



January 30, 2018

CERTIFIED: 7013 2250 0001 1902 6236

Department of Environmental Quality  
Office of Environmental Compliance  
Enforcement Division  
P.O. Box 4312  
Baton Rouge, LA 70821-4312

Re: NSPS Excess Emissions & CEM Performance Report – 4<sup>th</sup> Quarter 2017  
Valero Refining - Meraux LLC, Agency Interest # 1238  
2500 East St. Bernard Hwy., St. Bernard Parish, Meraux, LA  
Title V Permit Numbers: 2500-00001-V16

Gentlemen,

Valero Refining, Meraux LLC hereby submits this Excess Emissions and Monitoring Systems Reports, per LAC 33:III, Chapter 30, 40 CFR 60.7(c), 40 CFR 60.108a(d) and 40 CFR 63.1575 for the Fourth Quarter 2017.

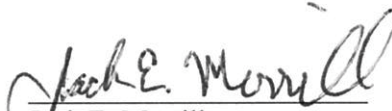
For this reporting period, no CEMS had excess emissions greater than 1 % of the total operating time and no CEMS had downtime greater than 5 % of the total operating time. One CEMS, the #2 Sulfur Recovery Unit Incinerator (EPN 1-93, EQT 0019) had excess emissions exactly 1.0 % of the total operating time.

Enclosed are the Data Assessment Reports for the appropriate CEMs and information required by NSPS Subpart Ja, 40 CFR 60.108a(d). Subpart Ja root cause and corrective action analysis reports are included with this submittal. The report dated August 9, 2017, is being resubmitted with a correction to the initial report submitted for the Third Quarter 2017. The estimated completion date for the corrective action was incorrect. Updates to previously submitted Subpart Ja root cause and corrective action analysis reports are also included if corrective actions were completed in this reporting period.

Should you have any questions regarding this submission, please contact Mr. Justin Stubbe at (504) 271-4141.

*I certify, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.*

Regards,

  
Jack E. Merrill  
Vice President & General Manager  
Valero Refining – Meraux LLC

Enclosures

cc: Mr. Brian Tusa, LDEQ SE Regional Office, New Orleans, LA

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **SO<sub>2</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: SO<sub>2</sub> corrected to 0% O<sub>2</sub> shall not exceed 250 ppm on a 12-hour rolling average

Monitor Manufacturer and Model No.: Brimstone SGX-231(SO<sub>2</sub>)/Rosemount Oxymitter 4000(O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/10/17

Process Unit(s) Description: #2 SRU Incinerator (EPN 1-93, EQT 0019)

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	21
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	21
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	1.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	3
e. Unknown causes	0
2. Total CMS Downtime	3
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.1 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **SO<sub>2</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: SO<sub>2</sub> corrected to 0% O<sub>2</sub> shall not exceed 250 ppm on a 12-hour rolling average.

Monitor Manufacturer and Model No.: ABB AO2000 Uras 26(SO<sub>2</sub>)/ Magnos 206 (O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/16/17

Process Unit(s) Description: #3 SRU Incinerator (EPN 5-00, EQT 0079)

Total source operating time in reporting period: 2,205 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	3
b. Control equipment problems	0
c. Process problems	12
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	15
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.7 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	3
e. Unknown causes	0
2. Total CMS Downtime	4
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.2 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average

Monitor Manufacturer and Model No.: Ametek, #4661

Date of Latest CMS Certification or Audit: CGA on 10/23/17

Process Unit(s) Description: Area 1 Fuel Drum for Boiler TB-01 (EPN 1-06, EQT 0010), Boiler B-7 (EPN 1-07, EQT 0011), MDH Product and Fractionator Heaters (EPN 2-92, EQT 0033)

Total source operating time in reporting period: EQT 0010- 2,169 hours, EQT 0011- 2,209 hours, EQT 0033- 2,195 hours

<b>Emissions Data Summary<sup>1</sup></b>			
1. Duration of excess emissions in reporting period due to:	<i>EQT 0010</i> (hours)	<i>EQT 0011</i> (hours)	<i>EQT 0033</i> (hours)
a. Startup/shutdown	0	0	0
b. Control equipment problems	0	0	0
c. Process problems	5	5	5
d. Other known causes	0	0	0
e. Unknown causes	0	0	0
2. Total duration of excess emission	5	5	5
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.2 %	0.2 %	0.2 %

<b>CMS Performance Summary<sup>1</sup></b>			
1. CMS downtime in reporting period due to:	<i>EQT 0010</i> (hours)	<i>EQT 0011</i> (hours)	<i>EQT 0033</i> (hours)
a. Monitor equipment malfunctions	0	0	0
b. Non-Monitor equipment malfunctions	0	0	0
c. Quality assurance calibration	1	1	1
d. Other known causes	15	15	1
e. Unknown causes	0	0	0
2. Total CMS Downtime	16	16	2
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.7 %	0.7 %	0.1 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted. (Percentage based on the lowest operating time.)

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Subpart J: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 4661 

Date of Latest CMS Certification or Audit:  CGA on 10/23/17 

Process Unit(s) Description:  Area 2 Fuel Drum for: Vacuum Heater (EPN 1-76, EQT 0013); No.1 Crude Heater (EPN 12-72A, EQT 0022); NHT Charge Heater (EPN 14-72, EQT 0023); NHT Debut Reboiler (EPN 15-72, EQT 0024); NHT Depent Reboiler (EPN 16-72 EQT 0027); Platformer Charge Heater (EPN 17-72 a,b,c , EQT 0028); Platformer Debut Reboiler (EPN 19-72, EQT 0029); DHT Charge Heater (EPN 5-73, EQT 0058); ROSE Heater (EPN 1-80, EQT 0014) 

Total source operating time in reporting period:  EQT 0013-2,206 hours; EQT 0022-2,203 hours; EQT 0023-2,204 hours; EQT 0024-2,188 hours; EQT 0027-2,192 hours; EQT 0028-2,202 hours; EQT 0029-2,182 hours; EQT 0058 – 2,182 hours; EQT 0014 - 2,208 hours 

<b>Emissions Data Summary<sup>1</sup></b>				
1. Duration of excess emissions in reporting period due to:	<i>EQT 0029, 0024, 0058 (hours)</i>	<i>EQT 0022, 0028, 0027 (hours)</i>	<i>EQT 0023 (hours)</i>	<i>EQT 0013, 0014 (hours)</i>
a. Startup/shutdown	0	0	0	0
b. Control equipment problems	0	0	0	0
c. Process problems	0	1	2	3
d. Other known causes	0	0	0	0
e. Unknown causes	0	0	0	0
2. Total duration of excess emission	0	1	2	3
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %	0.0 %	0.1 %	0.1 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>All EQT's (hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Subpart Ja: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average and 60 ppm on a 365 day rolling average.

Monitor Manufacturer and Model No.: Ametek 4661

Date of Latest CMS Certification or Audit: CGA on 10/23/17

Process Unit(s) Description: Area 2 Fuel Drum for Benzene Recovery Unit Reboiler (EPN 1-09, EQT 0127)

Total source operating time in reporting period: 2,173 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0%

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: J

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 4661

Date of Latest CMS Certification or Audit: CGA on 10/18/17

Process Unit(s) Description: Area 4 Fuel Drum for Merox Disulfide Separator to Platformer Charge Heater

Total source operating time in reporting period: 2,204 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	13
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	13
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.6 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0%

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 4661

Date of Latest CMS Certification or Audit: CGA on 10/23/17

Process Unit(s) Description: Area 6 Fuel Drum for Hydrocracker & Hydrotreater Charge Heaters (EPN 1-00, EQT 0009)

Total source operating time in reporting period: 2,208 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	9
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	9
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.4 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.



**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 4661

Date of Latest CMS Certification or Audit: CGA on 10/25/17

Process Unit(s) Description: Area 6 Fuel Drum for Boiler B-5 (EPN 2-00, EQT 0030) and Boiler B-6 (EPN 3-00, EQT 0048)

Total source operating time in reporting period: EQT 0030-2,206 hours; EQT 0048-0 hours<sup>3</sup>

<b>Emissions Data Summary<sup>1</sup></b>		
1. Duration of excess emissions in reporting period due to:	<i>EQT 0030 (hours)</i>	<i>EQT 0048 (hours)</i>
a. Startup/shutdown	0	0
b. Control equipment problems	0	0
c. Process problems	9	0
d. Other known causes	0	0
e. Unknown causes	0	0
2. Total duration of excess emission	9	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.4 %	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>		
1. CMS downtime in reporting period due to:	<i>EQT 0030 (hours)</i>	<i>EQT 0048 (hours)</i>
a. Monitor equipment malfunctions	0	0
b. Non-Monitor equipment malfunctions	0	0
c. Quality assurance calibration	2	0
d. Other known causes	0	0
e. Unknown causes	0	0
2. Total CMS Downtime	2	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.1 %	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

<sup>3</sup> Boiler B-6 ran on purchased natural gas for the entire Quarter.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide shall not exceed 0.1 pound/MMBtu on a 30-day rolling average.

Monitor Manufacturer and Model No.: ABB Limas11( NOx), Magnos27 (O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/24/17

Process Unit(s) Description: Boiler B-5 (EPN 2-00, EQT 0030)

Total source operating time in reporting period: 2,206 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide shall not exceed 0.1 pound/MMBtu on a 30-day rolling average.

Monitor Manufacturer and Model No.: ABB Limas11( NOx), Magnos27 (O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/24/17

Process Unit(s) Description: Boiler B-6 (EPN 3-00, EQT 0048)

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0%

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d))*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide shall not exceed 0.1 pound/MMBtu on a 30-day rolling average.

Monitor Manufacturer and Model No.: Thermo Environmental 42i (NO<sub>x</sub>)/(O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/17/17

Process Unit(s) Description: Boiler TB-01 (EPN 1-06, EQT 0010)

Total source operating time in reporting period: 2,169 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	1
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide corrected to 0% O<sub>2</sub> shall not exceed 40 ppm on a 30-day rolling average

Monitor Manufacturer and Model No.: Thermo Environmental 42i (NO<sub>x</sub>)/(O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/15/17

Process Unit(s) Description: Benzene Recovery Unit Reboiler (EPN 1-09, EQT 0127)

Total source operating time in reporting period: 2,173 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	2
d. Other known causes	1
e. Unknown causes	0
2. Total CMS Downtime	3
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.1 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: N/A (Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 36.a)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: ABB Limas11( NOx), Magnos27 (O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/26/17

Process Unit(s) Description: No.1 Crude Heater (EPN 12-72A, EQT 0022)

Total source operating time in reporting period: 2,203 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	23
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	23
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	1.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   Ja  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 5100 

Date of Latest CMS Certification or Audit:  CGA on 10/11/17 

Process Unit(s) Description:  North Flare Stack (EPN 20-72, EQT 0035), North Flare Header 

Total source operating time in reporting period:  2,209 hours 

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   Ja  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 5100 

Date of Latest CMS Certification or Audit:  CGA on 10/10/17 

Process Unit(s) Description:  North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header 

Total source operating time in reporting period:  2,209 hours 

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.



**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 5100

Date of Latest CMS Certification or Audit: CGA on 10/12/17

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Date of Latest CMS Certification or Audit: CGA on 10/14/17

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), North Flare Header

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	3
d. Other known causes	20
e. Unknown causes	0
2. Total CMS Downtime	23
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	1.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Date of Latest CMS Certification or Audit: CGA on 10/14/17

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	4
d. Other known causes	20
e. Unknown causes	0
2. Total CMS Downtime	24
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	1.1 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Date of Latest CMS Certification or Audit: CGA on 10/14/17

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	6
d. Other known causes	74
e. Unknown causes	0
2. Total CMS Downtime	80
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	3.6 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **Flow**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: GE Panametrics GF 868

Date of Latest CMS Certification or Audit: N/A

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), North Flare Header

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **Flow**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: GE Panametrics GF 868

Date of Latest CMS Certification or Audit: N/A

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSIONS AND MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(d) and 60.108a(d))*

Pollutant: **Flow**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: GE Panametrics GF 868

Date of Latest CMS Certification or Audit: N/A

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

Total source operating time in reporting period: 2,209 hours

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>(hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	0
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>	
1. CMS downtime in reporting period due to:	<i>(hours)</i>
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %

<sup>1</sup> For opacity, record all times in minutes. For gases, record all times in hours.

<sup>2</sup> For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in §60.7(c) shall be submitted.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **SO<sub>2</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: SO<sub>2</sub> corrected to 0% O<sub>2</sub> shall not exceed 250 ppm on a 12-hour rolling average

Monitor Manufacturer and Model No.: Brimstone SGX-231(SO<sub>2</sub>)/Rosemount Oxymitter 4000(O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/10/17

Process Unit(s) Description: #2 SRU Incinerator (EPN 1-93, EQT 0019)

Total source operating time in reporting period: 2,209 hours

<b>Ja EXCESS EMISSIONS</b>						
Date	Start	End	Duration (hours)	Max 12-HRA (ppm)	Cause	Corrective Action
10/13/17	05:00		21	931	SO <sub>2</sub> at 0% O <sub>2</sub> greater than 250 ppm, 12-HRA, with SO <sub>2</sub> emissions less than 500 lbs/day above the allowable limit due to a loss of offsite electrical power. For causes and corrective actions, see the root cause and corrective action analysis dated 10/12/17 in Appendix B of this report.	
10/14/17		02:00				
<b>TOTAL</b>			21			

<b>Ja CMS PERFORMANCE<sup>1</sup></b>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
11/22/17	09:00	11:00	2	Offline to clean probe and sample cell.	Calibrated and returned to service.	
11/22/17	13:00	14:00	1	Adjusted and calibrated following cleaning.	N/A	
<b>TOTAL</b>			3			

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.



**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **SO<sub>2</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: SO<sub>2</sub> corrected to 0% O<sub>2</sub> shall not exceed 250 ppm on a 12-hour rolling average.

