

Red Hill Bulk Fuel Storage Facility

Proposed
Administrative Order on Consent



Tonight's Purpose and Agenda

▶ Purpose

- ▶ Inform the Public
- ▶ Obtain Public Comment on the Administrative Order on Consent

▶ Agenda

- ▶ Informational Presentation
- ▶ Question and Answer Session
- ▶ Public Comment

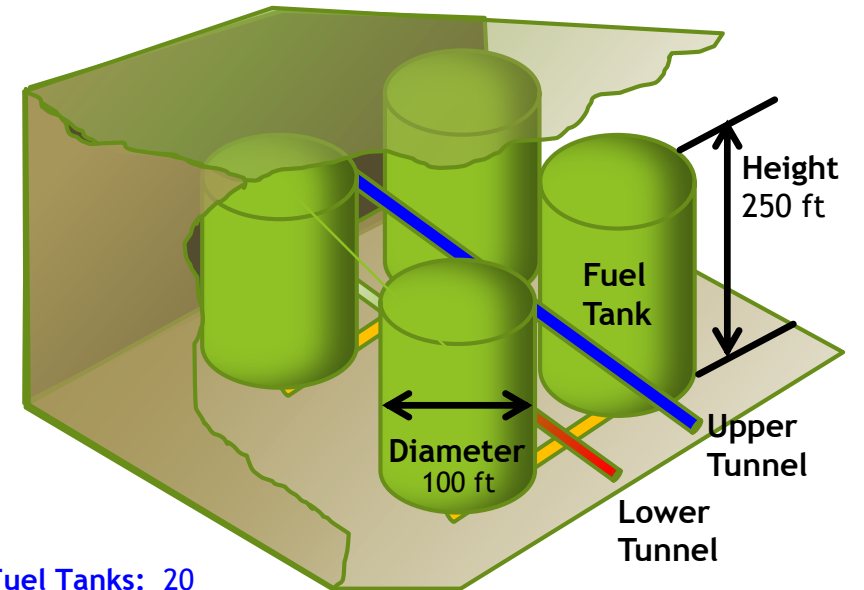
Informational Presentation

What is an Administrative Order on Consent (AOC)?

- ▶ Enforceable Order under federal and state environmental statutes
- ▶ Negotiated scope of work to be performed
- ▶ Signed voluntarily
- ▶ Red Hill AOC was negotiated between DOH/EPA and Navy/DLA
- ▶ Includes an Administrative Record
- ▶ Effective upon signature of all Parties

Red Hill Bulk Fuel Storage Facility

- ▶ Provides fuel for military's Pacific Command
- ▶ “Field-Constructed” 1940 to 1943
 - ▶ 20 vertical cylindrical tanks (250 feet x 100 feet each)
 - ▶ Tank capacity = 12.5 million gallons each
 - ▶ Welded steel plates backed with 2.5 - 4 feet of concrete against basalt rock
- ▶ National Historic Civil Engineering Landmark
- ▶ Located three miles uphill from Pearl Harbor
- ▶ Operators are Navy and DLA



