Administrative Order on Consent
In the Matter of Red Hill Bulk Fuel Storage Facility
EPA Docket No: RCRA 7003-R9-2015-01
DOH Docket No: 15-UST-EA-01

Response to Comments
September 28, 2015

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I. Introduction

In response to releases from the Red Hill Bulk Fuel Storage Facility ("Facility") in January 2014, U.S. Navy ("Navy"), Defense Logistics Agency ("DLA"), U.S. Environmental Protection Agency ("EPA"), and Hawaii Department of Health ("DOH"), collectively referred to as the "Parties," began negotiating an enforceable agreement, also known as an Administrative Order on Consent ("AOC"), under Section 7003 of the Resource Conservation and Recovery Act ("RCRA"). The AOC and the associated Statement of Work ("SOW") is a comprehensive solution to address releases from the Facility that requires Navy and DLA to perform extensive remedial and preventative measures to effectuate cleanup, support contingency readiness, and implement infrastructure upgrades to prevent fuel from the Facility from contaminating drinking water sources today and in the future. On September 28, 2015 Navy and DLA signed this proposed AOC, agreeing to perform the work described on the schedule established by the agreement.

Prior to signing and finalizing the agreement, EPA and DOH, collectively referred to as the "Regulatory Agencies," sought public input on the previous version of the proposed AOC signed by Navy and DLA on May 27, 2015. The public was provided an opportunity to comment on the proposed AOC between June 1, 2015 and July 20, 2015. To facilitate public participation and comment in the process of finalizing the AOC, the Regulatory Agencies conducted various outreach activities. A public information meeting was held on June 18, 2015 in Honolulu, Hawaii, where the Regulatory Agencies presented the details of the AOC and received comments from the public. The Regulatory Agencies created websites containing summaries of the proposed agreement, copies of the complete AOC and related materials, and supporting administrative documents available for public viewing. The Regulatory Agencies also issued press releases to various media outlets to increase public awareness of the proposed AOC. The Regulatory Agencies accepted written and oral public comments at the public meeting, and written comments at their offices and via electronic mail.

In total the Regulatory Agencies received over one hundred forty (140) written comments on the proposed AOC as well as an additional twenty-nine (29) oral comments received at the June 18, 2015 public meeting. Commenters reflected a broad range of stakeholders including private citizens, non-governmental organizations, government agencies, and publicly elected officials. The most extensive comments were submitted by the Honolulu Board of Water Supply (BWS).

Many commenters challenged the Regulatory Agencies' use of an AOC to address fuel releases from the Facility rather than some other type of enforcement action. When leaks from fuel tanks occur, Regulatory Agencies typically require the leak to be stopped and then order the responsible party to clean up the area affected by the leak to the maximum extent practicable. In this case, the Regulatory Agencies went beyond this traditional approach by negotiating an agreement that not only requires investigation and cleanup of the fuel that leaked, but also allows the Regulatory Agencies to oversee critical decisions regarding operation, repair, and infrastructure improvements to the Facility in order to prevent future releases.

Based on comments received, the Regulatory Agencies negotiated eight additional changes to the original agreement with Navy and DLA proposed on June 1, 2015. The Parties revised the following sections of the SOW:

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- Section 1.1 – to involve subject matter experts, including BWS and Hawaii Department of Land and Natural Resources;
- Section 1.2 – to increase public involvement;
- Section 1.8 (new) – to begin early compliance with new federal regulatory requirements applicable to field constructed underground tanks;
- Section 2.2 – to increase specificity on the scope of inspection, repair and maintenance activities covered by the agreement;
- Section 2.2 –to include a commitment to identify actions that can be taken, as soon as practicable, to reduce the risk of release independent of tank upgrades;
- Section 3.5 - to include a commitment to install tank upgrades as quickly as practicable so long as quality and performance of the upgrades are not compromised;
- Section 7.3.2 – to include a commitment to install additional monitoring wells as soon as possible to address data gaps identified and validated during initial scoping; and
- Section 8.0 – to expand the risk and vulnerability assessment to include a comparative analysis of the current Facility versus alternative fuel storage facilities.