Monitor Manufacturer and Model No.: ABB AO2000 Uras 26(SO<sub>2</sub>)/ Magnos 206 (O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/16/17

Process Unit(s) Description: #3 SRU Incinerator (EPN 5-00, EQT 0079)

Total source operating time in reporting period: 2,205 hours

<b>Ja EXCESS EMISSIONS</b>						
Date	Start	End	Duration (hours)	Max 12-HRA (ppm)	Cause	Corrective Action
10/13/17	01:00	16:00	15	569	SO <sub>2</sub> at 0% O <sub>2</sub> greater than 250 ppm, 12-HRA, with SO <sub>2</sub> emissions greater than 500 lbs/day above the allowable limit due to a loss of offsite electrical power. For causes and corrective actions, see the root cause and corrective action analysis dated 10/12/17 in Appendix B of this report.	
TOTAL			15			

<b>Ja CMS PERFORMANCE<sup>1</sup></b>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
10/16/17	10:00	11:00	1	SO <sub>2</sub> and O <sub>2</sub> Cylinder Gas Audit.	N/A	
11/29/17	11:00	14:00	3	Offline to clean probe.	Calibrated and returned to service.	
TOTAL			4			

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average and 60 ppm on a 365 day rolling average

Monitor Manufacturer and Model No.: Ametek 4661

Date of Latest CMS Certification or Audit: CGA on 10/18/17

Process Unit(s) Description: Area 2 Fuel Drum for Benzene Recovery Unit Reboiler (EPN 1-09, EQT 0127)

Total source operating time in reporting period: 2,173 hours

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 3-HRA (ppm)	Cause	Corrective Action
None						
TOTAL			0			

Ja CMS PERFORMANCE <sup>1</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
10/18/17	13:00	14:00	1	Cylinder Gas Audit.	N/A	
TOTAL			1			

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide corrected to 0% O<sub>2</sub> shall not exceed 40 ppm on a 30-day rolling average

Monitor Manufacturer and Model No.: Thermo Environmental 42i (NO<sub>x</sub>)/(O<sub>2</sub>)

Date of Latest CMS Certification or Audit: CGA on 10/15/17

Process Unit(s) Description: Benzene Recovery Unit Reboiler (EPN 1-09, EQT 0127)

Total source operating time in reporting period: 2,173 hours

<b>Ja EXCESS EMISSIONS</b>						
Date	Start	End	Duration (hours)	Max 30-DRA (ppm)	Cause	Corrective Action
None						
<b>TOTAL</b>			<b>0</b>			

<b>Ja CMS PERFORMANCE<sup>1</sup></b>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
10/15/17	09:00	11:00	2	NO <sub>x</sub> and O <sub>2</sub> Cylinder Gas Audit	N/A	
<b>TOTAL</b>			<b>2</b>			

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 5100

Date of Latest CMS Certification or Audit: CGA on 10/11/17

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), North Flare Header

Total source operating time in reporting period: 2,209 hours

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 3-HRA (ppm)	Cause	Corrective Action
None						
TOTAL			0			

Ja CMS PERFORMANCE <sup>2</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
None						
TOTAL			0			

<sup>1</sup>Due to the physical arrangement of the headers supplying the North Flare Stack (EPN 20-72, EQT 0035), two analyzers are required to measure H<sub>2</sub>S concentration of the gas combusted in the North Flare. Conservatively, excess emission on either of these analyzers will be considered excess emissions at the North Flare. However, the CEMS performance will be tracked separately.

<sup>2</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 5100

Date of Latest CMS Certification or Audit: CGA on 10/10/17

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header

Total source operating time in reporting period: 2,209 hours

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 3-HRA (ppm)	Cause	Corrective Action
None						
TOTAL			0			

Ja CMS PERFORMANCE <sup>2</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
None						
TOTAL			0			

<sup>1</sup>Due to the physical arrangement of the headers supplying the North Flare Stack (EPN 20-72, EQT 0035), two analyzers are required to measure H<sub>2</sub>S concentration of the gas combusted in the North Flare. Conservatively, excess emission on either of these analyzers will be considered excess emissions at the North Flare. However, the CEMS performance will be tracked separately.

<sup>2</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 5100

Date of Latest CMS Certification or Audit: CGA on 10/12/17

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

Total source operating time in reporting period: 2,208 hours

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 3-HRA (ppm)	Cause	Corrective Action
None						
TOTAL			0			

Ja CMS PERFORMANCE <sup>1</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
None						
TOTAL			0			

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Date of Latest CMS Certification or Audit: CGA on 10/14/17

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), North Flare Header

Total source operating time in reporting period: 2,209 hours

<b>Ja CMS PERFORMANCE<sup>1</sup></b>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
10/14/17	10:00	11:00	1	Cylinder Gas Audit.	N/A
10/15/17	17:00		16	Replaced Hydrogen and Oxygen bottle six packs but did not line them up correctly due to an incorrectly reading pressure gage.	Corrected lineup, calibrated the analyzer and returned it to service.
10/16/17		09:00			
11/8/17	09:00	13:00	4	Analyzer shutdown for annual preventative maintenance.	Calibrated and returned to service.
12/7/17	06:00	08:00	2	Zero air supply ran out after daily calibration check.	Replaced zero air bottle six-pack, calibrated the analyzer and returned it to service.
<b>TOTAL</b>			<b>23</b>		

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Date of Latest CMS Certification or Audit: CGA on 10/14/17

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header

Total source operating time in reporting period: 2,209 hours

Ja CMS PERFORMANCE <sup>1</sup>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
10/14/17	10:00	11:00	1	Cylinder Gas Audit.	N/A
10/15/17	17:00		16	Replaced Hydrogen and Oxygen bottle six packs but did not line them up correctly due to an incorrectly reading pressure gage.	Corrected lineup, calibrated the analyzer and returned it to service.
10/16/17		09:00			
11/8/17	09:00	13:00	4	Analyzer shutdown for annual preventative maintenance.	Calibrated and returned to service.
12/7/17	05:00	08:00	3	Zero air supply ran out after daily calibration check.	Replaced zero air bottle six-pack, calibrated the analyzer and returned it to service.
TOTAL			24		

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.



**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Date of Latest CMS Certification or Audit: CGA on 10/14/17

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

Total source operating time in reporting period: 2,209 hours

Ja CMS PERFORMANCE <sup>1</sup>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
10/14/17	10:00	11:00	1	Cylinder Gas Audit.	N/A
10/15/17	17:00		16	Replaced Hydrogen and Oxygen bottle six packs but did not line them up correctly due to an incorrectly reading pressure gage.	Corrected lineup, calibrated the analyzer and returned it to service.
10/16/17		09:00			
10/17/17	11:00	13:00	58	Analyzer shutdown for annual preventative maintenance. Due to accumulation of a foreign material in the analyzer, the manufacturer technician recommended a complete rebuild. Once rebuild was complete, analyzer would not operate properly. Troubleshooting was inconclusive, but Valero believed that an older part had been used in the rebuild. This part was replaced with the new updated part.	Calibrated and returned to service.
10/19/17		21:00			
10/20/17	10:00	11:00	1	Valero inspected the operation of the analyzer after running overnight and made adjustments.	Calibrated and returned to service.
12/7/17	06:00	08:00	2	Zero air supply ran out after daily calibration check.	Replaced zero air bottle six-pack, calibrated the analyzer and returned it to service.
12/8/17	10:00	12:00	2	Offline to blow out sample lines due to reduced sample flow.	Calibrated and returned to service.
<b>TOTAL</b>			<b>80</b>		

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **Flow**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: GE Panametrics GF 868

Date of Latest CMS Certification or Audit: N/A

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), North Flare Header

Total source operating time in reporting period: 2,209 hours

Ja CMS PERFORMANCE <sup>1</sup>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
None					
TOTAL			0		

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **Flow**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: GE Panametrics GF 868

Date of Latest CMS Certification or Audit: N/A

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header

Total source operating time in reporting period: 2,209 hours

<b>Ja CMS PERFORMANCE<sup>1</sup></b>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
None					
<b>TOTAL</b>			<b>0</b>		

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

**GASEOUS AND OPACITY EXCESS EMISSIONS AND  
MONITORING SYSTEMS PERFORMANCE**

*(per 40 CFR 60.7(c) and 60.108a(d))*

Pollutant: **Flow**

Applicable NSPS Subpart: Ja (Also Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: GE Panametrics GF 868

Date of Latest CMS Certification or Audit: N/A

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

Total source operating time in reporting period: 2,209 hours

Ja CMS PERFORMANCE <sup>1</sup>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
None					
<b>TOTAL</b>			<b>0</b>		

<sup>1</sup>In accordance with 40 CFR 60.108a(d)(6), changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit have been compared with operation of the control system and affected facility before and following the period of data unavailability to ensure that any changes made in operation of the emission control system during the period of data unavailability did not affect the ability of the system to meet the applicable emission limit.

# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **SO<sub>2</sub>**

Applicable NSPS Subpart:   Ja  

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: SO<sub>2</sub> corrected to 0% O<sub>2</sub> shall not exceed 250 ppm on a 12-hour rolling average.

Monitor Manufacturer and Model No.: Brimstone SGX-231(SO<sub>2</sub>)/Rosemount Oxymitter 4000(O<sub>2</sub>)

Source unit: #2 SRU Incinerator (EPN 1-93, EQT 0019)

CEM Sampling Location: #2 SRU Incinerator (#1-93)

CEM Span Value: Sulfur Dioxide 500 ppm; Oxygen 25%

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	SO <sub>2</sub> #1 <u>(low scale)</u>	SO <sub>2</sub> #2 <u>(high scale)</u>	O <sub>2</sub> #1 <u>(low scale)</u>	O <sub>2</sub> #2 <u>(high scale)</u>
Date of Audit	10/10/17	10/10/17	10/10/17	10/10/17
Audit Gas Cylinder No.	SG9150051BAL	CC125741	CC483689	SG9152263BAL
Date of Audit Gas Cert.	5/27/16	5/27/16	5/23/16	5/23/16
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	124.9 ppmv	274.5 ppmv	5.99 vol %	10.05 vol %
CEM Response Value	119.0 ppmv	272.7 ppmv	6.23 vol %	10.10 vol %
Accuracy	4.7%	0.7%	4.0%	0.5%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **SO<sub>2</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: SO<sub>2</sub> corrected to 0% O<sub>2</sub> shall not exceed 250 ppm on a 12-hour rolling average.

Monitor Manufacturer and Model No.: ABB AO2000 Uras 26(SO<sub>2</sub>)/ Magnos 206 (O<sub>2</sub>)

Source unit: #3 SRU Incinerator (EPN 5-00, EQT 0079)

CEM Sampling Location: #3 SRU Incinerator (#5-00)

CEM Span Value: Sulfur Dioxide 500 ppm; Oxygen 25%

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	SO <sub>2</sub> #1 <u>(low scale)</u>	SO <sub>2</sub> #2 <u>(high scale)</u>	O <sub>2</sub> #1 <u>(low scale)</u>	O <sub>2</sub> #2 <u>(high scale)</u>
Date of Audit	10/16/17	10/16/17	10/16/17	10/16/17
Audit Gas Cylinder No.	XC022957B	CC94008	CC483694	EB0063979
Date of Audit Gas Cert.	5/27/16	5/27/16	5/23/16	5/23/16
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	125.3 ppmv	275.3 ppmv	5.99 vol %	10.00 vol %
CEM Response Value	125.8 ppmv	277.8 ppmv	5.98 vol %	10.02 vol %
Accuracy	0.4%	0.9%	0.1%	0.2%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### B. Out of Control Periods:

3. Dates: N/A

4. Number of Days N/A

C. Corrective Actions: N/A

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 4661 

Source Unit:  Area 1 Fuel Drum for Boiler TB-01 (EPN 1-06, EQT 0010) 

CEM Sampling Location:  Area 1 Fuel Drum 

CEM Span Value:  Hydrogen Sulfide, 300 ppm 

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/23/17	10/23/17
Audit Gas Cylinder No.	XC034939B	CC26703
Date of Audit Gas Cert.	5/23/16	5/27/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value (ppmv)	76.0	175.3
CEM Response Value (ppmv)	74.7	176.3
Accuracy	1.7%	0.6%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart: J and Ja (Benzene Recovery Unit Reboiler Subject to Ja)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average(J and Ja) and 60 ppm on a 365 day rolling average (Ja only)

Monitor Manufacturer and Model No.: Ametek 4661

Source Unit: Area 2 Fuel Drum for: MDH Product and Fractionator Heaters (EPN 2-92, EQT 0033); No.1 Crude Heater (EPN 12-72A, EQT 022); ROSE Heater (EPN 1-80, EQT 0014); Vacuum Heater (EPN 1-76, EQT 0013); Platformer Charge Heater (EPN 17-72 a,b,c , EQT 0028); Platformer Debut Reboiler (EPN 19-72, EQT 0029); NHT Charge Heater (EPN 14-72, EQT 0023); NHT Debut Reboiler (EPA 15-72, EQT 0024); NHT Depent Reboiler (EPA 16-72, EQT 0027); DHT Charge Heater (EPN 5-73, EQT 0058); Benzene Recovery Unit Reboiler (EPN 1-09, EQT 0127)

CEM Sampling Location: Area 2 Fuel Drum

CEM Span Value: Hydrogen Sulfide, 300 ppm

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 (low scale)	H <sub>2</sub> S #2 (high scale)
Date of Audit	10/18/17	10/18/17
Audit Gas Cylinder No.	EB0062585	CC41503
Date of Audit Gas Cert.	5/23/16	5/27/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value (ppmv)	76.7	176.4
CEM Response Value (ppmv)	73.5	174.8
Accuracy	4.1%	0.9%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average.

