

AUG 07 2013



DEPARTMENT OF THE NAVY

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Ser N45/908
August 06, 2013

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Mr. Richard Takaba
Hawaii State Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
Underground Storage Tank Section
919 Ala Moana Boulevard, Room 212
Honolulu, HI 96814

Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX
SECOND QUARTER 2013 - QUARTERLY GROUNDWATER MONITORING
REPORT, INSIDE TUNNEL WELLS
FACILITY ID NO. 9-102271 / RELEASE ID NO. 99051, 010011 AND
020028

Environmental Science International, Inc. (ESI) collected groundwater samples from five wells at the Red Hill Fuel Storage Facility on April 22 and 23, 2013. The groundwater samples were analyzed for petroleum constituents.

Analytical Results

Laboratory analytical results indicated TPH-d was detected in the groundwater beneath the Facility at a concentration that exceeded the DOH Drinking Water EAL for Human Toxicity and the DOH Groundwater Gross Contamination EAL. TPH-d was detected at a concentration of 340 ug/L in monitoring well RHMW01 and 2,600 ug/L in monitoring well RHMW02. The DOH Drinking Water EAL for Human Toxicity for TPH-d is 190 ug/L. The DOH Groundwater Gross Contamination EAL for TPH-d is 100 ug/L. The Site-Specific Risk Based Level (SSRBL) for TPH-d is 4,500 ug/L.

PAHs (1-methylnaphthalene and naphthalene) were also present in monitoring well RHMW02 at concentrations above the DOH Drinking Water EALs for Human Toxicity and the DOH Groundwater Gross Contamination EALs. 2-methylnaphthalene was detected at a concentration above the DOH EAL for gross contamination. No other chemicals of potential concern (COPCs) were detected at concentrations above the DOH EALs.

Current Groundwater Status

The groundwater monitoring wells were assessed monthly for the presence of free product. No free product was observed.

According to the January 2008 (revised December 2009) *Red Hill Bulk Fuel Storage Facility Final Groundwater Protection Plan*, the Red Hill monitoring wells are assigned to the following categories.

Category 1:

At monitoring well RHMW2254-01, dissolved lead was detected at a concentration below DOH EALs in July 2012 and total lead was detected at a concentration below DOH EALs in October 2012, January and April 2013. Since these analytical results were above detection limits, but below the DOH Drinking Water EAL, and the trend is stable, the well falls into the Category 1 status.

TPH-d was detected at monitoring well RHMW03 at concentrations below DOH EALs in October 2012, January and April 2013. Monitoring well RHMW03 falls into the Category 1 status since the detected concentrations were below the DOH Drinking Water EAL and the concentration trend of TPH-d is stable.

Monitoring well RHMW05 is presently in Category 1 status since COPC concentrations were below DOH Drinking Water EALs, the TPH-d concentration decreased between January and April 2013, and the TPH-g and naphthalene concentration trends are stable.

The following responses are required for monitoring wells RHMW03 and RHMW05:

- a) Send quarterly reports to the DOH

The following responses are required for monitoring well RHMW2254-01:

- a) Send quarterly reports to the DOH
- b) Notify NAVSUP Chain of Command within one day
- c) Send Type 1 Report to DOH
- d) Prepare for alternative water source at RHMW2254-01

Category 2:

TPH-d was detected at monitoring well RHMW01 at a concentration above DOH EALs. Since the concentration trend increased and the DOH Drinking Water EAL was exceeded, monitoring well RHMW01 falls into the Category 2 status.

The following responses are required for monitoring well RHMW01:

- a) Send quarterly reports to the DOH
- b) Begin program to determine if tanks are leaking

Category 3:

Monitoring well RHMW02 is presently in Category 3 status since the TPH-d concentration was greater than half the SSRBL.

The following responses are required for monitoring well RHMW02:

- a) Send quarterly reports to the DOH
- b) Begin program to determine if tanks are leaking
- c) Increase monitoring frequency to once per month (if concentrations increasing)
- d) Notify DOH verbally within 7 days and follow with written notification in 30 days
- e) Remove sampling pumps, measure product in pertinent wells with interface probe, re-install pumps if product is not detected
- f) Immediately evaluate tanks for leaks

A description of some of the actions already taken and the Navy's plans for the remaining required responses are listed below.