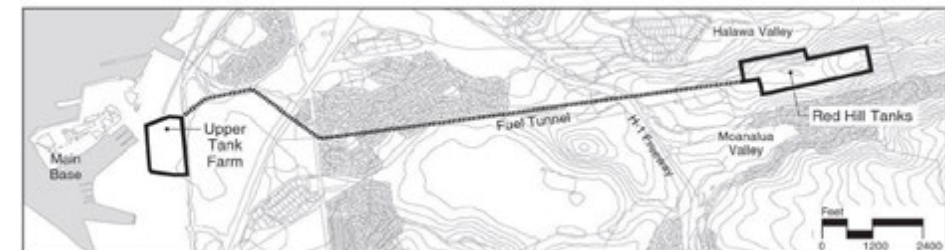
Fuel Tanks: 20

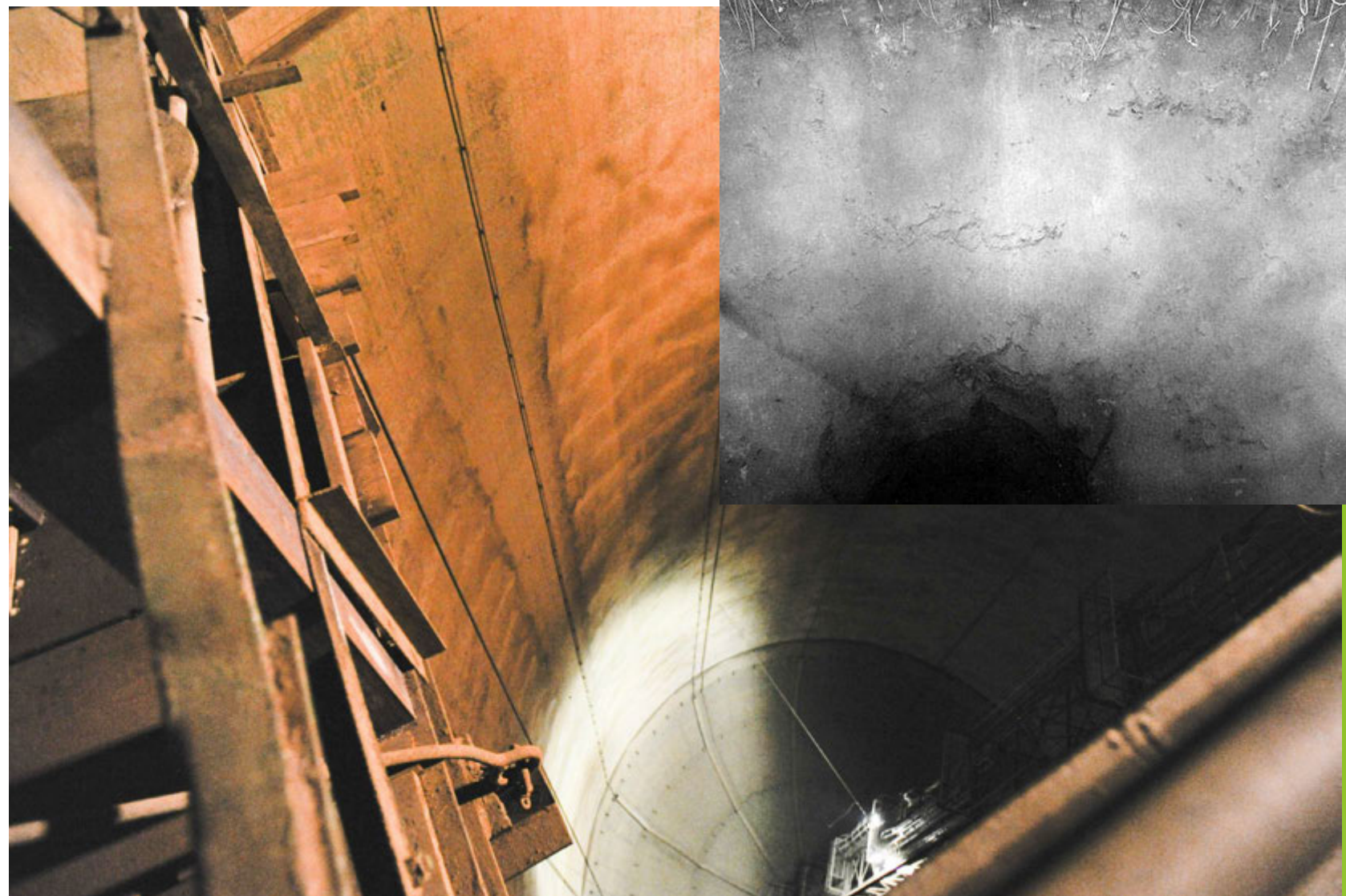
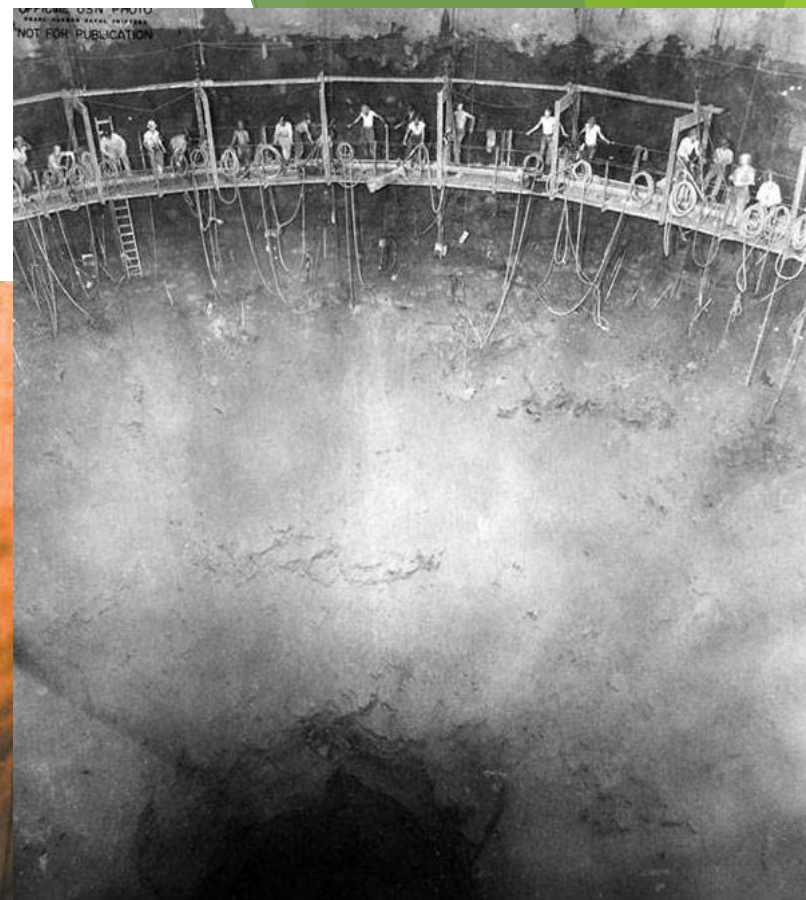
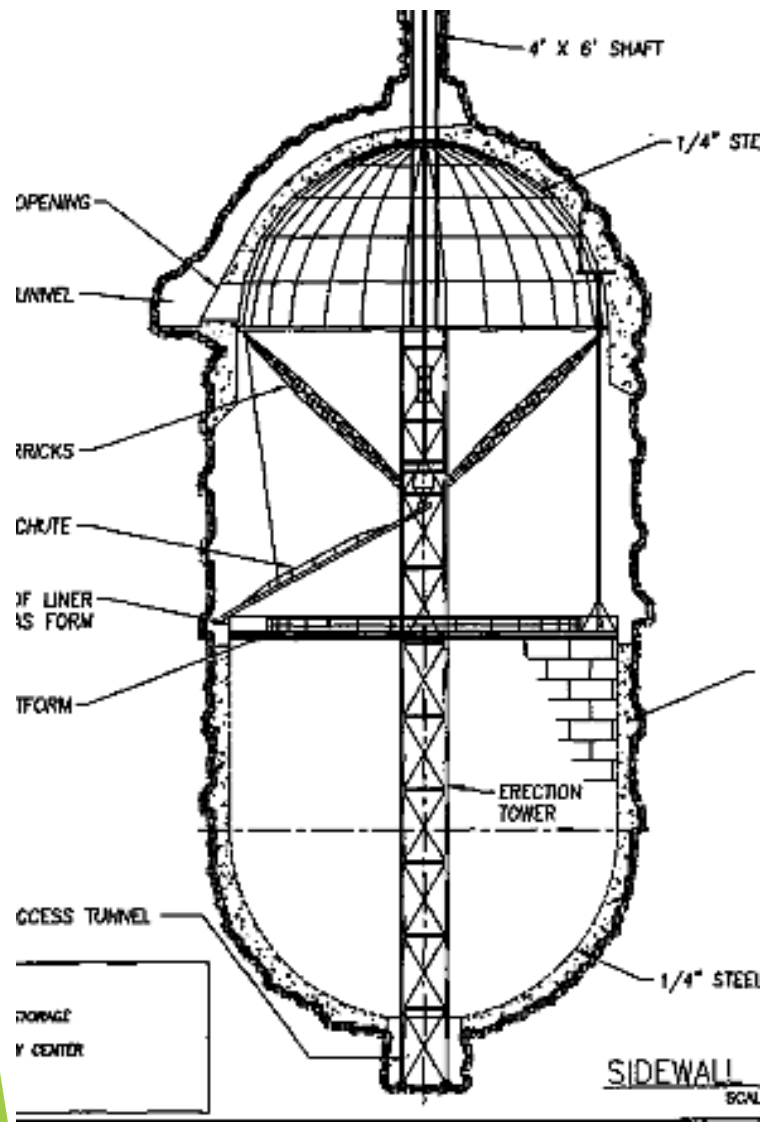
Capacity: 250 million gals