Monitor Manufacturer and Model No.: Ametek 4661

Process Unit(s) Description: Area 4 Fuel Drum for Merox Disulfide Separator to Platformer Charge Heater

CEM Sampling Location: Area 4 Fuel Drum

CEM Span Value: Hydrogen Sulfide, 300 ppm

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1	H <sub>2</sub> S #2
	<u>(low scale)</u>	<u>(high scale)</u>
Date of Audit	10/18/17	10/18/17
Audit Gas Cylinder No.	CC467104	CC91595
Date of Audit Gas Cert.	5/23/16	5/27/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value (ppmv)	78.0	169.9
CEM Response Value (ppmv)	76.7	168.7
Accuracy	1.7%	0.7%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 4661 

Process Unit(s) Description:  Area 6 Fuel Drum for Hydrocracker & Hydrotreater Charge Heaters (EPN 1-00, EQT 0009) 

CEM Sampling Location:  Area 6 Fuel Drum 

CEM Span Value:  Hydrogen Sulfide, 300 ppm 

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/23/17	10/23/17
Audit Gas Cylinder No.	CC182529	CC52088
Date of Audit Gas Cert.	5/23/16	5/27/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value (ppmv)	78.4	166.7
CEM Response Value (ppmv)	72.7	164.0
Accuracy	7.3%	1.6%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 4661 

Process Unit(s) Description:  Area 6 Fuel Drum for Boilers B-5 (EPN 2-00, EQT 0030) and B-6 (EPN 3-00, EQT 0048) 

CEM Sampling Location:  Area 6 Fuel Drum 

CEM Span Value:  Hydrogen Sulfide, 300 ppm 

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/25/17	10/25/17
Audit Gas Cylinder No.	CC421903	CC111958
Date of Audit Gas Cert.	5/23/16	5/27/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value (ppmv)	78.1	171.5
CEM Response Value (ppmv)	81.8	179.3
Accuracy	4.7%	4.5%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

(per 40 CFR 60, Appendix F, Section 7)

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide shall not exceed 0.1 pound/MMBtu on a 30-day rolling average.

Monitor Manufacturer and Model No.: ABB Limas11( NO<sub>x</sub>), Magnos27 (O<sub>2</sub>)

Process Unit(s) Description: Boiler B-5 (EPN 2-00, EQT 0030)

CEM Sampling Location: Boiler B-5

CEM Span Value: Nitrogen Oxide 100 ppm, Oxygen 25 %

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	NO <sub>x</sub> #1 <u>(low scale)</u>	NO <sub>x</sub> #2 <u>(high scale)</u>	O <sub>2</sub> #1 <u>(low scale)</u>	O <sub>2</sub> #2 <u>(high scale)</u>
Date of Audit	10/24/17	10/24/17	10/24/17	10/24/17
Audit Gas Cylinder No.	CC330464	LL64747	LL53418	LL167062
Date of Audit Gas Cert.	6/2/16	5/3/16	1/28/14	1/28/14
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	25.2 ppmv	54.5 ppmv	6.01 vol %	10.01 vol %
CEM Response Value	24.8 ppmv	52.8 ppmv	5.89 vol %	9.91 vol %
Accuracy	1.7%	3.0%	2.0%	1.0%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide shall not exceed 0.1 pound/MMBtu on a 30-day rolling average.

Monitor Manufacturer and Model No.: ABB Limas11 (NO<sub>x</sub>), Magnos27 (O<sub>2</sub>)

Process Unit(s) Description: Boiler B-6 (EPN 3-00, EQT 0048)

CEM Sampling Location: Boiler B-6

CEM Span Value: Nitrogen Oxide 100 ppm, Oxygen 25 %

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	NO <sub>x</sub> #1 <u>(low scale)</u>	NO <sub>x</sub> #2 <u>(high scale)</u>	O <sub>2</sub> #1 <u>(low scale)</u>	O <sub>2</sub> #2 <u>(high scale)</u>
Date of Audit	10/24/17	10/24/17	10/24/17	10/24/17
Audit Gas Cylinder No.	CC330464	LL64747	LL53418	LL167062
Date of Audit Gas Cert.	6/2/16	5/3/16	1/28/14	1/28/14
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	25.2 ppmv	54.5 ppmv	6.01 vol %	10.01 vol %
CEM Response Value	24.8 ppmv	52.4 ppmv	5.89 vol %	9.91 vol %
Accuracy	1.7%	3.8%	2.0%	1.0%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# DATA ASSESSMENT REPORT

(per 40 CFR 60, Appendix F, Section 7)

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide shall not exceed 0.1 pound/MMBtu on a 30-day rolling average.

Monitor Manufacturer and Model No.: Thermo Environmental Model 42i (NO<sub>x</sub>)/(O<sub>2</sub>)

Process Unit(s) Description: Boiler TB-01 (EPN 1-06, EQT 0010)

CEM Sampling Location: Boiler TB-01

CEM Span Value: Nitrogen Oxide 500 ppm, Oxygen 25 %

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	<u>NO<sub>x</sub> #1</u> <u>(low scale)</u>	<u>NO<sub>x</sub> #2</u> <u>(high scale)</u>	<u>O<sub>2</sub> #1</u> <u>(low scale)</u>	<u>O<sub>2</sub> #2</u> <u>(high scale)</u>
Date of Audit	10/17/17	10/17/17	10/17/17	10/17/17
Audit Gas Cylinder No.	SG9167966	CC89303	LL269	LL168197
Date of Audit Gas Cert.	5/31/16	2/11/14	4/26/16	4/25/16
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	126.9 ppmv	270.5 ppmv	6.03 vol %	10.10 vol %
CEM Response Value	126.7 ppmv	268.7 ppmv	5.70 vol %	9.70 vol %
Accuracy	0.2%	0.7%	5.5%	4.0%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide corrected to 0% O<sub>2</sub> shall not exceed 40 ppm on a 30-day rolling average

Monitor Manufacturer and Model No.: Thermo Environmental Model 42i (NO<sub>x</sub>)/(O<sub>2</sub>)

Process Unit(s) Description: Benzene Recovery Unit Reboiler (EPN 1-09, EQT 0127)

CEM Sampling Location: Benzene Recovery Unit Reboiler

CEM Span Value: Nitrogen Oxide 100 ppm, Oxygen 25 %

## I. ACCURACY ASSESSMENT RESULTS (CGA):

<u>CGA</u>	<u>NO<sub>x</sub> #1</u> <u>(low scale)</u>	<u>NO<sub>x</sub> #2</u> <u>(high scale)</u>	<u>O<sub>2</sub> #1</u> <u>(low scale)</u>	<u>O<sub>2</sub> #2</u> <u>(high scale)</u>
Date of Audit	10/15/17	10/15/17	10/15/17	10/15/17
Audit Gas Cylinder No.	CC430476	CC307733	CC483658	CC87078
Date of Audit Gas Cert.	6/2/16	6/2/16	5/23/16	5/23/16
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	25.0 ppmv	55.8 ppmv	5.96 vol %	9.94 vol %
CEM Response Value	24.8 ppmv	54.6 ppmv	5.43 vol %	9.40 vol %
Accuracy	0.7%	2.2%	8.9%	5.4%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# **DATA ASSESSMENT REPORT**

(per 40 CFR 60, Appendix F, Section 7)

Pollutant: **NO<sub>x</sub>**

Applicable NSPS Subpart: N/A (Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 36.a)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: Nitrogen Oxide corrected to 0% O<sub>2</sub> shall not exceed 40 ppm on a 30-day rolling average

Monitor Manufacturer and Model No.: Thermo Environmental Model 42i (NO<sub>x</sub>)/(O<sub>2</sub>)

Process Unit(s) Description: No.1 Crude Heater (EPN 12-72A, EQT 0022)

CEM Sampling Location: No.1 Crude Heater

CEM Span Value: Nitrogen Oxide 100 ppm, Oxygen 25 %

## I. ACCURACY ASSESSMENT RESULTS (CGA):

<u>CGA</u>	<u>NO<sub>x</sub> #1 (low scale)</u>	<u>NO<sub>x</sub> #2 (high scale)</u>	<u>O<sub>2</sub> #1 (low scale)</u>	<u>O<sub>2</sub> #2 (high scale)</u>
Date of Audit	10/25/17	10/25/17	10/25/17	10/25/17
Audit Gas Cylinder No.	LL178685	CC319153	CC483658	CC222165
Date of Audit Gas Cert.	5/2/16	6/2/16	5/23/16	5/23/16
Type of Certification	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	24.7 ppmv	55.4 ppmv	5.99 vol %	9.96 vol %
CEM Response Value	25.1 ppmv	57.9 ppmv	6.03 vol %	10.04 vol %
Accuracy	1.8%	4.4%	0.6%	0.8%
Standard	<15%	<15%	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: 12/11/17, 12:00 – 12/12/17, 10:00

2. Number of Days 0.9 (22 hours)

B. Corrective Actions: On 12/11/17, Valero took the analyzer offline to rebuild the sample pump under the normal preventative maintenance schedule. The analyzer was returned to service and calibrated. However, on the next daily calibration check the NO<sub>x</sub> span was > 4 times the allowable limit below the reference gas value. Valero adjusted the sample flow rate, recalibrated the analyzer, and returned it to service.



# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   Ja  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 5100 

Process Unit(s) Description:  North Flare Stack (EPN 20-72, EQT 0035), North Flare Header 

CEM Sampling Location:  North Flare Stack, North Flare Header (Y-AT-801) 

CEM Span Value:  Hydrogen Sulfide, 300 ppm 

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/11/17	10/11/17
Audit Gas Cylinder No.	CC441826	CC288207
Date of Audit Gas Cert.	10/3/16	10/4/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	79.1 ppmv	177.3 ppmv
CEM Response Value	77.0 ppmv	177.0 ppmv
Accuracy	2.7%	0.2%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# **DATA ASSESSMENT REPORT**

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   Ja  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 5100 

Process Unit(s) Description:  North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header 

CEM Sampling Location:  North Flare Stack, Hydrocracker Flare Header (Y-AT-800) 

CEM Span Value:  Hydrogen Sulfide, 300 ppm 

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/10/17	10/10/17
Audit Gas Cylinder No.	CC441826	CC288207
Date of Audit Gas Cert.	10/3/16	10/4/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value (ppmv)	79.1 ppmv	177.3 ppmv
CEM Response Value (ppmv)	78.0 ppmv	176.7 ppmv
Accuracy	1.4%	0.3%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **H<sub>2</sub>S**

Applicable NSPS Subpart:   Ja  

Reporting period dates: From  10/1/17  to  12/31/17 

Date submitted:  1/30/18 

Company:  Valero Refining - Meraux LLC 

Address:  2500 East St. Bernard Highway, Meraux, LA 70075 

Emission Limitation:  Hydrogen Sulfide shall not exceed 162 ppm on a 3-hour rolling average. 

Monitor Manufacturer and Model No.:  Ametek 5100 

Process Unit(s) Description:  South Flare Stack (EPN 3-77, EQT 0049) 

CEM Sampling Location:  South Flare Stack (Y-AT-802) 

CEM Span Value:  Hydrogen Sulfide, 300 ppm 

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/12/17	10/12/17
Audit Gas Cylinder No.	CC416820	CC407913
Date of Audit Gas Cert.	10/3/16	10/4/16
Type of Certification	EPA Protocol 1	EPA Protocol 1
Certified Audit Value	81.5 ppmv	175.6 ppmv
CEM Response Value	79.0 ppmv	174.7 ppmv
Accuracy	3.1%	0.5%
Standard	<15%	<15%

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates:   N/A  

2. Number of Days   N/A  

B. Corrective Actions:   N/A  

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), North Flare Header

CEM Sampling Location: North Flare Stack, North Flare Header (Y-AT-303)

CEM Span Value: Total Sulfur, Dual Range: 0-10,000 ppm, 10,000-1,000,000 ppm

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/14/17	10/14/17
Audit Gas Cylinder No.	CC305316	CC200786
Date of Audit Gas Cert.	5/27/16	3/28/17
Type of Certification	EPA Protocol 1	Certified Gas <sup>1</sup>
Certified Audit Value (ppmv)	1013.0 ppmv	10030.0 ppmv
CEM Response Value (ppmv)	1037.0 ppmv	10151.7 ppmv
Accuracy	2.4%	1.2%
Standard	<15%	<15%

<sup>1</sup> Valero unable to obtain EPA Protocol 1 certified gases greater than 1000 ppm.

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# **DATA ASSESSMENT REPORT**

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Process Unit(s) Description: North Flare Stack (EPN 20-72, EQT 0035), Hydrocracker Flare Header

CEM Sampling Location: North Flare Stack, Hydrocracker Flare Header (Y-AT-302)

CEM Span Value: Total Sulfur, Dual Range: 0-10,000 ppm, 10,000-1,000,000 ppm

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/14/17	10/14/17
Audit Gas Cylinder No.	CC305316	CC200786
Date of Audit Gas Cert.	5/27/16	3/28/17
Type of Certification	EPA Protocol 1	Certified Gas <sup>1</sup>
Certified Audit Value (ppmv)	1013.0 ppmv	10030.0 ppmv
CEM Response Value (ppmv)	1011.0 ppmv	10064.3 ppmv
Accuracy	0.2%	0.3%
Standard	<15%	<15%

<sup>1</sup> Valero unable to obtain EPA Protocol 1 certified gases greater than 1000 ppm.

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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# DATA ASSESSMENT REPORT

*(per 40 CFR 60, Appendix F, Section 7)*

Pollutant: **Total Sulfur**

Applicable NSPS Subpart: Ja (Required by Consent Decree: 3:10-cv-00563-bbc, Paragraph 49.a.ii)

Reporting period dates: From 10/1/17 to 12/31/17

Date submitted: 1/30/18

Company: Valero Refining - Meraux LLC

Address: 2500 East St. Bernard Highway, Meraux, LA 70075

Emission Limitation: None

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II

Process Unit(s) Description: South Flare Stack (EPN 3-77, EQT 0049)

CEM Sampling Location: South Flare Stack (Y-AT-304)

CEM Span Value: Total Sulfur, Dual Range: 0-10,000 ppm, 10,000-1,000,000 ppm

## I. ACCURACY ASSESSMENT RESULTS (CGA):

	H <sub>2</sub> S #1 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/14/17	10/14/17
Audit Gas Cylinder No.	CC305316	CC200786
Date of Audit Gas Cert.	5/27/16	3/28/17
Type of Certification	EPA Protocol 1	Certified Gas <sup>1</sup>
Certified Audit Value	1013.0 ppmv	10030.0 ppmv
CEM Response Value	1007.0 ppmv	10032.0 ppmv
Accuracy	0.6%	0.0%
Standard	<15%	<15%

<sup>1</sup> Valero unable to obtain EPA Protocol 1 certified gases greater than 1000 ppm.

