

# **Red Hill Fuel Storage Facility**

**Status Update for HBWS –June 27, 2016**

Implementation of Administrative Order  
on Consent between the Navy and  
Defense Logistics Agency with Hawaii  
Department of Health and the US EPA  
Region 9



## Background on AOC

- Why an AOC
- Roles and Responsibilities
- AOC Decision Process
- Stakeholder Involvement
- Work to be Performed



## External Subject Matter Expert Involvement

- AOC States “. . . intent of the Parties to seek the advice of subject matter experts, such as . . . for scoping and review of key deliverables. The Parties shall take actions that facilitate sharing of information with subject matter experts . . .”



## External Subject Matter Experts

- Three External Parties with Subject Matter Expertise Engaged in the AOC Implementation Process
  - Hawaii Department of Land and Natural Resources (DLNR)
  - United States Geologic Service (USGS)
  - Honolulu Board of Water Supply (BWS)



## Recent External Subject Matter Expert Involvement

- Agencies Facilitated Meetings in May with Parties and External Subject Matter Experts to Discuss Comments on Key Deliverables.
- Agencies Have Facilitated the Sharing of Documents and Information with External Subject Matter Experts and the Public.



# Information Available to the Public

## DOH Website

health.hawaii.gov/shwb/ust-red-hill-project-main/

## EPA Website

www.epa.gov/red-hill

The screenshot shows the website for the State of Hawaii, Department of Health, Solid & Hazardous Waste Branch. The page title is "U.S. NAVY RED HILL BULK FUEL STORAGE FACILITY UST PROJECT". The main content includes a paragraph describing the facility, a section for "Red Hill State Task Force meetings - 2014-2015", and a "January 2014" update regarding the refilling of Tank 5. A "Frequently Asked Questions" section is also visible, listing several questions about the AOC, tank improvements, and future risks. At the bottom, there is a link to the AOC and a note about the May 2015 AOC.

The screenshot shows the EPA website page for the Red Hill Bulk Fuel Storage Facility in Hawaii. The page features a header with the EPA logo and navigation links. The main content includes a large image of workers at the facility, a "Red Hill Updates" sidebar, and a main text block explaining the Administrative Order on Consent (AOC). Below this, there are sections for "About Red Hill" (with links to fuel storage, water quality, and 2014 release), "Enforcement Response to the Fuel Release" (with links to AOC, infrastructure improvements, and investigation/ remediation), and "Additional Information" (with links to Hawaii and Navy AOCs). The page also includes a "Contact Us" link and a footer with social media icons and a date of last update (March 15, 2016).

7/1/2016



## Summary - Work to be Performed

- Section 2 - Tank Inspection, Repair, and Maintenance
- Section 3 - Tank Upgrade Alternatives
- Section 4 - Release Detection / Tank Tightness Testing
- Section 5 - Corrosion and Metal Fatigue Practices
- Section 6 – Investigation and Remediation of Releases
- Section 7 – Groundwater Protection and Evaluation
- Section 8 – Risk and Vulnerability Assessment



## Section 2 – Tank Inspection, Repair and Maintenance (TIRM)

Specific Task	AOC Deadline	Current Status
Scoping Meetings (2.1)	Start within 30 Days from effective date of AOC	Scoping Completed
TIRM Procedures Report (2.2)	Within 120 days from final scoping meeting	Revised Draft Outline for TIRM Procedures Report received from Navy March 23, 2016
Decision Meeting (2.3)	Within 60 days of TIRM Procedures Report	



## Key Findings to Date Related to TIRM

- Tank 5 Inspection, Repair and Maintenance was Done by a Different Contractor than Prior Tanks
- Quality Assurance and Quality Control Procedures Very Critical
- Clear Opportunities for Improvement in Contracting and Procedures



## Section 3 – Tank Upgrade Alternatives

Specific Task	AOC Deadline	Current Status
Scoping Meeting (3.1)	Start within 30 days from effective date of AOC	Scoping Completed
Scope of Work (3.2)	Within 90 days from final Scoping Meeting	Draft SOW Outline submitted Jan 29, 2016
TUA Report (3.3)	Within 12 months of SOW Approval	







## Key Tank Upgrade Considerations

- Effective Containment of Fuel
- Condition of Existing Infrastructure
- Risk and Vulnerability
- Overall Engineered System vs. Focus on Single Components of System
- Ability to Repair and Maintain
- Cost vs. Benefit



