REGION 9
SAN FRANCISCO, CA 94105

February 06, 2026

VIA ELECTRONIC MAIL ONLY

Rear Admiral Lester Ortiz
Deputy Commander, Navy Closure Task Force-Red Hill
850 Ticonderoga Street, Ste. 110
Joint Base Pearl Harbor Hickam, HI 96860-5105

Subject: U.S. Environmental Protection Agency Request to Incorporate Field Studies to Validate Groundwater Flow Model, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor Hickam

Dear Rear Admiral Ortiz,

The U.S. Environmental Protection Agency (EPA) is encouraged by the Navy's recent progress in developing a groundwater flow model for the Red Hill Facility. The model supports the Phase II Closure Plan required under the 2023 Administrative Consent Order ACO). The updated best available groundwater flow model (October 2025) and the vadose zone transport model (December 2025) represent improvements in the representation of site structures, hydrogeologic conditions, and processes influencing groundwater flow.

Further refinement and validation of the groundwater flow model will require completion of field studies that provide direct observational data and additional lines of evidence to compare against model assumptions and predictions of groundwater flow rate and direction. Red Hill presents an especially challenging environment for groundwater modeling due to the complex geology of O'ahu, a very flat groundwater gradient, and the absence of clearly discernible plume migration. Calibration of the model to observed hydraulic heads alone does not provide sufficient confidence in model predictions, given measurement uncertainty and the very low hydraulic gradient at the site. Under these circumstances, field investigations—such as colloidal borescope testing and dye tracer studies—are critical to refining and validating the groundwater flow model.

Navy is responsible for developing a calibrated and validated groundwater flow model for the Red Hill Facility. To ensure continued progress toward that objective, EPA requests that the Navy take the following actions and provide the supporting reports:

- Evaluate colloidal borescope data from all wells to validate the model's accuracy in simulating groundwater flow rate and direction on local and regional scales.

- Utilize geophysical data to update and/or validate the numerical model structure and associated hydraulic property assignments.

- In the next model iteration, utilize dye tracer study to validate transport model assumptions.

- Develop and implement a dye tracer study at the Oily Waste Disposal Facility to better understand groundwater flow at the southwest end of the facility.

- Evaluate and report on available geochemical data (e.g., NVDOC, TOC, and monitored natural attenuation parameters) for spatial patterns indicative of groundwater transport.

Please provide a written response outlining the specific steps and schedule for incorporating these field studies no later than March 20, 2026.

If you have any questions regarding this request, please me at russi.tonya@epa.gov or (415) 972-3706.

Sincerely,

/s/
Tonya Russi
Red Hill Project Coordinator
U.S. Environmental Protection Agency,
Region 9

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