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STANDARD OPERATING PROCEDURE

SOP 6.1 Water Storage

Abstract: Ground water storage tanks store potable water in various locations throughout the distribution system.



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Revision Tracking Sheet

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ATTACHMENTS

1. SOP Acknowledgement and Training Form
2. Daily Operating Log Sheet
3. Cathodic Protection Operating and Maintenance Manual

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1. DEFINITIONS AND ACRONYMS

1.1. Definitions

- Cathodic protection: Cathodic protection is used to reduce corrosion on steel tanks, pipes, and other appurtenances.
- Drain: A valve located at the lowest point of the tank, designed to completely empty the tank by releasing all stored water.
- Fall protection: Fall protection is required to prevent falls when working at heights greater than four feet. Fall protection includes safety harness and line, safety nets, stair railings, and handrails.
- Flap valve: A control valve that allows water to flow out of a pipe and prevents debris from entering.
- Hatch: An entry point that allows access to the inside of the tank.
- Inlet: The opening point where water enters the tank.
- Insect Screen: A 24-mesh corrosion-resistant screen barrier installed at the inlet of the tank designed to prevent debris from entering. An insect screen shall be securely installed at each atmospheric opening (e.g., roof vent, overflow pipe, drain pipe).
- Level indicator transmitter: Instrumentation that receives the water level signal, displays the signal, and transmits it to the control system.
- Outlet: The opening point where water exits the tank.
- Overflow: When water level exceeds its maximum capacity, causing the excess water to spill out.
- Potable water: Water that is suitable for drinking.
- Safety Data Sheet (SDS): An Occupational Safety and Health Administration (OSHA) standardized hazard communication document detailing a chemical's properties and hazards (physical, health, and environmental); protective measures; and safety precautions for handling, storing, and transporting the chemical.
- Splash pad: A concrete pad at the discharge of the drain or overflow connections to the storage tank to prevent soil erosion.
- Vent: An opening that allows interior and exterior pressure to equalize.

1.2. Acronyms and Abbreviations

- | | |
|----------|--|
| • AWWA | American Water Works Association |
| • DSO | Water Distribution System Operator |
| • DWSCMP | Drinking Water System Compliance Monitoring Plan |
| • EPA | Environmental Protection Agency |
| • ft | foot |
| • JBPHH | Joint Base Pearl Harbor Hickam |
| • MG | million gallons |
| • mg/L | milligrams per liter |
| • NAVFAC | Naval Facilities Engineering Systems Command |
| • OIT | Operators-in-Training |
| • OSHA | Occupational Safety and Health Administration |

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- PPE personal protective equipment
- PRP32A Potable Water Branch
- SCADA Supervisory Control and Data Acquisition
- SDS Safety Data Sheet
- SOP Standard Operating Procedure
- UFC Unified Facility Criteria

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2. OVERVIEW

2.1. Scope and Purpose

This Standard Operating Procedure (SOP) covers the inspection and maintenance of potable water storage tanks, including interior and exterior inspections, checking for corrosion, leaks, and structural damage. The Joint Base Pearl Harbor Hickam (JBPHH) water system contains seven distinct water storage tanks:

- Three Camp Smith Tanks (S-325/S-326/S-327)
- Two Aiea-Halawa tanks (S-1/S-2)
- Two Red Hill Tanks (S-316, S-685)

In aggregate, the JBPHH system provides approximately XXXX million gallons (MG) of storage, with all tanks in service. S-325 is currently not in operation and is under construction. The available storage capacity (including offline tanks) provides less than one day of domestic water demand.

In storage tanks, other than pressurized vessels, the water surface is exposed to potential contamination. Tanks are the only place in the distribution system where pressure of the water at the surface is at atmospheric pressure; therefore, frequent tank inspection is required to ensure the water remains potable. Tanks that are not properly sealed or have improper openings provide an entry point for surface water runoff, vermin, birds, insects, etc. to enter the tank and contaminate the water. Proper tank operation and maintenance can address a variety of water quality concerns, including chemical, biological, and physical issues, which are summarized in *Table 2-1*.

Storage tanks also require regular inspection to prevent public safety concerns (structural failure, coating failure). A comprehensive water storage tank preventative maintenance program can extend the operational life of the tank, save money on tank rehabilitation, help determine long- and short-term maintenance planning and budgeting, and achieve compliance with regulatory requirements.