Many commenters expressed the need for greater detail in the AOC. With a project as complex as this one, the Regulatory Agencies determined that the framework of the AOC, which sets forth a series of successive tasks to develop a comprehensive solution for the Facility, is the best method to achieve the environmental goals. Many of the public's comments and concerns will be addressed during implementation of the AOC. The Facility is believed to be the largest underground storage tank ("UST") fuel facility in the United States. Its enormous size, unique design and complex geologic setting will require a careful and thorough evaluation to address past releases and prevent future releases.

Universally, the public comments wanted the Regulatory Agencies to ensure the protection of public health and the environment. This continues to be our goal as well. Implementing the AOC is the best method for protecting human health and the environment.

Before responding in detail to the comments, the Regulatory Agencies emphasize the following:

- Drinking water and groundwater monitoring results in the vicinity of the Facility comply with federal and state drinking water concentrations.

- BWS has confirmed that water samples from their wells in the area, which are taken regularly, have not detected any petroleum contamination.

- A confirmed fuel release in January 2014 from Tank 5 at the Facility resulted in an increase in the presence of petroleum contamination in soil vapor and ground water below the Facility. To date, some groundwater samples below the Facility have exceeded DOH's screening levels for petroleum but no samples have exceeded federal drinking water standards. The characteristics of the geology surrounding the tanks and depth to groundwater (approximately 100 feet) may be significantly limiting the vertical migration of contamination at the Facility.

- Many significant tasks will be completed within the first three years of the agreement. The schedule in the AOC is aggressive and requires Navy and DLA to submit multiple work plans within one hundred twenty (120) days of the effective date of the AOC,

including plans for improving inspection protocols, assessing groundwater contamination, addressing cleanup methods, and tank upgrade alternatives. In all, Navy and DLA are to complete approximately forty (40) tasks within the first three years of the AOC. The tank upgrade work to be performed at the Facility is complex and will require extensive planning and review, thus the need for the extended performance schedule. The AOC's timetable was created to accommodate the difficulties of working in a confined underground environment with limited infrastructure, the operational requirements of a strategic military installation and the process of securing federal funds from Congress.

- Tasks to be implemented within the first few years of the agreement are designed to further assess the potential threat the Facility poses to groundwater resources. In part, these tasks will confirm previous studies or correct previous determinations made without regulatory oversight. Should new information indicate that the Facility poses greater risk than characterized in existing studies, the Regulatory Agencies reserve the right to take additional action to ensure adequate protection of the groundwater resource. This action could include negotiated changes to the AOC or other enforcement action to address the unacceptable risk.

- The AOC is focused on investigation and prevention, and is not an assessment of penalties. The Regulatory Agencies can only assess penalties when there has been a violation of the regulations, which has not occurred here.

- While the Regulatory Agencies have a certain amount of authority to act unilaterally to order a respondent to take certain actions, an agreement on consent can achieve far greater benefits in a shorter amount of time. A unilateral order can be challenged and delayed by litigation. In this case, Navy and DLA are willing to make improvements and work with the Regulatory Agencies. Therefore, a signed agreement among the parties with regulatory oversight is the fastest and most effective way to put an enforceable mechanism in place to protect groundwater resources in the vicinity of the Facility and ensure that the Facility is operated and maintained in an environmentally protective manner.

II. Comments

Overall, the comments were focused around a small number of themes and topics. These included schedules, the threat to drinking water and groundwater, and Navy and DLA accountability as well as other issues as discussed below. The Regulatory Agencies' response to comments is organized according to these themes and topics.

A. Schedules

Many commenters raised concerns that the schedule in the AOC lacks urgency. Some commenters urged the Regulatory Agencies to shut down the facility immediately while others wanted a more aggressive schedule for certain aspects of the work.

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The Regulatory Agencies have developed the AOC's timetable such that the rate at which certain tasks are to be completed is consistent with the current assessment of the risk that Red Hill presents to public health and the environment. If at any time, however, the Regulatory Agencies find violations or other information that suggests the Facility poses a significantly greater risk, they retain all regulatory authorities to take action beyond the AOC as necessary to address this risk.

