



DEPARTMENT OF THE NAVY

COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPHH, HAWAII 96860-5101

OCT 01 2018 *MA*

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Ser N45/0613
September 25, 2018

CERTIFIED NO: 7016 0910 0001 0891 9486

Mr. Richard Takaba
Hawaii State Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
Underground Storage Tank Section
2827 Waimano Home Road
Pearl City, HI 96782

Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX
SOIL VAPOR SAMPLING RESULTS FOR AUGUST 2018
DOH FACILITY ID NO. 9-102271
DOH RELEASE ID NO. 990051, 010011, 020028, AND 140010

Soil vapor samples were collected from beneath all active and accessible Red Hill tanks on August 21, 2018.

Soil vapor VOC concentrations were measured in the field using a photo-ionization detector. The soil vapor sampling results are being submitted as Enclosure 1.

A conservative approach is to assess the integrity of the associated tank system if VOC concentrations exceed 280,000 ppbv in soil vapor monitoring points (SVMPs) beneath tanks containing JP-5 or JP-8, or 14,000 ppbv in SVMPs beneath tanks containing marine diesel fuel. These values are 50 percent of the calculated vapor concentration from fuel-saturated water.

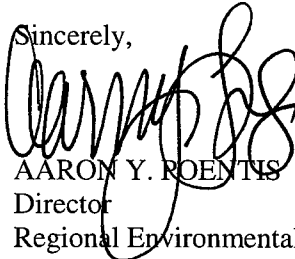
At Tank 5, the concentrations of VOCs detected in the front, middle, and outer edge soil vapor monitoring probes were 972 ppbv, 1,482 ppbv, and 1,361 ppbv, respectively. Tank 5 was emptied in January 2014 and has not contained fuel since that time. VOC concentrations in all down-gradient soil vapor monitors were below 440 ppbv.

All other VOC concentrations measured on 21 August were about 3 to 1,095 times below the action levels, with no consistent trends observed. NAVSUP FLC Pearl Harbor Causative Research Report is submitted as Enclosure 2. Possible reasons for the results are speculative and may include, but not be limited to, ongoing projects in the tunnel, groundwater level fluctuations, rainfall (or lack thereof), bi-product of biodegradation, and fuel movement in the tanks and piping.

Soil vapor VOC concentration trends will continue to be monitored. The next soil vapor sampling event is scheduled for September 2018, and will include collecting samples from soil vapor monitoring probes beneath all active and accessible tanks.

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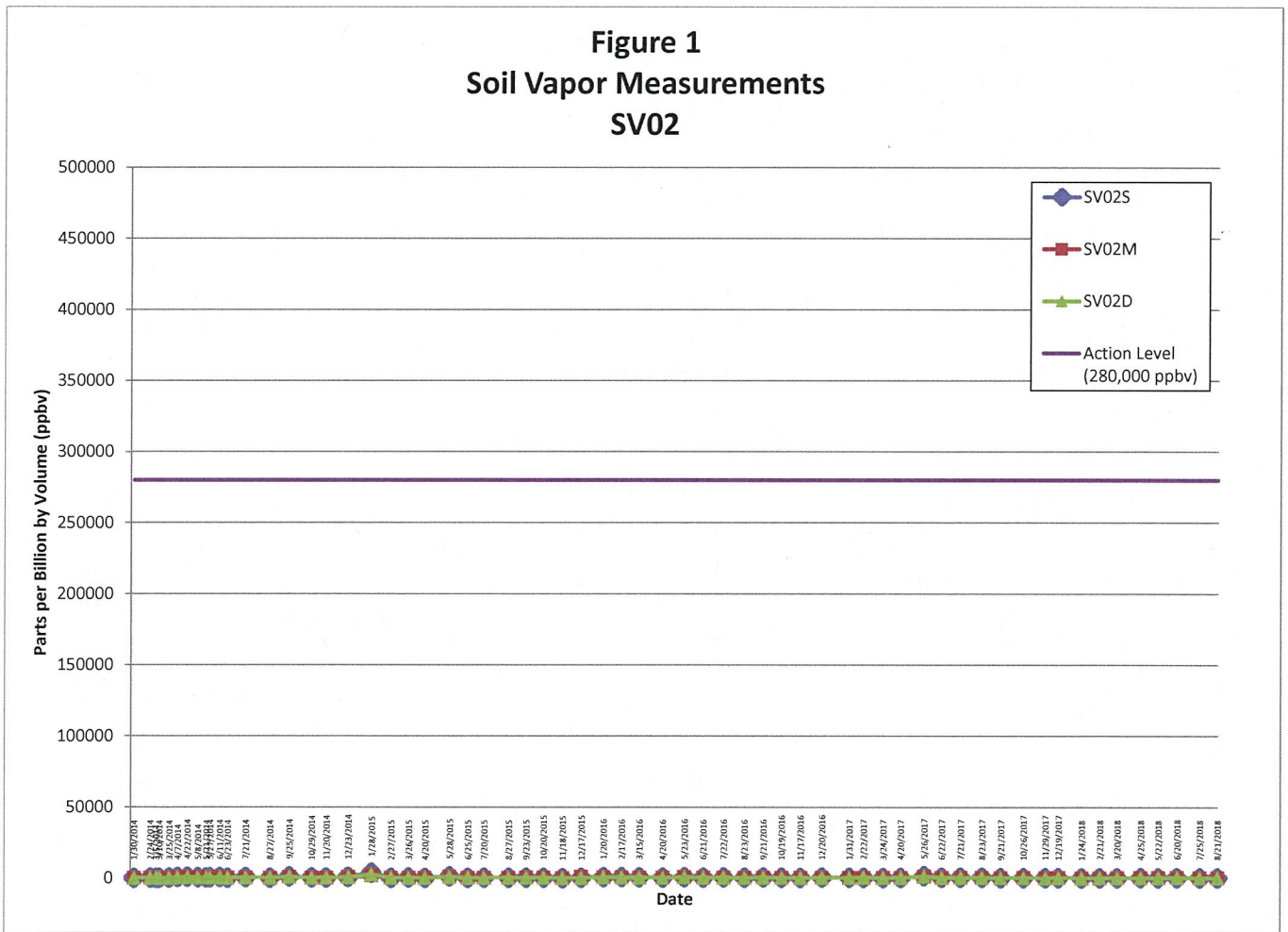
If there are any questions regarding this matter, or if more information is needed, please contact Mr. Melvin Muraoka at (808) 471-3869.

Sincerely,

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

Enclosures: 1. Summary of Soil Vapor Sampling Results for Tanks 2 through 18 and 20 through August 2018 (18 pages)
2. NAVSUP FLC Pearl Harbor Causative Research Report IRT Red Hill Soil Vapor Monitoring Report for August 2018

Copy to: Mr. Omer Shalev, U.S. EPA Region 9, Underground Storage Tank Program Office
Mr. John Floyd, NAVSUP FLC Pearl Harbor
Mr. Ed Gunthrie, DLA Energy Pacific

Figure 1
Soil Vapor Measurements
SV02



ENCLOSURE(/)