Length of Tunnels: 7.13 miles

Miles From Pearl Harbor to Red Hill Facility: ~3 Miles

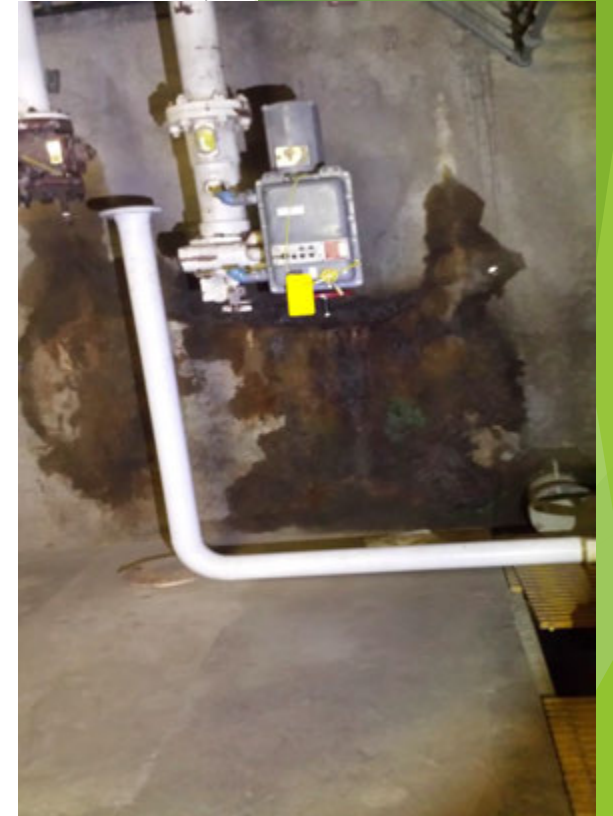
Depth from ground surface to top of tank: 110 to 175 feet





Release at Tank #5

- ▶ Navy reported a release on January 13, 2014
- ▶ Release occurred after Tank #5 had undergone scheduled maintenance and repair
- ▶ Release of approximately 27,000 gallons of fuel
- ▶ Led to the development of this AOC



Key Features of this AOC

- ▶ Protects groundwater resources
- ▶ Ensure that Facility is operated in an environmentally protective manner
- ▶ Requires the Navy/DLA to:
 - ▶ Reduce the risk of future fuel releases
 - ▶ Investigate and remediate releases to protect drinking water supplies
 - ▶ Obtain DOH and EPA approval for all work (AOC Section 7)

How is the AOC enforceable?