Some commenters believe the tanks should be shut down due to the risk from a catastrophic release resulting from an earthquake. We address this issue below in our response to comments regarding protection of groundwater and drinking water.

1. Overall Schedule of AOC Implementation and Completion

Many commenters were critical of the schedule for work to be performed by Navy and DLA under the AOC. Some commenters believed that most or all of the work to be performed should be concluded more expeditiously while other comments focused on the scheduled completion of specific tasks in the SOW. Commenters cited a history of past releases, the age of the tanks at the Facility and a perceived severe threat to drinking water resources as justification for requiring the work to be completed within a shorter time period. In general, most commenters believed that the schedule does not reflect a sense of urgency. Although a few commenters suggested a specific accelerated schedule in which to complete the work, most commenters did not provide a specific date or schedule.

Response:

EPA and DOH acknowledge commenters' concern with the length of the schedule for the work to be performed. The length of the schedule for nearly all of these difficult tasks is generally caused by the fact that the work to be performed at the Facility is very complex and requires extensive planning and review. Fuel storage industry experts advising EPA and DOH have indicated that some of the more robust upgrade options will be difficult to design and construct within the deadlines set forth in the AOC. The schedule in the AOC requires Navy and DLA to submit within one hundred twenty (120) days of the effective date of the AOC multiple plans ranging from improving inspection protocols and assessing groundwater contamination to addressing cleanup methods and tank upgrade alternatives. In all, Navy and DLA are to complete approximately forty (40) tasks within the first three (3) years of the AOC. The work to be performed as required by the AOC and outlined in the SOW will be deliberate and implemented after careful preparation and a review of relevant data.

Throughout this agreement, the Regulatory Agencies have intentionally prioritized taking the necessary time to ensure that the best alternatives are selected for the work to be performed and that the work is conducted with the highest quality without compromising public health protection. With the current schedule, the Regulatory Agencies are confident that public health will be protected while the Facility is being properly upgraded and steps are taken to address past fuel releases.

2. Schedule for Remediation of Existing Contamination

Many commenters stated that the schedule for cleaning up and remediating releases from the Facility is too slow. We received comments stating that the January 2014 release should be

cleaned up or remediated immediately and that Navy and DLA should expedite petroleum contamination removal directly underneath the Tanks and in groundwater. Some commenters stated that if the January 2014 release could not be remediated immediately, then the Tanks should be drained and taken out of service.

Response:
Petroleum releases into the environment from USTs are found typically as "free product" (i.e., a regulated substance that is present as a non-aqueous phase liquid), vapors in the soil or rock above the groundwater, or dissolved fuel in the groundwater. In general, recovering free product is the first step in addressing any release of fuel from a UST. Recovering free product from the January 2014 release at the Facility is and will remain a regulatory priority. The geology at Red Hill, however, presents unique challenges. The concrete casing of the Tanks at the Facility is surrounded by basalt bedrock, a tight rock formation that makes locating free product very difficult. Moreover, hastily planned attempts to recover free product may increase the possibility of further groundwater contamination by creating conduits in the basalt rock. For these reasons, the AOC outlines a careful and thoughtful approach to investigate remedial alternatives that are feasible in this unique setting. Section 6 of the SOW will require Navy and DLA to investigate and remediate potential releases from the Facility to the maximum extent practicable.

EPA and DOH agree with the commenters that the groundwater monitoring network and flow models are vital to understanding the threat the Facility may pose to groundwater and to protect the area's drinking water sources. EPA and DOH are making efforts to increase our understanding of groundwater flow in the area and will require Navy and DLA to install additional monitoring wells around the Facility as described in Section 7.3 of the SOW.

The existing schedule also recognizes that the development of a groundwater flow model will be challenging in these specific geologic conditions. Moreover, the development of an accurate and informative groundwater flow model is best created through an iterative approach of drilling monitoring wells, analyzing subsequent data and then repeating this process. During this study phase, interim data results will also be made available to the public. Based on this process, within approximately twenty-four (24) months of the effective date of the AOC, a groundwater flow model report (Section 7.1 of AOC) and additions to the groundwater monitoring well network (Section 7.3 of the AOC) will be completed.

