



January 30, 2019

CERTIFIED: 7016 2710 0001 0589 2962

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 – 4th Quarter 2018  
Valero Refining - Meraux LLC, Agency Interest # 1238  
2235 Jacob Drive, St. Bernard Parish, Meraux, LA  
Title V Permit Numbers: 2500-00001-V17

Gentlemen,

Valero Refining, Meraux LLC is submitting 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 2018.

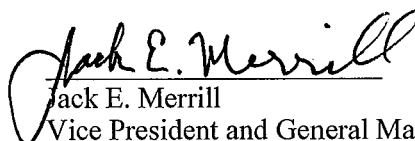
For this reporting period, the #3 SRU (EPN 5-00, EQT 0079) had excess emissions greater than 1% of the total operating time and no CEMS had downtime greater than 5% of the total operating time.

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 root cause and corrective action analysis for the event dated 11/18/18 was not completed within 45 days as required by 40 CFR 60.103a(d). This will be reported as a deviation in the next Semi-Annual Title V Deviation Report. 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 and General Manager  
Meraux Refinery

**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  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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 10/25/18 

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	7
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	7
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.3 %

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

Applicable NSPS Subpart:   Ja  

Reporting period dates: From  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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 10/12/18 

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

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	31
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	31
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	1.4 %

<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  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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 10/12/18 

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- 2,182 hours, EQT 0011- 1,505 hours, EQT 0033- 2,209 hours 

<b>Emissions Data Summary<sup>1</sup></b>			
	<i>EQT 0010 (hours)</i>	<i>EQT 0011 (hours)</i>	<i>EQT 0033 (hours)</i>
1. Duration of excess emissions in reporting period due to:			
a. Startup/shutdown	0	0	0
b. Control equipment problems	0	0	0
c. Process problems	0	0	0
d. Other known causes	0	0	0
e. Unknown causes	0	0	0
2. Total duration of excess emission	0	0	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.0 %	0.0 %	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>			
	<i>EQT 0010 (hours)</i>	<i>EQT 0011 (hours)</i>	<i>EQT 0033 (hours)</i>
1. CMS downtime in reporting period due to:			
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	0	0	0
e. Unknown causes	0	0	0
2. Total CMS Downtime	1	1	1
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %	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. (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  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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 10/23/18 

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 0013-2,209 hours; EQT 0022-2,209 hours; EQT 0023-2,209 hours; EQT 0024-2,209 hours; EQT 0027-2,209 hours; EQT 0028-2,209 hours; EQT 0029-2,208 hours; EQT 0058-2,209 hours; EQT 0014-2,209 hours 

<b>Emissions Data Summary<sup>1</sup></b>	
1. Duration of excess emissions in reporting period due to:	<i>All EQT's (hours)</i>
a. Startup/shutdown	0
b. Control equipment problems	0
c. Process problems	6
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	6
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.3 %

<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	27
e. Unknown causes	0
2. Total CMS Downtime	28
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	1.3 %

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/23/18

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: 2,208 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	6
d. Other known causes	0
e. Unknown causes	0
2. Total duration of excess emission	6
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.3 %

<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	27
e. Unknown causes	0
2. Total CMS Downtime	28
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	1.3 %

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/23/18

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

Total source operating time in reporting period: 2,180 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/17/18

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: 2,207 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	15
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	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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/24/18

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 0030-2,093 hours; EQT 0048-0 hours<sup>3</sup>

<b>Emissions Data Summary<sup>1</sup></b>		
	<i>EQT 0030 (hours)</i>	<i>EQT 0048 (hours)</i>
1. Duration of excess emissions in reporting period due to:		
a. Startup/shutdown	0	0
b. Control equipment problems	0	0
c. Process problems	17	0
d. Other known causes	0	0
e. Unknown causes	0	0
2. Total duration of excess emission	17	0
3. Total duration of excess emissions x (100) [Total source operating time] <sup>2</sup>	0.8 %	0.0 %

<b>CMS Performance Summary<sup>1</sup></b>		
	<i>EQT 0030 (hours)</i>	<i>EQT 0048 (hours)</i>
1. CMS downtime in reporting period due to:		
a. Monitor equipment malfunctions	0	0
b. Non-Monitor equipment malfunctions	0	0
c. Quality assurance calibration	1	0
d. Other known causes	0	0
e. Unknown causes	0	0
2. Total CMS Downtime	1	0
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.0 %	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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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>)

Date of Latest CMS Certification or Audit: CGA on 10/22/18

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

Total source operating time in reporting period: 2,093 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/23/18

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	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))*

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

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/17/18 (NO<sub>x</sub>)/ 10/18/18 (O<sub>2</sub>)

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

Total source operating time in reporting period: 2,182 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/16/18

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

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	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	0
e. Unknown causes	0
2. Total CMS Downtime	2
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 10/1/18 to 12/31/18

Date submitted: 1/30/19

Company: Valero Refining - Meraux LLC

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

Emission Limitation: None

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

Date of Latest CMS Certification or Audit: CGA on 10/19/18

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

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) and 60.108a(d))*

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

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/11/18

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	0
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: H<sub>2</sub>S

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/10/18

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  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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 10/12/18 

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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/15/18

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	35
e. Unknown causes	0
2. Total CMS Downtime	38
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	1.7 %

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/15/18

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	1
d. Other known causes	15
e. Unknown causes	0
2. Total CMS Downtime	16
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.7 %

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/25/18

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	16
e. Unknown causes	0
2. Total CMS Downtime	16
3. Total duration of CMS Downtime x (100) [Total source operating time] <sup>2</sup>	0.7 %

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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.

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

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

For all CMS covered in this report, no changes were made in the 3rd Quarter 2018 to CMS, process, or controls. I certify that the information contained in this report is true, accurate, and complete.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title



**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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/25/18

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

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

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 12-HRA (ppm)	Cause	Corrective Action
11/19/18	04:00	11:00	7	278	SO <sub>2</sub> at 0% O <sub>2</sub> > 250 ppm, 12-HRA, and SO <sub>2</sub> emissions < 500 lbs in a 24 hour period due to a unit upset resulting from a trip of the Recycle Gas Compressor in the Hydrocracker Unit. For causes and corrective actions, see the root cause and corrective action analysis in Appendix B dated 11/18/18.	
TOTAL			7			

Ja CMS PERFORMANCE <sup>1</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
10/25/18	13:00	14:00	1	SO <sub>2</sub> and O <sub>2</sub> 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: **SO<sub>2</sub>**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/12/18

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

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

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 12-HRA (ppm)	Cause	Corrective Action
10/31/18	20:00		10	310	SO <sub>2</sub> at 0% O <sub>2</sub> > 250 ppm, 12-HRA, and SO <sub>2</sub> emissions < 500 lbs in a 24 hour period due to an emergency safety shutdown of the #3 SRU following a trip of the Main Air Blower motor. The trip was caused by an electrical failure of a motor controller circuit board due to age and elevated temperatures in the switch house.	Valero repaired the HVAC system for the switch house and added monitoring of the switch house temperature to operator rounds. Valero will also set up a preventative maintenance schedule to replace these motor controller circuit boards before they exceed 10 years of service.
11/1/18		06:00				
11/2/18	17:00		8	321	SO <sub>2</sub> at 0% O <sub>2</sub> > 250 ppm, 12-HRA, and SO <sub>2</sub> emissions < 500 lbs in a 24 hour period due to operator error while testing newly installed motor controller circuit boards. The operator inadvertently stopped the running Main Air Blower.	Valero will add more distinguishing characteristics to the Control Room graphics so that users can more easily distinguish between running and non-running equipment.
11/3/18		01:00				
11/14/18	04:00	17:00	13	535	SO <sub>2</sub> at 0% O <sub>2</sub> > 250 ppm, 12-HRA, and SO <sub>2</sub> emissions < 500 lbs in a 24 hour period due to an emergency safety shutdown of the #3 SRU following a trip of the Main Air Blower motor. Valero discovered that an instrument air line to the Main Air Blower steam turbine governor had broken off. This air line was incorrectly installed and did not allow for the normal vibrations of the steam turbine.	Valero correctly installed a new instrument air line to the Main Air Blower steam turbine that allows for the normal vibrations of the steam turbine.
TOTAL			31			

**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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/12/18

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

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

Ja CMS PERFORMANCE <sup>1</sup>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
10/23/18	11:00	12:00	1	Adjusted for calibration drift.	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: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/23/18

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: 2,208 hours

Ja EXCESS EMISSIONS						
Date	Start	End	Duration (hours)	Max 3-HRA (ppm)	Cause	Corrective Action
10/31/18	19:00	22:00	3	272	H2S >162 ppm, 3-HRA, and SO2 emissions < 500 lbs in a 24 hour period due to an upset of the #3 SRU. For causes and corrective actions, see the "Gaseous and Opacity Excess Emissions Monitoring Systems Performance" page for the #3 SRU included in this report (Page 25).	
11/2/18	13:00	16:00	3	229	H2S >162 ppm, 3-HRA, and SO2 emissions < 500 lbs in a 24 hour period due to an upset of the #3 SRU. For causes and corrective actions, see the "Gaseous and Opacity Excess Emissions Monitoring Systems Performance" page for the #3 SRU included in this report (Page 25).	
TOTAL			6			

Ja CMS PERFORMANCE <sup>1</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
10/23/18	09:00	10:00	1	Cylinder Gas Audit.	N/A	
11/12/18	13:00		27	Analyzer offline due to a fault on the analyzer motherboard.	Valero removed the motherboard, thoroughly cleaned it, and tested all the connections. Valero then re-installed it and verified the fault had cleared. The analyzer was calibrated and returned to service.	
		16:00				
TOTAL			5			

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/16/18

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

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

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

Ja CMS PERFORMANCE <sup>1</sup>					
Date	Start	End	Duration (hours)	Cause	Corrective Action
10/16/18	14:00	15:00	1	NO <sub>x</sub> and O <sub>2</sub> Cylinder Gas Audit.	N/A
12/13/18	10:00	11:00	1	2 <sup>nd</sup> NO <sub>x</sub> and O <sub>2</sub> Cylinder Gas Audit performed due to maintenance scheduling error.	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: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/11/18

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						
<b>TOTAL</b>			0			

Ja CMS PERFORMANCE <sup>2</sup>						
Date	Start	End	Duration (hours)	Cause	Corrective Action	
10/11/18	13:00	16:00	3	Cylinder Gas Audit.	N/A	
<b>TOTAL</b>			3			

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/10/18

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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/12/18

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

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>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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/15/18

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
10/5/18	13:00	14:00	1	Analyzer adjusted for calibration drift.	Calibrated and returned to service.
10/11/18	08:00	09:00	1	Analyzer adjusted for calibration drift.	Calibrated and returned to service.
10/19/18	11:00		20	Analyzer adjusted for calibration drift on 11/19, but did not correctly switch back to sample until the completion of the automatic validation check on 10/20.	None. Analyzer continued to operate normally.
10/20/18		07:00			
11/11/18	19:00		15	Combustion air bottle exhausted. A stuck pressure gage on the bottle regulator prevented the bottle from being replaced when required.	Installed a new bottle and a new pressure gage. The analyzer was calibrated and returned to service.
11/12/18		10:00			
12/12/18	08:00	09:00	1	2 <sup>nd</sup> Cylinder Gas Audit performed due to maintenance scheduling error.	N/A
TOTAL			38		

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/15/18

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
11/11/18	19:00		15	Combustion air bottle exhausted. A stuck pressure gage on the bottle regulator prevented the bottle from being replaced when required.	Installed a new bottle and a new pressure gage. The analyzer was calibrated and returned to service.
11/12/18		10:00			
12/12/18	08:00	09:00	1	2 <sup>nd</sup> Cylinder Gas Audit performed due to maintenance scheduling error.	N/A
TOTAL			16		

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/25/18

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
11/11/18	19:00		16	Combustion air bottle exhausted. A stuck pressure gage on the bottle regulator prevented the bottle from being replaced when required.	Installed a new bottle and a new pressure gage. The analyzer was calibrated and returned to service.
11/12/18		11:00			
TOTAL			16		

<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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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

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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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					
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.