Table 2-1 Typical Water Quality Issues in Water Storage Tanks

Chemical Issues	Biological Issues	Physical Issues
Disinfectant Decay	Microbial Regrowth	Corrosion
Chemical Contaminants	Nitrification	Temperature/Stratification
Disinfection Byproduct Formation	Pathogen Contamination	Sediment
Taste and Odor	Taste and Odor	

2.2. Operating Summary

Water tanks hold a large fraction of the water in the distribution system. Storage tanks are essential to provide water for firefighting and for domestic and industrial use, and to help dampen variations in demand and pressures. However, they can contribute significantly to the overall detention time (water age) in the system. Military regulations require maintaining a minimum storage capacity, which is a function of daily average and peak demands as well as fire flow requirements. Operational practices can minimize water age in storage reservoirs through regular turnover. Tanks should be operated to allow diurnal fill and drain cycles, with a recommended minimum daily turnover of 30%.

All JBPHH tanks are remotely monitored and allowed to turn over by cycling pumps on and off through the Supervisory Control and Data Acquisition (SCADA) system. The tanks are filled by source water pumps and booster pump stations. Refer to *SOP 2.1 Water Supply Pump Stations*

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and *SOP 3.1 Booster Pump Stations* for details on source and booster pump stations, respectively.

2.3. Tank Descriptions

The S-1 and S-2 tanks each have a capacity of (b) (3) (B) MG. Tank S-1 is constructed of welded carbon steel. Tank S-2 is a new concrete tank completed in 2025. The tanks are situated at an approximate elevation of (b) (3) (B) feet (ft). The tank site is secured by a fence and locking gate. Refer to *Table 2-2* for tank details.

Camp Smith has three potable water storage tanks: S-325, S-326, and S-327. Tank S-325 and S-326 are concrete storage tanks with a total capacity of (b) (3) (B)-gallon. Tank S-327 is a bolted steel storage tank with a total capacity of (b) (3) (B)-gallon. Refer to *Table 2-2* for tank details.

The Red Hill tanks consist of two bolted steel tanks, S-316 and S-685, located at an approximate elevation of (b) (3) (B) ft. The two tanks have total capacities of (b) (3) (B) and (b) (3) (B) gallons, respectively. Refer to *Table 2-2* for tank details.

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Table 2-2 Water Tank Summary

Tank	Volume (gallons)	Diameter / Height (ft)	Operating Levels (ft)	Material / Manufacturer
S-1	(b) (3) (B)	(b) (3) (B) / (b) (3) (B)	(b) (3) (B) - (b) (3) (B)	(b) (3) (B) Steel / (b) (3) (B)
S-2 ¹	Under Construction	(b) (3) (B)	(b) (3) (B) - (b) (3) (B)	Concrete
S-316	(b) (3) (B)	(b) (3) (B) / (b) (3) (B)	(b) (3) (B) - (b) (3) (B)	(b) (3) (B) Steel / (b) (3) (B)
S-325	(b) (3) (B)	(b) (3) (B) / (b) (3) (B)	Offline	Cast-In-Place Concrete
S-326	(b) (3) (B)	(b) (3) (B) / (b) (3) (B)	(b) (3) (B) - (b) (3) (B)	Cast-In-Place Concrete
S-327	(b) (3) (B)	(b) (3) (B) / (b) (3) (B)	Not Applicable	(b) (3) (B) Steel / (b) (3) (B)
S-685	(b) (3) (B)	(b) (3) (B) / (b) (3) (B)	(b) (3) (B) - (b) (3) (B)	(b) (3) (B) Steel / (b) (3) (B)

¹ S-2 Tank details are based on the "current" anticipated design information.

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3. RESPONSIBILITIES AND QUALIFICATIONS

3.1. Responsibilities

The JBPHH Public Works Department owns and operates the JBPHH drinking water system. Operation and maintenance of the system is the responsibility of the Utilities Management Potable Water Branch (PRP32A). Water storage tank operation and maintenance within Pearl Harbor is performed by the Production Work Center and the Pearl Harbor and Outlying Areas Work Center. Refer to *Figure 3-1* for details.