3. Schedule for Upgrading Tanks
Numerous commenters stated that all Tanks should be upgraded immediately or within a time period shorter than what the AOC and SOW require. Some commenters stated that the Facility should not be allowed to operate until the Tanks have been upgraded. Other commenters questioned why the particular schedule for implementation in the SOW was selected. At least one commenter stated that the deadline for implementing tank rehabilitation should be reduced to five years or a similarly short period.

Response:
Navy and DLA have committed to an aggressive and enforceable schedule for upgrading the Tanks at the Facility under this negotiated agreement. Prior to the AOC, the Tanks would undergo an inspection, repair and maintenance cycle that would take approximately four years

for three tanks without regulatory scrutiny or incorporating significant technological innovation. The SOW, however, will require that all in-service Tanks include the Best Available Practicable Technology ("BAPT") within approximately twenty (20) years after a study period of less than two years. Furthermore, the SOW clearly stipulates that Tanks which have not been upgraded within the designated time period will not be allowed to be used by Navy and DLA until they receive BAPT. Therefore, the AOC requires that the Navy and DLA must incorporate ambitious, yet achievable additional requirements into their current processes despite significant physical constraints, in order to continue to utilize this strategic military asset. Furthermore, the revised AOC includes a commitment that Navy and DLA will "install BAPT as soon as reasonably practicable while maintaining quality and performance requirements."

Before proposing the AOC on June 1, 2015 the Regulatory Agencies considered numerous factors affecting Tank upgrades and extensively negotiated the Tank upgrade schedule requirements with Navy and DLA. For example, the Regulatory Agencies considered the current rate of maintenance, upgrades, and repairs at the Facility, the likelihood that BAPT will create more complex requirements and a higher degree of quality assurance, and the time necessary to select contractors to perform the work. In response to public concerns, the Regulatory Agencies reviewed options for schedule improvements with Navy and DLA and further evaluated the urgency of accelerating work. Based on these discussions, input from the Regulatory Agencies' industry experts, and further input provided by Navy, the Regulatory Agencies concluded that the original schedule is appropriate.

Given the available historical data and current groundwater and drinking water monitoring results reviewed by EPA and DOH, the Regulatory Agencies believe the work outlined in the SOW will enable Navy and DLA to continue to operate the Facility without compromising drinking water safety.

4. Schedule for Structural Assessment and Risk Assessment

Other specific topics that commenters said lacked urgency included the implementation of a structural assessment of the Tanks and the development of a risk and vulnerability assessment. BWS stated that both nondestructive and destructive testing could be conducted immediately. Some commenters noted that a risk and vulnerability assessment for the Facility, as described in Section 8 of the proposed AOC, should be completed sooner.

Response:

EPA and DOH agree with the commenters that developing a better understanding of the structural integrity of the Tanks and the level of risk the Facility poses to groundwater and drinking water resources is crucial. These two topics are addressed in the SOW and will inform much of the future work to be performed under the AOC. EPA and DOH note that the SOW requires Navy and DLA to submit a report on corrosion and metal fatigue within 60 days of the effective date of the AOC. Plans regarding a risk and vulnerability assessment are due to Regulatory Agencies within approximately 120 days of the effective date of the AOC. These existing deliverables reflect the importance and urgency of obtaining this information.

B. Threats to Drinking Water and Groundwater

1. Risk of Catastrophic Event Leading To Release

Commenters expressed concerns about the threat to groundwater and drinking water that could occur if there was a catastrophic or sudden large scale release from the Tanks and the effect such a release would have on Oahu's water resources.

Response:

The Regulatory Agencies agree that risk determination is a critical component of decision making. Under the AOC, Navy and DLA are required to perform a comprehensive risk and vulnerability assessment that evaluates the likelihood that catastrophic events such as earthquakes could cause a major fuel release. This assessment further relies on understanding groundwater flow patterns as well as contaminant fate and transport once fuel is released into the environment, and will be completed within the first two to three years of implementation. The Regulatory Agencies also consulted with industry technical experts whose initial evaluation indicates that a catastrophic release from the Tanks is unlikely.