Figure 2
Soil Vapor Measurements
SV03

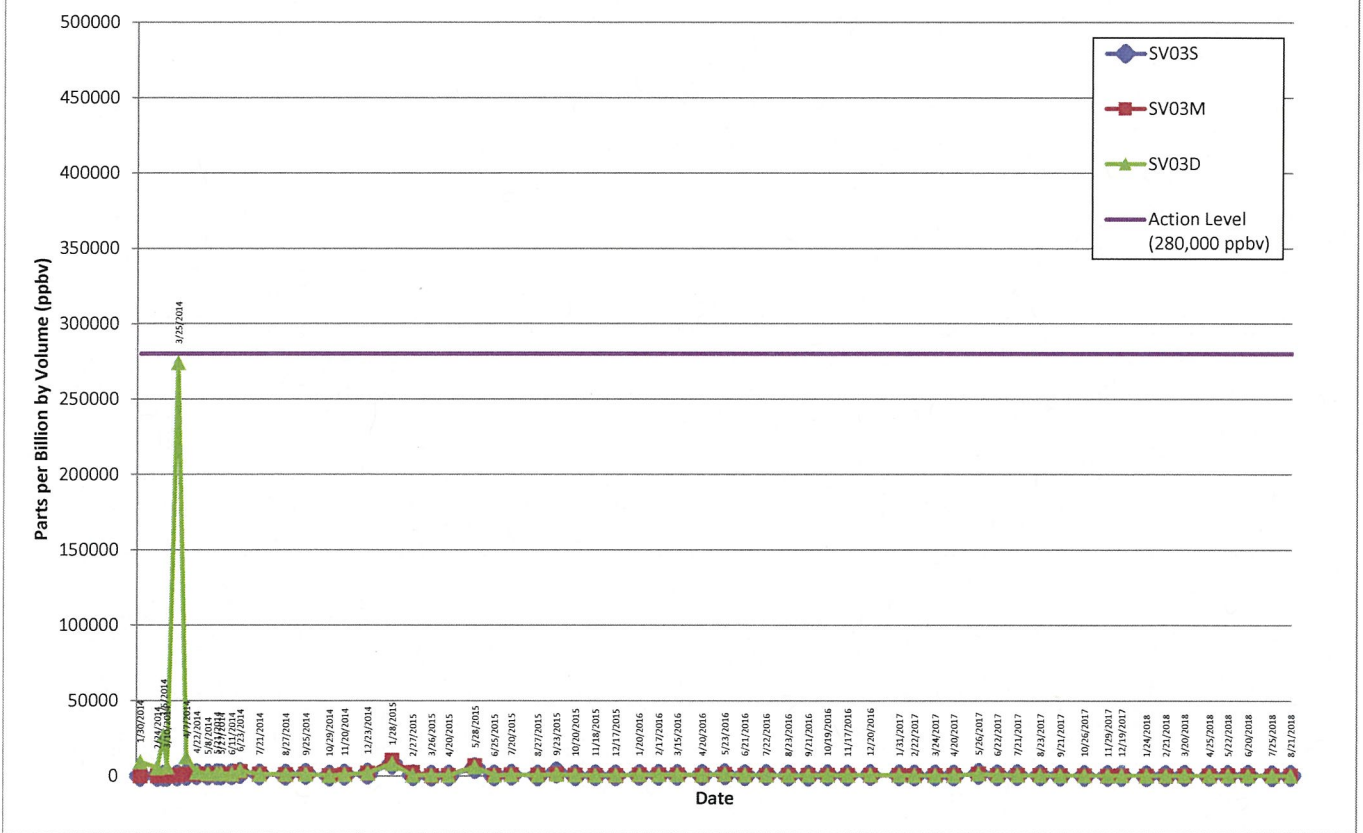


Figure 3
Soil Vapor Measurements
SV04

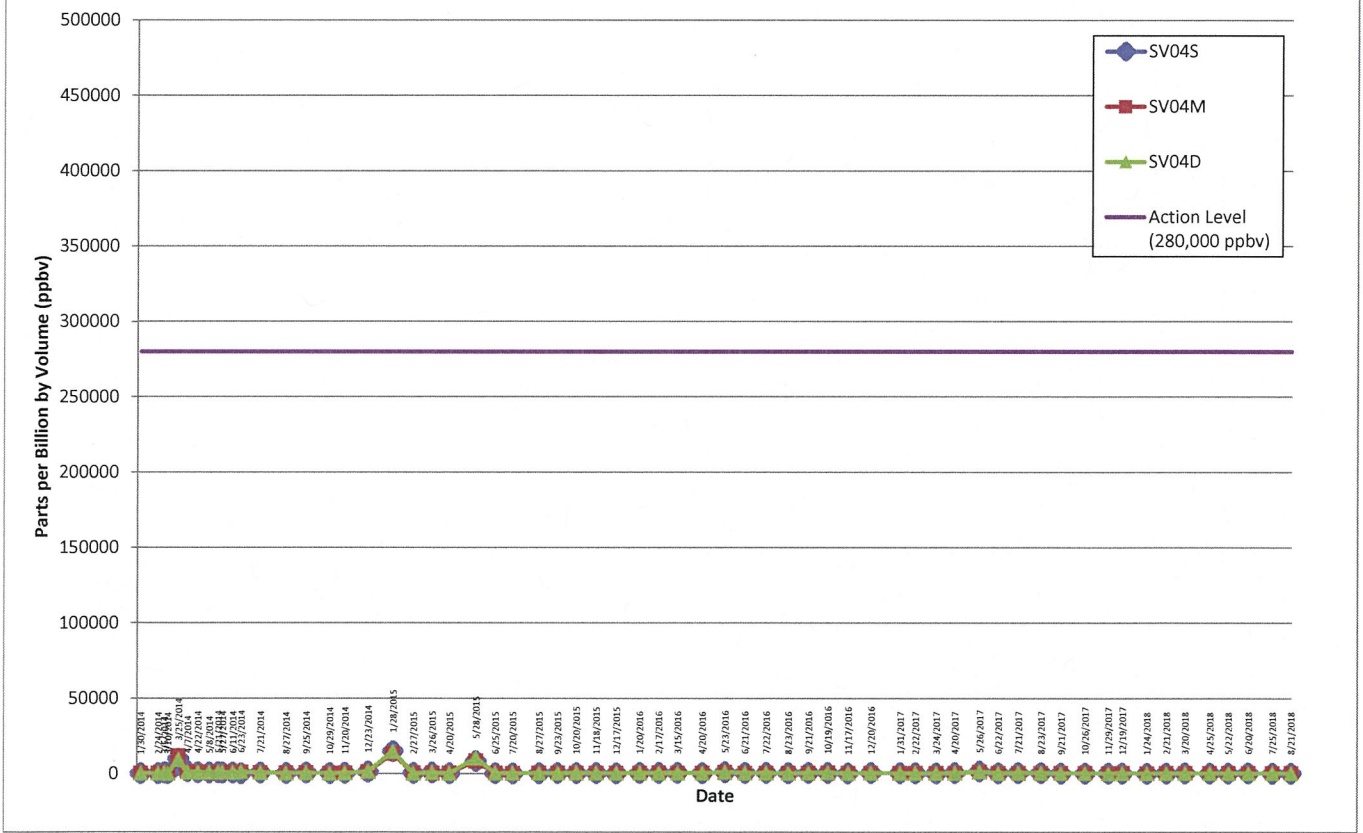


Figure 4
Soil Vapor Measurements
SV05

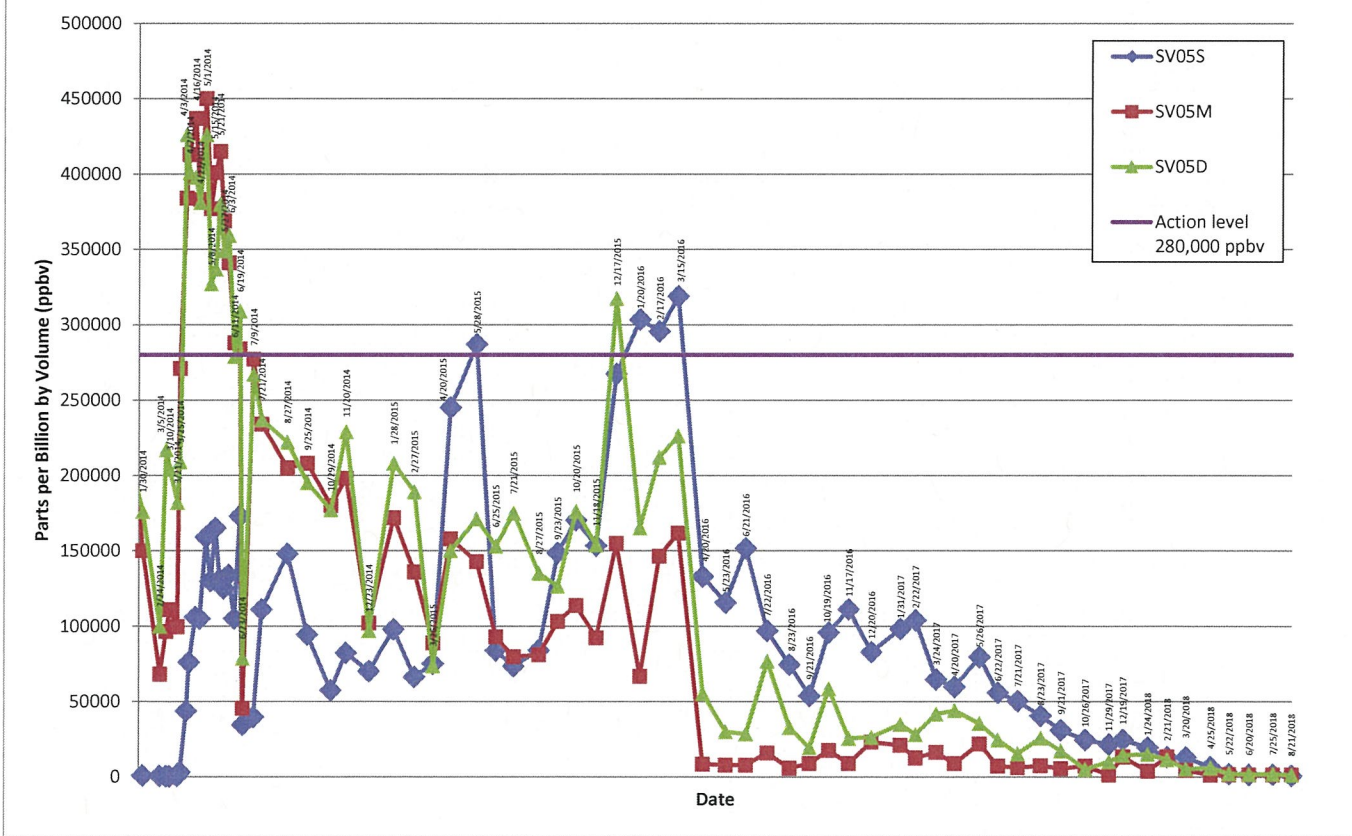


Figure 5
Soil Vapor Measurements
SV06

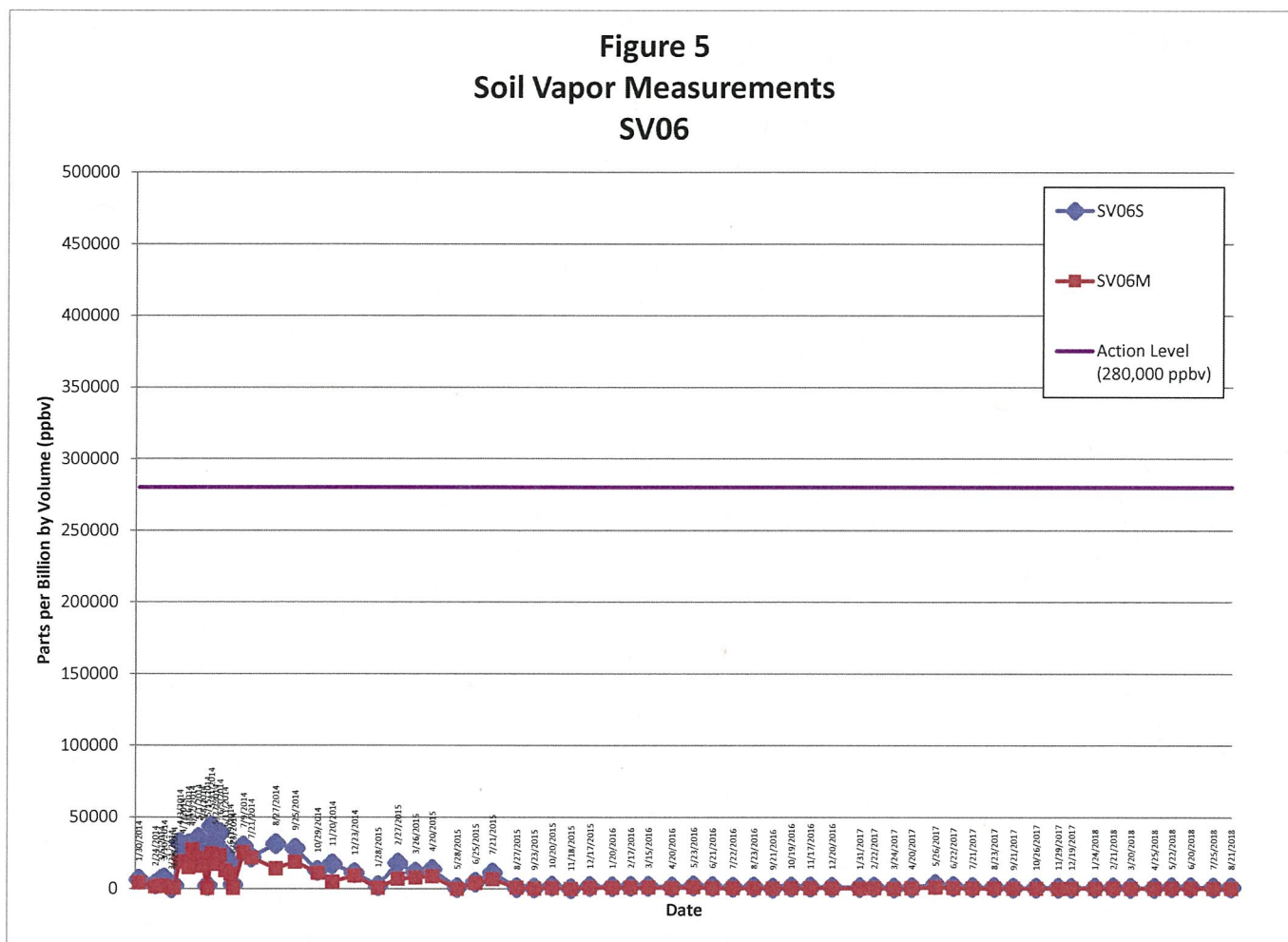


Figure 6
Soil Vapor Measurements
SV07

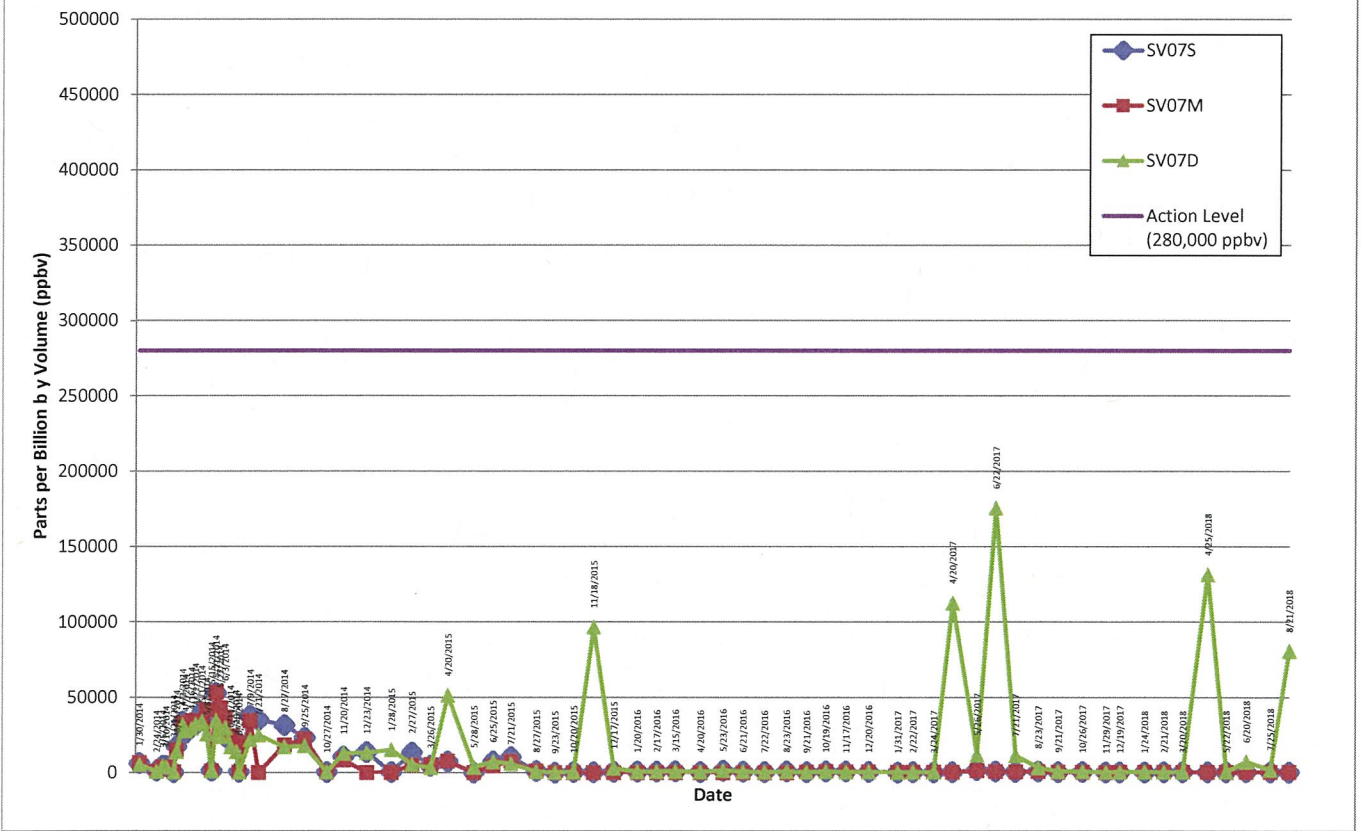


Figure 7
Soil Vapor Measurements
SV08

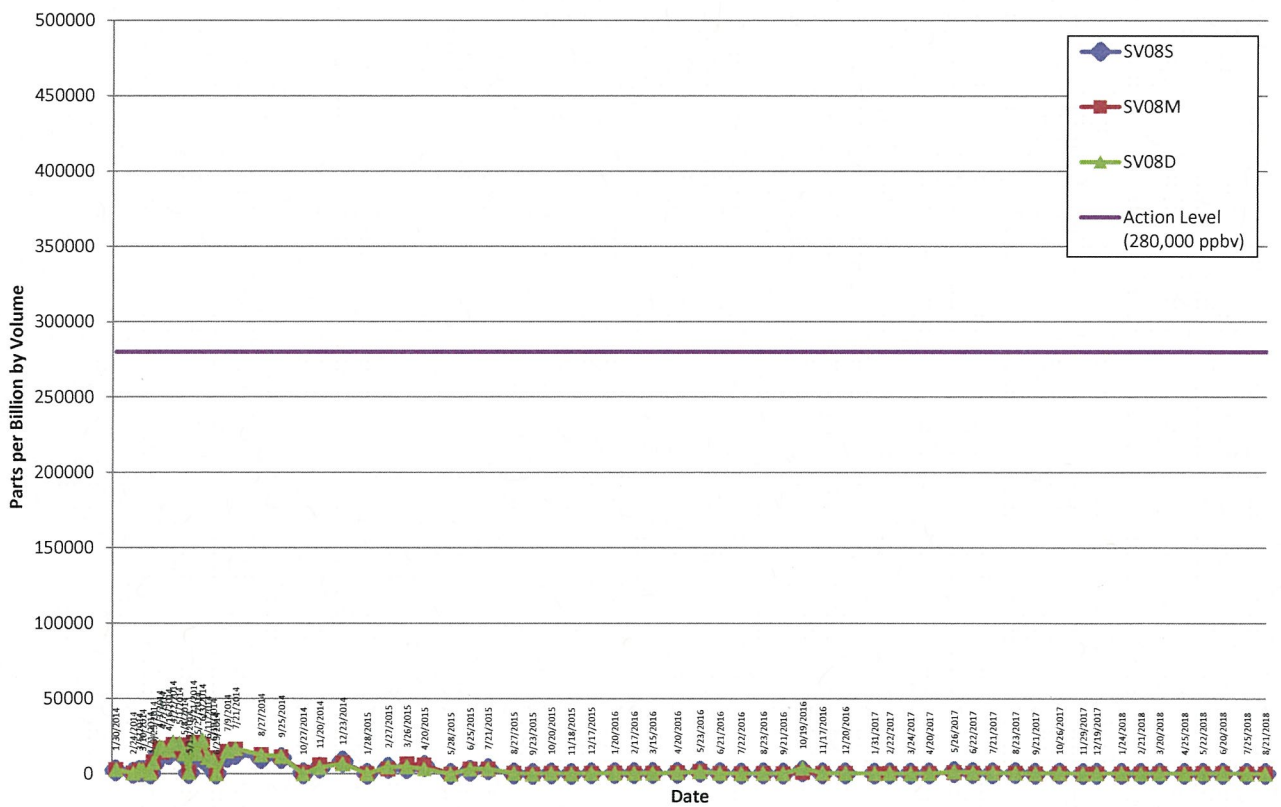


Figure 8
Soil Vapor Measurements
SV09

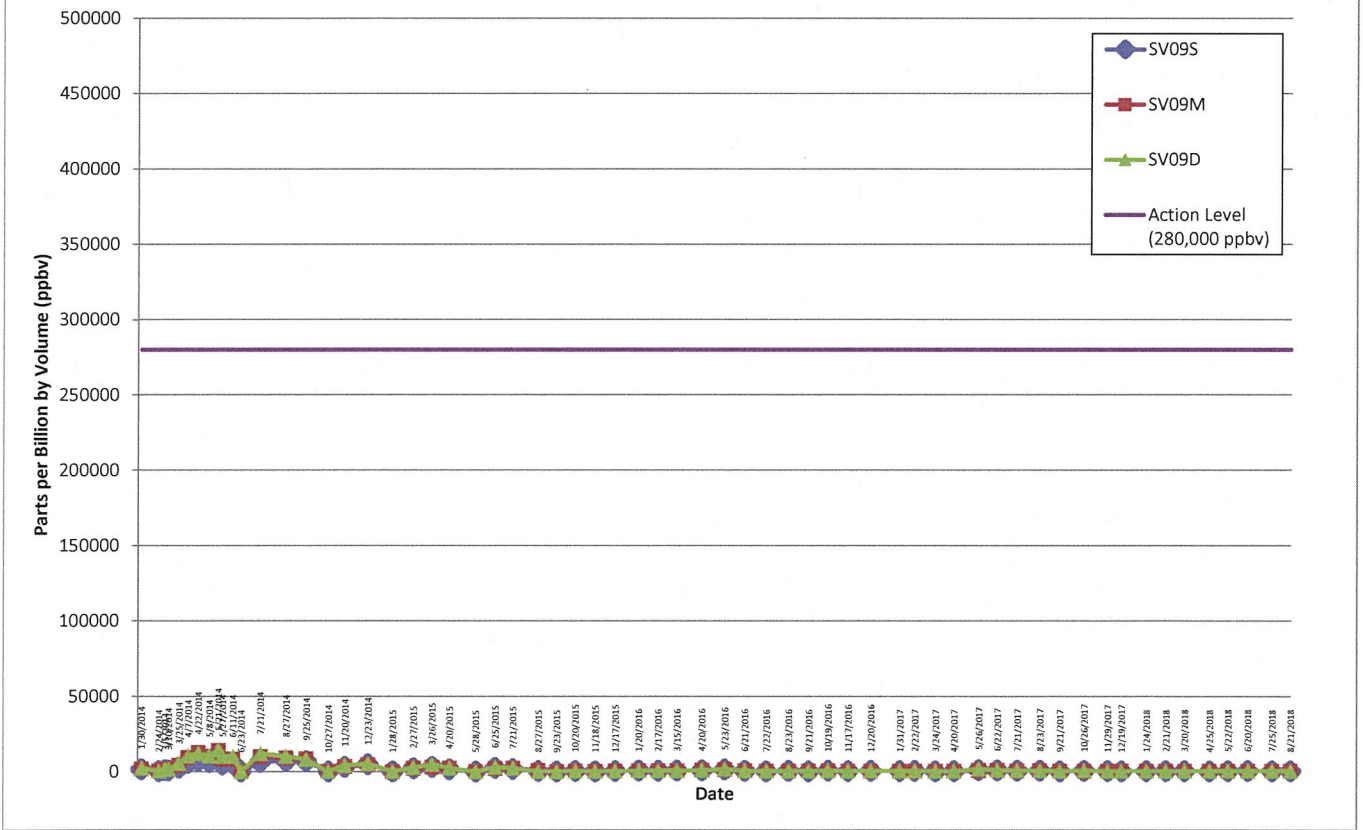


Figure 9
