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**DEPARTMENT OF THE NAVY**

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

5090  
Ser N45/0454  
March 8, 2017

**CERTIFIED NO: 7016 0910 0001 0899 9884**

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  
SOIL VAPOR SAMPLING RESULTS FOR FEBURARY 2017  
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 February 22, 2016.

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 103,867 ppbv, 12,767 ppbv, and 28,187 ppbv, respectively. Tank 5 was emptied in January 2014 and has not contained fuel since that time. No fuel level discrepancies were observed in the other tanks, and VOC concentrations in all down-gradient soil vapor monitors were below 1,000 ppbv.

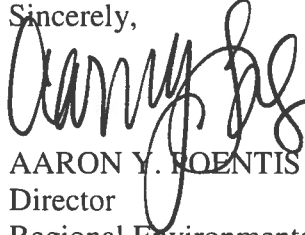
All other VOC concentrations measured in February were about 35 to 1,325 times below the action levels, with no consistent trends observed. Possible reasons for the results are speculative and may include, but not be limited to, ongoing projects in the tunnel, groundwater level fluctuations, rainfall (or lack thereof), and fuel movement in the tanks and piping.

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Soil vapor VOC concentration trends will continue to be monitored. The next soil vapor sampling event is scheduled for March 2017, and will include collecting samples from soil vapor monitoring probes beneath all active and accessible tanks.

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

Sincerely,

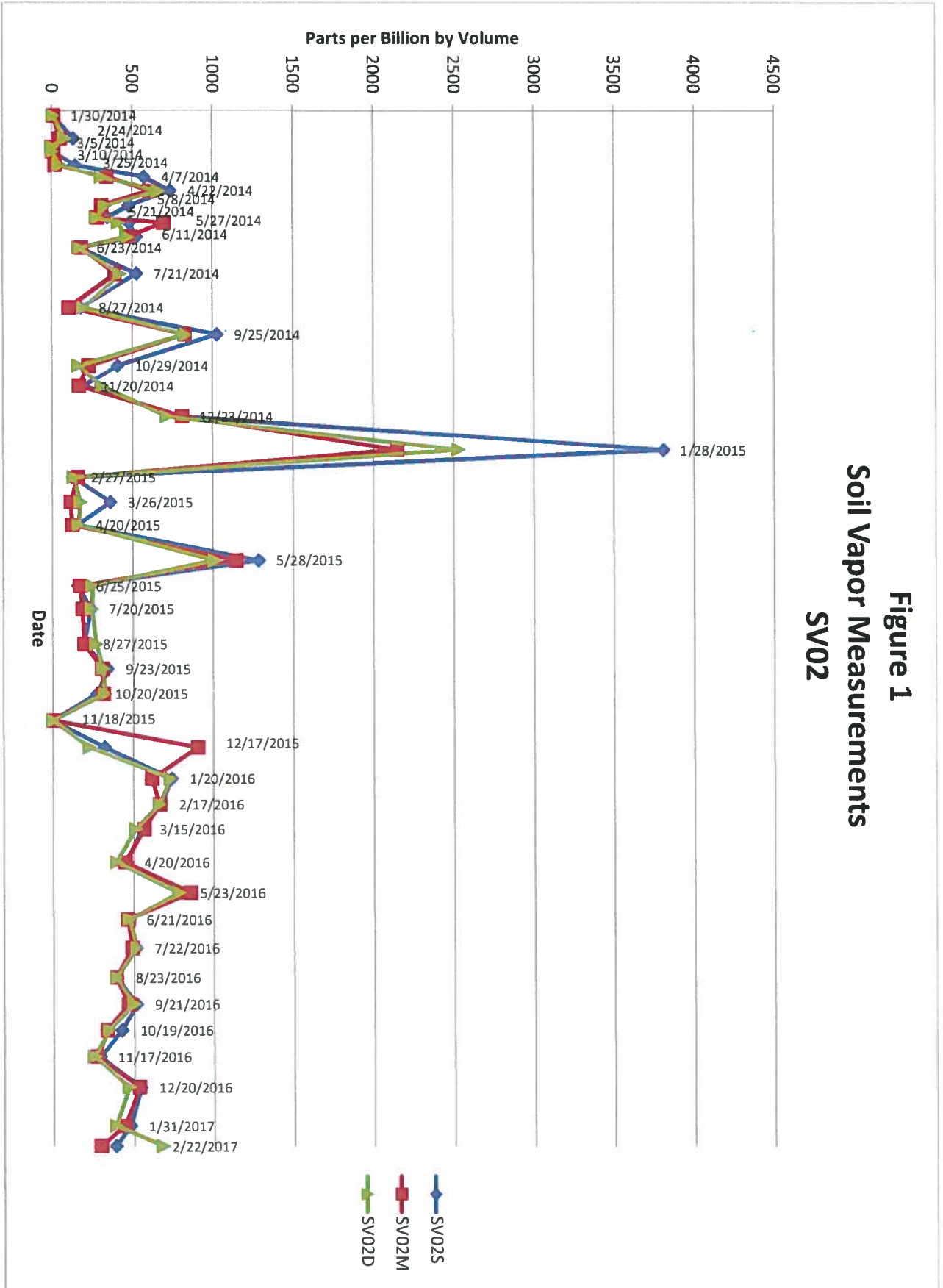


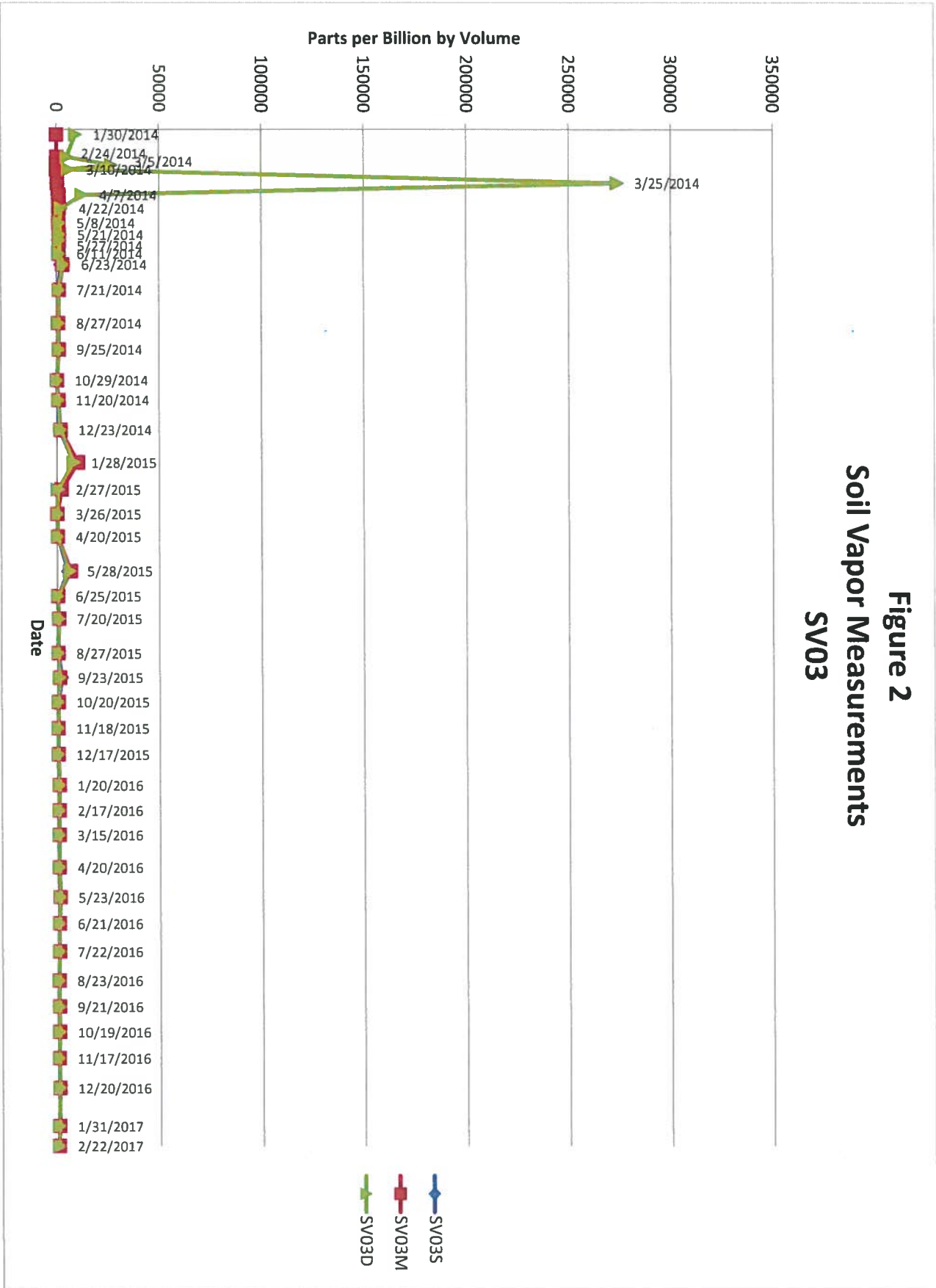
AARON Y. ROENTIS  
Director  
Regional Environmental Department  
By direction of the  
Commander

