DEPARTMENT OF HEALTH

STATE OF HAWAII

In the Matter of	Docket No. 19-UST-EA-01
U.S. NAVY'S APPLICATION FOR A UST PERMIT FOR THE RED HILL BULK STORAGE FACILITY.	VOLUME I (Pages 1 - 213)

The above matter came on for hearing via Zoom Videoconferencing, commencing at 8:07 a.m., on Monday, February 1, 2021.

BEFORE:
LOUIS L. C. CHANG, ESQ., Hearing Officer

APPEARANCES:

For the U.S. Navy:
JONATHAN McKAY, ESQ.
DAVID FITZPATRICK, ESQ.
MICHAEL LAW, ESQ.
KARRIN MINOTT, ESQ.
MARNIE RIDDLE, ESQ.

For the Board of Water Supply:
ELLA FOLEY GANNON, ESQ.
DAVID K. BROWN, ESQ.
Morgan Lewis & Bockius
300 Grand Avenue, 22nd Floor
Los Angeles, California 90071

JEFF A. LAU, ESQ.
Deputy Corporation Counsel
City and County of Honolulu
567 S. King Street
Honolulu, Hawaii 96813

APPEARANCES (Continued):

For the Sierra Club Hawaii Chapter:	DAVID KIMO FRANKEL, ESQ. 1638-A Mikihala Way Honolulu, Hawaii 96816
For Environmental Health Administration, Department of Health:	JAMES C. PAIGE, ESQ. Deputy Attorney General 425 Queen Street Honolulu, Hawaii 96813

Reported by: Donna N. Baba, CSR #103
Certified Shorthand Reporter

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P R O C E E D I N G S

HEARING OFFICER CHANG: Let's go on the record. Good morning, everyone; good afternoon to those of you checking in from other time zones. May I have appearances, please, for record?

MS. GANNON: Good morning, Hearings Officer Chang. My name is Ella Foley Gannon, I'm with the law firm of Morgan Lewis & Bockius, and I'm here on behalf of the Board of Water Supply. With me this morning is David Brown, also of Morgan Lewis & Bockius, and Jeff Lau, and we will be representing the Board in this proceeding.

HEARING OFFICER CHANG: All right, thank you very much.

MR. FRANKEL: David Frankel here for the Sierra Club.

HEARING OFFICER CHANG: All right, thank you.

MR. MCKAY: Good morning. Jon McKay here for the United States Navy and the Office of General Counsel. We have Mr. David Fitzpatrick, Ms. Karrin Minott, and Ms. Marnie Riddle, Mr. Mike Law.

HEARING OFFICER CHANG: All right. And then for the EHA?

MR. PAIGE: Good morning, your Honor. Deputy Attorney General James Paige for Environmental Health.

HEARING OFFICER CHANG: All right. Do you want to note the participation of party representatives for the record, or anybody feel a need for that?

MR. MCKAY: I think we could certainly put those who are on the Zoom call in the record. So for the Navy we have Mr. Frank Cioffi with us currently, and we expect that Mr. Curt Stanley will be joining.

MS. GANNON: The Board, we have with us David Norfleet of DNV GL; and we have Nicole DeNovio from Golder; and plus we have our colleague, Wogai Mohmand, from Morgan Lewis & Bockius.

HEARING OFFICER CHANG: All right, very good. Thank you.

MS. GANNON: And Erwin Kawata with the Board of Water Supply.

HEARING OFFICER CHANG: And then EHA has some party representatives?

MR. PAIGE: Yes. We have Lene Ichinotsubo present as a client representative.

HEARING OFFICER CHANG: And there was a Roxanne?

MR. PAIGE: She's not present. At various times there may be different client representatives who are going to come in and I'll introduce them at that point.

HEARING OFFICER CHANG: All right, very good.

One of the first things I wanted to address was the matter of my disclosure. Something came to my attention late last week, and I apologize for the timing of that, it's unfortunate. I believe we have had an earlier disclosure where you all generally are aware that I am an arbitrator/mediator by profession, and I was a practicing lawyer before that. But since about 2003 I changed my practice so that I am virtually exclusively an arbitrator/mediator/fact finder/hearing officer doing kinds of work that I describe generally as neutral work. I say almost exclusively, because there's a handful of people or parties that I guess legally that I continue to do legal work for, and one of them L&L Franchise, and the other are friends for whom I do things like wills and trusts and stuff but, you know, aside from for those few legal clients, law clients, I work generally as serving as a neutral.

I think that we have had prior dis -- theater, I have done work, I do a lot of employment, collective bargaining grievance arbitrations and mediations, as well as commercial and construction arbitrations and mediations. But on the employment side I have previously served as an arbitrator for a U.S. Navy matter with David Fitzpatrick representing, I

think it was the employer relative to the Military Police Union. I am currently an arbitrator in a matter involving the UPW and the Board of Water Supply on some employee grievance, and that I previously was an arbitrator in a matter, I think it was a DLNR matter that involved Kimo Frankel, who was counsel for one of the parties; this is a Big Island case.

Then I have done a bunch of work for Department of Health, as well as other departments of the State of Hawaii: Department of Land & Natural Resources, Department of Transportation. But for the Department of Health, I have been a mediator of some employment-related grievance matters. I have been a fact finder for a work unit that was having some issues, as well as a grievance involving the Department of Health, one of their sections, office sections.

But the one that concerned me most recently was this one with L&L Franchise, and I've explained very briefly that this as a long-time relationship of mine with a gentleman named Eddie Flores, he's an entrepreneur, and was a UH classmate of mine, or college classmate of mine and, you know, we've become friends and I've represented him through all of his enterprises as a business opportunities, real estate broker, as a real estate school, entrepreneur, and then

when he and his friends wanted to explore the possibility of franchising their little drive-in restaurant in Liliha, started out franchising in Hawaii and it just grew, so that to the point where they have franchises all across the country. And I had been doing their initial franchising work from Hawaii, as well as learning how to do it for the Mainland.

But they have an employee, Bryan Andaya, who happens to be a member of the Board of Water Supply, and in fact, I am told he's the chair. We have not had any discussion on that on this matter, we've not ever discussed any Board of Water Supply matter, but I can understand if it will raise some concerns, and I'm wanting to and hoping that we can address any questions that you all have. If you some concerns, we will address them as needed. So please fell free, ask me any questions you wish, I will respond.

MR. MCKAY: Well, thank you for the disclosure, we certainly appreciate the information you've offered already. The one question that we really had remaining is, is there anything that precipitated the timing of your disclosure? It came Friday. It was a little -- just curious that it came --

HEARING OFFICER CHANG: Yes, it is. I was in the -- my office is in the same building, it's down the

hall. It's a storage room that the L -- what I use for -- and the like, and while I was doing that Mr. Andaya flagged me and said he had heard that I was doing this case. Told him, yeah. And I hadn't realized that he was the chair, and having called my attention to that, it raised that --

THE COURT REPORTER: I'm sorry, you're bleeping out, Mr. Chang. It's not clear.

HEARING OFFICER CHANG: Okay. Do you want me to repeat anything?

THE COURT REPORTER: Just the last part.

HEARING OFFICER CHANG: While I was at, you know, I probably was at the copier machine and stuff, which is right outside his office, he flagged me and made the comment that he had heard that I was doing this case, and so we talked briefly about it. I said what's his connection, he said he's the chair. Then, you know, if there's any question it ought to be disclosed. And so that's why I made the disclosure, unfortunately it was on the Friday before the commencement of our hearings. So that's the timing.

MR. PAIGE: And just a few follow-ups just to clarify for the record. Mr. Andaya is not the decision-making authority over whether you do your continued work with L&L under contracts that you

mentioned. Does not -- is it our understanding --

HEARING OFFICER CHANG: No. I mean the reality is that Eddie Flores, as the principal -- it's a little bit of a longer story -- he's probably the main decision maker, but he turned over -- he brought in his daughter, Elisia Flores, who is a business executive, and worked -- after college worked with, I think it was GE in Arizona, and he enticed her to come back home to take over the business. So a few years ago he sort of retired, but not really. You know, he comes in two, three hours a day, four days a week. He's kind of the -- as the entrepreneur he's kind of the idea man, the marketing guy. He's a gorilla marketer. If you know L&L Franchise you might have a sense of the kinds of things that they do, creative marketing and all that. And so the real decision makers in the company are he and his daughter, and Bryan Andaya had been brought in as -- he's a lawyer, but he had been brought in as an executive, and told that he is going on a half-time basis sometime soon, if not already, but a year or so ago he took over the drafting of the franchise documentation because, again, he's a lawyer, he can do that. So you asked about decision making, and my take on the decision making is that it's really Flores and his partner, Kam, are the principal owners, and the

decisions they make.

MR. PAIGE: We don't have any additional questions. Again, we appreciate the disclosure and certainly take you at your word that you hadn't had any conflict and can be objective as the hearing officer, so the Navy has no intention to moving to disqualify you or ask that you recuse yourself.

HEARING OFFICER CHANG: Thank you. But I want to see if anybody else has any concerns or questions.

MR. FRANKEL: Sierra Club does not.

MS. GANNON: The Board does not.

HEARING OFFICER CHANG: All right, thank you.

MR. MCKAY: I sensed that and that's why I moved in front of them, I'm sorry. I knew I was asking questions. Sorry.

MR. PAIGE: The EHA has no objection.

HEARING OFFICER CHANG: Thank you, and thank you all. I appreciate the confidence and the trust that you have expressed, and my commitment is to serve as a, in the event a neutral fact finder and the like. So thank you very much.

Any other procedural matters anybody else wants to raise before we see if our live streaming is working?

MR. MCKAY: Can you check to see if

Mr. Stanley has tried to enter the room?

HEARING OFFICER CHANG: He has not.

MS. GANNON: I guess the only other procedural question that I had was I know there had been some confusion about the start time and the publication of that, so --

HEARING OFFICER CHANG: Oh, wait, I'm sorry. Curt Stanley has been waiting, I'm sorry, I missed that. And there's a Kat Van wanting to come in.

MR. MCKAY: That's the Navy's litigation support. Our paralegal, basically.

HEARING OFFICER CHANG: And also an ACOM is coming in.

MR. MCKAY: Yes, sir, that's our consultant ACOM, Frank Cioffi.

HEARING OFFICER CHANG: Okay. All right, so they're coming in and joining us. And Ms. Gannon, I'm sorry, I interrupted your comment there.

MS. GANNON: No problem. My question was just I know there had been issue about the start time in the publication originally, so I was just wondering, has that been resolved, and is the plan to continue starting at 8 o'clock each day?

HEARING OFFICER CHANG: That's my understanding. And then I believe we had the Department

of Health make a note on their site that the start time was 8:00, so we're on schedule to begin at 8:00 each day, unless the circumstances of the day call for us to do something different because of a Mainland time zone witness or something.

MS. GANNON: Very good. Thank you.

HEARING OFFICER CHANG: Everybody okay with that? Okay. Are you all ready then? I'm going to activate the live stream, and then we're going to begin the formal process of the hearing with your opening statements and the like.

MR. MCKAY: The Navy is ready.

MS. GANNON: Board is ready.

HEARING OFFICER CHANG: Okay. Fingers crossed, let's hope this works fine. There's supposed to be a 20-second delay or something. Are you all able to hear me? Is somebody able to check the live stream to see if it's going? I'm seeing things, awaiting for hearing, 49 people waiting. I believe that's all I have to do, so --

MS. GANNON: We have some consultants who are supposed to be monitoring that, so we could e-mail them and ask them to see if they're seeing it.

HEARING OFFICER CHANG: Yes. Because if it's not working, I have the IT people's cell phone numbers

and I can --

MS. GANNON: They reporting it's not working yet.

HEARING OFFICER CHANG: Yeah, because I'm seeing a screen that just shows a holder, not any life stream. My information says that we are live streaming, because the only thing I have now is to stop live streaming, and it's saying it's live on customized streaming.

MS. GANNON: It's still showing waiting for live --

HEARING OFFICER CHANG: You know what, let's go off the record and let me -- I'm going to need a few minutes to try to contact IT to see what's happening, because everything I'm seeing is saying that it's working.

MS. GANNON: Okay.

(A recess was taken.)

HEARING OFFICER CHANG: We can go back on the record, and may I invite your opening statements. Who would like to proceed first? Navy?

MR. MCKAY: Karrin Minott is prepared to give the opening statement for the Navy.

HEARING OFFICER CHANG: All right, very good. All right, good morning.

MS. MINOTT: I'm Karrin Minott with the United States Department of the Navy. The United States Department -- one moment please. We're going to actually have the slides pulled up, so we're going to have Razan go ahead and share her screen.

MS. AZZAKANI: Yes. Mr. Chang, I'm trying to share screen and I'm seeing that the host needs to --

HEARING OFFICER CHANG: Yes. One more button to push.

MS. AZZAKANI: All right, thank you.

HEARING OFFICER CHANG: Okay, you should be able to share screen now.

MS. MINOTT: The United States Department of the Navy has applied for a permit to operate the Red Hill Bulk Fuel Storage Facility. The evidence and testimony presented at this week's hearing will show that the Navy's permit should be granted. First, because the Navy is fully compliant with every one of Hawaii's underground storage safe regulations which were promulgated to protect the environment and human. Second, because the Navy's operation of the Red Hill Facility goes above and beyond those regulatory requirements to provide overlapping layers of environmental protection.

The United States has invested hundreds of

millions of dollars to upgrade procedures and infrastructure at the Red Hill Facility which has modernized the facility to protect the environment and make sure that the drinking water is safe.

The Red Hill Facility is more than just 20 Red Hill fuel storage tanks. The Navy operates the pipeline, a control room, tunnels, a pump house, an upper tank barn, Hickam product recovery tanks, Hickam Airfield piping and hydro pits, pierce and bore search tanks.

Exhibit N-90 provides a cross-section view of one of the Red Hill tanks. The cylindrical vaults are 100 feet in diameter, 200 feet in height, and lined with one-quarter inch thick steel plates, with a minimum ground cover of 110 feet, and built at least 100 feet underground. The steel lining was built against a steel framework, then concrete was pumped over it being from 4 feet to 8 feet thick. Grout was then forced between the concrete and the basalt rock to ensure the steel is protected from deterioration and the facility was hardened not only against attack, but from damaging elements of the environment.

The Navy's permit application demonstrates that the Navy complies with Hawaii's underground storage tank regulations. The Navy's tanks and

pipelines are properly designed, constructed and installed, and meets or exceed the current regulatory standards. The tanks are protected from corrosion by 2 to 4-foot thick concrete walls that separate the steel from the ground.

Twice a year the tanks are tested for leaks using a method that has been certified accurate by third-party verifiers. The Navy's procedures for inspection and repairs at Red Hill go above and beyond the industry standard using their best available technology designed for large underground tanks.

Since 2014 the Navy has a different facility, both in its physical constructs and how it's operated and monitored each and every day. The Red Hill Facility utilizes advanced operational procedures and processes, such as when refueling tanks there are visual inspections and personnel at the facility that have had increased training and certification. Additionally, fuel inventories are monitored every minute of every day with sophisticated automated fuel handling equipment system and automated tank paving systems. The Navy employs tank aging and trend analysis to monitor fuel inventories, and has increased its tank tightness testing to twice what the regulations require.

The Department of Health promulgated regulations applicable to underground storage tanks at the Red Hill Facility pursuant to the Hawaii Revised Statute Chapter 342L, the Hawaii Administrative Rules found in Chapter 11-280.1, were developed to ensure underground storage tanks remain protective of the environment. Regulations include specifications for the design, construction, installation, maintenance, repair and operations of the facility, as well as for release detection, reporting of releases, and response to suspected or confirmed releases. The Department of Health regulations conform to the United States Environmental Protection Agency's Federal Underground Storage Tank Regulations.

As the Board of Water Supply stated in its complaint initiated in this hearing, the permitting process must carefully evaluate and assess whether the Red Hill Facility complies with State law respecting underground storage tank operations, and that is the purpose of this hearing. The Navy's revised permit application and supporting documents presented in this proceeding demonstrates that the Navy operates and maintains the Red Hill Facility in accordance with Hawaii's regulations. Testimony and evidence the Navy presented in support of this proceeding further

demonstrates the continuing operation of Red Hill Facility is protective of human health and the environment.

The Red Hill Facility has been inspected by the Department of Health and United States Environmental Protection Agency. In 2017 a final evaluation report for the Red Hill Facility was compiled by five petroleum, oil and lubricant subject matter experts at the direction of the United States Environmental Protection Agency and the Department of Health, and it stated that it did not identify areas of noncompliance with current State or Federal regulations, and concluded, quote, "that systems and management practices in the place at the Red Hill Facility meets or exceed best practices with petroleum terminals and bulk fuel storage facilities," end quote.

The same report concluded that, quote, "Upon review of original design drawings and historical documents overall, key construction components of the tanks exceed or meet most modern-day construction standards," end quote.

The inspection report also concluded that the tanks' solid construction and location deep underground means that, quote, "Concerns of external factors are minimal," end quote. And, quote, "Damaged mechanisms

like the distortion of the steel plates or other damage due to stress, seismic events and settlement, which normally impact an aboveground storage tank are minimal or nonexistent," end quote.

Dr. Gaur Johnson, the Navy's structural engineer, attached a report commissioned by the U.S. EPA to evaluate the risk at EPA. The PEMY report agreed that the way the tanks are built deep underground and built into the bedrock makes them resilient to earthquakes.

Furthermore, as the Navy's current deputy director of the Region Fuel Department testified, Mr. John Floyd, the recent October 2020 inspection of the Red Hill Facility conducted by the same group of subject matter experts again resulted in no major findings reported to the Navy. Specifically, no contemporaneous fuel leaks or visible staining of fuel was found at any of the operational Red Hill storage tanks, surge tanks, aboveground storage tanks, Hickam field storage, hydrants or any of the pipelines. The inspectors reported to Mr. Floyd that the infrastructure was clean and pristine and that all automated fuel handling equipment alarm record and logs revealed that all alarm events were responded to correctly.

The strategic importance of this facility to the United States Navy is relevant to this proceeding. The United States has invested now over $200 million and is programming over $400 million more to ensure the facilities remain safe. To be clear, the continued improvements in investments in the Red Hill Facility are not to increase the fuel capacity or provide additional fuel services to the military, the whole of investment is to make sure the facility achieves the best available practicable technology complies with the Hawaii Underground Storage Tank Regulations and remains protective of human health and the environment.

The release of fuel in 2014 that led to the Administrative Order on Consent, also known as the AOC, was certainly unfortunate, but it was not from corrosion or deterioration of the Red Hill tanks. There is no factual dispute that that release was due to human error, which was exacerbated by data response plans that are no longer in place. The poor workmanship that led to the release would not be possible under the new and improved Tank Inspection, Repair, and Maintenance protocol, which includes an increased standard of care that was approved by the Department of Health and the United States Environmental Protection Agency in 2017.

The AOC is an agreement the Navy reached with the

Hawaii Department of Health and United States Environmental Protection Agency to assure the Navy is applying the best available practicable technology at the Red Hill Facility to be protective of the human health and the environment.

To do so, the Navy is in continuous cycle of researching and implementing state-of-the-art technology and processes. For instance, the Navy has partnered with industry and institutions such as the University of Hawaii to identify the best ideas and developments to enhance its processes including how to inspect and repair the facility.

Through eight separate sections of the AOC's scope of work the Navy has improved its inspection repair and maintenance processes, identified how to reduce risk, update a leak detection monitoring response action, enhance it's tank integrity program, and expanded its understanding of environmental conditions around the facility.

The AOC provided, as Exhibit N-001, was entered into to be, quote, "fair, reasonable, protective of human health and the environment, and in the public interest," end quote. It is a binding agreement the Navy and Defense Logistics Agency entered into with the regulated agencies: the Department of Health and the

U.S. Environmental Protection Agency.

Moreover, the AOC is an iterative process where every process that has been reviewed and approved in the AOC is subject to being revisited every five years, meaning at the first year review cycle all the lessons learned, as well as any updates and improvements to technology will be implemented until the parties agree the AOC requirements are satisfied. For example, the nondestructive testing used by the Navy during its Tank Inspection, Repair, and Maintenance program employs what the AOC parties agree is the best available practical technology. And where the Navy learns lessons and develops new information from efforts such as destruction testing, it must necessarily improve its process per the terms of the AOC.

Likewise, as the Navy develops new realtime tank integrity technology, such as permanent tank tightness testing techniques and continuous soil vapor monitoring, the Navy will upgrade the facility, as well as its processes and procedures as the technologies become proven. This permit will not relieve the Navy from its existing obligations in the AOC to continue to upgrade and improve the facility through the AOC process.

The AOC and accompanying statement of work require the submission of certain documents which are

reviewed by the Department of Health and the U.S. Environmental Protection Agency, with technical input from stakeholders, including the Board of Water Supply, they are then approved, approve conditions, modified, disapproved and sent back for Navy to modify, or a combination of these. The submission of these documents do not depend on the issuance of a permit, and they will continue.

The relevance of these deliverables to this proceeding is that the actions taken as part of the AOC process demonstrate the Navy's compliance or exceedance of regulatory requirements. Importantly, the AOC process is working, and a disputes clause, which provides for the off-chance the parties cannot progress, has never been invoked.

Since 2014 the Navy has improved many aspects of the Red Hill Facility operation. Mr. John Floyd's testimony focuses on the operation of the Red Hill Facility as it operates today, which includes layers of protection to prevent, detect, and mitigate. The Navy has improved an updated process related to fuel levels for its normal operations; changed the fuel refill process that requires intermittent tank tightness testing during the refill process with additional inspections and checks; enhanced the overfill

protection; increased the number of full-time employees at the facility; increased frequency of inspections in a 24-hour period; revised and standardized operator training and enhanced contractor qualifications processes to improve tank inspection repairs; implemented new procedures for rapidly draining tanks, and allow operators who transfer fuel out of a tank within 36 hours; improved procedures and implementation to more accurately inventory monitoring and trend analysis using automated fuel handling equipment to identify a fuel release, however unlikely, more accurately than in the past.

Additionally, operators are now required to report alarms immediately, and operation supervisors use the alarm logs to confirm there are no unscheduled fuel movements. These protocols are designed to correct prior breakdowns and identify a potential release more accurately, reducing the potential volume of released products, and thus, providing better protection of drinking water.

Mr. John Floyd's testimony also provides how the Red Hill Facility conducts inventory monitoring using Automated Fuel Handling Equipment system, known as the AFHE, and the Automatic Tank Gauging system, known as the ATG. Each tank has an ATG probe that measures the

level of fuel in each tank. The ATG data is transmitted to a central computer that is used to monitor and control operation of the system, and is monitored 24-hours a day, seven days a week from the AFHE control room, as seen here in Exhibit N-091.

Furthermore, the 2017 final evaluation report for Red Hill concluded that the Red Hill Facility control system contains all the expected components and features, and is by far exceeding industry standards by upgrading a system that is only 10 to 12 years old.

The Department of Health and the United States Environmental Protection Agency approved the Navy's Tank Inspection, Repair and Maintenance procedures, known also as the TIRM, which are now being implemented for inservice tanks at the facility. The Navy is firmly committed to protecting the environment and drinking water supply through continual improvement for tank Clean, Inspect, Repair program. Since the fuel release in 2014, the Clean, Inspect, Repair program has been overhauled. New tank repair specifications include a three-step repair process, additional checks and balances, additional staffing for better quality control, including a third-party quality assurance engineer that provides objective feedback on Navy contractors' performance, completion of repairs, and

implementation of Navy standards, as well as enhanced tank refilling procedures. These processes and procedure are new and were not previously in place at the time of the 2014 release.

The Navy's Tank Inspection, Repair, and Maintenance practices implemented at the Red Hill Facility are governed by a standard of care and safety that exceeds American Petroleum Institute Standard 653 that has been modified in order to accommodate the parameters of the Red Hill Underground Storage Tank system, and exceeds the usual industry practice.

In an effort to continue to improve, the Navy has invested approximately $1.9 million with the University of Hawaii, Applied Research Lab and College of Engineering for continuing enhancement to the TIRM process.