Seismic activity would appear to be the most likely natural event that could potentially cause a large scale release. While negotiating the AOC, the Regulatory Agencies reviewed earthquake risk information for Honolulu, and the Regulatory Agencies note that the seismic hazard is moderate. However, the risk of catastrophic release from seismic activity at the Facility from the Tank structures is comprised of both seismic hazard and the vulnerability of the Tank structures. The Regulatory Agencies have considered the potential for a catastrophic release as a result of seismic hazard and our preliminary assessment is that it does not present a significant threat of failure to the Tanks or piping within the Facility. (*see Catastrophic Release Memo_PEMY_15SEP15.pdf* in Administrative Record)

The nature of the construction and location of the Facility would also likely minimize catastrophic threats to the aquifer. The Tanks consist of a welded steel containment vessel, encased in 2.5 to 4 feet of concrete, and surrounded by basalt rock. In the event of a release, the concrete surrounding the Tanks' shells could limit the flow paths of leaked fuel before it encounters the basalt. Additionally, each of the Tanks are supported by a 20 foot thick concrete foundation significantly limiting the vertical precipitation recharge directly beneath the Facility. Therefore, little recharge occurs through rock directly below the Facility, minimizing the potential for dissolved-phase contamination migration to the aquifer below.

The Risk/Vulnerability Analysis required under section 8 of the SOW requires Navy and DLA to further examine and assess the risk of catastrophic release from seismic events as well as mechanical and human error. The analysis will also assess the effectiveness of Navy and DLA's risk mitigation procedures and protective measures. If these assessments determine that the risk is much greater than expected, the Regulatory Agencies will pursue any necessary changes to the work to address these factors.

2. Groundwater Monitoring

Commenters also stated that more monitoring wells should be installed in the areas around the Facility.

Response:

The implementation of the AOC will result in an increase in groundwater monitoring locations. There are currently seven groundwater monitoring wells operated by Navy located at or near the Red Hill Facility. Samples are collected from these GW monitoring wells every calendar quarter.

The AOC requires Navy to evaluate the need for additional monitoring wells in two phases. In the first phase Navy will develop a scope of work, subject to the Regulatory Agencies' approval, that addresses the need for additional monitoring wells to support the development and refinement of groundwater flow models. In addition to providing data for the modeling efforts, these monitoring wells will be incorporated into the long-term monitoring well network for detection of contaminants and to determine whether any existing contamination in the subsurface is migrating towards drinking water shafts that are used as sources of water on Oahu.

The second phase will occur upon completion of the groundwater flow model report. Navy will use the results of this report to further evaluate and refine the groundwater monitoring network. This effort will occur within four years of the effective date of the AOC.

In response to the public comments we received, the Regulatory Agencies modified a portion of the SOW pertaining to the installation of additional groundwater monitoring wells. Specifically, Section 7.3.2 now includes a commitment that "if gaps in groundwater monitoring well data are identified and validated, Navy and DLA will begin installation of additional monitoring wells as soon as possible."

3. Effect on Aquifer

Commenters raised concerns that past releases or similar releases in the future from Red Hill will affect the use of the aquifer/drinking water as well. Some commenters want more immediate action to protect the aquifer from damage. Some highlighted the vital nature of this drinking water aquifer and its classification as a sole-source aquifer as necessitating other actions to protect it.

Response:

The Regulatory Agencies believe the threat to the current BWS drinking water sources from Red Hill is low. Current data and analysis indicate that the BWS Halawa Shaft and Moanalua wells are not likely in the predominant flow path if a release were to occur from the Facility.

The contaminants present in the ground under the Facility have not prevented the use of any drinking water wells on Oahu. The only drinking water supply well that has detected any contaminants from the Facility is Navy's Red Hill Shaft. These low-level detections were below drinking water standards and have been isolated and sporadic. The most recent data does not indicate the presence of contamination and there does not appear to be a discernable trend or pattern to previous detections. Regular samples taken at the two other closest drinking water wells operated by BWS at Halawa and Moanalua have never detected any petroleum contamination.

The AOC enables the Parties to make informed decisions about the appropriate improvements and remedial actions that should be undertaken, thereby reducing the risk that the aquifer could be contaminated by petroleum releases from the Facility.