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

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## Appendix A

### Ja Root Cause and Corrective Action Analysis

**Subpart Ja Root Cause / Corrective Action Analysis**Impact Incident Number: **176002***The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*

Report:	<u>Update</u>	
Refinery:	<u>Valero (Meraux)</u>	
Incident Type:	<u>Flaring (Flow and SO2)</u>	Date of Event: <u>11/29/16</u>
Emissions Source(s):	<u>North Flare (EPN 20-72, EQT 0035)</u>	Date Analysis Completed: <u>1/5/17</u>

(1.) (60.108a(c)(6)(i))

**A description of the Discharge:**

On 11/29/16 at approximately 14:00, a leak developed in the Hydrocracker Unit (HC) on the Stripper Feed Exchanger (HC-E-003). This leak caused the high pressure of the intermediate separator vapor circuit to dump into the lower pressure stripper system. The resulting high pressure in the stripper system caused all PSVs in this circuit (Stripper, Stripper Off-gas Scrubber and Rich Amine Flash Drum) to relieve to the flare. This flaring exceeded 500,000 SCF/24 hours and 500 lbs of SO2/24 hours. Valero quickly initiated a HC shutdown and additional flaring continued until 12/1/16 at 17:00.

(2.) (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))

Date and Time the discharge was first identified	<u>11/29/16 14:07</u>
Date/Time the discharge had ceased	<u>12/1/16 17:00</u>
Duration of Discharge (Calculated)	<u>50.9</u> hrs

(3.) (60.108a(c)(6)(viii))

**The steps taken to limit the emissions during the discharge:**

Valero followed its Flare Minimization Plan and Operations Procedures to minimize the volume of this discharge.

(4.) (60.108a(c)(6)(xi))

**Necessity of RC/CAA: Determine and state whether a RC/CAA is necessary:**

Note: If the discharge was a result of a planned startup or shutdown, a RC/CAA analysis is not required if the flare management plan was followed.

Did the discharge result from a planned startup or shutdown?	<u>No</u>	(Yes/No)
Was the flare management plan followed?	<u>Yes</u>	(Yes/No/N/A)
Is the event exempt from a RC/CCA based on the answers above?	<u>No</u>	(Yes/No)

- If yes, skip section 5-7.

(5.) (60.108a(c)(6)(ix))

**Root Cause Analysis: Describe in detail the Root Cause(s) of the Incident, to the extent determinable:**

Did this discharge result from root causes identified in a previous analysis? No (Yes/No)

Inspection of the heat exchanger revealed rapid Chloride corrosion on the outside diameter of the tubes, concentrated between the last two baffles. This was the result of the presence of Ammonium chloride and water in the shell side (stripper feed) of the exchanger. Though some chlorides are expected in this stream, water is not. Water carryover into this exchanger is likely the result of poor oil/water separation in the Cold Flash Drum due to the following possibilities:

- 1) An undersized water boot.
- 2) Increased wash water rate post HC revamp (wash water rate increased approximately 50%).
- 3) Fouled mesh blanket.



(6.)

(60.108a(c)(6)(ix))

**Corrective Action Analysis: Include a description of the recommended corrective action(s) or an explanation of why corrective action is Is corrective action required? Yes (Yes/No)**

- 1) Determine a maximum Ammonium Bisulfide concentration to set the minimum wash water injection rate upstream of HC-E-004 to reduce likelihood of water carryover in stripper feed stream, and determine adjusted corrosion rates.
- 2) Review design of the Cold Flash Drum and generate MOCs and EWRs as needed to correct any deficiencies.
- 3) Generate MOC or EWR to replace or upgrade mesh blanket in Cold Flash Drum.
- 4) Order new HC-E-003 bundle for 2018. Evaluate possible metallurgy upgrade.
- 5) Find an alternate location for the Flash Gas Scrubber KO Drum (HC-V-065) liquid and generate an EWR to reroute it.

(7.)

(60.108a(c)(6)(x))

**Corrective Action Schedule: Include corrective actions already completed within the first 45 days following the discharge. For those not completed, provide a schedule for implementation, including proposed commencement and completion dates.**

- 1) Determine a maximum Ammonium Bisulfide concentration to set the minimum wash water injection rate upstream of HC-E-004 to reduce likelihood of water carryover in stripper feed stream, and determine adjusted corrosion rates.

Commencement Date: 1/5/17

Completed: 3/24/17

- 2) Review design of the Cold Flash Drum and generate MOCs and EWRs as needed to correct any deficiencies.

Commencement Date: 1/5/17

Completed: 6/26/17

The Cold Flash Drum does not need to be redesigned. The only design change needed is to replace the mesh blanket/demister pad with a plated frame type. New Action Item created 8/1/17.

- 3) Generate MOC or EWR to replace or upgrade mesh blanket in Cold Flash Drum.

Commencement Date: 1/5/17

Completed: 3/28/17

- 4) Order new HC-E-003 bundle for 2018. Evaluate possible metallurgy upgrade.

Commencement Date: 1/5/17

Completed: 12/29/17

- 5) Find an alternate location for the Flash Gas Scrubber KO Drum (HC-V-065) liquid and generate an EWR to reroute it.

Commencement Date: 1/5/17

Estimated Completion Date: 5/18/18

- 6) Replace the Cold Flash Drum mesh blanket/demister pad with a plated frame type.

Commencement Date: 8/1/17

Estimated Completion Date: 12/18/18

(8.)

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
11/28/2016 14:00	11/29/2016 13:00	442,131	37895	53.9	0.3
11/28/2016 15:00	11/29/2016 14:00	1,747,430	38574	3555.9	19.1
11/28/2016 16:00	11/29/2016 15:00	3,384,372	39341	8518.0	45.8
11/28/2016 17:00	11/29/2016 16:00	4,864,786	39651	10331.7	55.5
11/28/2016 18:00	11/29/2016 17:00	6,137,194	39757	10868.4	58.4
11/28/2016 19:00	11/29/2016 18:00	6,621,544	39846	11038.1	59.3
11/28/2016 20:00	11/29/2016 19:00	6,637,905	39920	11042.9	59.3
11/28/2016 21:00	11/29/2016 20:00	6,665,046	39934	11044.4	59.3
11/28/2016 22:00	11/29/2016 21:00	6,687,899	39941	11045.1	59.4
11/28/2016 23:00	11/29/2016 22:00	6,721,724	39952	11046.5	59.4
11/29/2016 0:00	11/29/2016 23:00	6,866,231	39961	11051.3	59.4
11/29/2016 1:00	11/30/2016 0:00	6,964,842	39962	11052.0	59.4
11/29/2016 2:00	11/30/2016 1:00	7,042,602	39973	11055.3	59.4
11/29/2016 3:00	11/30/2016 2:00	7,137,068	39977	11056.7	59.4
11/29/2016 4:00	11/30/2016 3:00	7,223,966	39979	11057.3	59.4
11/29/2016 5:00	11/30/2016 4:00	7,246,471	39795	11030.9	59.3
11/29/2016 6:00	11/30/2016 5:00	7,219,344	39781	11027.1	59.3
11/29/2016 7:00	11/30/2016 6:00	7,249,132	39770	11025.9	59.2
11/29/2016 8:00	11/30/2016 7:00	7,594,364	39758	11025.0	59.2
11/29/2016 9:00	11/30/2016 8:00	7,906,155	39853	11182.7	60.1
11/29/2016 10:00	11/30/2016 9:00	8,111,141	40001	11373.4	61.1
11/29/2016 11:00	11/30/2016 10:00	8,402,137	39654	11477.9	61.7
11/29/2016 12:00	11/30/2016 11:00	8,767,134	2739	11598.5	62.3
11/29/2016 13:00	11/30/2016 12:00	9,129,514	2713	11674.3	62.7
11/29/2016 14:00	11/30/2016 13:00	9,443,967	2641	11711.4	62.9
11/29/2016 15:00	11/30/2016 14:00	8,453,648	1973	8222.9	44.2
11/29/2016 16:00	11/30/2016 15:00	7,244,608	1211	3269.3	17.6
11/29/2016 17:00	11/30/2016 16:00	6,028,272	904	1458.6	7.8
11/29/2016 18:00	11/30/2016 17:00	4,778,453	802	922.3	5.0
11/29/2016 19:00	11/30/2016 18:00	4,403,343	743	765.2	4.1
11/29/2016 20:00	11/30/2016 19:00	4,638,495	728	819.7	4.4
11/29/2016 21:00	11/30/2016 20:00	4,684,620	760	831.6	4.5
11/29/2016 22:00	11/30/2016 21:00	4,700,482	800	838.1	4.5
11/29/2016 23:00	11/30/2016 22:00	4,694,191	819	839.9	4.5
11/30/2016 0:00	11/30/2016 23:00	4,572,301	835	837.3	4.5
11/30/2016 1:00	12/1/2016 0:00	4,490,705	840	837.0	4.5
11/30/2016 2:00	12/1/2016 1:00	4,451,088	839	835.3	4.5
11/30/2016 3:00	12/1/2016 2:00	4,400,707	847	836.0	4.5
11/30/2016 4:00	12/1/2016 3:00	4,371,611	856	837.8	4.5
11/30/2016 5:00	12/1/2016 4:00	4,332,023	873	838.9	4.5
11/30/2016 6:00	12/1/2016 5:00	4,308,423	884	839.3	4.5
11/30/2016 7:00	12/1/2016 6:00	4,257,383	900	839.9	4.5
11/30/2016 8:00	12/1/2016 7:00	3,801,902	903	830.2	4.5
11/30/2016 9:00	12/1/2016 8:00	3,592,594	785	674.1	3.6
11/30/2016 10:00	12/1/2016 9:00	3,359,769	631	480.1	2.6
11/30/2016 11:00	12/1/2016 10:00	3,096,404	551	376.7	2.0
11/30/2016 12:00	12/1/2016 11:00	2,765,661	483	258.1	1.4
11/30/2016 13:00	12/1/2016 12:00	2,436,801	442	183.9	1.0
11/30/2016 14:00	12/1/2016 13:00	2,154,612	421	147.8	0.8
11/30/2016 15:00	12/1/2016 14:00	1,871,867	428	136.5	0.7
11/30/2016 16:00	12/1/2016 15:00	1,473,125	429	128.5	0.7

(8.)

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
11/30/2016 17:00	12/1/2016 16:00	1,238,898	474	131.4	0.7
11/30/2016 18:00	12/1/2016 17:00	1,216,310	469	130.9	0.7
11/30/2016 19:00	12/1/2016 18:00	1,107,070	440	118.3	0.6
11/30/2016 20:00	12/1/2016 19:00	855,557	380	58.9	0.3
11/30/2016 21:00	12/1/2016 20:00	782,290	334	45.6	0.2
11/30/2016 22:00	12/1/2016 21:00	743,575	287	38.4	0.2
11/30/2016 23:00	12/1/2016 22:00	716,041	257	35.2	0.2
12/1/2016 0:00	12/1/2016 23:00	693,425	233	33.0	0.2
12/1/2016 1:00	12/2/2016 0:00	676,409	227	32.6	0.2
12/1/2016 2:00	12/2/2016 1:00	638,266	216	31.0	0.2
12/1/2016 3:00	12/2/2016 2:00	594,181	205	29.0	0.2
12/1/2016 4:00	12/2/2016 3:00	536,379	194	26.5	0.1
12/1/2016 5:00	12/2/2016 4:00	517,036	176	25.1	0.1
12/1/2016 6:00	12/2/2016 5:00	502,803	164	24.4	0.1
12/1/2016 7:00	12/2/2016 6:00	478,861	143	22.4	0.1

**Subpart Ja Root Cause / Corrective Action Analysis**

Impact Incident Number: 182740/182775

*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*

Report:	<u>Update</u>	
Refinery:	<u>Valero (Meraux)</u>	
Incident Type:	<u>Flaring (Flow)</u>	Date of Event: <u>6/9/17</u>
Emissions Source(s):	<u>North Flare (EPN 20-72, EQT 0035)</u> <u>South Flare (EPN 3-77, EQT 0049)</u>	Date Analysis Completed: <u>7/13/17</u>

(1.) (60.108a(c)(6)(i))

**A description of the Discharge:**

On 6/9/17 at 19:09, the South Naphtha Hydrotreater (NHT) compressor tripped. The North NHT compressor was placed on line, but it also tripped. After multiple, unsuccessful attempts to restart either NHT Compressor, Valero decided to shutdown the units downstream of the NHT. This included shutting down the Reformer Net Gas Compressor. With the Net Gas Compressor shutdown, a reverse flow path was created from the Pressure Swing Adsorption (PSA) unit through the Net Gas Compressor discharge section to the fuel gas system. The fuel gas system was over pressured and relieved to the North Flare. The high pressure in the fuel gas system tripped several process heaters which upset other units in the refinery and resulted in additional flaring to the South Flare.

Later, but within the same 24 hour period, Valero attempted to restart the Reformer Net Gas Compressor. The fuel gas system was again over pressured and relieved to the North Flare. While refilling the Flare Gas Recovery (FGR) Liquid Seal, the operator inadvertently shut the valve that isolates the flare header from the FGR Compressor instead of the make up water valve. This allowed additional flaring for several hours before it was noticed and was re-opened.

