Red Hill Bulk Fuel Storage Facility, Oahu, Hawaii

Defueling Plan Supplement 1.B - September 28, 2022

September 28, 2022 Supplement 1.B

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I. Introduction

On June 30, 2022, the Department of Defense (DoD) provided to the Hawaii Department of Health (DOH) its five-phase plan to defuel the Red Hill Bulk Fuel Storage Facility (RHBFSF). *See* Figure 1, below. DoD noted in its June 30, 2022, submission that its planning process was iterative and that DoD would provide supplements to the plan that would include additional details and updated timelines and milestones for the completion of defueling. On September 7, 2022, DoD provided to DOH the first of those defueling plan supplements, Supplement 1.A, which provided:

- A discussion of how DoD will incorporate community engagement into its defueling planning and implementation;
- An explanation of how DoD proposes to safely "unpack" the pipelines in the facility in order to perform repairs and upgrades to those lines;
- An interim progress update on infrastructure repairs and enhancements;
- A discussion of training improvements; and
- An update on the defueling plan's overall timelines.

DoD also submitted with Supplement 1.A several key safety planning documents that are relevant to the upcoming "unpacking" of the fuel lines in October 2022. Those safety documents include a comprehensive unpacking plan; a Spill Exercise Plan for unpacking; and updated drafts of the Spill Prevention Control and Countermeasures Plan (SPCC), Facility Response Plan (FRP), and Integrated Contingency Plan (ICP). These plans will become final after receipt and adjudication of comments from DOH and the Environmental Protection Agency (EPA).

This Supplement 1.B. builds upon the initial June 30, 2022, defuel plan submission and the September 7, 2022, supplement. Supplement 1.B. provides:

- An updated Critical Path Method (CPM) schedule;
- A discussion on alignment with the DOH Superseding Emergency Order (EO);
- An initial evaluation of the pipeline assessment, required by section 318 of the National Defense Authorization Act for Fiscal Year 2022 (NDAA), and two recent U.S. Environmental Protection Agency (EPA) inspection reports, as well as other updates on Phase 2 (*Identify Actions Required to Enable Defueling*) planning;
- Detailed descriptions of work items that DoD has completed or will complete in Phase 3 *(Implement Actions to Make Facility Safe to Defuel*) of the plan;
- An update on Phase 5 (*Defuel and relocate fuel*) planning;
- An update on DoD's Joint Task Force – Red Hill (JTF-RH); and
- Responses to EPA questions of August 11, 2022.

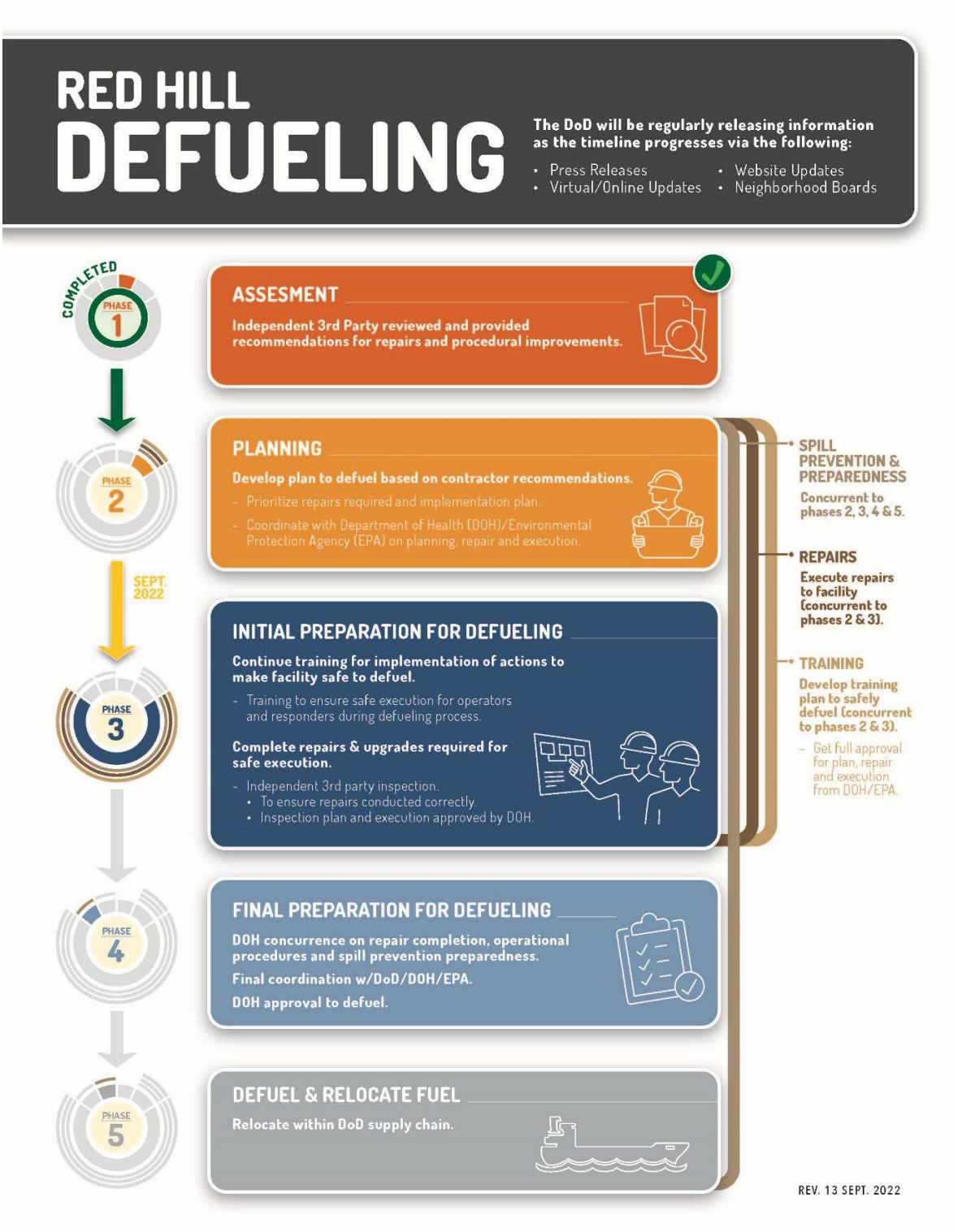


Figure 1 – DoD Red Hill Defueling Plan

II. September 28, 2022 Red Hill Defueling Plan Updates

The CPM schedule submitted in the September 7, 2022 Defueling Plan Supplement 1.A included DoD's then-current assessment of the time required to complete all necessary actions to defuel the Red Hill facility at the earliest date consistent with safe defueling. Enclosure (1) to this supplement is an updated schedule for completing all of those actions. The current schedule forecasts that DoD will remove all fuel from the RHBFSF by June 2024. The updated CPM schedule reflects recent changes that DoD has made in its planning for Phase 5 - *Defuel and Relocate Fuel.* DoD continues to seek efficiencies and to reduce further the timeline and will work with DOH to identify and decide upon those additional efficiencies.

In addition to the overall schedule adjustment, this supplement provides updated details on DoD's ongoing or planned activities for Phase 2, Phase 3, and Phase 5[1] of the DoD defuel plan.

A. Phase 2 Update – Identify Actions Required to Enable Defueling

As discussed in the June 30 defueling plan, Phase 2 is the planning phase for safely defueling RHBFSF. Phase 2 planning is substantially complete, pending DoD's ongoing evaluation of three recent external assessments and its upcoming review of two external assessments that may recommend additional required work. Upon receipt of these assessments, DoD will make decisions on whether to adopt those recommendations. Once DoD receives concurrence from DOH on those decisions and makes any necessary adjustments to the work plan, DoD will have completed Phase 2.[2] Below are updates on Phase 2 spill response planning and on newly received recommendations for additional repairs and enhancements to the RHBFSF pipeline infrastructure.

1. Phase 2 Spill Response Planning Update

As part of Phase 2, DoD reviewed EPA's SPCC Field Inspection Report dated August 16, 2022 and EPA's Joint Base Pearl Harbor Hickam (JBPHH) Underground Storage Tank (UST) System Inspection Report dated August 17, 2022. DoD has updated its safety plans, including its SPCC plan and its FRP, to address EPA's comments in its SPCC report prior commencing unpacking in October 2022. DoD is also addressing EPA's comments in the UST inspection report.

a. EPA SPCC Inspection Report

EPA's SPCC Inspection Report found that the prior version of DoD's facility SPCC plan did not sufficiently address the UST systems (completely buried tanks and buried piping)

[1] Phase 1 of the plan is complete. DoD has not updated any Phase 4 activities or timelines since the September 7 Supplement 1.A.

[2] DoD is executing Phase 2 and Phase 3 concurrently, so the limited extension of the Phase 2 schedule does not delay work in Phase 3 and does not delay the overall defueling schedule.

associated with the Red Hill fueling system. Prior to receipt of the SPCC investigation report, DoD already had begun addressing many of the issues and concerns that EPA raised in the report, and DoD provided on September 7, 2022 a series of updates to spill prevention and response plans, including draft updates of its FRP, ICP, and SPCC plan. DoD's updates to these plans address the primary concerns that EPA raised in its SPCC inspection report, as the updated plans now cover RHBFSF equipment and facilities that the prior versions of the plans did not address. *See, e.g*. Draft Updated SPCC Plan, Tab A to Appendix B-1 Red Hill Pipeline & Drainage Systems, September 2022. DoD's updated safety plans also include updated points of contact, enhanced reporting and communication plans in the event of a spill, refined implementation of response resources, and additional hazard vulnerability analysis, all of which address EPA's concerns.

Finally, the updated plans include planned responses to worst case spill release scenarios and provide the basis for DoD's various spill drills in advance of unpacking and defueling. *See e.g*., FRP at Tab A. On September 22, 2022, DoD completed an unpacking spill exercise, which prepared DoD to respond to an emergency scenario that could occur during unpacking. DOH and EPA had representatives on the unpacking spill drill planning team to ensure that DoD formulated a realistic and thorough exercise scenario and that it planned for and drilled appropriate response measures to that scenario. And both agencies observed the September 22 exercise.

DoD is incorporating into its FRP new safety measures based on lessons learned from the exercise. Among these new measures will be a barrier to minimize the risk of fuel migrating to Halawa stream at the UGPH. DoD is also continuing its dialogue with DOH and EPA to answer any remaining questions about the unpacking plan or DoD's safety preparations for unpacking. DOH and EPA will be invited to participate in subsequent spill exercise plan development in support of defueling operations as well as observing future exercises.

b. EPA's UST Inspection Report

EPA's UST inspection report includes a finding that two sumps in the lower access tunnel (LAT) meet the criteria for USTs under Hawaii's UST regulations. According to the EPA, DoD should perform tightness testing and release detection of those two sumps, as if they were USTs. DOD assesses that unpacking of the fuel lines has minimal risk of the type of spill that could cause significant quantities of fuel to enter to the sumps. This is particularly true for the zone 7 sump, as there is no fuel in the pipelines up gradient from this sump. Thus, DoD does not plan to conduct tightness testing on the zone 7 sump prior to unpacking.[3] However, DoD will complete an EPA-approved tightness testing procedure (RPE 1200) on the main sump prior to unpacking. Further, DoD agrees to conduct EPA-compliant testing of both sumps, prior to the defueling of the Red Hill tanks.[4]

[3] During a September 26, 2022 phone call between DoD, EPA and DOH, all parties agreed that tightness testing on the zone 7 sump is not required prior unpacking. DoD will document this decision in writing to EPA and DOH, upon request or as otherwise necessary.

