



Joint Base Pearl Harbor Hickam Potable Water System and Red Hill Shaft

Presented by

Naval Facilities Engineering Systems Command Hawaii



AGENDA

- **JBPHH Water Pumpage**
 - Red Hill and Aiea/Halawa Pumpage
 - Waiawa Pumpage and Monitoring
- **JBPHH Water Conservation**
- **Red Hill Update**

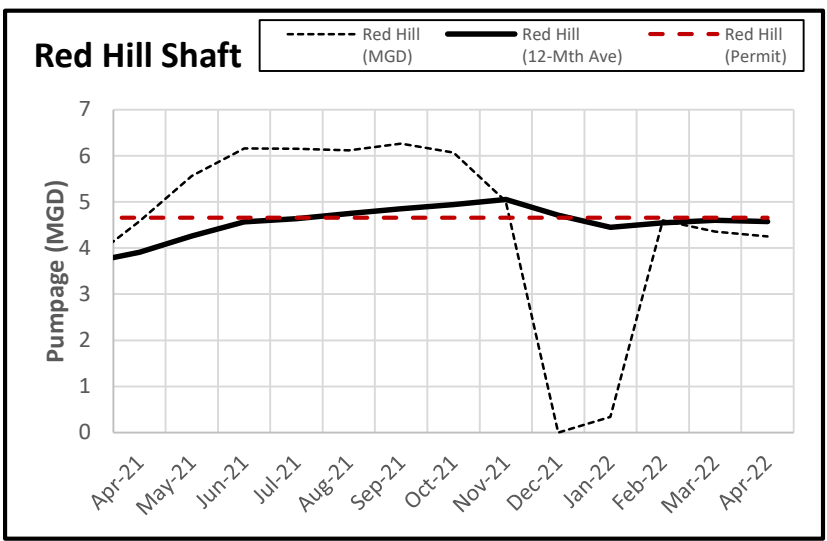


JBP HH Water Pumpage

Red Hill Shaft

WUP	Well No.	Allocation
85	3-2254-001	4.659 MGD

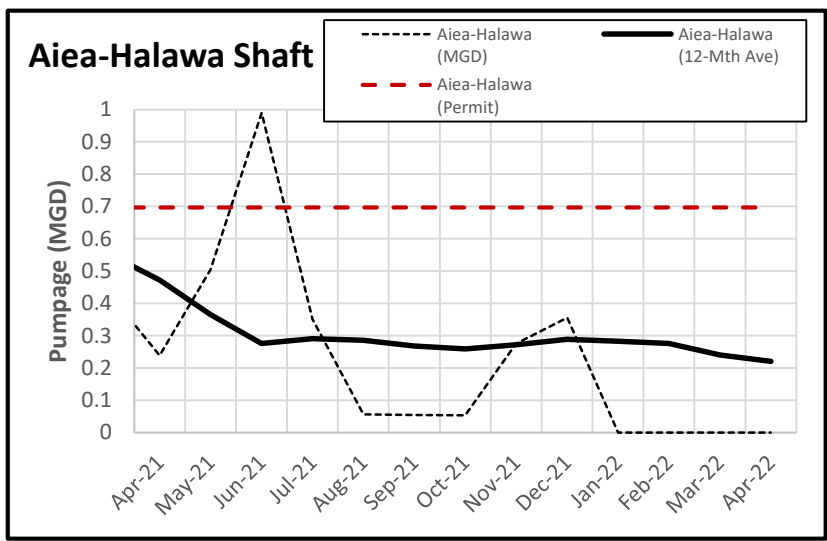
- Well secured 29-NOV-2021 through 29-JAN-2022
- Not connected to PWS-360 (JBPHH Potable Water)
- 12-Mth Average (April 2022) = 4.600 MGD
- **UNDER WUP ALLOCATION**



Aiea-Halawa Shaft

WUP	Well No.	Allocation
86	3-2253-032	0.697 MGD

- Well secured 3-DEC-2021
- 12-Mth Average (April 2022) = 0.240 MGD
- **UNDER WUP ALLOCATION**



