



**DEPARTMENT OF THE NAVY**

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Ser N4/0530  
May 15, 2019

**CERTIFIED NO: 7016 0910 0001 0891 7369**

Ms. Roxanne Kwan  
Hawaii State Department of Health  
Environmental Management Division  
Solid and Hazardous Waste Branch  
Underground Storage Tank Section  
2827 Waimano Home Road #100  
Pearl City, HI 96782

Dear Ms. Kwan:

**SUBJECT: UST PERMIT APPLICATION FOR RED HILL BULK FUEL STORAGE  
FACILITY, JBPHH, OAHU, DOH FACILITY ID NO. 9-102271**

The Navy submitted a permit application on 13 March 2019 for Red Hill Bulk Fuel Storage Facility (RHBFSF). Based upon DOH feedback, the application has been revised and shall replace the original submittal.

This letter and its enclosures provide information that does not fit into the application form "Application for an Underground Storage Tank Permit – Form No. 2" and are incorporated into the permit application.

The confidential/redacted information has been provided in full to the DOH; however, the Navy considers this information to be confidential under the Hawaii Revised Statutes (HRS) 342L-15 and does not concur with and will not allow its public release. The documents containing the exact location of the sensitive infrastructure comprising the system to include pipelines, hydrants, fill stands, etc. is for official use only and cannot be disclosed to the public because the impact of any damage caused to this system is so great, that it could cause irreparable harm to the government. Additionally, the technology and methodology used in these reports is proprietary to the contractor. Disclosure of their processes and procedures would result in significant competitive harm to the contractors. The government is bound not to disclose the information for other than official use by contract, federal law, and the Trade Secrets Act.

The revised Application for an Underground Storage Tank Permit – Form No. 2 is being submitted as Enclosure 1.

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A Location Map of the Red Hill storage tanks is provided as Enclosure 2. A Location Map of the surge tanks and piers is provided as Enclosure 3. A Location Map of the Hickam airfield hydrant system, which includes hydrant pits and product recovery tanks, is provided as Enclosure 4.

#### Primary Containment Material

The RHBFSF tanks F-1 to F-20 and F-ST1 to F-ST4 are constructed of reinforced concrete and lined with steel. The primary containment material is steel.

#### Facility Piping

Tank and piping diagrams for Defense Fuel Support Point (DFSP) Pearl Harbor and Hickam Airfield Hydrant System are provided as Enclosure 5. The diagrams indicate which segments of piping are in contact with the ground and have corrosion protection (dashed line), and which segments are above ground (solid line). All piping is single wall steel.

#### Piping - Release Detection

The piping for tanks F-1 to F-20 and F-ST1 to F-ST4 that is located between the tank and the first valve (nozzle piping) is considered and tested as part of the RHBFSF tanks. Information on tank tightness testing is presented in the "Tanks - Release Detection" section, below.

The piping located inside the RHBFSF tunnel is above ground; therefore, no release detection method for this above ground piping is checked in Section XI.11 on pages 6, 10, 14, 18, and 22 of the permit application form.

A line tightness test is performed annually on petroleum pipeline segments located outside the RHBFSF tunnel and fully or partially in contact with the ground. In January 2019, the leak detection rate per test section volume met the requirements of HAR §11-280.1-44(4)(A)(i), except for one pipeline section. This pipeline section was subsequently removed from service until it is repaired by replacement. See excerpts from the *2019 Annual Leak Detection Testing Report of 35 Sections (57,136 Feet) of Petroleum Pipelines* of March 2019, which are provided as Enclosure 6. Information on the petroleum pipeline segments located outside the RHBFSF tunnel and fully or partially in contact with the ground is presented on pages 19 to 22 of the permit application form, in the column labeled "Pipelines Located Outside Tunnel."

An annual static liquid pressure test is performed on pier pipelines to confirm that no leaks occur under static liquid pressure at least 1.5 times the maximum allowable working pressure as required in 33 CFR 156.170. This meets the requirements of HAR §11-280.1-44(4)(A)(i). In January 2019, the pier pipelines passed the annual static pressure testing. See excerpts from the

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*2019 Annual Static Liquid Pressure Testing Report of Three Sections (20,706 Feet) of Petroleum Pier Pipelines* of March 2019, which are provided as Enclosure 7.

The annual line tightness test of the piping associated with tanks PRT-Diamond Head and PRT-Ewa meets the requirements of HAR §11-280.1-44(4)(A)(i). Results for the January 2019 leak detection testing are presented in Table 2-1 of Enclosure 6. Test Section 10, "Type III PRT Issue," is the piping associated with tank PRT-Ewa, and Test Section 13, "AMC PRT Issue," is the piping associated with tank PRT-Diamond Head.

