

Record of Categorical Exclusion

Active

Step 1: DESCRIPTION OF PROPOSED ACTION

This document has been prepared to determine the environmental constraints and requirements associated with a proposed project or activity, and serves as the environmental impact analysis required for application of a Categorical Exclusion (CATEX) under the under the National Environmental Policy Act, or a decision that a higher level of analysis is required, such as an Environmental Assessment (EA) or Environmental Impact Statement (EIS).

This Record of Categorical Exclusion (RCE) is valid only so long as the action's scope/activity or the relevant environmental regulatory requirements remain unchanged. Action proponents are responsible for ensuring that this RCE remains valid before implementation of an action. It is recommend that the RCE be revalidated by the Installation Environmental Program once a year throughout the planning, design, and implementation of an action.

The Department of the Navy (DON) is aware of the November 12, 2024 decision in Marin Audubon Society v. Federal Aviation Administration, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, the DON has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500- 1508, in addition to DON's procedures/regulations implementing NEPA at 32 C.F.R. Part 775, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

Instructions: The Project Proponent shall utilize the GRX and review all applicable overlays identifying environmental requirements (cultural resources, wetlands, environmental restoration sites, etc.) to respond to the questions in the EC. The process timeline for ECs varies depending upon the regulatory consultations that may be required and can be addressed by an installations's NEPA planner.

GENERAL PROJECT INFORMATION

1. Activity Requesting Navy Closure Task Force Red Hill Environmental & Remediation (NCTF-RH Env & Remediation)

2. Activity POC / Phone / Email (b) (6)

3. Name of Project/Action Install Treatment System and Reactivate NAHS Water Supply - Amendment 2

4. EV WON 1718940

5. Project Installation Location Other

5a. Annex or Special Area (if applicable) Navy Aiea Halawa Shaft (NAHS)

6. Project Type Sustainment

7. Description of the Project This amended record of categorical exclusion (RCE) supersedes the previous RCE (FY23N096 A1) for the installation of a Granular Activated Carbon (GAC)/Ion Exchange (IX) treatment system at the Navy Aiea Halawa Shaft (NAHS). The previous scope of work has been amended to include a pilot study of the GAC/IX treatment system to demonstrate its functionality and treatment efficacy prior to proceeding with a formal request to Hawai'i Department of Health (DOH) to fully reactivate the shaft. Reactivating the shaft improves water distribution system resiliency by providing an alternate source of water. This RCE amendment adds pilot testing the GAC/IX treatment system and reconnection of the NAHS to the JBPHH Public Water System after DOH approval is received.

A summary of the scope of work for this amended project is as follows:

On November 20, 2021, there was a release of several thousand gallons of JP-5 jet fuel in the (b) tunnel at the Joint Base Pearl Harbor-Hickam (JBPHH) Red Hill Fuel Facility. Fuel from the release reached the Red Hill Shaft drinking water source. The NAHS well which draws water from the underground aquifer was shut down as a precautionary measure.

In advance of requesting approval from DOH to reactivate the NAHS, JBPHH proposes to install a GAC/IX treatment system to proactively comply with the April 2024 Environmental Protection Agency (EPA) National Primary Drinking Water Standards for per- and polyfluoroalkyl substances. Upon successfully demonstrating the treatment system efficacy, the Navy would formally request DOH approval to reactivate the shaft and reconnect it to the JBPHH public water supply. The Navy is currently in discussions with the State to identify requirements to return the well to service.

The proposed GAC/IX System would be located on the eastern portion of Navy Public Private Venture (PPV) housing land located adjacent to (b) (3) (A) (see attached location map). All work would be on Navy owned property. The Navy may request permission to discharge drinking water to a nearby Department of Transportation stormwater system. Project work would include installation of the GAC/IX vessels, above ground piping, booster tanks,

booster pumps and security fencing. Four trains of GACs/IX vessels would be installed. Prior to conducting the pilot study, the NAHS treatment system would remain dry with no water used for flushing. Once started the treatment system must remain wetted every 3 days to maintain the GAC media and IX resin. The system pipes and tanks would be pressure tested using only air.

The pilot study would determine the efficacy of the GAC/IX treatment system at removing PFAS over a 30-day period. The pilot test would direct water flow every 2-3 days from the shaft through a temporary line to only the initial train of the treatment system by closing the entry valves of the other three trains (see attached NAHS GAC schematic). Limiting the pilot test to one train reduces the amount of water to be discharged and avoids wetting the entire system. To evaluate system effectiveness, water samples would be collected prior to treatment, after GAC treatment, and after final IX treatment. A Technical Memorandum describing the pilot study operation and results would be submitted to DOH to support the Navy's reactivation request. Upon receiving approval from DOH to reactivate the shaft, the Navy would reconnect disinfection and fluoride injection systems, establish a new compliance sampling point, and connect the treatment system effluent line to the JBPHH Public Water System.