- ▶ Establishes required work and schedules for the Navy/DLA (AOC Section 6)
- ▶ Monetary penalties for failure to comply (AOC Section 15)
- ▶ Dispute resolution process places EPA as the ultimate decision maker if needed (AOC Section 14)

Statement of Work (SOW)

- ▶ The Statement of Work attached to the AOC provides the details of work to be performed and schedules.
 - ▶ Introduction (Section 1)
 - ▶ Tank Inspection, Repair and Maintenance (Section 2)
 - ▶ Tank Upgrade Alternatives (Section 3)
 - ▶ Release Detection/Tank Tightness Testing (Section 4)
 - ▶ Corrosion and Metal Fatigue (Section 5)
 - ▶ Investigation and Remediation of Releases (Section 6)
 - ▶ Groundwater Protection and Evaluation (Section 7)
 - ▶ Risk/Vulnerability Assessment (Section 8)

General Process for Key Work Tasks

- ▶ All tasks generally follow a similar process:
 - ▶ Study Phase
 - ▶ Decision Document
 - ▶ Implementation
- ▶ The timelines vary by task

Stakeholder Involvement

- ▶ The SOW provides for two levels of stakeholder involvement
 - ▶ Subject Matter Experts to provide input for scoping meetings or during the review of work products. (Section 1.1)
 - ▶ Summaries of final reports will be made available to the public. (Section 1.2)

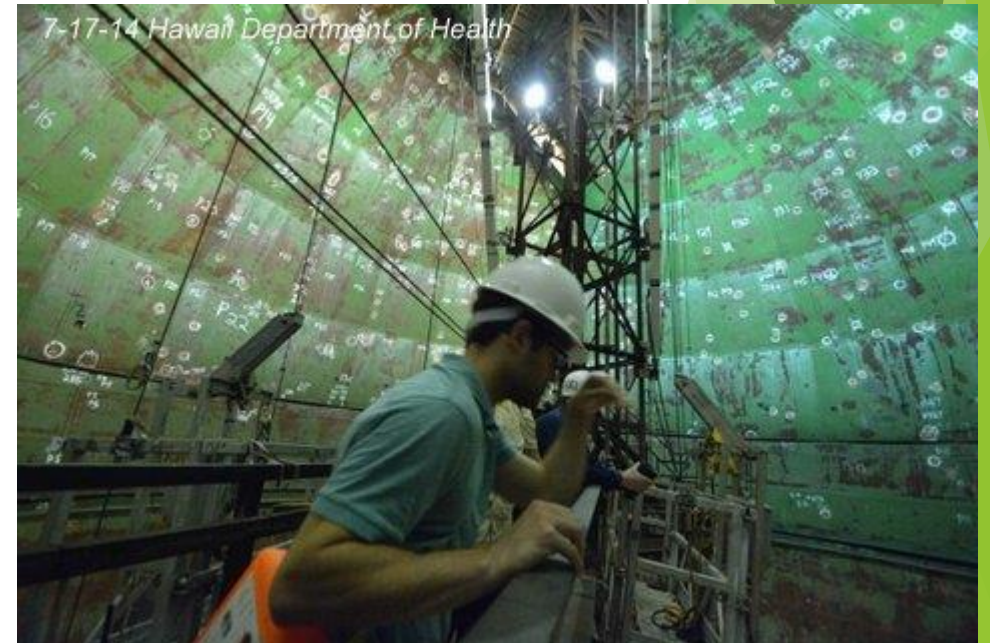
Tank Inspection, Repair, and Maintenance -“TIRM Procedures” (Section 2)

- ▶ Evaluates current tank inspection, repair, and maintenance procedures.
- ▶ Investigates and proposes options for improving current practices
- ▶ TIRM procedures revised based on tank upgrade decisions



Tank Upgrade Alternatives (Section 3)

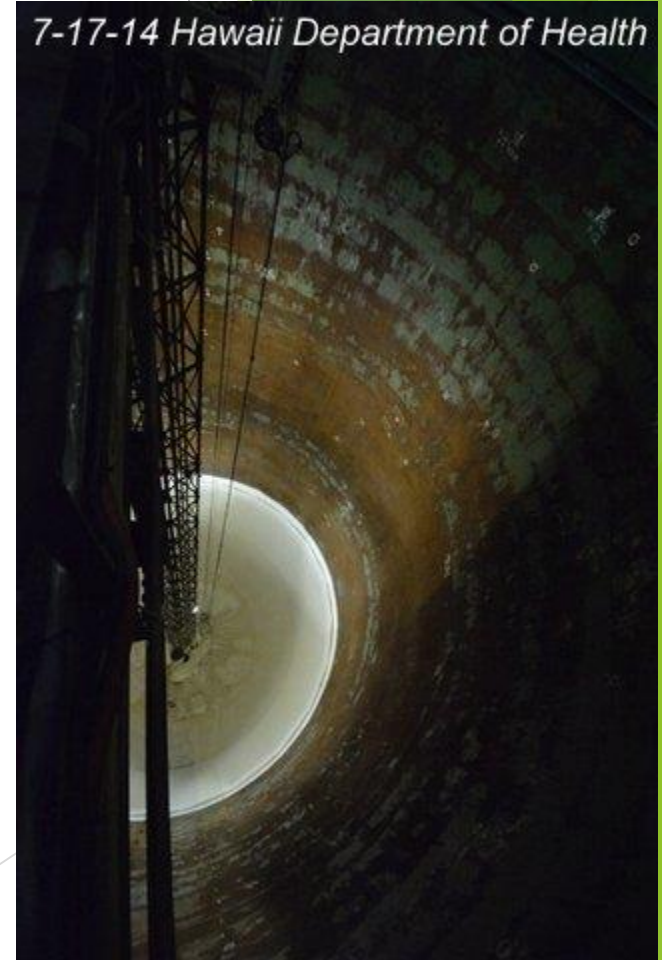
- ▶ Evaluates various tank upgrades alternatives
- ▶ Selects and implements the Best Available Practicable Technology (BAPT) to upgrade the tanks
- ▶ BAPT to be based on consideration of:
 - ▶ Risks and Benefits
 - ▶ Feasibility
 - ▶ Operational Life
 - ▶ Cost