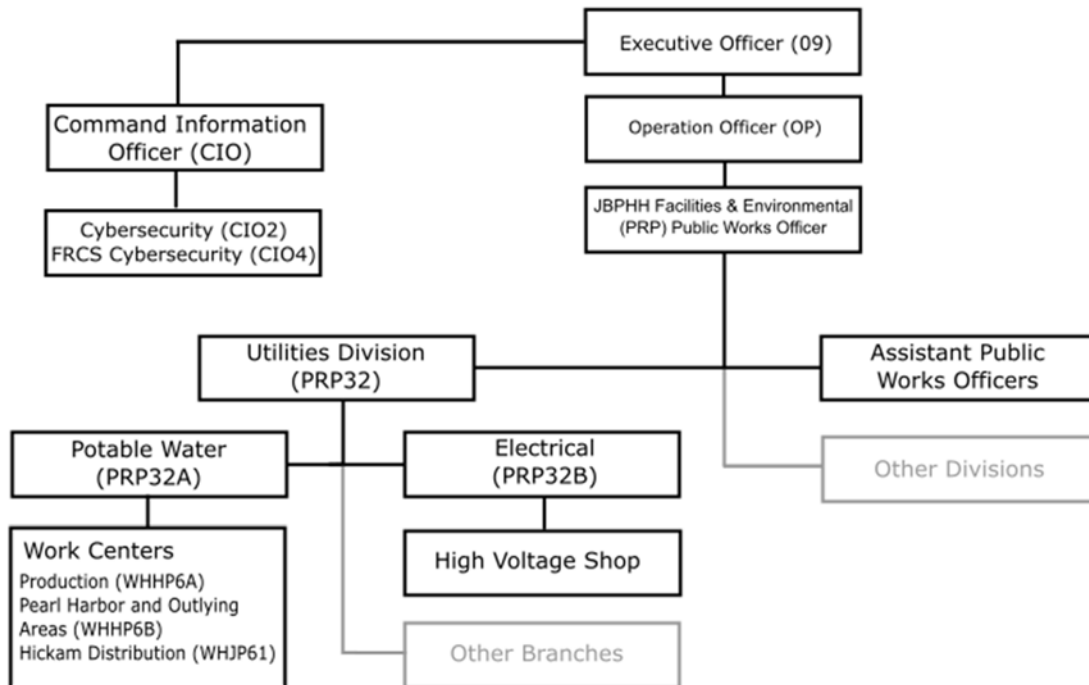


Figure 3-1 Public Works Department Organization

Lead operators and supervisors in PRP32A must ensure that the operators are trained and qualified prior to using this SOP. To support this process, a copy of this SOP should be made readily available to all users. Senior operators are required to update the SOP to reflect any changes in equipment, procedures, or regulations, and train the subordinate operators and maintenance crew(s) accordingly. Senior operators approve, coordinate, and maintain records of any major repairs on the equipment highlighted in this SOP. Training shall consist of in-depth, hands-on training for all new employees or employees new to this SOP and annual refresher meetings facilitated by the lead operator. All training should be documented using *Attachment 1 SOP Acknowledgement and Training Form*.

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3.2. Qualifications

All personnel involved in operations and maintenance activities at water storage tanks must adhere to the following:

- If required, personnel are responsible for obtaining and maintaining a Water Distribution System Operator's (DSO) certification, Grade 1 or higher from the State of Hawaii, Department of Health, Safe Drinking Water Branch. Please note unlicensed and uncertified operators and Operators-in-Training (OIT) shall not make process control or system integrity decisions about water quality or quantity that affect public health.
- Follow Navy and base-specific safety regulations and directives and obtain appropriate safety training (see *Section 4*).
- Be familiar with the following:
 - Emergency protocols and communications
 - Operation of tools and equipment
 - Procedures outlined in this SOP

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4. HEALTH AND SAFETY

4.1. General Guidelines

With respect to health and safety, operators shall implement the following:

- Comply with the JBPHH Safety Manual.
- Use engineering, operational, or administrative controls or other means of performing work to eliminate or minimize health and safety hazard risk. Eliminating or minimizing health and safety hazard risk is preferred over the use of personal protective equipment (PPE). Use PPE to reduce hazard exposure when the hazard cannot be eliminated.
- Follow all OSHA requirements for work in confined spaces, trenching, roadways, etc.
- Pay specific attention to the hazards outlined in *Section 4.2*.
- Be familiar with all applicable SDSs. Ensure SDSs are up to date. Ensure the SDSs displayed / available match the chemical being used (i.e., do not use an SDS for the same chemical from another manufacturer).

