI Approach" presentation
- Questions from the public should be held to the end of the meeting

Naval Facilities Engineering Systems Command
NAVFAC Washington

Site Status Updates

Andy Bogdanski - Jacobs

Ryan Mayer - NAVFAC Washington

Site Status Updates

- **UXO-001 (Hypervelocity Low-pressure Gun)**
  - Decision Document pending finalization
  - Remedial Action planned for award in FY25
- **AOC D (Water Tower)**
  - Pre-Engineering Evaluation/Cost Analysis (EE/CA) Results Tech Memo under review
  - EE/CA Report under preparation
  - Removal Action planned for award in FY25
- **Sites 3, 4, and 5 (Landfills No. 1, 2, and 3)**
  - RI Report under Navy review; anticipated for regulatory review Spring 2025

Site Status Updates (cont.)

- **Site 10 (Fire Testing Area)**
  - **Remedial Investigation**
    - On-Base RI SAP finalized April 2025
    - Off-Base RI SAP submitted for regulatory review May 2025
    - Field investigation to begin late-Spring 2025
  - **Interim Action**
    - Construction approvals with MDE ongoing
    - Action Memorandum under revision
    - Construction to start Spring 2025
- **Site 11 (Construction Waste and Rubble West Side of Bldg. 76)**
  - Responding to regulatory comments on Site Inspection SAP
  - Fieldwork anticipated Summer 2025

Site Status Updates (cont.)

- **Site 12 (Former Fire House)**
  - Sampling and Analysis Plan submitted for regulatory review March 2025
  - Fieldwork anticipated for Summer 2025

Questions and Comments

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

Questions and Comments

OPEN - Questions from Public Participants

Future Meeting Planning

- Per the charter, plan to meet 2 times per year
  - Navy proposes the next meeting for October 22, 2025
  - Wednesday evenings, 6:00-7:30 p.m.
  - Proposing new location, Twin Beaches Library, pending availability
- RAB agenda topics
  - If there are topics you'd like us to discuss, please communicate them to the RAB Co-Chairs:

    Navy Co-Chair – Cait Dugan: caitlyn.m.dugan.civ@us.navy.mil

    Community Co-Chair – David Harris: davidharris2nd@gmail.com

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