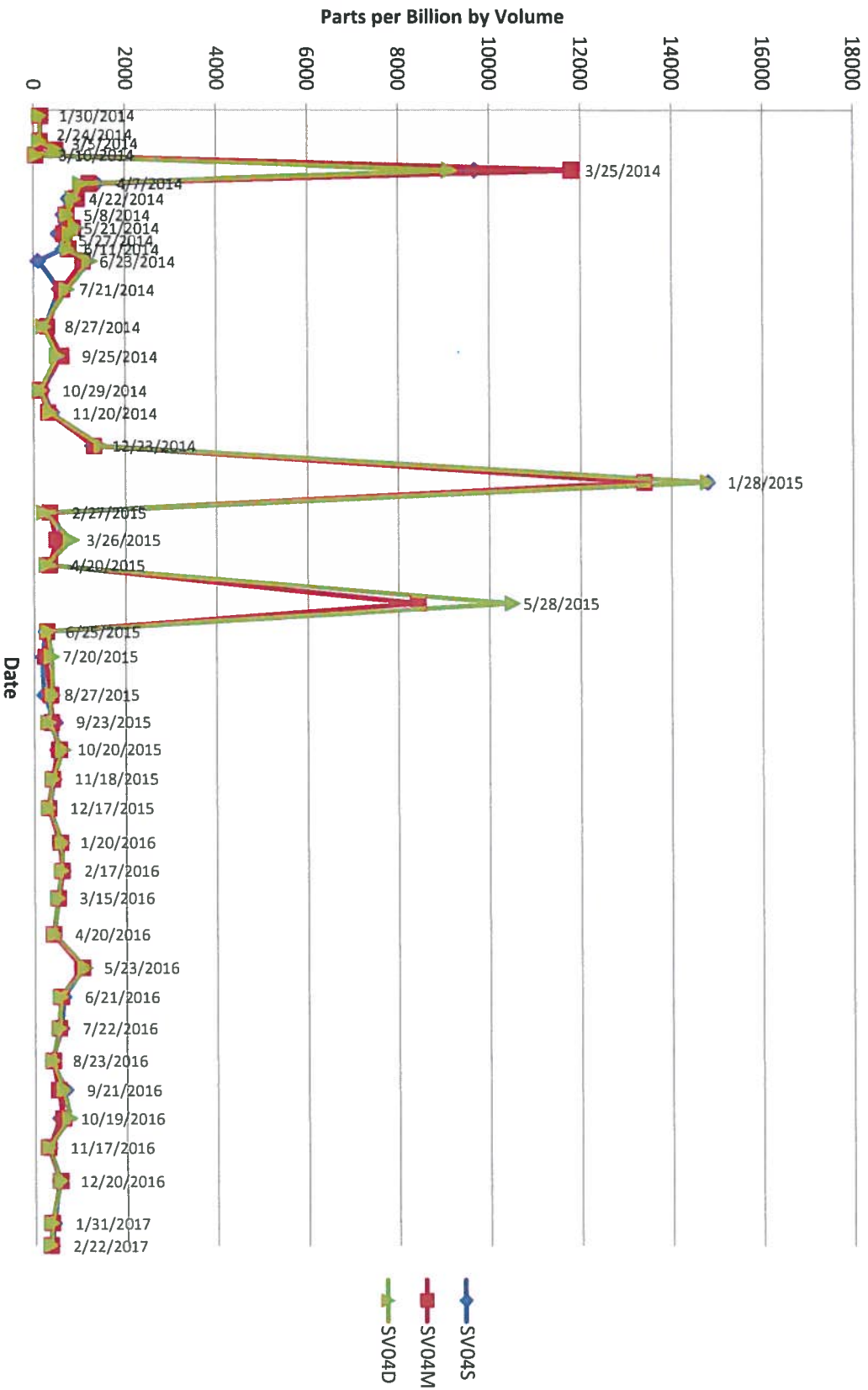
Enclosure: 1. Summary of Soil Vapor Sampling Results for Tanks 2 through 18 and 20 through February 2017 (18 pages)

Copy to: Mr. Bob Pallarino, U.S. EPA Region 9, Underground Storage Tank Program Office  
Mr. John Floyd, NAVSUP FLC Pearl Harbor  
Mr. Rockne Krill, DLA Energy Pacific

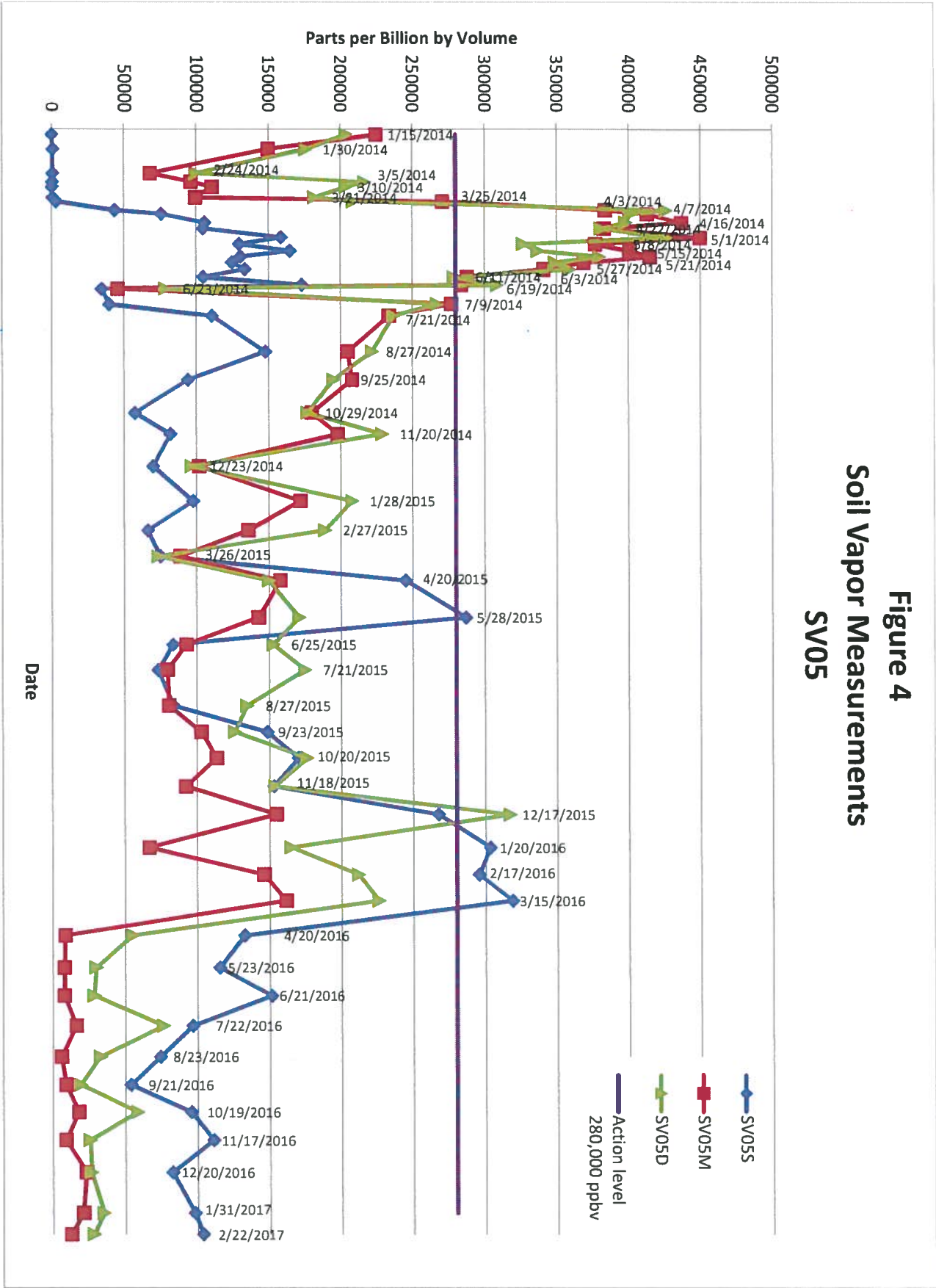
**Figure 1**  
**Soil Vapor Measurements**  
**SV02**