# DATA ASSESSMENT REPORT

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

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

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	SO <sub>2</sub> #2 (high scale)	O <sub>2</sub> #1 (low scale)	O <sub>2</sub> #2 (high scale)
Date of Audit	10/25/18	10/25/18	10/25/18	10/25/18
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	127.3 ppmv	275.3 ppmv	6.00 vol %	9.40 vol %
Accuracy	1.9%	0.3%	0.2%	6.5%
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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	SO <sub>2</sub> #2 (high scale)	O <sub>2</sub> #1 (low scale)	O <sub>2</sub> #2 (high scale)
Date of Audit	10/12/18	10/12/18	10/12/18	10/12/18
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 %	9.98 vol %
CEM Response Value	128.3 ppmv	278.7 ppmv	6.00 vol %	10.00 vol %
Accuracy	2.4%	1.2%	0.2%	0.2%
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: **H<sub>2</sub>S**

Applicable NSPS Subpart:   J  

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	H <sub>2</sub> S #2 (high scale)
Date of Audit	10/12/18	10/12/18
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)	72.3	169.3
Accuracy	4.9%	3.4%
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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/23/18	10/23/18
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)	77.3	178.3
Accuracy	0.8%	1.1%
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

---

# 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  10/1/18  to  12/31/18 

Date submitted:  1/30/19 

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 <u>(low scale)</u>	H <sub>2</sub> S #2 <u>(high scale)</u>
Date of Audit	10/23/18	10/23/18
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)	77.3	169.0
Accuracy	0.9%	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  

---

# 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/17/18	10/17/18
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)	78.3	167.0
Accuracy	0.1%	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:   J  

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	H <sub>2</sub> S #2 (high scale)
Date of Audit	10/24/18	10/24/18
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)	75.7	165.7
Accuracy	3.1%	3.4%
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  

---

# DATA ASSESSMENT REPORT

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

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

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	NO <sub>x</sub> #2 (high scale)	O <sub>2</sub> #1 (low scale)	O <sub>2</sub> #2 (high scale)
Date of Audit	10/22/18	10/22/18	10/22/18	10/22/18
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	25.5 ppmv	54.1 ppmv	6.00 vol %	10.00 vol %
Accuracy	1.2%	0.7%	0.2%	0.1%
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

---

# DATA ASSESSMENT REPORT

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

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

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	NO <sub>x</sub> #2 (high scale)	O <sub>2</sub> #1 (low scale)	O <sub>2</sub> #2 (high scale)
Date of Audit	10/23/18	10/23/18	10/23/18	10/23/18
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	24.4 ppmv	51.5 ppmv	6.00 vol %	10.00 vol %
Accuracy	3.2%	5.5%	0.2%	0.1%
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

---

# DATA ASSESSMENT REPORT

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

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

Applicable NSPS Subpart: Db

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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):

	NO <sub>x</sub> #1 (low scale)	NO <sub>x</sub> #2 (high scale)	O <sub>2</sub> #1 (low scale)	O <sub>2</sub> #2 (high scale)
Date of Audit	10/17/18	10/17/18	10/18/18	10/18/18
Audit Gas Cylinder No.	SG9167966	CC87303	LL269	LL168197
Date of Audit Gas Cert.	5/31/16	5/31/16	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	130.3 ppmv	267.7 ppmv	5.80 vol %	9.63 vol %
Accuracy	2.7%	1.0%	3.8%	4.7%
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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/16/18	10/16/18	10/16/18	10/16/18
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	24.5 ppmv	54.8 ppmv	5.63 vol %	9.50 vol %
Accuracy	2.0%	1.8%	5.5%	4.4%
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

---

# 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/19/18	10/19/18	10/19/18	10/19/18
Audit Gas Cylinder No.	LL178685	CC319153	CC483638	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	25.0 ppmv	57.0 ppmv	6.03 vol %	10.07 vol %
Accuracy	1.4%	2.8%	0.7%	1.1%
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: **H<sub>2</sub>S**

Applicable NSPS Subpart: Ja

Reporting period dates: From 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/11/18	10/11/18
Audit Gas Cylinder No.	CC441826	CC407913
Date of Audit Gas Cert.	10/3/16	10/4/16
Type of Certification	Certified Gas <sup>1</sup>	Certified Gas <sup>1</sup>
Certified Audit Value	79.2 ppmv	175.6 ppmv
CEM Response Value	73.3 ppmv	172.7 ppmv
Accuracy	7.4%	1.7%
Standard	<15%	<15%

<sup>1</sup> Valero unable to obtain EPA Protocol 1 certified gases for the Methane balanced audit gas required by this analyzer.

## 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	H <sub>2</sub> S #2 (high scale)
Date of Audit	10/10/18	10/10/18
Audit Gas Cylinder No.	CC416820	CC407913
Date of Audit Gas Cert.	10/3/16	10/4/16
Type of Certification	Certified Gas <sup>1</sup>	Certified Gas <sup>1</sup>
Certified Audit Value (ppmv)	81.5 ppmv	175.6 ppmv
CEM Response Value (ppmv)	84.0 ppmv	178.0 ppmv
Accuracy	3.1%	1.4%
Standard	<15%	<15%

<sup>1</sup> Valero unable to obtain EPA Protocol 1 certified gases for the Methane balanced audit gas required by this analyzer.

## II. CALIBRATION DRIFT ASSESSMENT

### A. Out of Control Periods:

1. Dates: N/A

2. Number of Days N/A

B. Corrective Actions: N/A

---

# 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/12/18	10/12/18
Audit Gas Cylinder No.	CC416820	CC407913
Date of Audit Gas Cert.	10/3/16	10/4/16
Type of Certification	Certified Gas <sup>1</sup>	Certified Gas <sup>1</sup>
Certified Audit Value	81.5 ppmv	175.6 ppmv
CEM Response Value	73.0 ppmv	174.7 ppmv
Accuracy	10.4%	0.5%
Standard	<15%	<15%

<sup>1</sup> Valero unable to obtain EPA Protocol 1 certified gases for the Methane balanced audit gas required by this analyzer.

## 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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 (low scale)	H <sub>2</sub> S #2 (high scale)
Date of Audit	10/15/18	10/15/18
Audit Gas Cylinder No.	CC305316	CC14378
Date of Audit Gas Cert.	5/27/16	11/7/17
Type of Certification	EPA Protocol 1	Primary Standard <sup>1</sup>
Certified Audit Value (ppmv)	1013.0 ppmv	10000.0 ppmv
CEM Response Value (ppmv)	984.0 ppmv	10073.0 ppmv
Accuracy	2.9%	0.7%
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

---

# 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/15/18	10/15/18
Audit Gas Cylinder No.	CC305316	CC14378
Date of Audit Gas Cert.	5/27/16	11/7/17
Type of Certification	EPA Protocol 1	Primary Standard1
Certified Audit Value (ppmv)	1013.0 ppmv	10000.0 ppmv
CEM Response Value (ppmv)	1001.0 ppmv	10043.7 ppmv
Accuracy	1.2%	0.4%
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

---

# 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 10/1/18 to 12/31/18

Date submitted: 1/30/19

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	10/25/18	10/25/18
Audit Gas Cylinder No.	CC305316	CC14378
Date of Audit Gas Cert.	5/27/16	11/7/17
Type of Certification	EPA Protocol 1	Primary Standard <sup>1</sup>
Certified Audit Value	1013.0 ppmv	10000.0 ppmv
CEM Response Value	1033.7 ppmv	10058.0 ppmv
Accuracy	2.0%	0.6%
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

## Fourth Quarter Ja Root Cause and Corrective Action Analysis Still in Progress at End of Reporting Period

Incident Date	Incident Type	Incident Description
11/18/18 <sup>1</sup>	Flare Flow and SO2	HCU Recycle Gas Compressor Trip, HCU Depressurization

<sup>1</sup> This RCCA was completed on 1/10/19 and is included in this report. This RCCA was not completed with 45 days of the event as required by 40 CFR 60.103a(d). This will be reported as a deviation in the next Semi-Annual Title V Deviation Report.

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

Incident Number: 345189/345193

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

Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow and SO2), SRU (SO2)  
 Emissions Source(s): North Flare (EPN 20-72, EQT 0035)  
South Flare (EPN 3-77, EQT 0049)  
#3 SRU Incinerator (EPN 5-00, EQT 0079)

Date of Event: 1/2/18  
 Date Analysis Completed: 2/15/18

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

**A description of the Discharge:**

Beginning at approximately 07:00 on January 1, 2018, the Meraux Refinery began experiencing SO2 emissions caused by multiple instrumentation failures throughout the refinery due to exceptionally cold air temperatures (approximately 24 F). Intermittent SO2 emissions began on January 1 due to instability of the #3 Sulfur Recovery Unit (SRU) followed by the loss of the Flare Gas Recovery Unit compressor on January 2nd from 06:20-08:35. One of the refinery's two main boilers, Boiler B-5, tripped offline at 04:33 on January 2nd and could not be restarted. Later at 08:11 the remaining main boiler, Boiler B-6, tripped offline and caused a shortage of steam and reduced steam header pressures across the entire refinery. At 09:02, the Hydrocracker Unit (HCU) tripped offline and performed an automatic depressurization due to reduced flow from its steam driven Recycle Gas Compressor. The bulk of the SO2 emissions from flaring occurred during this depressurization event, and the resultant trip of the #3 SRU, which takes it's feed from the HCU. The restart of the #3 SRU was also delayed by instrumentation failures, causing additional SO2 emissions.