4.2. Anticipated Hazards

- Falls
- Confined space entry
- Moving parts
- Drowning
- Heavy equipment
- Structural failure
- Work environment (hot weather, humid environment, wet slippery grounds, elevated platform, uneven/unstable ground, noise, etc.)
- Exposure to potentially harmful paints and coatings

4.3. Personal Protective Equipment

Utilize the following PPE based on anticipated activities:

- Personal fall arrest systems (Fall Protection), as required. The Camp Smith tanks require fall protection; the other storage tanks have stair access and guard rails.
- Safety steel toe shoes with anti-slip soles
- Cut- and/or chemical-resistant gloves
- Chemical-resistant suit
- Hard hat/helmet
- Eye protection
- Dust mask/respirator
- Class 2 safety vest (class 3 vest is required when visibility conditions are limited)

4.4. First Aid

Stocked first aid kits shall be kept in two primary locations: service trucks and water supply pump stations. Promptly remove any expired stock from first aid kits and replace. Operators shall follow detailed instructions in the JBPHH Safety Manual and EM-385-1-1, *Section 3* regarding first aid kit requirements, documentation, and follow up procedures.

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5. EQUIPMENT AND MATERIALS

The section lists the equipment and materials that are relevant to perform this SOP. For detailed information regarding location and quantity of each item, please refer to the JBPHH inventory provided as an attachment to *SOP 1.1 Introduction and Overview*.

Parts:

- Hatch and manway gaskets
- Insect Screen (corrosion-resistant #24-Mesh)

Equipment:

- Access keys
- Flashlight
- Inspection mirror
- Safety gear and equipment
- Digital camera
- High-pressure washer
- Broom
- Brush
- Shop vacuum
- Pruning shears
- Weed trimmer
- Lawn mower
- Chlorine test kit

Consumables:

- Detergent
- Sodium hypochlorite (12%)
- Food-grade lubricant

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6. SCHEDULE AND PROCEDURES

6.1. Schedule

Refer to *Table 6-1* for a routine tank operation and maintenance schedule. Detailed procedures are discussed in subsequent sections.

Table 6-1 Tank Maintenance Schedule

Frequency	Task	Section
Daily	Monitor tank levels and pump operation, alarms.	6.2
Weekly	Conduct exterior inspection.	6.3
Monthly	Perform visual inspection of tank roof; collect water sample.	6.4
Annually	Perform refresher training on this SOP.	6.5
Every 3 to 5 Years	Perform complete tank inspection.	6.6

6.2. Daily Remote Tank Monitoring

Monitor the SCADA system continuously for any alarms or warnings related to low/high water levels or power or communication outages.

- SCADA System Alarms: Observe SCADA system display for any alarms or warnings related to tank levels, pump operations, and power and communication outages at all water system facilities.
- SCADA Tank Level and Pump Status Displays
 - The system tank levels are shown as colored trendlines. Trendlines turn red when tanks reach the “High” level.
 - Pump status is overlaid onto the tank level trendlines.
 - Inspect the tank level indicators for each storage tank and verify that all tank levels are within the target levels listed in *Table 2-2*.
 - Tank levels should normally increase when pumps are operating and decrease when the pumps are off.
 - Shut off the longest-running pump when the tank reaches the high level.
 - Document tank levels and any observed anomalies.
- SCADA Pump Status
 - Confirm that the expected number of pumps are running based on system demands and tank levels.
 - Monitor pump vibration levels. Increased vibrations may indicate impending malfunction. If observed, report it immediately to the supervisor on duty.
- Documentation
 - Record the water level of each tank at the start of each shift in the daily operating log sheet in *Attachment 2 - Daily Operating Log Sheet*
 - Note any observed abnormalities.