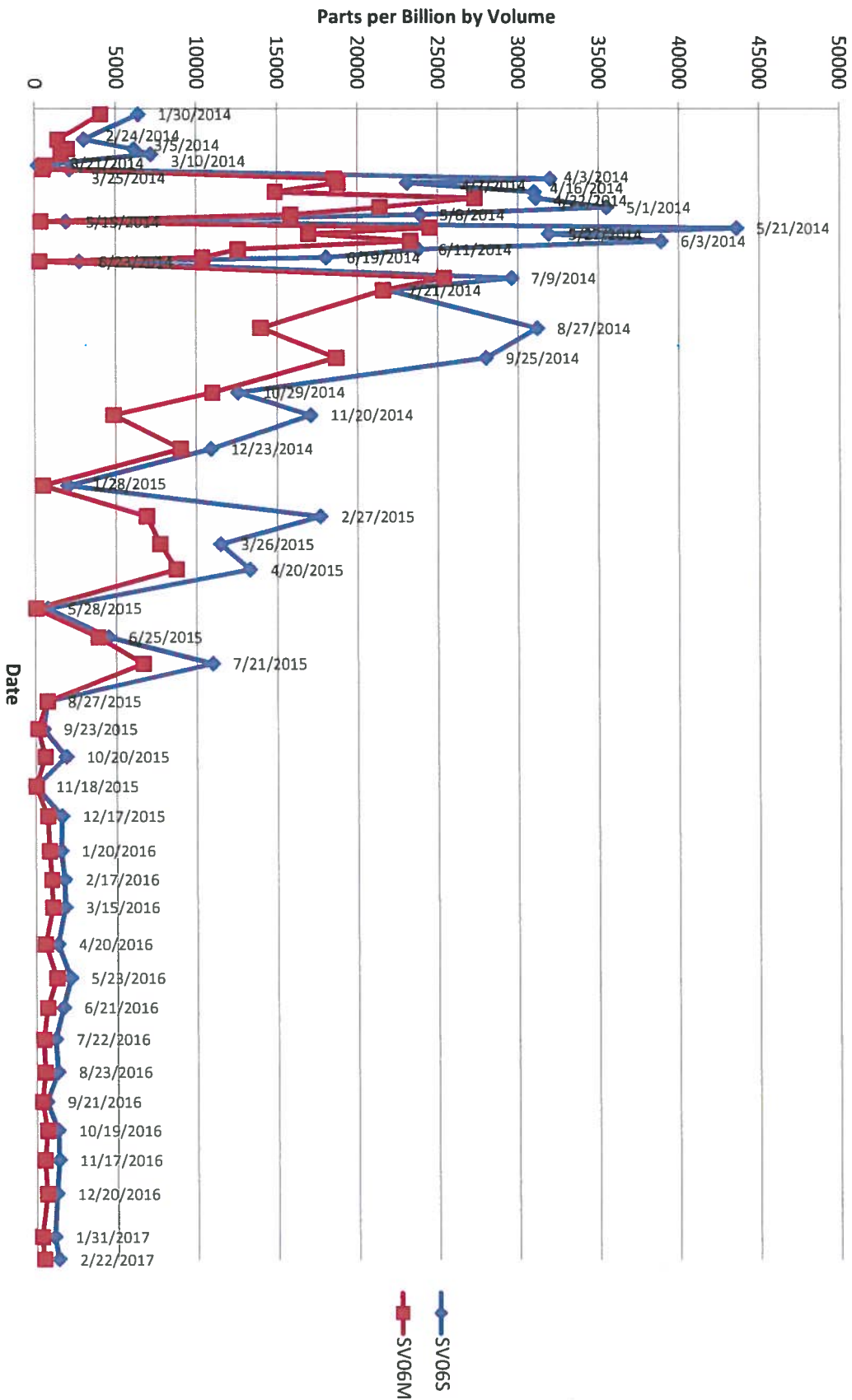




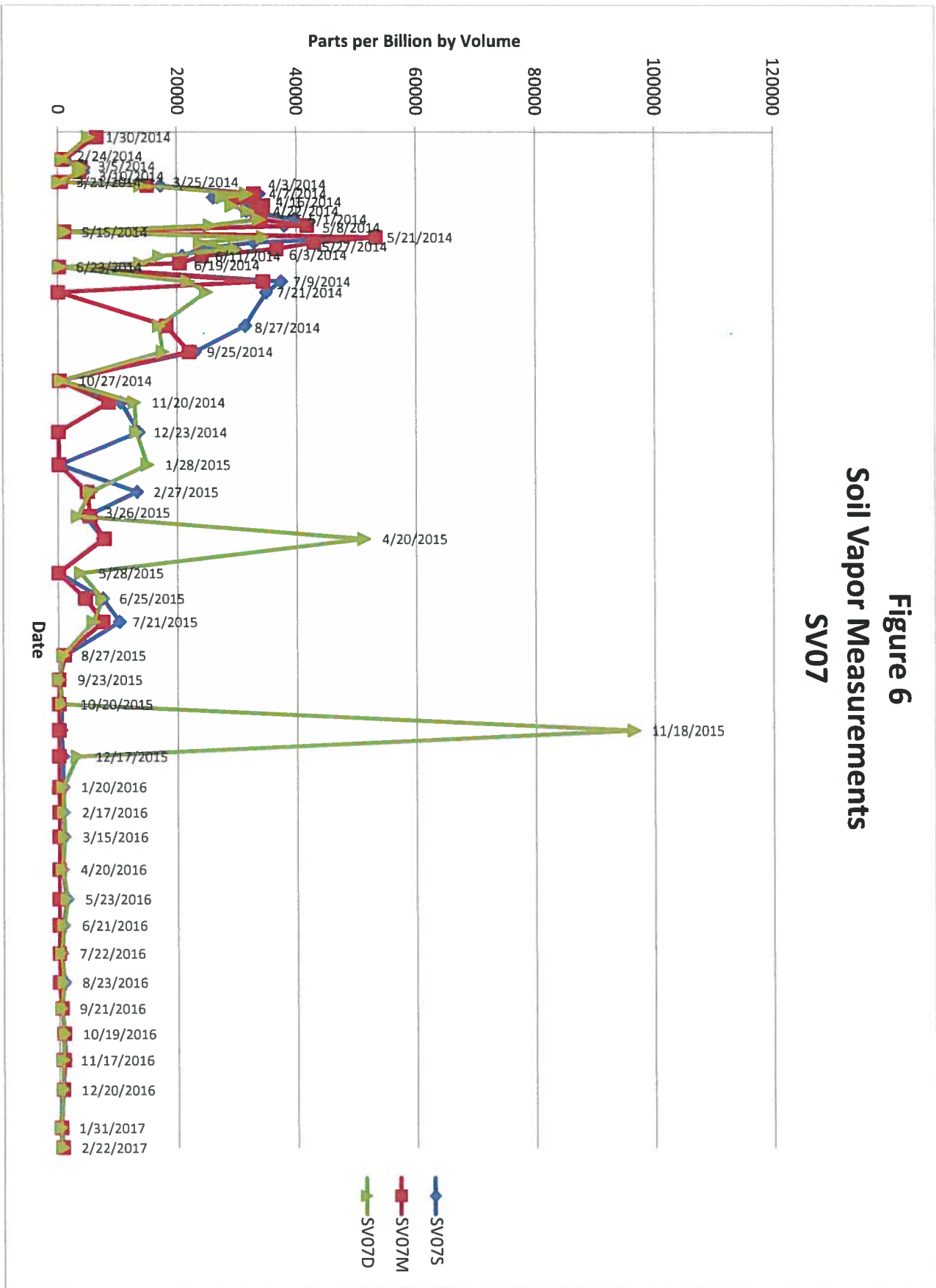


**Figure 3**  
**Soil Vapor Measurements**  
**SV04**