[4] DoD is proposing to use the MASSTECH SIM-1000 method to complete tightness testing for both sumps prior to defueling. During the above-referenced September 26, 2022 phone call, EPA and DOH agreed that this test meets regulatory requirements. DoD will document this proposal in writing to EPA and DOH, upon request or as otherwise necessary.

c. Response to EPA's August 11, 2022 Comments

In addition to DoD's review of the two recent EPA reports, DoD has reviewed and responded to EPA's questions and comments submitted to DoD on August 11, 2022. DoD has addressed EPA's comments in the September 7 Supplement 1.A and in this supplement. A full response to all comments is provided in Enclosure (6).

2. Updated Phase 2 Planning for Infrastructure Repairs and Enhancements.

DoD's Phase 2 work includes continued refinement of the work plan for the infrastructure repairs and enhancements required prior to defueling. DoD has recently completed the FY2022 NDAA Section 318 pipeline assessment ("the Section 318 assessment"), and DoD has begun to add recommended pipeline system repairs from that assessment to the work plan for Phase 3.

a. The NDAA Section 318 Report

DoD's contractor completed the Section 318 assessment on August 31, 2022, and DoD provided that assessment to the EPA and DOH on September 7, 2022. The contractor performing the Section 318 assessment found that the piping systems at the RHBFSF are "in fair to satisfactory condition and . . . serviceable to support defueling operations." *See* Section 318 assessment at 6. However, the assessment recommended that DoD take corrective actions to fix identified pipeline deficiencies, most of them relatively minor, prior to performing defueling operations. *Id*. The pipeline assessment identified 153 repair actions for defueling, 125 of which are not already identified and under contract.[5] *See* Enclosure (3).

DoD, as it did with the Simpson Gumpertz & Heger (SGH) report, conducted its own technical review of the Section 318 assessment in order to evaluate whether all of the Section 318 recommendations are required for safe defueling and whether any of the repair recommendations have long lead times that could affect the overall defueling schedule. DoD's technical review of the Section 318 assessment is provided at Enclosure (3). This technical review concurs with most of the Section 318 recommendations, and DoD plans to add the Section 318 work items, with some modifications, to the Phase 3 work schedule. DoD initially assesses that none of the recommended repairs would affect the critical path schedule for defueling, as most of the recommended repairs are routine. Some examples include:

- "Valve flange for the 12-inch gate valves is missing a fastener…. install new fastener"
- "Lack of thread engagement was observed on 12 fasteners… insure proper thread engagement"

[5] The NDAA Section 318 assessment recommended more pipeline repairs than did the SGH assessment, as the Section 318 assessment included more in-depth inspections using hydraulic integrity analysis, while the SGH assessment relied on visual inspections of the tank gallery and pipeline outside of the tank gallery. The NDAA Section 318 assessment included External Corrosion Direct Assessment (ECDA) of the pipelines, visual inspection of the pumps and other fuel system components, phased array ultrasonic testing (PAUT) of pipeline girth welds, and long-range ultrasonic testing (LRUT) of pipelines within concreate bulkheads. The assessment provided recommendations to repair the pipelines to a fully code-compliant system capable to withstand 275 psig per API-570 principles (DoD expects pressure associated with gravity-based defueling to be approximately 85 psi).

- "Gate valve GR68B is missing wheel nut on valve stem… install new wheel nut"
- "A loose fastener was observed on a 4-inch pipe flange within the pipe trench adjacent to S-23… tighten fastener"

DoD assesses that 99 of the 125 recommendations are relatively non-complex repairs, and DoD plans to complete those non-complex repairs as service orders under an existing maintenance service contract with the US Army Corps of Engineers. DoD expects these service orders to be under contract in the next two weeks. The remaining 26 items require some level of design, and DoD will execute those work items through an existing design-build emergent pipeline repair contract.

DoD will provide additional information to DOH as it continues to evaluate the Section 318 assessment and as it continues to incorporate the assessment's recommendations into the work plan, and DoD will incorporate those work items into its final comprehensive list of recommended repairs and enhancements to DOH (CPM UID 358). It expects to submit this comprehensive list by the end of October 2022.

b. DoD Updates on SGH Recommendations

As discussed in Supplement 1.A, DoD continues to evaluate the 43 infrastructure repairs and enhancements recommended in the Simpson Gumpertz & Heger (SGH) third party assessment to ensure that each of those recommendations is consistent with DOH's mandate to complete defueling "at the earliest date consistent with the safe defueling of the facility." As discussed in detail in Supplement 1.A, DoD has identified an SGH recommendation that DoD believes is not required for safe defueling: ID 266 (SGH HP-14), replacing a PVC drain line serving as secondary containment at Hotel Pier with steel. This Hotel Pier PVC line replacement is on the critical path. Thus, DoD believes that adopting the alternative solution identified in Supplement 1.A could accelerate the overall defueling process by as much as three months.

Supplement 1.A also included DoD's proposal to address the damaged AFFF reclamation line in the LAT. *See* Supplement 1.A at 7-8. This proposal was to forego the replacement of the nearly mile-long AFFF reclamation line, as that replacement work is not required for safe defueling and, if undertaken, would be on the critical path, potentially extending the overall defueling timeline. *Id*. DoD has begun discussions with DOH technical personnel to answer questions about DoD's proposal and how DoD plans to address any risks associated with its proposed solution. DoD will continue to address any questions or concerns that DOH has about this proposal and, consistent with the iterative process, will make any necessary adjustments to the proposed alternative solution. DoD will provide a formal proposal to DOH on its proposed alternative solution as soon as possible.

c. Pending Assessments to Complete Phase 2 Planning and Submission of Additional Documents to DOH

The following assessments and reports remain outstanding and will further inform DoD's work plan to prepare for safe defueling:

- DoD underground pump house (UGPH) to Hotel Pier pipeline assessment (expected fall 2022); and
- Additional stress and surge evaluations recommended by the SGH third-party assessment (expected fall 2022).

Upon DoD's receipt and evaluation of these assessments, as well as its continued refinement of the current work plan, DoD will submit the following documents to ensure that DoD meets all of the directives in DOH's May 5, 2022, Superseding Emergency Order (*See* Enclosure (2) for details on the status and ongoing progress for meeting the requirements of the DOH superseding emergency order) and that DOH concurs with all elements of DoD's defueling plan[6]:

- A consolidated repair list to defuel upon completion of all assessments (CPM Unique ID (UID): 358);[7]
- Third-party quality assurance plan for repairs (CPM UID: 362);
- Spill drill plan prior to defueling (CPM UID: 376);
- Correspondence documenting completion of all repairs required for defueling (CPM UID: 366); and
- Final request for approval to repack fuel lines and defuel (CPM UID: 370).

DoD has built into the CPM schedule the projected timelines for these expected future submissions and for DOH review periods for each submission. *See* Enclosure (1).

B. Phase 3 Updates– Implement Actions to Make Facility Safe to Defuel

1. Infrastructure Repairs and Enhancements

DoD continues to address SGH recommendations by developing scopes of work, awarding contracts, refining technical solutions and, in some cases, developing alternate solutions that would condense the critical path for defueling activities. Supplement 1.A describes DoD's proposed way forward for all 43 of SGH's critical defueling infrastructure recommendations. *See* Supplement 1.A, Part I.C (discussing SGH recommendations that DoD has already completed, recommendations that DoD plans to complete as recommended, and recommendations for which DoD proposes alternative solutions). Table 1 below provides a status update on each of the SGH recommendations. The recommendations are listed by a

[6] When DoD proposes to modify the work plan to forego recommended repairs and to adopt alternative solutions, DoD will continue to take the following steps:

1. Identify an alternative solution that can provide enhanced resiliency or safely decrease the defueling timeline;
2. Submit the recommendation to DOH for its concurrence (if applicable, DoD will also seek concurrence from the originator of the recommendation, e.g. SGH); and
3. Provide DOH the opportunity to accept or reject the alternative solution and then update the consolidated list of repairs to reflect infrastructure requirements prior to defueling.

[7] DoD will create this list based on its ongoing evaluations of the SGH third-party assessment, NDAA Section 318 Pipeline Assessment, DoD UGPH to Hotel Pier pipeline assessment, and additional evaluations recommended by SGH (e.g. stress and surge analysis).

unique ID number, which corresponds to the UID number on the CPM schedule (Enclosure (1)). DoD is also including with this supplement a detailed description and update for each of the SGH infrastructure recommendations. *See* Enclosure (4).

Table 1 – SGH Recommendations, Current Status

Unique ID	SGH ID No.	TITLE	STATUS (% Complete)
208	6	Install Pressure Indicating Transducer Sensors (PITS) in Tank Gallery	Work in Progress (25%)
236	8	Confirm dresser couplings can seal under vacuum conditions	Received DOH Concurrence
237	14	Evaluate pipe and hose rating between Red Hill and piers / docks	Work in Progress (80%)
238	28	Confirm oil tight door can operate upon loss of normal power	Work in Progress (10%)
239	31	Evaluate underlying cause of line sag	Work in Progress (90%)
241	1	Perform surge analysis for pipelines (JP5, F76, F24); evaluate dresser couplings	Work in Progress (90%)
242	LAT-3	JP5 pipe - Confirm system can withstand surge event; modify if necessary	Work in Progress (10%)
243	LAT-15*	AFFF Reclamation Line - install protection to overhead valve (PS 14-15)	Pursuing Alternative Solution
244	LAT-20	JP5 pipe - Install lateral restraint at PS 18	Pursuing Alternative Solution
246	LAT-29*	AFFF Reclamation Line - install protection to overhead valve (PS 26)	Pursuing Alternative Solution
247	LAT-32	Install protection around overhead valve (PS 27)	Pending 3rd Party Verification
248	LAT-38	Replace brace (PS 46-47)	Work in Progress (10%)
249	LAT-40	Replace column and anchorage (PS 47)	Work in Progress (15%)
250	LAT-41	Replace column and anchorage (PS 48)	Work in Progress (15%)
251	LAT-42	Replace beam (PS 48)	Work in Progress (15%)
252	LAT-44*	AFFF Reclamation Line - install protection to overhead valve (PS 61)	Pursuing Alternative Solution
253	LAT-46	Replace beam & connect to tunnel wall (PS 69-71)	Work in Progress (15%)
254	LAT-47	Provide lateral stops & reset pipe cradle (PS 73)	Work in Progress (10%)