(2.) (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))

Date and Time the discharge was first identified	<u>6/9/17 19:56</u>
Date/Time the discharge had ceased	<u>6/10/17 19:36</u>
Duration of Discharge (Calculated)	<u>23.7</u> hrs

(3.) (60.108a(c)(6)(viii))

**The steps taken to limit the emissions during the discharge:**

Valero followed its Flare Minimization Plan and Operations Procedures to minimize the volume of this discharge.

(4.) (60.108a(c)(6)(xi))

**Necessity of RC/CAA: Determine and state whether a RC/CAA is necessary:**

Note: If the discharge was a result of a planned startup or shutdown, a RC/CAA analysis is not required if the flare management plan was followed.

Did the discharge result from a planned startup or shutdown?	<u>No</u>	(Yes/No)
Was the flare management plan followed?	<u>Yes</u>	(Yes/No/N/A)
Is the event exempt from a RC/CCA based on the answers above?	<u>No</u>	(Yes/No)

- If yes, skip section 5-7.

(5.) (60.108a(c)(6)(ix))

**Root Cause Analysis: Describe in detail the Root Cause(s) of the Incident, to the extent determinable:**

Did this discharge result from root causes identified in a previous analysis? No (Yes/No)

Root Cause(s):

- 1) The South NHT Compressor tripping offline was caused by a failed limit switch that initiated an unnecessary shutdown.
- 2) The failed startup attempts on the North NHT compressor was due to the lube oil pressure not being satisfied within the set timeframe (30 secs).
- 3) Operator inadvertently shut the valve that isolates the flare header from the FGR Compressor instead of the make up water valve.

Contributing Factor(s):

- 1) The pressure control valves on the Net Gas Compressor discharge section are designed to control pressure by allowing forward flow from the Net Gas Compressor discharge to the PSA unit and the fuel gas system. The control system was not designed to prevent reverse flow from the PSA unit to the fuel gas system.

(6.)

(60.108a(c)(6)(ix))

**Corrective Action Analysis: Include a description of the recommended corrective action(s) or an explanation of why corrective action is not  
Is corrective action required? Yes (Yes/No)**

- 1) *Remove the limit switches that caused the unnecessary trip.*
- 2) *Consider installing check valve to prevent reverse flow from the PSA unit to the fuel gas system.*
- 3) *Consider installing a differential pressure override to prevent reverse flow from the PSA unit to the fuel gas system.*
- 4) *Create a control scheme narrative for the Net Gas Compressor discharge section pressure control system and review with operators.*
- 5) *Revise relevant procedures related to the operation of the Net Gas Compressor and PSA unit.*
- 6) *Consider extending the delay on low lube oil permissive when starting the NHT Compressors, or consider a time delay on trip.*
- 7) *Consider adding an auxiliary lube oil pump for the NHT Compressors.*
- 8) *Add a DCS alarm that alarms and re-alarms every 30 minutes when flare header to FGR isolation valves are closed.*
- 9) *Highlight when FGR suction isolation valves are closed on the daily shift report.*

(7.)

(60.108a(c)(6)(x))

**Corrective Action Schedule: Include corrective actions already completed within the first 45 days following the discharge. For those not completed, provide a schedule for implementation, including proposed commencement and completion dates.**

1) *Remove the limit switches that caused the unnecessary trip.*

*Commencement Date: 7/13/17*

*Completed: 11/20/17*

2) *Consider installing check valve to prevent reverse flow from the PSA unit to the fuel gas system.*

*Commencement Date: 7/13/17*

*Completed: 7/25/17*

*New Action Item created for installation.*

3) *Consider installing a differential pressure override to prevent reverse flow from the PSA unit to the fuel gas system.*

*Commencement Date: 7/13/17*

*Completed: 9/25/17*

*Override implemented.*

4) *Create a control scheme narrative for the Net Gas Compressor discharge section pressure control system and review with operators.*

*Commencement Date: 7/13/17*

*Completed: 9/26/17*

5) *Revise relevant procedures related to the operation of the Net Gas Compressor and PSA unit.*

*Commencement Date: 7/13/17*

*Completed: 8/29/17*

6) *Consider extending the delay on low lube oil permissive when starting the NHT Compressors, or consider a time delay on trip.*

*Commencement Date: 7/13/17*

*Completed: 8/22/17*

*New Action Item created for implementation.*

7) *Consider adding an auxiliary lube oil pump for the NHT Compressors.*

*Commencement Date: 7/13/17*

*Completed: 12/20/17*

*The extended delay time on the low lube oil permissive has made this unnecessary.*

8) *Add a DCS alarm that alarms and re-alarms every 30 minutes when flare header to FGR isolation valves are closed.*

*Commencement Date: 7/18/17*

*Completed: 8/16/17*

9) *Highlight when FGR suction isolation valves are closed on the daily shift report.*

*Commencement Date: 7/18/17*

*Completed: 7/26/17*

10) *Install check valve to prevent reverse flow from the PSA unit to the fuel gas system.*

*Commencement Date: 7/25/17*

*Estimated Completion Date: 12/18/18*

11) *Extend the delay on low lube oil permissive when starting the NHT Compressors, and add a time delay on the pressure trip.*

*Commencement Date: 8/22/17*

*Completed: 12/12/17*

(8.)

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
6/8/2017 19:00	6/9/2017 18:00	0	0	0.0	0.0
6/8/2017 20:00	6/9/2017 19:00	20,093	970	77.1	0.4
6/8/2017 21:00	6/9/2017 20:00	253,208	1092	189.5	1.0
6/8/2017 22:00	6/9/2017 21:00	282,223	1267	209.6	1.1
6/8/2017 23:00	6/9/2017 22:00	282,223	1267	209.6	1.1
6/9/2017 0:00	6/9/2017 23:00	282,223	1267	209.6	1.1
6/9/2017 1:00	6/10/2017 0:00	286,787	1270	209.6	1.1
6/9/2017 2:00	6/10/2017 1:00	505,196	1271	210.5	1.1
6/9/2017 3:00	6/10/2017 2:00	791,094	1272	211.6	1.1
6/9/2017 4:00	6/10/2017 3:00	935,716	1274	212.5	1.1
6/9/2017 5:00	6/10/2017 4:00	935,716	1274	212.5	1.1
6/9/2017 6:00	6/10/2017 5:00	951,526	1291	213.6	1.1
6/9/2017 7:00	6/10/2017 6:00	951,526	1291	213.6	1.1
6/9/2017 8:00	6/10/2017 7:00	951,526	1291	213.6	1.1
6/9/2017 9:00	6/10/2017 8:00	951,526	1291	213.6	1.1
6/9/2017 10:00	6/10/2017 9:00	952,890	1310	213.7	1.1
6/9/2017 11:00	6/10/2017 10:00	952,891	2317	213.7	1.1
6/9/2017 12:00	6/10/2017 11:00	952,891	2317	213.7	1.1
6/9/2017 13:00	6/10/2017 12:00	952,891	2317	213.7	1.1
6/9/2017 14:00	6/10/2017 13:00	952,891	2317	213.7	1.1
6/9/2017 15:00	6/10/2017 14:00	1,074,297	2345	227.3	1.2
6/9/2017 16:00	6/10/2017 15:00	1,074,298	2438	227.3	1.2
6/9/2017 17:00	6/10/2017 16:00	1,076,782	2724	230.1	1.2
6/9/2017 18:00	6/10/2017 17:00	1,080,402	3139	236.0	1.3
6/9/2017 19:00	6/10/2017 18:00	1,085,103	3682	246.1	1.3
6/9/2017 20:00	6/10/2017 19:00	1,066,297	4377	177.5	1.0
6/9/2017 21:00	6/10/2017 20:00	833,182	4255	65.1	0.3
6/9/2017 22:00	6/10/2017 21:00	804,334	4146	45.1	0.2
6/9/2017 23:00	6/10/2017 22:00	805,422	4591	47.0	0.3
6/10/2017 0:00	6/10/2017 23:00	805,422	4591	47.0	0.3
6/10/2017 1:00	6/11/2017 0:00	800,859	4588	46.9	0.3
6/10/2017 2:00	6/11/2017 1:00	582,450	4587	46.0	0.2
6/10/2017 3:00	6/11/2017 2:00	296,558	4745	44.9	0.2

**Subpart Ja Root Cause / Corrective Action Analysis**

Impact Incident Number: 182915

*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*

Report:	<u>Update</u>	
Refinery:	<u>Valero (Meraux)</u>	
Incident Type:	<u>Flaring (Flow)</u>	Date of Event: <u>6/15/17</u>
Emissions Source(s):	<u>North Flare (EPN 20-72, EQT 0035)</u>	Date Analysis Completed: <u>7/13/17</u>

(1.) (60.108a(c)(6)(i))

**A description of the Discharge:**

*On 6/15/17 at 17:17, the Pressure Swing Adsorption (PSA) unit tripped offline. The PSA unit has multiple adsorber vessels and the unit can normally be run in a reduced capacity mode while repairs are performed. Valero could not immediately restart the unit, even in the reduced capacity mode, and the unit was offline for approximately 4 hours while Valero performed troubleshooting and repairs. During this period, the PSA feed, a mixture of high concentrations of Hydrogen and light hydrocarbon gases, was sent to the North Flare.*

(2.) (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))

Date and Time the discharge was first identified	<u>6/15/17 17:17</u>
Date/Time the discharge had ceased	<u>6/15/17 21:33</u>
Duration of Discharge (Calculated)	<u>4.3</u> hrs

(3.) (60.108a(c)(6)(viii))

**The steps taken to limit the emissions during the discharge:**

*Valero followed its Flare Minimization Plan and Operations Procedures to minimize the volume of this discharge.*

(4.) (60.108a(c)(6)(xi))

**Necessity of RC/CAA: Determine and state whether a RC/CAA is necessary:**

*Note: If the discharge was a result of a planned startup or shutdown, a RC/CAA analysis is not required if the flare management plan was followed.*

Did the discharge result from a planned startup or shutdown?	<u>No</u>	(Yes/No)
Was the flare management plan followed?	<u>Yes</u>	(Yes/No/N/A)
Is the event exempt from a RC/CCA based on the answers above?	<u>No</u>	(Yes/No)

- If yes, skip section 5-7.

(5.) (60.108a(c)(6)(ix))

**Root Cause Analysis: Describe in detail the Root Cause(s) of the Incident, to the extent determinable:**

**Did this discharge result from root causes identified in a previous analysis?** No (Yes/No)

**Root Cause(s):**

- 1) A valve was found to have a damaged disk due to being misaligned from an incorrect installation. (2016) This valve prevented the unit from running in the reduced capacity mode.
- 2) Another valve was found to have holes in the diaphragm of it's operator, preventing the valve from operating properly. This valve caused the initial unit trip.

**Contributing Factor(s):**

- 1) Quality Assurance/Quality Control (QA/QC) procedures were not followed after the installation of the first valve.
- 2) Certain valves in the PSA are cycled continuously during the normal operation of the unit and are subject to wear and tear. In 2016, Valero began a preventative maintenance strategy for the periodic replacement of a portion of these valves at every unit turnaround (approximately every 2 years) as a corrective action for an incident that occurred on 10/15/2015. The first valve that was misaligned was replaced in 2016 under this program, but the 2nd valve with the holes in its diaphragm was scheduled for a later date.



(6.)

(60.108a(c)(6)(ix))

**Corrective Action Analysis: Include a description of the recommended corrective action(s) or an explanation of why corrective action is Is corrective action required? Yes (Yes/No)**

1) *Ensure that the preventative maintenance to replace the PSA wear and tear items is included in the scope of the next unit turnaround.*

2) *Validate the instrument QA/QC procedure. Audit instrument QA/QC packages for adherence to the instrument QA/QC procedure.*

(7.)

(60.108a(c)(6)(x))

**Corrective Action Schedule: Include corrective actions already completed within the first 45 days following the discharge. For those not completed, provide a schedule for implementation, including proposed commencement and completion dates.**

1) *Ensure that the preventative maintenance to replace the PSA wear and tear items is included in the scope of the next unit turnaround.*

*Commencement Date: 7/13/17*

*Completed: 7/18/17*

*New Action Item created for completion of preventative maintenance at the next unit turnaround.*

2) *Validate the instrument QA/QC procedure. Audit instrument QA/QC packages for adherence to the instrument QA/QC procedure.*

*Commencement Date: 7/13/17*

*Completed: 10/31/17*

3) *Complete the next preventative maintenance to replace the PSA wear and tear items in the next unit turnaround.*

*Commencement Date: 7/18/17*

*Estimated Completion Date: 12/31/18*

(8.)