The Quantitative Risk Vulnerability Assessment, known as the QRVA, is a risk assessment set at a particular point in time that identified areas where the Navy can reduce the risk of a potential release from this facility. It is not a prediction of the future. Phase 1 of the QRVA is the first phase of a multiphase process that identify sources of potential risk related to the Red Hill Facility, which the Navy is in the process of, or has already addressed to reduce the risk

of a potential release.

However, as Commander Frame explained in his testimony, the model of the QRVA freezes the facility design as of July 27, 2017, resulting in numerical predictions being based upon the conditions in the facility at that point in time. Any improvements made since that time, such as eliminating the smaller nozzles in service and revamping the tank filling process are excluded from this QRVA analysis.

This alteration of nozzles began with the Tank Inspection, Repair, and Maintenance performed for Tank 5, and it's currently being implemented in Tanks 13, 14 and 17. Commander Frame's testimony further explains that in addition to removing nozzles to reduce risk, the Navy is also installing new pipe spans which are intended to reduce stress on nozzle flanges, and are also replacing the product line ball valves.

With regard to how the facility operated, the Navy has also reduced fill in the tanks from 212 feet down to 190 feet or less. These measures were not in place in 2017 when the facility was assessed and have reduced the overall risk identified in the QRVA.

The Navy also meets or exceeds the regulatory requirement regarding tank tightness testing. The Navy conducts twice as frequent tank tightness testing at the

Red Hill Facility than required by Hawaii State requirements. Since 2019 each Red Hill tank containing petroleum product has undergone biennial tank tightness testing as a best management practice. The Navy is also pursuing a project to install permanent tank tightness testing equipment in every tank.

Mr. Chris Caputi's testimony provides the tank tightness testing method is approved by independent third-party evaluations, and is listed on the National Work Group for Leak Detection Evaluations, an organization known as NWGLDE, which is comprised of nine regulators and an industry expert. The selection of leak detection methods utilized for the Red Hill Facility follows accepted industry standard approach that focuses on identifying the leak detection criteria required for the site and selecting a method that is capable of meeting those criteria in this industry standard approach to use independent third-party evaluations and NWGLDE-listed technologies for the determination of the performance standards of a leak detection method.

Mr. Chris Caputi's testimony also provides that leak detection for underground piping for Red Hill was tested utilizing leak detection methods that are also third-party evaluated and listed with the NWGLDE

to make the required rate for each testing section. These leak detection methods are standard approaches to leak detection testing of both piping systems throughout the DOD and commercial industry, and were selected based on having appropriate third-party evaluations and listing on the NWGLDE website.

Lastly, Mr. Chris Caputi testifies that underground piping was static liquid pressure tested in conformance with industry standard practices accepted to the U.S. Coast Guard. The testing is required to ensure that no leaks occur under a static liquid pressure of at least 1.5 times the maximum allowable working pressure. This method of pipe leak detection or integrity evaluation is the longest serving and most basic approach of testing employed in the industry.

With respect to the testing of pipeline systems associated with the Red Hill Facility, the final inspection report for the Red Hill Facility which it provided states that the subject matter experts reviewed the API 570 section reports of the piping system, and concluded, quote, "The piping system inspection process meets or exceeds industry standards," end quote.

The Navy meets all regulatory requirements for corrosion protection in accordance with Hawaii

state regulations, and uses the best available technology to identify and repair any anomalies in the tank liner through its TIRM processes. The Navy incorporates the best available technology in accordance with American Petroleum Institute standards, which are modified to increase the standard of care at the Red Hill Facility. In fact, as provided in Navy testimonies, the Navy goes above and beyond the American Petroleum Institute standards by manually inspecting the entire interior surface with nondestructive technology, the accepted industry technology, as part of a modified API 653 procedure during each Clear, Inspect, Repair project.

As part of the AOC process the Navy continues to identify and implement improvements to the nondestructive evaluation process. That would be incorporated in the next review cycle in the AOC process.

The vast majority of releases of fuel from the Red Hill Facility occurred before 1988, and none have occurred since 2014. We believe the evidence will show that more than 80 percent of the releases occurred prior to the inception of the 1988 Underground Storage Tank Regulations. Moreover, many recorded releases did not result in releases of fuel to the environment.

Approximately 30 recorded releases were through a poorly designed telltale system, were likely captured in a tank drainage system. Likewise there are recorded releases of water which was placed in the tanks during inspection and repair periods. They cannot be confused for releases of fuel from the facility. And others concern defects on the upper domes well above the fuel line.

As presented in Commander Darrel Frame's testimony, several reported releases are historic, were based on noncontemporaneous reports that have identified a release, and of the known release of the fuel from the tanks at Red Hill, the drinking water has remained safe.

To detect any slow or chronic releases of fuel, the Navy conducts monthly soil vapor monitoring for volatile organic compounds, or VOCs, in the soil beneath each of the 18 active Red Hill tanks. Three soil vapor monitoring probes are located beneath each of these tanks. Moreover, to improve the readings detection processes for this facility, the Navy is pursuing additional technologies to expand the soil vapor monitoring system to provide continuous soil vapor monitoring.

To ensure the function of any fuel releases

that move through the hundred feet of rock between the tanks and the aquifer, the Navy also has a groundwater monitoring network that surrounds the facility. As shown in this map on page 55 of the Facility Environmental Report there are currently 19 monitoring wells in this network, with eight more scheduled to be added by the end of 2023.

As Curt Stanley points out in the facility environmental report, samples from each groundwater monitoring well are collected and analyzed on a quarterly basis. These samples show that detections of TPH in groundwater are limited to the area near the tanks and are not affecting the permitted wells. Neither the Navy's Red Hill drinking water shaft, nor the water that supplies the Halawa shaft ever been impacted by any past releases.

Furthermore, as the Board of Water Supply presents in its complaint to initiate this hearing, quote, "Testing conducted to date indicates the water provided by Board of Water Supply drinking water wells remain in compliance with standards for safe drinking water," end quote. In fact, the Board of Water Supply's own data shows that neither petroleum nor any of its constituents have been detected in sampling results. Thank you.

HEARING OFFICER CHANG: Thank you very much. Does Board of Water Supply want to present its opening?

MS. GANNON: Absolutely. Thank you, Hearing Officer Chang.

Good morning. For the record, my name is Ella Foley Gannon and I'm with the law firm of Morgan Lewis & Bockius, and I have the honor and privilege of representing the Honolulu Board of Water Supply in this proceeding, this critical proceeding.

And I think as we start out, it's really important to underscore how critical the issues are that are going to be decided by the Department of Health in this matter. It really, it just absolutely cannot be overstated how important this is. What this is going to determine is whether the water supply that supplies the people of Oahu and supports the environment of Oahu is going to be safe today, tomorrow, and for generations to come. If the decision is made to allow the Navy to continue to operate the facility in the manner that it does so and has been described in the permit application, we believe that simply cannot be guaranteed.

And as a sort framing device to think about, I think you have to think about, kind of what is risk tolerance, and what is -- you know, kind of you do a

cost benefit analysis. And so when you think about a thing that has such a catastrophic possible cost, the cost of losing this precious, unreplaceable water resource for the Island of Oahu, that therefore requires that the risk that can be allowed and tolerated has to be really, really small because it's just too big of a risk. And when you look at the evidence that's presented in this matter, I think the only conclusion you're going to be able to come to is the Navy can't meet the burden. It can't meet the burden in showing that it's complying with the statutes that govern underground storage tanks in Hawaii, it can't demonstrate that it's satisfying all of the regulations of the Department of Health, and it certainly can't demonstrate that it can be operated consistent with the overall public trust obligations that are established in the Constitution that guarantees protection of the water resources.

So we began. We think when you're taking in and hide this evidence, we really ask that that be kept in mind. The consequences are so great, the risk cannot be great. The risk has to be really, really small, and again, they're not going to meet that.

The Navy in its evidence presents a lot of documentation and a lot of discussion about the

systems, and systems within systems that are there to protect everything, and that there are layers of protection, but we're going to ask you to not take them at their word, but to really look at and examine the evidence that's before you that shows really what is going on at this facility and what risks are.

And when we talk about layers of protection, there's really only one layer of protection at this facility, and that layer of protection consists of a quarter inch piece of steel. I think a quarter inch is like this coffee stirrer, I mean that's about a quarter of an inch. That's really the only barrier between -- the only meaningful barrier between the fuel and this precious resource and the environment. And this layer is also subject to corrosion, and we know that. They'll talk about all of this corrosion protection that is out there, but we know that they're -- and you'll see pictures of this, you can look at this in the record. The only views that we have actually had of the outside of the tank, the side of the tank that they can't see, the side of the tank that they can't repair, the side of the tank that they can't maintain, is that it has corrosion. When we talked about the destructive testing that was done, and we'll talk a lot about it this week, they removed 10 coupons, which were

just like a section of the tank where they cut it out, they take it out, they looked at it. And again, we'll go through this and talk about it, what the meaning of it is.

But when you look at that, you look at those pictures, there's corrosion that's existing on each one of those coupons. Some have more than others, but there's evidence that shows that it's corrosion that is continuing to happen. How do we know that? We know that because when they do the TRIM (sic), when they do the inspection and repair they keep finding places where the fuel walls -- where the steel is being reduced in size. How would they have been reduced in size if there wasn't corrosion happening? What would they be testing for? What would they be seeing? They wouldn't be seeing anything.

They have to even -- in other volume inspections, they're having to acknowledge that there is a rate of corrosion that's happening, and they say that this can't really be happening because it's all protected by this concrete, but we see that water is getting in there, and we see that. I mean you saw when you were walking through the facility, we saw water dripping down. I mean there's water that is coming in contact with this steel.

And again, when those coupons were taken out, many of them were wet on the back side, so there is water. When you have water in this environment you have the oxygen that is necessary to allow for corrosion to happen. So again, we know that this is happening, and the evidence, we represent that when you take a careful look at this evidence, Hearings Officer Chang, you're going to see, again, you've got a quarter piece of steel, it's corroding, and that's what's there to protect us.

Now, again, they say that the concrete also protects it and the concrete is also holding the fuel in. We know that this is not true either. And how do we know this is not true, because when there's been spills the fuel has gotten out of the tank and it's gotten into the environment. We know that because they did the soil vapor testing that shows that there are fuel constituents in the soil, in the environment. When core samples were taken from rocks there was fuel in core samples from the rocks.

We know that it's gotten into the groundwater. The Navy's own witness, Curtis Stanley, says the Navy never pretended that the fuel has not ever reached the groundwater. So we know it's not being held in the concrete. It just simply can't be

because it's gotten into the environment, and we know when the release happened in 2014, it got to the lower access tunnel and there was actually a big oily spot right on your Tank 5, and at least when I was there it seemed to be that you could still see evidence of that, and we certainly have seen pictures, there are picture in the record that will show that.

So again, there is concrete there, but it cannot possibly do the job that the Navy says it does, which is that it keeps the fuel in. So again, layer upon layer, upon layer of protection, it's really one layer. One layer that's a quarter inch of steel that's old, that's corroded. So if this is the case, well, then it's really, really critical that they can make sure that they can test these things, they can repair them, they can maintain them.

So they have a TRIM (sic) process, and again, you're going to hear a lot about this, but there are some very, very significant problems with this. First of all, just from a practical standpoint, the pictures that they are just showed -- and when we were there in Tank 13 we saw it -- the way that this is done is they're hanging from that basket, there's people hanging from the basket that are along the walls of the tank. They're using a handheld device to scan every

inch, and they have to look at that and they have to note when there is an irregularity, and that's how they identify problem areas. And then they make those circles. We saw all those circles on the walls. And you'll see lots of pictures of them, but we saw them while they were there, so you can see that there's a lot of areas that are being identified.

But this really -- this really demands perfection from people hanging hundreds of feet above the air with a little handheld device and doing it for days, upon day, upon days, 'cause this liner is the size of a football field, and it's a huge task to ask people to do. And so it seemed incredible to imagine that there aren't going to be things that are going to be missed.

And so to have to say that that's all we have to rely upon to make sure that we're not going to have any of the corrosion eating through, that we're not going to have this fail eventually, this old steel that's being worn away, that's being corroded, this is, again, this is huge risk, consequence, terrible, risk is way too high. This is just not a reliable system.

Then there's also the additional problem that when they tried to prove up -- and there was a lot if talk in the opening here and throughout the evidence

about how that it's okay because the AOC has confirmed that all these things have been done, but the reality is a large, large majority of the things that have been submitted as part of the AOC have not be approved. They have either been disapproved, or they've been said that they don't actually meet the requirements, you got to provide more information.

So really, this again does not -- this does not lower the risk. This does not get us to a place where we can be comfortable with it. And so when we look at the validity of their TRIM (sic) process, they conducted an assessment of Tank 14 and they had done, you know, an analysis with their nondestructive testing, and then they took out the coupons, and this was supposed to verify did you catch the spots that were really wearing down that needed to be repaired, and what was the results of that? 50 percent of the time they were wrong. Now, there is no way we can say that that's an acceptable risk. I don't think anybody can say that that's an acceptable risk if you're going to miss it 50 percent of the time. And they're going to tell us that's okay, they've learned lessons and they're going to make it all better, but until we can see that, until we can know for sure that they can do what they say that they can do, that they can make sure

that there is no way that these things are going to be -- that there's going to be leaks, that there's going to be through holes, again, our position is that's just too high of a risk. We can't live with that. We absolutely cannot live with that.

Another problem with their TRIM (sic) is that under the industry standard and under guidance from the EPA and from the Department of Health, and even under their own policies, they're supposed to be testing these tanks every 20 years. And we can talk about, and our expert, Dr. Norfleet, will testify that there's really some problems with the way that they calculate the acceptable period of time. But even if we say, okay, 20 years, that's sufficient to say you're going to get back in there and you're going to test it, and assuming you can actually do this all perfectly, you're going to catch anything before it really becomes a problem. But when you look at the evidence, they don't meet that 20 years most of the time.

As noted in a letter from the EPA and from the Department of Health, it's really that on average of about 30 years. So it's a third more than it's supposed to be even under their own calculation and under the industry standard. And again, we're talking about a facility that presents a huge risk, and they

have not been doing it. I'm sure they're going to tell us it's okay, we will in the future. But that's not the evidence before you. That's not what you can base your decision on. So you have to look at what they've done.

And the longest tank that went without inspection years 58. This is only an 80-year-old facility. Fifty-eight years without their doing any testing or exploring, and that's supposed to give us the level of assurance we need that says that there's no way that this quarter-inch steel is going to erode and it's going to fail, and we're going to have a risk and we're going to have -- so that's really their only way of preventing.

The other measures that they talk about are really focused on detection, not prevention, so it's supposed to detect leaks that happen. Well, that doesn't give us an awful lot of the assurance because it happens after a leak has already occurred. Again, we want to see measures that are actually going to prevent the leaks from happening. They can't do that.

And even, there are even questions about whether the -- the adequacy of their leak detection, and we'll talk about that, and part of the problem is that there's also such a lack of transparency that we

don't have a lot of the underlying data. So we don't know for sure how their leak detections work. We know that the method that they use has been approved, but we haven't seen the details, and again, this is such a huge risk. We can't accept that. That, in our position, that cannot be deemed to be sufficient evidence to show that they're complying with State law. So without that evidence we just can't go there.

And finally, their final area is all focused on being able to be protective of health and human environment, and ultimately the mitigation that is going to be done. And so what does the Navy do about mitigation? What does it do about mitigation, it says we don't have to do anything because it's really fortunate, we have these soils that can just act like a sponge and can just hold huge amounts of fuel in them if the Navy spilled. We don't believe that the evidence shows that. We don't believe that there's any documentation that shows that.

They also say there's natural attenuation that happens, and it's going to happen fast enough that it's going to make sure that all this fuel that's being held in a spongy rack is never going to get anywhere. And again, we agree natural attenuation happens, but we don't believe that the evidence demonstrates that it

happens at the rate that it can, and that you can really adequately rely upon both of those things to ensure that in the event of these future releases, and particularly if there is a catastrophic release, which really can happen, when we talk about the fact that we've got hundreds of millions of gallons of fuel in old tanks which have corrosion that's only a hundred feet above the groundwater resource, this unreplaceable groundwater resource, that again is just too big of a risk.

And they tell us that it's okay because they've monitoring it and it hasn't gotten to our drinking water yet. Well, that's not the standard. The standard isn't that we have to wait until our drinking water is contaminated or we've lost this irreplaceable resource. The responsibility of the Department of Health and the Board of Water Supply is to make sure we protect that water resource today, and that's what we're trying to decide here in this case, that's what we have to make sure that we can accomplish.

They also say that they can make this determination that it's never reached anywhere because of this extensive monitoring well program that they implement. Well, let's look at that a little bit

closely, too. It's extensive because they have three 2-inch wells in a 13-acre field which is in a groundwater system which is so complicated and complex that they've been trying to model it for years and they don't seem to have gotten it right.

Again, because of the lack of transparency we don't know for sure because they haven't produced that groundwater model so that we can actually understand what they know about how things move in this system and what they can actually say improved about how these factors should all be interpreted and played into it.

And finally, they say, well, if there really was a major catastrophic release and it got to the groundwater and started contaminating things, you don't have to worry about it 'cause we could always pump through Red Hill and we could always treat it. We have a lot of problems with that. First off, they don't have a treatment plan, so if this happened today or tomorrow or three years from now they couldn't treat it. It just -- it simply doesn't exist.

We understand that they're undergoing a feasibility study to look at it, and that's all great. But today, the facility that they're asking you to permit, simply cannot do that. They also haven't really considered what happens to the drinking water

resources if you have to take all of that out of the system. And how long would take? Nobody knows.

So once again, we talk about this huge catastrophic problem and this risk, which is really, really high. Based on the information that we have, and based on the information that we don't have, this is simply an unacceptable situation, and it cannot be allowed to continue. It cannot be allowed to continue to operate because it does not satisfy the requirements of Hawaii State law.

And again, we'll walk through that with you in particular with all of the Navy's witnesses, their own witnesses, but those are the major things that we wanted you to be aware of as we start. And, again, the Navy says a lot of things about all of this stuff, and they ask us to trust them. Well, that's really hard for us to do, again, because A, they haven't been transparent; B, they have not done everything that they said that they're going to do, and they also want us to rely on the fact that they're going to do more improvements. That's great, but you can't rely upon that today. Today you have to rule on the application that's before you. And the third problem is a lot of what they've done in the studies as I mentioned earlier as part of the AOC have actually been shown to be

inadequate by the Department of Health itself and by the EPA.

So all of the real layers that we have to look at all point in one direction, you cannot issue this permit and be consistent with Hawaii State law. It cannot happen. And what the Board asks for you to do is instead tell the Navy that they have to move those tanks away from the groundwater resource, or they have to install secondary containment so that there really is a barrier between the fuel and the environment which would be put at such great risk.

So, again, we ask that you deny the permit for these reasons, and look forward to the opportunity to discuss and give evidence further throughout this proceeding. Thank you.

HEARING OFFICER CHANG: All right, thank you. I think we're at a point perhaps we should take a short break, give people a few minutes to rest and reenergize. Is that all right? Is ten minutes sufficient?

MS. GANNON: Yes.

MR. MCKAY: Yes.

HEARING OFFICER CHANG: All right. Let's take a ten-minute break, we'll see you then.

(A recess was taken.)

HEARING OFFICER CHANG: Let's go back on the

record, and Mr. Frankel are you ready to give your opening statement?

MR. FRANKEL: Sure.

HEARING OFFICER CHANG: All right, Mr. Frankel.

MR. FRANKEL: The Navy has polluted our water and will do so again. That is simply unacceptable. From the very beginning the Navy's Red Hill tanks have leaked. In 1949, Tank No. 16 was leaking 546 gallons of fuel per day, and on some days the tank leaked more than 1,550 gallons of fuel. Tank 3 leaked 60 gallons per day and Tank 17 leaked 20 gallons per day. In 1958 a tank leaked 1,500 gallons of fuel. In 1971 a Red Hill tank leaked more of 20,000 gallons of fuel. In 1980 another tank leaked more than 25,000 gallons of fuel.

In 1998 the Navy casually noted that, quote, "there are leaks during normal operation." In 2002 the Navy confirmed the release of fuel of unknown quantities. In 2014 a Red Hill tank leaked 27,000 gallons of fuel.

Why have these tanks leaked? Sometimes it was due to poor design, sometimes due to sloppy construction, sometimes due to inadequate oversight, sometimes due to bad repair work, sometimes due to corrosion, and once during an earthquake. If anything

could go wrong at Red Hill, it has.

It is undisputed that these tanks -- that these leaks have contaminated our water. Navy report after report reveals that these tanks have contaminated our water. The Navy's 2007 Technical Report concluded, quote, "The results of this investigation clearly indicate that petroleum has been released from the facility in the past."

Three groundwater monitoring wells were installed within the lower access tunnel of the facility, and samples from each have consistently detected petroleum dissolved in the groundwater beneath the site.

The current level of impact to the environment exceeds the Tier 1 action level standard developed by the Hawaii Department of Health for groundwater that will be used as drinking water. The Navy's 2008 Groundwater Protection Plan, its 2010 audit, and the Navy's 2020 Investigation and Remediation of Releases Report all conclude that the tanks contaminated our groundwater. These tanks will leak again.

The Navy calculated the likelihood of fuel leaking outside the Red Hill Facility, and that means, I want to be clear here, not just confined to that long

tunnel we walked through at the bottom of the elevator, this is outside the facility. This is their calculation, its quantitative risk and vulnerability assessment concluded that the probability of a sudden leak of between 1,000 and 30,000 gallons over the next year is 27.6 percent. That risk jumps to 96 percent over the next ten years. So we know these tanks will leak a lot of fuel. And by the way, one of the fundamental assumptions in this report of risk is that these tanks are inspected once every 20 years. That's a basis of the calculation, but these tanks have not been and will not be inspected once every 20 years.

In addition to these acute instances, the facility is also expected to chronically and continuously release 5,803 gallons of fuel per year. Think about that. In addition to any acute releases, these tanks are expected to release more than 5,800 gallons of fuel every single year.

The Navy has identified a number of steps it can reduce the risk of more releases. Decommissioning the small nozzles, coating interiors, inspecting the tanks frequently. The TIRM report actually calls for the Navy to do these inspections once every 10 years, unless circumstances allow for a longer period of time up to 20 years.

Think of our site visit, when we looked at Tank 13, that was the first tank we looked in. The Board of Water Supply's counsel refers to the circles on the walls. I call them more amoeba shaped. In any case, whether they're circles or amoebas, those shapes indicated areas that needed to be repaired. The report for that tank inspection revealed there was quite a bit of corrosion on the back side of this tank. The inspection report required mandatory fixes for these corrosion spots. They were so important because of the threat they posed.

And how long it had been before this tank had previously been inspected? What was the interval between inspections? 25 years. In that 25-year period the Navy concluded that the tank had degraded so much, mandatory repairs needed to be made. Despite a list of items the Navy recognizes need to be taken to reduce the risk, the Navy has not come close to implementing these measures.

The Department of Health concluded that the storage of up to 187 million gallons of fuel 100 feet above the drinking water resources of water resource, quote, "is inherently dangerous."

A 1998 Navy study concluded that an uncontrolled massive fuel release from the Red Hill

Fuel Storage and Distribution Facility would cause irreparable damage to the drinking water source below the site. Also the cost of clean up would be prohibitive, long term, and may not be completely successful.

In a 2010 audit the Navy concluded that, quote, "The environment in the Pearl Harbor area has not been sufficiently protected from the Red Hill fuel tanks."

Given the Navy's track record, the inevitability of more leaks continuing to occur, and the importance of our groundwater, the Red Hill tanks cannot be and are not operated in a manner that is protective of our water. There is a practical alternative, build new tanks above ground in a safe location; relocate the fuel, just as the Navy did on the Mainland.

The Navy's history of leaks is shameful. The likelihood of more fuel leaks is unacceptable. Contaminating our groundwater, whether that water is used for drinking water today or not, is simply unacceptable. The Navy cannot be given a free pass to ruin our water. The Department of Health must conclude that the Navy's permit to operate it's antiquated, and leaky tanks is unacceptable. Thank you.