Tank Upgrade Alternatives (continued)

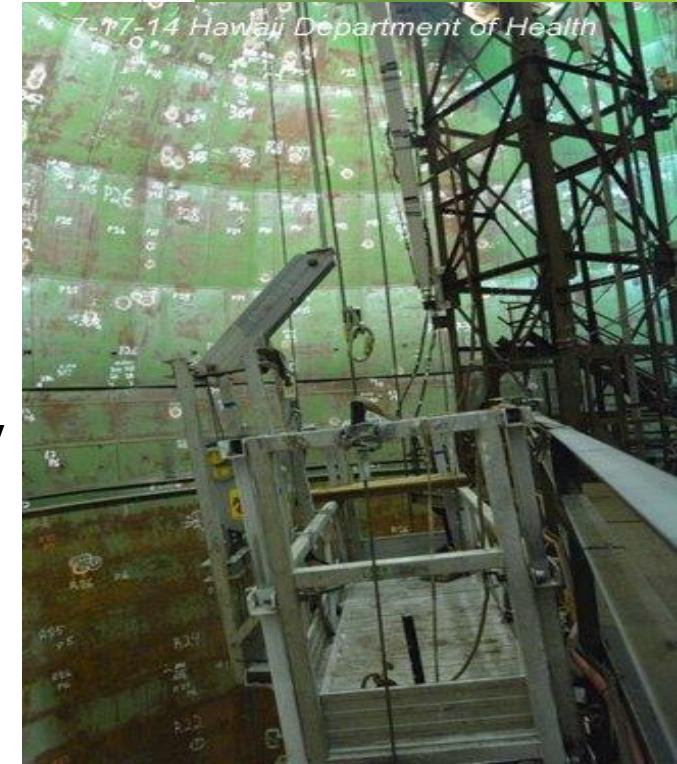
- ▶ Initial BAPT determination made within two years
- ▶ Pilot technologies may be proposed to fully evaluate a particular technology
- ▶ BAPT will be implemented in five-year phases over 20 years
- ▶ Every five years, BAPT is re-evaluated

7-17-14 Hawaii Department of Health



Tank Upgrade Alternatives (continued)

- ▶ Why 20 year schedule for tank upgrades?
 - ▶ A significant engineering challenge - enormous size of each tank
 - ▶ Facility constraints - tank access, power needs, etc.
 - ▶ Schedule is enforceable
 - ▶ Facility remains operational - ability to continue to meet military fuel needs
- ▶ Tanks that are not upgraded within 20 years will be emptied and taken out of service
- ▶ Due to funding complexities, Regulatory Agencies may allow up to five additional years to complete all upgrades



Release Detection and Tank Tightness Testing (Section 4)

- ▶ Red Hill utilizes three methods to detect releases:
 - ▶ Continuous measurement of fuel levels in the tanks
 - ▶ Tank tightness testing
 - ▶ Monthly soil vapor sampling
- ▶ Navy to immediately increase frequency of tank tightness tests to annually
- ▶ New release detection practices evaluated and the selected method implemented



Corrosion and Metal Fatigue Practices (Section 5)

- ▶ Report detailing current corrosion and metal fatigue assessment procedures
- ▶ Destructive testing on at least one of the tanks to assess condition of outside of tank wall
- ▶ Based on results, current procedures may be modified