In the unlikely event that drinking water supplies were contaminated, a Navy drinking water pump station with an infiltration gallery that extends to within 1,600 feet of Tanks 1 and 2 would be impacted first. The nearest BWS drinking water wells are one mile or more miles from the Tanks at the Facility. If exceedances of drinking water quality standards were observed, readily available techniques that strip the contamination from the water before it enters the drinking water supply system using activated carbon filters may be possible methods of treatment. In fact, the BWS already performs this type of treatment at other supply wells on Oahu (see "Water Quality FAQ,"on the BWS website, "Does the Board of Water Supply treat water?", http://www.hbws.org/cssweb/display.cfm?sid=1163#ques5). Navy and DLA, or any other party, found responsible for contaminating drinking water supplies is liable for the cost of treatment. However, the goal of the AOC is to prevent releases of fuel into the subsurface so that treatment of water supplies is not necessary.

C Public Transparency

1. Public Accountability

Some commenters indicated that the AOC limits public involvement in the decision making process for the work to be performed. Some commenters also indicated that implementation of the work performed pursuant to the AOC lacked transparency.

Response:

The AOC provides for public involvement during its implementation. This AOC and supporting documentation have been made available to the public for review and comment. In addition, the updated SOW requires the parties to the AOC to update the public at least annually on progress being made to complete the tasks required by the AOC.

2. Availability of All Documents

Commenters stated that all documents generated as a result of work required under the AOC be made publicly available.

Response:

Summaries of all final reports developed by Navy and DLA will be made available to the public. The Regulatory Agencies will also make all final deliverables available to the public to the extent such documents are not protected from public disclosure. Specifically, some deliverables may not be available for public review due to legal restrictions regarding the disclosure of procurement sensitive information, confidential business information, national security purposes and other legal concerns.

3. Adding Additional Parties to the AOC

Some Commenters requested that additional organizations be identified as Parties to the AOC.

Response:

The AOC is a legal instrument between and among Navy, DLA, DOH and EPA. It is inappropriate for non-regulatory organizations to be parties to the AOC. The Regulatory Agencies, DOH and EPA represent the interests of the public under State and Federal law. The

Regulatory Agencies are committed to working with key stakeholders and other interested organizations to seek information, advice, and opinions throughout implementation of the AOC.

4. Funding of Work to be Performed

Commenters were concerned that schedules in the AOC are slowed unnecessarily by potential funding constraints. The BWS in its comments states that "the AOC should be revised to… require Navy and DLA to arrange necessary funding within no more than six months from the signing of the AOC" for important activities and that "[t]he funding commitment should be sufficient to complete the activities within five years (or a similarly short time period) after signing of the AOC…."

Response:

Navy and DLA are required to comply with federal budgeting and procurement law which may limit the development of new projects. Under the Anti-deficiency Act, a federal government organization cannot involve the government in any obligation to pay money before funds have been appropriated by Congress for that purpose, unless otherwise allowed by law. 31 U.S.C. § 1341(a)(1)(B). The AOC cannot override existing law. The AOC was written to provide an incentive to Navy to obtain the necessary funding as quickly as possible, but by law, Navy cannot commit funds to a project until those funds have been appropriated. One of the purposes of the AOC is to provide a framework that allows Navy and DLA to anticipate the costs of complying with its requirements so that the process to obtain necessary funding can begin as quickly as possible. Once the AOC is implemented, Navy and DLA can identify specific tasks that need to be accomplished and request subsequent funding from Congress.

D. Compliance with State and Federal Regulations

1. Compliance with Regulations versus AOC Requirements

Commenters thought that the AOC releases Navy and DLA from existing requirements, and that the Tanks are not currently in compliance with state and federal requirements. Commenters were concerned that the AOC does not adequately require Navy to comply with existing regulatory requirements.

Response:

The AOC requires Navy and DLA to continue to meet all applicable State regulatory requirements, including existing State UST regulations – and it creates new requirements above and beyond existing requirements. The AOC also gives the Regulatory Agencies additional authority to oversee decisions related to the Facility's operations, infrastructure upgrades, and repairs.