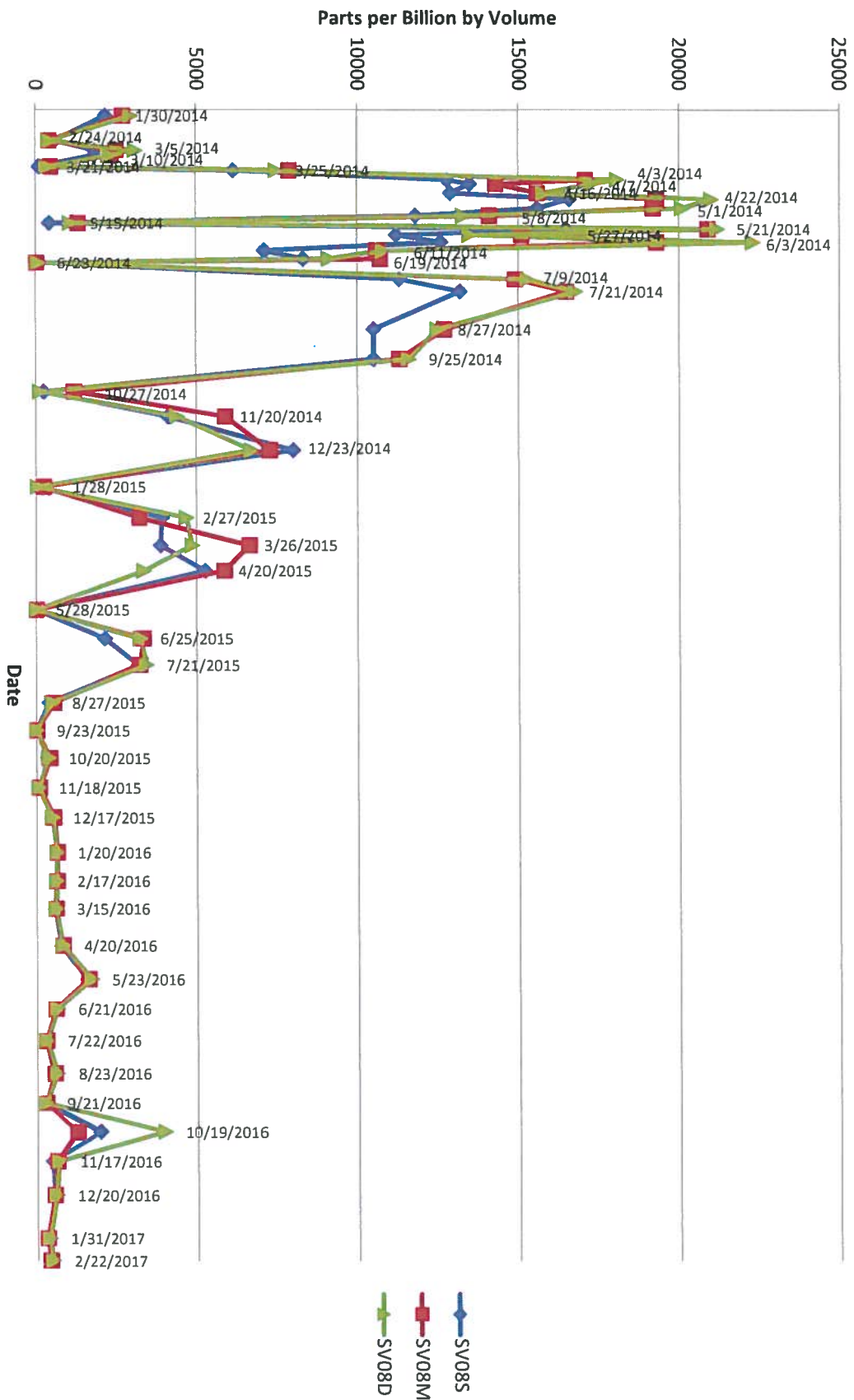




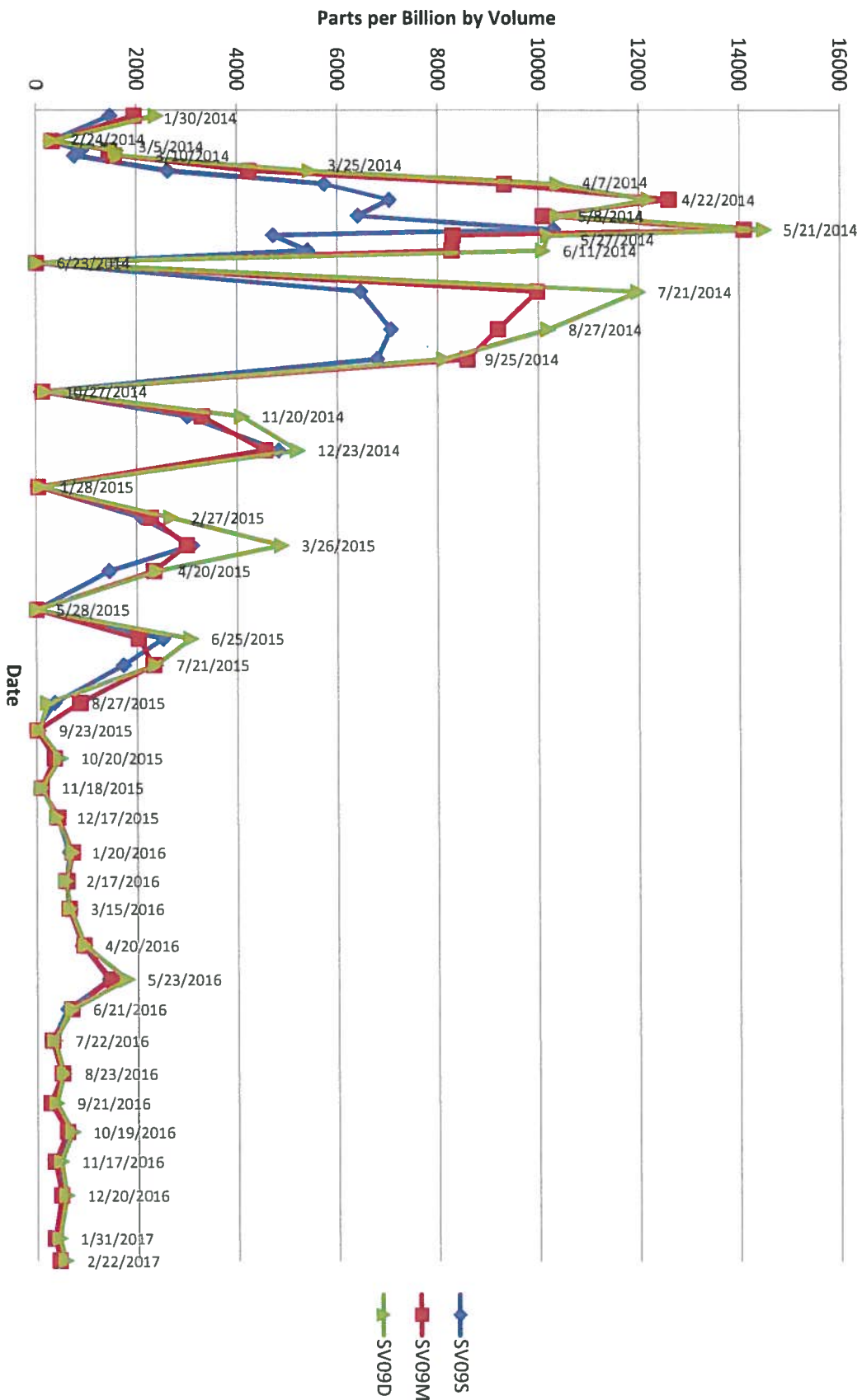
**Figure 5**  
**Soil Vapor Measurements**  
**SV06**