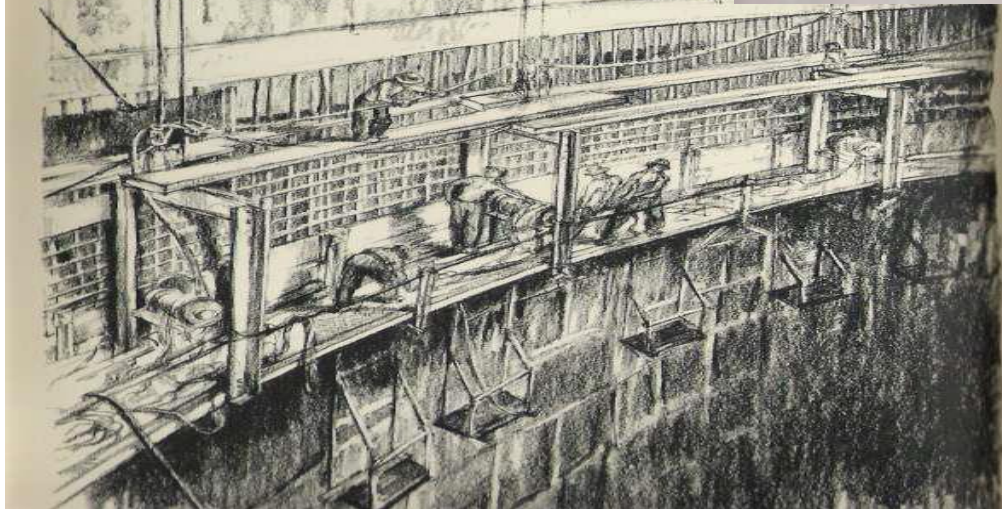
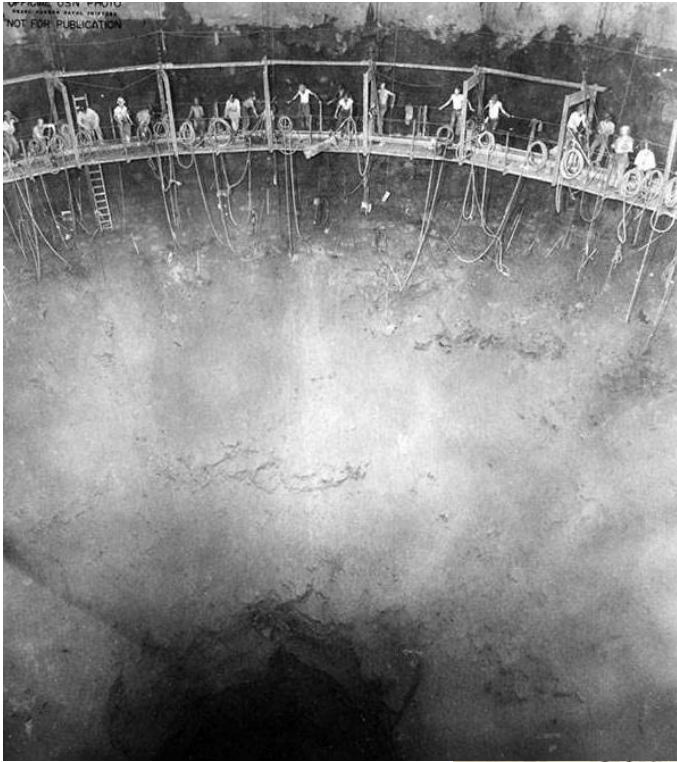
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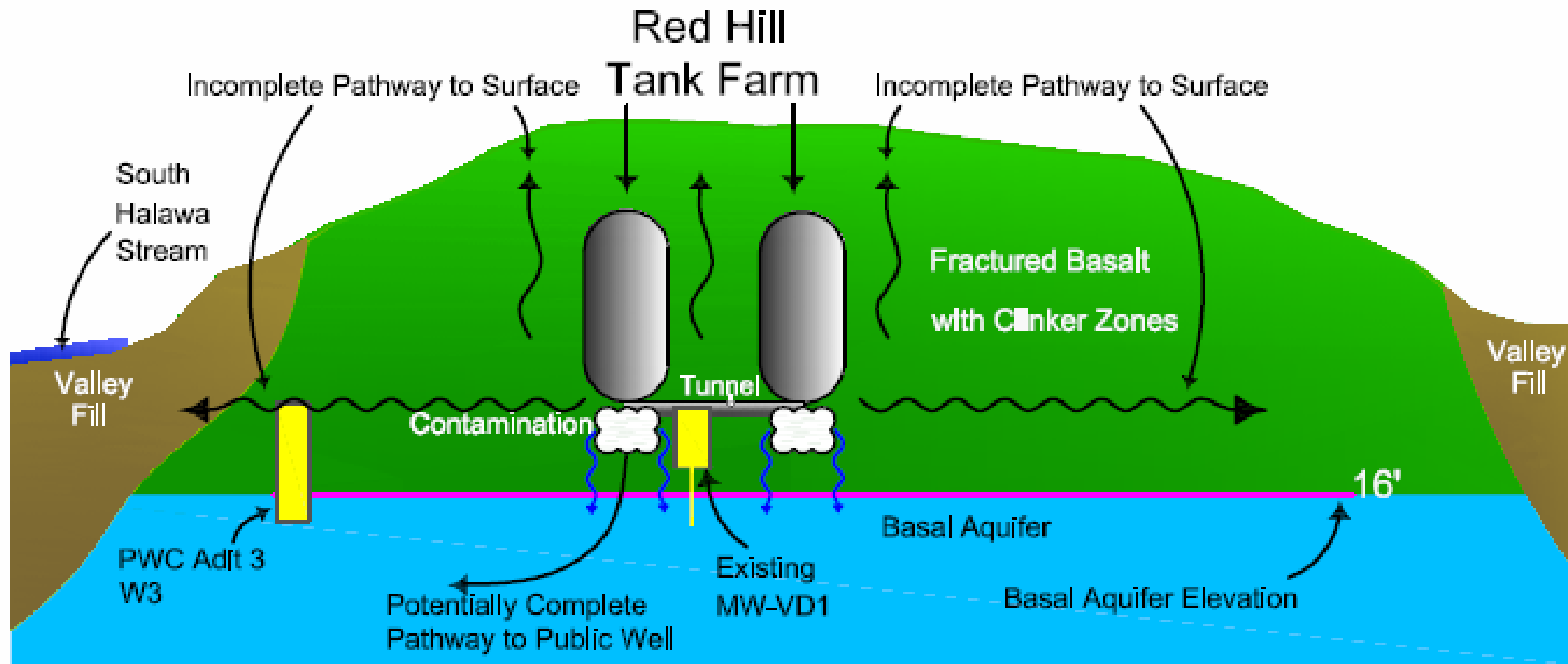
Investigation and Remediation of Releases (SOW Section 6)