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
6/14/2017 17:00	6/15/2017 16:00	129,365	2000	219.8	1.2
6/14/2017 18:00	6/15/2017 17:00	768,623	2002	225.0	1.2
6/14/2017 19:00	6/15/2017 18:00	1,910,283	2002	225.2	1.2
6/14/2017 20:00	6/15/2017 19:00	2,858,067	2004	232.6	1.2
6/14/2017 21:00	6/15/2017 20:00	3,675,376	2007	241.5	1.3
6/14/2017 22:00	6/15/2017 21:00	3,734,194	2031	247.1	1.3
6/14/2017 23:00	6/15/2017 22:00	3,671,798	1608	142.7	0.8
6/15/2017 0:00	6/15/2017 23:00	3,662,181	1179	126.4	0.7
6/15/2017 1:00	6/16/2017 0:00	3,660,856	1098	126.0	0.7
6/15/2017 2:00	6/16/2017 1:00	3,660,856	1098	126.0	0.7
6/15/2017 3:00	6/16/2017 2:00	3,637,341	422	63.2	0.3
6/15/2017 4:00	6/16/2017 3:00	3,637,102	380	63.2	0.3
6/15/2017 5:00	6/16/2017 4:00	3,604,924	98	27.3	0.1
6/15/2017 6:00	6/16/2017 5:00	3,604,924	98	27.3	0.1
6/15/2017 7:00	6/16/2017 6:00	3,604,924	98	27.3	0.1
6/15/2017 8:00	6/16/2017 7:00	3,604,924	98	27.3	0.1
6/15/2017 9:00	6/16/2017 8:00	3,604,924	98	27.3	0.1
6/15/2017 10:00	6/16/2017 9:00	3,604,829	31	27.3	0.1
6/15/2017 11:00	6/16/2017 10:00	3,609,714	166	29.9	0.2
6/15/2017 12:00	6/16/2017 11:00	3,610,367	219	30.1	0.2
6/15/2017 13:00	6/16/2017 12:00	3,610,367	1040	30.1	0.2
6/15/2017 14:00	6/16/2017 13:00	3,610,367	1040	30.1	0.2
6/15/2017 15:00	6/16/2017 14:00	3,610,367	1040	30.1	0.2
6/15/2017 16:00	6/16/2017 15:00	3,610,367	1040	30.1	0.2
6/15/2017 17:00	6/16/2017 16:00	3,610,367	1040	30.1	0.2
6/15/2017 18:00	6/16/2017 17:00	2,971,109	1038	24.9	0.1
6/15/2017 19:00	6/16/2017 18:00	1,829,449	1038	24.7	0.1
6/15/2017 20:00	6/16/2017 19:00	881,664	1036	17.3	0.1
6/15/2017 21:00	6/16/2017 20:00	64,355	1033	8.4	0.0

**Subpart Ja Root Cause / Corrective Action Analysis**

Impact Incident Number: **184369**

*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*

Report:	<u>Correction</u>		
Refinery:	<u>Valero (Meraux)</u>		
Incident Type:	<u>Flaring (Flow and SO2), SRU (SO2)</u>	Date of Event:	<u>8/9/17</u>
Emissions Source(s):	<u>North Flare (EPN 20-72, EQT 0035)</u>	Date Analysis Completed:	<u>9/7/17</u>
	<u>South Flare (EPN 3-77, EQT 0049)</u>		
	<u>#3 SRU Incinerator (EPN 5-00, EQT 0079)</u>		

(1.) (60.108a(c)(6)(i))

**A description of the Discharge:**

*At approximately 04:42 on 8/9/17, the Meraux Refinery lost electrical power on one of the four 13.8 kilovolts (kV) feeders supplying electrical power to the refinery. Although power was interrupted for only three seconds, multiple Refinery unit upsets and shutdowns were triggered. These upsets and shutdowns resulted in flaring and SO2 emissions from the North and South Flares > 500,000 SCF above baseline and > 500 lbs SO2 in a 24 hour period and SO2 emissions from the #3 SRU > 500 lbs above allowable in a 24 hour period.*

*After assessing the condition of the electrical power supply, Valero began the process of restarting the affected units late on 8/9/17. This continued until 8/11/17. There were additional periods of flaring on 8/10/17 and 8/11/17, but this flaring consisted of clean hydrogen or excess fuel gas that did not contain significant quantities of H2S.*

(2.) (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))

	<b>North Flare</b>	<b>#3 SRU</b>
Date and Time the discharge was first identified	<u>8/9/17 4:50</u>	<u>8/9/17 4:46</u>
Date/Time the discharge had ceased	<u>8/11/17 8:00</u>	<u>8/9/17 19:09</u>
Duration of Discharge (Calculated)	<u>51.2</u>	<u>14.4</u> hrs

(3.) (60.108a(c)(6)(viii))

**The steps taken to limit the emissions during the discharge:**

*Valero initiated its refinery sulfur shedding procedure and followed its Flare Minimization Plan and Operations Procedures to minimize the volume and SO2 emissions of this discharge.*

(4.) (60.108a(c)(6)(xi))

**Necessity of RC/CAA: Determine and state whether a RC/CAA is necessary:**

*Note: If the discharge was a result of a planned startup or shutdown, a RC/CAA analysis is not required if the flare management plan was followed.*

Did the discharge result from a planned startup or shutdown?	<u>No</u>	(Yes/No)
Was the flare management plan followed?	<u>Yes</u>	(Yes/No/N/A)
Is the event exempt from a RC/CCA based on the answers above?	<u>No</u>	(Yes/No)

- If yes, skip section 5-7.

(5.) (60.108a(c)(6)(ix))

**Root Cause Analysis: Describe in detail the Root Cause(s) of the Incident, to the extent determinable:**

Did this discharge result from root causes identified in a previous analysis? No (Yes/No)

*1) The root cause was a raccoon climbing on the support structure in the electrical switchyard which caused a short that opened the breaker supplying power to the refinery. Electrical equipment in the switchyard showed clear signs of recent flashover damage and the remains of a raccoon was found under this equipment.*

(6.)

(60.108a(c)(6)(ix))

**Corrective Action Analysis: Include a description of the recommended corrective action(s) or an explanation of why corrective action is not  
Is corrective action required? Yes (Yes/No)**

1) *Valero is pursuing an agreement with the owner and operator of the electrical switchyard to fund and install precise-fit dielectric protection covers to protect the equipment from bird and animal contact. These types of covers are not commonly found on high voltage electrical distribution equipment and are above and beyond what is considered industry standard practice.*

*Valero has elected to install these protective covers to reduce the likelihood of this reoccurring, but their absence prior to the incident should not be construed as a deficiency.*

(7.)

(60.108a(c)(6)(x))

**Corrective Action Schedule: Include corrective actions already completed within the first 45 days following the discharge. For those not completed, provide a schedule for implementation, including proposed commencement and completion dates.**

1) *Install precise-fit dielectric protection covers to protect the equipment from bird and animal contact.*

*Commencement Date: 9/7/17*

*Estimated Completion Date: 12/31/18*

**(8.) North and South Flares**

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

	(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))	
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline SCF	TRS or H2S ppm (24-hr average, flow-weighted) ppmv	24-hr cumulative SO2 lbs	24-hr cumulative reduced sulfur lbs as H2S
8/8/2017 4:00	8/9/2017 3:00	46,258	4,652	35	0
8/8/2017 5:00	8/9/2017 4:00	191,060	4681	187.3	1.0
8/8/2017 6:00	8/9/2017 5:00	930,086	4418	793.8	4.3
8/8/2017 7:00	8/9/2017 6:00	1,448,653	4298	1074.8	5.8
8/8/2017 8:00	8/9/2017 7:00	1,867,050	4250	1102.8	5.9
8/8/2017 9:00	8/9/2017 8:00	2,263,803	4222	1123.4	6.0
8/8/2017 10:00	8/9/2017 9:00	2,632,872	4203	1148.2	6.2
8/8/2017 11:00	8/9/2017 10:00	2,835,156	4177	1155.8	6.2
8/8/2017 12:00	8/9/2017 11:00	2,953,501	4649	1397.8	7.5
8/8/2017 13:00	8/9/2017 12:00	3,013,720	4811	1446.8	7.8
8/8/2017 14:00	8/9/2017 13:00	3,014,346	4927	1447.3	7.8
8/8/2017 15:00	8/9/2017 14:00	3,039,860	4907	1449.1	7.8
8/8/2017 16:00	8/9/2017 15:00	3,064,735	4878	1450.3	7.8
8/8/2017 17:00	8/9/2017 16:00	3,062,479	4854	1449.8	7.8
8/8/2017 18:00	8/9/2017 17:00	3,070,778	4839	1450.3	7.8
8/8/2017 19:00	8/9/2017 18:00	3,102,181	4799	1451.3	7.8
8/8/2017 20:00	8/9/2017 19:00	3,105,976	4763	1451.4	7.8
8/8/2017 21:00	8/9/2017 20:00	3,109,299	4366	1450.5	7.8
8/8/2017 22:00	8/9/2017 21:00	3,110,006	4070	1448.3	7.8
8/8/2017 23:00	8/9/2017 22:00	3,115,546	4080	1448.5	7.8
8/9/2017 0:00	8/9/2017 23:00	3,124,582	3533	1445.4	7.8
8/9/2017 1:00	8/10/2017 0:00	3,125,379	2949	1443.9	7.8
8/9/2017 2:00	8/10/2017 1:00	3,126,526	2379	1442.9	7.8
8/9/2017 3:00	8/10/2017 2:00	3,132,815	2079	1441.2	7.7
8/9/2017 4:00	8/10/2017 3:00	3,133,237	1725	1435.2	7.7
8/9/2017 5:00	8/10/2017 4:00	2,992,585	1490	1280.7	6.9
8/9/2017 6:00	8/10/2017 5:00	2,255,898	1325	672.2	3.6
8/9/2017 7:00	8/10/2017 6:00	1,737,950	1239	386.1	2.1
8/9/2017 8:00	8/10/2017 7:00	1,349,796	1249	360.6	1.9
8/9/2017 9:00	8/10/2017 8:00	1,098,492	1245	344.4	1.9
8/9/2017 10:00	8/10/2017 9:00	964,837	1234	325.3	1.7
8/9/2017 11:00	8/10/2017 10:00	811,207	1238	320.3	1.7
8/9/2017 12:00	8/10/2017 11:00	763,167	737	80.6	0.4
8/9/2017 13:00	8/10/2017 12:00	783,257	543	33.8	0.2
8/9/2017 14:00	8/10/2017 13:00	854,917	400	34.5	0.2
8/9/2017 15:00	8/10/2017 14:00	934,062	387	34.7	0.2
8/9/2017 16:00	8/10/2017 15:00	1,033,502	377	35.7	0.2
8/9/2017 17:00	8/10/2017 16:00	1,160,882	360	38.2	0.2
8/9/2017 18:00	8/10/2017 17:00	1,276,727	347	38.9	0.2
8/9/2017 19:00	8/10/2017 18:00	1,379,550	341	40.0	0.2
8/9/2017 20:00	8/10/2017 19:00	1,526,393	334	41.5	0.2
8/9/2017 21:00	8/10/2017 20:00	1,611,854	320	43.1	0.2
8/9/2017 22:00	8/10/2017 21:00	1,696,156	307	44.1	0.2
8/9/2017 23:00	8/10/2017 22:00	1,781,204	298	44.4	0.2
8/10/2017 0:00	8/10/2017 23:00	1,871,864	292	46.0	0.2
8/10/2017 1:00	8/11/2017 0:00	1,968,646	288	47.1	0.3
8/10/2017 2:00	8/11/2017 1:00	2,072,407	283	48.4	0.3
8/10/2017 3:00	8/11/2017 2:00	2,175,050	274	49.5	0.3
8/10/2017 4:00	8/11/2017 3:00	2,283,257	257	50.3	0.3
8/10/2017 5:00	8/11/2017 4:00	2,388,835	227	50.0	0.3
8/10/2017 6:00	8/11/2017 5:00	2,502,169	188	50.8	0.3
8/10/2017 7:00	8/11/2017 6:00	2,651,863	136	50.5	0.3

**(8.) North and South Flares cont.****The measured or calculated cumulative quantity of gas discharged over the discharge duration.***Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.*

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(viii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
8/10/2017 8:00	8/11/2017 7:00	2,631,351	127	47.7	0.3
8/10/2017 9:00	8/11/2017 8:00	2,484,250	175	43.3	0.2
8/10/2017 10:00	8/11/2017 9:00	2,249,985	169	37.5	0.2
8/10/2017 11:00	8/11/2017 10:00	2,202,230	155	34.9	0.2
8/10/2017 12:00	8/11/2017 11:00	2,130,949	146	32.3	0.2
8/10/2017 13:00	8/11/2017 12:00	2,055,917	138	29.8	0.2
8/10/2017 14:00	8/11/2017 13:00	1,986,072	134	28.6	0.2
8/10/2017 15:00	8/11/2017 14:00	1,888,886	129	26.5	0.1
8/10/2017 16:00	8/11/2017 15:00	1,763,680	124	24.0	0.1
8/10/2017 17:00	8/11/2017 16:00	1,642,981	119	21.3	0.1
8/10/2017 18:00	8/11/2017 17:00	1,523,284	116	20.1	0.1
8/10/2017 19:00	8/11/2017 18:00	1,390,153	112	17.7	0.1
8/10/2017 20:00	8/11/2017 19:00	1,242,869	109	16.0	0.1
8/10/2017 21:00	8/11/2017 20:00	1,155,975	104	14.1	0.1
8/10/2017 22:00	8/11/2017 21:00	1,071,372	100	13.0	0.1
8/10/2017 23:00	8/11/2017 22:00	984,055	99	12.5	0.1
8/11/2017 0:00	8/11/2017 23:00	887,833	94	10.4	0.1
8/11/2017 1:00	8/12/2017 0:00	791,221	91	9.2	0.0
8/11/2017 2:00	8/12/2017 1:00	687,531	87	7.8	0.0
8/11/2017 3:00	8/12/2017 2:00	582,817	84	6.5	0.0
8/11/2017 4:00	8/12/2017 3:00	471,430	81	5.2	0.0

**(9.) #3 SRU****The measured or calculated cumulative quantity of gas discharged over the discharge duration.***Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.*