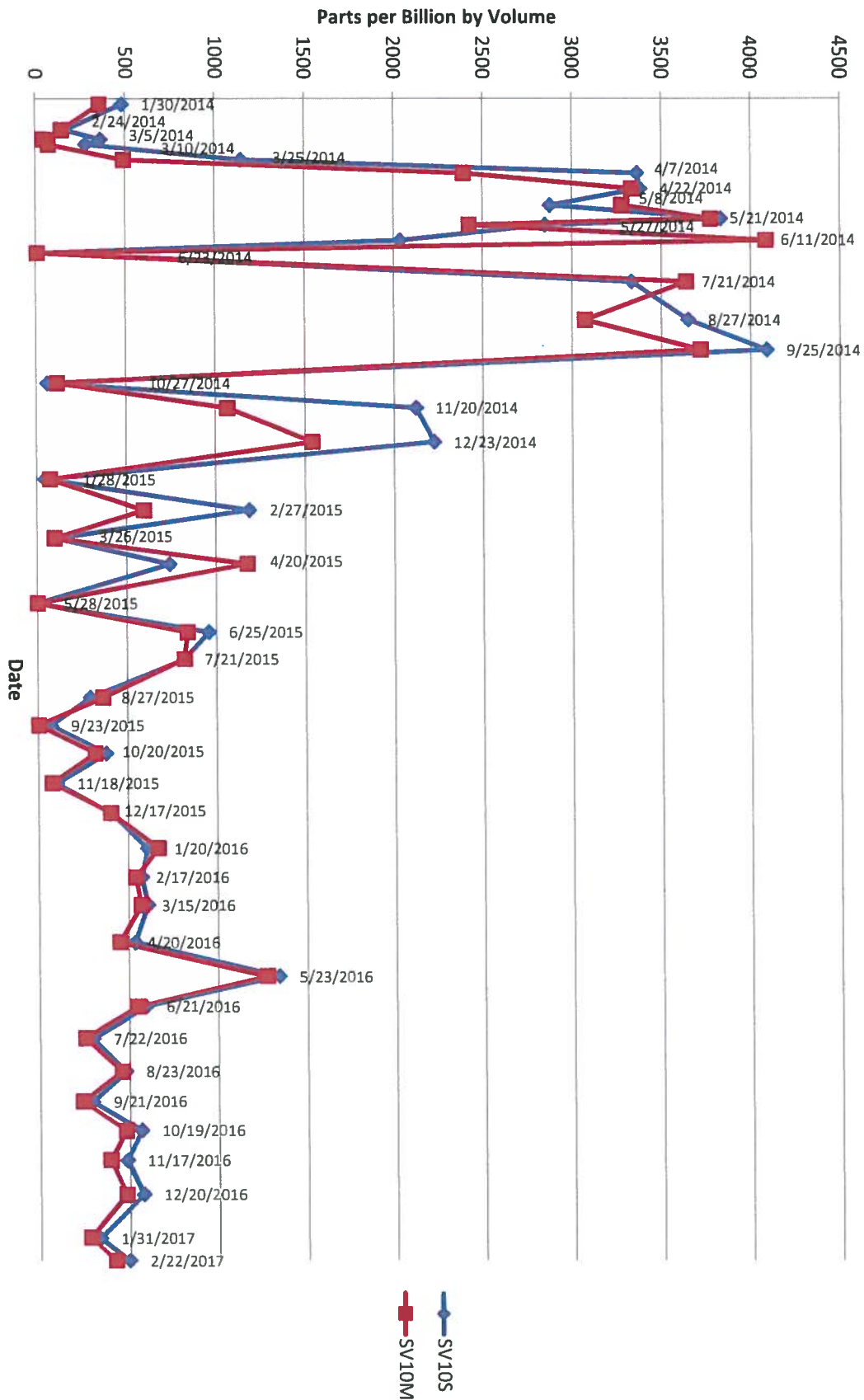




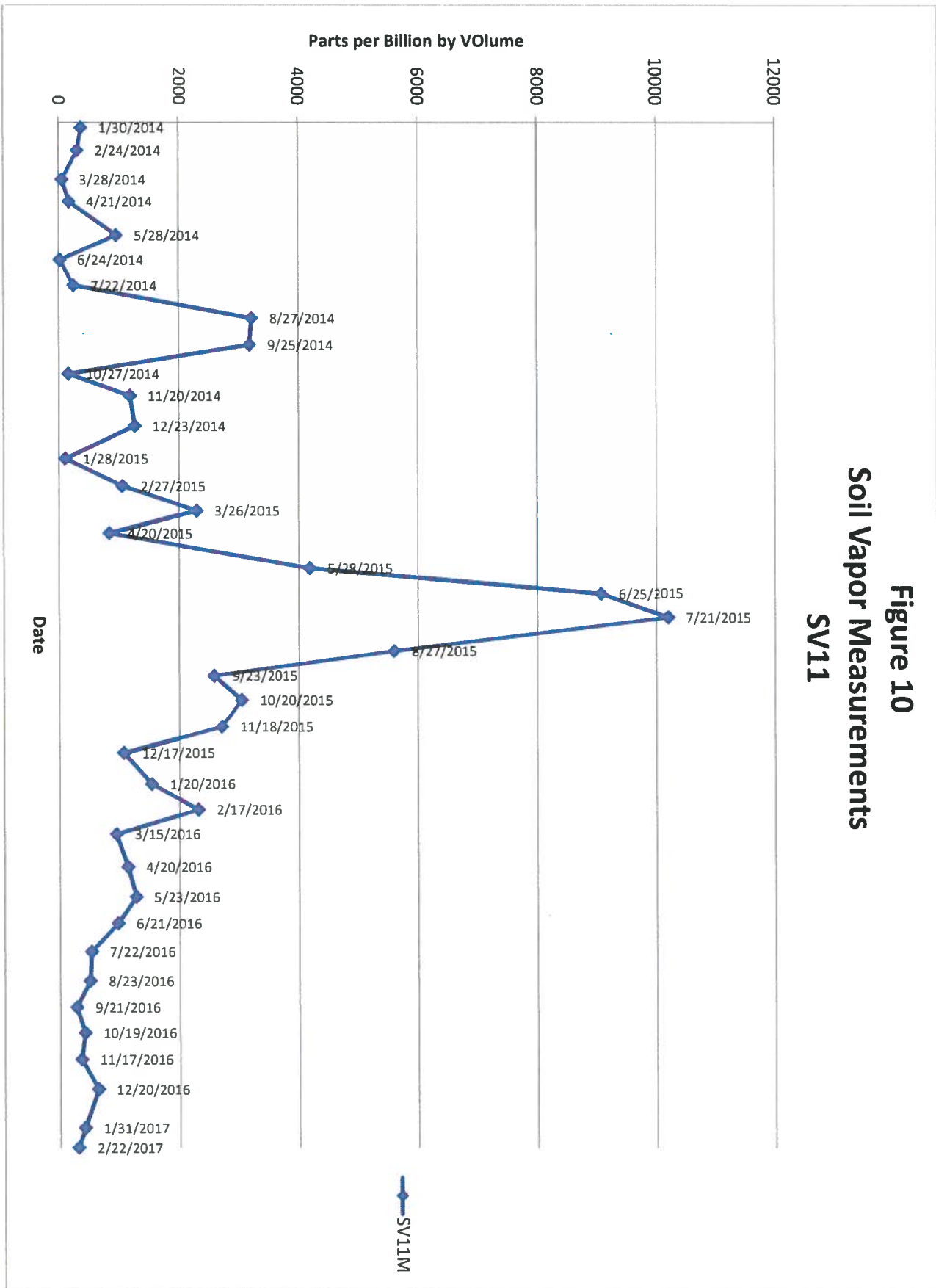
**Figure 7**  
**Soil Vapor Measurements**  
**SV08**