- ▶ Purpose of SOW Section 6 is to evaluate alternatives for investigating and remediating releases from the Facility
 - ▶ Including response to January 2014 release
 - ▶ Considers complex geological setting
- ▶ Selects and implements most appropriate remedial alternative

Step 1. Finding the Leak



Step 2. Remove free product (if possible)

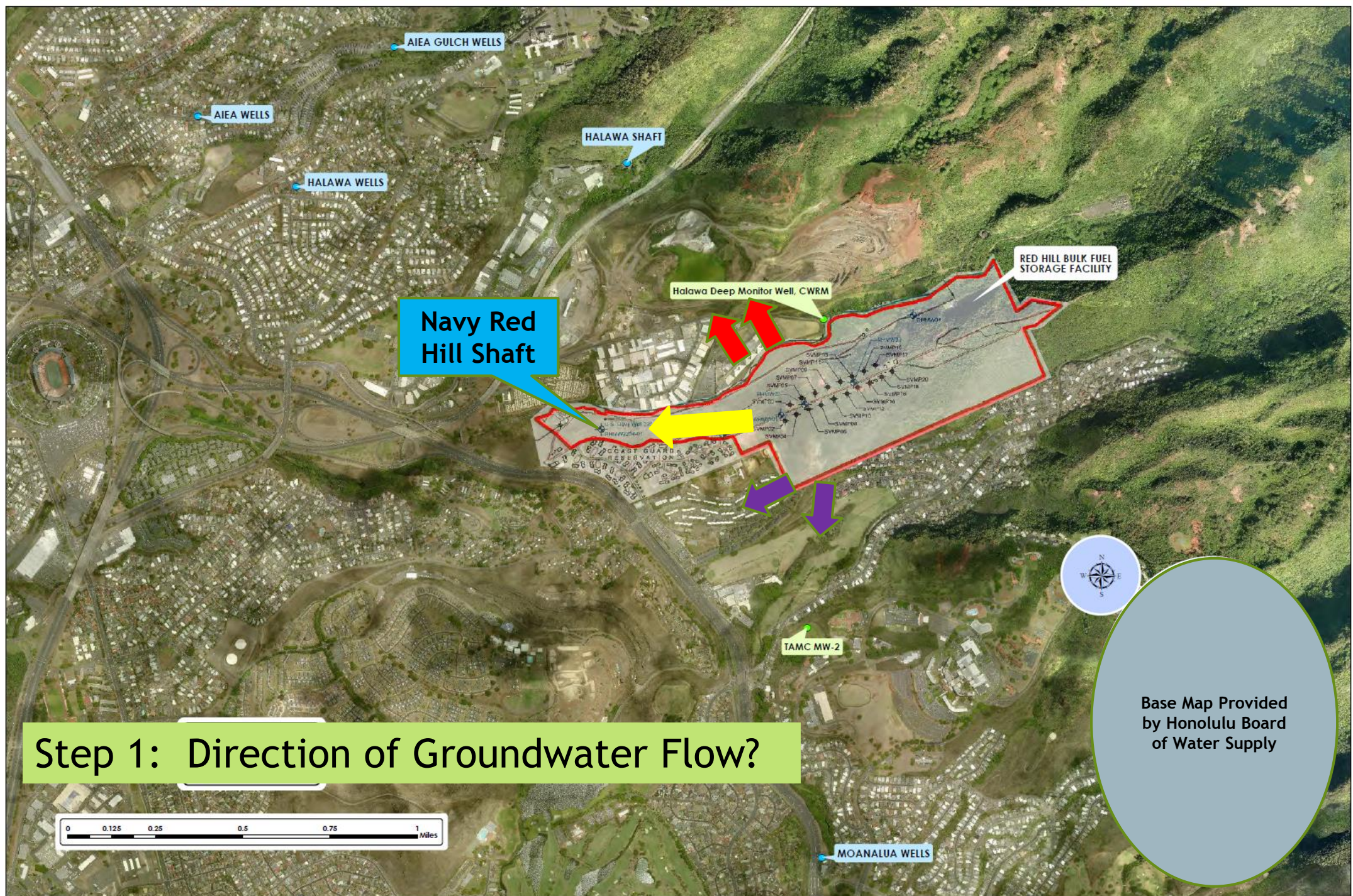


Step 3. In Situ Cleanup (Remediation)

Not all contamination can be found or be removed

Groundwater Protection and Evaluation (SOW Section 7)

- ▶ Purpose of SOW Section 7:
 - ▶ Determine the direction and rate of groundwater flow within aquifers around the facility
 - ▶ Estimate what happens if contaminants are released from the facility (fate and transport)
 - ▶ Finalize a groundwater monitoring network