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

	Flares	#3 SRU
Date and Time the discharge was first identified	<u>1/2/18 6:20</u>	<u>1/1/18 7:00</u>
Date/Time the discharge had ceased	<u>1/2/18 16:20</u>	<u>1/3/18 10:00</u>
Duration of Discharge (Calculated)	<u>10.0</u>	<u>51.0 hrs</u>

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

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

Valero initiated it's 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? No (Yes/No)  
 Was the flare management plan followed? Yes (Yes/No/N/A)  
 Is the event exempt from a RC/CAA based on the answers above? No (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(s) of this incident were the cold weather or other instrumentation failures on Boiler B-5, Boiler B-6, and the #3 SRU as described below:

**1) Boiler B-5**

a) B-5 tripped on low fuel gas pressure. The fuel gas pressure regulator pilot filter is not free draining and its tubing is not protected from freezing. Liquids accumulated and froze and clogged the pilot filter.

b) B-5 could not be restarted due to slack in the linkages for switch feedback causing false position indications on the Flue Gas Recirculation Damper, Stack Damper, and Fresh Air Damper. The false position indications prevented start up permissives from being satisfied. These feedback switches were newly installed in 2017.

**2) Boiler B-6**

a) B-6 tripped on a false high steam pressure indication. This trip is provided by a single pressure instrument. The impulse lines for this instrument were not properly insulated and froze.

**3) #3 SRU**

a) The temperature of the analyzer probe for the Air Demand Analyzer got too low and caused the Air Demand Analyzer to indicate a fault. This fault prevents automatic operation of the SRU Main Burner combustion air and led to several trips of the Main Burner.

b) Several other critical instruments were not working properly due to frozen impulse lines.

c) Some purge gas rotameters on critical instruments were cracked during the freeze causing the loss of that instrument.

(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 necessary.

Is corrective action required? Yes (Yes/No)

- 1) Re-pipe B-5 and B-6 fuel gas regulator pilot filters to eliminate the low point, add insulation and tracing, and install pressure gauges across pilot filters.
- 2) Add checking the fuel gas regulator pilot filter differential pressure to operator rounds.
- 3) Remove the newly installed feedback switches and replace them with the original ones that had better reliability.
- 4) Install additional steam pressure instruments to provide 2 out of 3 logic for the high steam pressure trip.
- 5) Add insulation and heat tracing to B-5 and B-6 steam pressure instruments.
- 6) Pull and inspect the #3 SRU Air Demand Analyzer probe and verify that it is installed correctly.
- 7) Develop a preventative maintenance schedule for the periodic replacement of purge gas rotameters in the SRUs.
- 8) Evaluate moving the #3 SRU Air Flowmeter to Tail Gas Burner transmitters above taps
- 9) Provide winterization protection for the affected instruments in the #3 SRU.

(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) Re-pipe B-5 and B-6 fuel gas regulator pilot filters to eliminate the low point, add insulation and tracing, and install pressure gauges across pilot filters.

Commencement Date: 2/15/18

Completed: 10/26/18

2) Add checking the fuel gas regulator pilot filter differential pressure to operator rounds.

Commencement Date: 2/15/18

Completed: 10/26/18

3) Remove the newly installed feedback switches and replace them with the original ones that had better reliability.

Commencement Date: 2/15/18

Completed: 10/30/18

4) Install additional steam pressure instruments to provide 2 out of 3 logic for the high steam pressure trip.

Commencement Date: 2/15/18

Completed: 9/20/18

5) Add insulation and heat tracing to B-5 and B-6 steam pressure instruments.

Commencement Date: 2/15/18

Completed: 10/26/18

6) Pull and inspect the #3 SRU Air Demand Analyzer probe and verify that it is installed correctly.

Commencement Date: 2/15/18

Completed: 8/8/18

7) Develop a preventative maintenance schedule for the periodic replacement of purge gas rotameters in the SRUs.

Commencement Date: 2/15/18

Completed: 4/3/18

8) Evaluate moving the #3 SRU Air Flowmeter to Tail Gas Burner transmitters above taps

Commencement Date: 2/15/18

Completed: 4/17/18

9) Provide winterization protection for the affected instruments in the #3 SRU.

Commencement Date: 2/15/18

Completed: 8/11/18

**(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
1/1/18 9:00	1/2/18 8:00	385,450	27	12.4	0.1
1/1/18 10:00	1/2/18 9:00	759,797	65	67.3	0.4
1/1/18 11:00	1/2/18 10:00	962,465	390	327.7	1.8
1/1/18 12:00	1/2/18 11:00	1,174,431	490	411.4	2.2
1/1/18 13:00	1/2/18 12:00	1,174,431	490	411.4	2.2
1/1/18 14:00	1/2/18 13:00	1,174,431	490	411.4	2.2
1/1/18 15:00	1/2/18 14:00	1,174,431	490	411.4	2.2
1/1/18 16:00	1/2/18 15:00	1,186,246	527	413.2	2.2
1/1/18 17:00	1/2/18 16:00	1,187,174	555	413.3	2.2
1/1/18 18:00	1/2/18 17:00	1,187,174	555	413.3	2.2
1/1/18 19:00	1/2/18 18:00	1,187,174	555	413.3	2.2
1/1/18 20:00	1/2/18 19:00	1,187,174	555	413.3	2.2
1/1/18 21:00	1/2/18 20:00	1,187,174	555	413.3	2.2
1/1/18 22:00	1/2/18 21:00	1,187,174	555	413.3	2.2
1/1/18 23:00	1/2/18 22:00	1,191,686	559	413.4	2.2
1/2/18 0:00	1/2/18 23:00	1,192,796	570	413.4	2.2
1/2/18 1:00	1/3/18 0:00	1,192,796	570	413.4	2.2
1/2/18 2:00	1/3/18 1:00	1,192,796	570	413.4	2.2
1/2/18 3:00	1/3/18 2:00	1,192,796	570	413.4	2.2
1/2/18 4:00	1/3/18 3:00	1,192,796	570	413.4	2.2
1/2/18 5:00	1/3/18 4:00	1,192,796	570	413.4	2.2
1/2/18 6:00	1/3/18 5:00	1,192,796	570	413.4	2.2
1/2/18 7:00	1/3/18 6:00	1,134,034	557	410.3	2.2
1/2/18 8:00	1/3/18 7:00	984,955	551	406.9	2.2
1/2/18 9:00	1/3/18 8:00	807,346	543	401.0	2.2
1/2/18 10:00	1/3/18 9:00	432,999	505	346.1	1.9
1/2/18 11:00	1/3/18 10:00	230,330	180	85.7	0.5

**(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)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume SCF	SO2 ppm (24-hr average, flow- weighted) <sup>1</sup>	24-hr cumulative SO2 above allowable <sup>2</sup>	24-hr cumulative reduced sulfur above allowable
			ppmv	lbs	lbs as H2S
1/2/18 7:00	1/3/18 6:00	559,815	964	485.4	2.6
1/2/18 8:00	1/3/18 7:00	561,818	1000	554.8	3.0
1/2/18 9:00	1/3/18 8:00	576,345	1000	620.8	3.3
1/2/18 10:00	1/3/18 9:00	569,923	817	604.5	3.2
1/2/18 11:00	1/3/18 10:00	506,300	158	573.9	3.1
1/2/18 12:00	1/3/18 11:00	491,990	57	547.9	2.9
1/2/18 13:00	1/3/18 12:00	521,233	39	521.0	2.8
1/2/18 14:00	1/3/18 13:00	596,520	40	496.4	2.7
1/2/18 15:00	1/3/18 14:00	570,301	32	477.0	2.6

<sup>1</sup> SRU SO2 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**

Incident Number: **350366**

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

Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow and SO2), SRU (SO2)  
 Emissions Source(s): North Flare (EPN 20-72, EQT 0035)  
South Flare (EPN 3-77, EQT 0049)  
#2 SRU Incinerator (EPN 1-93, EQT 0019)  
#3 SRU Incinerator (EPN 5-00, EQT 0079)

Date of Event: 1/16/18  
 Date Analysis Completed: 3/1/18

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

**A description of the Discharge:**

On January 16, 2018 at 21:15, the Meraux Refinery (Valero) and much of the surrounding area lost all electrical power. On the evening of January 16, 2018 a winter weather front moved into SE Louisiana that was unusual for the region, with 15-20 mph winds and freezing rain. Several 230kv power lines developed ice on the lines. The ice on the lines, combined with the wind, created ideal conditions for a phenomenon known as power line "galloping". At 21:05, the first of the two 230kV power lines feeding the refinery and surrounding area tripped and locked out. At 21:15, the second one tripped and locked out, resulting in a total loss of power to the Meraux Refinery. Power was not restored to the Meraux Refinery until the next morning at 09:20.

The loss of the electrical power also shutdown many of the instruments used to quantify emissions from the flares and Sulfur Recovery Units (SRU's). Even after the power was restored many of these instruments were damaged by the freezing conditions or required manual start ups by instrument technicians. The flare flowmeters were restored as soon as the power was restored (09:20), but the Total Sulfur analyzers were not online until approximately 17:00. In the period that the instruments were not available, Valero estimates that approximately 5,724 lbs of SO2 and 34.9 pounds of H2S were released from the combustion of >10,000,000 SCF of process upset gas in the flares. The estimates are based on similar upsets where the instruments were available. The SRU's were shutdown completely by the power loss and did not produce quantifiable emissions until late when the burners were re-lit and flow was re-established in the units. The data presented below starts after power was restored and the required instruments were back in service. By 17:00 on 1/17/18, the flaring from the power failure had subsided but flaring continued for several days at essentially baseline rates until the Flare Gas Recovery Unit could be placed in service. Valero used an alternate baseline during this period.

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

	North Flare	#2 SRU	#3 SRU
Date/Time discharge was first identified	1/17/18 9:00	1/19/18 3:15	1/19/18 1:35
Date/Time discharge had ceased	1/23/18 7:00	1/24/18 0:00	1/22/18 3:06
Duration of Discharge (Calculated)	142.0	116.8	73.5 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 the maximum extent possible, given that no electrical power was available, 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? No (Yes/No)  
 Was the flare management plan followed? Yes (Yes/No/N/A)  
 Is the event exempt from a RC/CCA based on the answers above? No (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 this event was the loss of both main electrical feeds to the area due to "galloping" lines. As this event occurred on 3rd-party equipment located several miles from the refinery, there are no corrective actions available to refinery personnel. However, Valero has decided to research options for providing staged temporary power generators during inclement winter weather conditions for boilers and critical instrumentation and controls. This will not prevent a sudden loss of all power from causing an emissions release, but it will help prevent the freeze damage that Valero experienced from causing later releases during unit start ups.