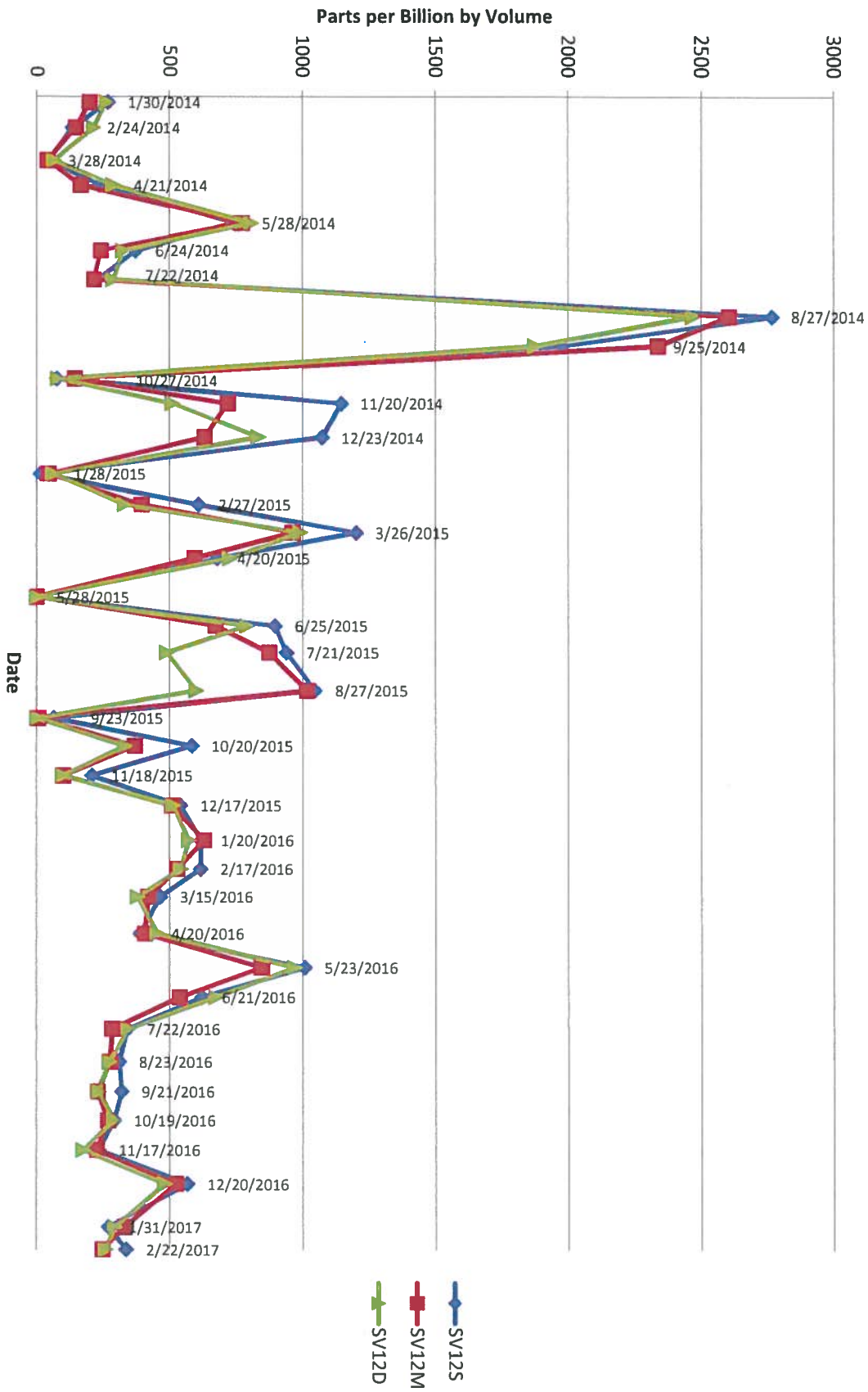


**Figure 8**  
**Soil Vapor Measurements**  
**SV09**

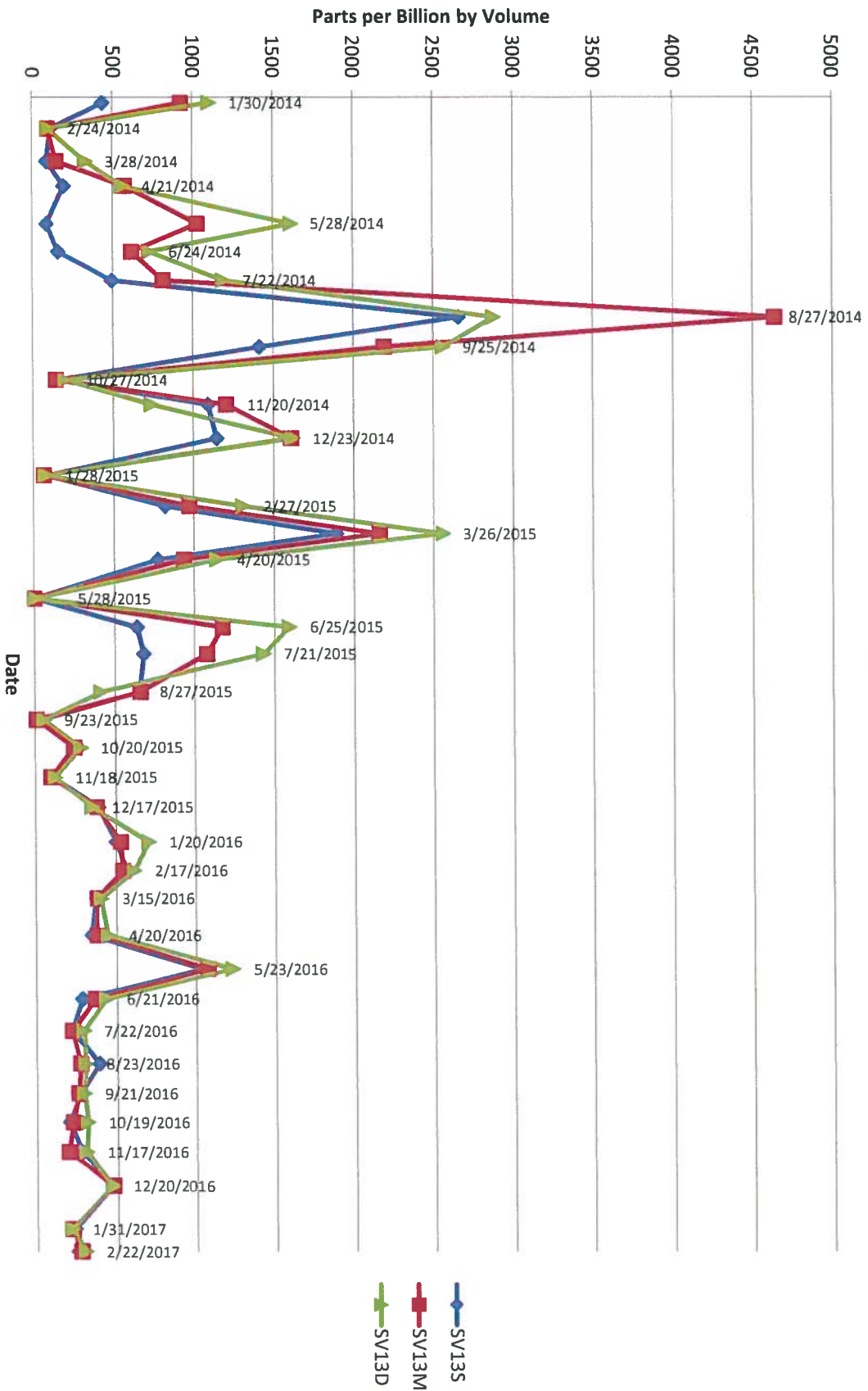


**Figure 9**  
**Soil Vapor Measurements**  
**SV10**

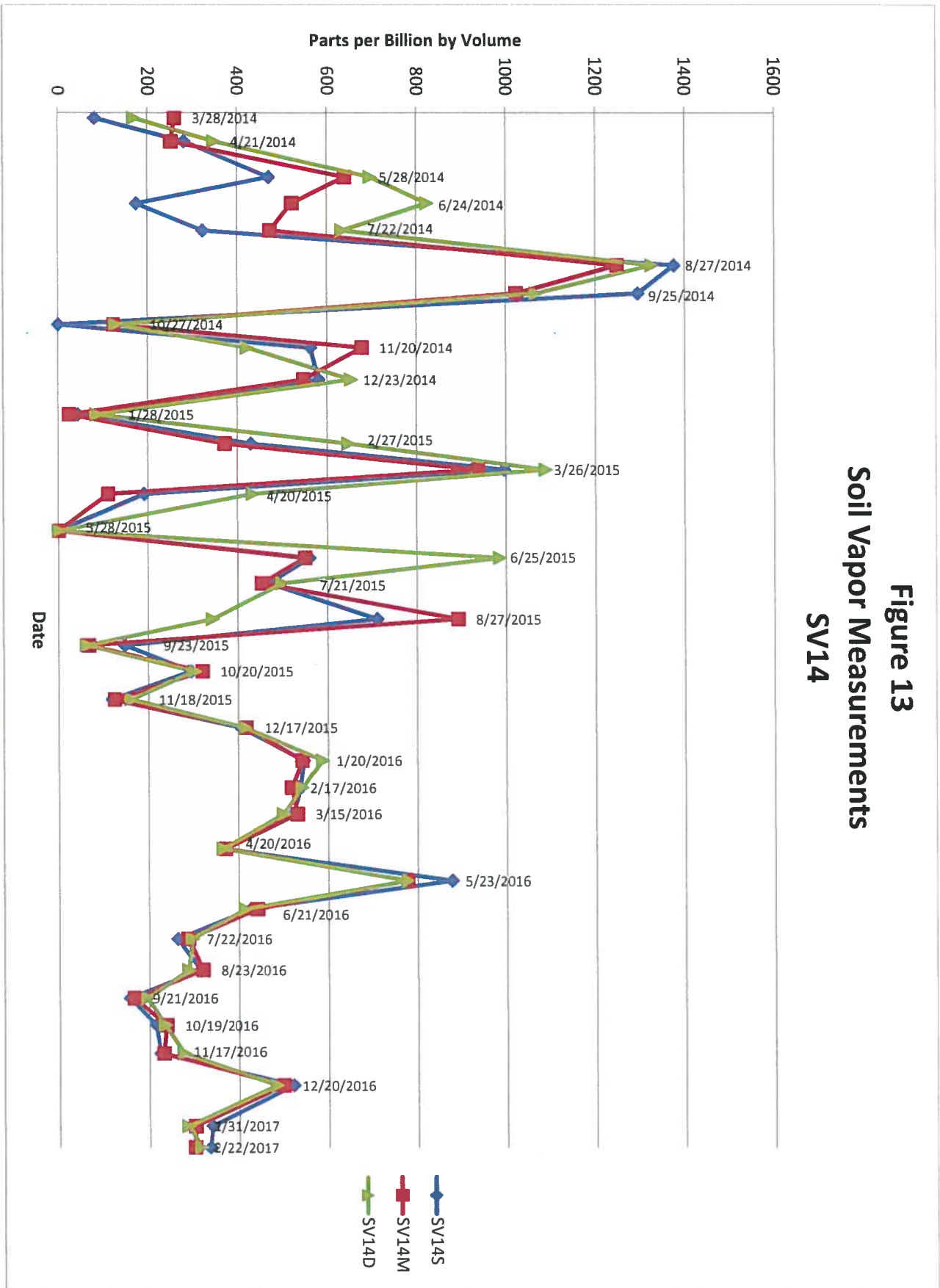