See attached pilot study scope of work for additional details.

8. Why is this project needed?

Reactivating NAHS would provide an alternate water source supporting Navy water system resiliency goals. The treatment system would ensure compliance with the EPA's National Primary Drinking Water Standards for per- and polyfluoroalkyl substances well in advance of the 2029 enforcement date.

9. Project Design/Construction Process

Design-Build

10. Is this project related to any other past or future project? If so, please describe.

No

11. Total Project Area - Include clear zones, laydown areas, contractor parking, utility corridors, and pavement, etc.

150000

Square Feet

12. Ground Disturbing Activities? (Excavation, grading, demolition, site work, laydown areas, temporary soil stockpiling, utility work, borings, etc.)

Yes

12a. What is the maximum depth of proposed excavation (if any)?

36

Inches

12b. Total Size of Disturbed Ground (land) Area.

24000

Square Feet

13. Will there be actions conducted in the water and/or wetlands (maintenance or new dredging, placement of fill, new pilings, pile driving or extraction, etc.)?

No actions will occur in the water or wetlands

References: JBPHH - Inventory of Actual & Potential Wetlands, available on Teams at NAVFAC HI Checklist/General/Files/References; USFWS Online Mapper at <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>

14. If the project involves dredging, will the dredge spoil require characterization prior to disposal?

NA

15. Is the site within a floodplain that will experience increased flooding over the lifespan of the project/activity?

No

If yes, may require mitigation measures, increased freeboard, etc:

<https://www.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>

DESIGN RELATED QUESTIONS: If any of the answers are yes, or activities associated with impacts are identified, please discuss in the project description, question 7, above. Information provided below should be best guess estimates. Recommend considering the outer/upper limits of what you think is likely.

16. Any utility connections or exterior lighting to be installed, abandoned, or replaced? (fuel lines, water, sewer, stormwater, electric, cable)?

Yes

17. Will the project involve vegetation clearing?

Yes

17a. What type of vegetation would be removed? grass

18. Will trees taller than 15 feet be removed or trimmed between June 1 and September 15? If yes, consultation would be required. No

19. Will the project add or remove barbed wire? No

20. Will the construction/repair/maintenance actions generate hazardous waste by-products (lead paint chips, asbestos, PCBs, solvents, effluent, etc.)? Yes

21. Will the construction/repair actions require de-watering or hydrotesting? Unsure

22. Is the project location with a historic building or sensitive archaeological area? If yes, a project site map with the historic buildings or archaeological sites shown will help expedite review. References: GRX, NFADS, Pearl Harbor ICRMP 2012 Figures 1 and 5, Hickam ICRMP 2008 Figures 1.3-1 and 3.4-1. No

23. Will there be actions to impact or modify existing or new waterworks systems (pipes, valves, faucets, storage tanks, backflow preventers, water meters, potable building plumbing or wells)? Yes

24. Is the project located in an environmental restoration site? Reference: GRX No

25. Will there be any change in land use, new processes or maintenance activities conducted? Yes

26. Does the project include asphalt paving? No

27. Will there be nighttime work required? No

ADDITIONAL COMMENTS AND INFORMATION

Additional Comments Please expedite review as contractor is ready to order equipment for delivery and installation to meet Navy schedule.

(b) (6)

1/25/2024

Checklist Step 1 Preparer, phone number and e-mail (if Same as Question #2 - Type "Same")

Date

EV NEPA Planner Only - Continue to Step 2

Assigned To: (b) (6) NAVFAC HAWAII PEARL (USA)

Step 2: SUMMARY OF ENVIRONMENTAL REQUIREMENTS

EV WON 1718940

Name of Project/Action Install Treatment System and Reactivate NAHS Water Supply - Amendment 2

NEPA File Number FY23N096 A2

PLANNING REQUIREMENTS (Issues That Can Effect the Project's Timeline, Cost or Site Location)