Soil Vapor Measurements
SV10

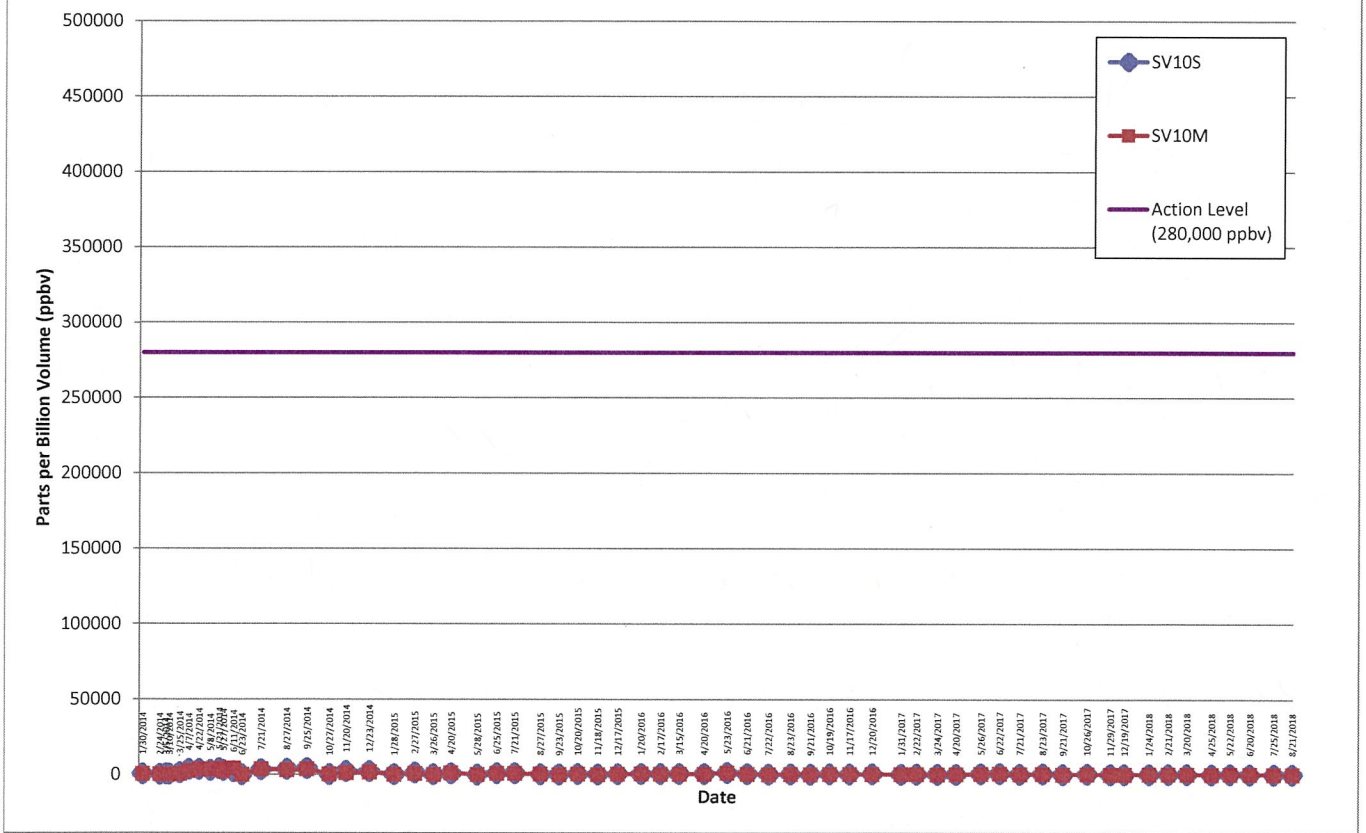


Figure 10
Soil Vapor Measurements
SV11

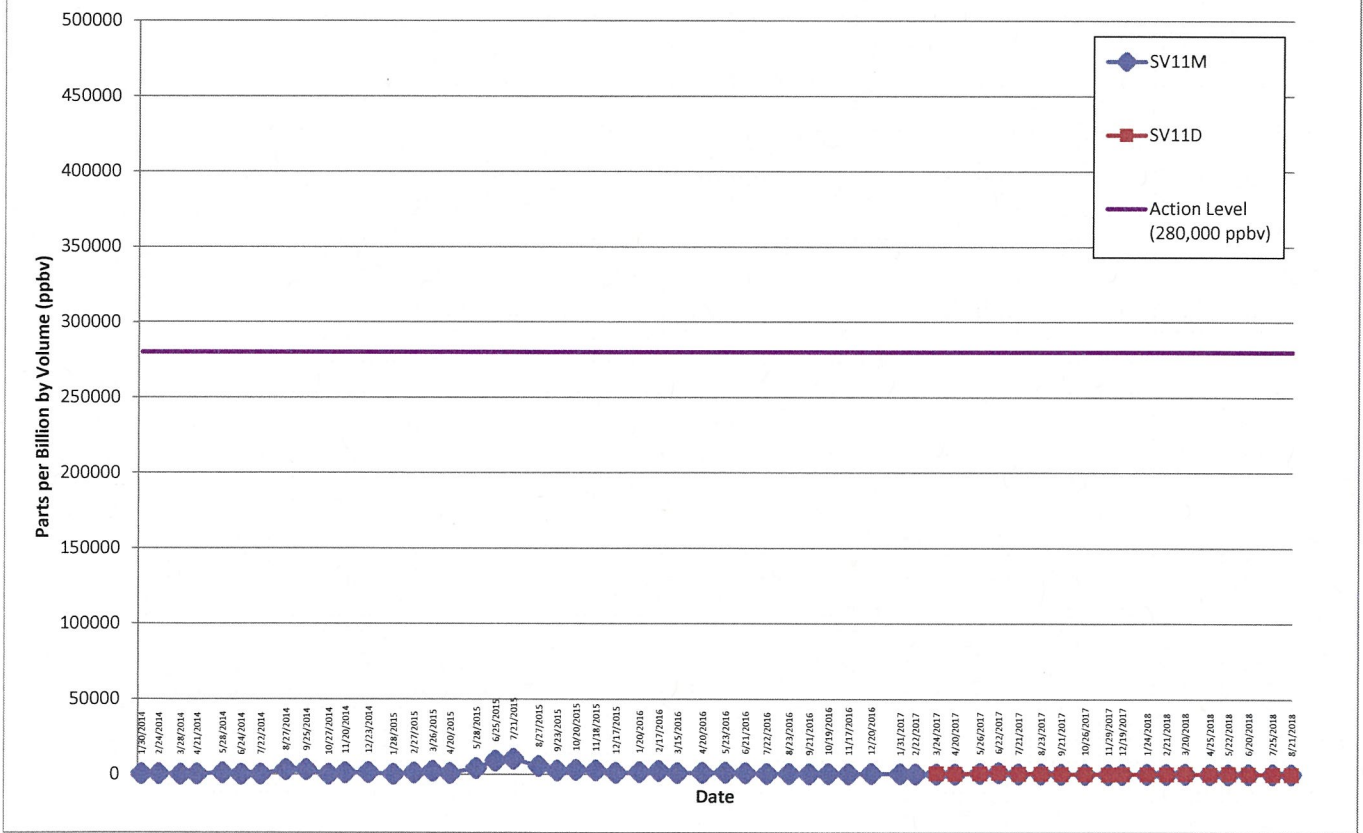


Figure 11
Soil Vapor Measurements
SV12

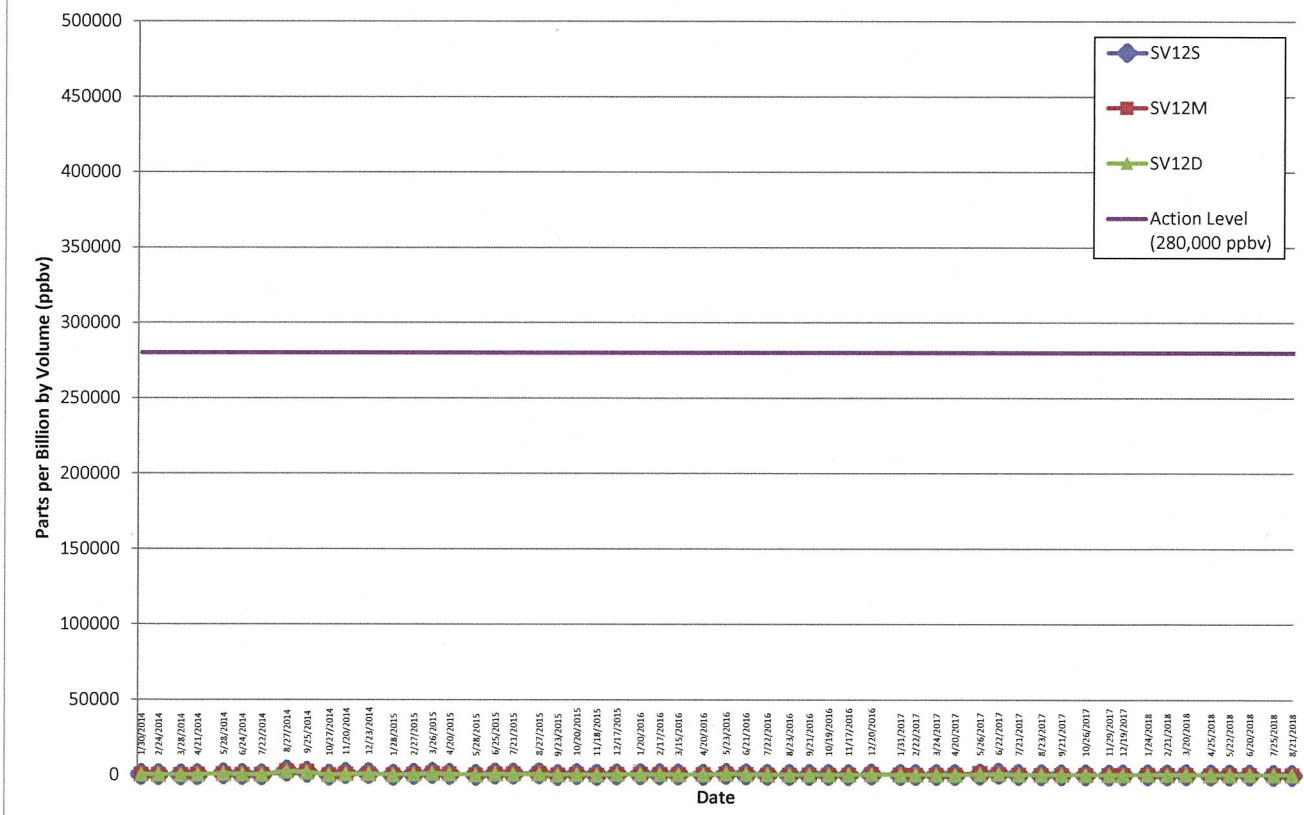


Figure 12
Soil Vapor Measurements
SV13

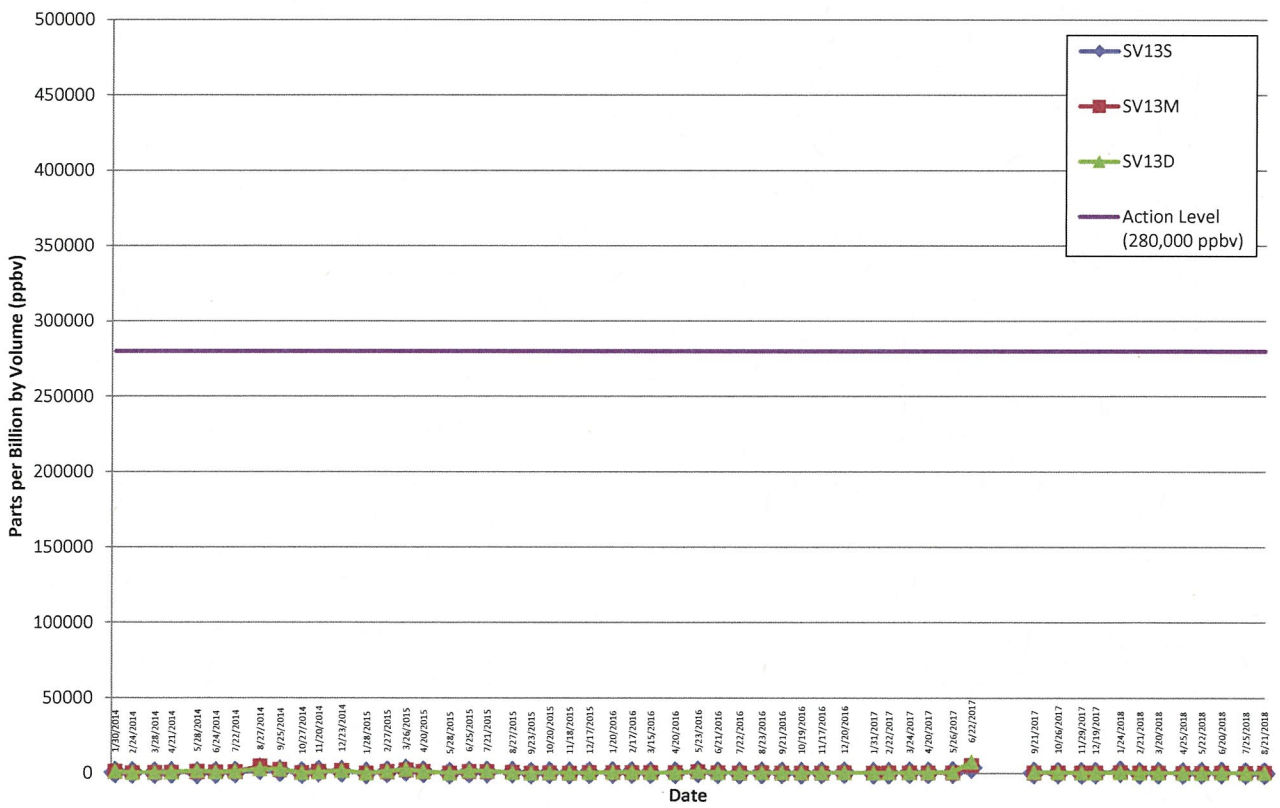


Figure 13
Soil Vapor Measurements
SV14

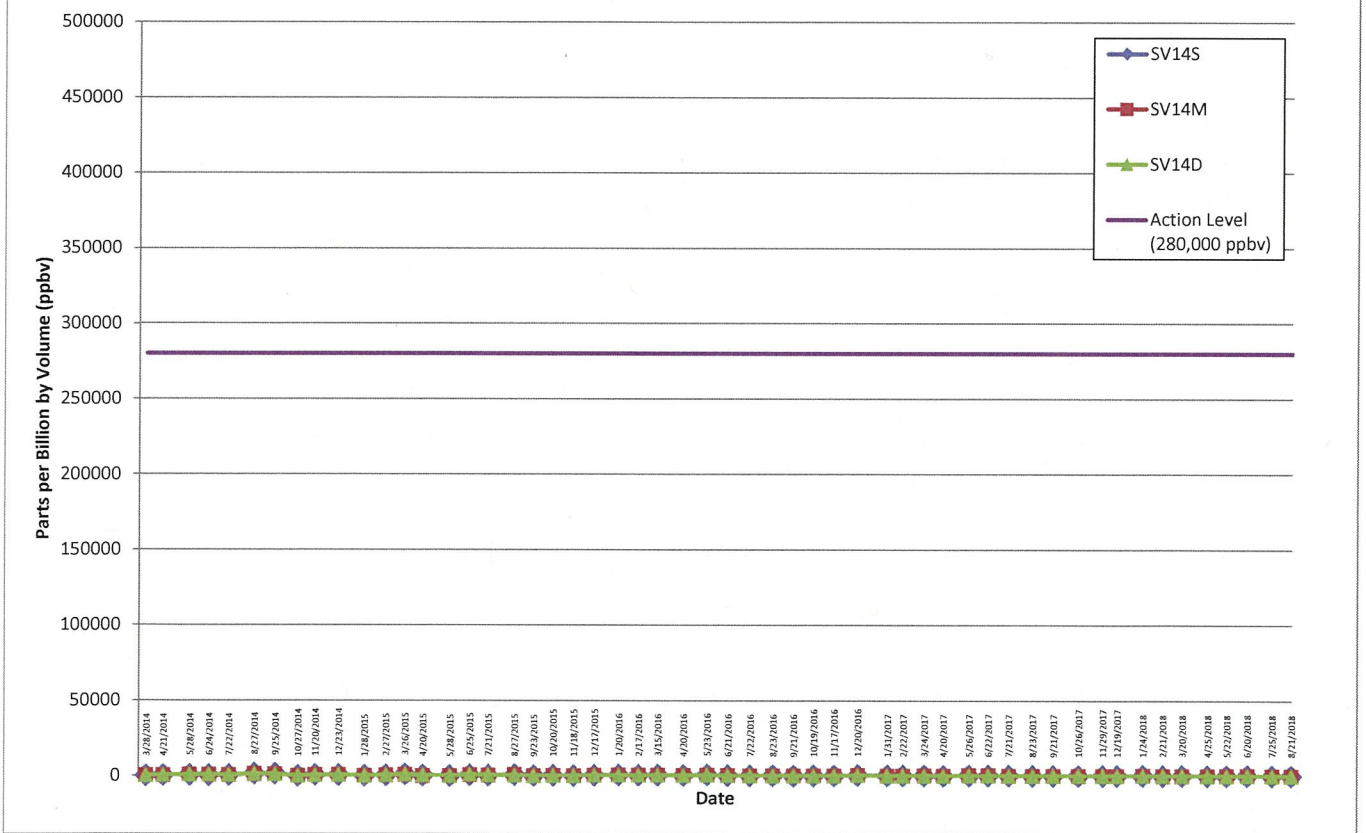


Figure 14
Soil Vapor Measurements
SV15

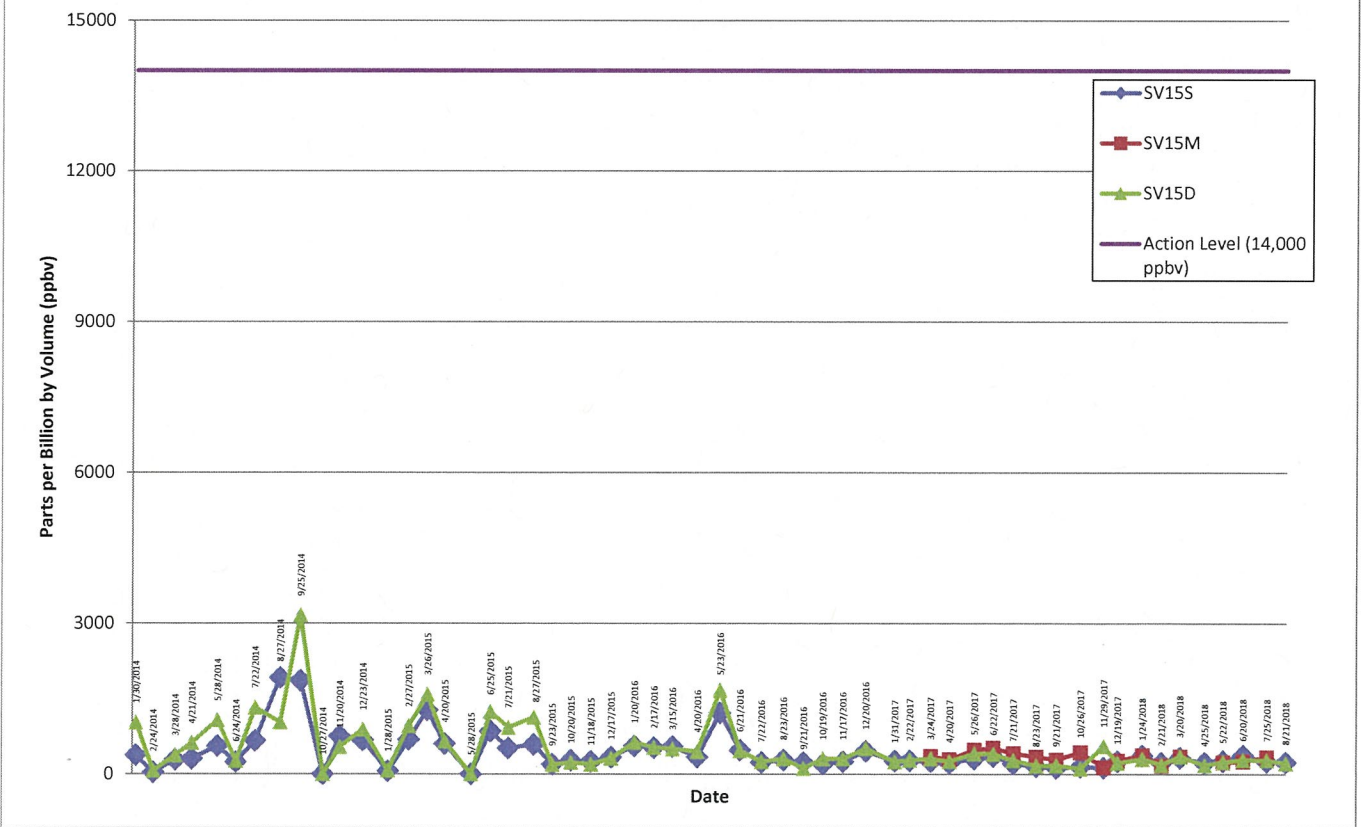


Figure 15
Soil Vapor Measurements
SV16

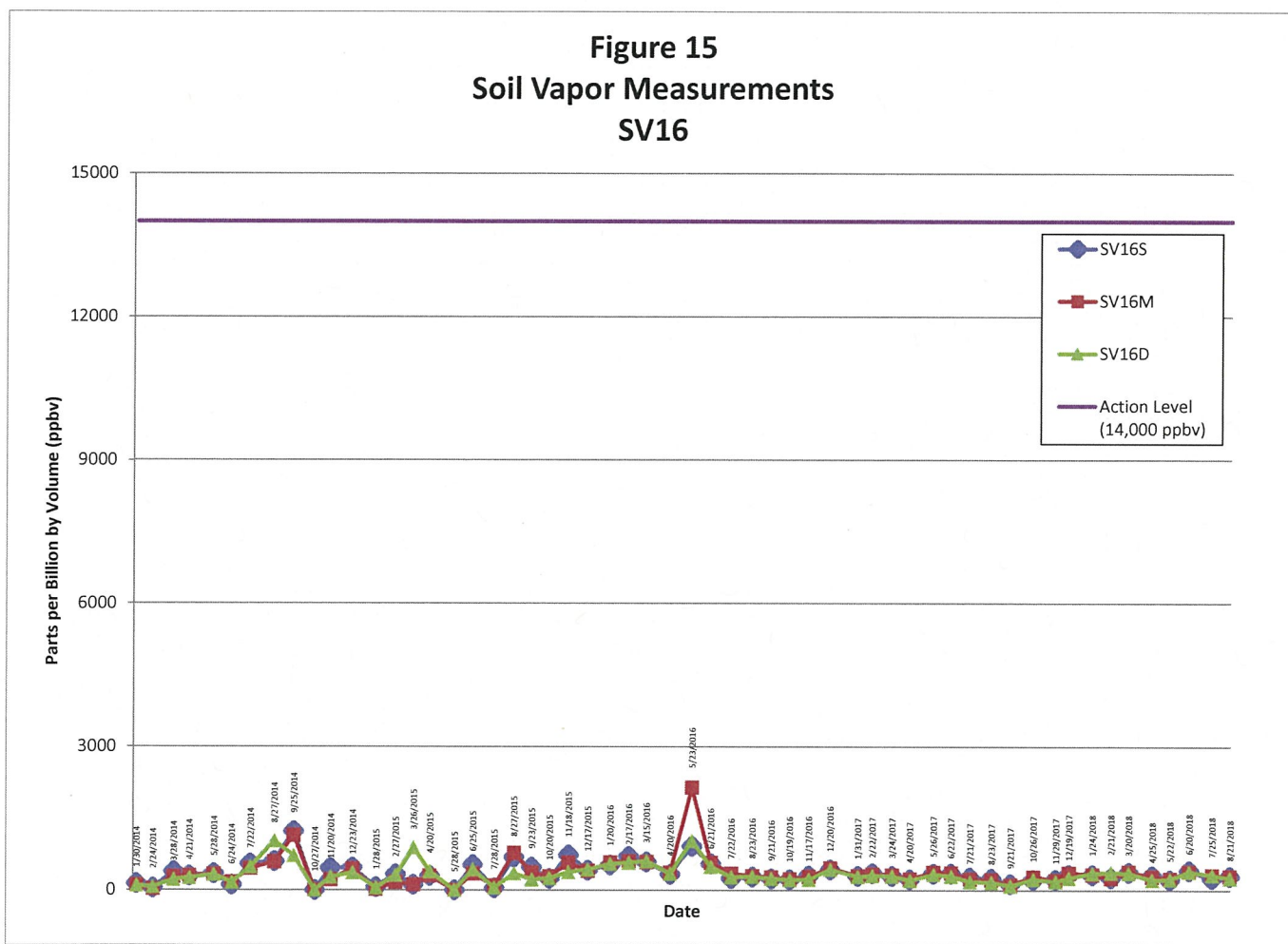


Figure 16