HEARING OFFICER CHANG: All right, thank you. For EHA, any opening statement?

MR. PAIGE: Waive.

HEARING OFFICER CHANG: All right, thank you. Are we ready to begin with testimony?

MR. MCKAY: Yes, sir, the Navy's ready to present its first witness. He did dial in earlier. There may have been some confusion on the timing, so we're going to dial him up right now if we could just be patient.

HEARING OFFICER CHANG: All right, we'll await that process. The Navy's going to be calling Officer Whittle?

MR. MCKAY: Yeah, Commander Blake Whittle, yes, sir, and he's the one who dialed in earlier. We asked him to stand by.

HEARING OFFICER CHANG: All right. Welcome, Commander Whittle. May I ask you to take your oath.

Ms. Baba, would you administer the oath, please.

Whereupon,

BLAKE WHITTLE,

called as a witness on behalf of the United States Navy, being first duly sworn by the court reporter, was examined and testified as follows:

HEARING OFFICER CHANG: All right. Who will be -- is there any introduction on the direct testimony?

MR. MCKAY: Yes, sir, we intend to just do a brief introduction with our witnesses to provide some context and then ask them for the cross. Karrin is going to be handling Commander Whittle. Thank you.

HEARING OFFICER CHANG: All right, thank you.

Ms. Minott?

MS. MINOTT: Yes, good morning. Here we have Commander Blake Whittle. He was the Regional Appeals Officer at Naval Supply Systems Command, Fleet Logistics Center, Pearl Harbor from 2017 until June of 2020. And in this position he was really responsible for all bulk petroleum operations across the Joint Base Pearl Harbor Hickam, and including the Red Hill Bulk Fuel Storage Facility.

DIRECT EXAMINATION

BY MS. MINOTT:

Q. Commander Whittle, are there any corrections you would like to make in your direct testimony?

THE WITNESS: None at this time.

MS. MINOTT: Thank you. I'm happy to turn over Commander Whittle for cross-examination at this time.

HEARING OFFICER CHANG: All right. Do we have

an agreed sequence that the Board of Water Supply will commence the -- all right. Then for the Board of Water Supply, your cross-examination, please.

MS. GANNON: Thank you, Hearing Officer Chang.

CROSS-EXAMINATION

BY MS. GANNON:

Q. And good morning, Commander Whittle, and thank you for joining us. I am counsel for the Board of Water Supply, I just have some questions about your testimony.

There is references in your testimony to the fact that there are two tanks that have been taken permanently out of service. Can you explain why those tanks were taken out of service?

A. Yes. Before I do, do you have a preferred form of address, ma'am?

Q. Oh, you can call me Ms. Gannon.

A. Thank you, Ms. Gannon. To give the complexity of why those tanks were taken off line you have to understand that fuel is managed worldwide by Defense Logistics Agency for allocation of the resource globally. So effectively when you break it down, in each theater you have a geographic combatant commander. Under review of that combatant commander, in this case INDOPACOM, you have all the services, so Pacific Fleet, USARPAC, the Army component, PACAF, the Air Force

component, and each one of those locations there's fuels planners, and they effectively plan what we would take for the most strenuous possible operation that we have currently on the books, or Operational Plan we call it, OPLAN for short, what are the requirements for fuel for that.

Once they'd done that analysis for their component, they send that up to the Joint Petroleum Office at the INDOPACOM level. From there, INDOPACOM makes the determination on requirements for fuel at a classified level they're needed DIR wide. They push that information to Defense Logistics Agency, and Defense Logistics Agency pushes an unclassified Inventory Management Plan, or IMP for short, out to all the DFSPs, Defense Fuel Support Points, across the DOD. That determination tells the facility how much it's required to store.

In the mid-'80s and again in the '90s we saw a drawdown in forces and reduction requirements of fuel burn as we needed efficiencies in how we burn fuel. In both those cases the determination was made to take tanks off line at Red Hill because they were no longer needed to meet that storage requirement for the DOD. That's why those two tanks were taken off line.

Q. And so how were these two specific tanks chosen,

or was it chosen at random?
A. I don't believe it was chosen at random. To the best of my knowledge one was taken off line in '88, I believe, another one in '99, and they're both taken off line because of their coming up of their repair cycle, so determination was made instead of repairing those tanks we would have actually put them into what we might in the Navy call lay up, effectively they will not longer be used to store fuel.
Q. And have those tanks been formally closed?
A. No, those tanks have not been formally closed. They are no longer in operating status and not connected to the network.
Q. And generally when you would formally close the tank, what would you do with them?
A. I can't speak to that. A Red Hill tank has never been closed, so I don't know how I'd make a determination on what would happen to a Red Hill tank when it was formally closed.
Q. Are you aware of the requirement in Hawaii state law that when tanks are formally closed they are either removed or filled with an inert substance?
A. I believe that is a common practice for other underground storage tanks, yes.
Q. But that has not been done here?

A. Those two tanks have not been filled with dirt or soil.
Q. Thank you. Turning now to page 6 of your testimony, you described the monitoring system which is in place at Red Hill. What's the purpose of the monitoring system?
A. I'm sorry, I apologize, what monitoring system are you referring to? There's several.
Q. Where you talk about the two that you describe are the Automated Fuel Handling Equipment and the tank tightness test. What is purpose for both tests?
A. The Automated Fuel Handling Equipment is both to monitor the inventory within the facility, the fuel itself, as well as to allow the movement of fuel for that facility, so that's how you control fuel movements. That's the primary purposes of the automated fuel handling equipment. The tank tightness test is an independent process, not part of the AFHE, which displays the tanks are tight, that they are not leaking.
Q. These are leak detection methods and not leak prevention methods; is that correct?
A. Yes.
Q. Thank you. Just going back to the Automated Fuel Handling System, you described this as a continuous monitor monitoring fuel level. What level of fuel tank

has to occur for it to be detected?
A. It can detect down to 1/16th of an inch.
Q. How much would 1/16th of an inch equate in fuel in a tank of this size and scale?
A. Roughly 320, 330 gallons, approximately.
Q. And when does an alarm go off?
A. At the half-inch level.
Q. And the half-inch level would be how much fuel, approximately?
A. I need a calculator to do the public math, I apologize. 2,000 each gallon? What's 8 times 300?
Q. 2400. And what do you do when an alarm goes off?
A. Well, for starters, an unscheduled movement, that there was an actual alarm of fuel moving, never happened in my time operating the facility, so again, I'd have to speak not from what you do, but from what the standard operating procedures in regards to this tell us we would do, because you get many alarms at the facility, but they aren't the alarms you're referring to. Because different things can occur in the facility, it's a little bit complex. And so you're saying if an operator -- actually, I apologize, could you clarify the question?
Q. Sure. So you said that if there was 2400 gallons of fuel all of a sudden leaked, or there was a decrease

in 2400 gallons of fuel an alarm would go off.
A. Correct.
Q. What would you do at that moment?
A. You'd check to make sure that you hadn't improperly programmed a procedure. That is the most common thing that's going to happen. If you don't involve every part of the system when you do a scheduled fuel movement, you will get an unscheduled fuel movement alarm. That would be the initial reaction.

The second is to check for bleed by or other things occurring in a valve, have you seen pressure changes on a skin valve or otherwise inside/outside of that tank to determine why that fuel level has changed on you. I pull up most recent trend analyst and see if there's any consistencies there, and then we begin drain down procedures if we had a validated unscheduled fuel movement.
Q. So if you suddenly release 2400 gallons of fuel or more, you go through these processes once you decide it's really a leak, then you start drawing down the fuel; is that correct? Is that what you said?
A. Yes.
Q. And how long would it take you to empty the tank?
A. It's depending on the height of the fuel in the tank.

Q. On average.
A. You can't get an average, that's impossible.
Q. Okay, a full tank.
A. A full tank, anywhere from 12 to 24 hours.
Q. And during that 12 to 24 hours would you be able to do anything about the leak?
A. No, you would not. But if you pull a drawdown to below where the leak is occurring, the leak would stop.
Q. But your leak detector wouldn't tell me where the leak was occurring, would it?
A. No, it would not.
Q. So you could have a leak continuing to occur for 24 hours is what I take from that; is that correct?
A. Yes.
Q. So you said that you haven't had the alarm go off while you've been there. Did the alarm go off when Tank 5 leaked in January of 2014?
A. Yes, it did.
Q. What did they do?
A. They improperly reacted to that alarm.
Q. What was the reaction?
A. They silenced the alarm.
Q. They silenced the alarm, they didn't do anything?
A. Yes, correct.
Q. Thank you. Then you described the tank tightness

test and you indicate that you're now doing those twice as often as required. Has that been done on each tank?
A. All the tanks that are in service, yes. You can only conduct a tank tightness test on a tank that's full of fuel.
Q. So how many of the tanks have been subject to this twice-a-year tank tightness test at this point?
A. All the tanks that are in service with fuel in them.
Q. And how many is that, please?
A. Fourteen.
Q. So 14 tanks have had them done twice a year. How long has that been going on?
A. In 2008 before regulatory requirements we began initiating tank tightnesses on a biennial basis. At some point after 2008 we made it to an annual requirement, again, before there was any regulatory requirement.

I believe in the 2010s it became a regulatory requirement to conduct it annually. At that point we moved to a semiannual test.
Q. Thank you. You also noted that no tank has ever failed a tank tightness test since you're been doing them. Does that include -- was there a tank tightness test done on Tank 5 before the leak happened?

A. Yes. A few months before it was taken out of service there was a tank tightness test completed on it.
Q. And did it pass the tank tightness test?
A. It did.
Q. So a tank tightness test as I understand is really talking about whether a leak is happening right at that moment. It doesn't predict whether there's going to be future leaks.
A. Yes, that's correct.
Q. It's only talking about kind of things that have already occurred. So because a tank has passed a tank tightness test doesn't mean that there won't be a leak; is that correct?
A. Correct. In the case of Tank 5 it passed the Tank Tightness service -- tank tightness test, was taken out of service, and the contractor improperly performed maintenance and drilled holes through the integrity of the tank, which were improperly repaired. It did not predict a contractor's improper maintenance procedures.
Q. Or any other thing that could happen in the future. So again, it's just speaking to a moment is my point, is that it's just telling you at that moment it's not detecting --
A. Yes, it cannot predict the future.
Q. -- as up to the level that it can measure it,

right?
A. It cannot detect the future, yes.
Q. And what's the smallest leak that you can detect?
A. EPA requirements require half gallon per hour certification. However, we clearly showed in Section 4 of the AOC, the current system we're using, well exceeds that threshold.
Q. And when you say exceeds, so what rate can you get?
A. I believe in the short pattern test we were able to almost double the requirement. However, my understanding is when we're able to install continuous leak detection monitoring, that will approach -- rapidly approach much lower numbers.
Q. But that's not in place right now, correct?
A. No, that is not in place right now.
Q. Okay. So right now could you detect a .1 leak?
A. Given enough time, yes.
Q. Given enough time. But under your current system you wouldn't be testing for that?
A. It's unlikely, but not impossible.
Q. But my question, is that what you're doing right now?
A. It is possible we would detect that leak that you're talking about, a .1 gallon per hour leak in our

current testing environment. It's not a guarantee, but it is possible.

Q. Thank you. Let me ask you a little bit more about the tanks themselves. You indicate in your testimony that you think that -- you consider the tanks to be steel which is clad or jacketed in concrete. Can you describe what you mean by clad or jacketed?

A. When the tanks were initially constructed, the way they were built was with a quarter-inch steel liner with half inch in the baseplates and bolt up. After that, they poured concrete lifts behind the tank. So effectively when you think of the mountain itself you go basalt rock, and then you go the spray-on gunite, which is another name for shotcrete or what you line a pool with, and then you have the concrete that was actually poured. Then there's a thin layer of pressure-injected grout, and then there's the actual steel liner itself of the tank. That's how I would describe the clad or jacket effect of it, in that the steel liner is there to act as inherent barrier to release, however, it doesn't have to absorb the force of the fluid in the same way a traditional tank would.

In an aboveground storage tank the fuel simply sits pressing up on the steel and that expands outward, so the tank expands and contracts. That's not true of

these tanks because they're buried underground, so the force of the fluid and the pressures it exerts presses on the steel which presses on the, in this case pressure injected grout, which presses on the concrete, which presses on the gunite, which presses on the mountain itself.

So the structure itself is really encapsulated in the mountain because they never impacted the structural integrity of the mountain when they built the facility. That's how I would describe the steel jacket or clad effect which you're talking about.

Q. So it's really a structural, really there to support the structure of the steel, is that accurate?

A. Yes.

Q. So it's not necessarily a corrosion controlling method, it's actually a structural?

A. It acts as a corrosion control method as well.

Q. In order for it to act as a corrosion control method does it have to be in contact with the steel?

A. Not necessarily, but that would be helpful. What you're looking for is when you go to regulations, the Hawaii Administrative Rules as well as the EPA regulations looking for steel in contact with the ground, that's when begin cathodic protection and other mechanisms, right? So even if you get a gap or a seam,

it's still better than the steel being in contact with the ground itself.

Q. But can't there be other elements that cause corrosion, not just the ground? Is that why the Hawaii Administrative Rules actually require UST tanks that are underground to have corrosion protection even if they don't come in contact with the ground? The pipelines they require to be in contact with the ground, not the tanks, and my understanding, and correct me if my understanding is wrong, is that's because there are other elements that can cause corrosion.

A. Yes. I would agree there are other elements can cause corrosion.

Q. And one of those elements would be the presence of water, correct?

A. Yes, water can result in corrosion on steel.

Q. And are you aware of the fact that there's been water seen on the back side of these tanks?

A. I'm sorry, I'm not sure what you're referring to.

Q. To the back side of the steel liner. For example, when the destructive testing was done and those coupons were removed, my understanding is that there was water seen on the underside or the back side of the steel, at the part that you don't have any corrosion protection on. Is that consistent with your

understanding?
A. I saw the plates after they were removed and brought into my office immediately after. I saw no moisture on it, other than one that appeared to have, from the lower dome, had a, what I would call a coating on it. That's the only one that may have had moisture that I'm aware of. But I believe you have a Mr. Frank Kern coming up, and he was there when they actually cut them out so he'd better be able to speak to it than I. But I didn't see any moisture on the plates.
Q. We will discuss that with Mr. Kern, thank you.
So would you consider -- do you believe that the concrete is in contact with the steel throughout the Red Hill Facility?
A. I believe overall, yes. However, it's impossible to prove a negative, so I can't say for certain that in all 14 currently operating tanks 100 percent of the steel was in contact with 100 percent of the concrete. It's acceptable to believe that there has been some pull away over time, but I wouldn't believe it to be anything large. We're talking millimeters, if at all.
Q. So you testified that as a fuels officer one of your tasks is to make sure that this facility is operated safely with regard to human health and the safety of the environment. In this critical role, can

you explain to us what you would do in the event of a catastrophic release?

A. In the event of a catastrophic release? I understand what you're saying, but could you define a catastrophic release, and what scenario are we talking about?

Q. Let's say there was a million gallons released, what would you do?

A. Where is the release occurring from?

Q. Tank 14. Could be any of the tanks, but let's just say Tank 14.

A. I'm not -- I apologize, I'm really not trying to be difficult here, but the tanks are constructed in such a way that the tank envelope itself, having a catastrophic release from the tank envelope itself is, I mean, almost, I don't want to say inconceivable, but very challenging. If you can give me a better explanation what kind of release you're talking about, I could, but a catastrophic release just from a tank envelope? The possibilities of that are negligible.

Q. There's evidence that there's corrosion happening, that these are aging tanks, that we all know that corroded steel can be subject to failure. I mean you see that bridges sometimes fail because of corrosion, buildings sometimes fail because of

corrosion, so it doesn't seem to me to be an inconceivable scenario to say that you could have failure of the steel in one of these tanks. And I'm giving you just a range to say let's say there was a million gallons, that's one of the things that the ABS report considers. So if there was a release because there was some failure within the tank that allowed for the release of a million gallons of fuel, you certainly have way more than a million gallons of fuel stored there, what would you do?

A. Again, that's not something that's realistic to -- practical. I understanding that corrosion's occurring. I'm not denying that corrosion's occurring, but what you're describing, that's not how corrosion occurs. It's simply not realistic that the tank envelope would have a catastrophic failure from corrosion that result in a million gallon release.

Q. So when your own expert said there was a 5 percent chance of a sudden release of more than a million gallons from Red Hill the next hundred years, they were talking about an impossible scenario?

A. I'm not saying they're talking about an impossible scenario. But you defined Red Hill, are you talking about the tank envelope itself, or you talking about the entirety of the facility? It's two very

different things, and I apologize --

Q. Okay. If you can't answer for the one tank, then answer for the whole facility. Answer for whatever you can answer for. If whatever ABS was talking about as being possibly happening, what would you do in the event of a release of a million gallons from Red Hill?

A. So I believe what you're talking about when you refer to that isn't an actual failure of Red Hill tanks itself, but it's actual a connection or the piping which has always been the most likely scenario for catastrophic leaks. Not the tanks, but the piping and the connections in that system that is identified as the most probable cause of a large scale release.

In that case, the upper tank, based on the 1998 Bull Brother's report, we installed security doors as well as tank caps over top of the -- over the Red Hill water shaft of any intrusion, even though the modeling shows nothing would ever reach it, and the door automatically shuts when it detects petroleum or other fluids of a pilon nature to lock down the tunnel and secure the tunnels from rolling downhill.

Q. And you can hold a million gallons of fuel in the lower access tunnel?

A. Yes.

Q. And before you got the door shut if there had

been a release into the environment, what would you do then?

A. There's several miles of tunnel between the door shut and actual downhill run, so there's collection points downhill from the shutting door that you can station back trucks and other technology to suck up any fuel that passed by the door. We practice that regularly.

Q. You practice that for like a million-gallon spill?

A. So there's a release practice event, effectively, mandated by -- and I'm forgetting the acronym for it -- but effectively you practice for three different events. Each year you practice for a different event. So the first year you practice for, let's say, a small but likely, more probable but larger, and then the worst case scenario in the third year, and then you repeat the cycle.

Q. There is discussion that -- there's a recognition that there could be a large fuel release into the groundwater that would necessitate treatment to be done. That's been called out as being something that is certainly feasible, if not probable. What would you do if there was a large amount of water -- fuel released into the groundwater?

A. The intention of the Navy, I believe, is to continue to go forward on a path to build a groundwater treatment facility in order to treat any large scale release of fuel.
Q. If that happened tomorrow, what would you do?
A. You could run the pumps from the groundwater facility, pull the fuel up from the actual using the Red Hill pumps, and then send it down to a wastewater treatment facility. But you'd eventually run that out of a building to do that, so you'd have a limited time you could conduct that.
Q. And you have those arrangements in place so that you would have some place to send it to immediately if it happened tomorrow?
A. I believe so, yes. I'm not an expert in a wastewater treatment facility in other locations of the Navy, but because of the location of the Navy's Red Hill shaft, you could pull up that water. And we do, I mean 20 percent of Joint Base's drinking waters come from that short shaft.
Q. I don't remember seeing anything about sending it out to a water treatment facility in any of the Navy's testimony. Are you aware of where in the record that is?
A. I'm not. I don't know if it's ever been fully

fleshed out, but that's what I would recommend in that scenario.

Q. Okay. But you don't know that that's actually something that's in place or could be carried out. As the chief safety officer you don't have that plan?

A. I'm sorry, the chief safety officer?

Q. I'm sorry, the fuels officer who is in -- one of their tasks is to make sure that the environment is protected. In that role you don't have this plan?

A. That would be as NAVFAC facility, not a FLC Pearl Harbor facility.

Q. Okay. So you note that you've been conducting the inspections according to the Decision Document from the Administrative Order.

Do you agree that it's critical that that inspection continued to be carried out on a regular basis?

A. I'm sorry, you're saying in regards to the TIRM report, the Tank Inspection, Repair, and Maintenance report.

Q. Yes.

A. Yes. And I believe that inspections are critical to the facility.

Q. And do you think it's acceptable to have the inspections occur more than 20 years apart?

A. Trying to backdate a standard for today's API 653 standard and fit into the historical practice of the facility is always going to be exceptionally challenging. The standards in 1950 or 1960, or even 1970 weren't 2020 standards, so to say that you're going to apply that standard to historical practices is challenging.

Q. Have you met the 20-year standard since it's applied, on all the tanks?

A. No, we have not.

Q. And do you believe that's acceptable?

A. No.

Q. A couple of other questions back about your leak detection. From the time that the alarm would go off, how long do you think it could be before you would start draining the fuel, if you figured out it really was a leak that was happening?

A. Depending on plain configuration, a matter of minutes to hours.

MS. GANNON: I appreciate your taking the time to discuss this with me. That's all the questions I have for you. Thank you.

THE WITNESS: Thank you, Ms. Gannon.

HEARING OFFICER CHANG: Mr. Frankel?

MR. FRANKEL: All right.

CROSS-EXAMINATION

BY MR. FRANKEL:

Q. Commander Whittle, you don't live on Oahu, do you?

A. I don't anymore, no.

Q. On page 26 of your testimony you talk about what the draft permit authorized. Let's take a look at Exhibit N-38, if I can figure out how to share my screen.

A. I apologize, I was told I wasn't allowed to bring any resources into this, so I don't have my exhibits with me.

Q. That's fine. I'm going to try to pop it up here, if I can figure out the technology. All right, hopefully -- is N-38 visible to you?

A. Yes, sir. Mr. Frankel, is that acceptable for a form of address?

Q. You can call me Kimo. Whatever you want to call me, sure.

A. Yes, sir. Yeah, I see it.

Q. Okay. So this document, this draft permit, it's not signed is it?

A. No.

Q. It's not dated.

A. It's not fully dated, but it was -- they issued,

what, the month and the year when they provided to us.
Q. And there's a couple Xs there, right, and the date?
A. Yes.
Q. So it's not fully dated. It's a draft, isn't it?
A. Yes. I believe it's marked draft at the bottom.
Q. It did not authorize anything, did it?
A. The draft permit?
Q. This draft permit authorized nothing; is that correct?
A. Yes, but the draft permit was attached to a letter allowing us to continue to operate the facility. Again, I apologize for not being allowed to have my exhibits, but I believe that's one of the other attachments, that letter?
Q. That letter was not attached to this document that you're referring to.
A. I apologize then.
Q. Okay. And we can address that letter at a subsequent time, all right? Let's talk about leaks from Red Hill tanks and associated pipelines. They've leaked in the past, correct?
A. I didn't hear the question.
Q. They've leaked in the past?
A. Have the tanks leaked? Yes, they have.

Q. They leaked in 1948?
A. I don't have a record of every incident you're going to refer to in front of me, and I apologize for that.
Q. You ever see the Bechtel report?
A. Yes, I'm familiar with the Bechtel report.
Q. Is it consistent with your memory that back in the late '40s the tanks leaked, based on the Bechtel report?
A. In the '40s, in the Bechtel report it does refer to leaks. However, after studying the facility and going through those reports and early data, it appears that you can't determine what is a leak from the facility versus was the leak originating from the telltale system. Therefore, you can't tell if that release was a leak released to the environment or was released into the telltale system and drained off into a slop tank or other mechanism.
Q. Okay. Tanks leaked in 1998; is that right?
A. I've never seen any proof or record of that in 1998. We filed a, I believe you're referring to the report the United States Navy filed on one of the tanks. However, that tank was subsequently drained down, inspected, and put back into service. That was before tank tightness testing, as well as before the current

installation of AFHE, so gaining determination of any leakage before that time, around that time is very challenging. There was no technology for tank tightness testing like we do it today, so I've never seen a confirmation of that report. I know there is an initial notification to the Department of Health that we believe we may have an issue here, but when drained down they couldn't find any hole in the tank or other issue that I'm aware of.

Q. Are you aware of the Willbros Engineering report?

A. Which one, the 1998 report?

Q. Yes.

A. Yes, I'm aware of that report.

Q. Are you aware in that report that it noted that there are fuel leaks during normal operation?

A. I'm aware of that statement, however, I'm unsure of what they meant by that. Fuel leaks during normal operation is not consistent with the facility I ran, nor anything I ever saw, so I can't understand where they got that from.