Environmental Aspect

Environmental Requirement

SME Comments

Code

Terrestrial Threatened, Endangered Species No effect	No ESA Section 7 consultation required.	The no effect determination is based on the implementation of these required Best Management Practices (BMPs): A-4 - GREEN WASTE A-8 - STANDING WATER A-9 - ACTIVE NESTS IN TREES/BUSHES	EV22
Marine Threatened, Endangered Species N/A	Work will not occur in, over, or near waters where marine ESA-listed species are present.		EV22
Impacts to Essential Fish Habitat N/A	Work will not occur in, over, or near waters where EFHs are present.		EV22
Migratory Bird Treaty Act (MBTA) No Effect	Based on the scope of work in Step 1, the Navy has determined that there are no potential impacts to MBTA species.	The no potential impacts are based on the required BMPs: A-9 - ACTIVE NESTS IN TREES/BUSHES	EV22
Wetland Impacts No		Based on the information provided, no wetland impacts are anticipated.	EV22
Jurisdictional Lands/Navigable Water No Permit Required	This project does not require a Department of the Army permit or State of Hawaii Water Quality Certification coverage. The Actions do not involve in-water work or discharges of dredged or fill material to Waters of the United States (WOTUS), and would not affect the course, location, condition or physical capacity of WOTUS, thus complying with Section 10 of the Rivers and Harbors Act, and Sections 401(a)(1) and 404 of the Clean Water Act.		EV22
Floodplain Impacts No	Proposed action would not increase the flood hazard in the project area. See SME comments for applicable flood hazard area zone and reference map number.	The project site is located within a flood hazard area Zone D according to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map 15003C0332	EV21
Coastal Zone Mgmt Act Yes - on de Minimis List	The proposed action is listed among the de minimis activities agreed upon between the Navy and the State of Hawaii CZM Program. DBEDT memo Ref. No. P-12644, 9 July 2009 is available on Teams at NAVFAC HI Checklist/General/Files/References . No further review is required as long applicable mitigation and conditions are met; see SME comments to the right.	See item 1 New Construction. The project would follow the applicable Project Mitigation/General Conditions. 1, 3, 6, 8, 9, 10 and 11	EV21
Possible Air Emission Source Yes	Coordinate requirements with EV12 Clean Air Act Compliance Program Manager.	Dust control measures should be enforced in accordance with HAR 11-60.1-33 (Fugitive Dust) which provides reasonable precautions for the site activities. Additionally, any air emission source(s) owned/operated by the contractor and activities requiring an air quality permit to perform their work for this project shall be obtained by the contractor prior to bringing the air emission source(s) to the work site for operation.	EV12
Installation Restoration No		There are no Environmental Restoration concerns at this time.	EV3
LIST/ACT		Based on the project	

<p>03/1/2011</p> <p>No</p>		<p>description, the GAC and Resin tanks of the GAC system will not be a concern regarding Spill Prevention, Control and Countermeasure (SPCC) requirements since the system will be primarily treating water and not meet SPCC oil storage thresholds.</p>	<p>EV12</p>
<p>Hazardous Materials</p> <p>Yes</p>	<p>There is the potential for hazardous materials to be encountered. See SME comments to the right for specific hazardous materials. Test for these materials prior to project work. If presence is confirmed, take necessary precautions to limit personnel exposure and releases to the environment.</p> <p>Submit waste package documentation to the Installation Environmental Office or if applicable to the responsible agency as determined by the Real Estate agreement.</p>	<p>-excess/surplus soil. -Investigation Derived Wastes, i.e; contaminated groundwater that is not sufficiently treated by system will require disposal pending results of analytical results.</p>	<p>EV12 / PRJ42</p>
<p>Stormwater</p> <p>Over one acre disturbance</p>	<p>i. NPDES permit coverage for discharges of storm water associated with construction activities is required.</p> <p>ii. If the project involves discharge of any non-stormwater including hydrotesting waters, dewatering effluent, process water, or wash water to a drainage system or waterbody, then separate NPDES permit coverage will be required.</p> <p>iii. Project required by the Navy Region Hawaii Small MS4 permit to include Low Impact Development (LID) features. This LID policy is separate from the applicability requirements defined in UFC 3-210-10. If LID is not implemented to the Maximum Extent Technically Feasible a waiver is required.</p> <p>iv. If the project will discharge storm water to the Navy Region Hawaii Storm Drainage System via surface flow or direct connection, project managers must request a permit application form to discharge/connect to the storm drainage system from NAVFAC Hawaii EV11 prior to obtaining an NPDES permit.</p>	<p>Requirement iii and iv only applicable if land application and infiltration is not adequate and discharge subsequently reaches Navy Region Hawaii Municipal Separate Storm Sewer System (NRH MS4). Approval of Land Application of water does not allow discharge to NRH MS4 (separate approval is required).</p> <p>The Navy may request permission to discharge drinking water to a nearby Department of Transportation stormwater system provided the following requirements are met:</p> <ul style="list-style-type: none"> • Continue with the use of fiber roll BMP on the Navy's property. • Monitor the discharge to ensure it doesn't overflow from the drainage structure. • Clean the immediate area at the discharge point on the Navy's property (prior to the initial discharge). • The discharge is not performed if a storm event is forecasted. 	<p>EV11</p>
<p>Drinking Water</p> <p>Yes</p>		<p>The Navy is currently engaging in conversations with the Department of Health (DOH).</p> <p>For new potable water supply systems, extensions to new areas, rehabilitation, or replacement of existing potable water supply systems, the DOH shall review and approve plans for all new water systems and substantial modifications to an existing water system, which include but are not limited to any physical modifications to the source, storage, collection, treatment, or distribution facilities or having an actual or potential significant impact on the quality of water delivered to its users (HAR 11-20-30). A review can be</p>	<p>EV11</p>