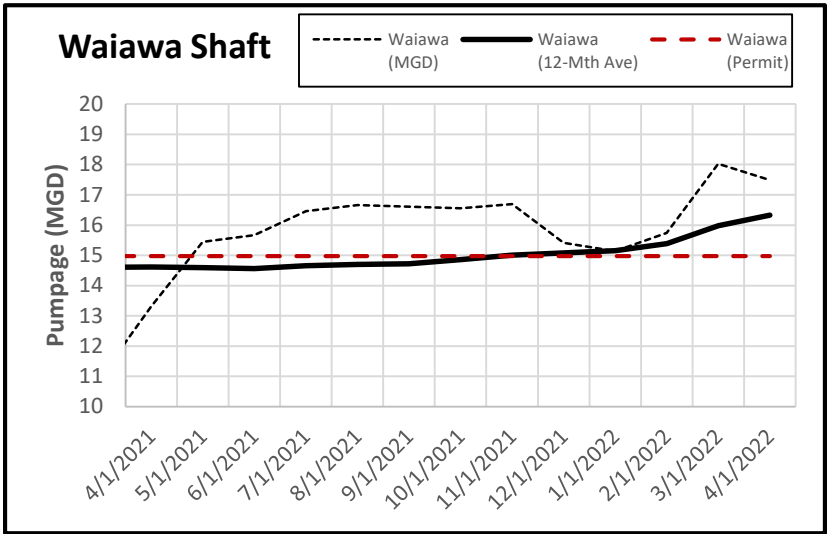


JBPHH Water Pumpage

Waiawa Shaft

WUP	Well No.	Allocation
111	3-2558-010	14.977 MGD

- Sole water source for PWS-360 (JBPHH Potable Water system)
- 12-Mth Average (April 2022) = 16.326 MGD
- **OVER WUP ALLOCATION**



Water Monitoring

Waipahu-Waiawa Aquifer Information

- Aquifer Code 30203
- 105 MGD Sustainable Yield¹
- 84.287 MGD Permitted Allocation²
- ~55 MGD Actual Pumpage³
- ~20 MGD Available Permitted Allocation
- ~50 MGD Yield Allocation

Navy Monitoring and Reporting

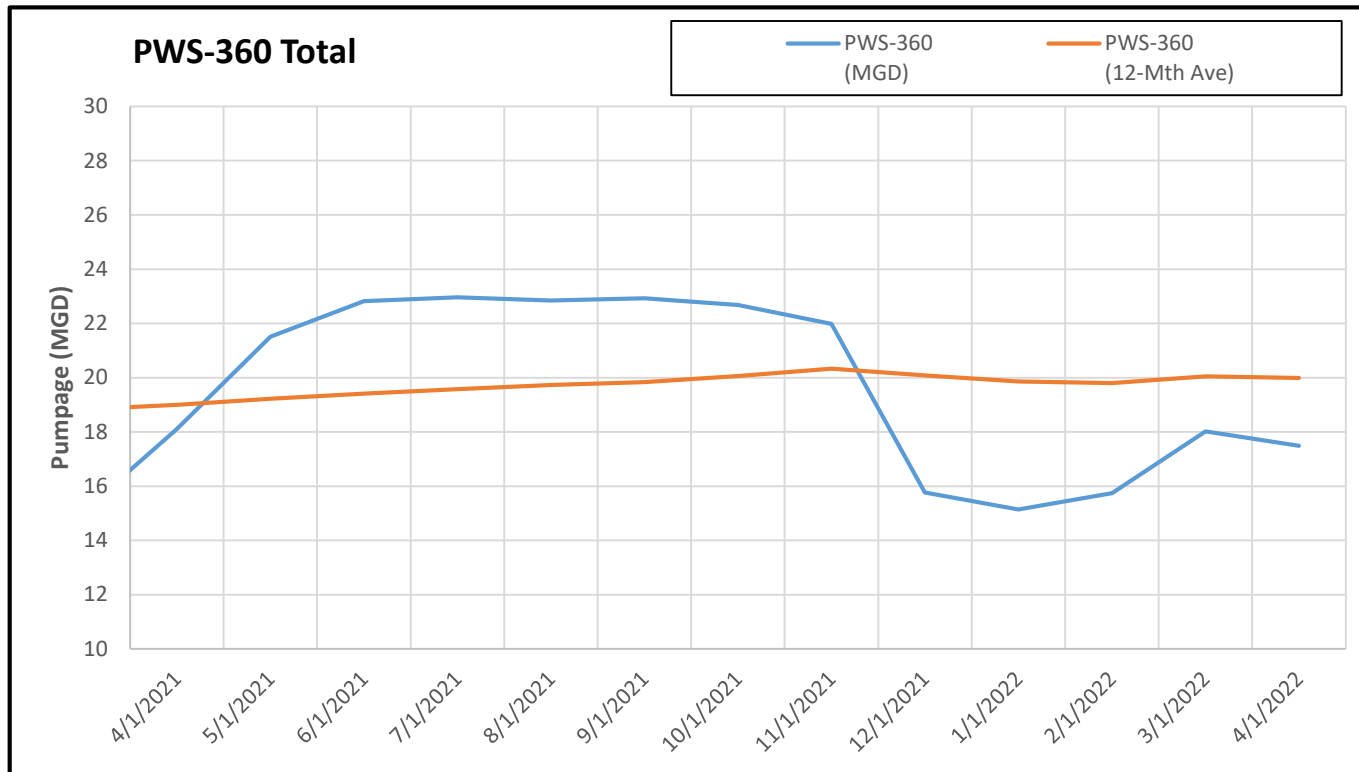
- Monitoring quality and quantity of water
- Pumpage Monitoring – Feedback loop to mission/customers
- Increased water conservation measures at high demands
- Weekly Chloride sampling at Waiawa and Red Hill shafts
- Weekly reporting of pumpage and chlorides to CWRM
- SCADA Aquifer level monitoring
- Long term distribution monitoring via contract
- In-line analyzer installation