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(vi))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(viii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume	SO <sub>2</sub> ppm	24-hr cumulative SO <sub>2</sub> <sup>2</sup>	24-hr cumulative reduced sulfur
			(24-hr average, flow-weighted) <sup>1</sup>		
		SCF	ppmv	lbs	lbs as H <sub>2</sub> S
8/8/2017 4:00	8/9/2017 3:00	24,106,577	58	233.7	1.3
8/8/2017 5:00	8/9/2017 4:00	24,182,988	75	307.0	1.7
8/8/2017 6:00	8/9/2017 5:00	24,575,070	145	694.0	3.7
8/8/2017 7:00	8/9/2017 6:00	24,092,525	174	749.5	4.0
8/8/2017 8:00	8/9/2017 7:00	23,414,879	185	758.0	4.1
8/8/2017 9:00	8/9/2017 8:00	22,699,494	210	779.9	4.2
8/8/2017 10:00	8/9/2017 9:00	22,012,119	213	777.1	4.2
8/8/2017 11:00	8/9/2017 10:00	21,413,516	218	777.7	4.2
8/8/2017 12:00	8/9/2017 11:00	20,723,027	220	773.6	4.2
8/8/2017 13:00	8/9/2017 12:00	20,004,789	223	769.7	4.1
8/8/2017 14:00	8/9/2017 13:00	19,276,104	225	764.6	4.1
8/8/2017 15:00	8/9/2017 14:00	18,529,534	226	758.5	4.1
8/8/2017 16:00	8/9/2017 15:00	17,763,638	248	771.5	4.1
8/8/2017 17:00	8/9/2017 16:00	17,077,073	287	814.7	4.4
8/8/2017 18:00	8/9/2017 17:00	16,534,826	326	881.4	4.7
8/8/2017 19:00	8/9/2017 18:00	16,129,075	343	916.7	4.9
8/8/2017 20:00	8/9/2017 19:00	15,804,178	347	925.0	5.0
8/8/2017 21:00	8/9/2017 20:00	15,475,097	349	926.7	5.0
8/8/2017 22:00	8/9/2017 21:00	15,184,342	351	931.1	5.0
8/8/2017 23:00	8/9/2017 22:00	14,943,355	353	935.4	5.0
8/9/2017 0:00	8/9/2017 23:00	14,748,475	355	939.8	5.1
8/9/2017 1:00	8/10/2017 0:00	14,541,282	357	942.6	5.1
8/9/2017 2:00	8/10/2017 1:00	14,331,243	358	944.8	5.1
8/9/2017 3:00	8/10/2017 2:00	14,122,892	359	946.8	5.1
8/9/2017 4:00	8/10/2017 3:00	13,928,254	361	949.9	5.1
8/9/2017 5:00	8/10/2017 4:00	13,686,503	346	881.9	4.7
8/9/2017 6:00	8/10/2017 5:00	13,182,366	279	503.1	2.7
8/9/2017 7:00	8/10/2017 6:00	13,581,044	253	456.5	2.5
8/9/2017 8:00	8/10/2017 7:00	14,183,170	244	457.2	2.5
8/9/2017 9:00	8/10/2017 8:00	14,848,092	222	444.0	2.4
8/9/2017 10:00	8/10/2017 9:00	15,530,951	220	453.2	2.4
8/9/2017 11:00	8/10/2017 10:00	16,150,895	218	461.9	2.5
8/9/2017 12:00	8/10/2017 11:00	16,813,426	218	474.2	2.5
8/9/2017 13:00	8/10/2017 12:00	17,413,200	216	481.5	2.6
8/9/2017 14:00	8/10/2017 13:00	18,018,067	215	490.2	2.6
8/9/2017 15:00	8/10/2017 14:00	18,704,403	249	626.3	3.4
8/9/2017 16:00	8/10/2017 15:00	19,325,815	242	663.3	3.6
8/9/2017 17:00	8/10/2017 16:00	19,834,360	206	630.3	3.4
8/9/2017 18:00	8/10/2017 17:00	20,199,841	169	567.7	3.1
8/9/2017 19:00	8/10/2017 18:00	20,430,898	155	538.2	2.9
8/9/2017 20:00	8/10/2017 19:00	20,557,220	153	535.0	2.9
8/9/2017 21:00	8/10/2017 20:00	20,695,751	154	539.6	2.9
8/9/2017 22:00	8/10/2017 21:00	20,796,098	154	542.0	2.9
8/9/2017 23:00	8/10/2017 22:00	20,862,729	154	545.5	2.9
8/10/2017 0:00	8/10/2017 23:00	20,881,043	155	548.5	2.9
8/10/2017 1:00	8/11/2017 0:00	20,898,139	156	551.6	3.0
8/10/2017 2:00	8/11/2017 1:00	20,906,120	157	554.7	3.0
8/10/2017 3:00	8/11/2017 2:00	20,907,571	158	558.0	3.0
8/10/2017 4:00	8/11/2017 3:00	20,909,187	159	561.0	3.0
8/10/2017 5:00	8/11/2017 4:00	20,880,800	160	562.5	3.0
8/10/2017 6:00	8/11/2017 5:00	20,806,214	160	561.6	3.0
8/10/2017 7:00	8/11/2017 6:00	20,706,577	160	559.8	3.0

**(9.) #3 SRU cont.**

**The measured or calculated cumulative quantity of gas discharged over the discharge duration.**

*Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.*

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(vi))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume	SO <sub>2</sub> ppm	24-hr cumulative SO <sub>2</sub> <sup>2</sup>	24-hr cumulative reduced sulfur
			(24-hr average, flow-weighted) <sup>1</sup>		
		SCF	ppmv	lbs	lbs as H <sub>2</sub> S
8/10/2017 8:00	8/11/2017 7:00	20,594,183	160	557.5	3.0
8/10/2017 9:00	8/11/2017 8:00	20,449,393	160	555.0	3.0
8/10/2017 10:00	8/11/2017 9:00	20,261,388	160	552.3	3.0
8/10/2017 11:00	8/11/2017 10:00	20,060,683	160	547.6	2.9
8/10/2017 12:00	8/11/2017 11:00	19,910,738	160	544.6	2.9
8/10/2017 13:00	8/11/2017 12:00	19,818,679	160	545.5	2.9
8/10/2017 14:00	8/11/2017 13:00	19,751,410	161	545.8	2.9
8/10/2017 15:00	8/11/2017 14:00	19,631,190	128	420.9	2.3

<sup>1</sup> SRU SO<sub>2</sub> CEMS are spanned to 500 ppm. For emissions calculations, Valero assumes 2 times the span, 1000 ppm, for CEMS readings >= 500 ppm.

<sup>2</sup> Tail Gas Treater bypass emissions are calculated using a mass balance method, not using the flow and concentration values listed here.



**Subpart Ja Root Cause / Corrective Action Analysis**

Impact Incident Number: **186191/186237**

*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*

Report:	<u>Initial</u>		
Refinery:	<u>Valero (Meraux)</u>		
Incident Type:	<u>Flaring (Flow and SO2), SRU (SO2)</u>	Date of Event:	<u>10/12/17</u>
Emissions Source(s):	<u>North Flare (EPN 20-72, EQT 0035)</u>	Date Analysis Completed:	<u>11/20/17</u>
	<u>South Flare (EPN 3-77, EQT 0049)</u>		
	<u>#3 SRU Incinerator (EPN 5-00, EQT 0079)</u>		

(1.) (60.108a(c)(6)(i))

**A description of the Discharge:**

At approximately 23:15 on 10/12/17, the Meraux Refinery experienced a partial loss of electrical power. Although the power was interruption was brief, multiple Refinery unit upsets and shutdowns were triggered. These upsets and shutdowns resulted in flaring and SO2 emissions from the North and South Flares > 500,000 SCF above baseline and > 500 lbs SO2 in a 24 hour period and SO2 emissions from the #3 SRU > 500 lbs above allowable in a 24 hour period.

After assessing the condition of the electrical power supply, Valero began the process of restarting the affected units late on 10/12/17. This continued until 10/15/17. Additionally, while loading a Hydrogen Make-Up Gas Compressor in the Middle Distillate Hydrogen Unit (MDH) at 20:12 on 10/14/17, the discharge PSV lifted and began passing pipeline Hydrogen to the North Flare, increasing the volume flared but having no effect on SO2 emissions. Valero was delayed in locating this source of flaring due to the MDH being connected to the South Flare and normally flaring on the South Flare, and this gas passing to the North Flare due to a low Flare Gas Recovery (FGR) Liquid Seal on the North Flare.

(2.) (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))

	Flaring	#3 SRU
Date and Time the discharge was first identified	<u>10/12/17 23:15</u>	<u>10/12/17 23:15</u>
Date/Time the discharge had ceased	<u>10/15/17 7:15</u>	<u>10/13/17 8:40</u>
Duration of Discharge (Calculated)	<u>56.0</u>	<u>9.4</u> hrs

(3.) (60.108a(c)(6)(viii))

**The steps taken to limit the emissions during the discharge:**

Valero initiated its refinery sulfur shedding procedure and followed its Flare Minimization Plan and Operations Procedures to minimize the volume and SO2 emissions of this discharge.

(4.) (60.108a(c)(6)(xi))

**Necessity of RC/CAA: Determine and state whether a RC/CAA is necessary:**

Note: If the discharge was a result of a planned startup or shutdown, a RC/CAA analysis is not required if the flare management plan was followed.

Did the discharge result from a planned startup or shutdown?	<u>No</u>	(Yes/No)
Was the flare management plan followed?	<u>Yes</u>	(Yes/No/N/A)
Is the event exempt from a RC/CCA based on the answers above?	<u>No</u>	(Yes/No)

- If yes, skip section 5-7.

(5.) (60.108a(c)(6)(ix))

**Root Cause Analysis: Describe in detail the Root Cause(s) of the Incident, to the extent determinable:**

Did this discharge result from root causes identified in a previous analysis? No (Yes/No)

The root cause of the power interruption was a flashover on a failed insulator on one of the electrical transmission lines powering the refinery and surrounding area. As this event occurred on 3rd-party equipment located several miles from the refinery, there are no corrective actions available to refinery personnel.

The root causes of the additional flaring from the MDH Make-Up Gas Compressor were:

1) Refinery personnel were searching for sources on the North Flare and not the South Flare. Both flares are connected at the suction of the FGR unit, but normally flaring has occurred on the flare that the source is most directly connected to. However, in this case the low FGR Liquid Seal presented the path of least resistance and a source on the South Flare passed to the North Flare. Refinery personnel were not generally aware that this crossflow was possible and this was the first time that this has been observed.

2) FGR unit inlet flowmeters were not reading properly. This would have assisted operations in locating the source of flaring.

3) MDH Make-Up Compressor discharge PSV lifted during loading and did not re-seat when pressure returned to normal.

(6.)

(60.108a(c)(6)(ix))

**Corrective Action Analysis: Include a description of the recommended corrective action(s) or an explanation of why corrective action is not required.** Yes (Yes/No)

- 1) *Develop Operation Learning Bulletin on locating sources of flaring and review with Operations.*
- 2) *Evaluate the suitability of the FGR inlet flow meters.*
- 3) *Review the MDH Unit Start-Up procedure for appropriate time for loading compressor.*
- 4) *Pull and Inspect the Compressor discharge PSV at next opportunity and evaluate test frequency.*

(7.)

(60.108a(c)(6)(x))

**Corrective Action Schedule: Include corrective actions already completed within the first 45 days following the discharge. For those not completed, provide a schedule for implementation, including proposed commencement and completion dates.**

- 1) *Develop Operation Learning Bulletin on locating sources of flaring and review with Operations.*

*Commencement Date: 11/20/17*

*Estimated Completion Date: 2/20/18*

- 2) *Evaluate the suitability of the FGR inlet flow meters.*

*Commencement Date: 11/20/17*

*Estimated Completion Date: 2/20/18*

- 3) *Review the MDH Unit Start-Up procedure for appropriate time for loading compressor.*

*Commencement Date: 11/20/17*

*Estimated Completion Date: 1/30/18*

- 4) *Pull and Inspect the Compressor discharge PSV at next opportunity and evaluate test frequency.*

*Commencement Date: 11/20/17*

*Estimated Completion Date: 10/2/18*

**(8.) North and South Flares**

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
10/11/17 23:00	10/12/17 22:00	79,804	2,181	28	0
10/12/17 0:00	10/12/17 23:00	556,987	2213	713.0	3.8
10/12/17 1:00	10/13/17 0:00	1,370,333	2426	1575.6	8.5
10/12/17 2:00	10/13/17 1:00	2,030,227	2496	2157.3	11.6
10/12/17 3:00	10/13/17 2:00	2,569,527	2615	2497.9	13.4
10/12/17 4:00	10/13/17 3:00	3,044,471	2745	2763.7	14.9
10/12/17 5:00	10/13/17 4:00	3,357,929	2804	2847.1	15.3
10/12/17 6:00	10/13/17 5:00	3,713,991	2904	3006.0	16.2
10/12/17 7:00	10/13/17 6:00	3,962,626	2642	3051.3	16.4
10/12/17 8:00	10/13/17 7:00	4,126,690	2504	3093.6	16.6
10/12/17 9:00	10/13/17 8:00	4,279,062	2507	3107.1	16.7
10/12/17 10:00	10/13/17 9:00	4,431,763	2517	3123.1	16.8
10/12/17 11:00	10/13/17 10:00	4,655,723	2530	3148.2	16.9
10/12/17 12:00	10/13/17 11:00	4,761,204	2541	3159.2	17.0
10/12/17 13:00	10/13/17 12:00	4,822,724	2556	3166.8	17.0
10/12/17 14:00	10/13/17 13:00	4,887,499	2568	3176.4	17.1
10/12/17 15:00	10/13/17 14:00	4,929,459	2578	3181.5	17.1
10/12/17 16:00	10/13/17 15:00	4,935,909	2580	3182.0	17.1
10/12/17 17:00	10/13/17 16:00	4,942,066	2586	3182.6	17.1
10/12/17 18:00	10/13/17 17:00	5,005,683	2593	3187.8	17.1
10/12/17 19:00	10/13/17 18:00	5,018,620	2564	3187.8	17.1
10/12/17 20:00	10/13/17 19:00	5,020,739	2387	3184.6	17.1
10/12/17 21:00	10/13/17 20:00	5,022,906	2235	3182.8	17.1
10/12/17 22:00	10/13/17 21:00	5,023,978	1985	3180.7	17.1
10/12/17 23:00	10/13/17 22:00	5,013,053	1918	3177.3	17.1
10/13/17 0:00	10/13/17 23:00	4,538,493	1555	2490.1	13.4
10/13/17 1:00	10/14/17 0:00	3,727,819	1293	1627.3	8.7
10/13/17 2:00	10/14/17 1:00	3,076,264	1077	1043.9	5.6
10/13/17 3:00	10/14/17 2:00	2,641,487	933	708.6	3.8
10/13/17 4:00	10/14/17 3:00	2,257,652	804	447.1	2.4
10/13/17 5:00	10/14/17 4:00	1,950,902	821	365.9	2.0
10/13/17 6:00	10/14/17 5:00	1,590,761	796	207.1	1.1
10/13/17 7:00	10/14/17 6:00	1,341,159	809	159.4	0.9
10/13/17 8:00	10/14/17 7:00	1,179,119	755	115.8	0.6
10/13/17 9:00	10/14/17 8:00	1,023,963	819	102.5	0.6
10/13/17 10:00	10/14/17 9:00	870,258	797	86.5	0.5
10/13/17 11:00	10/14/17 10:00	644,711	1004	61.6	0.3
10/13/17 12:00	10/14/17 11:00	538,414	987	50.5	0.3
10/13/17 13:00	10/14/17 12:00	479,508	965	42.9	0.2
10/13/17 14:00	10/14/17 13:00	416,143	936	33.2	0.2
10/13/17 15:00	10/14/17 14:00	372,832	917	27.9	0.1
10/13/17 16:00	10/14/17 15:00	370,041	905	27.4	0.1
10/13/17 17:00	10/14/17 16:00	369,642	893	27.0	0.1
10/13/17 18:00	10/14/17 17:00	306,458	882	21.7	0.1
10/13/17 19:00	10/14/17 18:00	289,707	880	21.0	0.1
10/13/17 20:00	10/14/17 19:00	287,065	886	21.1	0.1
10/13/17 21:00	10/14/17 20:00	382,596	756	22.0	0.1
10/13/17 22:00	10/14/17 21:00	523,446	716	27.9	0.1
10/13/17 23:00	10/14/17 22:00	666,165	729	35.1	0.2
10/14/17 0:00	10/14/17 23:00	746,398	743	39.9	0.2
10/14/17 1:00	10/15/17 0:00	793,002	751	42.8	0.2
10/14/17 2:00	10/15/17 1:00	837,473	775	49.1	0.3
10/14/17 3:00	10/15/17 2:00	729,010	772	43.0	0.2