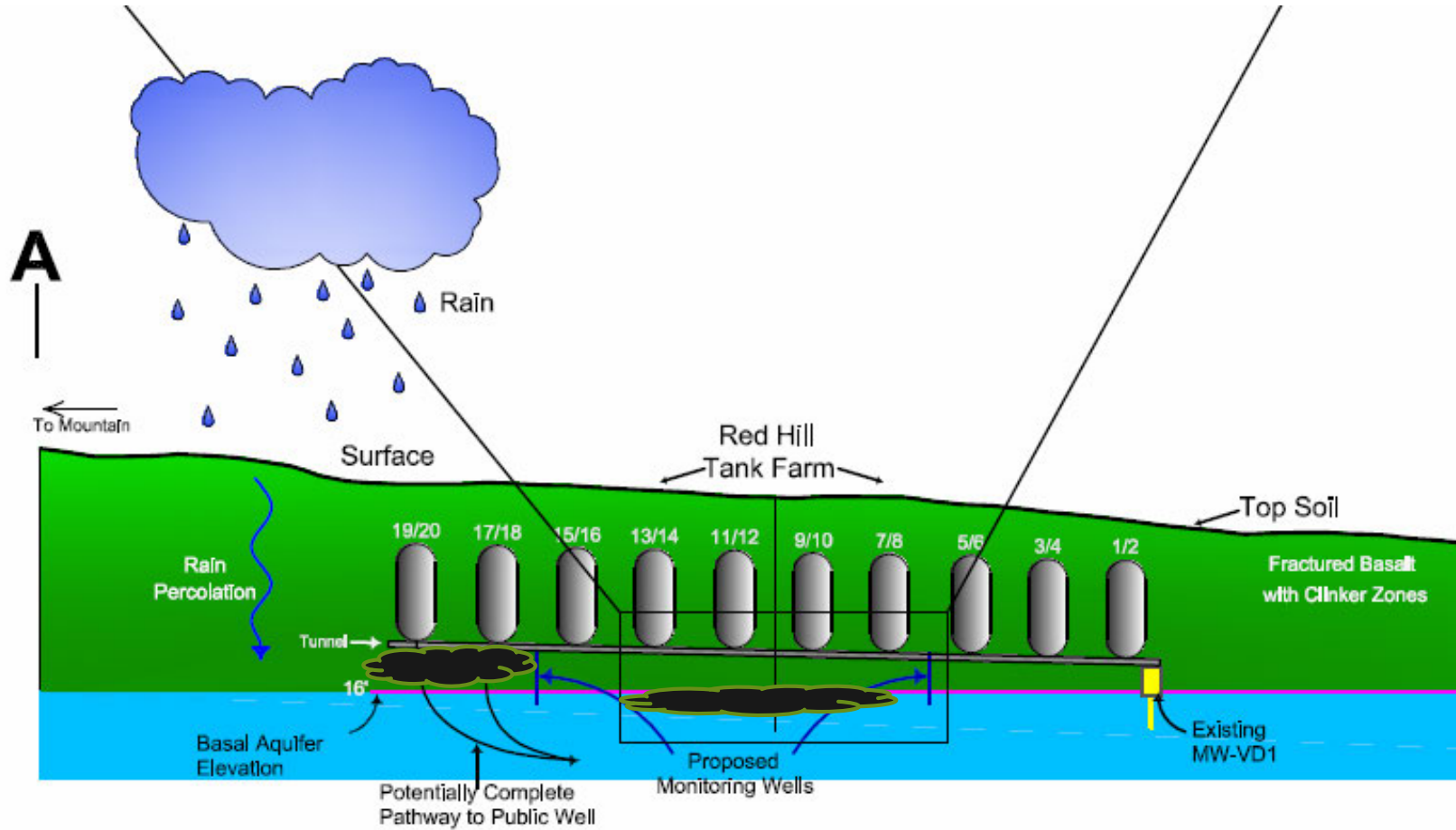


Navy Red Hill Shaft

Step 1: Direction of Groundwater Flow?

Base Map Provided by Honolulu Board of Water Supply

Step 2: What happens to contaminants (fate and transport)



Step 3: Install additional monitoring wells as needed.

Risk/Vulnerability Assessment (SOW Section 8)

- ▶ Purpose of SOW Section 8 is to assess the level of risk the Facility may pose to groundwater resources from vulnerabilities associated with:
 - ▶ Catastrophic events (e.g., **seismic events**)
 - ▶ Mechanical and human errors
 - ▶ Risk mitigation and protective measures
- ▶ Includes engineering and environmental factors
- ▶ The assessment will inform selection of BAPT (tank upgrades)

AOC in Summary

- ▶ Requires Navy/DLA to take steps to ensure that the groundwater is protected
- ▶ Focused on Long-Term prevention of fuel leaks through upgrades to the Facility
- ▶ Enforceable, including penalties
- ▶ EPA/DOH oversight of all work under the AOC

Next Steps

- ▶ All comments will be reviewed and evaluated by EPA/DOH
- ▶ EPA/DOH decide whether to:
 - ▶ (1) Sign the AOC as is; OR
 - ▶ (2) Re-open negotiations with Navy/DLA based on public comment; OR
 - ▶ (3) Not sign the AOC
- ▶ AOC is finalized only after EPA and DOH signature

Question and Answer Period at Information Stations

Public Comment Session