Q. Okay. Tank leaked in 2014, right?

A. That's correct.

Q. And one section of pipeline was found to be leaking as recently as January 2019?

A. I believe you're referring to a part of the

network, but not a piece of pipeline that is in Red Hill proper. Are you being in general referring to the entire defense fuel support point, or are you referring to in Red Hill Facility, its actual self?

Q. Well, you helped prepare the application, correct, that was submitted to the Department of health to operate these tanks?

A. I did.

Q. And as attached to your application you included a report on a section of pipeline. Do you recall that?

A. I believe so, yes.

Q. Okay. So that pipeline is part of this application, correct?

A. That's correct.

Q. And that pipeline was found to be leaking as recently as January 2019.

A. But that's not attached to Red Hill, that's a pipeline attaches the upper tank farm located on Pearl Harbor proper.

Q. You included it in the application, didn't you, for this permit?

A. Yes. That was the requirement to include it, but it was not part of Red Hill proper, it's part of the permit for the entire facility.

Q. Right. It's part of the permit for the facility,

which is the subject matter of this contested case hearing.

A. I understand what you're saying, but that pipeline didn't fail in Red Hill or near Red Hill, it failed due to best business practices because it was not an actual regulatory requirement to test that piece of pipeline on Pearl Harbor.

Q. It was leaking.

A. It was not leaking. We pressure tested it, and when we pressure tested it it failed the pressure test. That's how you determine in the POL industry if you have an issue. You go above the correct operating pressure. You go up to what we might call the max allowable operating pressure and using pumps to pressurize it and you closely monitor. That the system that the industry uses to determine pipeline integrity. In this case the pipeline did not pass that test.

Q. And therefore, was vulnerable to leaking?

A. Yes, and taken out of service.

Q. And there are four other sections of the pipeline that also had failed tests previously, correct?

A. I'm unaware of any offhand, but I know there have been failures of the pipeline, that's why you test it.

Q. Okay. The Navy leaks have contaminated our groundwater, haven't they?

A. I'm sorry, I don't fully understand the question.
Q. Leaks from the Red Hill Facility have contaminated our groundwater, haven't they?
A. I wish I could better speak on the subject. I'm not an expert in groundwater. To the best of my knowledge there have been elevated TPH-d readings directly underneath the facility. But my understanding is that's a breakdown of constituents that are being detected there by the bium, but again, I'm not an expert on groundwater and I apologize for not being able to more fully answer the question.
Q. If various Navy reports, which the Navy has actually submitted as evidence in this contested case hearing, say plainly that the facility's contaminated our groundwater, you have no reason to disagree with that, do you?
A. I'm not sure what reports you're referring to, but if those are the Navy's reports, then although I didn't sign off on them, I can't speak to them very well and I apologize for that. I don't know what to say.
Q. All right, well maybe we could look at a few. Let's see if I can do this. So this is Exhibit B-8, it's a file, Red Hill Bulk Fuel Storage Facility Technical Report from August 2007. The big block of yellow there, the last sentence of it says: Three

groundwater monitoring wells were installed within the lower access tunnel of the facility, and samples from each have consistently detected petroleum dissolved in the groundwater beneath the site. Do you see that?

A. Yes.

Q. Do you have any reason to disagree with that statement?

A. No. I don't know who did this report in 2007, but I have no reason to agree with -- disagree with that statement of that report.

Q. Okay. Here's the 2010 audit prepared for the Navy by, I guess some branch of DOD, and it says -- this is B-11, page 2: Fuel releases -- well, site investigations have shown evidence of fuel releases which have resulted in contamination of the rock bed, soil, and groundwater surrounding the Red Hill tanks.

Do you see that?

A. Yes.

Q. Do you have any reason to disagree with that?

A. No, not that I'm aware.

Q. Okay. And let's just -- we'll conclude with this one, which is Exhibit S-5. Actually this is not a Navy document, so we'll leave that one aside. We'll stop there.

And your consultant concluded that these tanks

are likely to leak again, didn't it? ABS.
A. During the risk assessment?
Q. Yes.
A. I'm not a risk assessment expert, but I don't believe that was their fundamental conclusion, no.
MR. FRANKEL: All right. No further questions. Thank you.
HEARING OFFICER CHANG: Any questions from the EHA party?
MR. PAIGE: Yes, EHA.

CROSS-EXAMINATION

BY MR. PAIGE:
Q. We have just a couple questions for you, Commander Whittle. On page 15 of your testimony in response to a question about how were the regulating agencies involved in the Navy's development of its application, you indicated both Department of Health, and to a lesser extent the U.S. Environmental Protection Agency were involved.
But you're not contending that the EPA is part of the DOH permitting process, are you?
A. No. Simply that we do -- did a working call every single Monday that I was at the facility with the EPA and Department of Health, or virtually every Monday, and during those discussions the permit was often

discussed during that period of time, whether us giving updates or requesting updates, or them requesting information from us. The EPA and Department of Health were both on those phone calls as our regulators, so I believe that they were aware of it, but it's a State permitting process, so EPA had a much lesser role than they do in many other aspects of the AOC.

Q. And then along those lines on the next page of your testimony you indicated that majority of the week before the permit was submitted was spent in meetings with EPA and Hawaii State Department of Health, and that the Navy brought copies of the permit to the room where they were having the meetings to review.

Would it be correct to say that those meetings were actually on the AOC?

A. So if memory serves me correctly, in July of 2018, the HAR was amended to required the permitting of the facility. Knowing that was coming, we began meeting with the DOH in anticipation for that. That permit form, in my opinion, it's designed for gas station facilities, much less complex than this facility. And so I believe early December of 2018 we hosted DOH for several days to walk through the facility and discuss the permit application and the permit itself to make sure we were complying with all regulations before we

even started the application process.

Then in early 2019 we began the actual application process. During the week of meetings face to face there was many topics discussed, but as I remember it, Captain Delao, who was then commanding officer of NAVFAC Hawaii walked into the meeting with the permit itself and announced that this was the permit that we would be submitting. And I believe we submitted that day or the next day, not -- we didn't directly hand it over to them, but certified mail sent it to the Department of Health. I'm not sure if that fully answers the question, so I apologize.

Q. No, I was just wondering if the focus of the meeting, is it your testimony that the focus of the meeting the week before was on the permit, or was the focus really on the AOC destructive reporting water -- groundwater model updates, those type of things?

A. In my mind from my perspective, it was an AOC week of face-to-face meetings, but what's inside the scope and outside the scope of the AOC, things like the permit which the AOC doesn't directly address were still discussed because you had meeting of our regulators and the regulated body there, so I don't think we could exclusively say that it was only AOC discussion because it was a -- in my mind anytime we met face to face it

was you're our regulators and we seek guidance or we want clarification, or we want a process check on how we're doing.

MR. PAIGE: That's all the questions I have. Thank you.

HEARING OFFICER CHANG: All right. Is there any redirect?

MS. MINOTT: We would request to take a break at this time and then come back for redirect.

HEARING OFFICER CHANG: That would be fine. How much time would you like?

MS. MINOTT: We'll do 15 minutes?

HEARING OFFICER CHANG: All right, we will take a 15-minute break.

(A recess was taken.)

HEARING OFFICER CHANG: Back on the record, please.

MR. FRANKEL: I just want to establish for the record if anybody's in the room there with Commander Whittle who's not already in our Zoom gallery here.

THE WITNESS: No. I'm in my house in Virginia Beach and I told my wife and daughters they had to go somewhere else, as much help as my 3-and-a-half-year-old would have been for this, so I'm all alone and I've spoken to no one.

HEARING OFFICER CHANG: All right. Thank you. Ms. Minott?

MS. MINOTT: Yes, thank you.

REDIRECT EXAMINATION

BY MS. MINOTT:

Q. Commander Whittle, wanted to follow up on a couple things from your testimony here from the cross.

How has the alarm protocol changed since 2014? What kind of those process or procedures have changed since 2014 since the fuel release?

A. 2014 a very different procedure was in place. The operators themselves, control room operators, if you toured the facility you'd see in the control room, and 24 hours a day, seven days a week a PAPA sits there. A PAPA had the authority to silence alarms on their own. No longer is that true. Any alarm automatically results in -- resulting to a routing to the operations supervisor, to deputy fuels officer, and to the fuels officer, for me notification of any unscheduled fuel movement or other alarm.

In addition, they audit the logs regularly to make sure no alarms were missed. There is no ability for them to dismiss or make a judgment call on their part, so that would be the single largest way we've changed the way we react to alarms since 2014.

Q. And does the Navy have a Groundwater Protection Plan?
A. We do.
Q. I would like to go ahead and bring up B-373. Commander Whittle, do you recognize this document? Are you familiar with it?
A. I am.
Q. And what is it?
A. It's a Groundwater Protection Plan for the facility.
Q. And does this contain actions that would be recognized to remediate a large release?
A. Yes.
Q. Thanks. I would also like to bring up Exhibit N-41. Commander Whittle, do you recognize this document?
A. Could you scroll down? Yes.
Q. And what is this document?
A. After we submitted our permit, that was feedback provided by the Department of Health. It states the Department of Health considers Navy Region Hawaii, in short the Navy's submission of its application for permit is timely. Based on this, the DOH intends to allow the Navy to continue to operate the subject UST system until its decision on the permit application is

rendered. In this case, application for the Red Hill Bulk Fuel Storage Facility.

MS. MINOTT: Good. Thank you. No further questions.

HEARING OFFICER CHANG: Any recross from any parties? First, Board of Waste Supply?

MS. GANNON: I do have one follow-up question.

RECROSS-EXAMINATION

BY MS. GANNON:

Q. So when we were talking before about what you would do in the face of a catastrophic release you couldn't identify the actions, but now you were just pointing to a Groundwater Protection Plan. Is that plan still current and in date?

A. I'd have to check. I've been away from the facility now for six months as I've got a Navy Expeditionary Combat Command here in Virginia Beach, but to the best of my knowledge it receives regular updates and it has been updated.

Q. The version just put on the screen said it was updated in 2014, I think, so that would be the regularly updated?

A. I believe so, that was the most current version, but I'm not a specialist in the protection plan, so I couldn't say for certain if it's been updated since

then.
Q. So that plan hasn't really changed since the release in 2014 of Tank 5?
A. The groundwater response plan?
Q. Yes.
A. I'm not an expert in that. I can't speak to that, I'm sorry.
Q. Okay. And so, again, you've indicated that you knew that this plan existed and you're were aware of it. My understanding is that it's supposed to be updated every five years. Is there any reason that that doesn't sound accurate to you?
A. I'm unaware of the regulations for updating the Groundwater Protection Plan.
Q. Okay. And again, since in your role as one of the people who's supposed to be in charge of the safety of the environment, so what would you do according to this plan in response to a catastrophic release? If there was a release into the groundwater, what would you do?
A. I have to go through, review the plan and go through it. Again, I apologize, it's been six months since I ran the facility. I'm not as current as I should be. I'm focused on my current job now, so I apologize, and I don't operate a fuel facility anymore.

MS. GANNON: Okay. That's all that I had. Thank you so much.

HEARING OFFICER CHANG: Mr. Frankel, any recross?

MR. FRANKEL: Yes, just to give J. Paige a little heartburn here.

RECROSS-EXAMINATION

BY MR. FRANKEL:

Q. So that July 2019 letter that Keith Kaoka signed that you were just asked about, you don't know whether the Department of Health had legal authority to suggest to the Navy that it could operate the tanks until a decision on the permit application is rendered, do you?

A. I'm not an expert in the state law of Hawaii, however, they are who we go to as regulators, so I assume if they gave me regulatory guidance it would be correct and true, and I operated the facility as such.

MR. FRANKEL: Okay, thank you. No further questions.

HEARING OFFICER CHANG: Okay. Mr. Paige, any questions?

MR. PAIGE: No questions.

HEARING OFFICER CHANG: Okay. I have a few.

Commander Whittle and Counsels, this is early in the hearing process, so if my questions are better

directed to other witnesses, by all means, feel free to call that out. You all know much, much, much more about the details of this case at this point than I do, so I'm just trying to understand some basic things. My questions might be better addressed to other witnesses, and if that's the case, I'd like for you to let me know.

EXAMINATION

BY HEARING OFFICER CHANG:

Q. First of all, Commander Whittle, I'd like to ask you to take a look at and then help me understand the tank construction. And so I'm going to put up the exhibit that shows the tank.

Are you all seeing Exhibit N-90?

A. I'm seeing the Red Hill Tank Exhibit.

Q. In looking at this exhibit I've been trying to get a picture, an understanding of the tank construction, and so I'm glad to have this exhibit. One thing I notice is that there's supposed to be a 6-inch layer of a gunite covering on the basalt, and this exhibit does not show that. But is that your understanding as to how the tank's constructed?

A. Yes, sir. I can run you through it quickly if you want to help make it more sense. I think this diagram has been simplified slightly for purposes of

illustration. But imagine that the ridgeline is about, in your imagination, where the Red Hill Tank Exhibit exists, where that much dirt is above the tank, right?

They started to build the facility, they did two things at once. They knew they had to dig the tunnel, so they started on the lower access tunnel down at Pearl Harbor, and they also started up at Red Hill and they dug that center towards the tunnel, so that would be the lower access tunnel you're looking at. Once they completed that tunnel, at the same time they were drilling from the top of the mountain a 4-foot by 6-foot, I will call pilot shaft to reach from basically where the Red Hill in your mind is down to the top of the tank, and then went from the top of the tank to the bottom of the tank, and then actually about 15, 20 feet below that. In the diagram that's where the center tower is is the same place where they built that pilot shaft.

Then at that point they actually dug in from the side as well, from the upper access tunnel and lower access tunnel, to connect to the entire system. Once they dug in from the upper access tunnel they dug a, what they called a ring tunnel around the outer edge of the tunnel. Now, it's a little bit hard to image in this diagram, but imagine when you walked into the tank

if instead of walking straight out you walked left and right around the tank, and effectively that'd create a ring around the outer edges of the tank up at the upper access tunnel.

Then from there they cored up to that top center shaft and then lowered down effectively the metal plating you see to protect the workers from rock fall. And then they hung scaffolding 360 degrees around the outer edge of the tank at that level about 15, 16 wooden hand cranks, and what they would do is excavate out to the depth that they needed and then lower it down a few feet, go down, and keep on going all the way to the bottom of the tank, and about 20 feet below the bottom of the tank. So then at that point they'd excavated the space that they needed.

But as they were going, to your point, they used grout -- grout, that's not a good term -- they used spray-on gunite, was the term at the time, you call it shotcrete today, and that provided the initial 4 inches to 6 inches of coverage on top of the rock. That was to consolidate the rock, as well as to keep down the dust during construction so they could continue to work their way down.

So as they excavated, excavate to the depth, spray on that gunite, and then go down to the next level

digging or excavation down. So yes, there's a coating, the first thing touching the actual basalt rock is spray-on gunite all the way throughout the entire tank envelope, basically. Does that answer the question, sir?

Q. It does. Very helpful. Does the gunite go under the tank as well?

A. Yes. The gunite goes everywhere for consolidated -- should to the best of my knowledge. They sprayed it down over all the rock surfaces, to the best of my knowledge.

Q. Would the gunite also go above the --

A. Absolutely.

Q. Okay. So I'm understanding then the construction was -- it was a mined operation, you were exca-

A. Yes.

Q. Like a mine. You were not working with a pit?

A. No. So think of it this way, as they excavated out on that harness I talked about on that 360 degrees of scaffolding, it falls down that center pilot hole, extended out to 30-by-30, about a 30-inch -- not 30-by-30 -- be a 30-foot diameter hole, we call a slop hole, that fell down to the bottom of the tank where they installed conveyor belts, and actually at the time the world's longest conveyor system, conveyed the rock

from underneath the tank all the way down to Pearl Harbor proper.

So that's why they talk about it as a mined operation, meaning that that rock, one touch, you jackhammer and you pick axe it, it falls down that hole all the way down to the base, and then is carried away, and that's why it's referred to a mined operation. Very different from other types of tank construction.

Q. And then you used the term, the construction of the concrete shell around the tank. You used the term that the concrete was placed in lifts. Can you explain that process?

A. Yes. So if you were pouring a concrete sidewalk, say, you would put 2-by-4s up on either side of the concrete to contain the concrete as a mold for the concrete, then you would pour it into kind of that form, you would call it, for the concrete. In this case --

Q. One other term that was used was reinforced concrete. So do you know what the reinforcing was?

A. Yes, absolutely. It's rebar woven throughout the entirety of the concrete. That's what accounts for the reinforcement.

Q. So somebody had to construct then the form for the concrete?

A. No, because the form for the concrete in this

case is the gunite we just talked about, and on the interior -- but that's the exterior form -- and on the interior form it is the steel itself, so there was no form.

Q. All right. So somebody then placed the reinforcing steel, and then you installed the concrete.

A. Yeah, you would build up the steel above a certain level, and then you would pour up that lift I talked about, allow that to dry, and then you continue to build basically.

Q. All right, I understand. The pressure grouting, do we know whether it is a complete skin or shell, or is it spotty?

A. I couldn't say with any real certainty the pressure grouting goes everywhere. But I don't think I properly explained where the grouting is in the process, and I apologize for that. Just before they poured that concrete they did one last thing. They painted the basalt with red dirt, and we have pictures of them doing it with paint brushes and spray guns to put red dirt on it, and that acted as a cleave area, right? Because as the concrete dried, it broke away from the mountain where that red dirt was because it gave it something to cleave off of that it wouldn't stick to, and came towards the tank.

So the grouting nozzles went through the steel liner through the concrete and into that gap that resulted from the drying concrete. So to fully explain it, it would be steel liner, concrete poured grout, tiny bit of red dirt, and then gunite, and then basalt rock.

I apologize for the lack of clarity on that. That's a clunky explanation. I had so much trouble explaining this when I was on the job that I made up a styrofoam mockup so I could point to it to explain it to people, and I'm sorry I don't have my styrofoam with me today.

Q. That would have been good to see. So I have the layers then, steel, concrete, the --

A. Pressure-injected grout.

Q. Grout, and then the basalt.

A. Gunite and then the basalt. And again, I apologize for my explanation.

Q. All right. Now, the concrete completely encases the tanks.

A. Yes.

Q. Does the grout also completely encase the tanks?

A. Yes. But it's not touching the steel, it's touching in between the concrete. Actually, you know, I can't say that they -- I retract that, I apologize.

You can't say that the grout -- the

pressure-injected grout completely encases the tanks. It simply went into the space where space was available when the concrete dried.

Q. Okay. The gunite completely encases the tanks?

A. Yes.

Q. All right. As does the basalt?

A. Yes.

Q. You gave me the impression that in terms of weaknesses in the system that might contribute to an undesired release, that it would not likely be the tank, it would more likely be other aspects of the facility. Is that your feeling?

A. Yes. On any large scale the tank is unlikely to have a large scale release. I think the 2014 case is an anomaly because it wasn't due to corrosion or rust, it was due to impact to improper maintenance procedures which we've since corrected, and that contractor has been bankrupted for the work they did.

The risk is in the system, is the connection point to the system, not the actual tank envelope itself. That's why one of the largest risk reduction procedures we undertook upon the understating the data in the report was to reduce it from two nozzles to one nozzle for the tanks, because the larger nozzle is fully man inspectable. A human being can crawl through it and

inspect it. I mean I did it once and I wouldn't recommend it as a past time if you don't like tight spaces, but the smaller nozzle you can't get into.

So we're decommissioning that nozzle, and you can change its use to turn into what's called a dry carrier pipe and route sample taps or whatever you want through the smaller nozzle, so there's effectively a double wall there for future use, if that's the route you choose to go.

Q. Okay. And I think you might need to explain that a little more for me, but I have a preliminary question. The tank is fed in and out through the piping at the base of the tank, would that be right?

A. That's correct. If someone were to visit the facility, what they would -- after being in the control room they would look out and see the pump house. Those pumps are in place to push the fluid up that gradient to Red Hill itself because you have to overcome that pressure in the tank as you raise it up. So you can only feed it from the bottom. Effectively from the top, the access that most people who'd be inside the tank go in that manhole, that's for access for maintenance procedures when the tank's drained down, and the top is for ventilation and gauging at the very top of the tank where you can see the gauging gallery label on lop of

it. But the only way fuel ingresses or egresses from the facility is through that lower nozzle piping.

Q. Okay. Now can we talk about the 2014 release?

A. Yes, sir.

Q. I've not seen a complete description of what happened. Are you familiar with what happened?

A. Yes, sir.

Q. And can you tell me what happened? Where did the leak occur and the like.

A. So as previously stated, we know Tank 5 was not leaking prior to its maintenance, because although we were only doing it every two years, as it wasn't required by anybody at the time, we happened to do a tank tightness testing event a few months before Tank 5 went out of service for scheduled inspection.

Once you inspect the tank, I believe -- and I'm sorry, Ma'am -- Ms. Gannon referred to it, you hang the workers in baskets and they scan the entire interior of the tank all the way from the top to the bottom. In that you'll receive anomalies in the tank structure itself, the lining, and the idea is, is that you don't cut out the steel because that weakens the tank, but instead you improve the tank by adding more steel inside. The short hymn for that is effectively a patch plate that you would put inside the tank.

But before you can put the patch plate on you have to weld it in place. In order to weld the tank, because it's a POL facility you have to first have an inspector come in and drill a small hole through the actual tank lining and take a reading behind the tank to make sure there's no explosive gases, because you're going to do hot work or welding and you don't want an explosion to occur.

In industry you don't have to fill that hole. In our tanks, by our regulation, we have to fill that hole back in. By Navy's requirement you have to fill that hole back in. In the case of 2014 they did not fill that hole that they drilled back in. Then they put a patch plate, which intention was to improve the tank, over top of the steel which was no longer meeting our requirements or our standards. They did an improper weld job around the outside of that patch plate so that there was a mechanism for the fuel once filled to go through that bad weld and through the hole they have actually drilled through the tank itself to leave the actual tank envelope.

That happened in more than one location. I don't know the exact number of locations because of the poor welding that occurred. So you can't point to one area of the tank or one problem with the tank in a certain

location because, in fact, it's because where they did work, often the work was shoddy and it caused the release.

Q. Thank you for that explanation, it's very helpful. There was also discussion though about operator error, and I think you talked about it in brief, that apparently that the alarm system worked, alarmed that there was a release, but the operator improperly just shut off the alarm and ignored the alarm, is that what happened?

A. Yes, sir, that's correct.

Q. And you've described that the changes since have now removed that single operator decision point to a multilevel decision point.

A. Even more importantly, sir -- and probably, I apologize, I failed to do it -- we don't fill tanks the same way. When we returned the last tank, we returned to service, instead of filling and waiting, we broke it up in smaller, more manageable, monitorable increments.

We staged actual intermediary tank tightness tests during that process, so as you fill, you would do a few consecutive fills very tightly controlled, monitored, and then you would wait, and then after another fill wait again, and after another fill wait again in small increments, and then stop everything,

wait for the tank to fully settle, and conducted tank tightness tests in order to bound your risk better. So that way you're not testing the tank when it's completely full for tank tightness, you're doing maybe a quarter full, and maybe a half full, and three-quarters full, and all the way full, so that way, each period you know if I had a problem I could drain down to the last good level and know the tank was secure.

Q. Big picture-wise, from 2014 till today, what are the differences today that address the problems that were encountered that led to the 2014 release, besides what you've already told us about the operator, multilevel decision making, and the staged tank tightness testing, are there other differences today?

A. Absolutely. The first I would say is cost investment in the facility. The cost to inspect and repair one of these tanks has increased literally tenfold from the cost of a 2014 inspection and repair in order to address the risk, concerns, mitigations, and the standard of care of the tanks.

I would say the oversight has completely changed. The last tank that was returned to service, I personally went out and viewed the weld inspections along with Commander Frame, the API 653 Registered Professional Engineer who was -- it's his company who was certifying

the tank, did that with us.

The level, and it's hard to even begin to describe the level of attention and detail that shifted from 2014 to today. To compare the operations then to now is almost -- it's like comparing apples to lawn chairs almost. It's a very different thing.