Unique ID	SGH ID No.	TITLE	STATUS (% Complete)
255	LAT-48	Provide cradle and lateral stops (PS 74)	Work in Progress (10%)
256	LAT-55	Repair / provide pipe cradle (PS 6)	Work in Progress (15%)
257	PM-10	JP5 pipe - Analyze system for surge events; provide axial restraint (Tanks 5, 13-14, 17-20)	Work in Progress (10%)
258	PM-11	F24 pipe - Evaluate and design axial restraint (Tanks 15 & 16)	Work in Progress (10%)
260	PM-19	JP5 pipe - Connect lateral to protect dresser coupling (Tank 20)	Pending 3rd Party Verification
261	PM-20	JP-5 pipe - Connect lateral to protect dresser coupling (Tank 18)	Pending 3rd Party Verification
264	PM-25	Tank 10 12" dresser coupling - Provide thermal blanket	Work in Progress (50%)
265	HT-12*	AFFF Reclamation Line - install protection to overhead valve (Adit 3)	Pursuing Alternative Solution
266	HP-14**	Hotel Pier - Replace PVC drain pipe	Pending DOH Concurrence
310	PM-21	JP5 pipe - Connect laterals to protect 20" dresser couplings	Work in Progress (10%)
311	PM-22	JP5 pipe - Connect laterals to protect 12" dresser couplings	Work in Progress (10%)
313	32	JP5 / F76 pipes - Evaluate need for dresser couplings and remove if possible	Work in Progress (50%)
316	PM-1	Equalization Line - Install bypass from Tank 20 to other side of DBB valve (JP5 pipe)	Work in Progress (15%)
316	PM-2	Equalization Line - Install bypass after Tank 20 ball valve to main lateral (JP5 pipe)	Work in Progress (15%)
318	PM-3	Equalization Line - Install bypass from Tank 15 to other side of DBB valve (F76 pipe)	Pursuing Alternative Solution
	PM-4	Equalization Line - Install bypass after Tank 15 ball valve to main lateral (F76 pipe)	
	PM-12	F76 pipe - Evaluate and design (if required) longitudinal restraints (Tanks 15 & 16)	
319	27	Equalization Line - Install across tank isolation valves	Pursuing Alternative Solution
	PM-5	Equalization Line - Install bypass from Tank 6 to other side of DBB valve (F24 pipe)	
	PM-6	Equalization Line - Install bypass after Tank 6 ball valve to main lateral (F24 pipe)	
320	HT-6	FOR line - Assess pipe integrity and repair as appropriate (PS 146)	Work in Progress (10%)
321	LAT-24	F24 pipe - Install lateral stops PS 21-103	Work in Progress (10%)
326	HT-3	FOR line - Assess pipe integrity and repair as appropriate (PS 124)	Work in Progress (90%)

Unique ID	SGH ID No.	TITLE	STATUS (% Complete)
456	AGP-1	F76 line - Repair pipe sections (North Road)	Pursuing Alternative Solution
457	AGP-2	F76 line - Repair pipe sections (North Road)	Pursuing Alternative Solution
*This recommendation is pending an AFFF alternative solution which would eliminate the requirement for these actions. (UID #324) ** This recommendation is pending DOH concurrence with DoD's assessment that it is not a prerequisite for safe defueling.			

Phase 3 activities are predominantly being performed by contractors that have the expertise and capacity to perform such work. The following is a list of contract types and methods referenced in Enclosure (4) that are in place to perform the various activities required to defuel Red Hill:

a) Pipeline A/E Contract**:** contract for Architecture / Engineering (A/E) services; executed with A/E firm to complete root cause analyses for the 5/6/21 and 9/29/21 surge events. DoD Agent: Naval Facilities Engineering Systems Command (NAVFAC); Contract #: N3943020D2242; Contractor: Austin Brockenbrough & Associates, LLC; *See* Enclosure 5 for a copy of the redacted contract.

b) National Defense Authorization Act (NDAA) Section 318 A/E Assessment**:** contract for A/E services to conduct an inspection of the pipeline system, supporting infrastructure, and appurtenances, including valves and any other corrosion prone equipment at RHBFSF. The Secretary of the Navy directed this inspection requirement in accordance with the NDAA for Fiscal Year 2022, Section 318: Inspection of Piping and Support Infrastructure at Red Hill Bulk Fuel Storage Facility, Hawaii. DoD Agent: NAVFAC; Contract #: N3943020D2242; Contractor: Austin Brockenbrough & Associates, LLC; *See* Enclosure 5 for a copy of the redacted contract.

c) Pipeline Repairs Contract**:** contract for design and construction to repair fuel piping at the RHBFSF; executed with contractor to complete design and repair of contract items. DoD Agent: NAVFAC; Contract #: N394320D2225; Contractor: APTIM Federal Services, LLC; *See* Enclosure 5 for a copy of the redacted contract.

d) Recurring Maintenance / Minor Repair Contract**:** contract that provides quarterly, semi-annual, and annual maintenance service for capitalized installation level real property. Also included is a minor repair and emergency response services for mission essential repairs. DoD Agent: United States Army Corps of Engineers; Contract #: 47QSHA18D000Y; Contractor: Pond & Company

e) Automated Fuel Systems Installation Contract**:** contract that provides engineering services for the design, fabrication, integration, installation, configuration management, quality assurance, logistics, maintenance, life-cycle management and technical support

capability for the installation of Automated Fuel Systems and other fuel related systems and equipment. DoD Agent: Defense Logistics Agency; Contract #: SP4702-19-D-0005; Contractor: Englobal Government Services

f) Public Works Department (PWD) Shops**:** in-house multi-trade shop forces within the Public Works Department perform construction and maintenance work based on resources available in lieu of a contract.

g) Facility Support Contracts**:** contracts that provide for facility services, maintenance, and installation support services; for example, grounds maintenance, custodial, pest control, integrated solid waste management, street sweeping, facility and utility operations and maintenance, and transportation.

   i. Elevator Maintenance**:** DoD Agent: NAVFAC; Contract #: N6247820D2478; Contractor: Otis Elevator Company

   ii. Fire Suppression System Maintenance**:** DoD Agent: NAVFAC; Contract #: N6247818D2466; Contractor: Media Plumbing & Heating, Inc. DBA Kinetix

h) AFFF Systems Repair Contract**:** a contract for design and construction services of AFFF fire suppression system repairs; executed with construction firm to complete design and construction/repair. The acquisition for design services is underway.

i) JBPHH Hotel Pier Contracts**:** comprised of separate contracts for design and construction; executed with A/E firm to complete design. Once design is complete, a second contract is awarded to a construction company to complete the repair work.

   i. PVC to Steel**:** DoD Agent: NAVFAC; Contract #: N6247820D5036/ N6247822F4351; Contractor: Jacobs/Black & Veatch Joint Venture

   ii. Pier Structure**:** DoD Agent: NAVFAC; Contract #: N6247820C4001; Contractor: Triton Marine Construction Corp

2. Life Cycle of Phase 3 Work Items

DoD has identified eight steps in the life cycle of a Phase 3 repair or enhancement, from the initial recommendation to DOH's ultimate concurrence that the repair or enhancement has addressed the relevant underlying condition and supports safe defueling. Those eight steps are as follows:

Step 1: Each recommendation originates from either a Third Party Assessment or is identified by DoD.

Step 2: DoD reviews and validates that the recommendation is required for defueling, with concurrence from DOH.

Step 3: DoD personnel either complete the work, if it is minor and within their capability, or contract for the work.
Step 4: For contracted work, the contractor is required to perform quality control (QC) to ensure that construction and repairs meet the standards and guidelines set by DoD. DoD outlines QC requirements in each contract and performs quality assurance (QA) to ensure that the contractor is performing the work and that the contractor's quality control program is effective. For work that DoD performs in-house, DoD technical experts conduct QC on the completed work.

Step 5: DoD contract oversight personnel conduct QA to ensure contractor QC is performed appropriately and the work meets requirements and standards. Assigned DoD construction managers and engineering technicians complete this QA for each repair recommendation. The technical managers regularly observe the work and specifically observe all critical construction activities or testing procedures.

Step 6: DoD's third party contracted firm performs inspection and verification that the work is completed appropriately and addresses the recommendation.

Step 7: DoD submits third party QA inspection and verification to DOH for concurrence. (CPM UID 366)

Step 8: DOH concurs that the work performed addresses the recommendation or the underlying condition that drove the recommendation.

C. Phase 5 Update – Defuel and Relocate Fuel

DoD continues to refine the Phase 5 defueling timeline. Additional analysis of the factors and conditions of the current plan has allowed DOD to reduce the timeline for the safe and expeditious defueling of the ~104 million gallons of fuel to 120-calendar days. DoD will continue this analysis and will continue to conduct market research in efforts to reduce the defueling timeline as much as possible, consistent with safe defueling.

DoD is considering the following potential options, factors, and conditions to reduce[8] the Phase 5 timeline to as low as 30 days:

[8] As noted in Supplement 1.A, conditions or constraints that could extend the timeline include:

1. Unplanned maintenance requirements. Any unforeseen maintenance issues at the RHBFSF could require defueling operation to stop while repairs are made, thus affecting the overall time to complete defueling.
2. Critical operational requirements. Access to Hotel Pier for Red Hill defueling operations could be limited if real-world military operations require the use of Hotel Pier for in-port refueling.
3. Severe weather events. The impacts of severe weather or natural disasters can vary widely, including effects on tanker availability and access to Hotel Pier for an undetermined amount of time.

1. Utilizing additional tankers. The plan to defuel in a 120-calendar day timeline uses two tankers to conduct 10 fuel lifts on a 14-calendar day cycle for each tanker defueling evolution. Increasing the number of tankers could reduce evolution cycle time more than 50% per tanker. The additional tankers could receive fuel and serve as floating storage until they can be offloaded at a commercial facility or other destinations within the DoD bulk fuel supply chain.

2. Increasing the flowrate for defueling to Hotel Pier. DoD is considering use of a more efficient but still conservative flowrate for the defueling operations to Hotel Pier. The current plan uses a flowrate of ~150,000 gallons per hour (gph), taking approximately 4-calendar-days to fill each tanker. Adjusting the flowrate to 300,000 gph—which is still significantly lower than the 500,000 gph maximum—could reduce the tanker load time by 50%, while still maintaining a safe defuel rate.

3. Suspending fueling operations on the Pearl Harbor side of JBPHH during the execution of defueling. In this scenario, Hotel Pier would be fully dedicated to Red Hill defueling operations. All other fuel requirements would be fulfilled via other means. There would be no impact to operations at Hickam Airfield, as all fuel tanks will be filled prior to commencing Phase 5.

4. Resupplying the Upper Tank Farm (UTF) as part of defueling. Defueling the Red Hill tanks into the UTF would be accomplished by intentionally lowering the inventory in UTF prior to the start of Phase 5. This would maximize the ullage (storage) available to receive Red Hill F-76 and F-24 at the beginning of defueling operations, reduce the total number of contracted tankers required to defuel Red Hill, and reduce the need to bring fuel from off island to support operations at JBPHH.

5. Conducting defueling operations at Hotel Pier twice weekly, Monday-Tuesday and Thursday-Friday for the duration of defueling. One contracted tanker could be filled during each two-day defueling evolution by conducting 24-hour operations. There would be no fuel on-load operations planned for Wednesdays, Saturdays, or Sundays, allowing for proper crew rest between defueling evolutions.

III. Joint Task Force Red Hill

DoD established the Joint Task Force Red Hill (JTF-RH) to be the single accountable DoD entity for safe and expeditious defueling of the RHBFSF and the primary point of coordination with State and Federal stakeholders on Red Hill issues.[9] The Secretary of Defense has selected Rear Admiral John Wade to command the JTF-RH. JTF-RH leadership will also include six Directors (O-6 level) to oversee the following capabilities: Planning, Training, Quality Assurance, Operations, Repairs, and Response. JTF-RH will establish a Senior Policy Group, including experts from DOH and EPA, to provide strategic guidance to the JTF-RH Commander (CDR) and foster a collaborative environment to complete the mission. In addition, JTF-RH will include a Commander's Oversight Group, comprised of DoD experts in safety, public affairs, legislative affairs, community relations, comptroller and audit, legal, and policy, to advise the JTF-RH CDR on relevant issues and coordinate external communications.