		initiated by sending an email to DOH.SDWB@doh.hawaii.gov and providing plans and specifications certified by a licensed professional engineer, as well as other information, including testing and inspections, the DOH considers necessary to grant approval prior to construction.	
Wastewater Yes		If there's discharge to the JBPHH sanitary sewer system, and if the operation does not possess an Industrial Wastewater Discharge Certificate (IWDC) or if there are operational changes to its existing IWDC, please refer to COMNAVREGHINST 11345.5A for application instructions. Please add construction note to adequately protect the existing sewer from illicit discharge of construction wastes and debris.	EV11
Environmental Protection Guidelines No			PRJ42

Other Enter your comments here...

Other 2 Enter your comments here...

CULTURAL RESOURCES

1a. Review of Project Effects - Historic Preservation No Further Review	The undertaking does not have the potential to cause effects on listed, contributing or eligible properties, or that such undertaking is listed in Appendix A of the Region Hawaii Programmatic Agreement.	Ref # FY23N096	EV23
1b. Review of Project Effects - Archaeology No Further Review	The undertaking does not have the potential to cause effects on listed, contributing or eligible properties, or that such undertaking is listed in Appendix A of the Region Hawaii Programmatic Agreement.	Ref HP memo 02920	EV21
2. Applicable Programmatic Agreements Region PA 2012	Please answer question #2a below.		EV23

2a. Appendix A Undertakings

Historic Preservation
IX.A.1: Project does not have the potential to cause effects on listed, contributing or eligible, properties.

Historic Preservation

Archaeology
I.B.3: Ground disturbing activities that occur outside archaeologically sensitive areas indicated on ICRMP maps.

(b) (6)

2/6/2025 11:37 AM

EV23 - Architect/Historian Reviewer

(b) (6) NAVFAC HAWAII PEARL (USA)

(b) (6)

ARCHAEOLOGIST, NAVFAC HAWAII PEARL

2/4/2025 2:00 PM

EV23 - Archaeology Reviewer

STEP 3: NEPA PLANNER RECOMMENDATION

- The proposed action is within the scope of the catex below. No extraordinary circumstances are present in this case. Therefore, the proposed action is excluded from the requirement for further NEPA analysis. RCEs relying on CATEX 43 and 44 have to be uploaded to N45 EPL.
- The proposed action is within the scope of the catex below. Although one or more extraordinary circumstances are present in this case (specify below), the proposed action's potential effects in terms of both context and intensity are not considered significant. Therefore, the proposed action is excluded from the requirement for further NEPA analysis. RCEs relying on CATEX 43 and 44 have to be uploaded to N45 EPL. RCEs with extraordinary circumstances must be vetted through the chain of command, including Region, and undergo counsel review prior to signature.

CATEX1: 33. New construction that is similar to or compatible with existing land use (i.e., site and scale of construction are consistent with those of existing adjacent or nearby facilities) and, when completed, the use or operation of which complies with existing regulatory requirements (e.g., a building within a cantonment area with associated discharges and runoff within existing handling capacities). The test for whether this CATEX can be applied should focus on whether the proposed action generally fits within the designated land use of the proposed site;

Based on information found in Steps 1 and 2 of this document, I find that the project or activity meets one or more extraordinary circumstances found in the Navy's NEPA Implementing Regulation, 32 CFR 775 and will have potentially significant environmental impacts, preventing the application of a CATEX. At a minimum, an Environmental Assessment is necessary unless impacts will clearly be significant, in which case an Environmental Impact Statement (EIS) will be required. My recommendation for higher level NEPA analysis will be forwarded up my installation chain-of-command, and will be shared with the COMNAVREG HAWAII Environmental Planning Office and Counsel.

NEPA Planner Comments Enter your comments here...

Installation Environmental Comments PWD EV Compliance has reviewed and has no comments.