Soil Vapor Measurements
SV17

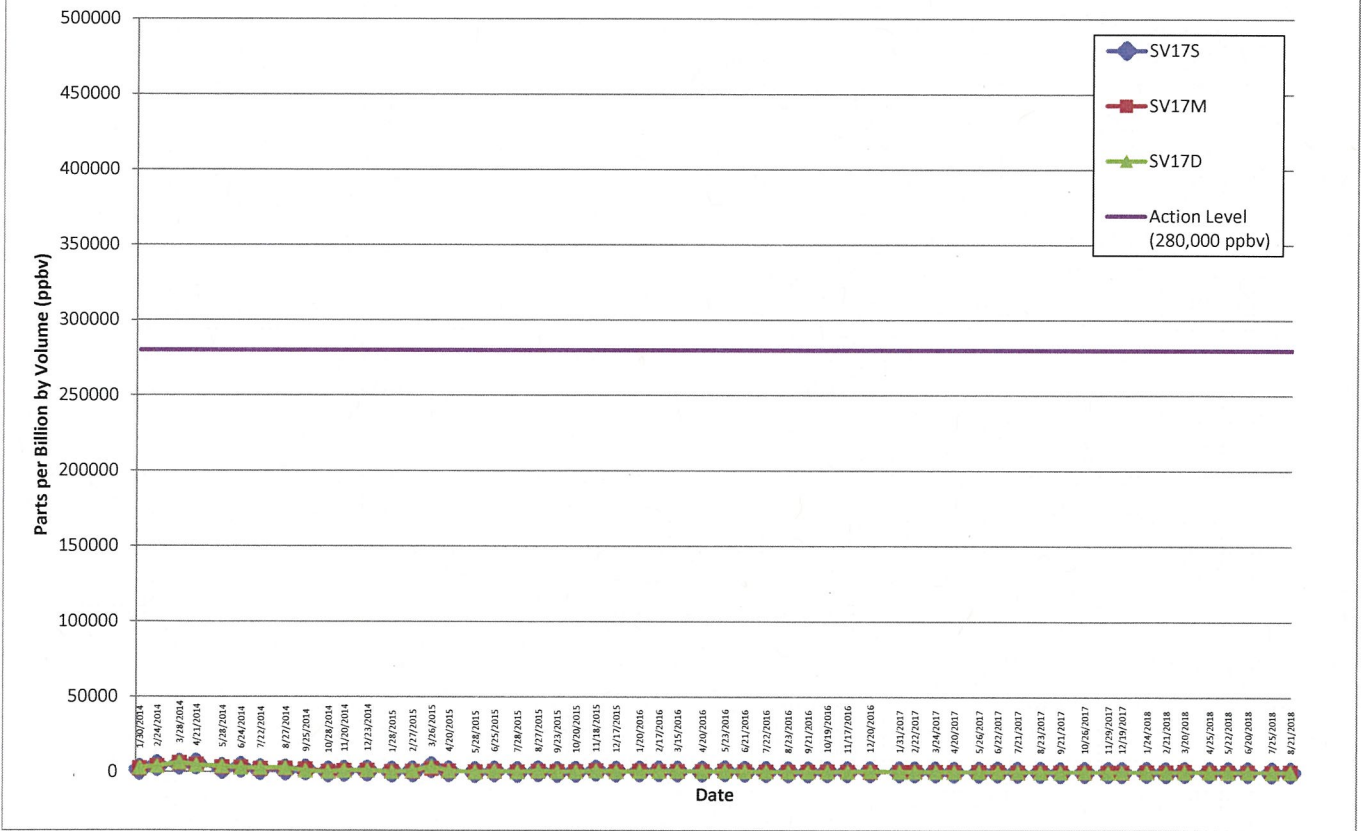


Figure 17
Soil Vapor Measurements
SV18

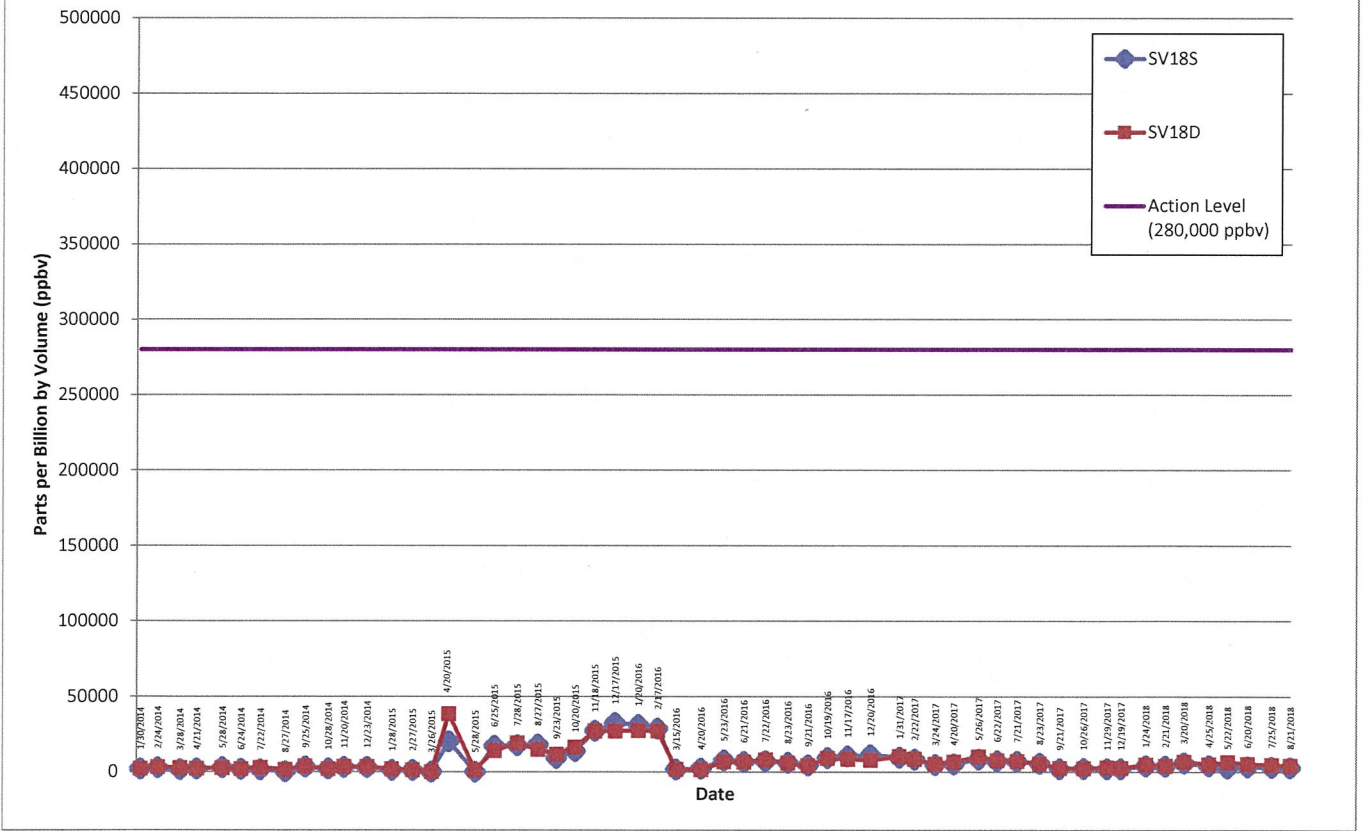
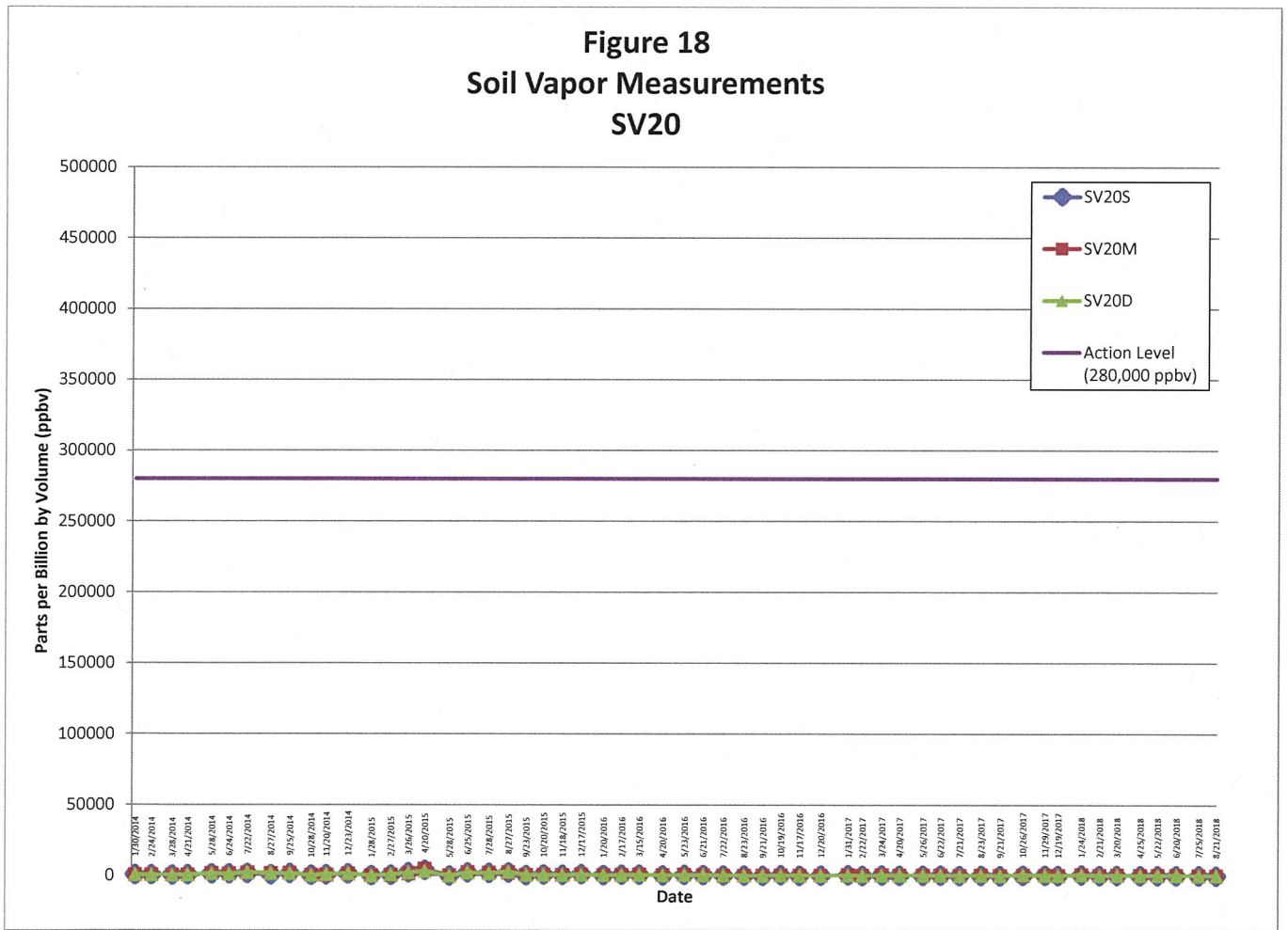


Figure 18
Soil Vapor Measurements
SV20



23 Sep 2018

From: Deputy Director, Fuel Department, NAVSUP FLC Pearl Harbor, HI
To: Environmental Department, NAVFAC Pearl Harbor, HI

Subj: NAVSUP FLC PEARL HARBOR CAUSATIVE RESEARCH REPORT IRT RED HILL
SOIL VAPOR MONITORING REPORT FOR AUGUST 2018

Ref: (a) Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan
(b) Red Hill Soil Vapor Monitoring Report for Round 124, dtd 21 Aug 2018
(c) Red Hill Soil Vapor Monitoring Report for Round 125, dtd 30 Aug 2018

1. Ref (a) requires NAVSUP FLCPH investigate possible fuel leaks. Refs (b) reported the following soil vapor monitoring results at the Red Hill Fuel Storage Facility:

Strong increase in trend indicated at tank 7
Slight increase in trends indicated at tanks 2, 9, 11-13, 16-18

2. Refs (c) reported the following soil vapor monitoring results at the Red Hill Fuel Storage Facility:

Strong increase in trend indicated at tank 7
Slight increase in trends indicated at tanks 3, 9, 13, and 17

3. FLCPH causative research and findings:

- a. Reviewed all AFHE Unscheduled Fuel Movement (UFM) Alarm Summaries and UFM Reports. No alarms could be attributed to a fuel leak or an unscheduled movement of fuel. There were numerous UFM alarms recorded during month that were created during system troubleshooting and testing conducted to correct previous UFM false alarms caused by a software error. This was a carryover of the testing performed and reported in July 2018. Three additional alarms were recorded for the following tanks and all alarms are related to operator error or system problems; troubleshooting and analysis of system problem is ongoing:

22 Aug: RH 15; 28 July: RH 15; 30 Aug: RH 02; 25 July: RH 15

- b. Reviewed Red Hill Inventory Trend Analysis Reports for August 2018; reports did not reveal evidence of a loss of fuel in any Red Hill tank.
- c. Red Hill maintenance and repair contractors did not report any factors that could have influenced increase in trends.

ENCLOSURE(2)

Subj: NAVSUP FLC PEARL HARBOR CAUSATIVE RESEARCH REPORT IRT RED HILL
SOIL VAPOR MONITORING REPORT FOR AUGUST 2018

- d. Inspection of the area surrounding all Red Hill tanks did not show evidence of a fuel leak or evidence that fuel was spilled in the area.
 - e. All active tanks have passed tank tightness testing within the required periodicity.
4. There's no evidence of a leaking tank in the Red Hill Complex or evidence of a spill that may have contributed to elevated soil vapor VOC levels in the area of elevated VOC concentrations.

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ou=USN, cn=FLOYD.JOHN.LEWIS.1064149357
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JOHN FLOYD