## Section 4 – Release Detection and Tightness Testing

Specific Task	AOC Deadline	Current Status
TTT Frequency Increase (4.1)	Within one year of effective date of AOC	
Outline RD Monitoring System Report (4.2)	Within 30 days of effective date of AOC	Approved by Agencies
RD Monitoring Systems Report (4.3)	Within 60 days of Outline Approval	Submitted April 4, 2016, Agency Approval Pending
Scoping Meetings for New RD Alternatives (4.4)	Within 60 days of Agencies' Approval of RD Monitoring Systems Report	



# Release Detection and Tightness Testing Report - Key Issues

- Frequency
- Precision
- Impact of False Positives
- Opportunities for Improvements



# Section 5 - Corrosion and Metal Fatigue Practices

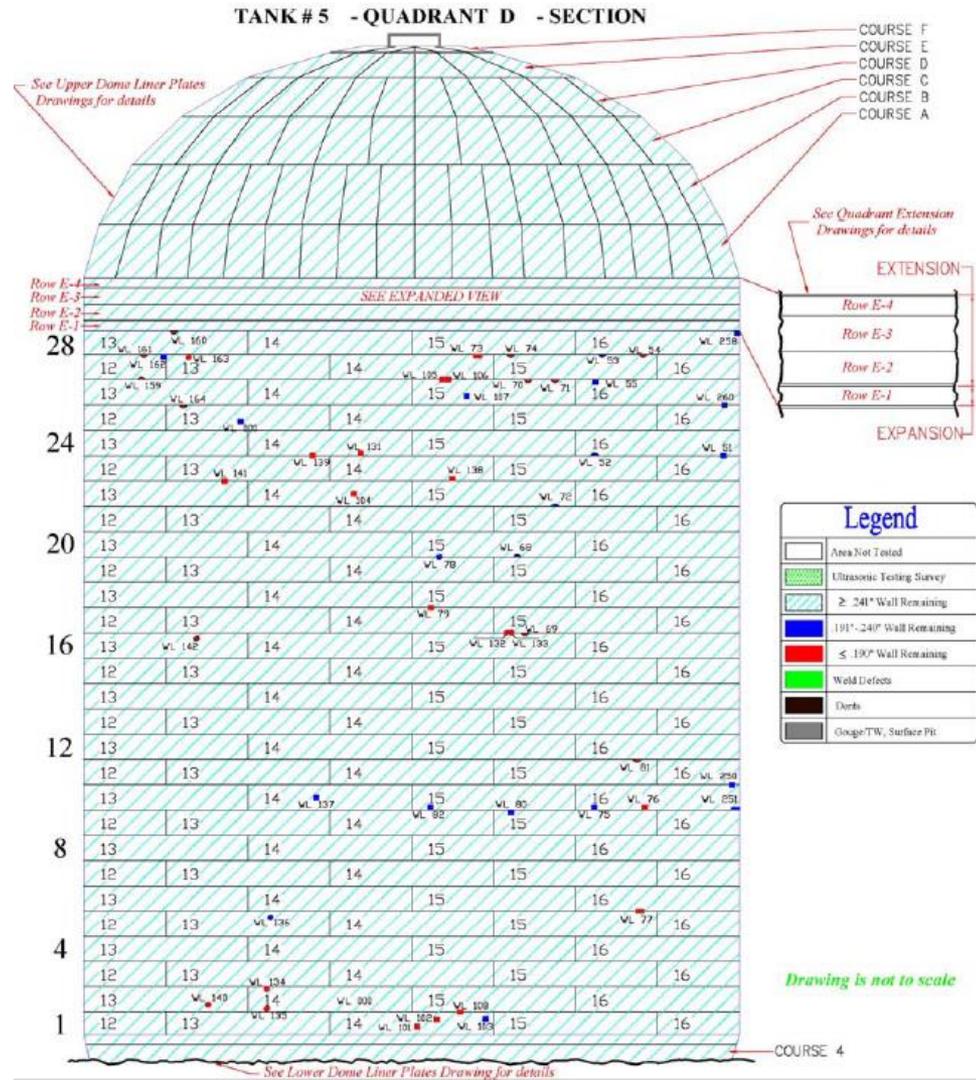
Specific Task	AOC Deadline	Current Status
Report Outline (5.1)	Within 30 days of effective date of AOC	Approved by Agencies
Corrosion and Metal Fatigue Practices Report (5.2)	Within 60 days of Outline Approval	Submitted April 4, 2016, Agency Approval Pending
Scoping for Destructive Testing (5.3.1)	Within 90 days of Agencies' Approval of Corrosion and Metal Fatigue Practices Report	