(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 necessary.  
Is corrective action required? Yes (Yes/No)  
1) Evaluate temporary power generators staged for Boilers and the Control Room during winter conditions.  
2) Establish periodic meeting with the electrical power provider to review power reliability.

(7.) (60.108a(c)(6)(ix))  
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) Evaluate temporary power generators staged for Boilers and the Control Room during winter conditions.  
Commencement Date: 3/1/18  
Completed: 10/29/18  
*Valero determined that this was unnecessary as the likelihood of these events simultaneously occurring again was extremely low.*  
2) Establish periodic meeting with the electrical power provider to review power reliability.  
Commencement Date: 3/1/18  
Completed: 3/21/18

**(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
1/17/18 9:00	1/18/18 8:00	5,194,145			
1/17/18 10:00	1/18/18 9:00	5,314,303			
1/17/18 11:00	1/18/18 10:00	4,737,700			
1/17/18 12:00	1/18/18 11:00	4,046,831			
1/17/18 13:00	1/18/18 12:00	3,542,960			
1/17/18 14:00	1/18/18 13:00	3,054,971			
1/17/18 15:00	1/18/18 14:00	2,569,841			
1/17/18 16:00	1/18/18 15:00	2,050,583			
1/17/18 17:00	1/18/18 16:00	1,912,227	399	110.2	0.6
1/17/18 18:00	1/18/18 17:00	1,955,420	370	115.6	0.6
1/17/18 19:00	1/18/18 18:00	1,976,443	398	127.2	0.7
1/17/18 20:00	1/18/18 19:00	1,973,506	440	138.3	0.7
1/17/18 21:00	1/18/18 20:00	1,967,743	512	158.4	0.9
1/17/18 22:00	1/18/18 21:00	1,960,167	548	167.9	0.9
1/17/18 23:00	1/18/18 22:00	1,953,153	573	174.3	0.9
1/18/18 0:00	1/18/18 23:00	1,945,496	592	179.0	1.0
1/18/18 1:00	1/19/18 0:00	1,940,830	610	183.9	1.0
1/18/18 2:00	1/19/18 1:00	1,936,208	629	188.9	1.0
1/18/18 3:00	1/19/18 2:00	1,929,341	653	195.7	1.1
1/18/18 4:00	1/19/18 3:00	1,923,388	677	202.7	1.1
1/18/18 5:00	1/19/18 4:00	1,920,131	699	209.1	1.1
1/18/18 6:00	1/19/18 5:00	1,918,789	729	217.5	1.2
1/18/18 7:00	1/19/18 6:00	1,907,767	753	224.1	1.2
1/18/18 8:00	1/19/18 7:00	1,900,551	776	230.3	1.2
1/18/18 9:00	1/19/18 8:00	1,907,054	845	253.3	1.4
1/18/18 10:00	1/19/18 9:00	1,848,026	904	270.5	1.5
1/18/18 11:00	1/19/18 10:00	1,823,686	929	276.5	1.5
1/18/18 12:00	1/19/18 11:00	1,826,859	936	278.9	1.5
1/18/18 13:00	1/19/18 12:00	1,822,655	951	282.8	1.5
1/18/18 14:00	1/19/18 13:00	1,813,481	951	282.1	1.5
1/18/18 15:00	1/19/18 14:00	1,797,976	961	284.1	1.5
1/18/18 16:00	1/19/18 15:00	1,760,799	969	285.2	1.5
1/18/18 17:00 <sup>1</sup>	1/19/18 16:00	67,089	607	174.6	0.9
1/18/18 18:00	1/19/18 17:00	45,966	570	161.3	0.9
1/18/18 19:00	1/19/18 18:00	43,147	521	146.3	0.8
1/18/18 20:00	1/19/18 19:00	42,585	472	132.8	0.7
1/18/18 21:00	1/19/18 20:00	42,180	436	122.1	0.7
1/18/18 22:00	1/19/18 21:00	41,780	416	115.9	0.6
1/18/18 23:00	1/19/18 22:00	42,498	397	110.5	0.6
1/19/18 0:00	1/19/18 23:00	83,648	382	107.7	0.6
1/19/18 1:00	1/20/18 0:00	112,317	371	105.6	0.6
1/19/18 2:00	1/20/18 1:00	121,062	363	103.6	0.6
1/19/18 3:00	1/20/18 2:00	140,302	354	101.2	0.5
1/19/18 4:00	1/20/18 3:00	165,243	345	99.0	0.5
1/19/18 5:00	1/20/18 4:00	181,802	340	97.8	0.5
1/19/18 6:00	1/20/18 5:00	190,925	335	96.0	0.5

<sup>1</sup> Alternate Baseline established.



**(9.) #2 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)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume	SO <sub>2</sub> ppm (24-hr average, flow-weighted) <sup>1</sup>	24-hr cumulative SO <sub>2</sub> above allowable <sup>2</sup>	24-hr cumulative reduced sulfur above allowable
		SCF	ppmv	lbs	lbs as H <sub>2</sub> S
1/22/18 12:00	1/23/18 11:00	133,309	1000	495.4	2.7
1/22/18 13:00	1/23/18 12:00	133,948	1000	505.0	2.7
1/22/18 14:00	1/23/18 13:00	133,558	1000	514.6	2.8
1/22/18 15:00	1/23/18 14:00	132,713	1000	520.3	2.8
1/22/18 16:00	1/23/18 15:00	131,226	1000	521.7	2.8
1/22/18 17:00	1/23/18 16:00	132,689	1000	521.5	2.8
1/22/18 18:00	1/23/18 17:00	132,549	1000	520.8	2.8
1/22/18 19:00	1/23/18 18:00	132,627	1000	520.2	2.8
1/22/18 20:00	1/23/18 19:00	133,228	1000	519.7	2.8
1/22/18 21:00	1/23/18 20:00	129,856	1000	519.0	2.8
1/22/18 22:00	1/23/18 21:00	129,034	1000	518.5	2.8
1/22/18 23:00	1/23/18 22:00	128,937	1000	517.9	2.8
1/23/18 0:00	1/23/18 23:00	129,798	978	516.5	2.8
1/23/18 1:00	1/24/18 0:00	120,020	99	494.8	2.7
1/23/18 2:00	1/24/18 1:00	120,997	70	473.0	2.5

<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.**(10.) #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)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume	SO <sub>2</sub> ppm (24-hr average, flow-weighted) <sup>1</sup>	24-hr cumulative SO <sub>2</sub> above allowable <sup>2</sup>	24-hr cumulative reduced sulfur above allowable
		SCF	ppmv	lbs	lbs as H <sub>2</sub> S
1/20/18 12:00	1/21/18 11:00	228,007	1000	494.2	2.7
1/20/18 13:00	1/21/18 12:00	228,441	1000	522.4	2.8
1/20/18 14:00	1/21/18 13:00	227,456	1000	550.5	3.0
1/20/18 15:00	1/21/18 14:00	252,617	1000	581.6	3.1
1/20/18 16:00	1/21/18 15:00	248,237	1000	612.3	3.3
1/20/18 17:00	1/21/18 16:00	237,833	1000	641.6	3.4
1/20/18 18:00	1/21/18 17:00	251,359	1000	672.0	3.6
1/20/18 19:00	1/21/18 18:00	250,865	1000	698.8	3.8
1/20/18 20:00	1/21/18 19:00	252,252	1000	702.4	3.8
1/20/18 21:00	1/21/18 20:00	252,051	1000	705.3	3.8
1/20/18 22:00	1/21/18 21:00	252,014	1000	708.0	3.8
1/20/18 23:00	1/21/18 22:00	252,955	1000	710.6	3.8
1/21/18 0:00	1/21/18 23:00	253,985	1000	713.2	3.8
1/21/18 1:00	1/22/18 0:00	253,629	1000	715.7	3.8
1/21/18 2:00	1/22/18 1:00	252,259	976	716.7	3.9
1/21/18 3:00	1/22/18 2:00	233,935	452	696.2	3.7
1/21/18 4:00	1/22/18 3:00	238,776	100	665.6	3.6
1/21/18 5:00	1/22/18 4:00	242,787	59	635.6	3.4
1/21/18 6:00	1/22/18 5:00	224,976	47	606.7	3.3
1/21/18 7:00	1/22/18 6:00	224,838	33	577.7	3.1
1/21/18 8:00	1/22/18 7:00	224,366	33	548.7	2.9
1/21/18 9:00	1/22/18 8:00	227,553	28	519.9	2.8
1/21/18 10:00	1/22/18 9:00	231,970	25	491.4	2.6
1/21/18 11:00	1/22/18 10:00	230,615	26	463.1	2.5

<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: 372656*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Update  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): North Flare (EPN 20-72, EQT 0035)

 Date of Event: 6/15/18  
 Date Analysis Completed: 7/26/18

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

**A description of the Discharge:**

On June 14, 2018 at approximately 06:45, while unloading one of the Naphtha Hydrotreater (NHT) compressors in preparation for maintenance, it made an abnormal noise and shutdown. Immediately after this, the remaining compressor also shutdown which required Valero to perform unplanned shutdowns of the NHT and downstream Reformer unit.

A small amount of flaring of Hydrogen rich gas occurred during the unit shutdowns, but the bulk of the gas volume flared began on June 15, 2018 at approximately 09:06 as part of a normal Reformer start up.

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

	<b>North Flare</b>
Date and Time the discharge was first identified	<u>6/15/18 9:06</u>
Date/Time the discharge had ceased	<u>6/15/18 17:30</u>
Duration of Discharge (Calculated)	<u>8.4</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)

Valero has determined the root cause of this incident to be liquids accumulating in the NHT Make-Up Compressor suction line piping. Contributing to this was the fact that prior to this the NHT was operated with the valve supplying offsite vendor Hydrogen open leaving the Make-Up Compressors lightly loaded. When this valve was shut and the compressor that was being shut down was unloaded, the load on the remaining compressor rapidly increased. This dislodged the accumulated liquid into the Make-Up Compressor Suction Drum where it was detected as a high level and automatically shut down both compressors.

(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) Evaluate the piping lay out from the Chloride Treater to the NHT Compressor Make-Up Drum for improvements to prevent liquid accumulation.
- 2) Add a step to the operating procedures to open the drain lines on the Make-Up Compressor Suction Drum prior to increasing load on a compressor.
- 3) Add to the NHT Night Orders a warning not to use the valve supplying offsite vendor Hydrogen unless it is required.

(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) Evaluate the piping lay out from the Chloride Treater to the NHT Compressor Make-Up Drum for improvements to prevent liquid accumulation.

Commencement Date: 7/26/18

Completed: 12/4/18

- 2) Add a step to the operating procedures to open the drain lines on the Make-Up Compressor Suction Drum prior to increasing load on a compressor.

Commencement Date: 7/26/18

Completed: 10/2/18

- 3) Add to the NHT Night Orders a warning not to use the valve supplying offsite vendor Hydrogen unless it is required.