DoD has built the JTF-RH command and control structure to ensure the expeditious defueling of Red Hill in a safe and informed manner, with full transparency to DoD's regulators, its intergovernmental partners, and the people of Hawaii. The JTF-RH command and control structure addresses the gaps and inefficiencies that caused or contributed to the 2021 spills at Red Hill. The Department of Navy's Command Investigation into those incidents found that the Red Hill command and control structure was replete with "overly complex and unclear lines of responsibility and accountability" and that the command and control structure "broke down in crisis because there was no individual identified as singularly responsible and accountable for incident response when the November spill occurred." The JTF-RH command and control structure rectifies those deficiencies by vesting with Rear Admiral Wade clear and undivided command authority and accountability for the safe and expeditious defueling of the facility.[10]

The following organization chart is a preliminary outline of the Joint Task Force command and control structure, directorates, and responsibilities.

[9] As discussed in Supplement 1.A, the Department of the Navy remains responsible for the continued monitoring of the drinking water and for the closure of Red Hill.

[10] DoD also recognizes the importance of effectively communicating with external Federal and State stakeholders. JTF-RH will use functional naming conventions that are easily translatable to the civilian community vice a more military model, with an emphasis on the public affairs/community outreach office.

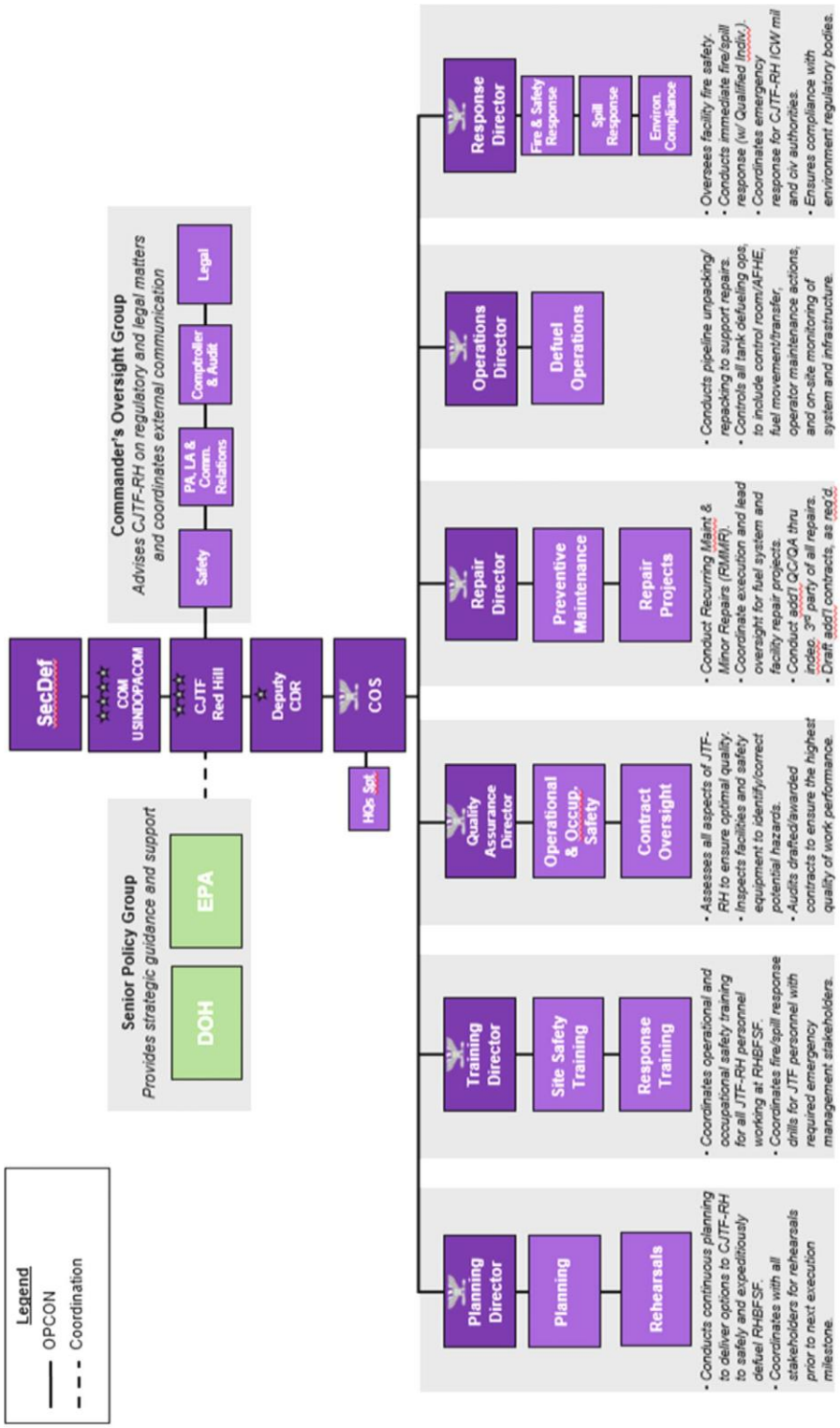


Figure 2 – Joint Task Force Red Hill

IV. Next Deliverables

In addition to monthly CPM schedule updates, DoD will provide the deliverables identified in Table 2 to DOH and EPA.

Table 2 – List of Deliverables

Title	**Date Due to DOH**	**Concurrence Date From DOH**
Consolidated repair list to defuel upon completion of all assessments	October 24, 2022 (UID 358)	November 25, 2022 (UID 336)
Third-party quality assurance plan for repairs	November 1, 2022 (UID 362)	November 21, 2022 (UID 289)
Spill drill plan prior to defueling	November 10, 2023 (UID 376)	December 7, 2023 (UID 381)
Completion of all repairs required for defueling	January 2, 2024 (UID 366)	January 29, 2024 (UID 226)
Final request for approval to repack fuel lines and defuel	January 11, 2024 (UID 370)	February 7, 2024 (UID 95)

V. Conclusion

DoD remains focused on the safe and expeditious defueling of Red Hill. Through collaboration among multiple stakeholders, DoD found opportunities to safely reduce the timeline to defuel Red Hill and looks forward to continued collaboration with DOH, EPA, and others. DoD's commitment to protect the population of Hawaii, the environment, and the security of the nation will guide JTF-RH actions in implementing the defueling plan. As JTF-RH is established, the Commander will continue to work with DOH and other key stakeholders to determine the appropriate fora and frequency for strategic leader engagement and collaboration, fostering open communication to ensure the safe and expeditious defueling of Red Hill. The Department of the Navy will continue to do the same to communicate updates on continued monitoring of the drinking water and preparation for the closure of Red Hill.

VI. Acronyms

Acronym	Meaning
AFFF	Aqueous Film Forming Foam
AFHE	Automatic Fuel Handling Equipment
AISC	American Institute of Steel Construction
AOC	Administrative Order on Consent
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
AST	Above-Ground Storage Tank
ATG	Automatic Tank Gauging
BFP	Backflow Prevention
CCC	Cross Connection Control
CFR	Code of Federal Regulations
CIR	Clean, Inspect and Repair
CNRH	Commander, Navy Region Hawaii
COA	Course of Action
COCO	Contractor Owned / Contractor Operated
COMNAVREGHI	Commander, Navy Region Hawaii
CONOP	Concept of Operations
CPF	Commander, US Pacific Fleet
CPM	Critical Path Method
CRO	Control Room Operator
DBB	Double Block and Bleed
DCR	Demand-to-Capacity Ratios
DFM	Diesel Fuel - Marine
DFSP	Defense Fuel Support Point
DLA	Defense Logistics Agency
DoD / DOD	Department of Defense
DoH / DOH	Department of Health
DOT PHMSA	Department of Transportation, Pipeline Hazardous Materials Safety Administration
EO	Emergency Order
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ERP	Emergency Response Plan

Acronym	**Meaning**
EXWC	Engineering and Expeditionary Warfare Center
FE	Finite Element
FFS	Fitness for Service
FLC	Fleet Logistics Center
FOR	Fuel Oil Reclamation or Recovery
FRP	(Red Hill Fuel Storage) Facility Response Plan
FRT	Facility Response Team
HAR	Hawaii Administrative Rules
HAZOP	Hazard and Operability
HI DoH	Hawaii Department of Health
HP	Hotel Pier
HPV	High Point Vent
HRS	Hawaii Revised Statues
ICP	Integrated Contingency Plan
ICS	Incident Command System
IDWST	Interagency Drinking Water System Team
IG	Inspector General
IMP	Integrity Management Plan
ITO	Internal Training Officers
JB	Joint Base
JBPHH	Joint Base Pearl Harbor Hickam
JTF-RH	Joint Task Force – Red Hill
LAT	Lower Access Tunnel
LL	Lessons Learned
LOTO	Lock out Tag Out
MOC	Management of Change
MSC	Military Sealift Command
MTG	Manual Tank Gauging
NAVFAC	Naval Facilities Engineering Systems Command
NAVFACHI	Naval Facilities Engineering Systems Command Hawaii
NAVSUP	Navy Supply Systems Command
NAVSUP FLCPH	Navy Supply Systems Command Fleet Logistics Center Pearl Harbor
NDAA	National Defense Authorization Act
NOSC	Navy On-Scene Coordinator
OMES	Operation, Maintenance, Environmental and Safety Plan

Acronym	**Meaning**
OPORD	Operation Order
ORA	Operational Readiness Assessment
OSC	On-Scene Coordinators
OSD	Office of the Secretary of Defense
OSHA	Occupational Health and Safety Administration
OSRO	Oil Spill Response / Recovery Organization
PACFLT	US Pacific Fleet
PAO	Public Affairs Office
PCAR	Preliminary Condition Assessment Report
PHA	Process Hazard Analysis
PIT	Pressure Indicating Transducer / Transmitter
PITS	Pressure Indicating Transducer Sensors
POL	Petroleum, Oil, and Lubricants
PS	Pipe Support
PSM	Process Safety Management
PVC	Polyvinyl Chloride
PWS	Public Water System
QA	Quality Assurance
QC	Quality Control
QI	Qualified Individual
RBPS	Risk-Based Process Safety
RFI	Request for Information
RH	Red Hill
RHBFSF	Red Hill Bulk Fuel Storage Facility
ROC	Regional Operations Center
RP	Recommended Practices
RRA	Risk and Resilience Assessment
SCADA	Supervisory Control and Data Acquisition
SECNAV	Secretary of the Navy
SGH	Simpson Gumpertz & Heger Inc.
SIM	Structural Integrity Management
SME	Subject Matter Expert
SMT	Spill Management Team
SOW	Statement of Work
SOW	Supervisor of the Watch