# Corrosion and Metal Fatigue Report – Key Issues

- Effectiveness of Non-Destructive Testing
- Corrosion Rate
- Construction Anomalies
- Opportunities for Improvements

TANK MAPS  
Willbros Government Services, LLC  
Tulsa, OK

Testex  
WWW.TESTEX-NDT.COM





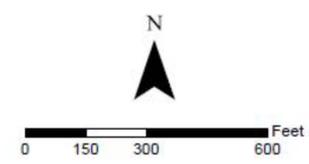
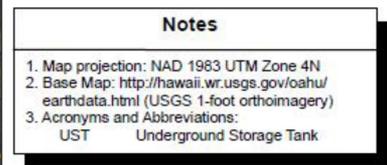
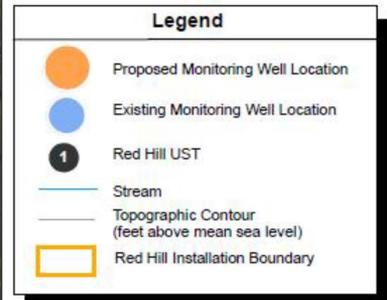
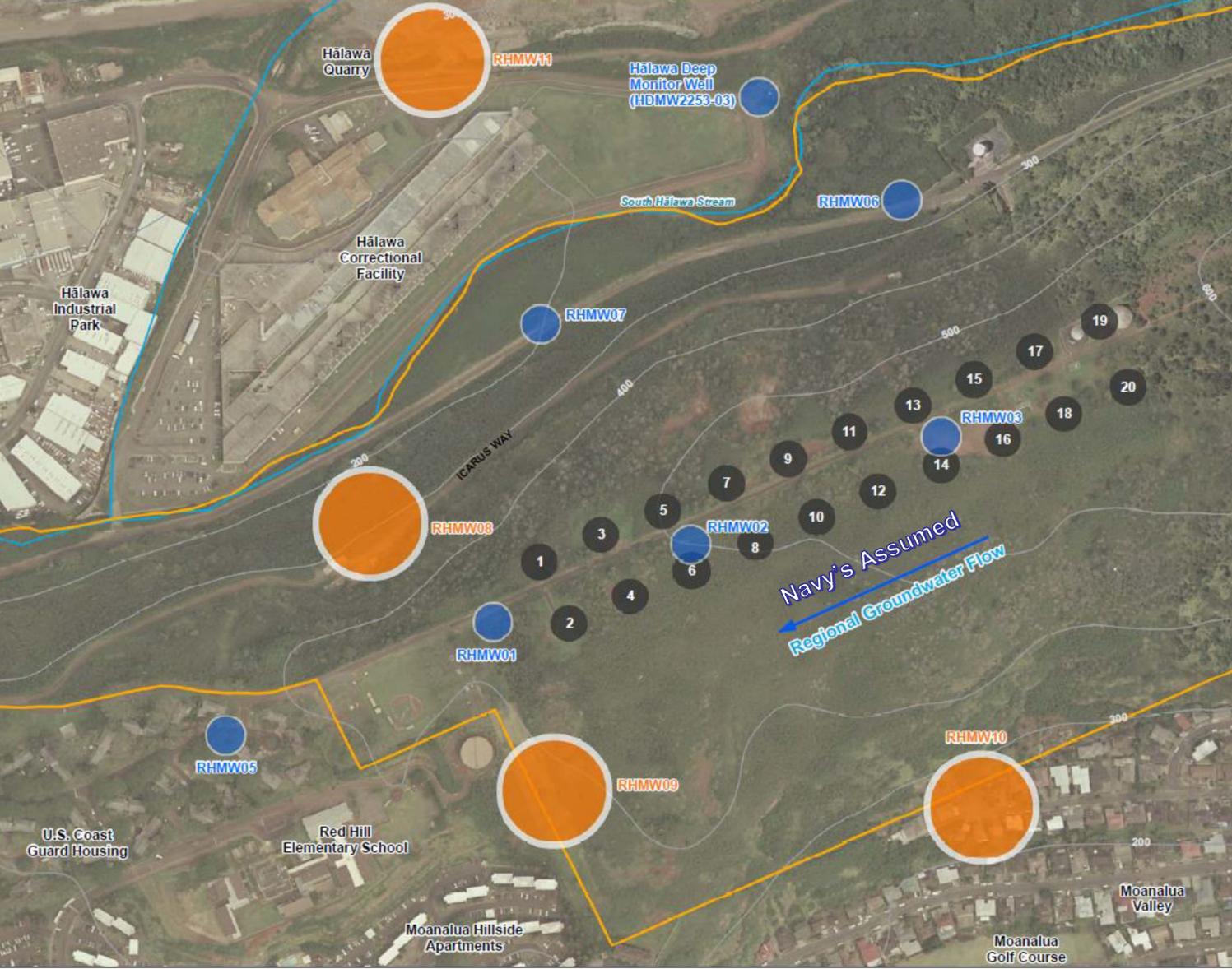
# Section 6 – Investigation and Remediation of Releases