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6.3. Weekly Exterior Tank Inspection

Visit each tank site at least once per week and perform the following tasks:

- Check security
 - Check for damaged fences, open gates, and vandalism. Repair any damaged fence component and report vandalism incidents to local authorities.
 - Ensure the area is free from combustible storage, trash, debris, or other fire hazards.
 - Inspect ladder access locks and ladder guards for damage, signs of tampering, corrosion, or vandalism.
- Check vegetation
 - Check for excessive vegetation or dangerous conditions like uncut grass, brush, or dead trees.
 - Remove any dead trees and branches and trim any vegetation using pruning shears.
- Check tank openings
 - Inspect all tank openings for evidence of surface runoff, vegetation, and animal intrusion, and remove or clean as needed.
 - Where the tank roof is readily accessible with stairs, inspect the tank vent screen (**Error! Reference source not found.**) for damage and clean the screen from any obstructions using a brush or a shop vacuum. If necessary, schedule a replacement.
 - Check that all tank hatches are secured and locked.
 - Inspect the overflow pipe outlet for debris and damage
 - Inspect the flapper valve (**Error! Reference source not found.**):
 - Ensure the valve closes correctly to form a watertight seal.
 - Check for any internal screen damage
 - Verify the overflow pipe has an appropriate air gap (approximately (b) (3) (B) inches) to prevent susceptibility to flooding
 - Assess the access road and the tank's surrounding area for water ponding, washouts, or poor drainage.
 - Remove any obstacles impacting drainage.
- Documentation
 - Document any maintenance issues, repairs, or unusual findings, including specific issues and actions taken. Take and provide photographs for visual documentation.
 - Generate Corrective Work Orders for issues requiring adjustments or replacements.
- Verify that the mechanical water level gauge (**Error! Reference source not found.**) agrees with SCADA readings.

6.4. Monthly Operation Review and Tank Inspection

In addition to the daily and weekly tasks listed above, perform the following actions at least once per month:

- Check for minimum water turnover, see *SOP 8.1 Real Time Monitoring* for details.
- Inspect Tank Exterior (in addition to weekly inspections)
 - Inspect the tank's concrete foundation for signs of degradation, including settlement, cracks, spalling, and exposed reinforcement. Repair as needed.
 - Check exterior of concrete tanks for seepage, cracks, loose or crumbly material, and for any deteriorated expansion joints. Repair as needed.
 - Inspect the tank's paint condition, looking for signs of fading, peeling, or rust. If repainting or repairs are required, schedule the tasks for a later date.

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- Where the tank roof is not readily accessible with stairs, inspect the tank vent screen for damage and clean the screen from any obstructions using a brush or a shop vacuum. If necessary, schedule a replacement.
- Access and inspect the tank roof
 - Inspect for signs of damage such as cracks, corrosion, and any unprotected openings.
 - Mark any daylight in the interior (a hole in a wall or the roof)
 - Inspect roof coating for signs of peeling.
 - Identify and address any potential safety hazards.
 - Inspect the hatch for signs of damage.
 - Clean/sweep the area around hatches to prevent debris from entering the tank upon hatch inspection.
 - Check the hatch lock for proper function.
 - Open access hatches and check the condition of the inner seal. Replace the seal if there are any signs of wear or damage.
 - Ensure access hatch's gasket forms a watertight seal and hatch is not vulnerable to surface runoff.
 - Where the tank roof is readily accessible, inspect the tank vent screen for damage and clean the screen from any obstructions using a brush or a shop vacuum. If necessary, schedule a replacement.
 - Inspect water quality inside the tank (to check if anything is floating on surface, oily sheen, anything suspended in the water).
 - Inspect the interior walls and tank bottom through the open hatch using a flashlight.
- Check the cathodic protection system for adequate current. Refer to *Attachment 3-5* for further information on cathodic protection.
- Collect a sample to monitor water quality.
 - See Drinking Water System Compliance Monitoring Plan (DWSCMP) under separate cover for details on sampling methodology.
 - Locate the tank's external faucet.
 - Flush the line by opening the faucet and allowing water to run for 1 minute to expel stagnant water from the sample line.
 - Record any aesthetic water quality observations, such as discoloration, particles, sheen, taste, or odor.
 - At a minimum, measure the residual chlorine concentration. Additional field-measured parameters may include pH, turbidity, and conductivity.
 - Follow sample collection and field measurement procedures documented in the system's sampling plan.
 - Consider collecting a sample for microbiological parameters (coliforms). Coordinate the coliform sample collection with the Public Works Department, specifically its environmental lab and PRP32A staff.
- Documentation
 - Document any maintenance issues, repairs, or unusual findings, including specific issues and actions taken. Take photographs for visual documentation.
 - Generate Work Orders for minor issues requiring adjustments or replacements.
 - Generate Emergency Work Orders for critical issues indicating equipment damage or potential failure.

6.5. Annual SOP Refresher Training

- Schedule Training
 - Review operator schedules to identify a convenient time and date for most or all operators to attend the training session.