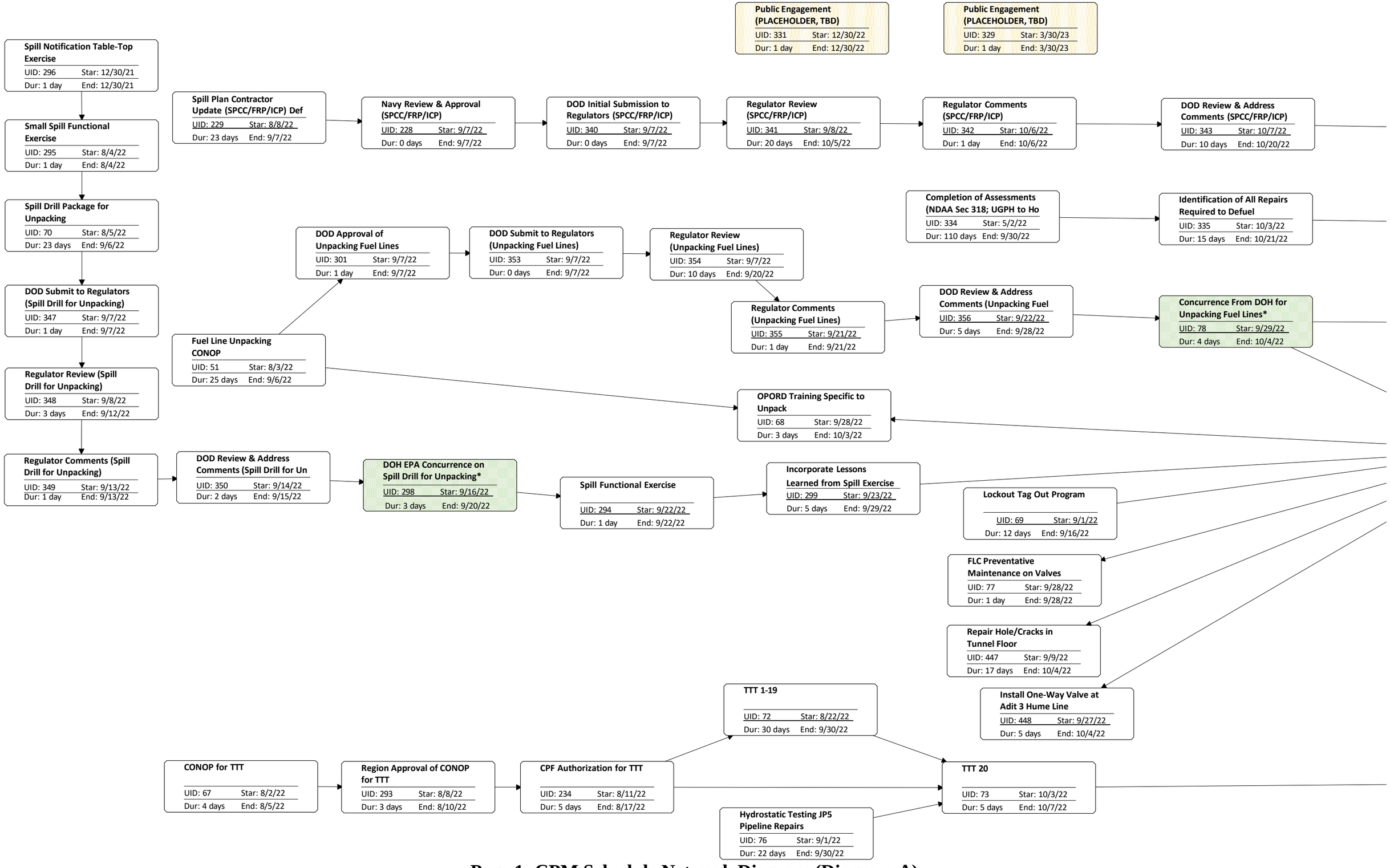
Acronym	**Meaning**
SPAWAR	Space and Naval Warfare Systems Command (now NAVWAR - Naval Information Warfare Systems Command)
SPCC	Spill Prevention Control and Countermeasures Plan
SRT	Spill Response Team
TBD	To Be Determined
TTT	Tank Tightness Testing
TTX	Table Top Exercise
UC	Unified Command
UFM	Unscheduled Fuel Movement
UGPH	Underground Pump House
USC	United Stated Code
USCG	US Coast Guard
USINDOPACOM	United States Indo-Pacific Command
UST	Underground Storage Tank
WAP	Work Authorization Program
WDT	Water Development Tunnel

Enclosure (1) to
Red Hill Bulk Fuel Storage Facility, Oahu, Hawaii
28 September 2022 Supplement 1.B

Defuel Plan CPM Schedule

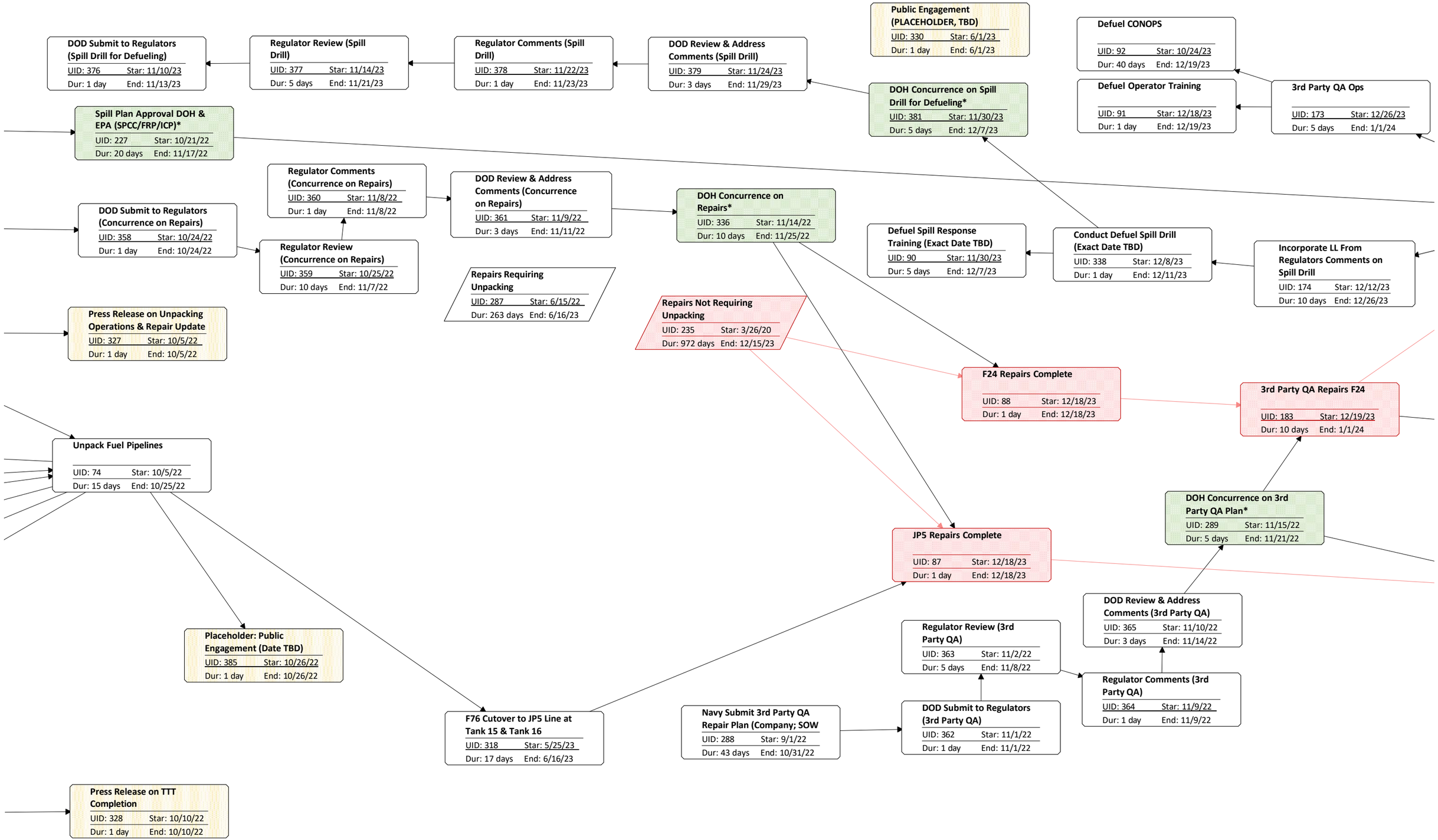
(as of 28 Sept 2022)

Red Hill Defuel Plan CPM Schedule: Network Diagram (as of 28 SEP 2022)



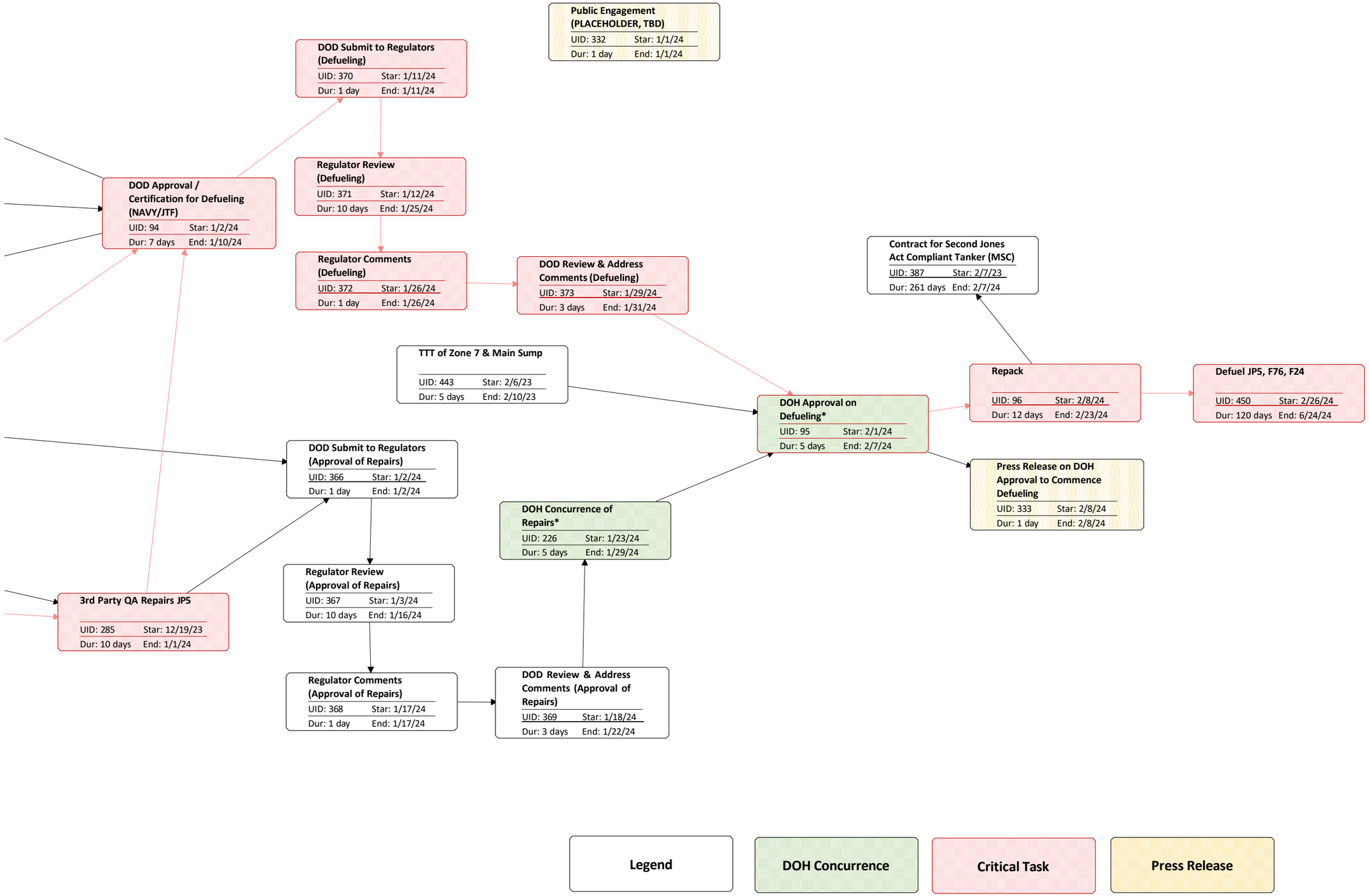
Page 1: CPM Schedule Network Diagram (Diagram A)