To comply with the new federal UST regulations (effective October 13, 2015) Navy and DLA must demonstrate to the Regulatory Agencies that they either currently satisfy, or will satisfy, the new requirements for operator training, installation and regular testing of spill and overfill protection, monthly walk-through inspections and enhanced recordkeeping. The State of Hawaii's UST program has "State Program Approval" and it will need to revise the Hawaii Administrative Rules to be as stringent as the federal UST regulations. The Facility will also be subject to regular inspections by the Regulatory Agencies.

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Based on our knowledge of current practices at the Facility, Navy may already implement many of the applicable requirements outlined in the new UST regulations. For example field-constructed tanks will be required to comply with new release detection requirements, and the regulations provide facilities with a number of options to meet these requirements. These options include tank tightness testing, automatic tank gauging, inventory control, groundwater and vapor monitoring, or other methods approved by the implementing agency. Navy currently uses a combination of three release detection methods, annual tank tightness testing, continuous tank gauging, and monthly vapor monitoring. The new regulations would require the Tanks at the Facility to only undergo annual tank tightness testing (*see* 80 Federal Register 41668, July 15, 2015), however Navy already exceeds this requirement by conducting tank tightness testing, and two additional release detection procedures.

2. Negotiated Agreement vs. Unilateral Action

Some commenters questioned why the Regulatory Agencies pursued a negotiated agreement in response to releases at the Facility rather than unilateral action.

Response:

As a result of the fuel release from Tank 5 at the Facility in January 2014, the Regulatory Agencies began negotiating this administrative order with Navy and DLA to address past fuel releases and minimize the likelihood of future releases. In general, a negotiated agreement such as an AOC is appropriate and often preferable in instances where a regulated entity is willing to cooperate with the regulatory agencies to achieve the appropriate environmental goals. Where respondents to a regulatory enforcement action have demonstrated an ability to work with the Regulatory Agencies to resolve complex environmental challenges, such as the Navy and DLA have thus far, an AOC is highly preferable. The AOC provides the Regulatory Agencies with a vehicle to develop the type of customized and innovative solutions that a one–of-a-kind facility like this Facility demands. The AOC is specifically structured to establish a process for collecting the necessary data and evaluating a variety of technical options to address past fuel releases and prevent future releases.

3. Corrosion Protection of Tanks at the Facility

Some commenters stated that corrosion protection, such as cathodic protection, should be installed on the Tanks at the Facility immediately.

Response:

Preventing corrosion to the Tanks at the Facility is difficult. If corrosion prevention systems are not designed or implemented properly, these systems may exacerbate the rate of corrosion to the Tanks. Further study is needed to evaluate whether corrosion prevention systems, such as cathodic protection, can reliably prevent or retard corrosion to the Tanks at the Facility.

The new UST regulations do not require corrosion protection requirements, including cathodic protection, for the Tanks at the Facility or similarly constructed tanks. Metal corrosion control known as cathodic protection is only required under certain circumstances. Because the Tanks at the Facility are encased in concrete, cathodic protection is not required or effective at reducing corrosion of the Red Hill tanks. (80 Federal Register 41595, July 15, 2015).

Nevertheless, corrosion protection is a vital aspect to the continued safe and long-term operation of the Facility. The AOC requires Navy and DLA to re-examine and improve their current Tank inspection, maintenance, and repair procedures (Section 2 of the SOW) and to perform a comprehensive evaluation of the corrosion and metal fatigue for the Tanks, including destructive testing of a representative samples of the Tanks (Section 5 of the SOW).

4. Secondary Containment of the Tanks at the Facility

Some commenters stated that Navy and DLA should immediately install secondary containment in all of the Tanks and associated piping at the Facility because it is an industry standard.

Response:

The new 2015 UST regulations require secondary containment of tanks and piping only for new and replaced field-constructed tanks 50,000 gallons or less in volume. Although secondary containment has become the industry standard for the vast majority of much smaller USTs, the size and structure of Tanks at the Facility are very unique. Field-constructed tanks larger than 50,000 gallons, such as the 12.5 million gallon Tanks at the Facility, are not required to install secondary containment.