JBP HH Delivered Water

PWS-360, JBP HH Potable Water System

- Waiawa is the sole water source for PWS-360 (JBP HH Potable Water system)
- Total user consumption down over 20%
- Without additional source(s), Waiawa Shaft continue to pump over WUP



Navy Water Conservation JBPHH



Already Implemented

- Reduced Irrigation
- Securing Car Wash and other high use operations
- Tenant and Resident voluntary reductions

Ongoing/recurring

- Public Communications
- Low-flow fixtures
- Leak reporting
- Leak detection

Long Term System Improvement Options

- **Water Resource Management Study:**
 - Red Hill Water Use/Reuse Options
 - Other Production (desalinization)
 - R-1 Type system/usage
 - Wastewater effluent reuse
- **Advanced Metering**
- **SCADA Upgrades**
- **HVAC Designs/Modifications**
- **Smart Irrigation**
- **Xeriscape**

Public Communication Examples



WATER CONSERVATION EFFORTS

When washing your hands, turn off the water while you lather.

Reducing your time in the shower by just three minutes can save about eight gallons of water.

The poster features a bathroom scene with a toilet, sink, and shower. Callouts highlight water-saving tips: turning off the water while lathering hands and reducing shower time. A circular icon with a water drop and a recycling symbol is in the top left corner.

REPORT BROKEN SPRINKLERS

If you see a broken sprinkler spigot, report it. Please take note of the location of the sprinkler, the time you saw it and a description of how it's broken.

Bubbling or overflowing causing puddling

Improper spraying

Physical damage causing improper watering

How to report broken sprinklers:

For concerns in housing and neighborhoods, contact your **PROPERTY MANAGER**.

For nonresidents and issues outside of housing, contact Public Works Emergency Service at **(808) 449-3100**.

The poster shows three types of broken sprinkler issues: bubbling/overflowing, improper spraying, and physical damage. It includes instructions on how to report the problem, with contact information for property managers and the public works emergency service. A circular icon with a water drop and a recycling symbol is in the top left corner.



Red Hill Environmental Update

- **Recovery and Remediation**
 - Fuel recovery through skimming and absorbents continues
 - Adit 3 soil vapor monitoring being expanded to characterize 20 Nov release
 - Commence excavation of hold/leach tank outside Adit 3 this month
- **Monitoring**
 - Groundwater and soil vapor monitoring continues on a weekly basis
 - Monitoring well network being expanded
- **Modeling**
 - Schedule for groundwater flow model being negotiated with regulators



Backup Slides



Public Communication Examples

WATER CONSERVATION EFFORTS

Turn off the water while you brush your teeth and you could save up to 4 gallons of water per minute.

This could save a family of four **200 GALLONS PER WEEK!**

WATER CONSERVATION EFFORTS

Washing dishes by hand uses nearly 5,000 more gallons of water a year than using a dishwasher.

DISHWASHERS COULD SAVE YOU NEARLY **5K GALLONS OF WATER A YEAR**



Public Communication Examples

WATER CONSERVATION EFFORTS

When washing your hands, turn off the water while you lather.

Reducing your time in the shower by just three minutes can save about eight gallons of water.

WATER CONSERVATION EFFORTS

Use a hose nozzle, or turn off the water while washing your car.

This can save you **100** GALLONS OF WATER EVERY TIME!

Water Conservation Efforts

It All Starts With You!

When washing your hands, turn the water off while you lather.



Footnotes

1. **Source: CWRM Ground Water Hydrological Unit Map, Island of Oahu**
https://files.hawaii.gov/dlnr/cwrmaps/gwhu_oahu.pdf
2. **Source: CWRM Report - Pearl Harbor Water Shortage Plan, August 2020**
<https://files.hawaii.gov/dlnr/cwrmaps/submittal/2020/sb20200818C1.pdf>
3. **Source: CWRM Report - Water Resource Protection Plan**
<https://dlnr.hawaii.gov/cwrmaps/planning/hiwaterplan/wrpp/>