<b>Specific Task</b>	<b>AOC Deadline</b>	<b>Current Status</b>
Scoping Meetings (6.1)	Within 30 days of effective date of AOC	Complete
Scope of Work (6.2)	Within 60 days of Final Scoping Meeting	Submitted May 4, 2016, Agencies' Approval Pending
Investigation and Remediation of Releases Report (6.3)	Within 24 months of the Agencies' Approval of the SOW	



## Section 7 – Groundwater Protection and Evaluation

Specific Task	AOC Deadline	Current Status
Scoping Meeting for Groundwater Flow and Fate & Transport Model Report (7.1.1, 7.2.1)	Within 30 days of effective date of AOC	Complete
Groundwater Flow and Fate & Transport Model SOW (7.1.2, 7.2.2)	Within 90 days of Final Scoping Meeting	Submitted May 4, 2016, Agencies' Approval Pending
Groundwater Flow Model Report (7.1.3)	Within 24 months of Agencies' Approval of SOW	
Fate & Transport Model Report (7.2.3)	Within 6 months of Agencies' Approval of the Groundwater Flow Model Report	
Scoping Meeting for Groundwater Monitoring Well Network (7.3.1)	Within 30 days of effective date of AOC	Complete
Groundwater Monitoring Well Network SOW (7.3.2)	Within 90 days of Final Scoping Meeting	Submitted May 4, 2016, Agencies' Approval Pending/ Monitoring Well Installation Workplan submitted April 26, 2016/Agencies' partial approval on June 17, 2016
Groundwater Monitoring Well Network (7,3.3)	Within 12 months of Agencies' Approval of Groundwater Flow Model Report	



**Figure 2**  
 Proposed Monitoring Well Locations  
 Monitoring Well Installation Work Plan  
 Red Hill Bulk Fuel Storage Facility  
 JBPHH, O'ahu, Hawai'i

# Additionally Planned Monitoring Wells Pending Installation



## Contaminants of Potential Concern (CoPC)

- Current list of Analytes includes 12 compounds:
  - Total Petroleum Hydrocarbons (TPH-d, TPH-o, TPH-g)
  - BTEX (Benzene, Toulene, Ethylbenzene, Xylenes)
  - Napthalenes (Napthalene, 1-Methylnapthalene, 2-Methylnapthalene)
  - Lead Scavengers (1,2 Dichloroethane, 1,2 Dibromoethane)



## Contaminants of Potential Concern (CoPC)

- Since 2005, Navy has collected quarterly samples and analyzed them for 64 separate compounds
- 52 of these 64 compounds have generally not been detected in samples collected.
  - Some compounds have been detected but at levels significantly below State Environmental Action Levels



## Contaminants of Potential Concern (CoPC)

- The 52 compounds that the Regulatory Agencies agreed to remove from the analyte list are not constituents of the fuel being stored at Red Hill.
- As per comments from the BWS, Navy will provide a list of all fuel additives currently in fuel used at Red Hill.
- Final COPC list may be revised based on our review of fuel additives.



## Section 8 – Risk and Vulnerability Assessment

Specific Task	AOC Deadline	Current Status
Risk and Vulnerability Scoping Mtgs (8.1)	Begin within 30 days of effective date of AOC	In progress. Next scoping meeting needs scheduling
Risk/Vulnerability Assess SOW (8.2)	Within 90 days of final scoping mtg	



## Risk and Vulnerability Assessment – Key Issues Discussed to Date

- Establishing Probability and Magnitude of Future Major Releases
- Identifying Vulnerabilities
- Interaction Between Section 8 Work and Work Being Done Under Other Sections of the AOC



# Questions / Discussion