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- Refresher Training
 - Review key aspects of this SOP.
 - Address operators' questions or concerns.
 - Identify areas to improve the SOP.
- Documentation
 - Record the date, time, and attendees of the training sessions.
 - Note any updates or revisions made to the SOP.

6.6. Complete Tank Inspection (Every 3-5 Years)

A complete tank inspection consists of a thorough examination of the tank's interior, exterior, foundation, and accessories, as well as cleaning of the interior surfaces. Interior inspections and cleaning could be performed using robotic devices or divers, but draining is required for routine inspections every 3 to 5 years under Unified Facility Criteria (UFC) 3-230-02. Complete tank inspections may be carried out by a contractor.

- Conduct exterior (including roof) inspections per monthly tasks.
- Preparation
 - Coordinate with the Production Supervisor to maintain adequate water supply and pressure in the distribution system during tank outage.
 - Notify the local fire department and large water users about the planned tank outage.
 - Isolate the tank from the water distribution system.
 - Check the discharge area at the drain outlet for obstructions that could cause flooding.
 - Dechlorinate the discharging water in accordance with local regulations: place burlap bags filled with a solid dechlorinating agent (e.g., sodium sulfite tablets) securely at the discharge point.
- Drain the contents of the tank. Open the tank's drain valve to completely drain the tank of water. Throttle the valve as needed to avoid erosion of the discharge area.
- Observe local confined space entry requirements and other safety regulations while entering the tank. Access the tank interior using the tank's ladder or scaffolding, or an available ground-level hatch.
- Clean the tank
 - Remove any sediment or sludge from the tank floor manually or using a vacuum.
 - Use a stiff brush to scrub the entire interior of the tank.
 - Wash the tank walls and floor with a detergent solution to remove dirt, algae, and other contaminants.
 - Rinse the tank completely with clean water to remove all cleaning solution residues.
 - Flush water and dirt from the tank.
- Inspect storage steel tank interior for pitting, corrosion, and biofilm buildup. Inspect concrete surfaces for cracks, leaks, spalling, and crumbly or loose material. Repair as needed.
- Disinfect tank according to one of the three American Water Works Association (AWWA) Standard C652 approved methods (*Table 6-2*).

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Table 6-2 AWWA Water Storage Tank Disinfection Methods

Step	Method 1	Method 2	Method 3
1	Fill the tank to overflow with chlorinated water	Apply a 200 milligrams per liter (mg/L) chlorine solution to surfaces using a brush or a spray nozzle. Allow the solution to contact the surfaces for a minimum of 30 minutes	Fill the tank to 5% capacity with 50 mg/L chlorinated water
2	Hold the chlorinated water in the tank for: • 6 hours: if a pre-mixed chlorine solution • 24 hours: if chemicals were mixed in the tank	Fill the tank with chlorinated water at a concentration of 3 mg/L	Retain the water in the tank for no less than 6 hours
3	After holding time is complete, the chlorine residual must be no less than 10 mg/L	Retain water in the tank for 3-6 hours	Fill the tank with potable water and retain water for 24 hrs. The required residual after 24 hours is 2 mg/L

- Method 1 is the recommended approach for JBPHH:
 - Remove all inspection, repair, and cleaning equipment and materials from the tank.
 - Ensure that access hatches and tank drains are closed.
 - Fill the tank with potable water by opening the isolation valve on the fill line.
 - Add 12% liquid sodium hypochlorite while the water level in the tank is between 10 and 15 feet. Pour sodium hypochlorite from pails or pump from a tote or drum using suitable equipment through the roof hatch or another opening. The following volumes of liquid sodium hypochlorite are required²:
 - Tanks S-325 or S-326: 100 gallons
 - Tanks S-327 or S-685: 100 gallons
 - Tank S-316: 100 gallons
 - Tank S-1 or S-2: 100 gallons
 - Isolate the tank once it is full and hold the chlorinated water for at least 24 hours. After 24 hours, the chlorine residual must be no less than 10 mg/L.
 - Drain the tank as described under "Preparation" above.
- Conduct bacteriological tests for total coliforms as follows:
 - Collect a sample from the sampling tap immediately after filling the tank, see DWSCMP under separate cover for details on sampling methodology.
 - Collect a sample from the sampling tap 24 hours after filling the tank see DWSCMP under separate cover for details on sampling methodology.
- If both tests are negative, return the tank to service by opening the isolation valve on the fill line. If one or both tests yield positive coliforms, repeat the disinfection process.
- Documentation
 - Note all procedures, including dates, chemicals used, and test results.