In 2014 you might be able to do an operation with little paperwork. One of the things we implemented during my time there, and John Floyd could talk about it, is we never move fuel without a preplanned standard operating procedure for every step of it, so we can make sure every single time we follow every step per the checklist and make sure we're doing it properly.

We changed the way we address risk. You heard earlier we don't fill the tanks as high. What we found in risk assessments inspections is the upper dome of the tank, which you can see in that illustration, Mr. Chang, is the most challenging and problem prone to error. So in a normal tank, that would be the roof of a tank, and that's now how we treat this facility, is instead of being what we call wetted area where fuel sits, we treat it as a non-wetted area, so that way if their integrity is used in the upper dome, it won't affect the actual storage of fuel.

That's just a few of the ways we've gone to

address risk and reduce them. We talked about the decommission and the nozzles, because that's a high-risk point from the way the facility was operated. We are pushing forward with being, I believe, the first UST to have that certified tank tightness testing procedure in place. It's not done yet, which I acknowledge, but having that 24/7 will give us incredible fidelity on the tanks itself. So it's a continuing process of improvements.

My motto when I ran the facility and what I would always tell my team was we don't wait for the regulators to tell us to do something, we need to be one step ahead of them in trying to exceed the regulations. So we drove, while I was there, from going to an annual tank tightness testing to two tank tightness tests a year to make sure we were always exceeding the requirement, and that was the mentality.

An amount of money the DOD is spending, in some years the Defense Logistics Agency is close to spending as much money on Red Hill as it spends maybe for the entire United States Army's fuel facilities, or United States Air Force Navy fuel facilities. The investment and expenditure that we're putting in to maintaining and modernizing this facility is huge and can't be understated. It's a lot of money putting in to making

sure the facility is updated and modernized.
Q. Thank you very much. Coming back to the 2014 release, if up to 27,000 gallons of fuel was released where did it go? Do we know?
A. Very hard to say. We publish monthly soil vapor monitoring reports, they are on DOH's website for people to go look at, and you can see a spike in soil vapor monitoring that occurs under Tank 5 in around that timeframe. So you can see some gets down there. But the analogy I use often is that you have to remember, although not a containment mechanism, the concrete works to absorb the fuel. I say it's a little bit analogous to if you're changing the oil for your truck or your car in your driveway and when you're done by accident you kick over your spill bucket, you'll be able to pick up some of it, but lot of it will be in your concrete or in your blacktop, in your driveway until you remove that concrete, and that's where it will remain.

There's been a lot of study done on it, and it's very hard to say. So I wish I could provide you with a more exact answer of that, that 27,000 gallons, but that's the best I could say, so I apologize, Mr. Chang.
Q. No problem. Let's see if I have other questions.

You were telling us about the installation of continuous monitors, that that has not yet been done.

Is there a timetable for that?
A. I don't have the timetable offhand. When I left, I know they were pushing forward on that as of June of 2020. It's a little bit unusual. I don't know if the facility's ever done something like that before, so it's a little bit challenging, but I don't have the timeframe for that installation, and I apologize for that.
Q. Okay. You were asked a question about the TIRM and setting a 20-year standard that each tank has to be -- go through that process, but it has not been met. I wanted to find out -- well, tell me generally, first of all, what is that standard, and then you can tell me why it has not been met.
A. The standard currently for how we maintain the tanks is American Petroleum Institute, API 653 Modified Inspection. That's because the API 653 isn't intended for these tanks, which are unique tanks.
Taking that standard, we have tank experts out at Expeditionary Warfare Center in Port Hueneme, and they put together the Tank Inspection, Repair, and Maintenance document, the TIRM, with a 20-year cycle. I think you'll see that very commonly throughout industry is 20 years is a very common timeframe to go back and reinspect tanks, but that's condition dependent. It's also historically dependent. The challenge being is you

try and stay ahead of regulations, but for instance, if tomorrow they said the regulators said you have to inspect the tanks every five years, virtually all my tanks would then be out of periodicity. So as the regulations change, mature, and evolve, you're almost always playing a game of catch up to bring your tanks into compliance.

So it's challenging to maintain those standards as I don't think the API 653 20-year inspection cycle really came fully implemented until the early 2000s, so you're playing catch up to get back to the proper standard, because before you may not have been maintaining tanks on that same cycle. I know that's a little bit confusing and convoluted, so I apologize, but that's now I understand it.

Q. Okay. One question in my mind is, has it been a recent change that has required the Navy to comply with the Federal and the State regulations on these USTs?

A. Yes. And I'm not an expert on this, but I'll give you my understanding, and I think you'll have some experts that will come up later in testimony, but as I understand it, the State of Hawaii has an approved enforcement plan, so what happens is the EPA under the region, in this case Region 9 operating out of San Francisco, can approve any State enforcement plan which

meets or exceeds the EPA's regulatory standard.

In this case EPA updated their regulations, the CFR. In the following year that impacted, I believe, the Hawaii Administrative Rules, which were then impacted, and that's why the tank became permitted. The facility's been operating since 1943 with no requirement for permitting and, therefore, was never permitted. I believe the EPA upgraded their -- not upgraded -- altered their definition of USTs as well as USTs connected to airport hydrant systems, and because of that, it was determined that we would submit a permit.

Q. Is the pending application for a permit the Navy's first such application for permit?

A. For the Red Hill Facility, absolutely. For other facilities, no. I'm sure there are other states where we have put in permits for facilities, and I know we permit facilities in Hawaii, but certainly the first Red Hill permit that I'm aware of, yes.

Q. All right. The next area of questions I have for you relate to the AOC. And Counsels, if there are other witnesses that are better suited to respond to this, just let me know.

But I wanted to get an overview of the status of the work under the AOC. It has eight sections, and then, you know, is there somewhere which describes the

current results, because I understand it's been a multi-leveled moving process.

A. I could talk about that, but I believe the Navy has the witness, the AOC program manager coming up later in testimony, and Mr. Chang, he may be able to give you current fidelity and information on the AOC status, because I'm, unfortunately, a little bit out of date here, so I don't want to provide you anything factually inaccurate.

However, I will say the complexity of the AOC is that it's a continuous process. So oftentimes although we're constantly working with the regulators, they're constantly visiting the facility, or giving us guidance, or interacting with us, or reviewing documents. Because it is a continuing process, our documents sometimes don't meet the standard the regulators require, and then we go back, review, improve them, make changes, and resubmit them. So it's constantly evolving all the time in the various sections of the AOC.

Q. Okay. By chance do you know the name of that Navy witness who's going to be more familiar with this?

A. I believe Mr. Don Panthen will be testifying on that.

HEARING OFFICER CHANG: All right. Thank you. Counsels, as a prefatory comment, there had been an

article in the local newspapers that talked about or reported that the Navy has been investigating the feasibility of a tank-within-a-tank option, and talking about plans or commitments to do such.

Is that something that is going to be addressed by other witnesses, or may I ask Commander Whittle what he may know about this?

MR. MCKAY: Sir, Commander Whittle may have some information, but we do have two or three witnesses that may have more up-to-date information. Mr. Frank Kern submitted in his supplemental testimony that he is the, kin of the technical lead for that effort. And then as Commander Whittle said, Mr. Donald Panthen, he's the program director for all the efforts done under the AOC, so he'd be managing the business side of that. And then Commander Darrel Frame, who also submit testimony, is familiar with the effort and the feasibility study.

HEARING OFFICER CHANG: All right. Then I will spare Commander Whittle questions on this and --

THE WITNESS: I appreciate that, Mr. Chang. I'm happy to give you my take on it, but again, I'm a little dated, and that's a newer moving effort.

HEARING OFFICER CHANG: All right, very good. Thank you very much, Commander.

Let me turn to Counsels again, any further

questionings as a result of the questions I asked? For the Navy, any questions?

MS. MINOTT: No, we don't have any further questions. Thank you.

HEARING OFFICER CHANG: And for BWS?

MS. GANNON: A couple of questions that come to mind during your questioning.

FURTHER EXAMINATION

BY MS. GANNON:

Q. First off, Commander, when we were talking about the likelihood of where a release would come, I just wanted to clarify again, you were talking about the, sort of the catastrophic releases are more likely to come from other parts than the tanks. How about chronic releases?

A. Chronic releases are more likely or as likely to come from the tank envelope as the piping itself. I would say chronic releases you're at risk pretty equally everywhere.

Q. Okay. And then the work that was completed that was done on Tank 5 that ultimately led to this -- that led to the release, you had stated in your discussion now with Hearings Officer Chang that you were trying to put patch plates over parts of the steel that no longer met your requirement. Why did those areas not meet your

requirement?

A. There could be a variety of reasons it couldn't meet the requirement. What I would say is that standing technology is continuously improving. We used to use ultrasonic testing, now we used phased array ultrasonic testing. The analogy I give is it's a -- if you went and got an ultrasound because someone was pregnant 20, 30 years ago, it was a little bit hard to make out what the baby looked like, and now because the technology has improved so much, you get a 3D ultrasound and the data has improved and you can get a better picture of what the actual tank looks like.

Now, you could use a bunch of other technologies as well, but they've all improved, right? So as it's improved you can now look at it and say while this weld, this patch plate might have made standards for when it was conducted in 1943, it no longer meets current weld or certification standards, so that's one reason.

In addition, you could have a thinning of the tank. Corrosion could be causing the tank to thin and that's why our additional patch plates are required over top. That's anticipated in virtually any storage tank situation. Industry-wide you're going to do patch plates in order to maintain the integrity of the tank envelope.

Q. So it's not really plausible to say that the tank had nothing to do with corrosion. I mean it's a reason that you're doing the repairs that caused the problem was corrosion, or could have been corrosion, then it could have been related to corrosion; is that correct?
A. No. I have to fundamentally disagree with that. We did a report that was a causal analysis of the 2014 release that was approved by the regulators, and the fundamental failing of the tank was holes were drilled through it. By my projections, that tank probably could have gone another 50 years without having any issues, but once you drilled a hole through it, you caused an integrity issue. Corrosion isn't the root cause analysis of that, it's the improper maintenance procedures.
Q. You did a root cause analysis? Has that been submitted?
A. I believe there was a report done, yes. Part of the AOC.
Q. Has that been submitted as part of the evidence in this proceeding that we could look at?
A. I didn't submit that. I believe you can go on the EPA's website and it will be on there.
Q. I don't believe it's available, but -- so I just wanted to be clear. So that's not been submitted.

When you're talking about the way that you used to do these patch plates, was that kind of work and method only used in Tank 5 in 2014, or was that method ever used in any other repair?

A. I'm sorry, I don't think I fully understand the question. Are you saying the patch plates are used in other tanks in other repairs?

Q. You were talking about how they did this grinding down and that led to these problems and it was a process that you realized had to be corrected. Was that type of process used in any other tank?

A. The patch plate process is used in every tank in the world.

Q. Right. But you were just criticizing the way the work was done in Tank 5. Was that type of work done in any other tank?

A. No.

Q. So all of the earlier patch plates were done you're confident they never were done in any sort of shoddy process, even though you didn't have this additional layers of quality control, et cetera, that you say now really addresses this problem?

A. I believe it was done by a different contractor under a different contract. It really comes down to a bad welder doing bad welts inside of Tank 5 that caused

the release with the hole, the gas test hole. So, yes, I didn't --

Q. But you didn't have these additional levels of ways to confirm all the earlier repairs that were done that you now say are in place; is that correct?

A. That's correct.

Q. And if there was corrosion that was continuing behind one of these patch plates that created a through wall, would that result in a release?

A. No.

Q. That couldn't result in a release?

A. No.

MS. GANNON: Okay. I have no further questions. Thank you.

HEARING OFFICER CHANG: Okay. Mr. Frankel?

MR. FRANKEL: Thank you.

FURTHER EXAMINATION

BY MR. FRANKEL:

Q. Can concrete crack?

A. Yes.

Q. Are there cracks in the concrete surrounding the tanks at Red Hill?

A. I've never seen anything to suggest there is. When we took the patch plates or any other time coupons have been taken, I see no evidence of cracking or

spalling in the concrete that I'm aware of.
Q. What percentage of the concrete has actually being looked at surrounding the tanks of Red Hill?
A. A very small fraction.
Q. Thank you. When the fuel leaked out of Tank 5, was all of it confined to that lower tunnel beneath the tanks?
A. I don't believe any of it actually ever entered into the lower tunnel between the tanks.
Q. So it wouldn't have gone out to the environment?
A. Yes. Or into the concrete.
Q. Okay. So there is corrosion on the back side found in the fuel tanks, isn't there?
A. Yes.
Q. And there have been through holes found in a number of the tanks in Red Hill, haven't there been?
A. Yes.
Q. You know, when the tanks were initially designed and operated in the '40s, would you call them -- were they designed and operated in a way protective of the environment?
A. Per the standards of the time, yes.
Q. No, the standards of today. When you started to talk about protective of the environment, were they designed and operated in a manner protective of the

environment?
A. For a 2020 standard? No. 2021, sorry.
Q. Yeah, that's fair. And how about in 2014, were the tanks operated in a manner that were protective of the environment in 2014?
A. No. The failures of the 2014 release were not fully protective of the environment.
Q. Were they protective of the environment in 2015? Were the tanks operated in a manner that was protective of the environment in 2015?
A. I don't know of any releases or any issues that were not protective to the environment in 2015.
Q. I'm not asking if there were any releases, I'm asking if they were operated in a manner that was protective of the environment in 2015.
A. To the best of my knowledge, yes.
MR. FRANKEL: Okay. No further questions.
HEARING OFFICER CHANG: Mr. Paige, any questions?
MR. PAIGE: No questions.

FURTHER EXAMINATION

BY HEARING OFFICER CHANG:
Q. Actually, there's one that was raised from your counsel's questions. The history of the leaks, there's a 35-year-plus period before the 2014 release where

there's no document indicating a history of release. Are you familiar with that?

A. Yes. When I initially took the job in June of 2017, to get a better understanding if it I did a deep dive on all the files and all the historical reports I could find from the enactment of the, I believe the Clean Water Act in '88, up through 2017 so I could make sure I had a full understanding of the, what I would say recent history of the tanks.

Q. A general question, why were there no documented releases in that 30-plus-year period when there were so many before?

A. I would say the preponderance of the prior releases, as best I could characterize them, would be falling into two categories, the first being ones where although they were tracked as drops in the tank, it's unclear where the drop was coming from. These were the '40s and the '50s where the telltale system appears to be malfunctioning because it was thin piping in a rotor tank, so it could appear as a release when a release wasn't happening.

Then you go into the early '80s and it was maintenance procedures that were done on the tanks that were causing potential issues within the tanks. I think following, once you got into the '90s, the standard,

although not acceptable for today's standard, the standard of repair and care on the tanks had improved substantially, and that accounts for why you don't see releases to modern day, that I'm aware of, release reports, with the exception of 2014.

Now, there were times where reports were made to the Department of Health. I believe I mentioned them earlier. However, when the tanks were drained down, inspected and refilled, there were no holes, no cracks, and no integrity issues with the tanks found. So I think the Navy has always leaned towards over-reporting on these tanks regardless of if it turns out to be validated in the end or not, and so that's why you have some initial reports out there that have been followed up with later with here's the -- for the regulators, here is the validated repair report showing there was no issue.

HEARING OFFICER CHANG: Thank you very much, commander. If there are no further questions, can we release Commander Whittle?

MS. GANNON: Yes.

HEARING OFFICER CHANG: All right, thank you very much.

THE WITNESS: Thank you, Mr. Chang.

(Witness excused.)

HEARING OFFICER CHANG: Would this be a good time for us to take a lunch break? We were going to -- the schedule called for us to go a little later, but do you want to start with the new witness and take a break, or would you like to just take a lunch break now and then pick up a witness later?

MS. GANNON: I think it makes sense to take a break.

MR. MCKAY: Yeah, this may be a good stopping point. We can line our witness up for whatever time you want to restart.

HEARING OFFICER CHANG: All right. How much time would you all want for a lunch break and breather. Is an hour good, or you want more or less?

MR. MCKAY: We're happy with an hour.

MS. GANNON: That's fine with us, yes.

HEARING OFFICER CHANG: Let's go with that.

MR. FRANKEL: Can we start right at 1:00? That's an even number.

HEARING OFFICER CHANG: All right, that's fine. We'll recess for our noon break and reconvene at 1:00 o'clock. All right, thank you everyone.

(Whereupon, at 11:52 a.m. a luncheon recess was taken.)

AFTERNOON SESSION

(February 1, 2021, 1:00 p.m., the hearing was resumed.)

HEARING OFFICER CHANG: We are on the record, and Ms. Riddle, you are calling the Navy's next witness.

MS. RIDDLE: Yes. It is Danae Smith.

HEARING OFFICER CHANG: All right. And Ms. Smith, may I ask you to take your oath at this time.

THE WITNESS: Yes, sir.

Whereupon,

DANAE SMITH,

called as a witness on behalf of the United States Navy, being first duly sworn by the court reporter, was examined and testified as follows:

HEARING OFFICER CHANG: Ms. Riddle.

MS. RIDDLE: Yes, thank you.

Danae Smith is the Environmental Compliance Program Manager at the Naval Petroleum Office. She's been in this position since October of 2013, and before that she also held the position from the April 2011 to September 2012.

DIRECT EXAMINATION

BY MS. RIDDLE:

Q. Ms. Smith, could you briefly summarized the content of the testimony that you've delivered so far in

this case?
A. Yes. Good afternoon everyone, or good evening if you're on the East Coast like me. I am going to discuss the Hawaii Administrative Regulations 11-180.1 for the underground storage tank regulations and how they apply to Joint Base Pearl Harbor-Hickam, specifically the Red Hill field-constructed tanks, and the previous deferral that was done in 40 CFR 280 that was removed in 2015, making the airport hydrant system at Hickam Air Field and the Red Hill field-constructed tanks no longer deferred from these regulations.
Q. Thank you. Ms. Smith, are there any corrections you'd like to make to the testimony that you've already given?
A. Yes. On page 6 there was an error. I had cited just 20C with the piping, and if you could pull up the 20B for the tanks so I could read the correct statement. I was trying to be concise.
Q. So can you see my screen?
A. Yes.
Q. Is this the section that you're -- or the question and answer that you're talking about?
A. Yes. So this is the section. At the bottom of the page I had wrote: HAR 280.1-20(b) and (c) state that routinely contains regulated substances and is in

contact with the ground must be properly designed, constructed, and installed, and any portion underground, dot-dot-dot.

So that is tied to (c), which is for piping. 20(b) -- and just to shorten my testimony I'll just say the end portion instead of going over 11-280.11, unless you all want me to say that repeatedly. Do you guys have a preference?

Q. I was going to bring up the --

A. Oh, I can state it. 20(b), the tanks, only says the tank that routinely contains regulated substances must be properly designed, so "and is contact with the ground" was not included in (b).

Q. Got it, okay. And I can bring up the HAR section so we can take a look if you'd like. There we go. Should be it.

Okay. So this is Section 11-280.1-20, and then (b) is here. Can everybody see that?

HEARING OFFICER CHANG: Yes.

A. Yes. So for (b) says: Tanks. Each tank must be properly designed, constructed, installed, and any portion underground that routinely contains product must be protected from corrosion in accordance with the code of practice.

Q. All right. And then (c) down here refers to

piping?
A. And then: The piping that routinely contains regulated substances and is in conduct with the ground must be properly designed, constructed, installed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association.
MS. RIDDLE: All right, thank you. Your witness, whoever's starting.
HEARING OFFICER CHANG: Give me a moment. A witness is coming in, let me admit the witness, or the observer. I don't see them now.
Okay. Ms. Gannon, are you conducting the cross?
MS. GANNON: I am.

CROSS-EXAMINATION

BY MS. GANNON:
Q. So good evening, Ms. Smith, and thank you for joining us to answer some questions that I have about your testimony.
My first question is, can a facility that leaks, an underground storage tank that leaks, meet the requirements of Hawaii State Law?
A. An underground storage tank that leaks has to do a few things if it is leaking. One, we have to report

it, and then a repair has to be done. And then if it's tested and passes the repair, then it can return to service.

Q. So are you aware of the requirement in -- the statutory requirement in 342L-32(b)? I noted that in your testimony you had referred to L and other provisions, but not this specific provision. But it states that underground storage tanks and tanks that's substandard shall include but are not limited to the following specifications. And the first specification is, the tank and tank system shall be designed, constructed, installed, upgraded, maintained, repaired, and operated to prevent releases of stored regulated substances for the operational life of the tank or the tank system.

Are you familiar with that provision?

A. Yes. You cut out the first part, but I heard the statute part, so I think, yes, I am aware of that.

Q. So this provision requires that for the operational life of the tank system they cannot be operated and maintained so that leaks occur; is that correct?

A. So the tank is supposed to hold fuel, yes, and prevent leaks.

Q. Right. They shall be designed, constructed,

installed, upgraded, maintained, repaired, and operated to prevent releases of the stored regulated substance for the operational life of the tank?

A. Yes, yes.

Q. So how does the Red Hill Facility meet that requirement?

A. So we -- first, they were designed and constructed to prevent leaks, the original construction. We design -- all tanks are designed to hold fuel, not to leak. And then if, like it said in the statute, you can repair a tank if it has been found to be leaking, and then repaired to meet.

Q. It does say it can be repaired, it doesn't necessarily say it can be repaired to address the leak. It's just leaks are supposed to be prevented. So are you saying that it specifically says you can have a leak first and then repair it and still be in compliance with the statute?

A. I think that the HAR allows for that.

Q. I'm talking about the statute, which obviously those statutes in the way the low-high structure, statutes, regulations, so I'm starting with the statutes.

A. Yeah, so the statute, yes, we are -- the Red Hill tanks are designed to prevent leaks.

Q. Have there been leaks at Red Hill?
A. Yes.
Q. Have there been many leaks at Red Hill?
A. The last one that I know of is the January 2014 one when we were able to reportably -- and the '70s to actually required to report, it was in the 2014 spill, and we did --
Q. Oh, I'm sorry, go ahead. I didn't mean to cut you off, sorry.
A. No, no. I said the Navy did report that release from Tank 5.
Q. Okay. So that was in 2014. Are you aware of the ABS report that has been done on the tanks?
A. Yes.
Q. Yes. In the ABS report there is a list of what they identify as known and verified leaks, and it's in the numbers like 60 or something like that. So do you have any reason to believe that the ABS report is wrong about the fact that there have been a number of leaks that have happened over the years?
A. I'm really sorry, I don't know if it's because there's so many participants. Can you repeat the question?
Q. Oh, sure, no problem. So I'm saying that in that ABS report they identify a number of leaks, you know, in

around 60, I think it is, that have been verified and that were based upon review of the Navy's documents, and my question to you is, is there any reason for you to doubt the ABS's conclusion that there have been a number of leaks that have occurred over the years?

A. So that report took from documents that stated there were leaks without confirming what leaks, if they were contained, if they were investigated, in they were removed, if they were from the telltale system, if they released into the environment, if it was a leaking valved or not.

So, yes, we have many documents that don't go into detail about releases in the system at Red Hill that were cited in that report.

Q. So you do doubt that there have been a number of leaks over the years at Red Hill?

A. I believe that we do not have strong -- yes. Because we don't have complete data from those reports, they were literally secondhand differences, they weren't from -- from 1970 onward when we were required to report releases, those are the ones that I trust that are verified if they released into the environment.

Q. So again, your position is you think that ABS has got it wrong, there's no real evidence to show that there's been a number of releases at Red Hill over the

years?
A. Yes.
Q. Okay. Then we're going to move on to the statutory, or the regulatory requirements that apply to Red Hill. When did the regulatory requirements apply to this type of field-constructed underground tanks go into effect?
A. For the HAR or for 40 CFR 280?
Q. For the HAR. For what you're trying to get a permit now.
A. So the HAR, the 280, the deferral was removed in 2018 or 2019 when it was --
Q. In 2018 or 2019?
MR. FRANKEL: I think she's frozen.
MS. RIDDLE: Yes. Sorry, Ms. Smith, I think your transmission is frozen.
HEARING OFFICER CHANG: Ms. Smith, are you able to hear us at all? Okay, can somebody give her a call, she may not be aware.
THE WITNESS: Sorry, I'm back. I don't know --
HEARING OFFICER CHANG: Okay, that's all right.
THE WITNESS: There's about 4 inches of snow and we lost our heating, and the Internet's been out, so

I apologize.