Red Hill Defuel Plan CPM Schedule: Network Diagram (as of 28 SEP 2022)



Page 2: CPM Schedule Network Diagram (Diagram A)

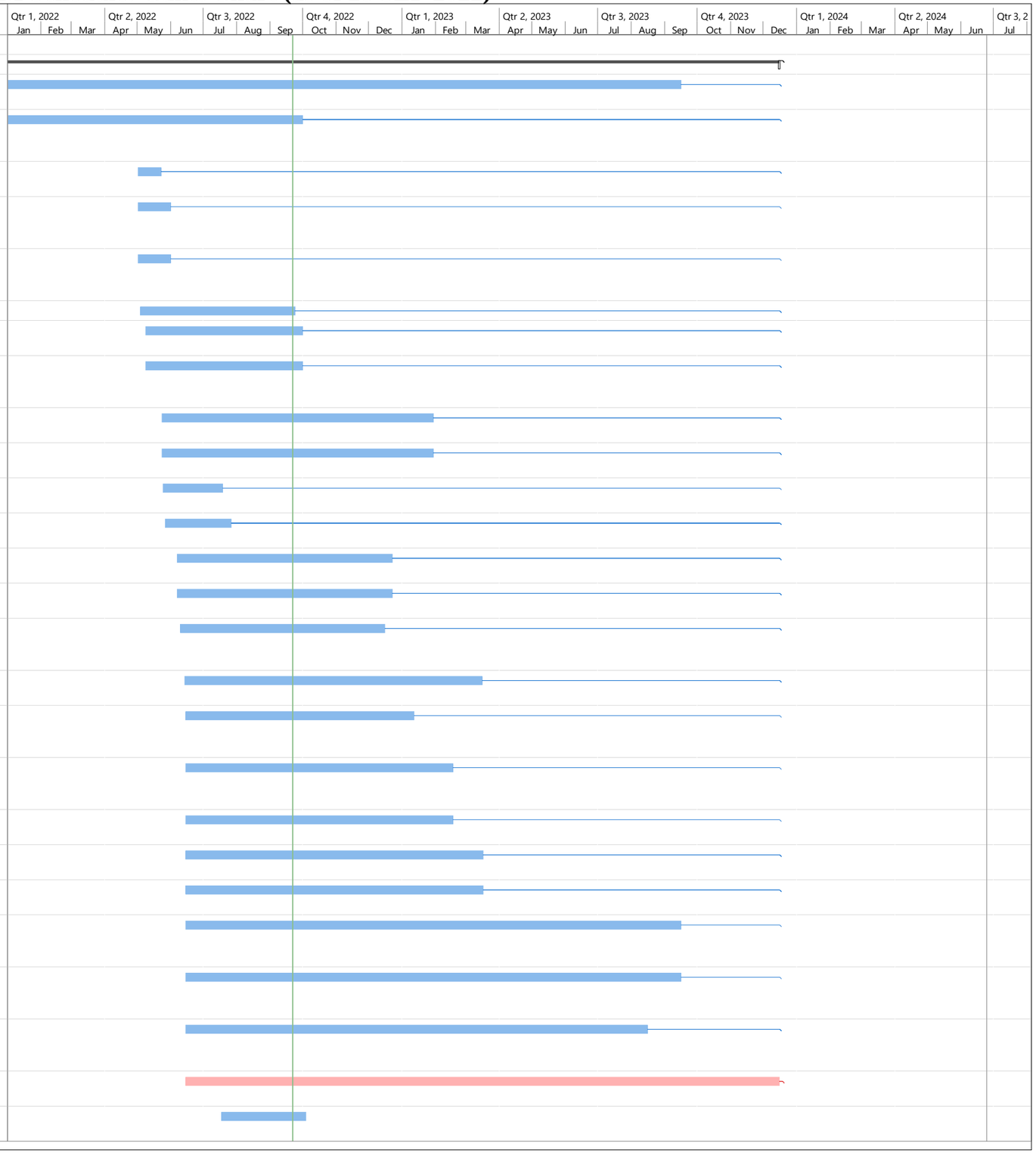
Red Hill Defuel Plan CPM Schedule: Network Diagram (as of 28 SEP 2022)



Page 3: CPM Schedule Network Diagram (Diagram A)

Red Hill Defuel Plan CPM Schedule: Gantt Chart (as of 28 SEP 2022)

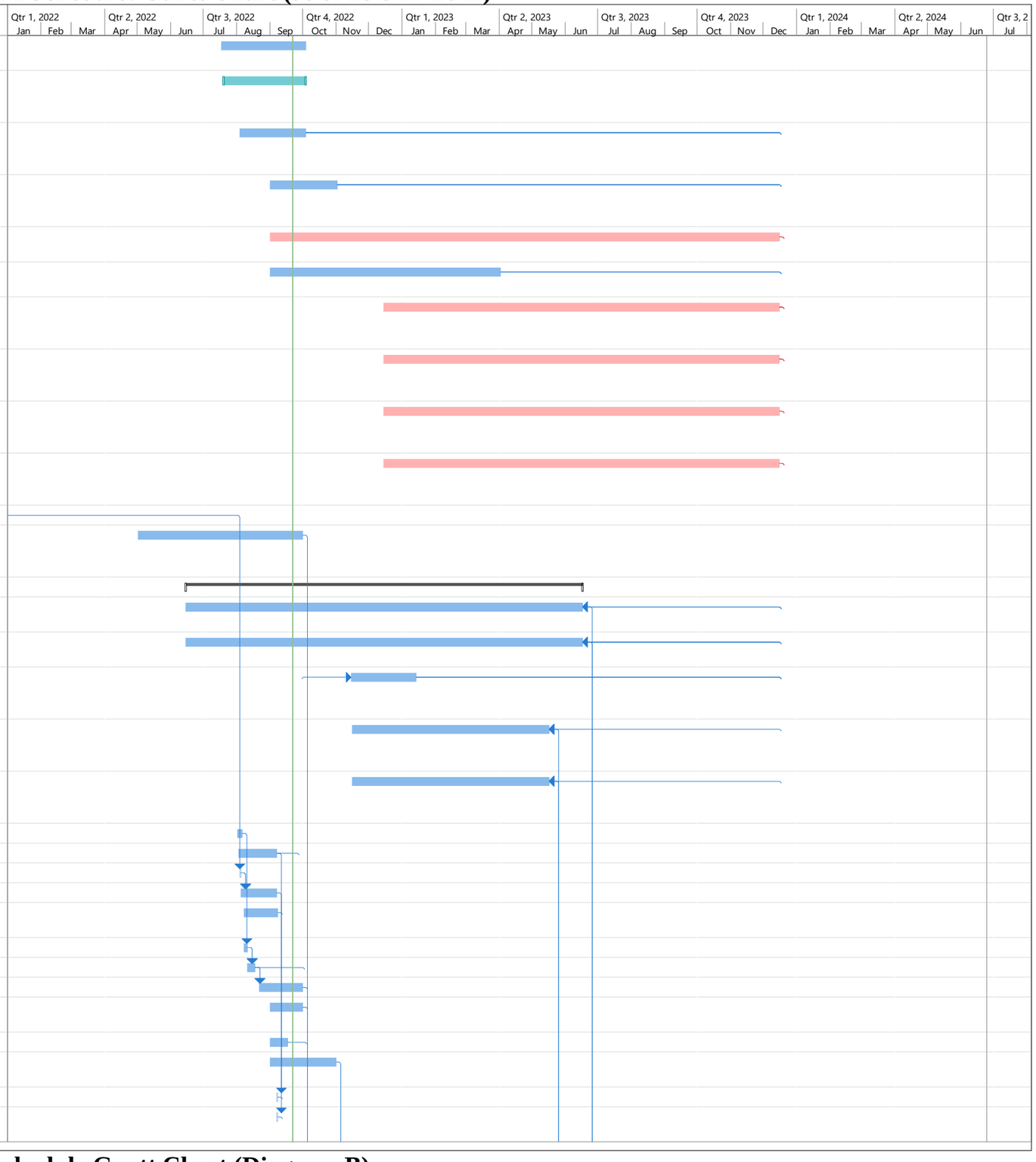
ID	Unique ID	Name	Duration	Start	Finish	Unique ID Predecessors	Unique ID Successors
59	**394**	**Legend**	**1 day?**	**1/1/20**	**1/1/20**		
1	**235**	**Repairs Not Requiring Unpacking**	**972 days**	**3/26/20**	**12/15/23**		**87,88**
3	433	Hotel Pier Structural Repairs (SGH #HP-5, 6, 7, 8, 11, 12, 13)	907 days	3/26/20	9/15/23		87,88
6	237	Evaluate Pipe & Hose Rating Between Red Hill and Piers and Docks (SGH #14)	208 days	12/15/21	9/30/22		87,88
8	236	Confirm dresser couplings can seal under vacuum conditions (SGH #8)	15 days	5/2/22	5/22/22		87,88
9	260	JP5 pipe - Connect lateral to protect dresser coupling (Tank 20) (SGH #PM-19)	22 days	5/2/22	5/31/22		87
10	261	JP5 pipe - Connect lateral to protect dresser coupling (Tank 18) (SGH #PM-20)	22 days	5/2/22	5/31/22		87
11	251	Replace beam (PS 48) (SGH #LAT-42)	103 days	5/4/22	9/23/22		87,88
4	239	Evaluate Underlying Cause of Line Sag (SGH #31)	105 days	5/9/22	9/30/22		87,88
5	241	Perform Surge Analysis for Pipelines (JP5, F76, F24): Evaluate Dresser Couplings(SGH #1)	105 days	5/9/22	9/30/22		87,88
12	254	Provide lateral stops & reset pipe cradle (PS 73) (SGH #LAT-47)	179 days	5/24/22	1/29/23		87,88
13	255	Provide cradle and lateral stops (PS 74) (SGH #LAT-48)	179 days	5/24/22	1/29/23		87,88
14	244	JP5 pipe - Install lateral restraint at PS 18 (SGH #LAT-20)	39 days	5/25/22	7/18/22		87
15	247	Install protection around overhead valve (PS 27) (SGH #LAT-32)	43 days	5/27/22	7/26/22		87,88
16	253	Replace beam & connect to tunnel wall (PS 69-71) (SGH #LAT-46)	143 days	6/7/22	12/22/22		87,88
17	256	Repair / provide pipe cradle (PS 6) (SGH #LAT-55)	143 days	6/7/22	12/22/22		87,88
18	238	Confirm oil tight door can operate upon loss of normal power (SGH #28)	135 days	6/10/22	12/15/22		87,88
24	249	Replace column and anchorage (PS 47) (SGH #LAT-40)	197 days	6/14/22	3/15/23		87,88
19	242	JP5 pipe - Confirm System Can Withstand Surge Event; Modify if Necessary (SGH #LAT-3)	118 days	6/15/22	1/11/23		87
20	313	JP5 / F76 pipes - Evaluate need for dresser couplings and remove if possible (SGH #32)	177 days	6/15/22	2/16/23		87
22	321	F24 Pipe - Install Lateral Stops PS 21-103 (SGH #LAT-24)	177 days	6/15/22	2/16/23		88
23	248	Replace brace (PS 46-47) (SGH #LAT-38)	197 days	6/15/22	3/16/23		87,88
25	250	Replace column and anchorage (PS 48) (SGH #LAT-41)	197 days	6/15/22	3/16/23		87,88
26	257	JP5 pipe - Analyze system for surge events; provide axial restraint (Tanks 5, 13-14, 17-20) (SGH #PM-10)	328 days	6/15/22	9/15/23		87
27	258	F24 pipe - Evaluate and design axial restraint (Tanks 15 & 16) (SGH #PM-11)	328 days	6/15/22	9/15/23		88
29	268	Perform pipeline repairs identified from Red Hill NDAA and other pipeline inspections (placeholder)	305 days	6/15/22	8/15/23		87,88
31	**266**	Hotel Pier - Replace PVC drain line (SGH #43) (HP-14)	393 days	6/15/22	12/15/23		**87,88**
32	456	F76 Line - Repair Pipe Sections (North Road) (AGP-1)	56 days	7/18/22	10/3/22		