Commencement Date: 7/26/18

Completed: 10/2/18

- 4) Complete the piping lay out changes identified in the previous corrective action.

Commencement Date: 12/4/18

Estimated Completion Date: 6/21/19

**(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
6/14/18 10:00	6/15/18 9:00	409,160	178	11.2	0.1
6/14/18 11:00	6/15/18 10:00	920,821	178	11.9	0.1
6/14/18 12:00	6/15/18 11:00	1,504,335	112	8.4	0.0
6/14/18 13:00	6/15/18 12:00	1,569,958	113	8.4	0.0
6/14/18 14:00	6/15/18 13:00	1,571,770	113	8.4	0.0
6/14/18 15:00	6/15/18 14:00	1,571,770	113	8.4	0.0
6/14/18 16:00	6/15/18 15:00	1,654,807	115	8.9	0.0
6/14/18 17:00	6/15/18 16:00	1,870,248	81	9.0	0.0
6/14/18 18:00	6/15/18 17:00	1,866,092	70	7.7	0.0
6/14/18 19:00	6/15/18 18:00	1,842,613	55	6.3	0.0
6/14/18 20:00	6/15/18 19:00	1,834,844	45	6.0	0.0
6/14/18 21:00	6/15/18 20:00	1,805,169	26	3.7	0.0
6/14/18 22:00	6/15/18 21:00	1,802,890	16	3.6	0.0
6/14/18 23:00	6/15/18 22:00	1,802,890	16	3.6	0.0
6/15/18 0:00	6/15/18 23:00	1,802,890	16	3.6	0.0
6/15/18 1:00	6/16/18 0:00	1,802,890	16	3.6	0.0
6/15/18 2:00	6/16/18 1:00	1,802,884	9	3.6	0.0
6/15/18 3:00	6/16/18 2:00	1,802,884	9	3.6	0.0
6/15/18 4:00	6/16/18 3:00	1,802,884	9	3.6	0.0
6/15/18 5:00	6/16/18 4:00	1,802,884	9	3.6	0.0
6/15/18 6:00	6/16/18 5:00	1,802,758	8	3.6	0.0
6/15/18 7:00	6/16/18 6:00	1,802,758	8	3.6	0.0
6/15/18 8:00	6/16/18 7:00	1,802,737	7	3.6	0.0
6/15/18 9:00	6/16/18 8:00	1,802,670	6	3.6	0.0
6/15/18 10:00	6/16/18 9:00	1,511,218	6	3.0	0.0
6/15/18 11:00	6/16/18 10:00	999,557	5	2.3	0.0
6/15/18 12:00	6/16/18 11:00	400,009	5	1.7	0.0

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

Incident Number: 372839/372889

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

Report: Update  
 Refinery: Valero (Meraux)  
 Incident Type: SRU (SO2)  
 Emissions Source(s): #2 SRU Incinerator (EPN 1-93, EQT 0019)  
#3 SRU Incinerator (EPN 5-00, EQT 0079)

Date of Event: 6/21/18  
 Date Analysis Completed: 8/2/18

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

**A description of the Discharge:**

On June 21, 2018 at approximately 03:00, the #2 Sulfur Recovery Unit (SRU) Incinerator shutdown. Valero quickly reduced the refinery's sulfur production and transferred acid gas to the #3 SRU. The #2 SRU was kept in a hot standby condition while Valero began troubleshooting the #2 SRU Incinerator. While this troubleshooting was in progress, at approximately 08:03, the #2 Tail Gas Treater (TGT) shutdown. The #2 SRU Incinerator was restarted at approximately 13:09, but despite several attempts, Valero could not re-light the #2 TGT Burner until 06:31 on June 23. Excess SO2 emissions continued until the #2 SRU was stabilized at 20:15.

SO2 emissions greater than 500 lbs above allowable in a 24 hour period were released primarily from the #2 SRU after the #2 TGT shutdown, with small contributions from the #3 SRU when acid gas was rapidly transferred from the #2 SRU.

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

	#2 SRU	#3 SRU
Date/Time discharge was first identified	<u>6/21/18 3:37</u>	<u>6/21/18 3:37</u>
Date/Time discharge had ceased	<u>6/23/18 20:15</u>	<u>6/21/18 7:44</u>
Duration of Discharge (Calculated)	<u>64.6</u>	<u>4.1 hrs</u>

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

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

Valero followed its Sulfur Shedding Plan and Operations Procedures to the maximum extent possible to minimize the SO2 emissions from this event.

(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? No (Yes/No)  
 Was the flare management plan followed? Yes (Yes/No/N/A)  
 Is the event exempt from a RC/CCA based on the answers above? No (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 shutdown of the #2 SRU Incinerator was the failure of an air flow transmitter. The loss of the #2 TGT later while the #2 SRU was in hot standby was due to reduced natural gas flow to the #2 TGT Burner causing flame instability and a burner fire-eye trip. The difficulty relighting the #2 TGT Burner was due to inconsistent operation of the pilot gas Maxon valve, pressure surges into the burner when the main burner when the main burner Maxon valve opens causing the flame to be snuffed out and the inability for the field operator to regulate the natural gas supply pressure during the relight sequence.

(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 necessary.**

Is corrective action required? Yes (Yes/No)

- 1) Identify all other transmitters in the SRU's of the same type as the one that failed in this event and develop recommendations for replacement.
- 2) Evaluate setting controller set point limits to ensure that natural gas flow to the #3 TGT Burner does not go below the minimum value that ensures flame stability.
- 3) Evaluate a redesign of the #2 TGT Burner controls to address the issues identified in this investigation.

(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) Identify all other transmitters in the SRU's of the same type as the one that failed in this event and develop recommendations for replacement.

Commencement Date: 8/2/18

Completed Date: 8/30/18

2) Evaluate setting controller set point limits to ensure that natural gas flow to the #3 TGT Burner does not go below the minimum value that ensures flame stability.

Commencement Date: 8/2/18

Completed Date: 9/19/18

3) Evaluate a redesign of the #2 TGT Burner controls to address the issues identified in this investigation.

Commencement Date: 8/2/18

Completed Date: 12/21/18

4) Implement the changes to the #2 TGT Burner controls identified in the previous corrective action.

Commencement Date: 12/21/18

Completed Date: 4/2/19

**(9.) #2 and #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)(vii))
First hour of 24-hr Period	Last hour of 24-hr Period	24-hr cumulative volume	SO2 ppm (24-hr average, flow-weighted) <sup>1</sup>	24-hr cumulative SO2 above allowable <sup>2</sup>	24-hr cumulative reduced sulfur above allowable
		SCF	ppmv	lbs	lbs as H2S
6/20/18 4:00	6/21/18 3:00	555,901	47	0.0	0.0
6/20/18 5:00	6/21/18 4:00	709,837	80	69.4	0.0
6/20/18 6:00	6/21/18 5:00	798,944	102	116.4	0.0
6/20/18 7:00	6/21/18 6:00	881,482	125	167.4	0.0
6/20/18 8:00	6/21/18 7:00	877,082	128	167.4	0.0
6/20/18 9:00	6/21/18 8:00	838,038	132	171.7	0.0
6/20/18 10:00	6/21/18 9:00	823,290	136	181.0	0.1
6/20/18 11:00	6/21/18 10:00	820,818	140	188.3	0.1
6/20/18 12:00	6/21/18 11:00	818,152	151	210.0	0.1
6/20/18 13:00	6/21/18 12:00	816,998	155	215.1	0.2
6/20/18 14:00	6/21/18 13:00	852,071	168	247.0	0.3
6/20/18 15:00	6/21/18 14:00	895,423	187	289.2	0.6
6/20/18 16:00	6/21/18 15:00	883,869	198	328.6	0.8
6/20/18 17:00	6/21/18 16:00	884,025	212	369.8	1.0
6/20/18 18:00	6/21/18 17:00	866,498	225	411.8	1.2
6/20/18 19:00	6/21/18 18:00	864,154	240	454.7	1.5
6/20/18 20:00	6/21/18 19:00	854,776	256	496.1	1.7
6/20/18 21:00	6/21/18 20:00	856,436	273	538.1	1.9
6/20/18 22:00	6/21/18 21:00	872,667	292	583.9	2.1
6/20/18 23:00	6/21/18 22:00	875,738	312	630.5	2.4
6/21/18 0:00	6/21/18 23:00	868,307	330	673.1	2.6
6/21/18 1:00	6/22/18 0:00	854,349	348	714.4	2.8
6/21/18 2:00	6/22/18 1:00	835,780	366	754.7	3.0
6/21/18 3:00	6/22/18 2:00	825,935	382	794.1	3.2
6/21/18 4:00	6/22/18 3:00	815,946	397	831.7	3.4
6/21/18 5:00	6/22/18 4:00	811,116	381	798.8	3.6
6/21/18 6:00	6/22/18 5:00	812,387	373	788.2	3.8
6/21/18 7:00	6/22/18 6:00	811,844	367	773.7	4.0
6/21/18 8:00	6/22/18 7:00	814,662	382	811.9	4.2
6/21/18 9:00	6/22/18 8:00	820,319	392	845.3	4.4
6/21/18 10:00	6/22/18 9:00	828,279	395	873.5	4.6
6/21/18 11:00	6/22/18 10:00	830,330	403	903.8	4.7
6/21/18 12:00	6/22/18 11:00	830,187	404	919.8	4.9
6/21/18 13:00	6/22/18 12:00	829,034	414	952.4	5.1
6/21/18 14:00	6/22/18 13:00	833,310	415	958.1	5.1
6/21/18 15:00	6/22/18 14:00	832,599	420	953.8	5.1
6/21/18 16:00	6/22/18 15:00	834,362	419	952.3	5.1