HEARING OFFICER CHANG: Okay. Let's pick up it from where we were. Ms. Gannon, you want to repeat your query.

Q. Sure, thank you. And again, yes, if you're having any trouble hearing me, I can certainly try to speak up, or I'm happy to repeat it. Just let me know if there's need or if you have problems understanding what I'm saying.

A. Okay.

Q. But again, you said that so the HAR, the regulatory requirements that are at issue in this case, when did they go in effect?

A. I think 2018 or '19.

Q. And we had just talked about the corrosion protection standard, and I appreciate your correction about the difference between recognizing that (b) applies to the tanks and (c) applies to the pipes, and so I wanted to go back to that section as well, and I'll pull it up for you, and I'm using it from the Navy's Exhibit 56.

HEARING OFFICER CHANG: What section are you looking at?

MS. GANNON: I'm showing you the wrong thing. Is the regulation showing for you?

THE WITNESS: I see the regulation.

MS. GANNON: Oh, okay.

Q. So what this is looking at 11-280.1-20(b), and am fine for us just to used the 20(b) rather than having to say the whole regulations, I think that's easier.

So as you recognize, this provision now does apply to the Red Hill tank facilities; is that correct?

A. Yes.

Q. And so because these tanks are underground they must be protected from corrosion; is that correct?

A. Yes.

Q. And there's a number of provisions here, ways that they could meet this requirement, and we just can run through them quickly. Under 1, constructed of fiberglass, does that apply at Red Hill?

A. No. Number 3 applies.

Q. Number 3 applies, so because they are constructed of steel and clad or jacketed in a noncorrodible material.

Can you explain how we meet that requirement?

A. Yes. So the preamble in the EPA regulation actually goes into a little bit more detail and says any tank that is constructed of steel but the noncorrodible material surrounds it, such as concrete, then that is considered meets corrosion and does not need cathodic

protection. So the point is -- uh-huh?
Q. Where in the Hawaii regulations is that provision found?
A. No, it doesn't say that. I am taking out from the preamble from 40 CFR 280 since they were supposed to -- the HAR is supposed to be as strict or stricter than the 40 CFR 280, and so only in the HAR it says the tank is constructed of steel and clad or jacketed with a noncorrodible material, and I am referencing the two documents that I'm familiar with. I go into more detail about that since this mirrors the 40 CFR 280.20 with the tanks that also says, in that the tank is constructed of steel and clad or jacketed with a noncorrodible material.
Q. But are you familiar with the Section 280.1-26(b) which has the State definition for clad and jacketed?
A. Let's go to that.
Q. Okay, so this is the section -- I'm sorry, it's not highlighted here -- but this section. So this is the definition for how you could comply with these performance standards, right? That's what it says over here.
And if we go down to Section C, this says this is how you can comply with 20(b)(3), clad or jacketed section. So can you tell me which one of these,

Sections 1, 2, 3 or 4, the Red Hill tanks comply with?
A. No, I am sorry, I cannot.
Q. Okay. So then let's go on, and mostly interested in your experience with other, kind of, using concrete as cladded jacketing for UST systems.
Are you aware of any UST system that is known to have corrosion occurring where they have relied on concrete as a clad or jacketing method?
A. Yes. Some -- the steel does corrode slightly even if it's in concrete, but not at a rate to be of concern.
Q. And usually would those also have some sort of cathodic protection on the steel?
A. No. Our field constructed tanks that are steel encased in concrete don't have the cathodic protection on it.
Q. But then you said that they -- then they do experience corrosion?
A. They experienced slight reduction of the steel; some steel loss.
Q. As a result of corrosion; is that correct?
A. Yes.
Q. Okay. Then I wanted to go next to Section 280.1-33 (sic) which you had referenced in your testimony saying that we could comply with these, and

these are the provisions that apply when a tank has been repaired; is that correct? I'll get to it in a second, sorry.

All right. So this is the section I'm referencing, which is about repaired tanks. Do you see where I'm talking about?

A. Yes.

Q. And then I want to go down to this subsection, and could you read the highlighted provision to me?

A. Yes. Prior to the return to use of a repaired UST system, any repaired USTs must pass a tank tightness test in accordance with Section 11-280.1-43(3).

Q. So then let's go to 280.1-43(3), and is it your position that Red Hill can meet this test?

I'll pull it up in a second, but I thought your testimony had been that you could meet this requirement; is that correct?

A. Yes.

Q. Let me get to the provision, and I'd like to talk about how we know that. So here it is, 280.1-43. So this is a provision that you have to be able to comply with, and that you say that you can comply with. Can you just read this section to me?

A. Yes. Tank tightness testing. Tank tightness testing, or another test of equivalent performance, must

be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion of contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

So my understanding was that we, because they're the field-constructed tanks, they can adhere to 10, which is a tank tightness test of 0.5 gallon per hour leak rate.

Q. Where is that provision in the regulations found?

A. It's a little bit further, it's down at (10) for field-constructed tanks. If you scroll down.

Q. Okay.

A. So in this one, since it has methods of release detection for field-constructed tanks.

Q. But this is for all the tanks, right, not just for the repaired tanks. But when the earlier section cross-referenced it said it has to comply with 1-43(3), I don't understand where it says that doesn't apply to field-construction tanks. I read the regs as saying you have to be able to comply with 280.1-43(3), and we just read that language, then we just looked at 43(3), and that talks about a .1 gallon per hour detection rate, isn't that right?

A. Yes.
Q. So you can't meet that standard.
A. We have not asked the test vendor to meet that standard, so I cannot confirm that.
Q. So for example, when Tank 5 was put back into service after being repaired, you didn't confirm that it met this standard; is that correct?
A. We did the 10, we did the 0.5 gallon-per-hour leak rate.
Q. So you didn't comply with this provision as it's stated in the regulation.
A. Yes.
Q. Can you testify in your -- you state in your testimony that the release response requirements found in state regulations apply to Red Hill; is that correct?
A. Can you repeat that one more time?
Q. You say that the release response requirements found in the HAR apply at Red Hill.
A. Yes. Sorry, yes.
Q. And there is a release requirement that you have to clean up any spill of more than 25 gallons. Are you aware of that provision?
A. Yes.
Q. And can you explain to me how you do that, how do you clean up fuel that is spilled?

A. So for a tank -- if it spills into the tunnel we would use a spill pad to clean up the fuel. In the case of the Red Hill Tank 5 release, we negotiated with EPA and DOH and determined it would be better not to punch holes in the basalt rock to try to find the fuel.
Q. So you have a plan that if it spills into a lower tank you go in and you clean it up. What if there's another spill into the environment, what is your plan for how you clean that up?
A. That is not my department, sorry.
Q. Has the investigation and remediation of release report referenced in your testimony, has that been approved by the agency?
A. It is still pending; it's still in negotiations.
Q. So it's not an approved document?
A. The Section 6 or the Section 7?
Q. You can answer for both.
A. I think they're both pending review, actually.
Q. Okay. You state in your testimony that DOH and the EPA agreed, and you just referenced this, that penetrating the rock in order to locate the fuel could create pathways to the groundwater, so it was exempted from this requirement. Can you point us to the document that provides that approval?
A. Well, it was the Administrative Order of Consent

and the statement of work combined was the way forward. I'm not sure if we had it in writing from the State besides verbal when we just went into negotiations with them once we studied the release.

Q. Okay. So your thought is that that was just a verbal consultation and that was the basis for not having to meet this regulatory requirement?

A. I can't be for certain. I'd have to ask NAVFAC Hawaii that.

Q. And you talked about in your testimony that the tank tightness equipment is maintained by an outside contractor. Can you explain to me what kind of oversight the Navy has over that contractor?

A. So that contractor is contracted out through NAVFAC LANT, who has -- it's a centrally managed program funded by Defense Logistics Agency, and so the KO in NAVFAC LANT has oversight over that contractor.

Q. And do you know what kind of like quality assurances, QAQC they do on the contractor's work?

A. I would have to ask the KO.

Q. And are you aware of any place in the record for this proceeding where that information can be found?

A. I do not think so.

HEARING OFFICER CHANG: Could you define the KO?

THE WITNESS: Sorry, contracting officer of the contract.

HEARING OFFICER CHANG: Okay, thank you.

Q. (By Ms. Gannon) And turning now to the tanks closures that have been done, so Tanks 1 and 19 have been permanently closed; is that correct?

A. Yes.

Q. And do you know what the basis for that closure was?

A. So we hadn't used them and we gas-freed and inerted them for Tanks 1 and 19.

Q. And you indicate that the normal procedure under the State regulation for a closed tank is that they would either be removed or filled with a solid inert material; is that correct?

A. Yes.

Q. And has that been done?

A. No. So NAVFAC Hawaii worked with the DOH hearing officer, Richard Takaba, and determined that it would be impractical to either remove the tank, two tanks, because they're so large. The tank system, because the other 18 tanks were still in service, the structural integrity of all of those tanks were undetermined, so they decided we didn't have to remove it.

And then filling a 12-million-gallon tank with

inert material they also decided was costly, so they agreed to just keep it gas freed and provide the notification, which NAVFAC Hawaii did.

Q. And again, can you point me to the written approval of this approach that was provided by the Department of Health?

A. I do not have that. NAVFAC Hawaii has that. Raelynn Kishaba, the tank program manager for Hawaii has that.

Q. Do you know if that's in the record?

A. I do not know.

Q. I'm not aware, I have not seen that. That then there was a reference in your testimony that you submitted this closure plan in 2007, January of 2007 for 109 to DOH. Did DOH approve that closure plan? Again, was there a formal approval to you?

A. I'm not sure if it was formal, but an e-mail was received that said that they accepted the closure notification.

MS. GANNON: All right, I think that's all I had. I thank you for walking through this.

THE WITNESS: Thank you.

MR. FRANKEL: Can you give me two minutes?

HEARING OFFICER CHANG: Yes, no problem. We'll take a very short break.

MR. FRANKEL: Thank you.

(Off-the-record session.)

HEARING OFFICER CHANG: Okay, back on the record.

CROSS-EXAMINATION

BY MR. FRANKEL:

Q. Ms. Smith, you don't live on Oahu, do you?

A. I do not.

Q. And are you familiar with the requirements of Hawaii's public trust doctrine?

A. No.

Q. So you don't know if granting the permit would be consistent with Hawaii's public trust doctrine?

A. No.

Q. You are aware, however, that Hawaii's Underground Storage Tank Law is stricter than federal law?

A. Yes.

Q. Okay. Are you familiar with the fact that the Red Hill tanks leaked in 1948-'49?

A. I'm aware that we have documentation that states that, yes.

Q. How about are you aware of the leak in 1958 of 1500 gallons of fuel?

A. I don't have that. I haven't reviewed the release documentation in awhile.

Q. Are you aware of the 1971 release from Tank 1 that leaked more than 20,000 gallons of fuel?
A. I don't recall that, but it could --
Q. Okay. How about the 1980 leak from Tank 11 of 25,628 gallons of fuel, is that something you're familiar with?
A. No.
Q. Okay.
A. I didn't review the spill data before this call.
Q. Okay. Are you familiar that in 2002 the Navy confirmed the release of fuel of unknown quantities?
A. No.
Q. Okay. So if you knew all that, that might alter your answer about whether you thought there'd been a history of lots of spills or not, right?
A. Since I don't know the document sources for those, yes, I cannot confirm.
Q. Okay. Have you seen or heard any -- read anything about the sum total of the amount of fuel that's leaked since they were installed, a calculation that amounts to more than 178,000 gallons of fuel?
A. Yes, I'm aware of that.
Q. Do you have any reason to dispute it?
A. I cannot.
Q. Okay. So I want to go through some of the rules

that we just talked about, see if we can -- I'm going to try bring up the sections of the rules, see if I understood correctly. So we have some sections to the -- I'm going first through, make sure I understand, so this is a part of HAR 11.280.1-20, and I believe that's Exhibit N-56, the Navy's provided the rules, a community copy of the rules.

So you said that section B, Subsection (b) of this section, which requires that the tanks be protected from corrosion, you said that the Red Hill tanks fulfill Subsection (3), the tank is constructed of steel and clad -- clad or jacketed with a noncorrodible material, right? That's the provision?

A. Yes.

Q. And when we go down to 11-280.1-26, paragraph (c), and it says the following codes of practice may be used to comply with Section 11-280.1-20(b)(3), the section we just referred to, you said you do not know which of these four categories the Navy's tanks comply with, correct?

A. Yes. I would also add that it says "may be used" so they may not have to be required. So if it's with the concrete, it may not be in this 1 through 4.

Q. Is there any other code or practice out there that you know of that would or has accepted a concrete

cladding as a safe method of protecting tanks from corrosion? Are there any codes of practices like that?

A. I'm not sure.

Q. Okay.

A. I did not research that since in the preamble and discussing it with EPA, they confirmed that concrete's a noncorrodible material, so I did not do further investigation.

Q. Okay, I'll leave it at that. Okay, let's go to the next section that was interesting we talked about. 11-280.1-43 about tank tightness.

Actually, I'll go down here first. Sorry, dash 33 first. So you read this section. It requires that prior to the return of use of a repaired underground storage tank system, any repaired underground storage tanks must pass a tank tightness test in accordance with Section 43(3), right?

A. Yes.

Q. And if we look at Section 43(3), it requires tank testing capable of detecting a one-tenth of a gallon per hour leak rate from any portion of the tank, right?

A. Yes.

Q. And you're not aware of any Navy test that has fulfilled this requirement?

A. No.

Q. And no means you're not aware, correct?
A. No, I'm not aware, exactly.
Q. Let me stop sharing, and let's talk about the alternative of relocating the fuel that's in the underground storage tanks. So the Navy replaced the tanks at Point Loma, correct?
A. Yes.
Q. That's in San Diego?
A. Yes.
Q. Those tanks had leaked?
A. Yes.
Q. And new tanks were built above ground?
A. Yes.
Q. The Navy also replaced the tanks at Naval Base Kitsap?
A. No. There's currently a proposal.
Q. So they're replacing, they're in the process of replacing them?
A. Some of them.
Q. And that's in Washington state?
A. Yes.
Q. And those tanks face seismic risks.
A. Yes. The ones they are replacing are on a fault line.
Q. And the new tanks are being built above ground?

A. Yes, away from the fault line.

MR. FRANKEL: No further questions.

HEARING OFFICER CHANG: All right. Mr. Paige, any questions?

MR. PAIGE: No questions.

HEARING OFFICER CHANG: Any redirect?

MS. RIDDLE: We'd like to request a short break before redirect.

HEARING OFFICER CHANG: How much time would you like?

MS. RIDDLE: Ten minutes, please.

HEARING OFFICER CHANG: Okay. Let's take a ten-minute recess.

MS. RIDDLE: Thank you.

(A recess was taken.)

HEARING OFFICER CHANG: Are we ready to resume? Ms. Riddle?

MS. RIDDLE: Yes. We do not have any redirect at this time, but would you like to ask Ms. Smith any questions?

HEARING OFFICER CHANG: I have a couple areas.

EXAMINATION

BY HEARING OFFICER CHANG:

Q. Ms. Smith, I think I understand your statement, but I want to confirm and be clear about it. Is this

current pending application for a permit for the Red Hill Facility the first time that the Navy has been required to apply for such permit?

A. Yes, that is my understanding.

Q. And is it because of the history of the regulations coming into effect in, what, 2018?

A. Yes. With the field-constructed tanks no longer being deferred, and the airport hydrant system and the tanks all being together as one system, yes.

HEARING OFFICER CHANG: Okay. I have a question for counsels for the Navy. The Navy had earlier indicated that one of the issues in the case was whether or not the Navy was even subject to the regulations. Is that no longer an issue?

MS. RIDDLE: That is something that we would like to reserve our rights on.

HEARING OFFICER CHANG: Okay. I have that noted as an issue, so we'll hear more then when you're ready to add more to that.

Q. And I wanted to ask Ms. Smith if you could explain a little further a statement in your testimony. You were referring on pages 4 and 5 of your testimony to applications for approval that is pending. Can you kind of explain that generally to me?

A. That we're still -- oh, that DOH gave us

continued operations while the permit application is pending? I'm sorry, I don't remember 4 and 5.

Q. Okay. I'll read the section on page 5 of your testimony. State of Hawaii as updated its USC regulations to incorporate the revised 2015 federal requirements. The State has applied for formal approval of its revised regulations, but they have not yet been approved per the EPA's State UST programs, page -- and you reference an Exhibit N-57.

I'm not understanding the totality of that.

A. Okay. So on 40 CFR 280 is the federal regulations, and then 40 CFR 281 allows for states to submit to the EPA to be considered the regulator on behalf of the federal government for the underground storage tank systems. So they have to submit their revised regulations that mirror or are more stringent than the 40 CFR 280 that was promulgated in 2015.

Q. Would it be reasonable to expect that those Hawaii proposed regulations would be approved by EPA because they are stricter than federal regulations?

A. Yes, I presume they will be, but I do not want to speak on behalf of UST office.

Q. Certainly. Now, you were asked some questions, and I'm a little unclear about the context. We were talking about release requirements for quantities of

spills, and then there was some testimony about the matter is in negotiations and is pending with the EPA and DOH. Is that a different topic from what we just talked about, this federal reg and Hawaii regs?

A. To separate things. So those, the pages 4 and 5 are specifically DOH getting approval from EPA for the HAR. The other one with the spill, so the January 2014 fuel spill, those we are in -- we entered negotiations with EPA and DOH to do an Administrative Order of Consent. Instead of meeting the previous HAR requirements for finding the fuel, we came up with an Administrative Order of Consent to meet the investigation piece of it. And so sections -- in the statement of work, Section 6 and 7, are specifically to meet the reporting or to -- instead of finding the fuel now.

Q. And generally, then, you're saying the AOC is the alternate process that has been agreed upon between the EPA, Department of Health, and the Navy as to what needs to be done because of the 2014 release?

A. Yes. To meet 5 and 6.

Q. To meet what?

A. To meet the subchapters 5 and 6.

Q. Okay. Because I'm not completely familiar with that, what do 5 and 6 deal with?

A. Those are the finding the fuel, cleaning up the fuel, protecting the environment, and then investigating to make sure it's all cleaned up, and reporting.

HEARING OFFICER CHANG: All right. I have no other questions. Does anyone else have any follow-up questions? Hearing none, are we done then with Ms. Smith?

MS. GANNON: We are. Thank you.

HEARING OFFICER CHANG: Thank you very much, Ms. Smith.

THE WITNESS: Thank you.

(Witness excused.)

HEARING OFFICER CHANG: Okay. Navy's next witness? Or do we with want a break? It's been about an hour.

MR. MCKAY: We can probably appreciate a break to get our witness up and running. Fifteen minutes?

HEARING OFFICER CHANG: All right, we will resume in 15 minutes.

(A recess was taken.)

HEARING OFFICER CHANG: We are ready to go back on the record. Mr. Floyd, at this time may I ask you to take your oath, and then the questionings will begin.

Whereupon,

JOHN FLOYD,

called as a witness on behalf of the United States Navy, being first duly sworn by the court reporter, was examined and testified as follows:

HEARING OFFICER CHANG: All right. Ms. Minott, are you conducting the exam?

MS. MINOTT: Yes, I will be.

Mr. Floyd is currently the Deputy Director here at the Regional Fuel Department for Naval Supply System Command for the fleet Logistics Center, Pearl Harbor.

Mr. Floyd here, he manages all access to fuel operations, to include fuel receipt, storage, delivery, quality surveillance, and inventory management.

DIRECT EXAMINATION

BY MS. MINOTT:

Q. Mr. Floyd, are there any corrections that you would like to make to your direct or supplemental testimony?

A. Yes. I would like to make one correction. I'm not sure what question it was, but I believe it was related to the TIRM. There is a passage, a sentence in there that states that we are double-walling the nozzle piping. That is not correct. That is a proposed TUA implementation plan, tank upgrade alternative, but we're

not there yet. Thank you.

MS. MINOTT: Thank you. We now offer Mr. Floyd for cross-examination.

HEARING OFFICER CHANG: All right.

MR. BROWN: You have David Brown here. Can you guys hear me okay?

HEARING OFFICER CHANG: Yes.

MR. BROWN: I will be conducting the examination for the Board of Water Supply.

THE WITNESS: I'm sorry, I can't hear you. I would like a headset, please.

HEARING OFFICER CHANG: Let's go off record for a moment, let's take care of that.

(Off-the-record session.)

HEARING OFFICER CHANG: Let's go on the record. Mr. Brown?

CROSS-EXAMINATION

BY MR. BROWN:

Q. Good afternoon, and thank you for joining us, Mr. Floyd. By name is David Brown, I represent the Board of Water Supply. I have some questions for you today about the written testimony you submitted in this matter. I just want to make sure before I start, you've got your headset on okay and you can hear me?

A. Yes, I do.

Q. All right. If you have any problems with that, let's me know, we can take a break.
A. Okay.
Q. So Mr. Floyd, you testified that you ensure completion of all required maintenance and repair work at the Red Hill Facility, including preventative and corrective breakdown and outsourced contractor maintenance; is that correct?
A. That's correct.
Q. So are you familiar with the repair work performed at Red Hill to address the Tank 5 fuel release that was reported in January 2014?
A. That occurred before my tour started, but however, I am familiar with it. I've read the records, and I have been managing the facility and responsible for making corrections since then, yes.
Q. Can you tell me what was done immediately after the Tank 5 fuel release in the next several months with respect to that tank?
A. So immediately the tank was drained down and drained empty. The next step was that the current contractor, Willbros, came in and they completed warranty work. We had a second, a third-party come in, they proved up some of the Willbros repairs.
After Willbros completed all of their warranty

work, we, that means NAVSUP, NAVFAC, and DLA, and Navy Region Hawaii, we were not -- we did not feel comfortable putting the tank back in service at that time, and we ordered another complete inspection of the tank.

Q. And why weren't you comfortable putting it back in service at that time?

A. Well, Willbros had initially failed us. There were a lot of problems with the craftsmanship of their work, the QA, the QC process. And because of everything that was at stake, leadership decided that we'd be better off completing another complete inspection of the tank.

Q. And was there ever a search for the source of the leak?

A. I'm sorry, sir, I don't understand your question.

Q. Sure. Was there ever a search for the number of different points within that tank where fuel was released with respect to the Tank 5 release that was reported in January 2014?

A. So, would not call it a search, however, when we went back and we did QA or trued up the repairs made, we found a number of faulty repairs that most likely contributed to the source of the leak.

Q. Does the Navy know from how many different places

in Tank No. 5 the fuel was released between December and January 2014? Sorry, December 2013 and January 2014?
A. I am certain there's someone that is in the repair organization, most likely EXWC, Expeditionary Warfare Command, that are responsible, are the actual POL SMEs responsible for the tank repairs. They may have that information. I do not have that information. I've heard that it could be, I think maybe 16, however, I'm not sure.
Q. Okay. Do you know which documents would record exactly how many different places in Tank 5 that the fuel release occurred from?
A. No, I don't.
Q. Do you know if that document would even have been in the record for this proceeding?
A. If it was memorialized in a document, that would certainly be the post-inspection report that documented everything that was found and all of the repairs made.
Q. Okay. You had mentioned Willbros. I'd like to bring a document up for you, so if you give me one second while I share my screen. Let me know, Mr. Floyd, if you can see my screen.
A. Yes, I can see your screen.
Q. So can you see this document? This is Navy Exhibit No. 7, with a Bates stamp here Navy 0000517. Do

you know what this document is?
A. No, I don't. Could you continue to scroll down?
Q. Sure. This document, it's on Navy letterhead, correct?
A. Yes, it is.
Q. And it's addressed to Willbros Government Services?
A. Yes.
Q. Is that the same tank contractor you were speaking about earlier?
A. Yes.
Q. And this says for subject line, Contract No. N62583. I'll omit the rest of the number there, but it says: Clean, inspect, repair Tanks 5 and 17 Red Hill, Pearl Harbor, Hawaii; is that right?
A. Yes.
Q. Can you take a look at the first three bullets underneath the language right here by my cursor, it says preliminary investigation has provided the following information. Can you read those first three bullets for me, please?
A. Yes. The operators of the tank reported a loss of product during the initial filling operations, and the gauging logs show a loss of product over the 30-day period. Bullet one.