Page 4: CM schedule Gantt Chart (Diagram B)

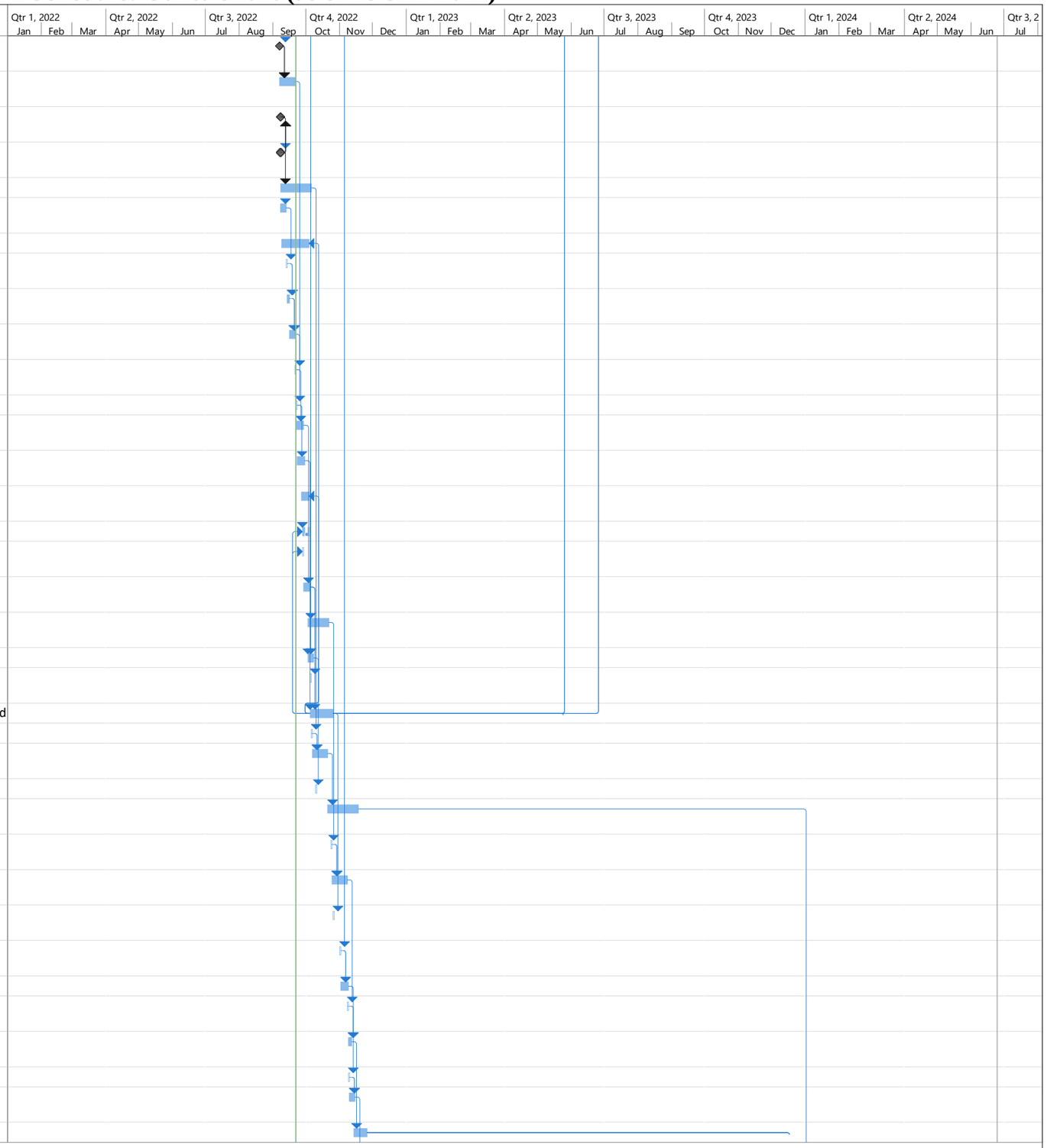
Red Hill Defuel Plan CPM Schedule: Gantt Chart (as of 28 SEP 2022)

ID	Unique ID	Name	Duration	Start	Finish	Unique ID Predecessors	Unique ID Successors
33	457	F76 line - Repair Pipe Section (North Road) (AGP-2)	56 days	7/18/22	10/3/22		
2	326	FOR Line- Assess Pipe Integrity and Repair as Appropriate (PS 124) (HT-3)	54 days	7/20/22	10/3/22		
21	320	FOR Line - Assess pipe integrity & repair as appropriate (SGH HT-6, PS 146)	43 days	8/4/22	10/3/22		87,88
7	264	Tank 10 12" dresser coupling - Provide thermal blanket (SGH #PM-25)	44 days	9/1/22	11/1/22		87,88
28	324	Repair / Replace AFFF Reclamation Line (TBD)	337 days	9/1/22	12/15/23		285,183
30	269	RMMR Repairs per NDAA Assessment (placeholder)	152 days	9/1/22	4/1/23		87,88
34	243	AFFF Reclamation Line - install protection to overhead valve (PS 14-15) (SGH #LAT-15)	262 days	12/15/22	12/15/23		87,88
35	246	AFFF Reclamation Line - install protection to overhead valve (PS 26) (SGH #LAT-29)	262 days	12/15/22	12/15/23		87,88
36	252	AFFF Reclamation Line - install protection to overhead valve (PS 61) (SGH #LAT-44)	262 days	12/15/22	12/15/23		87,88
37	265	AFFF Reclamation Line - install protection to overhead valve (Adit 3) (SGH #HT-12)	262 days	12/15/22	12/15/23		87,88
50	296	Spill Notification Table-Top Exercise	1 day	12/30/21	12/30/21		295
54	334	Completion of Assessments (NDAA Sec 318; UGPH to Hotel Pier; SGH Assessments)	110 days	5/2/22	9/30/22		335
84	**287**	**Repairs Requiring Unpacking**	**263 days**	**6/15/22**	**6/16/23**		
87	319	Install equalization/bypass lines (SGH #27, PM-5, PM-6)	263 days	6/15/22	6/16/23	74FF	87,88
88	316	Install equalization/bypass lines (SGH #PM-1, PM-2)	263 days	6/15/22	6/16/23	74FF	87,88
89	208	Install Pressure Indicating Transducer Sensors (PITS) in Tank Gallery (SGH #6)	44 days	11/15/22	1/13/23	74SS	88,87
85	310	JP5 pipe - Connect laterals to protect 20" dresser couplings (SGH #PM-21)	130 days	11/16/22	5/16/23	74FF	87
86	311	JP5 pipe - Connect laterals to protect 12" dresser couplings (SGH #PM-22)	130 days	11/16/22	5/16/23	74FF	87
49	67	CONOP for TTT	4 days	8/2/22	8/5/22		293
48	51	Fuel Line Unpacking CONOP	25 days	8/3/22	9/6/22		68,301
58	295	Small Spill Functional Exercise	1 day	8/4/22	8/4/22	296	70
64	70	Spill Drill Package for Unpacking	23 days	8/5/22	9/6/22	295	347
51	229	Spill Plan Contractor Update (SPCC/FRP/ICP) Defuel	23 days	8/8/22	9/7/22		228
52	293	Region Approval of CONOP for TTT	3 days	8/8/22	8/10/22	67	234
53	234	CPF Authorization for TTT	5 days	8/11/22	8/17/22	293	72FS+2 days,73
65	72	TTT 1-19	30 days	8/22/22	9/30/22	234FS+2 days	73
66	76	Hydrostatic Testing JP5 Pipeline Repairs	22 days	9/1/22	9/30/22		73
67	69	Lockout Tag Out Program	12 days	9/1/22	9/16/22		74
68	288	Navy Submit 3rd Party QA Repair Plan (Company; SOW)	43 days	9/1/22	10/31/22		362
74	301	DOD Approval of Unpacking Fuel Lines	1 day	9/7/22	9/7/22	51	353FS-1 day
108	347	DOD Submit to Regulators (Spill Drill for Unpacking)	1 day	9/7/22	9/7/22	70	348



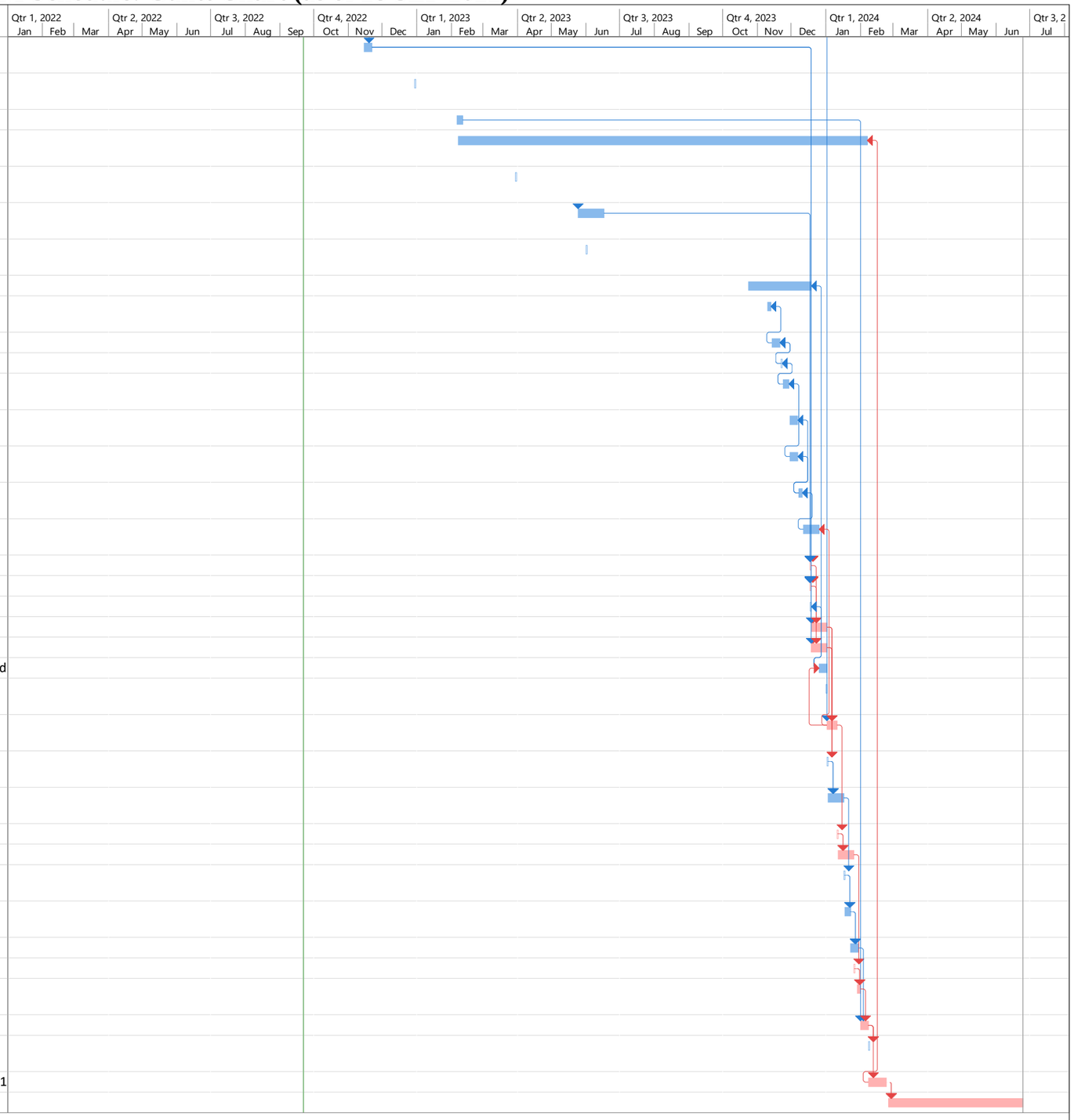
Red Hill Defuel Plan CPM Schedule: Gantt Chart (as of 28 SEP 2022)