(9.) #2 and #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	SO2 ppm (24-hr average, flow-weighted) <sup>1</sup>	24-hr cumulative SO2 above allowable <sup>2</sup>	24-hr cumulative reduced sulfur above allowable
		SCF	ppmv	lbs	lbs as H2S
6/21/18 17:00	6/22/18 16:00	841,059	416	949.0	5.1
6/21/18 18:00	6/22/18 17:00	835,918	419	945.0	5.0
6/21/18 19:00	6/22/18 18:00	829,706	418	940.0	5.0
6/21/18 20:00	6/22/18 19:00	825,814	417	936.5	5.0
6/21/18 21:00	6/22/18 20:00	798,580	427	932.6	5.0
6/21/18 22:00	6/22/18 21:00	801,683	417	924.9	4.9
6/21/18 23:00	6/22/18 22:00	829,226	400	904.9	4.9
6/22/18 0:00	6/22/18 23:00	803,727	405	877.0	4.7
6/22/18 1:00	6/23/18 0:00	797,492	394	849.6	4.6
6/22/18 2:00	6/23/18 1:00	795,808	384	823.0	4.4
6/22/18 3:00	6/23/18 2:00	796,168	373	798.1	4.3
6/22/18 4:00	6/23/18 3:00	782,684	333	788.6	4.2
6/22/18 5:00	6/23/18 4:00	775,217	317	777.8	4.2
6/22/18 6:00	6/23/18 5:00	774,364	312	766.9	4.1
6/22/18 7:00	6/23/18 6:00	779,085	317	756.2	4.1
6/22/18 8:00	6/23/18 7:00	786,201	317	743.1	4.0
6/22/18 9:00	6/23/18 8:00	798,093	317	730.9	3.9
6/22/18 10:00	6/23/18 9:00	803,803	314	719.0	3.9
6/22/18 11:00	6/23/18 10:00	809,200	318	707.1	3.8
6/22/18 12:00	6/23/18 11:00	810,642	315	695.1	3.7
6/22/18 13:00	6/23/18 12:00	816,786	314	683.4	3.7
6/22/18 14:00	6/23/18 13:00	834,018	332	672.6	3.6
6/22/18 15:00	6/23/18 14:00	826,973	311	660.6	3.5
6/22/18 16:00	6/23/18 15:00	833,418	307	648.6	3.5
6/22/18 17:00	6/23/18 16:00	836,035	302	636.2	3.4
6/22/18 18:00	6/23/18 17:00	835,939	298	623.6	3.4
6/22/18 19:00	6/23/18 18:00	842,875	289	595.1	3.2
6/22/18 20:00	6/23/18 19:00	850,369	280	573.3	3.0
6/22/18 21:00	6/23/18 20:00	851,209	277	546.4	2.8
6/22/18 22:00	6/23/18 21:00	843,344	282	531.1	2.6
6/22/18 23:00	6/23/18 22:00	775,321	343	504.4	2.4
6/23/18 0:00	6/23/18 23:00	643,419	364	489.8	2.4

<sup>1</sup> SRU SO2 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**

Incident Number: 372988

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

Report: Update  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow and SO2)  
 Emissions Source(s): North Flare (EPN 20-72, EQT 0035)

Date of Event: 6/26/18  
 Date Analysis Completed: 8/9/18

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

**A description of the Discharge:**

On June 26, 2018 at approximately 10:55 AM, the Hydrocracker Unit experienced an automatic safety shutdown following an unplanned trip of a Recycle Gas Compressor (RGC). A controlled depressurization to the North Flare immediately followed causing the release of SO2 emissions greater than 500 lbs and volume greater than 500,000 SCF in a 24 hour period. The gas flared during this depressurization was primarily hydrogen with hydrogen sulfide (H2S) also present in low concentration.

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

**North Flare**

Date/Time discharge was first identified 6/26/18 10:56  
 Date/Time discharge had ceased 6/26/18 16:50  
 Duration of Discharge (Calculated) 5.9 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 the maximum extent possible 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? No (Yes/No)  
 Was the flare management plan followed? Yes (Yes/No/N/A)  
 Is the event exempt from a RC/CCA based on the answers above? No (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 RGC shut down on loss of the inboard and outboard seals after the compressor experienced elevated vibrations. The root cause of this incident was high pH liquid carry over into the compressor which led to mechanical failure of compressor components.

(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 necessary.**

Is corrective action required? Yes (Yes/No)

- 1) Run the Water Wash to the Recycle Gas Scrubber.
- 2) Evaluate installing seals capable of handling high pH material.
- 3) Repair damaged compressor components.
- 4) Evaluate installing a flow meter on the motive steam to the RGC to help troubleshoot and evaluate performance.



(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) Run the Water Wash to the Recycle Gas Scrubber.

Commencement Date: 8/9/18

Completed Date: 8/9/18

2) Evaluate installing seals capable of handling high pH material.

Commencement Date: 8/9/18

Completed Date: 12/12/18

3) Repair damaged compressor components.

Commencement Date: 8/9/18

Completed Date: 8/9/18

4) Evaluate installing a flow meter on the motive steam to the RGC to help troubleshoot and evaluate performance.

Commencement Date: 8/9/18

Completed Date: 12/11/18

5) Install a flow meter on the motive steam to the RGC.

Commencement Date: 12/11/18

Completed Date: 7/2/19

**(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
6/25/18 11:00	6/26/18 10:00	59,173	83	19.4	0.1
6/25/18 12:00	6/26/18 11:00	2,682,155	135	560.3	3.0
6/25/18 13:00	6/26/18 12:00	4,101,734	139	579.3	3.1
6/25/18 14:00	6/26/18 13:00	4,568,472	154	607.4	3.3
6/25/18 15:00	6/26/18 14:00	4,664,301	204	626.5	3.4
6/25/18 16:00	6/26/18 15:00	4,753,300	233	636.7	3.4
6/25/18 17:00	6/26/18 16:00	4,778,658	252	638.5	3.4
6/25/18 18:00	6/26/18 17:00	4,778,658	252	638.5	3.4
6/25/18 19:00	6/26/18 18:00	4,778,658	252	638.5	3.4
6/25/18 20:00	6/26/18 19:00	4,778,658	252	638.5	3.4
6/25/18 21:00	6/26/18 20:00	4,778,658	252	638.5	3.4
6/25/18 22:00	6/26/18 21:00	4,778,658	252	638.5	3.4
6/25/18 23:00	6/26/18 22:00	4,778,658	252	638.5	3.4
6/26/18 0:00	6/26/18 23:00	4,778,658	252	638.5	3.4
6/26/18 1:00	6/27/18 0:00	4,801,300	299	642.8	3.5
6/26/18 2:00	6/27/18 1:00	4,801,300	299	642.8	3.5
6/26/18 3:00	6/27/18 2:00	4,801,300	299	642.8	3.5
6/26/18 4:00	6/27/18 3:00	4,801,300	299	642.8	3.5
6/26/18 5:00	6/27/18 4:00	4,801,300	299	642.8	3.5
6/26/18 6:00	6/27/18 5:00	4,801,300	299	642.8	3.5
6/26/18 7:00	6/27/18 6:00	4,801,300	299	642.8	3.5
6/26/18 8:00	6/27/18 7:00	4,801,300	299	642.8	3.5
6/26/18 9:00	6/27/18 8:00	4,801,300	299	642.8	3.5
6/26/18 10:00	6/27/18 9:00	4,801,300	299	642.8	3.5
6/26/18 11:00	6/27/18 10:00	4,742,126	216	623.3	3.3
6/26/18 12:00	6/27/18 11:00	2,119,145	164	82.5	0.4
6/26/18 13:00	6/27/18 12:00	699,566	160	63.5	0.3
6/26/18 14:00	6/27/18 13:00	232,842	154	35.4	0.2

**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: N/A*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): South Flare (EPN 3-77, EQT 0049)

 Date of Event: 11/11/18  
 Date Analysis Completed: N/A
**(1.)** (60.108a(c)(6)(i))**A description of the Discharge:***These discharges were a series of Nitrogen pulse purges conducted over several days.***(2.)** (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))
 Date and Time the discharge was first identified 11/11/18 8:23  
 Date/Time the discharge had ceased 11/11/18 16:33  
 Duration of Discharge (Calculated) 8.2 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. Additional purges and Nitrogen volume was required to comply with the maintenance vent provisions of 40 CFR 63.643 as well as additional supplemental natural gas required to comply with the Net Heating Value of the Combustion Zone limit (> 270 Btu/scf) of 40 CFR 63.670, which will become effective on January 30, 2019.***(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>Yes</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>Yes</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)  
 N/A
**(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? No (Yes/No)  
 N/A
**(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.**

N/A

(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
11/10/18 8:00	11/11/18 7:00	4,766	12	0.2	0.0
11/10/18 9:00	11/11/18 8:00	53,665	56	0.7	0.0
11/10/18 10:00	11/11/18 9:00	128,650	65	1.5	0.0
11/10/18 11:00	11/11/18 10:00	205,157	88	2.7	0.0
11/10/18 12:00	11/11/18 11:00	282,248	77	3.7	0.0
11/10/18 13:00	11/11/18 12:00	362,560	67	4.7	0.0
11/10/18 14:00	11/11/18 13:00	440,513	67	5.6	0.0
11/10/18 15:00	11/11/18 14:00	518,488	64	6.4	0.0
11/10/18 16:00	11/11/18 15:00	592,384	66	7.3	0.0
11/10/18 17:00	11/11/18 16:00	626,769	69	7.7	0.0
11/10/18 18:00	11/11/18 17:00	626,696	12	7.7	0.0
11/10/18 19:00	11/11/18 18:00	626,623	12	7.7	0.0
11/10/18 20:00	11/11/18 19:00	626,564	13	7.7	0.0
11/10/18 21:00	11/11/18 20:00	626,478	13	7.7	0.0
11/10/18 22:00	11/11/18 21:00	626,395	13	7.7	0.0
11/10/18 23:00	11/11/18 22:00	626,319	13	7.7	0.0
11/11/18 0:00	11/11/18 23:00	626,250	13	7.7	0.0
11/11/18 1:00	11/12/18 0:00	626,166	16	7.7	0.0
11/11/18 2:00	11/12/18 1:00	626,083	13	7.7	0.0
11/11/18 3:00	11/12/18 2:00	625,987	11	7.7	0.0
11/11/18 4:00	11/12/18 3:00	625,885	11	7.7	0.0
11/11/18 5:00	11/12/18 4:00	625,793	12	7.7	0.0
11/11/18 6:00	11/12/18 5:00	625,713	15	7.7	0.0
11/11/18 7:00	11/12/18 6:00	625,642	14	7.7	0.0
11/11/18 8:00	11/12/18 7:00	625,572	13	7.7	0.0
11/11/18 9:00	11/12/18 8:00	576,601	11	7.3	0.0
11/11/18 10:00	11/12/18 9:00	501,656	15	6.4	0.0
11/11/18 11:00	11/12/18 10:00	740,582	66	8.7	0.0

Note: Another event requiring a Root Cause and Corrective Action Analysis began shortly before the last 24-hr period ended.

**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: 386213*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Initial  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): North Flare (EPN 20-72, EQT 0035)

 Date of Event: 11/12/18  
 Date Analysis Completed: 12/27/18

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

**A description of the Discharge:**

On November 12, 2018 at approximately 07:30, the Make Up Gas Compressor "B" (MUG B) in the Hydrocracker Unit tripped offline on high temperature while reducing compressor loading from 90% to 50%. Valero began troubleshooting to determine the cause of the trip which included multiple attempts to re-start and load the compressor. On the last attempt at approximately 10:34, the 1st stage pressure control valve opened and sent make up Hydrogen to the flare. Make up Hydrogen is high purity Hydrogen with little to no H2S. The position of this 1st stage pressure control valve was incorrectly displayed as closed in the control room which delayed the operators from responding to reduce or stop the flaring.