#### Piping - Cathodic Protection

All piping segments that are in contact with the ground are protected by an impressed current cathodic protection system. A detailed description of the system, including a description of rectifiers, system drawings, and location of anode beds, can be found in the two most recent Annual Pearl Harbor Cathodic Protection Survey Reports and Annual Hickam Cathodic Protection Survey Reports. Excerpts from these reports are provided as Enclosures 8 and 9, respectively.

#### Product Recovery Tanks

Tanks PRT-Diamond Head and PRT-Ewa are protected by an impressed current cathodic protection system. A detailed description of the system, including a description of the rectifiers, system drawings, and location of anode beds, can be found in the two most recent Hickam Cathodic Protection Survey Reports. Excerpts from these reports are provided as Enclosure 9.

#### Tanks - Release Detection

A tank tightness test is performed on tanks F-2 to F-18 and F-20, and tanks F-ST1 to F-ST4 semi-annually, unless they have been emptied for the Clean, Inspect, Repair (CIR) process. The tank tightness test meets the 0.5 gallon per hour leak rate as specified in HAR §11-280.1-43(10)(A). See excerpts from the *Final 2018 Annual Leak Detection Testing Report of 17 Bulk Field-Constructed Underground Storage Tanks at Red Hill Fuel Storage Complex* of January 2019, which are provided as Enclosure 10.

#### Method of Product Dispensing

Tanks F-ST1 to F-ST4 are not storage nor dispensing tanks, instead they serve as surge tanks to allow for the buffering of product pressure throughout the system during product movement. They have no ability to dispense fuel.

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### Overfill Prevention Equipment

Tanks F-1 to F-20 and F-ST1 to F-ST4 are equipped with an Automated Fuel Handling Equipment (AFHE) Industrial Control System (ICS) inventory monitoring based on Automatic Tank Gauging (ATG) equipment overflow protection sensors and equipment that de-energizes the pump and shuts an isolation valve to prevent overfilling each UST once the fuel level in the tank reaches no more than 95% full.

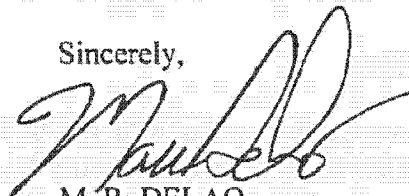
The AFHE system operates 24 hours a day, 365 days a year, and is a continuously manned and monitored system, equipped with both a high and high-high level alarm, with high alarms set at a level of no more than 90% full.

### Airfield Piping

Information on the airfield piping has been added to pages 23 to 26 of the UST permit application form. All of the piping is underground, as shown in Enclosure 5 and the figures of Enclosure 6. Table 2-1 of Enclosure 6 provides a summary of the 2019 annual leak detection testing results for each of the 21 sections of airfield piping. Test sections 11, 12, 13, 14, 15, 20 and 21 are associated with the Diamond Head Piping Loop. The other fourteen sections are associated with the Ewa Piping Loop.

If you have any questions regarding this matter or need any additional information, contact Ms. Raelynn Kishaba by phone at (808) 471-1171, extension 233 or by email at [raelynn.kishaba@navy.mil](mailto:raelynn.kishaba@navy.mil).

Sincerely,



M. R. DELAO  
Captain, CEC, U.S. Navy  
Regional Engineer  
By direction of the  
Commander

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Enclosures:

1. Revised DOH Form No. 2, Application for an Underground Storage Tank Permit for Red Hill Bulk Fuel Storage Facility, DOH Facility ID No. 9-102271 of May 15, 2019
2. Location Map of Red Hill Storage Tanks
3. Location Map of Surge Tanks and Piers
4. Location Map of Hickam Airfield Hydrant System
5. Tank and Piping Diagrams for DFSP Pearl Harbor and Hickam Airfield Hydrant System
6. Excerpts from *2019 Annual Leak Detection Testing Report of 35 Sections (57,136 Feet) of Petroleum Pipelines* of 14 March 2019, prepared for Defense Logistics Agency Energy, submitted by Michael Baker International
7. Excerpts from *2019 Annual Static Liquid Pressure Testing Report of Three Sections (20,706 Feet) of Petroleum Pier Pipelines of March 2019*, prepared for Defense Logistics Agency Energy, submitted by Michael Baker International
8. Excerpts from July 2017 and February 2018 Annual Pearl Harbor Cathodic Protection Survey Reports
9. Excerpts from September 2016 and January 2018 Annual Hickam Cathodic Protection Survey Reports
10. Excerpts from *Final 2018 Annual Leak Detection Testing Report of 17 Bulk Field-Constructed Underground Storage Tanks at Red Hill Fuel Storage Complex, Joint Base Pearl Harbor-Hickam, Hawaii* of 23 January 2019, prepared for Defense Logistics Agency Energy, submitted by Michael Baker International