Section 3 of the SOW nevertheless requires Navy and DLA to identify and evaluate the various tank upgrade alternatives, including secondary containment, which can be applied to the in-service Tanks at the Facility. However, in order to ensure the successful operation of such a major upgrade, further studies of the existing tank structure and engineering feasibility studies are necessary. If not designed and constructed properly, a tank retrofit could increase the risk of future fuel releases.

III. Conclusion

Universally, public comments sought aggressive actions to address past fuel releases and prevent future releases to ensure protection of public drinking water supplies. In response to public comment, the Regulatory Agencies negotiated modifications to eight areas of the SOW to address a variety of public comments. Many public comments also related to specific aspects of the work that will be performed. Those technical requirements will be developed under the various tasks in the AOC, and public comments related to the details of the work will be considered during the development of the work plan deliverables required under the AOC. In addition, the Regulatory Agencies sought additional expert input. Taking into account the public comments received, the Regulatory Agencies have concluded that signing the revised AOC is the best way to ensure protection of public health and the environment while Navy and DLA continue to utilize the Facility.

Implementing the right solution for the Facility is a significant engineering challenge. It will require technologies and procedures specifically designed for the Facility. The initial phases of the AOC focus on accomplishing the extremely complex and critical work of evaluating, designing, and selecting cleanup specifics and upgrade technologies for the massive, uniquely engineered Tanks, which are believed to be the largest underground fuel tanks in the United States. Implementing an effective long-term solution will take time to ensure its success.

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However, much work will also be conducted within the first two years of the AOC to ensure that the Facility is operated safely while a long-term solution is implemented. The schedule requires Navy and the DLA to hit the ground running, submitting within 120 days multiple plans ranging from improving inspection protocols and assessing groundwater contamination risk to addressing cleanup methods and tank upgrade alternatives. In all, the Navy and DLA are to complete approximately forty (40) tasks within the first three years. The Regulatory Agencies anticipate opportunities to accelerate the current tank upgrade schedule, and the agreement includes penalties for Navy and DLA if current schedules are not met. Ultimately, tanks not upgraded by the end of the current schedule will have to be taken out of service.

The AOC is flexible and work requirements will be tailored to the findings from studies of the Facility and the surrounding environment conducted under the AOC. In addition, the Regulatory Agencies each reserve their rights to take additional actions if they determine, together or separately, that the AOC is not sufficiently protective. Existing regulations also require Navy and DLA to respond immediately to any emergency situation encountered at the Facility. Currently, the drinking water is safe for human consumption for both BWS customers and military communities. The water for BWS customers and military communities is being tested every three months to assure the water is safe. Contamination related to the Facility has never been detected in the BWS drinking water sources.

Initial evaluations from technical experts conclude that a catastrophic release from the Facility into groundwater is very unlikely. The tanks are constructed in solid rock and consist of 2.5 to 4 feet thick reinforced concrete and a steel plate. Major earth movement that would rupture a Tank at the Facility is highly unlikely. The most likely catastrophic release scenario would be a piping failure with a release into the lower access tunnel. This vulnerability is being addressed by Navy and DLA with the installation of oil tight doors in the tunnel system, along with a new fire suppression system to reduce the threat of a release caused by fire. Furthermore, the piping in the lower tunnel system is not buried or concealed and is visually inspected daily.

Similarly, initial evaluations have concluded that migration of existing Facility contamination to the BWS wells is also unlikely. The predominant direction of groundwater flow beneath the Facility does not appear to be towards the nearby BWS Halawa Shaft or the Moanalua wells. Additionally, over time, naturally occurring bacteria typically degrade subsurface petroleum. Petroleum related contamination can be easily and reliably removed from water. In the unlikely event petroleum from the Facility reaches drinking water sources, technologies such as granular activated carbon can be used to remove contamination. In addition, if fuel from the Facility reaches drinking water supplies, Navy and DLA will be liable for the cost of any treatment required.

Under this AOC, the Regulatory Agencies have been effective in negotiating sweeping remedial and preventative measures to effectuate comprehensive cleanup, contingency readiness, and infrastructure upgrades at the Facility. This agreement is designed to address past releases and prevent future releases with an aggressive and phased performance schedule, backed by stringent penalty provisions and regulatory oversight, to ensure the ongoing protection of public health and the environment.

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