**(8.) North and South Flares cont.**

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
10/14/17 4:00	10/15/17 3:00	638,115	761	38.6	0.2
10/14/17 5:00	10/15/17 4:00	632,643	679	36.3	0.2
10/14/17 6:00	10/15/17 5:00	671,569	593	36.2	0.2
10/14/17 7:00	10/15/17 6:00	729,056	539	37.6	0.2
10/14/17 8:00	10/15/17 7:00	735,319	540	37.9	0.2
10/14/17 9:00	10/15/17 8:00	733,951	464	37.3	0.2
10/14/17 10:00	10/15/17 9:00	740,787	470	37.5	0.2
10/14/17 11:00	10/15/17 10:00	751,739	245	37.7	0.2
10/14/17 12:00	10/15/17 11:00	752,383	246	37.7	0.2
10/14/17 13:00	10/15/17 12:00	750,985	246	37.7	0.2
10/14/17 14:00	10/15/17 13:00	754,828	247	37.8	0.2
10/14/17 15:00	10/15/17 14:00	752,406	246	37.7	0.2
10/14/17 16:00	10/15/17 15:00	748,801	245	37.6	0.2
10/14/17 17:00	10/15/17 16:00	743,389	244	37.4	0.2
10/14/17 18:00	10/15/17 17:00	742,007	241	37.3	0.2
10/14/17 19:00	10/15/17 18:00	744,422	235	37.3	0.2
10/14/17 20:00	10/15/17 19:00	745,108	227	37.2	0.2
10/14/17 21:00	10/15/17 20:00	646,907	219	32.4	0.2
10/14/17 22:00	10/15/17 21:00	506,614	212	25.8	0.1
10/14/17 23:00	10/15/17 22:00	363,791	206	18.7	0.1

**(9.) #3 SRU**

The measured or calculated cumulative quantity of gas discharged over the discharge duration.

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(vi))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(viii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume	SO <sub>2</sub> ppm	24-hr cumulative SO <sub>2</sub> <sup>2</sup>	24-hr cumulative reduced sulfur
			(24-hr average, flow-weighted) <sup>1</sup>		
		SCF	ppmv	lbs	lbs as H <sub>2</sub> S
10/11/17 23:00	10/12/17 22:00	26,160,801	61	265.7	1.4
10/12/17 0:00	10/12/17 23:00	25,713,844	78	309.4	1.7
10/12/17 1:00	10/13/17 0:00	25,016,353	110	349.0	1.9
10/12/17 2:00	10/13/17 1:00	24,388,653	148	408.7	2.2
10/12/17 3:00	10/13/17 2:00	23,756,876	188	470.0	2.5
10/12/17 4:00	10/13/17 3:00	23,103,815	217	512.7	2.8
10/12/17 5:00	10/13/17 4:00	22,489,649	220	512.0	2.8
10/12/17 6:00	10/13/17 5:00	22,399,688	245	609.2	3.3
10/12/17 7:00	10/13/17 6:00	22,464,459	284	786.0	4.2
10/12/17 8:00	10/13/17 7:00	22,404,515	300	850.0	4.6
10/12/17 9:00	10/13/17 8:00	22,384,394	304	864.6	4.6
10/12/17 10:00	10/13/17 9:00	21,985,042	306	865.2	4.7
10/12/17 11:00	10/13/17 10:00	21,503,107	307	862.8	4.6
10/12/17 12:00	10/13/17 11:00	20,965,577	308	859.3	4.6
10/12/17 13:00	10/13/17 12:00	20,375,776	309	854.7	4.6
10/12/17 14:00	10/13/17 13:00	19,826,919	309	850.8	4.6
10/12/17 15:00	10/13/17 14:00	19,395,604	311	851.0	4.6
10/12/17 16:00	10/13/17 15:00	19,004,978	313	853.5	4.6
10/12/17 17:00	10/13/17 16:00	18,684,168	315	857.2	4.6
10/12/17 18:00	10/13/17 17:00	18,422,720	319	865.3	4.7
10/12/17 19:00	10/13/17 18:00	18,163,433	320	867.3	4.7
10/12/17 20:00	10/13/17 19:00	17,879,891	321	867.6	4.7
10/12/17 21:00	10/13/17 20:00	17,617,428	322	868.5	4.7
10/12/17 22:00	10/13/17 21:00	17,310,203	324	872.4	4.7
10/12/17 23:00	10/13/17 22:00	16,922,143	327	875.9	4.7
10/13/17 0:00	10/13/17 23:00	17,018,368	313	836.7	4.5
10/13/17 1:00	10/14/17 0:00	17,360,271	283	801.4	4.3
10/13/17 2:00	10/14/17 1:00	17,637,067	248	746.5	4.0
10/13/17 3:00	10/14/17 2:00	17,938,692	212	690.8	3.7
10/13/17 4:00	10/14/17 3:00	18,269,294	186	656.0	3.5
10/13/17 5:00	10/14/17 4:00	18,552,968	186	661.8	3.6
10/13/17 6:00	10/14/17 5:00	18,346,251	164	570.2	3.1
10/13/17 7:00	10/14/17 6:00	17,990,768	128	399.4	2.1

<sup>1</sup> SRU SO<sub>2</sub> CEMS are spanned to 500 ppm. For emissions calculations, Valero assumes 2 times the span, 1000 ppm, for CEMS readings >= 500 ppm.

<sup>2</sup> Tail Gas Treater bypass emissions are calculated using a mass balance method, not using the flow and concentration values listed here.

**Subpart Ja Root Cause / Corrective Action Analysis**Impact Incident Number: **344894***The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*

Report:	<u>Initial</u>	Date of Event:	<u>12/13/17</u>
Refinery:	<u>Valero (Meraux)</u>	Date Analysis Completed:	<u>1/25/18</u>
Incident Type:	<u>Flaring (Flow)</u>		
Emissions Source(s):	<u>North Flare (EPN 20-72, EQT 0035)</u>		

(1.) (60.108a(c)(6)(i))

**A description of the Discharge:**

On 12/13/17 at 09:23, the Reformer Net Gas Compressor (NGC) tripped due to high seal gas vent pressure. The seal gas is supplied from an on-site Nitrogen facility that is owned and operated by a 3rd party. This Nitrogen facility was in a turnaround and the Nitrogen generator that is normally in service was not running, leaving the refinery completely dependent on liquid Nitrogen delivered by truck. A scheduled truck delivery was missed and the liquid Nitrogen tank level became low and the Nitrogen pressure was reduced. A few hours before the trip, manual valves for the NGC seal gas were throttled open further than normal after receiving a low flow alarm. When the truck arrived and began filling the Nitrogen tank, the pressure returned and caused the seal gas to trip on high pressure.

The compressor itself was quickly restarted at 09:25, but Valero had difficulty loading the compressor and stopping the flaring. The gas flared from this event caused flaring at the North Flare to exceed 500,000 SCF in a 24 hour period. This gas was pipeline quality Hydrogen, free of H2S or other Sulfur compounds.

(2.) (60.108a(c)(6)(ii)) and (60.108a(c)(6)(ix))

Date and Time the discharge was first identified	<u>12/13/17 9:23</u>
Date/Time the discharge had ceased	<u>12/13/17 10:59</u>
Duration of Discharge (Calculated)	<u>1.6</u> hrs

(3.) (60.108a(c)(6)(viii))

**The steps taken to limit the emissions during the discharge:**

Valero followed its Flare Minimization Plan and Operations Procedures to minimize the volume of this discharge.

(4.) (60.108a(c)(6)(xi))

**Necessity of RC/CAA: Determine and state whether a RC/CAA is necessary:**

Note: If the discharge was a result of a planned startup or shutdown, a RC/CAA analysis is not required if the flare management plan was followed.

Did the discharge result from a planned startup or shutdown?	<u>No</u>	(Yes/No)
Was the flare management plan followed?	<u>Yes</u>	(Yes/No/N/A)
Is the event exempt from a RC/CCA based on the answers above? - If yes, skip section 5-7.	<u>No</u>	(Yes/No)

(5.) (60.108a(c)(6)(ix))

**Root Cause Analysis: Describe in detail the Root Cause(s) of the Incident, to the extent determinable:**

Did this discharge result from root causes identified in a previous analysis? No (Yes/No)

**Root Cause(s):**

1) Low level in the refinery liquid Nitrogen tank. This was a manpower issue with the 3rd-party Nitrogen supplier and cannot be resolved by corrective actions by Valero personnel.

2) The delay in loading the NGC was due to not operating the anti-surge system as designed. Operations believed that the anti-surge system did not work and were attempting to load the compressor in partial-manual mode where anti-surge functions were overriding manual controls.

3) The procedure does not address the proper modes for the suction and spillback valves for loading the compressor.

(6.) (60.108a(c)(6)(ix))

**Corrective Action Analysis: Include a description of the recommended corrective action(s) or an explanation of why corrective action is not Is corrective action required?** Yes (Yes/No)

1) Conduct a test run to identify issues with full automatic operation of the anti-surge system and correct any deficiencies noted.

2) Based on the resolution of the anti-surge control scheme, revise the operating procedure to include the loading of the compressor.

(7.) (60.108a(c)(6)(x))

**Corrective Action Schedule: Include corrective actions already completed within the first 45 days following the discharge. For those not completed, provide a schedule for implementation, including proposed commencement and completion dates.**

1) Conduct a test run to identify issues with full automatic operation of the anti-surge system and correct any deficiencies noted.

Commencement Date: 1/25/18

Estimated Completion Date: 3/19/18

2) Based on the resolution of the anti-surge control scheme, revise the operating procedure to include the loading of the compressor.

Commencement Date: 1/25/18

Estimated Completion Date: 3/19/18

(8.)

**The measured or calculated cumulative quantity of gas discharged over the discharge duration.**

Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.

		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(viii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume of flared gas above Baseline	TRS or H2S ppm (24-hr average, flow-weighted)	24-hr cumulative SO2	24-hr cumulative reduced sulfur
		SCF	ppmv	lbs	lbs as H2S
12/12/17 9:00	12/13/17 8:00	12,850	27	1.4	0.0
12/12/17 10:00	12/13/17 9:00	457,548	37	17.7	0.1
12/12/17 11:00	12/13/17 10:00	664,661	49	28.2	0.2
12/12/17 12:00	12/13/17 11:00	664,661	49	28.2	0.2
12/12/17 13:00	12/13/17 12:00	664,661	49	28.2	0.2
12/12/17 14:00	12/13/17 13:00	664,661	49	28.2	0.2
12/12/17 15:00	12/13/17 14:00	664,661	49	28.2	0.2
12/12/17 16:00	12/13/17 15:00	664,661	49	28.2	0.2
12/12/17 17:00	12/13/17 16:00	664,661	49	28.2	0.2
12/12/17 18:00	12/13/17 17:00	664,661	49	28.2	0.2
12/12/17 19:00	12/13/17 18:00	664,661	49	28.2	0.2
12/12/17 20:00	12/13/17 19:00	664,661	49	28.2	0.2
12/12/17 21:00	12/13/17 20:00	651,811	22	26.8	0.1
12/12/17 22:00	12/13/17 21:00	651,811	22	26.8	0.1
12/12/17 23:00	12/13/17 22:00	651,811	22	26.8	0.1
12/13/17 0:00	12/13/17 23:00	651,811	22	26.8	0.1
12/13/17 1:00	12/14/17 0:00	651,811	22	26.8	0.1
12/13/17 2:00	12/14/17 1:00	651,811	22	26.8	0.1
12/13/17 3:00	12/14/17 2:00	651,811	22	26.8	0.1
12/13/17 4:00	12/14/17 3:00	651,811	22	26.8	0.1
12/13/17 5:00	12/14/17 4:00	651,811	22	26.8	0.1
12/13/17 6:00	12/14/17 5:00	651,811	22	26.8	0.1
12/13/17 7:00	12/14/17 6:00	651,811	22	26.8	0.1
12/13/17 8:00	12/14/17 7:00	651,811	22	26.8	0.1
12/13/17 9:00	12/14/17 8:00	651,811	22	26.8	0.1
12/13/17 10:00	12/14/17 9:00	207,113	13	10.5	0.1
12/13/17 11:00	12/14/17 10:00	0	0	0.0	0.0