**Figure 11**  
**Soil Vapor Measurements**  
**SV12**

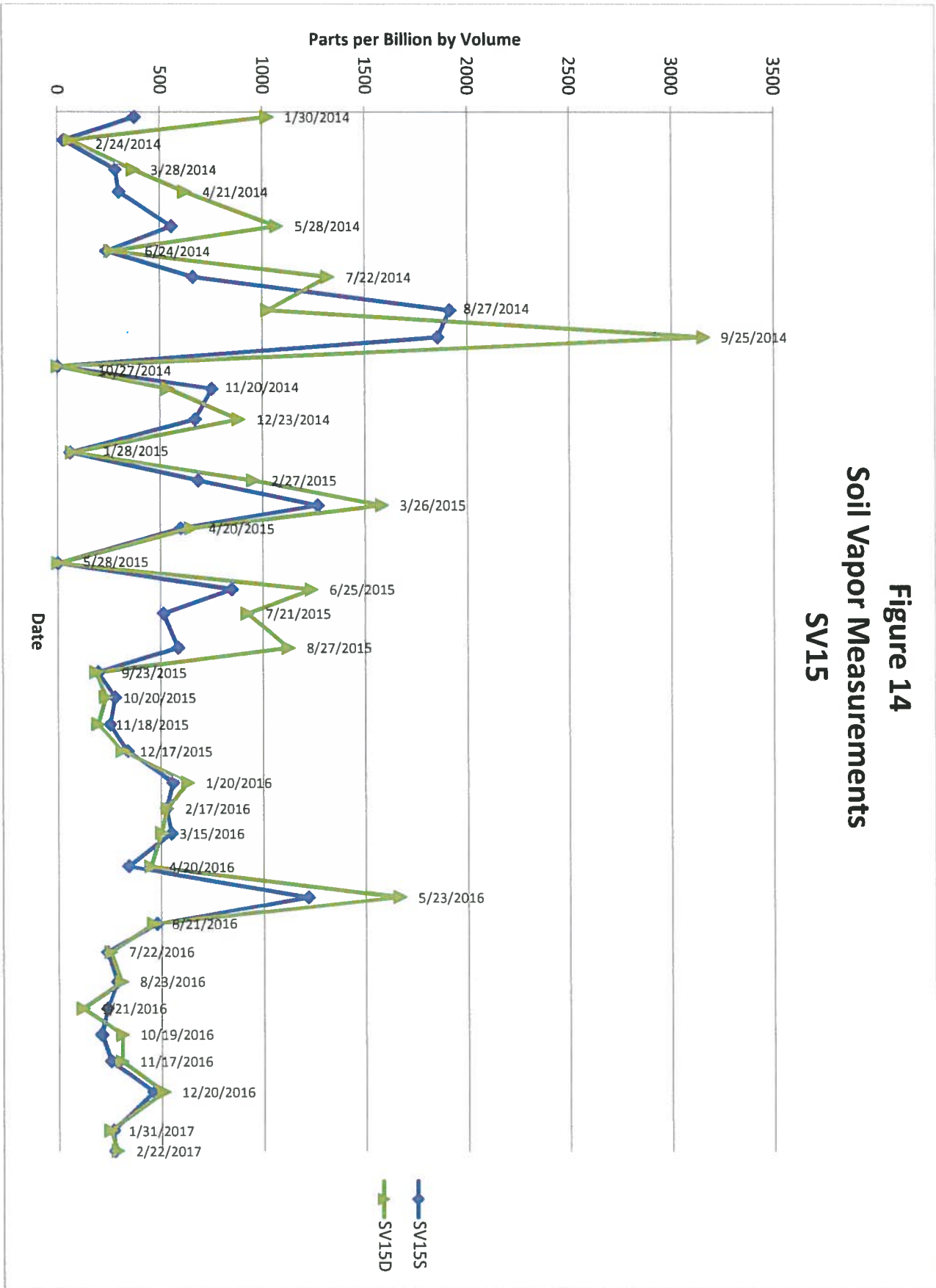


**Figure 12**  
**Soil Vapor Measurements**  
**SV13**



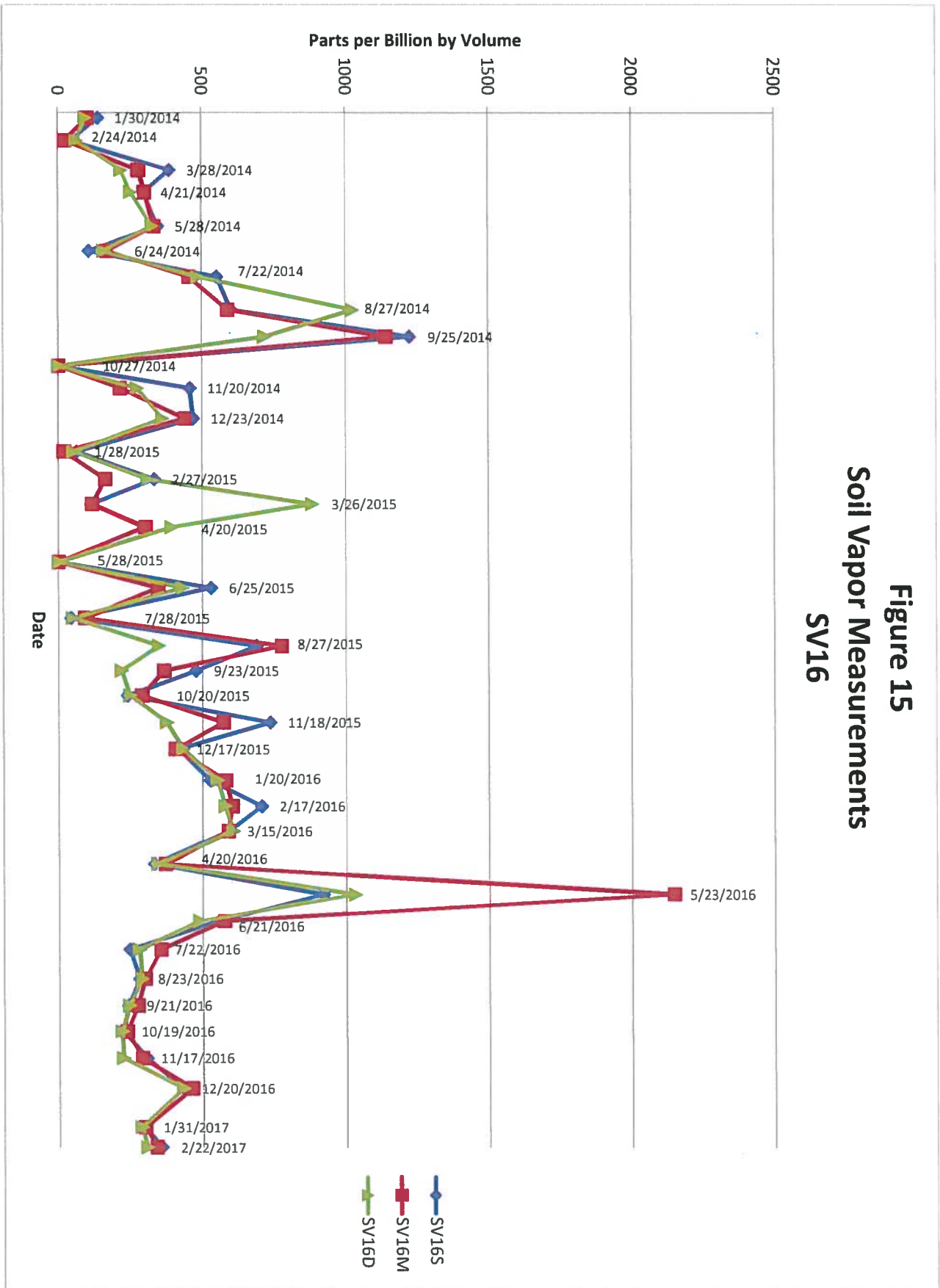
**Figure 13**  
**Soil Vapor Measurements**  
**SV14**