Bullet two: There was a reappearance of fuel on the lower tunnel wall after the tank was refueled.

Bullet three: The monitoring well nearest to Tank 5 has shown a signature spike of petroleum products.

Q. Do you agree with those statements, Mr. Floyd?

A. Yes.

Q. So do you know what was meant by a reappearance of fuel on the lower tunnel after the tank was refueled?

A. No, I don't.

Q. Is it possible that Tank 5 had released before in the past and that there was fuel on the wall in the lower access tunnel?

A. I have no knowledge of that occurrence.

Q. And do you have any reason to believe that the monitoring well nearest to Tank 5 didn't show a spike in fuel petroleum products at that time?

A. My recollection of the monitoring logs for Monitoring Well No. 2 is that it did show a spike after the fill of Tank 5.

Q. Okay, thank you. Do you know who wrote this letter?

A. No, I don't.

Q. The information is redacted.

A. No, I don't.

Q. Okay. Thank you, Mr. Floyd. The Navy identified some lessons learned from the fuel release from Tank 5; is that correct?
A. That's correct.
Q. And Commander Whittle earlier today testified that the Navy performed a root cause analysis, or RCA, to identify those lessons. Are you familiar with that root cause analysis?
A. No, I'm not.
Q. Why wouldn't the Navy perform a root cause analysis to determine why the Tank 5 release happened?
A. I can't answer that without speculating.
Q. Okay. Lets change gears real quick. I'd like to ask you a few questions about your testimony concerning layers of protection. So you indicated that there are three layers of protection related to releases that are implemented in Red Hill, and those are prevention, detection, and mitigation; is that right?
A. That's correct.
Q. And in your written testimony you spend about 20 pages discussing these different methods that are implemented at Red Hill; does that sound about right to you?
A. Yes.
Q. You only devote a page and a half of your

testimony to prevention, and one sentence to mitigation. The other 18 pages discuss the detection of releases. Why is there so much focus on detection of releases rather than prevention and mitigation?

A. So prevention is fairly straightforward. How do we prevent it? With our enhanced maintenance procedures, with our overfill protection system, and our operational procedures. So that's pretty straightforward, black and white.

Detection, there's a bit more involved with detection. As we discussed, I walked through the system of systems, so certainly prevention is the most important aspect, right, we want to keep it in the tanks. But when you look at my testimony, you read my testimony, you see how we operate the facilities, that's pretty straightforward. The detection just simply required a bit more explanation.

Q. Okay, that's fair. Mr. Floyd, you testified that prevention of releases is accomplished through the Tank Inspection, Repair, and Maintenance, TIRM process. The Navy relies upon that T-I-R-M, or I can call TIRM process, to prevent fuel releases; is that correct?

A. We rely upon the TIRM process to ensure the hydraulic integrity of the tank to prevent fuel releases.

Q. So the hydraulic integrity of the tank is necessary to prevent releases?
A. Certainly important to that, yes.
Q. Are you aware of the destructive testing that was performed by the Navy on Tank 14 in June of 2018?
A. Yes. I was at periphery of that. I'm aware that we took 10 coupons out of Tank 14 to validate our nondestructive inspection methods.
Q. And did you view those steel liner samples that were removed from Tank 14?
A. Yes, I did.
Q. Okay. I'd like to bring up another exhibit to show you. Bear with me as I work this technology. Can you see my screen all right, Mr. Floyd?
A. Yes, I can. Yes.
Q. This is Navy Exhibit 32, the IMR Test Lab report on Destructive Analysis of 10 Steel Coupons Removed From the Red Hill Storage Tank No. 14. Are you familiar with this document, Mr. Floyd?
A. Somewhat, yes.
Q. Somewhat. I'd like you to take a look at a few of the pages of this document and ask you some questions about that. So I have on the screen -- and tell me if you need me to blow it up a little bit more -- is Figure 1 from the IMR Test Lab report. Do you know what this

is an image of?
A. That is one of the coupons that was removed from Tank 14. I think we're looking at the back side of it.
Q. Correct, the back side of Coupon 1. What is your understanding of the brown substance on the back side of this steel liner sample?
A. I don't know what it is. So, one, I'd like to qualify myself. I'm not a metallurgist or a material specialist. We hired -- I'm sorry, we brought in another Navy organization to manage this process, it's Navy Expeditionary Warfare Command, and they're corrosion experts, or their NIST experts are the ones that manage this project. So my area, again, my area of expertise is in the operations and maintenance of the facility. I did not delve deep into this process because we have specialists that do this for us.
Q. Certainly. And but to be able to understand, you know, how to maintain this as asset, these tanks, wouldn't it be important for purposes of your role at the facility to understand the types of threats to tank integrity?
A. Yes.
Q. And so wouldn't understanding, and I think you mentioned the term corrosion, be important for purposes of maintaining, repairing, and ensuring the integrity of

the Red Hill tanks?
A. Yes.
Q. So wouldn't it be something you would be interested in to understand what was coming off of the back side of these coupons?
A. Yes.
Q. So do you have any reason to believe that what we're looking at here is not corroded?
A. No.
HEARING OFFICER CHANG: Excuse me, Mr. Brown, I'm sorry to interrupt you, but the image says it's the interior surface. Can we clarify that?
MR. BROWN: Sure. This one right here, and actually it's -- I think that this may just be a typo on this document.
HEARING OFFICER CHANG: Okay.
MR. BROWN: Because these are certainly --
HEARING OFFICER CHANG: They have it reversed then, right?
MR. BROWN: Yeah.
HEARING OFFICER CHANG: Okay, I understand.
Q. (By Mr. Brown) And let me pull up a different document then. Here we go. This one is a little bit smaller, but I can blow it up for you. So this is Navy Exhibit 27. It is the field sample notes taken from the

coupon sampling from Tank 14. As you can see, Mr. Floyd, the date of this, at least Coupon No. 1 says Wednesday, June 20th of 2018, so that's consistent with your understanding of when the coupons were removed from Tank 14?

A. Yes.

Q. And then there's a quite a bit of information in here on the specifics of the coupon and the visual examination under the drawing here. And I'll go down, this is the same coupon that we just looked at, and actually let me scroll up for you, and this one actually makes it clear that this is the exterior on the left and the interior on the right, and we can see that the other document was simply in reverse. So let me make this a little bit bigger, same photos.

So back to my initial question, do you have any reason to believe that this is not corrosion that's afflicting the exterior of Red Hill Tank No. 14 at Coupon No. 1?

A. No.

Q. And we scroll down, this is Coupon No. 2. Do you have any reason to believe that the brown substances on this coupon are not corrosion within the exterior on the back side of Coupon No. 2, Tank No. 14?

A. No.

Q. And now we have Coupon No. 3. This one the image is not as good, but there is an identification here -- and let me scroll out for you a little bit -- does it indicate that for Coupon 3 there's the presence of corrosion?
A. Yes.
Q. How about for Coupon No. 4 that we're looking at right now?
A. Yes.
Q. This is Coupon No. 5 -- or actually 6. My apologies for scrolling too fast. Does the document indicate there's presence of corrosion?
A. Yes, small.
Q. And this is Coupon No. 7. Does it indicate there's the presence of corrosion?
A. Yes.
Q. We have an image of Coupon No. 8 here. Same question, do we have presence of corrosion?
A. Yes.
Q. And then Coupon No. 10, presence of corrosion?
A. Yes, small.
Q. This is Coupon A1, which I understand stands for the alternate coupon selection number 1 that was actually removed. Was there presence of corrosion on this coupon.

A. Yes.
Q. And finally, Coupon No. A2, was there presence of corrosion?
A. Yes, general.
Q. Thank you, Mr. Floyd. So we just walked through the 10 coupon samples. Every single one indicated the presence of corrosion; is that correct?
A. That's correct.
Q. Were you surprised by the amount of corrosion present on the back side of the steel liner samples?
A. No, I was not. The coupon study was done in accordance with Section 5 of the AOC, and the purpose of that study was to validate the inspection procedures that had already documented indications that were on the back side. So this basically validated what our inspection procedures -- what our inspection had already discovered.
Q. And Mr. Floyd, weren't the coupon selections chosen to represent areas where there would be no corrosion as well?
A. I'm not sure of that. I can't answer that, sorry.
Q. These steel liner samples were sent to a Navy laboratory and underwent laboratory testing and measurements, correct?

A. I'm not sure if it was a Navy laboratory, but it was certainly sent to a laboratory for analysis.
Q. And what were the results of that analysis?
A. I'm not familiar with that.
Q. Okay. Do you know if the Navy submitted a report on the destructive testing results?
A. Yes, I believe so.
Q. And what was your understanding of what that report said?
A. So I cannot recall the report simply because that is something more in the repair arena with NAVFAC, specifically NAVFAC EXWC. So that's the organizations that was responsible for that section of the AOC that was responsible, had the lead on this project. So no, I'm not familiar with that report.
Q. Let's take a look at what the Department of Health and the U.S. EPA said about that report. Excuse me, I'll share my screen. Okay. Do you see my screen, Mr. Floyd?
A. Yes.
Q. This is a letter from U.S. EPA and the State of Hawaii, Department of Health, dated July 7, 2020, addressed to Captain Marc Delao regarding the response to the Navy letter acknowledging the agency disapproval with Navy's corrosion and metal fatigue practices and

destructive testing results report.

And in this letter, U.S. EPA and the Department of Health provide several statements, but I'd like to direct you to this statement, the first full paragraph where my pointer is going, and says: The regulatory agencies do not concur that the Navy and DLA's destructive testing efforts have demonstrated that the Navy's practices are sound. It goes on to say that there will be work performed under the AOC in Section 5.4.

What's your understanding of AOC Section 5.4?

A. I'm not familiar with that section of the AOC.

Q. Okay. Let me pull that up. Do you see my screen, Mr. Floyd?

A. Yes.

Q. Okay. So this is the Administrative Order on Consent, statement of work which is Attachment A thereto, Exhibit B-82, and let's go down to the Section 5.4. So Section 5.4 states: If the parties determine that the results of the previous deliverables in this section indicate the need for evaluation and implementation of potential changes in practices to control corrosion or for metal fatigue, the Navy and DLA shall within 60 days from the Regulatory Agencies' approval of the Destructive Testing Results Report,

schedule and hold a scoping meeting to be attended by the parties for the purpose of developing appropriate modifications the scopes of work and timelines in Section 2 and/or Section 3.

Are you familiar with Section 2 of the AOC, Mr. Floyd?

A. Yes. Section 2 is the TIRM, Tank Inspection, Repair, and Maintenance.

Q. So we just reviewed a letter from the Department of Health and U.S. EPA which stated Section 5.4 of the AOC is supposed to be implemented, and Section 5.4 which we just read states that it is prepared for developing appropriate modifications for Tank Inspection, Repair, and Maintenance.

What is the current status of the Navy's TIRM process?

A. Status? No, I don't know. That is a question that's probably better asked to our Red Hill program manager. I think he's going to be on sometime during that process. He is the one that tracks the deliverables. The TIRM to the best of my knowledge, I believe, is a complete report, and we have already began to implement the improvements from the TIRM.

Q. So this document, or this section of the AOC which we just discussed as being implemented, in order

to prepare appropriate modifications to the Tank Inspection, Repair, and Maintenance process is ongoing, but as the individual responsible for ensuring the completion of all required maintenance and repair work, you're not certain where TIRM stands right now?

A. No, I'm not. So my understanding is that it's complete, however, we are continuing, and we will continue to make improvements when and wherever we can to our Tank Inspection, Repair, and Maintenance procedures.

So you're asking me something now about the destructive testing. As I stated, I am not an expert in this field. This is a section of the AOC that is managed by another organization. So where do I fall in relation to this? At the end of a tank CIR, I will get from the Tank Repair and NAVFAC what is called a suitability for service, and that is what I look for. So I do not manage every aspect of the AOC, that's simply not my job. There's some items I'm more familiar than others, certainly TIRM, involved with TUA, involved with leak detection. You get down to Section 6 and 7, the environmental remediation freight and transport, I'm not involved with that to a great extent, other than knowing that that is something that's happening in the background.

Q. So let's move on to something that you did testify about specifically, and that's the decommissioning of nozzles. What are the small nozzles that are being decommissioned?
A. So these are the smaller pipes that we cannot put a human into in order to inspect it, or to coat it, or to make repairs. So to buy down risk, we are decommissioning the smaller nozzles or the smaller pipes leading into the tanks. We re-manifold the piping outside of the tanks, so now we can direct one, two, three different products through one larger line, again, that can be internally inspected, repaired and coated.
Q. Okay. And has the Navy decommissioned all the Red Hill tanks' nozzles, the small nozzles that are too small for humans to inspect?
A. We have not currently, we've only done one, that is Tank 5. Of the nozzle modifications are part of the CIR, or the Clean, Inspect, Repair process, so as each tank goes through the Clean, Inspect, Repair process that modification will take place.
Q. How long does the Navy anticipate that it will take to decommission all the small nozzles on the Red Hill tanks?
A. Currently our Clean, Inspect, Repair process for the current cycle of tanks runs out to 2032.

Q. And so just so that I'm clear, and I want to make sure I understand that, when you say the current cycle, in 2032 you will have clean, inspect, and repaired all the tanks, and decommissioned all the small nozzles?
A. All of the eighteen active tanks. 2032 is the start of the project for the last two tanks.
Q. And when will that be completed?
A. It typically take about three years, however, we're -- as we complete more tanks, we've been able to develop better processes, better synergies, and we have been able to move the completion dates back, or what's the word, or increase the velocity in which we can complete the repairs.
Q. So the 2035 date you just mentioned is more of an aspirational date, right? That's not based on the current or historical pattern or time that it's taken for tanks to go through things like repair, correct?
A. No, I didn't say 2035.
Q. What did you say?
A. 2032.
Q. I thought you said that's when it would start, and then it would end --
A. That's our start, yes. That's when it will start, 2032. We hope that we can get it done within three years, maybe less, I don't know.

Q. But that's not the timing that it's historically been done in, correct? Most tanks have taken a lot longer to be cleaned and inspected?
A. Yes.
Q. Okay. I had a couple of questions about some testimony you had concerning inspection at Red Hill that took place in 2016. I believe there's also a reference in the Navy's opening statement. That testimony states that an inspection report to U.S. EPA dated in June of 2017 indicated that the Red Hill Facility met then current requirements; is that correct?
A. Yes. I believe it stated that we met or exceeded industry standards.
Q. And the current regulations, State regulations that the tanks operate under were not applicable until July 15, 2018; is that right?
A. That's correct.
Q. So that inspection report was issued before those regulations applied to the Red Hill tanks, right?
A. Correct.
Q. So it doesn't state in that document anywhere that the Red Hill Facility or the Red Hill tanks meet current state law requirements, does it?
A. So it met the overarching requirement, which I believe is 40 CFR Part 112, and I believe that is what

the State law was written from. I think the term is used that the State law can adopt 40 CFR Part 112 or make it more stringent.

Q. Right. And if it's more stringent, that may mean more than what federal law requires, correct?

A. That's correct.

Q. Mr. Floyd, you also make a statement in your testimony in which you attribute to Powers Engineering Inspection, or PEI, the statement about the likelihood of fuel staying between the steel liner and concrete shell, but you're careful in your testimony not to attribute that comment to the Navy.

We heard earlier from Commander Whittle that concrete is not a containment mechanism and that fuel gets into the subsurface. We also heard from you earlier today that you have no reason to believe that there wasn't a spike in the groundwater monitoring well after the Tank 5 release.

It's not your position personally or the Navy's position that all fuel that leaked through the Red Hill tank fuel liner would stay between the concrete outer shell, is it?

A. Sorry, could you ask that question again?

Q. Sure. Do you think that all of the fuel that's released from the Red Hill tank steel liners is going to

stay within the concrete?
A. I have no idea. I stated what the report stated. That was a specialist that was hired by the EPA to come out and assess the facility. He's a very reputable tank inspector, so I accept what he states.
Q. Was there a project to try to locate the fuel at Red Hill after the Tank 5 release in between the steel liner and the concrete?
A. I'm not aware of such protect.
Q. You're not aware of such a project?
A. Yes.
Q. So you don't know if there was any at all behind the steel liner?
A. No, I don't. Other than what is being currently being worked under Section 6 and 7 of the AOC, as I stated earlier, that is being worked by our environmental engineers and geologists, and I'm not very familiar with their body of work.
Q. I'd like to take a look at another exhibit. Do you see my screen, Mr. Floyd?
A. Yes.
Q. Okay. This is the Naval Audit Service Audit Report for the Red Hill Facility from 2010. Are you familiar with this report?
A. I've reviewed it, yes.

Q. Are you familiar with the findings and recommendations?
A. Some of them, yes.
Q. And this is a report prepared by the Navy, or on its behalf, by some department of the Navy or the Department of the Defense; is that correct?
A. Yes.
Q. Do you have any reason to believe that the conclusions in this report are not true?
A. No.
Q. And it says in here that groundwater contamination exists around the underground storage tanks at Red Hill, RH, because of irregular maintenance and insufficient inspection over the life of the fuel tanks. For example, 6 of the 18 active Red Hill tanks have had no recorded inspection of maintenance efforts for 27 to as much as 46 years. Additionally, we determined that the inspection and maintenance schedule in place at the time of our site visits was infeasible because fuel requirements and time constraints limited the rate at which the work could be performed.

Is this statement at all consistent with a conclusion that the Red Hill tanks can somehow withhold fuel and be fuel tight and not release into the environment?

A. I'm sorry, could you repeat that question again, please?
Q. Sure. If there's a release outside of the steel liner, has it gotten into the environment before?
A. So we have had spikes in our soil vapor monitoring. We just discussed Monitoring Well 2 just outside of Tank 5, all right, that had a spike, all right, indicating a release to the environment. Our Groundwater Protection Plan, groundwater monitoring, I believe, has detected constituents of fuel in the past. Not sure if there's been any detection of free floating product. That is a question best directed to our environmental specialists.
Q. Okay. Thank you, Mr. Floyd. I'd like you to take a look at one more exhibit. And Mr. Floyd, you've been in the Red Hill Facility, right?
A. Yes, I have.
Q. And have you been -- you toured the entire facility, right?
A. Yes.
Q. That includes the lower access tunnel?
A. Yes.
Q. And the lower access tunnel provides a pathway to travel to and from the tanks below the tanks, right?
A. Yes.

Q. And when was the last time you were in the lower access tunnel?
A. Friday.
Q. Friday. Branching off the lower access tunnel are access points beneath each one of the tanks, correct?
A. Yes.
Q. And at those access points there are pipes for each tank that are used to distribute fuel through the facility?
A. Yes.
Q. And those are where the nozzles are located?
A. So the nozzles are at the base of each tank, actually at the concrete plug of each tank, so the nozzles, that is considered the piping upstream of the last valve, isolation valve and the piping as it penetrates the tank.
Q. So, sorry, just so that I'm clear, the nozzles are in the area underneath each tank where the piping comes off of the tanks, right?
A. Yes.
Q. I'd like to show you Exhibit B-7. Can you see my screen?
A. Yes.
Q. Okay. This is a newspaper article from the

Star-Advertiser, dated June 22nd, 2014, and there's an image here. Are you familiar with this imagine?

A. Oh my. It's a plug at the bottom of a Red Hill tank showing the skin valves. I cannot tell you what tank it is.

Q. Sure. I'll read the caption for you. It says: A close-up of the wet spot in the concrete below Tank 5 at the Red Hill Underground Fuel Storage Facility. The wet material matched the jet fuel that was emptied from Tank 5.

Do you have any reason to believe that this is not a photo taken in 2014 in the vicinity of Tank 5 that shows fuel seeping through into the lower access tunnel?

A. No reason to believe it's not.

Q. And you were in the lower access tunnel last Friday, right?

A. Yes.

Q. When you went to the lower access tunnel did you come by the area where Tank 5 is located where this point is?

A. Yes.

Q. And isn't there still visible staining there beneath Tank 5?

A. Yes.

Q. So how is it in your testimony then that you

state there was an inspection in 2020 and that no fuel leaks or visible staining was found at any of the operational Red Hill storage tanks/surge tanks above ground, Hickam tanks, hydrants or any pipelines?

A. So to be clear, there was no -- there were no fuel leaks discovered during that inspection. That is a stain. If it was stained in 2014, it can reasonably be expected to be still stained in 2020, 2021. So we did not go back and repaint that area.

Q. So it is not a correct statement to say there is no visible staining of fuel around any of the operational Red Hill storage tanks.

A. So the correct statement is that there was no evidence of any fuel leaks during -- active fuel leaks during the 2020 Department of Health inspection.

Q. But there is staining, and there is visible staining, and it's still there.

A. Yes. So that staining from Tank 5 has been previously reported, very well documented. It's in the Star-Advertiser, it shows up on TV news. That is something that we do not refute at all.

MR. BROWN: Okay. I appreciate your time, Mr. Floyd. I have no further questions.

THE WITNESS: Thank you, sir.

HEARING OFFICER CHANG: Mr. Frankel, are you

next?

MR. FRANKEL: Yes.

CROSS-EXAMINATION

BY MR. FRANKEL:

Q. Deputy Director Floyd, you were just asked about that photo, and I'm curious, you know, how much concrete would that fuel have had to have traveled through to stain that wall?

A. I believe the tank sits on a 20-foot reinforced concrete plug.

Q. So that fuel that stained the wall traveled through 20 feet of concrete to get there?

A. Yeah. I would surmise that, yes.

Q. Okay, thank you. Now, on page 14 of your testimony you talk about necessary steps to prevent releases. I want to talk about three of those steps that you talked about in your testimony, and if any of these are not your area, if there's another witness who should talk about it, let me know and we'll ask question of him or her.

But first, one step you talk about is recoating the tank interior. You know what I'm talking about?

A. Yes.

Q. As to prevent corrosion, to help prevent corrosion, correct?

A. Yes.
Q. And it's an important protective measure?
A. Yes.
Q. How many of the 18 tanks have been recoated with a polysulfide?
A. So to be clear, under the current TIRM we recoat the lower dome and the extension ring, and certain repairs that were made to the tanks.
Q. So that doesn't include the barrel then?
A. No, it does not.
Q. Okay. And how many of the upper part of the tanks have been recoated with a polysulfide as of today?
A. So Tank 5 we coated the lower dome and certain patch plate repairs. Tank 5, of course, that contract was awarded before our TIRM. Under the current constructive repair we're again coating that lower dome, I believe, what, 50 to 55 feet, first 50 to 55 feet of the tank and the extension ring.
Q. Okay. So are you telling me that Tank 5 is the only one that this important protective measure has been implemented on so far?
A. Tank 5 we did not coat the extension ring. The tanks that are currently, that are currently undergoing repairs under the new TIRM will receive those repairs.
Q. And so that means there are 14 tanks currently in

operations -- in operation that have not been recoated with the polysulfide; is that right?
A. So to be clear, we do not do the coatings until we take the tanks down for clean, inspect and repair. So the tanks that are currently undergoing the Clean, Inspect, Repair, they will receive this new coating, this new addition to our repair tanks. So the tanks that are in service, right, you're correct, those tanks have not undergone their maintenance cycle yet, so you're correct, we have not done that.
Q. Okay. So there are 14 tanks that are operating that have not been recoated, right?
A. So the term recoating, again, we recoat the lower dome, and the new process is that we're coating the extension ring. So if a tank has not undergone the maintenance process, you're correct, it has not. So if Tank 14 -- so we currently have four tanks under going the maintenance process now, so yes, that will be 14.
Q. Okay. So those 14 tanks remain at risk? I mean if the polysulfide is an attempt to reduce the risk, these 14 tanks that are still in operation, the risk remains?
A. Yes.
Q. Okay. Another protective measure you mentioned is decommissioning smaller nozzles, and Mr. Brown talked

to you a little bit about that, and those smaller nozzles are at the bottom of the tank, right?
A. Yes.
Q. And decommissioning the nozzles reduces risks?
A. Yes.
Q. And there are 14 tanks still have the smaller nozzles attached to them, correct?
A. That's correct.
Q. So the risk remains for those 14 tanks?
A. So, yes, we cannot take them out of service until we complete their maintenance cycle.
Q. Okay. So --
A. Of course, we continue to work the mitigation for that risk, and those nozzles, they're part, they're actually an extension of the tank, so what we do now is when we do tank tightness testing, semiannual tank tightness testing, that's the portion of the tank that undergoes that tank tightness testing.
Q. So I don't know if you know this, but this permit that you're applying for is valid for only up to five years. Do you know that?
A. Yes.
Q. So maybe you're a successor, maybe you'll be there in five years, maybe I'll be here five years, let's say you succeed and get this permit granted from

the Department of Health. You'll come back in five years, and let's say I come back and talk to you in 2026, January 2026. What I want to know, how many of these nozzles you've replaced by the time this permit is over. And I want to hear a commitment from you, how many nozzles do you think are going to be replaced by, let's say five years from now, 2026?