(b) (6) USN NAVFAC HAWAII PEARL (USA) (b) (6) ENVIRONMENTAL PROTECTION SPECIALIST, NAVFAC HAWAII PEARL NEPA PLANNER SIGNATURE Assigned To: (b) (6) NAVFAC HAWAII PEARL (USA)	2/13/2025 12:43 PM SIGNATURE DATE/TIME
(b) (6) NAVFAC HAWAII PEARL (USA) (b) (6) NEPA SUPERVISOR, NAVFAC HAWAII PEARL NEPA SUPERVISOR SIGNATURE Assigned To: (b) (6) NAVFAC HAWAII PEARL (USA)	2/13/2025 3:27 PM SIGNATURE DATE/TIME

STEP 4: ICO OR DESIGNEE DETERMINATION OF CATEGORICAL EXCLUSION (CATEX) APPLICABILITY AND RECORD OF CATEGORICAL EXCLUSION (RCE)

I have previously reviewed OPNAV M-5090 Environmental Readiness Program Manual for environmental planning under the National Environmental Policy Act and the information within the attached Environmental Checklist supporting the use of this RCE. I find that the CATEX(s) identified below are applicable for the proposed project or activity and that even the presence of one or more of the extraordinary circumstances found in the Navy's NEPA Implementing Regulation, 32 CFR 775, would not result in environmentally significant impacts that would preclude the use of the identified CATEX(s). I acknowledge that, should the scope or applicable environmental laws or regulations that would affect the subject project or activity change, this RCE will no longer be valid and that a new Environmental Checklist shall be submitted for compliance with NEPA.

I will ensure that this signed RCE will be retained locally for six years and that a copy will be forwarded to the installation NEPA Program Manager, COMNAVREG HAWAII Environmental Planning Office, and NRMA office of General Counsel.

CATEX 33	New construction that is similar to or compatible with existing land use (i.e., site and scale of construction are consistent with those of existing adjacent or nearby facilities) and, when completed, the use or operation of which complies with existing regulatory requirements (e.g., a building within a cantonment area with associated discharges and runoff within existing handling capacities). The test for whether this CATEX can be applied should focus on whether the proposed action generally fits within the designated land use of the proposed site;
----------	---

KLEINMAN, ROBERT D CAPT USN JBPHH PEARL HI (USA) (b) (6)	2/17/2025 11:44 PM
---	--------------------

PUBLIC WORKS OFFICER /JB4, JBPHH PEARL HI

ICO OR DESIGNEE SIGNATURE

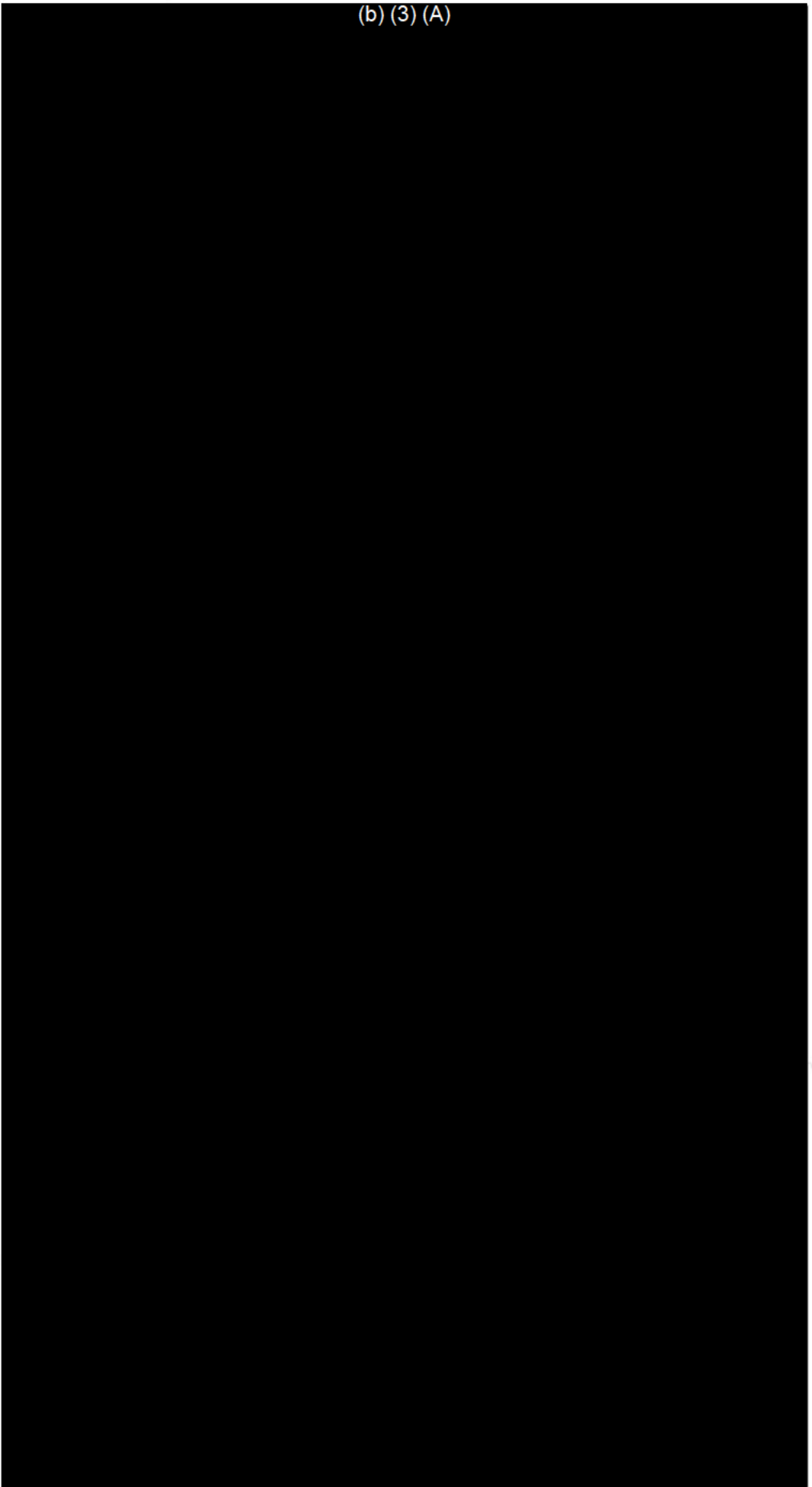
Assigned To: Kleinman, Robert D CAPT USN JBPHH PEARL HI (USA)