² The computed volumes will result in an initial chlorine residual in the full, mixed tank of at least 20 mg/L, assuming the sodium hypochlorite contains at least 10% available chlorine.

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- Document any maintenance issues, repairs, or unusual findings, including specific issues and actions taken. Take and provide photographs for visual documentation.
- Generate Corrective Work Orders for minor issues requiring adjustments or replacements.
- Generate Emergency Work Orders for critical issues indicating equipment damage or potential failure.

6.7. Unscheduled Tank Inspections

Perform tank inspections after unexpected events:

- Perform exterior tank inspections as described under *Section 6.3* after any of the following:
 - Severe weather events
 - Nearby wildfires
 - Reports on vandalism
- Disinfect the storage tank as described in *Section 6.6* after any of the following:
 - Repeat positive coliform results during routine sampling.
 - Aesthetic water quality issues (discoloration, taste and odor, etc.)
 - Suspected water contamination

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7. TROUBLESHOOTING

The following section offers an approach to troubleshooting common issues encountered with water storage tanks. Refer to *Table 7-1* for general troubleshooting guidelines.

Table 7-1 General Troubleshooting Guide

Issue	Potential Cause	Remedy
Water quality problems	Water stagnation	Improve tank turnover
	Corrosion	Inspect cathodic protection system Perform interior tank inspection
	Contaminant Intrusion	Seal openings Drain and disinfect tank
	Source water contamination	Drain and disinfect tank
	Sediment buildup	Clean and disinfect tank
Unexpected tank levels	Leaks	Perform exterior tank inspection
	Defective level sensor	Compare SCADA data to mechanical level gauge, and replace sensor
	Pump operation	Review automatic controls and pump operation

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8. REFERENCES

- AWWA C652-19 Disinfection of Water Storage Facilities.
- AWWA D100-21 Welded Carbon Steel Tanks for Water Storage.
- AWWA Manual M42: Steel Water Storage Tanks, First Edition, 1998.
- AWWA Standard G200-04 Distribution Systems Operation and Management, 2010.
- Department of the Army, EM-385-1-1 Safety and Occupational Health (SOH) Requirements Manual, 15 March 2024.
- Department of the Navy, OPNAV M-5100.23 Navy Safety and Occupational Health Manual. 5 June 2020.
- Drinking Water System Compliance Monitoring Plan (DWSCMP) prepared by AH Engineering, (Final Date TBD)
- Environmental Protection Agency (EPA), Drinking Water Storage Tank Assessment, March 2021.
- EPA Office of Ground Water and Drinking Water, Finished Water Storage Facilities, 15 August 2002
- JBPHH Safety Manual
- UFC 3-230-02 Operation and Maintenance: Water Supply Systems, 10 December 2019.

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9. ATTACHMENTS

- Attachment 1: SOP Acknowledgement and Training Form
- Attachment 2: Daily Operating Log Sheet
- Attachment 3: Cathodic Protection Operating and Maintenance Manual

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Attachment 1:
SOP Acknowledgement and Training Form

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SOP ACKNOWLEDGEMENT AND TRAINING FORM

This SOP must be read and signed each time training is provided, or modifications are made to the SOP. This form should accompany the current SOP version.

Document Title:	Water Storage
Document Revision Number:	
Document Revision Date:	

Please sign below in accordance with the following statement: "I have read and understood the above referenced document. I agree to perform the procedures described in this SOP in accordance with the document until such time that it is superseded by a more recent, approved revision."

Print Name	Signature	Date

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Attachment 2:
Daily Operating Log Sheet

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JBP HH Daily Operating Log

Tank Log Sheet

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Attachment 3:
**Cathodic Protection Operating and
Maintenance Manual**

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**N6247820F4247
REPLACE CATHODIC PROTECTION
TANK S-1 ALIAMANU
JBPHH, HAWAII**

**Operating and Maintenance
Manual**

Section 264214 – Cathodic Protection System

**For
TANKS No. S1**

Prepared for:

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[Redacted]
[Redacted]

Prepared by:

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[Redacted]
[Redacted]
(b) (3) (B)
[Redacted]

December 2020

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