ID	Unique ID	Name	Duration	Start	Finish	Unique ID Predecessors	Unique ID Successors
112	353	DOD Submit to Regulators (Unpacking Fuel Lines)	0 days	9/7/22	9/7/22	301FS-1 day	354
113	354	Regulator Review (Unpacking Fuel Lines)	10 days	9/7/22	9/20/22	353	355
44	340	DOD Initial Submission to Regulators (SPCC/FRP/ICP)	0 days	9/7/22	9/7/22	228	341
69	228	Navy Review & Approval (SPCC/FRP/ICP)	0 days	9/7/22	9/7/22	229	340
45	341	Regulator Review (SPCC/FRP/ICP)	20 days	9/8/22	10/5/22	340	342
109	348	Regulator Review (Spill Drill for Unpacking)	3 days	9/8/22	9/12/22	347	349
80	447	Repair Hole/Cracks in Tunnel Floor	17 days	9/9/22	10/4/22	74SF-1 day	
110	349	Regulator Comments (Spill Drill for Unpacking)	1 day	9/13/22	9/13/22	348	350
111	350	DOD Review & Address Comments (Spill Drill for Unpacking)	2 days	9/14/22	9/15/22	349	298
70	298	DOH EPA Concurrence on Spill Drill for Unpacking*	3 days	9/16/22	9/20/22	350	294FS-1 day
114	355	Regulator Comments (Unpacking Fuel Lines)	1 day	9/21/22	9/21/22	354	356
71	294	Spill Functional Exercise	1 day	9/22/22	9/22/22	298FS-1 day	299
115	356	DOD Review & Address Comments (Unpacking Fuel Lines)	5 days	9/22/22	9/28/22	355	78
72	299	Incorporate Lessons Learned from Spill Exercise	5 days	9/23/22	9/29/22	294	74
81	448	Install One-Way Valve at Adit 3 Hume Line	5 days	9/27/22	10/4/22	74SF-1 day	
78	68	OPORD Training Specific to Unpack	3 days	9/28/22	10/3/22	51,74SS-5 days	
79	77	FLC Preventative Maintenance on Valves	1 day	9/28/22	9/28/22	74SS-5 days	
75	78	Concurrence From DOH for Unpacking Fuel Lines*	4 days	9/29/22	10/4/22	356	74,327
55	335	Identification of All Repairs Required to Defuel	15 days	10/3/22	10/21/22	334	358
76	73	TTT 20	5 days	10/3/22	10/7/22	76,234,72	328
38	327	Press Release on Unpacking Operations & Repair Update	1 day	10/5/22	10/5/22	78	
82	74	Unpack Fuel Pipelines	15 days	10/5/22	10/25/22	78,299,69	68SS-5 days,77SS-5 d
46	342	Regulator Comments (SPCC/FRP/ICP)	1 day	10/6/22	10/6/22	341	343
47	343	DOD Review & Address Comments (SPCC/FRP/ICP)	10 days	10/7/22	10/20/22	342	227
77	328	Press Release on TTT Completion	1 day	10/10/22	10/10/22	73	
73	227	Spill Plan Approval DOH & EPA (SPCC/FRP/ICP)*	20 days	10/21/22	11/17/22	343	94
116	358	DOD Submit to Regulators (Concurrence on Repairs)	1 day	10/24/22	10/24/22	335	359
117	359	Regulator Review (Concurrence on Repairs)	10 days	10/25/22	11/7/22	358	360
83	385	Placeholder: Public Engagement (Date TBD)	1 day	10/26/22	10/26/22	74	
120	362	DOD Submit to Regulators (3rd Party QA)	1 day	11/1/22	11/1/22	288	363
121	363	Regulator Review (3rd Party QA)	5 days	11/2/22	11/8/22	362	364
118	360	Regulator Comments (Concurrence on Repairs)	1 day	11/8/22	11/8/22	359	361
119	361	DOD Review & Address Comments (Concurrence on Repairs)	3 days	11/9/22	11/11/22	360	336
122	364	Regulator Comments (3rd Party QA)	1 day	11/9/22	11/9/22	363	365
123	365	DOD Review & Address Comments (3rd Party QA)	3 days	11/10/22	11/14/22	364	289
56	336	DOH Concurrence on Repairs*	10 days	11/14/22	11/25/22	361	88,87



Red Hill Defuel Plan CPM Schedule: Gantt Chart (as of 28 SEP 2022)

ID	Unique ID	Name	Duration	Start	Finish	Unique ID Predecessors	Unique ID Successors
90	289	DOH Concurrence on 3rd Party QA Plan*	5 days	11/15/22	11/21/22	365	285,183
41	331	Public Engagement (PLACEHOLDER, TBD)	1 day	12/30/22	12/30/22		
106	443	TTT of Zone 7 & Main Sump	5 days	2/6/23	2/10/23		95
107	387	Contract for Second Jones Act Compliant Tanker (MSC)	261 days	2/7/23	2/7/24	96SF-1 day	
39	329	Public Engagement (PLACEHOLDER, TBD)	1 day	3/30/23	3/30/23		
57	318	F76 Cutover to JP5 Line at Tank 15 & Tank 16	17 days	5/25/23	6/16/23	74	87
40	330	Public Engagement (PLACEHOLDER, TBD)	1 day	6/1/23	6/1/23		
100	92	Defuel CONOPS	40 days	10/24/23	12/19/23	173SF-5 days	
132	376	DOD Submit to Regulators (Spill Drill for Defueling)	1 day	11/10/23	11/13/23	377SF-1 day	
133	377	Regulator Review (Spill Drill)	5 days	11/14/23	11/21/23	378SF-1 day	376SF-1 day
134	378	Regulator Comments (Spill Drill)	1 day	11/22/23	11/23/23	379SF-1 day	377SF-1 day
135	379	DOD Review & Address Comments (Spill Drill)	3 days	11/24/23	11/29/23	381SF-1 day	378SF-1 day
91	90	Defuel Spill Response Training (Exact Date TBD)	5 days	11/30/23	12/7/23	338SF-1 day	
92	381	DOH Concurrence on Spill Drill for Defueling*	5 days	11/30/23	12/7/23	338SF-1 day	379SF-1 day
96	338	Conduct Defuel Spill Drill (Exact Date TBD)	1 day	12/8/23	12/11/23	174SF-1 day	90SF-1 day,381SF-1 day
95	174	Incorporate LL From Regulators Comments on Spill Drill	10 days	12/12/23	12/26/23	94SF-5 days	338SF-1 day
93	87	JP5 Repairs Complete	1 day	12/18/23	12/18/23	235,208,320,23	285
94	88	F24 Repairs Complete	1 day	12/18/23	12/18/23	235,208,320,32	183
99	91	Defuel Operator Training	1 day	12/18/23	12/19/23	173SF-5 days	
97	285	3rd Party QA Repairs JP5	10 days	12/19/23	1/1/24	87,289,324	94,366
98	183	3rd Party QA Repairs F24	10 days	12/19/23	1/1/24	88,289,324	94,366
101	173	3rd Party QA Ops	5 days	12/26/23	1/1/24	94SS-5 days	92SF-5 days,91SF-5 d
43	332	Public Engagement (PLACEHOLDER, TBD)	1 day	1/1/24	1/1/24		
102	94	DOD Approval / Certification for Defueling (NAVY/JTF)	7 days	1/2/24	1/10/24	227,183,285	173SS-5 days,174SF-5
124	366	DOD Submit to Regulators (Approval of Repairs)	1 day	1/2/24	1/2/24	183,285	367
125	367	Regulator Review (Approval of Repairs)	10 days	1/3/24	1/16/24	366	368
128	370	DOD Submit to Regulators (Defueling)	1 day	1/11/24	1/11/24	94	371
129	371	Regulator Review (Defueling)	10 days	1/12/24	1/25/24	370	372
126	368	Regulator Comments (Approval of Repairs)	1 day	1/17/24	1/17/24	367	369
127	369	DOD Review & Address Comments (Approval of Repairs)	3 days	1/18/24	1/22/24	368	226
103	226	DOH Concurrence of Repairs*	5 days	1/23/24	1/29/24	369	95
130	372	Regulator Comments (Defueling)	1 day	1/26/24	1/26/24	371	373
131	373	DOD Review & Address Comments (Defueling)	3 days	1/29/24	1/31/24	372	95
104	95	DOH Approval on Defueling*	5 days	2/1/24	2/7/24	226,373,443	96,333
42	333	Press Release on DOH Approval to Commence Defueling	1 day	2/8/24	2/8/24	95	
105	96	Repack	12 days	2/8/24	2/23/24	95	387SF-1 day,450FS+1
63	450	Defuel JP5, F76, F24	120 days	2/26/24	6/24/24	96FS+1 day	



Page 7: CM schedule Gantt Chart (Diagram B)

Acronym	**Meaning**
CONOP	Concept of Operations
CPF	Commander, US Pacific Fleet
DoD / DOD	Department of Defense
DoH / DOH	Department of Health
EPA	Environmental Protection Agency
FLC	Fleet Logistics Center
FRP	(Red Hill Fuel Storage) Facility Response Plan
ICP	Integrated Contingency Plan
JTF	Joint Task Force
LL	Lessons Learned
MSC	Military Sealift Command
NDAA	National Defense Authorization Act
OPORD	Operation Order
PITS	Pressure Indicating Transducer Sensors
QA	Quality Assurance
SGH	Simpson Gumpertz & Heger Inc.
SOW	Statement of Work
SPCC	Spill Prevention Control and Countermeasures Plan
TBD	To Be Determined
TTT	Tank Tightness Testing
UGPH	Underground Pump House