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

 Date and Time the discharge was first identified 11/12/18 10:35  
 Date/Time the discharge had ceased 11/12/18 12:03  
 Duration of Discharge (Calculated) 1.5 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. Once Valero was aware that the valve position indication was incorrect, the flaring was stopped.

(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? No (Yes/No)  
 Was the flare management plan followed? Yes (Yes/No/N/A)  
 Is the event exempt from a RC/CCA based on the answers above? No (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)

Valero has determined the root causes of the high temperature trip of MUG N was delamination of the 2nd stage valve plate material and wrong material in the 3rd stage valves. The incorrect valve position was caused by a malfunctioning positioner on the 1st stage pressure control valve.

(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 Third Party Failure Analysis and issue recommended changes to valves material.
- 2) Troubleshoot and repair 1st stage pressure control valve positioner.
- 3) Install feedback position indication on the 1st stage pressure control valve.

(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 Third Party Failure Analysis and issue recommended changes to valves material.

Commencement Date: 12/27/18

Estimated Completion Date: 3/12/19

2) Troubleshoot and repair 1st stage pressure control valve positioner.

Commencement Date: 12/27/18

Estimated Completion Date: 2/12/19

3) Install feedback position indication on the 1st stage pressure control valve.

Commencement Date: 12/27/18

Completed Date: 1/8/19

(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.

First hour of 24-hr Period	Last hour of 24-hr Period	(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
		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
11/11/18 10:00	11/12/18 9:00	501,656	15	6.4	0.0
11/11/18 11:00	11/12/18 10:00	740,582	66	8.7	0.0
11/11/18 12:00	11/12/18 11:00	1,687,256	23	11.6	0.1
11/11/18 13:00	11/12/18 12:00	1,608,614	7	10.6	0.1
11/11/18 14:00	11/12/18 13:00	1,530,504	6	9.7	0.1
11/11/18 15:00	11/12/18 14:00	1,453,329	23	8.9	0.0
11/11/18 16:00	11/12/18 15:00	1,379,141	9	8.0	0.0
11/11/18 17:00	11/12/18 16:00	1,344,535	9	7.6	0.0
11/11/18 18:00	11/12/18 17:00	1,344,455	10	7.6	0.0
11/11/18 19:00	11/12/18 18:00	1,344,372	9	7.6	0.0
11/11/18 20:00	11/12/18 19:00	1,344,286	10	7.6	0.0
11/11/18 21:00	11/12/18 20:00	1,344,213	12	7.6	0.0
11/11/18 22:00	11/12/18 21:00	1,344,138	13	7.6	0.0
11/11/18 23:00	11/12/18 22:00	1,344,056	11	7.6	0.0
11/12/18 0:00	11/12/18 23:00	1,343,961	10	7.6	0.0
11/12/18 1:00	11/13/18 0:00	1,343,882	10	7.6	0.0
11/12/18 2:00	11/13/18 1:00	1,343,802	12	7.6	0.0
11/12/18 3:00	11/13/18 2:00	1,373,906	131	8.3	0.0
11/12/18 4:00	11/13/18 3:00	1,470,027	111	10.1	0.1
11/12/18 5:00	11/13/18 4:00	1,549,718	119	11.8	0.1
11/12/18 6:00	11/13/18 5:00	1,635,963	120	13.6	0.1
11/12/18 7:00	11/13/18 6:00	1,710,250	93	14.8	0.1
11/12/18 8:00	11/13/18 7:00	1,783,402	110	16.2	0.1
11/12/18 9:00	11/13/18 8:00	1,859,382	93	17.4	0.1
11/12/18 10:00	11/13/18 9:00	1,907,682	111	18.4	0.1
11/12/18 11:00	11/13/18 10:00	1,592,143	12	14.9	0.1
11/12/18 12:00	11/13/18 11:00	568,266	14	11.0	0.1
11/12/18 13:00	11/13/18 12:00	566,489	15	11.0	0.1
11/12/18 14:00	1/0/00 0:00	566,442	0	11.0	0.1
11/12/18 15:00	1/0/00 0:00	566,442	0	11.0	0.1
11/12/18 16:00	1/0/00 0:00	566,442	0	11.0	0.1

Note: Flaring from the planned shutdown of an LPG Sphere began at approximately 02:40 on 11/13/18.

**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: N/A*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): South Flare (EPN 3-77, EQT 0049)

 Date of Event: 11/13/18  
 Date Analysis Completed: N/A
**(1.)** (60.108a(c)(6)(i))**A description of the Discharge:***These discharges were a series of Nitrogen pulse purges conducted over several days.***(2.)** (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))
 Date and Time the discharge was first identified 11/13/18 2:45  
 Date/Time the discharge had ceased 11/13/18 9:36  
 Duration of Discharge (Calculated) 6.8 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. Additional purges and Nitrogen volume was required to comply with the maintenance vent provisions of 40 CFR 63.643 as well as additional supplemental natural gas required to comply with the Net Heating Value of the Combustion Zone limit (> 270 Btu/scf) of 40 CFR 63.670, which will become effective on January 30, 2019.***(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>Yes</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>Yes</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)  
 N/A
**(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?** No (Yes/No)  
 N/A
**(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.**

N/A

(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
11/12/18 2:00	11/13/18 1:00	1,343,802	12	7.6	0.0
11/12/18 3:00	11/13/18 2:00	1,373,906	131	8.3	0.0
11/12/18 4:00	11/13/18 3:00	1,470,027	111	10.1	0.1
11/12/18 5:00	11/13/18 4:00	1,549,718	119	11.8	0.1
11/12/18 6:00	11/13/18 5:00	1,635,963	120	13.6	0.1
11/12/18 7:00	11/13/18 6:00	1,710,250	93	14.8	0.1
11/12/18 8:00	11/13/18 7:00	1,783,402	110	16.2	0.1
11/12/18 9:00	11/13/18 8:00	1,859,382	93	17.4	0.1
11/12/18 10:00	11/13/18 9:00	1,907,682	111	18.4	0.1
11/12/18 11:00	11/13/18 10:00	1,592,143	12	14.9	0.1
11/12/18 12:00	11/13/18 11:00	568,266	14	11.0	0.1
11/12/18 13:00	11/13/18 12:00	566,489	15	11.0	0.1
11/12/18 14:00	11/13/18 13:00	566,464	16	11.0	0.1
11/12/18 15:00	11/13/18 14:00	565,372	16	11.0	0.1
11/12/18 16:00	11/13/18 15:00	565,353	13	11.0	0.1
11/12/18 17:00	11/13/18 16:00	565,349	10	11.0	0.1
11/12/18 18:00	11/13/18 17:00	565,352	10	11.0	0.1
11/12/18 19:00	11/13/18 18:00	565,335	10	11.0	0.1
11/12/18 20:00	11/13/18 19:00	565,318	10	11.0	0.1
11/12/18 21:00	11/13/18 20:00	565,314	10	11.0	0.1
11/12/18 22:00	11/13/18 21:00	565,304	10	11.0	0.1
11/12/18 23:00	11/13/18 22:00	565,301	11	11.0	0.1
11/13/18 0:00	11/13/18 23:00	565,298	12	11.0	0.1
11/13/18 1:00	11/14/18 0:00	565,275	11	11.0	0.1
11/13/18 2:00	11/14/18 1:00	566,087	19	11.0	0.1
11/13/18 3:00	11/14/18 2:00	535,878	9	10.3	0.1
11/13/18 4:00	11/14/18 3:00	439,659	11	8.5	0.0

**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: N/A*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): South Flare (EPN 3-77, EQT 0049)

 Date of Event: 11/14/18  
 Date Analysis Completed: N/A

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

**A description of the Discharge:***These discharges were a series of Nitrogen pulse purges conducted over several days.*

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

 Date and Time the discharge was first identified 11/14/18 14:57  
 Date/Time the discharge had ceased 11/16/18 3:34  
 Duration of Discharge (Calculated) 36.6 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. Additional purges and Nitrogen volume was required to comply with the maintenance vent provisions of 40 CFR 63.643 as well as additional supplemental natural gas required to comply with the Net Heating Value of the Combustion Zone limit (> 270 Btu/scf) of 40 CFR 63.670, which will become effective on January 30, 2019.*

(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>Yes</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>Yes</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)  
 N/A

(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? No (Yes/No)  
 N/A

(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.**

N/A



(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.

First hour of 24-hr Period	Last hour of 24-hr Period	(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
		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
11/13/18 14:00	11/14/18 13:00	1,166	9	0.2	0.0
11/13/18 15:00	11/14/18 14:00	4,304	34	0.2	0.0
11/13/18 16:00	11/14/18 15:00	96,851	89	1.7	0.0
11/13/18 17:00	11/14/18 16:00	169,506	84	2.7	0.0
11/13/18 18:00	11/14/18 17:00	273,438	86	4.2	0.0
11/13/18 19:00	11/14/18 18:00	291,582	60	4.5	0.0
11/13/18 20:00	11/14/18 19:00	295,611	15	4.5	0.0
11/13/18 21:00	11/14/18 20:00	383,783	85	5.8	0.0
11/13/18 22:00	11/14/18 21:00	477,503	82	7.1	0.0
11/13/18 23:00	11/14/18 22:00	867,443	38	9.5	0.1
11/14/18 0:00	11/14/18 23:00	961,339	69	10.7	0.1
11/14/18 1:00	11/15/18 0:00	1,030,784	54	11.3	0.1
11/14/18 2:00	11/15/18 1:00	1,115,024	71	12.3	0.1
11/14/18 3:00	11/15/18 2:00	1,206,247	78	13.6	0.1
11/14/18 4:00	11/15/18 3:00	1,286,498	77	14.6	0.1
11/14/18 5:00	11/15/18 4:00	1,348,688	76	15.5	0.1
11/14/18 6:00	11/15/18 5:00	1,349,147	15	15.5	0.1
11/14/18 7:00	11/15/18 6:00	1,349,343	11	15.5	0.1
11/14/18 8:00	11/15/18 7:00	1,420,634	106	16.8	0.1
11/14/18 9:00	11/15/18 8:00	1,516,226	96	18.4	0.1
11/14/18 10:00	11/15/18 9:00	1,516,427	5	18.4	0.1
11/14/18 11:00	11/15/18 10:00	1,516,573	4	18.4	0.1
11/14/18 12:00	11/15/18 11:00	1,516,704	6	18.4	0.1
11/14/18 13:00	11/15/18 12:00	1,516,844	6	18.4	0.1
11/14/18 14:00	11/15/18 13:00	1,516,974	8	18.3	0.1
11/14/18 15:00	11/15/18 14:00	1,555,071	107	19.1	0.1
11/14/18 16:00	11/15/18 15:00	1,668,001	111	21.5	0.1
11/14/18 17:00	11/15/18 16:00	1,603,970	65	20.6	0.1
11/14/18 18:00	11/15/18 17:00	1,500,148	7	19.1	0.1
11/14/18 19:00	11/15/18 18:00	1,482,144	6	18.9	0.1
11/14/18 20:00	11/15/18 19:00	1,478,253	8	18.8	0.1
11/14/18 21:00	11/15/18 20:00	1,390,215	9	17.6	0.1
11/14/18 22:00	11/15/18 21:00	1,296,633	13	16.2	0.1
11/14/18 23:00	11/15/18 22:00	906,832	14	13.8	0.1
11/15/18 0:00	11/15/18 23:00	814,473	31	12.7	0.1
11/15/18 1:00	11/16/18 0:00	831,383	65	13.0	0.1
11/15/18 2:00	11/16/18 1:00	829,550	57	12.8	0.1
11/15/18 3:00	11/16/18 2:00	819,450	58	12.4	0.1
11/15/18 4:00	11/16/18 3:00	809,704	74	12.2	0.1
11/15/18 5:00	11/16/18 4:00	747,691	9	11.4	0.1
11/15/18 6:00	11/16/18 5:00	747,399	9	11.4	0.1
11/15/18 7:00	11/16/18 6:00	747,369	9	11.4	0.1
11/15/18 8:00	11/16/18 7:00	676,231	10	10.1	0.1
11/15/18 9:00	11/16/18 8:00	580,775	8	8.5	0.0
11/15/18 10:00	11/16/18 9:00	580,702	10	8.5	0.0
11/15/18 11:00	11/16/18 10:00	580,661	17	8.5	0.0
11/15/18 12:00	11/16/18 11:00	580,618	11	8.5	0.0
11/15/18 13:00	11/16/18 12:00	580,567	11	8.5	0.0