- a) **Send quarterly reports to the DOH**
The Quarterly Groundwater Monitoring Report is being submitted as Enclosures 1 and 2.
- b) **Begin program to determine if tanks are leaking**
Tank tightness testing was performed on all 15 in-service tanks from January to March 2011. No leaks were detected. Biennial tank tightness testing on 15 in-service tanks commenced in January 2013.
- c) **Notify NAVSUP Chain of Command within one day**
NAVSUP Pearl Harbor was notified of the groundwater analytical results and provided a copy of the groundwater monitoring report.
- d) **Send Type 1 Report to DOH**
A Type 1 Report was submitted to the DOH on June 11, 2010. The report included a re-evaluation of the Tier 3 risk assessment and groundwater model results.
- e) **Increase monitoring frequency to once per month (if concentrations increasing)**
Final laboratory analytical results were received in June 2013. A groundwater monitoring event was performed in July 2013. The laboratory analytical results will be evaluated to determine if TPH-d concentrations increased from April 2013.

It should be noted the October 2012, January and April 2013 laboratory analytical results for TPH-d were flagged with a data qualifier since "the chromatographic pattern was inconsistent with the profile of the reference fuel standard". The concentrations quantified as TPH-d may not be representative of diesel fuel contamination at the site. The monitoring frequency for future groundwater sampling events will be discussed with DOH.

- f) **Notify DOH verbally within 7 days and follow with written notification in 30 days**
DOH was notified of the TPH-d concentration greater than half the SSRBL at monitoring well RHMW02.
- g) **Remove sampling pumps, measure product in pertinent wells with interface probe, re-install pumps if product is not detected**
Free product measurements have been taken monthly since July 2009 in the Facility wells (RHMW01, RHMW02, RHMW03, and RHMW05). No free product has been detected. Dedicated oil/water interface probes were installed so sampling pumps no longer need to be removed. Free product thickness will continue to be measured and reported monthly.
- h) **Immediately evaluate tanks for leaks**
There have been no unexplained losses of fuel, and no free product observed on the groundwater. Soil vapor monitoring points were installed under each of the 18 active USTs. Samples have been collected monthly, but results have been inconclusive.
- i) **Prepare for alternative water source at RHMW2254-01**
A drinking water treatment system was designed in the event of petroleum contamination at U.S. Navy Well 2254-01.

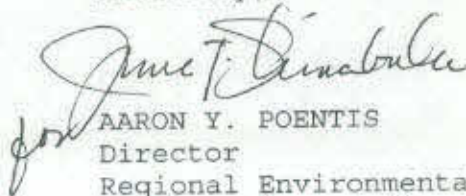
There is no indication of an immediate threat of disruption to the U.S. Navy Well 2254-01 drinking water resources. The concentration of TPH-d at monitoring well RHMW02 was greater than half of the SSRBL. The responses required by the Groundwater Protection Plan will be performed as described above.

A groundwater sampling event was performed in July 2013. A Groundwater Monitoring Report for the July 2013 sampling event will be prepared and submitted to the DOH.

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If there are any questions regarding this matter, or if more information is needed, please contact Ms. Raelynn Kishaba at (808) 471-1171, extension 233.

Sincerely,



AARON Y. POENTIS
Director
Regional Environmental Department
By direction of the
Commander

- Enclosure: 1. Final Second Quarter 2013 - Quarterly Groundwater Monitoring Report, Inside Tunnel Wells, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Oahu, Hawaii of July 2013 (1 hard copy)
2. Final Second Quarter 2013 - Quarterly Groundwater Monitoring Report, Inside Tunnel Wells, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Oahu, Hawaii of July 2013 (1 CD)

Copy to: Ms. Joanna Seto, DOH Safe Drinking Water Branch (1 CD)
Mr. Christopher Lau, NAVSUP Fleet Logistics Center Pearl Harbor (1 hard copy, 1 CD)