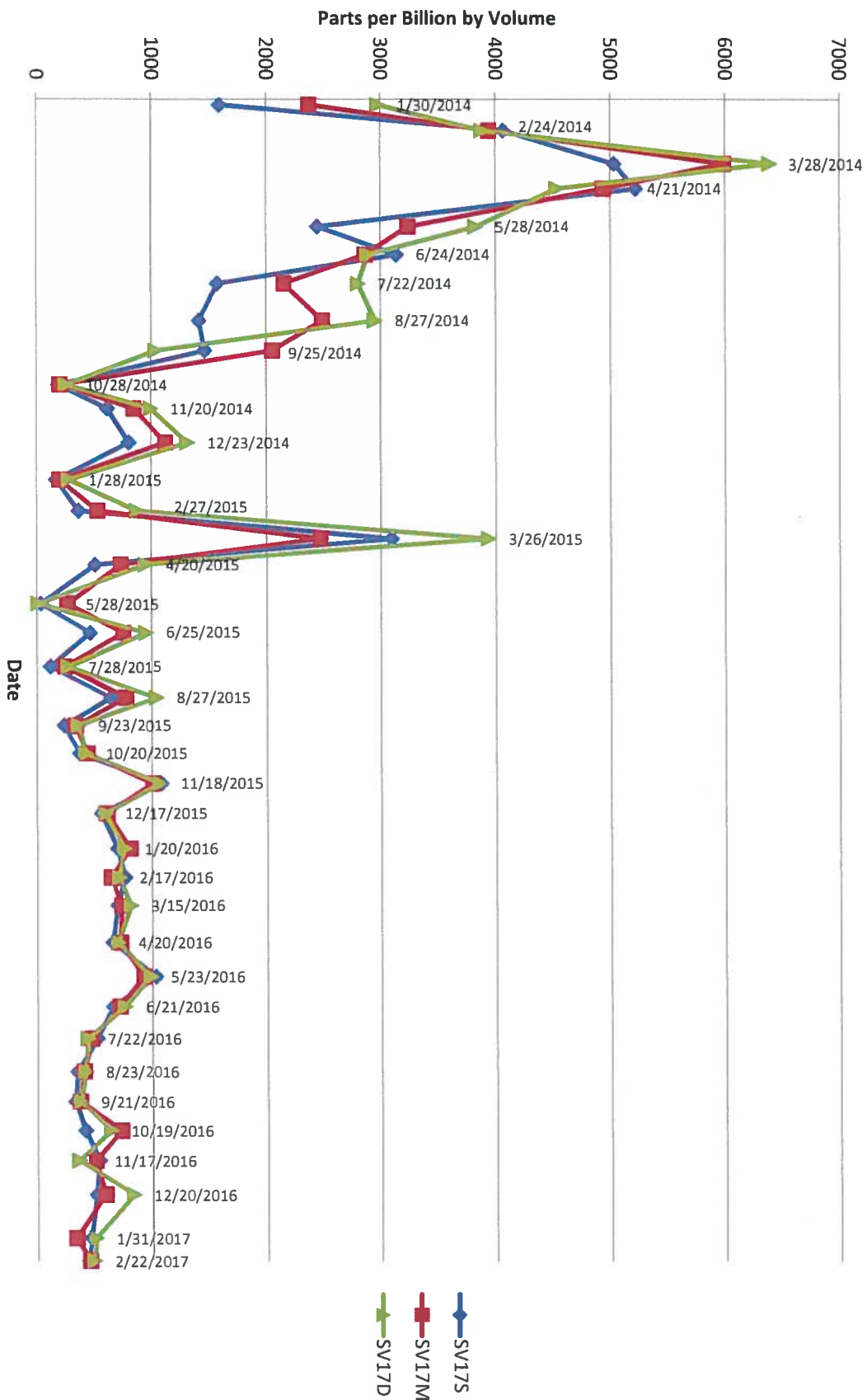


**Figure 14**  
**Soil Vapor Measurements**  
**SV15**

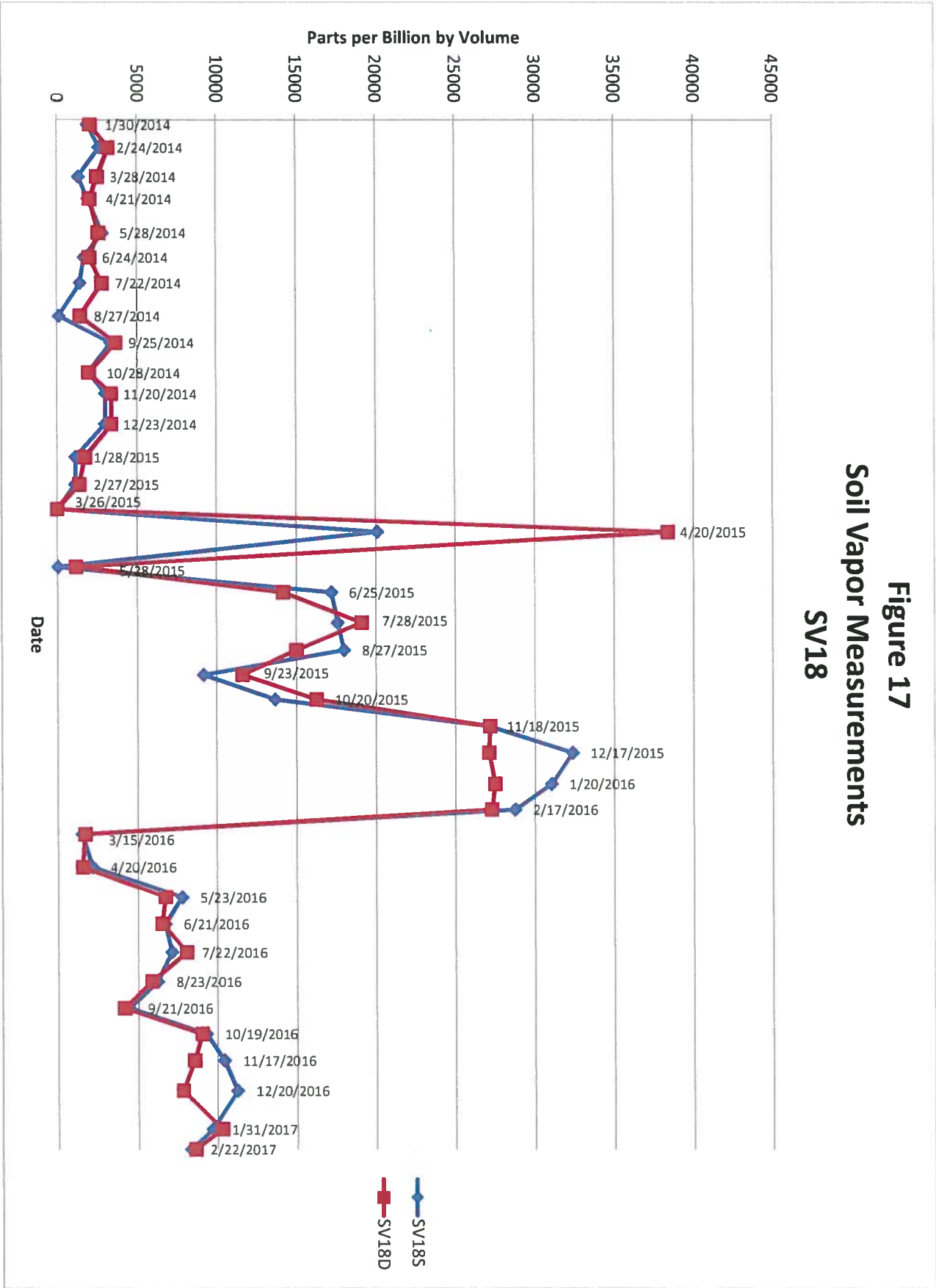




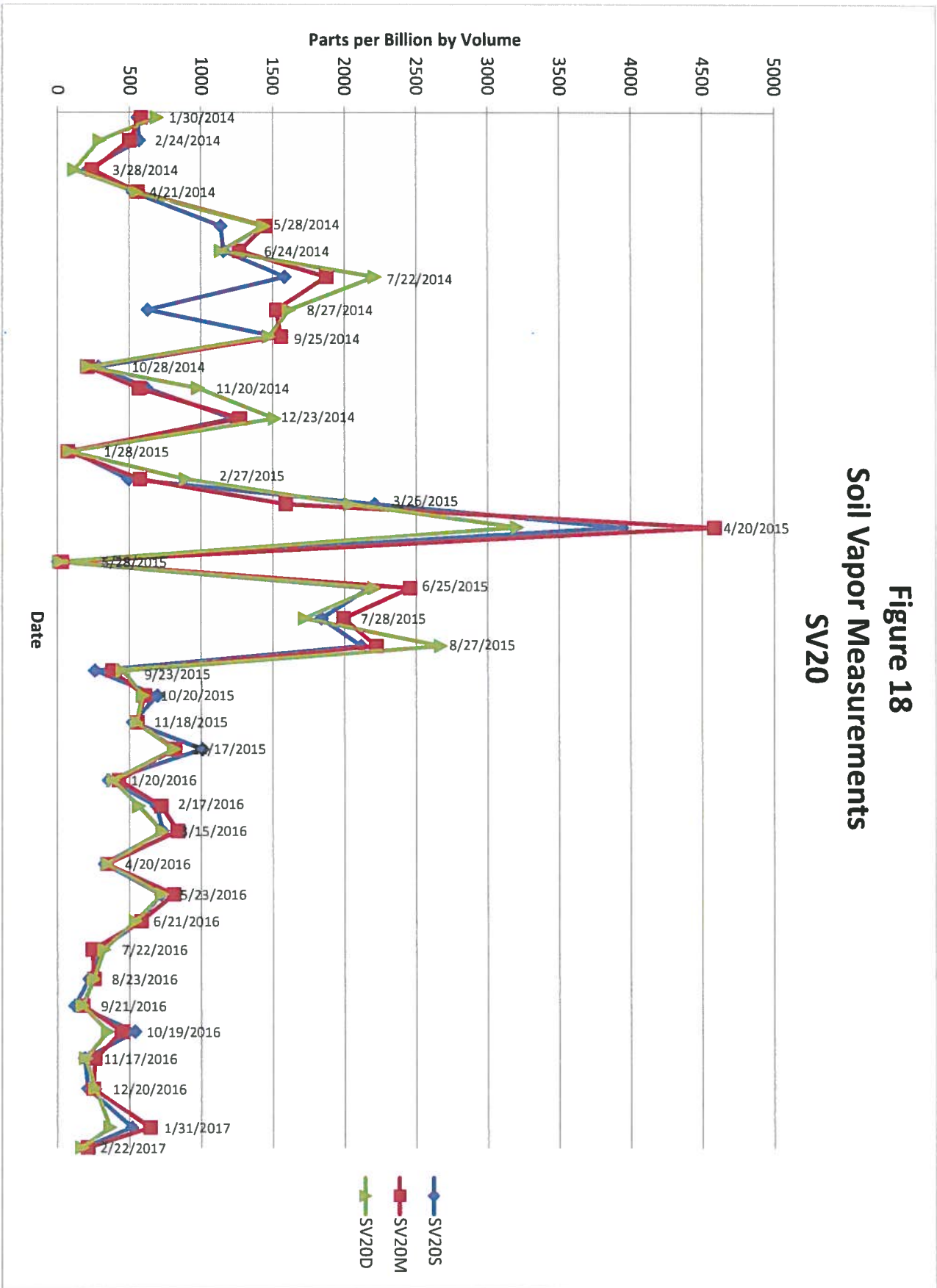
**Figure 15**  
**Soil Vapor Measurements**  
**SV16**



**Figure 16**  
**Soil Vapor Measurements**  
**SV17**



**Figure 17**  
**Soil Vapor Measurements**  
**SV18**



**Figure 18**  
**Soil Vapor Measurements**  
**SV20**