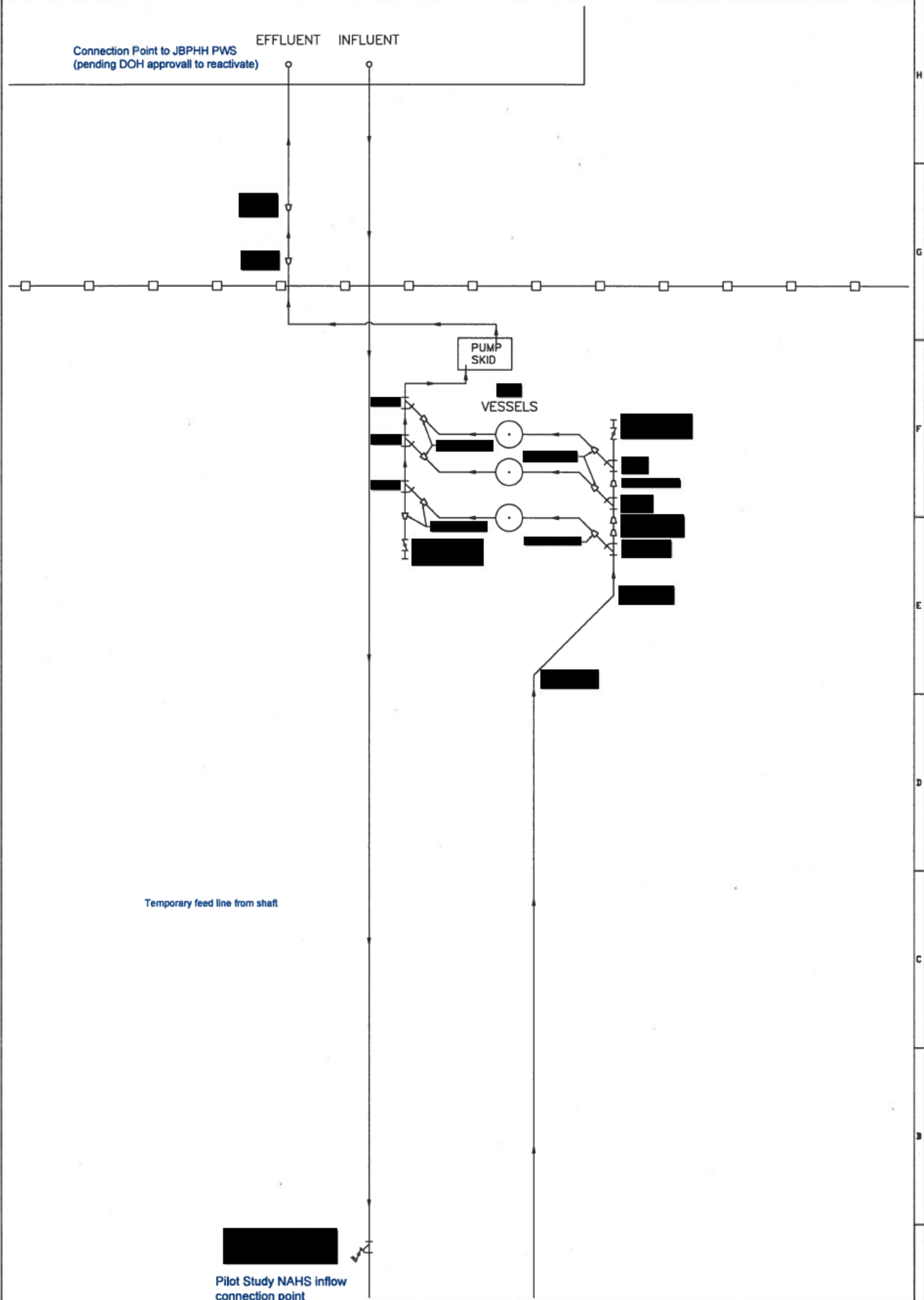
SIGNATURE DATE/TIME



Location Map: NAHS GACs

(b) (3) (A)





				DWN BY: CWA	DATE: 09/06/2024	TITLE: PROCESS FLOW DIAGRAM	
REMEDIATION TECHNOLOGIES 42 LONGWATER DRIVE NORWELL MA USA 781-792-5000				CKD BY:	DATE:	CLIENT: HALAWA	
0 INITIAL DRAWING				APPO BY:	DATE:	PROJECT NUMBER	DRAWING NUMBER
REV	DESCRIPTION	DATE	DWN	CKD	APPD	SCALE: NOT TO SCALE	SHEET 1 OF 3



H
G
F
E
D
C
B
A



REMEDATION TECHNOLOGIES
42 LONGWATER DRIVE
NORWELL MA USA
781-792-5000

DWN BY: CWA DATE: 09/06/2024

CKD BY: DATE:

APPD BY: DATE:

SCALE: NOT TO SCALE

TITLE: PROCESS FLOW DIAGRAM

CLIENT: HALAWA

PROJECT NUMBER

DRAWING NUMBER

SHEET

REV	DESCRIPTION	DATE	DWN	CKD	APPD
0	INITIAL DRAWING	09/06/24	CWA		

1					
---	--	--	--	--	--

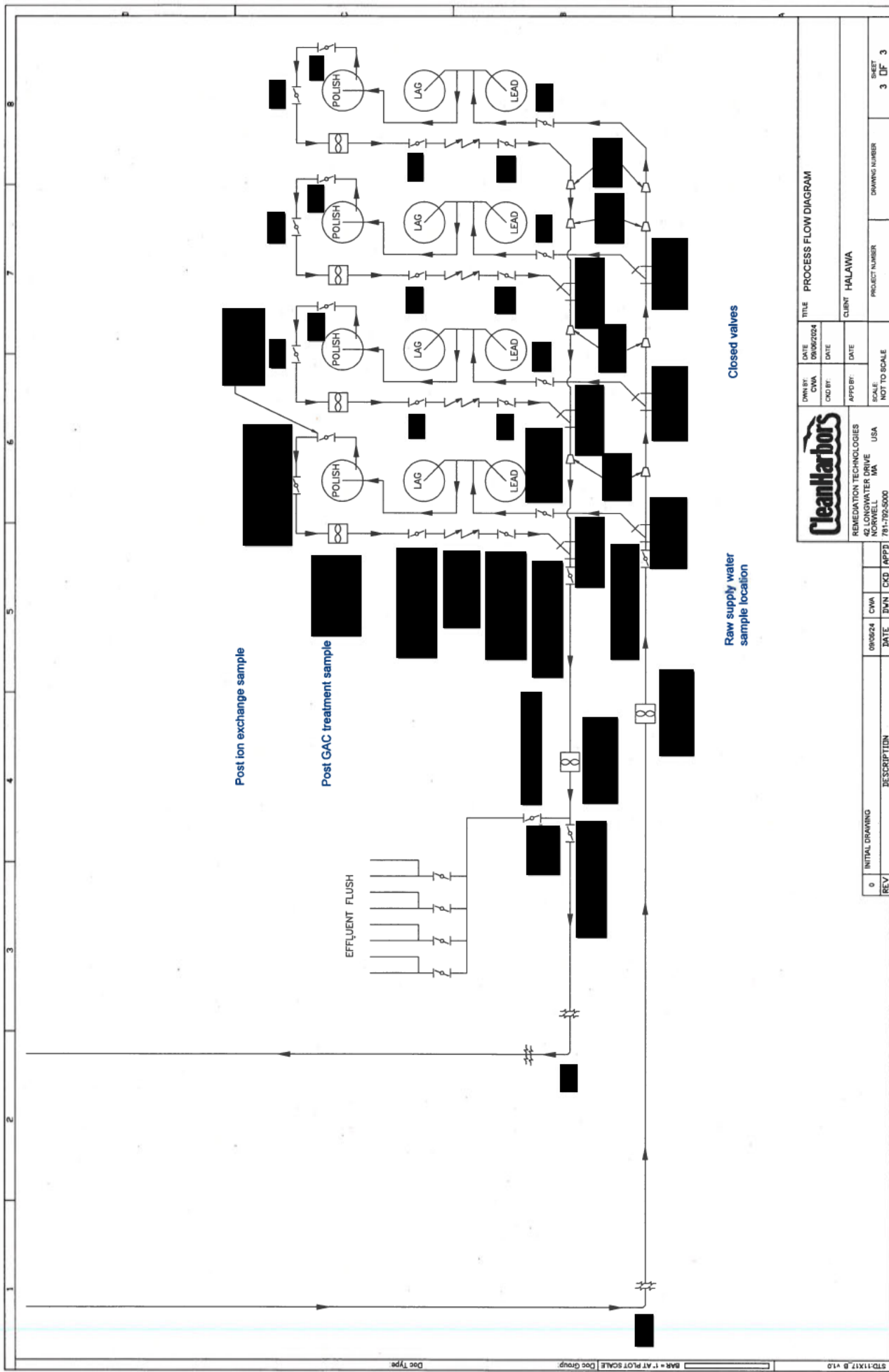
2					
---	--	--	--	--	--

3					
---	--	--	--	--	--

4					
---	--	--	--	--	--

2	DF	3
---	----	---

--	--	--	--



		REMEDATION TECHNOLOGIES 42 LONGWATER DRIVE MA 01904 781-792-5000		DWN BY: CWA CWD BY:		DATE: 09/06/2024 DATE:		TITLE: PROCESS FLOW DIAGRAM	
0 INITIAL DRAWING REV		DATE: 09/05/24 CWA: BWN CDD: IAPPD		SCALE: NOT TO SCALE		PROJECT NUMBER: HALAWA		DRAWING NUMBER: 3 DF 3	
DESCRIPTION:		DATE:		SCALE:		PROJECT NUMBER:		DRAWING NUMBER:	

Navy Aiea Halawa Shaft (NAHS) Pilot Study

The Navy would conduct a Pilot Study of the GAC/IX treatment system to demonstrate its efficacy at reducing per- and polyfluoroalkyl substances (PFAS) prior to formally requesting Hawai'i Department of Health (DOH) approval to fully reactivate the shaft. The scope of work of the pilot study would include:

- Pilot Study period of performance will be 30 days; Navy has discretion to adjust pilot testing period as necessary based on field conditions.
- Field activities will take place during normal daylight working hours. A sampling event on Saturday may be necessary to operate the treatment system every 2-3 days.
- Before beginning any phase of work, Navy, Contractor and Consultant personnel will have field meetings to discuss the safety, equipment, and worker responsibilities to execute this Sampling and Analysis Plan (SAP).
- In general, work will be performed in Level D personal protective equipment, consisting of a hard hat, safety glasses, safety-toed boots, and hearing protection,
- The pilot study will utilize only the initial first train of the four train treatment system.
- Consultant sampling technicians shall be trained on the intricacies of collecting drinking water samples for PFAS analyses. Samplers will take precautions to prevent potential cross-contamination and avoid donning clothing and personal hygiene items that could contain PFAS.
- Field notes will be captured on loose leaf paper/forms or electronic devices each day.
- The Navy will provide DOH a sampling schedule one-week in advance of testing so they can be present to observe and collect split samples with the consultant, if desired.
- Collection of samples will occur prior to GAC, between GAC and IX, and directly after treatment.
- Since sampling occurs directly after treatment, utilization of the piping from the effluent sample point to the booster tanks and pump is not required.
- Injection of chlorine and fluoride are not included in the pilot study.
- Minimal Investigation derived waste (IDW) from sampling is expected to be generated during this pilot study. IDW from sampling will be returned to consultant's operation center for proper disposition.
- If pilot study sampling schedules align with required compliance monitoring requirements, Navy will consider utilizing pilot study sampling data to fulfill the compliance requirement rather than duplicating the effort.