A. Doing math. So I do not have my CIR schedules in front of me. Certainly the four tanks that are currently undergoing the Clean, Inspect, Repair, and we will probably, late -- mid-2021 we'll induct another tank. Five, at least six.

Q. So the vast majority of the tanks will still have these small nozzles that pose a risk.

A. Yes.

Q. Okay. A third protective measure that you've talked about is the tank inspection, and sometimes you guys refer to it as a TIRM, and sometimes you refer to it as a CIR; is that right?

A. That's correct.

Q. And these inspections are conducted pursuant to API Standard 653, right?

A. Modified, yes.

Q. Modified. And that standard, as modified, provides the requirements for the frequency of

inspection of these -- of, well, as unmodified is for above ground fuel storage, correct?
A. Yes.
Q. But you folks have modified it because it's underground, right?
A. That's correct.
Q. And the Navy determined that inspection should take place every 10 years, unless, unless the corrosion rate is such that it could be inspected later, i.e. 20 years, as recommended by the API Std 653 inspector, right?
A. Yes.
Q. Okay. Now, Tank 3 was last inspected in 1983; is that right?
A. That sounds right.
Q. That's nearly 40 years ago.
A. That's correct.
Q. Tank 3's overdue for an inspection?
A. Yes.
Q. And it's continuing to operate.
A. So Tank 3 has not undergone its initial API 653 yet. So the initial API 653, that is what starts the periodicity clock for the follow on inspections, yes.
Q. Tank 4 was last inspected in 1983; is that right?
A. That sounds right.

Q. Nearly 40 years ago, right?
A. Yes.
Q. Tank 4 is overdue for an inspection, isn't it?
A. Overdue by API 653 standards?
Q. If we want to be protective of the environment, is it overdue for an inspection?
A. So the inspection cycle is determined by the API 653 engineer based upon the condition that they close the tank out in. So if we have not inspected the tank, established a corrosion rate, I can't honestly say that it is overdue for an inspection. Do I want to go inside and take a look at that tank and get it inspected? You absolutely bet I do.
Q. You know, let's -- I'm going to share my screen here so you can look at this document. Close this other one out. So this is that TIRM report. Does that look familiar, TIRM report?
A. Yes.
Q. Okay. And if you go to page 19-6 of this report it reads: The next inspection shall be in 10 years unless the corrosion rate is such that it can be inspected later, i.e. 20 years.

So has a API Std 653 inspector determined a corrosion rate for Tank 4?
A. No.

Q. Okay. So Tank 4 is overdue for an inspection, isn't it?
A. Next inspection should be in 10 years unless the corrosion rate is such that it can be inspected, i.e. 20 years as recommended by the API 653 inspector. As I read that statement, the API 653 inspector determines when the next inspection is due.
Q. You're telling me under the Navy standards the inspector can decide that a tank does not need to be inspected for 40 years?
A. No, that's not what I'm telling you. I'm telling you how I read this document. That's not what I'm telling you, sir, no.
Q. Okay. The Navy requires that these tanks be inspected actually every 10 years, unless an inspector says, you know what, this can go to 20 years because of the corrosion rate. But you don't have an inspector whose told you that Tank 4 can wait 20 years, have you?
A. That won't happen until we take the tank down, clean it and inspect it.
Q. So that Tank 4 is overdue for an inspection, isn't it?
A. We don't have any inspection history on it, so I guess we can't say that it's overdue for an inspection, simply because we don't have inspection history on it.

Q. And it's continuing to operate, isn't it?
A. That's correct.
Q. Tank 7 was last inspected in 1998; is that right?
A. That sounds about right.
Q. More than 22 years ago; is that right?
A. Yes.
Q. Tank 7 is overdue for an inspection, isn't it?
A. Yes.
Q. Tank 8 was last inspected in 1998; is that right?
A. That sounds about right.
Q. More than 22 years ago, right?
A. That's the math, yes.
Q. Tank 8 is overdue for an inspection; is that right?
A. There's a question?
Q. Mm-hmm.
A. Yes.
Q. Tank 9 was last inspected in 1995, right?
A. Sounds about right, if that's what the records show.
Q. More than 25 years ago, right?
A. Sounds about right, yes.
Q. Tank 9 is overdue for an inspection, isn't it?
A. Yes.
Q. Tank 10 was last inspected in 1998; is that

right?
A. Not sure. If that's what the record states.
Q. More than 22 years ago. Does that sound right?
A. Same as the other tanks, yes.
Q. Tank 10 is overdue for an inspection, isn't it? Isn't it?
A. I'm sorry?
Q. Tank 10? Well, okay, Tank 10 was last inspected in 1998, right?
A. Okay, yes.
Q. More than 22 years ago. And Tank 10 is overdue for an inspection, isn't it?
A. Yes. By that standard, yes, it is.
Q. Tank 11 was last inspected in 1981?
A. Maybe '83; '81 or '83.
Q. Okay. Nearly four decades ago; is that right?
A. Mm-hmm.
Q. Tank 11 is overdue for an inspection?
A. Yes.
Q. Tank 12 was last inspected in 1995. Does that sound right?
A. That sounds right, yes.
Q. More than 25 years ago.
A. If that's the math, yes.
Q. Tank 12 is overdue for an inspection; is that

right?
A. Yes.
Q. So you identified three protective measures that decreased the risk that are necessary for protective -- protecting our environment: recoating certain areas with a polysulfide; removing the small nozzles; and inspecting all the tanks. And within the next five years, none of those three things is going to be accomplished for even close to a majority of the tanks, isn't that right?
A. Oh, no. We cannot shut down the entire facility. We have to phase our maintenance in. So I can go a little bit on this one here. This is probably a question better suited for our EXWC maintenance specialist.

So, no, we cannot execute all of those measures at this time, all right? However, the other portion of my testimony, all right, that discusses our system of systems on how we're ensuring that we're operating the tanks in the most environmentally protective manners possible is our continued tank tightness testing that we're doing twice a year, which exceeds the requirement of the State, the requirement of the HAR, our soil vapor monitoring that we're doing, our groundwater monitoring, all of these things that detect if we're releasing

something into the environment.

So in addition to -- there are other things that are in addition to the maintenance procedures that you spelled out and we just simply cannot do. So I like to draw your attention to the other things that we're doing to ensure that we're operating the tanks in the most environmentally protective manner possible. Our strict operating protocols, all right, the way we respond to alarms, the way we track and monitor our fuel inventory, most importantly our tank tightness testing, all right, that tells us that the tank is tight, that it meets current EPA requirements, and I feel good about that.

Q. Have you looked at the ABS report that estimates that over 5,000 gallons of fuel are expected to leak every single year through chronic conditions?

A. I'm not sure if it said that. However, if there is a release below the minimum detectable threshold of .5 gallons per hour at, what, .499 gallons per hour, I think if the tank, if the tank was releasing, it would release up to 4,300 gallons, I believe the math comes out to.

MR. FRANKEL: Thank you. No further questions.

HEARING OFFICER CHANG: All right. Mr. Paige, any questions?

MR. PAIGE: Yes, just a couple questions.

CROSS-EXAMINATION

BY MR. PAIGE:

Q. Deputy Director Floyd, going back to the October 2020 inspection, is it your understanding that there's been no final report issued regarding that inspection?

A. That's correct.

Q. So would it be fair to say that any major findings or issues or concerns have not been conveyed at this point?

A. So, no, nothing has been conveyed at this point. Upon our debrief after the two-week inspection, very thorough inspection, the lead inspector had no significant findings. So if there was nothing significant at the conclusion of the inspection in October, I could reasonably expect that there would not be anything significant that would be added on later.

Q. Okay. You made a statement the inspectors reported the infrastructure was clean and pristine but no fuel leaks. Is that a statement you're attributing to an individual, or is that an impression?

A. To an individual, yes.

Q. And do you have any other information concerning specific findings or concerns that were conveyed during

that time period?
A. There was some concern, questions about our third-party certification for tank tightness testing. Now that we got that one resolved, nothing specific that I can call out now, no.
Q. And then going back to the evaluations that were conducted in 2016 with the five POL SMEs, you mentioned Eastern Research Group, Aspen Controls, PEMY Consulting, Ellis Geotechnical, and Powers Engineering and Inspection, and then you've indicated that these companies were selected by DOH to be part of the evaluation inspection team. What do you base that on?
A. I'm sorry, say that again, please?
Q. You had indicated that the five POLs were actually selected by the Department of Health to be part of the evaluation inspection team. I'm wondering if that's a correct statement.
A. That's incorrect. They were contracted by EPA Region 9.
MR. PAIGE: Okay. I think that's all the questions I have for now.
HEARING OFFICER CHANG: Any redirect?
MS. MINOTT: We would request just a break, a little break before redirect.
HEARING OFFICER CHANG: Okay. I've lost

track. Have we gone sufficiently -- you want a short break, or you want to take a recess of 15 minutes?

MS. MINOTT: A short break; just a short break.

HEARING OFFICER CHANG: Five, ten minutes?

MS. MINOTT: Ten minutes.

HEARING OFFICER CHANG: All right, ten minutes, we'll recess.

MS. MINOTT: Great. Thank you.

HEARING OFFICER CHANG: Okay. Off the record.

(A recess was taken.)

HEARING OFFICER CHANG: Let's go back on the record. Ms. Minott, were you conducting the exam here?

MS. MINOTT: Yes.

HEARING OFFICER CHANG: Does the Navy have redirect?

MS. MINOTT: Yes.

HEARING OFFICER CHANG: Okay. Proceed.

REDIRECT EXAMINATION

BY MS. MINOTT:

Q. Just a couple questions, Mr. Floyd. I wanted to first kind of go back to that, you mentioned that the inspection for the last two tanks, that part of the new TIRM process, CIR process, is set to begin, currently scheduled for 2032, correct?

A. Yes.
Q. And when the last two tanks go into service, at what point in time is the fuel drained from them?
A. The last two tanks?
Q. Yes.
A. That would be 2032.
Q. Okay, thanks. And are you familiar with the military Unified Facility Criteria?
A. Yes, your various UFCs. Not all of them. More specially 463, maintenance 461 to some extent, that's the design criteria.
Q. And we heard before from Kimo that there's a 20-year inspection periodicity. Is that based on the UFC code?
A. No, I'm not sure. I just know that's the, based upon the inspector's last record, inspector record, their recommendation. So I'm not --
Q. Are you aware of an -- I'm sorry.
A. I can't quote the UFC to you, sorry.
Q. Okay. Are you aware of any Hawaii requirement or HAR requirement for that 10 or 20 year inspection periodicity?
A. No.
MS. MINOTT: No further questions here.
HEARING OFFICER CHANG: Okay. For BWS?

MR. BROWN: I just have one question for Mr. Floyd.

RECROSS-EXAMINATION

BY MR. BROWN:

Q. Mr. Floyd, we just learned this morning that in the event of a catastrophic release that isn't directly to the environment and makes it into the access tunnel, that the access tunnel could potentially hold that fuel.

As the person responsible for maintenance, are you aware of any tightness test of the tunnel that's been performed that can conclude that it will hold that fuel?

A. No, I'm not. I'm aware of the oil pressure door that was newly installed and that was designed to hold the contents of one full Red Hill tank.

Q. But there's no access tunnel tightness test is there?

A. No, not that I'm aware of.

MR. BROWN: That's all I have.

HEARING OFFICER CHANG: Okay. Mr. Paige, do you have any follow-up?

MR. PAIGE: Nothing further.

HEARING OFFICER CHANG: Mr. Frankel, I'm sorry, I think I skipped over you. Do you have any follow-up?

MR. FRANKEL: No, thank you.

HEARING OFFICER CHANG: Okay. Let me ask the questions that I have.

EXAMINATION

BY HEARING OFFICER CHANG:

Q. Mr. Floyd, it appears that you began your work at Pearl Harbor sometime after the 2014 release event; is that right?

A. Yes, sir. I began in February 6, 2015.

Q. So those things were very critical and challenging at the time that you assumed the position. What was your role in responding to the event that had been reported about the release in 2014?

A. My role, arriving post event, I arrived in the final stages of developing the AOC, the Administrative Order on Consent. I had operator input into all of those sections, specifically Sections 2, 3, 4 and 8. My primary role as an operator was to fix the wrongs of 2014, specifically in how we responded to alarms.

Q. So when you began, had the investigation as to what went wrong been completed, or was that in process?

A. The investigation had been completed, yes, sir.

Q. So when you said your role was to fix the wrongs, tell me more about that, what did you work on?

A. I worked on the TIRM, how we inspect and repair

tanks. I had operator input there. I had operator input, significant input on Section 4 of the AOC, the current release detection monitoring systems, specifically how we responded to alarms. Also with our tank return-to-service procedures, there's overlap between Sections 2 and Sections 4. I had input into how we return or tanks to service after repair. Was a big deal because this is when a tank is most vulnerable and that is what happened with Tank 5.

Q. Did you have any role in the investigation of the release in terms of what happened, where did it go, and what resulted?

A. No, sir, I did not.

Q. Are you aware of what was done to try to answer those kinds of questions, what happened, where did the fuel go?

A. So I'm aware of those questions. To the best of my knowledge that is still ongoing with Sections 6 and 7 of the AOC where we're looking at remediation of past releases, as well as trying to develop a fate and transport model that we can -- some type of modeling to show where it could possibly go or where it's at now. So I was on the periphery of that, I was not directly involved with that. That was mainly our environmental staff, their contractors.

Q. Your testimony identifies your major roles, and one of them was to develop long-range plans to maintain infrastructure to ensure perform safety, environmental compliance, et cetera. Is there such a plan?
A. Yes, sir, it's ongoing. It's a very dynamic plan. One is our tank inspection and repair and maintenance, how we cycle tanks in and out of service for maintenance. Looking at upgrading our technologies. This year will be -- we have funding set aside, we're developing a project to put in full-time tank tightness testing or release detection testing.

We're getting ready to pilot full-time realtime soil vapor monitoring. We're in the initial phases, or Stage 1, I believe, of piloting one tank for a new double wall technology. That's just a few of them. So there's not -- there's no one comprehensive master plan to incorporate all of these changes.

I guess they can best be defined under Section 2, the TUA, the Tank Upgrade Alternatives, and I've been involved with that. And hopefully that's going to be the document that wraps it all up. Will be our overarching and our guiding document for the next 20, 25 years or so as we work on getting all of their tanks upgraded.
Q. What is the progress of the double wall

technology pilot?
A. So last year we contracted, NAVFAC contracted with a French company, GTT Technologies, and they are developing a pilot. I think for FY21 we're going to do a design concept. Beginning late FY22 we will begin the pilot or the construction of the initial pilot in one of our tanks, so that's to prove up the concept.
Q. What is the double wall technology that is being considered?
A. So I'm not an expert on this. I think you're going to receive testimony on this later, perhaps from Mr. Frank Kern from EXWC who's the lead on this one. But we're looking to adopt technology from the liquid gas industry that this company, I think they got like 70 percent of the market share, they developed the technology to double line the L and G carriers. And roughly, actually larger on scale than a Red Hill tank, this is reported to be a proven technology so that we will have an additional hydraulic barrier inside the tank with interstitial monitoring that we could monitor the interstitial area between the new double wall technology and the existing tank liner.
Q. Do you know the material, anything about the material being considered?
A. I believe, I'm not sure, it may be a

honeycomb-type stainless steel. I'm not sure.
Q. Okay, thank you. One question I have is generally about the connection or the interrelationship between the AOC and the HAR regulation requirements. Are they the same, are they different? Are they parallel and similar? What's the relation?
A. So each one takes up a significant portion of my work volume, and I tend to keep them separate. I view the AOC simply what it is, it's a bilateral agreement between Navy, DLA, and the regulators that provides a strategy for improving and upgrading the operations and maintenance of Red Hill, whereas the HAR, Hawaii Administrative Rules, is law, all right? This is a law that defines how we should operate the facility. So as a pretty clear distinction for me as an operator, the HAR provides the framework, that's the law, and these are the articles that we have to comply with.
Q. And presumably the efforts of the AOC is to meet those requirements?
A. So in a way it certainly will, but the -- I see the AOC as being more in terms of our strategic planning, all right, on how we operate the facility and how we make it better and more protective of the environment in terms of what upgrades we can implement, how we conduct our maintenance, how we conduct our leak

detection. So there is in some cases some overlap, but again, for me I do not have a problem viewing those as separate and distinct.

Q. Thank you. I have a sense that we have a very dynamic situation and things are changing, and so the circumstances at one time will change, so I have some questions in that regard.

Your testimony references the findings of the 2017 final evaluation report.

A. Yes, sir.

Q. So I have a general question of between the time of that 2017 FER and today, what if anything significantly has changed?

A. In what context, sir? In context of the law, or how we operate the facility?

Q. Actually both would be fine, you can take them one at a time.

A. So the 2017 report, the inspection took place in 2016, that was a baseline assessment that was to, one, determine, help the regulators determine how to regulate a facility such as ours; and two, a baseline assessment on how well that we align with the 40 CFR rule; 40 CFR Part 112, and at that time it was stated that we were meeting and exceeding all industry standards.

From that, as the HAR developed, there were no

significant hurdles that we had to meet in order to come in compliance with the HAR because of what we were already doing in 2015, '16 and '17. So it was a fairly easy pivot, although we were not being regulated by the State, there were no significant hurdles that we had to overcome in order to get to where we needed to be.

Q. So between the 2017 timeframe and 2021, no other significant changes?

A. No, sir. So our biggest challenge was working with the State, making sure that they understood how our facility operates because there were some portions of the law that were not aligned to a large facility such as ours, so the law as written, you simply cannot regulate a Costco Station and a Tesoro Station the same way that you'd regulate Red Hill. That's been our biggest challenge.

Q. Your testimony also refers to a 2020 inspection that was done by the Department of Health. Are there documents that set forth the findings of that inspection?

A. No, sir. The final report is pending.

Q. And the final report is to be issued by whom?

A. The Department of Health.

Q. In your testimony given earlier you referred to, or there was discussion about this polysulfide coating,

and as I understand your testimony, you're saying that the early work with this is to coat the lower dome and the, is it expansion ring? Extension ring?

A. Extension ring, yes, sir. So the extension ring is a -- so Tanks 1 through 4 were slightly smaller, so Tanks 5 through 20, they were made larger by adding the extension ring onto it. So I think you walked inside of a tank. When you walk inside, just directly above the 8-foot portal that you enter the tank, that's the area that's called the extension ring. This is where the barrel transition into the upper dome of the tank.

Q. There were some steel elements that seemed to protrude. Would that be the line of the extension ring?

A. Yes, sir. So those you're probably referring to as the backing bars of the tank. So that portion of the tank was constructed and welded from the outside, we use backing bars there. So the extra metal that you see inside the tank would be those backing bars, all right, so that was a known point of weakness in the tank and during construction, so we're going to put that coating of Novolac epoxy on that as an extra protective measure.

In addition to that, we've lowered our fuel height also for Tank 5, and all subsequent tanks that fuel height will be underneath the extension ring.

Q. Your reference to the term lower dome, I am

understanding that to be the bottom of the tank.
A. Yes, sir.
Q. Is that right?
A. Yes, sir.
Q. Why would the coating be of the lower dome only and up to that extension ring? Why only that portion?
A. So this is a question that could probably be better answered by one of the tank repair specialists, but the lower dome is where any water in the tank will collect. So water is always inherent in fuel, and as the fuel sets into the tanks, any entrained water will leach out in the fuel and collect in the bottom of the tank. So the tank bottom, to add just an extra protective measure, we put that coating on there, all right, as another barrier against corrosion.

And the extension ring, all right, just in the manner that it was constructed and the number of indications that we've seen in the extension ring, we found it would be prudent to put that extra barrier there also.
Q. So is this polysulfide material only applied to the lower dome, and then there's a gap, and it's applied in the area of the extension ring?
A. Yes, sir, currently. And to some of the repairs that are made in the areas of the patch plates.

Q. So it's kind of a spot application only?
A. Yes, sir.
HEARING OFFICER CHANG: All right. Thank you very much, Mr. Floyd, I appreciate your information.
Counsels, any follow-up questions?
MR. BROWN: I have a few follow-up questions, Hearing Officer Chang.
HEARING OFFICER CHANG: Okay. Go ahead, Mr. Brown.

FURTHER EXAMINATION

BY MR. BROWN:
Q. Mr. Floyd, you were just speaking about the polysulfide coating on the interior of the tanks, and my understanding was that this is applied, as Hearings Officer Chang had just mentioned, at the bottom, sometimes at the top, and then it looks like on the patch plates. Is there any coating that is applied to the back side of the steel liner?
A. Not that I'm aware of. But again, that may be a question better asked to the tank repair specialist.
Q. So are you saying that you can access the back side of the steel liner in these tanks?
A. No, you cannot.
Q. So you couldn't put a coating on it then.
A. Ask your question again, please.

Q. Is there a coating on the back side of the steel liner?
A. Not to my knowledge, no.
Q. And the coating is what you're saying is protective of corrosion, right, from the inside?
A. Yes.
Q. And the corrosion that we looked at on each of the ten coupons from Tank 14 was on the back side of the steel liner?
A. Yes.
Q. So there is no coating, and there's no way to put a coating on the back side of the steel liner, not to your knowledge?
A. No, it's not. However, once we install a new patch plate, I'm not sure how that's treaded before it goes in.
Q. And the other question I had, just a couple of quick follow-ups, you had mentioned the difference between the regulations before and after the 2016 inspection. Were the -- or sorry, is the HAR more stringent than the federal regulations for USTs? I mean are there more requirements?
A. I wouldn't know.
Q. You wouldn't know?
A. No.

MR. BROWN: Okay, I have nothing further.

HEARING OFFICER CHANG: Okay. We have any other questions? Mr. Frankel? Mr. Paige?

MR. PAIGE: None.

HEARING OFFICER CHANG: And the Navy has no more questions?

MS. MINOTT: We do not. Thank you.

HEARING OFFICER CHANG: All right. Mr. Floyd, thank you very much.

(Witness excused.)

HEARING OFFICER CHANG: Okay. Let's go off the record and decide where we go from here.

(Whereupon, 4:12 p.m. the hearing was recessed until 8:00 a.m. on February 2, 2021.)

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C E R T I F I C A T E

I, DONNA N. BABA, a Certified Shorthand Reporter in the State of Hawaii, do hereby certify:

That I was acting as shorthand reporter in the foregoing matter on Monday, February 1, 2021.

That the foregoing proceedings were taken down in machine shorthand by me at the time and place stated herein, and were thereafter reduced to print under my supervision;

That the foregoing represents, to the best of my ability, a correct transcript of the proceedings had in the foregoing matter.

I further certify that I am not counsel for any of the parties hereto, nor in any way interested in the outcome of the cause named in the caption.

Dated: Honolulu, Hawaii, February 11, 2021.

/s/ Donna N. Baba

DONNA N. BABA, CSR #103