(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
11/15/18 14:00	11/16/18 13:00	580,529	13	8.5	0.0
11/15/18 15:00	11/16/18 14:00	539,362	12	7.7	0.0
11/15/18 16:00	11/16/18 15:00	333,962	10	3.9	0.0

**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: 386425*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Initial  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow and SO2)  
 Emissions Source(s): North Flare (EPN 20-72, EQT 0035)

 Date of Event: 11/18/18  
 Date Analysis Completed: 1/10/19
**(1.)** (60.108a(c)(6)(i))**A description of the Discharge:**

*On November 18, 2018 at approximately 19:40, the Hydrocracker Unit experienced an automatic safety shutdown following an unplanned trip of the Recycle Gas Compressor (RGC). A controlled depressurization to the North Flare immediately followed causing the release of SO2 emissions greater than 500 lbs and volume greater than 500,000 SCF in a 24 hour period. The gas flared during this depressurization was primarily hydrogen with hydrogen sulfide (H2S) also present in low concentration.*

**(2.)** (60.108a(c)(6)(ii) and (60.108a(c)(6)(ix))
 Date and Time the discharge was first identified 11/18/18 19:40  
 Date/Time the discharge had ceased 11/19/18 15:50  
 Duration of Discharge (Calculated) 20.2 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 the maximum extent possible 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)

*Valero has determined the root causes of the shutdown of the RGC was that it tripped on low lube oil pressure caused by an over-speed trip of the steam turbine driven lube oil pump combined with a slow or inadequate response of the standby electric lube oil pump. Due to the limited instrumentation available on the RGC lube oil system, Valero could not determine the exact cause of the over-speed of the turbine driven lube oil pump. However, a malfunctioning or "sticking" pressure control valve in the lube oil system was identified as the likely cause of the over-speed, as well as, a contributor to the delayed response of the electric lube oil pump. Valero has also determined that the design of the RGC lube oil control system was unnecessarily fast acting in initiating a RGC trip and slower acting in initiating the auto start of the electric lube oil pump.*

(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) *Add a time delay to the RGC low lube oil pressure trip to allow additional time for the electric lube oil pump to restore pressure and stabilize the lube oil system.*
- 2) *Replace the pressure control valve that is suspected of "sticking".*
- 3) *Upgrade the pressure switches that provide the auto start signal to the electric lube oil pump to faster acting pressure transmitters.*

(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) *Add a time delay to the RGC low lube oil pressure trip to allow additional time for the electric lube oil pump to restore pressure and stabilize the lube oil system.*

*Commencement Date: 1/10/19*

*Completed Date: 1/16/19*

- 2) *Replace the pressure control valve that is suspected of "sticking".*

*Commencement Date: 1/10/19*

*Estimated Completion Date: 12/31/20*

- 3) *Upgrade the pressure switches that provide the auto start signal to the electric lube oil pump to faster acting pressure transmitters.*

*Commencement Date: 1/10/19*

*Estimated Completion Date: 12/31/20*

<b>(8.)</b>					
<b>The measured or calculated cumulative quantity of gas discharged over the discharge duration.</b>					
<i>Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.</i>					
		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
<b>First hour of 24-hr Period</b>	<b>Last hour of 24-hr Period</b>	<b>24-hr cumulative volume of flared gas above Baseline</b>	<b>TRS or H2S ppm (24-hr average, flow-weighted)</b>	<b>24-hr cumulative SO2</b>	<b>24-hr cumulative reduced sulfur</b>
		SCF	ppmv	lbs	lbs as H2S
11/17/18 19:00	11/18/18 18:00	2,775	8	0.2	0.0
11/17/18 20:00	11/18/18 19:00	1,021,441	4768	803.7	4.3
11/17/18 21:00	11/18/18 20:00	2,023,462	654	912.1	4.9
11/17/18 22:00	11/18/18 21:00	2,723,619	23	914.8	4.9
11/17/18 23:00	11/18/18 22:00	3,542,182	16	916.9	4.9
11/18/18 0:00	11/18/18 23:00	3,599,467	342	920.4	4.9
11/18/18 1:00	11/19/18 0:00	3,599,437	40	920.4	4.9
11/18/18 2:00	11/19/18 1:00	3,599,386	26	920.4	4.9
11/18/18 3:00	11/19/18 2:00	3,863,424	711	951.9	5.1
11/18/18 4:00	11/19/18 3:00	4,145,070	339	967.9	5.2
11/18/18 5:00	11/19/18 4:00	4,419,430	65	970.9	5.2
11/18/18 6:00	11/19/18 5:00	4,682,013	346	986.1	5.3
11/18/18 7:00	11/19/18 6:00	4,754,221	5860	1060.2	5.7
11/18/18 8:00	11/19/18 7:00	4,838,569	5819	1145.5	6.2
11/18/18 9:00	11/19/18 8:00	5,276,528	13	1146.4	6.2
11/18/18 10:00	11/19/18 9:00	5,769,416	25	1148.4	6.2
11/18/18 11:00	11/19/18 10:00	6,225,387	22	1150.1	6.2
11/18/18 12:00	11/19/18 11:00	6,784,859	20	1151.9	6.2
11/18/18 13:00	11/19/18 12:00	7,340,616	11	1152.9	6.2
11/18/18 14:00	11/19/18 13:00	7,772,218	10	1153.7	6.2
11/18/18 15:00	11/19/18 14:00	8,215,771	9	1154.4	6.2
11/18/18 16:00	11/19/18 15:00	8,416,196	9	1154.7	6.2
11/18/18 17:00	11/19/18 16:00	8,417,389	12	1154.7	6.2
11/18/18 18:00	11/19/18 17:00	8,417,965	12	1154.7	6.2
11/18/18 19:00	11/19/18 18:00	8,418,561	14	1154.7	6.2
11/18/18 20:00	11/19/18 19:00	7,400,468	16	351.1	1.9
11/18/18 21:00	11/19/18 20:00	6,399,004	16	242.7	1.3
11/18/18 22:00	11/19/18 21:00	5,699,406	11	240.1	1.3
11/18/18 23:00	11/19/18 22:00	4,881,411	11	237.9	1.3
11/19/18 0:00	11/19/18 23:00	4,824,703	13	234.5	1.3
11/19/18 1:00	11/20/18 0:00	4,825,300	10	234.4	1.3
11/19/18 2:00	11/20/18 1:00	4,825,914	10	234.4	1.3
11/19/18 3:00	11/20/18 2:00	4,562,447	9	203.0	1.1
11/19/18 4:00	11/20/18 3:00	4,281,373	10	187.0	1.0
11/19/18 5:00	11/20/18 4:00	4,007,573	11	184.0	1.0
11/19/18 6:00	11/20/18 5:00	3,745,560	13	168.8	0.9
11/19/18 7:00	11/20/18 6:00	3,673,913	12	94.6	0.5
11/19/18 8:00	11/20/18 7:00	3,590,131	11	9.4	0.1
11/19/18 9:00	11/20/18 8:00	3,152,747	11	8.5	0.0
11/19/18 10:00	11/20/18 9:00	2,660,458	9	6.4	0.0
11/19/18 11:00	11/20/18 10:00	2,205,095	8	4.8	0.0
11/19/18 12:00	11/20/18 11:00	1,646,223	10	3.0	0.0
11/19/18 13:00	11/20/18 12:00	1,091,059	12	1.9	0.0
11/19/18 14:00	11/20/18 13:00	660,052	12	1.2	0.0
11/19/18 15:00	11/20/18 14:00	217,100	12	0.5	0.0

**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: N/A*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): South Flare (EPN 3-77, EQT 0049)

 Date of Event: 11/22/18  
 Date Analysis Completed: N/A

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

**A description of the Discharge:***These discharges were a series of Nitrogen pulse purges conducted over several days.*

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

 Date and Time the discharge was first identified 11/22/18 15:38  
 Date/Time the discharge had ceased 11/25/18 16:16  
 Duration of Discharge (Calculated) 72.6 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. Additional purges and Nitrogen volume was required to comply with the maintenance vent provisions of 40 CFR 63.643 as well as additional supplemental natural gas required to comply with the Net Heating Value of the Combustion Zone limit (> 270 Btu/scf) of 40 CFR 63.670, which will become effective on January 30, 2019.*

(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? Yes (Yes/No)  
 Was the flare management plan followed? Yes (Yes/No/N/A)  
 Is the event exempt from a RC/CCA based on the answers above? Yes (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)  
 N/A

(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? No (Yes/No)

N/A

(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.**

N/A

(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
11/21/18 15:00	11/22/18 14:00	15,789	8	0.1	0.0
11/21/18 16:00	11/22/18 15:00	32,680	65	0.4	0.0
11/21/18 17:00	11/22/18 16:00	102,449	77	1.3	0.0
11/21/18 18:00	11/22/18 17:00	168,734	84	2.3	0.0
11/21/18 19:00	11/22/18 18:00	239,986	92	3.4	0.0
11/21/18 20:00	11/22/18 19:00	315,898	93	4.7	0.0
11/21/18 21:00	11/22/18 20:00	390,567	85	5.8	0.0
11/21/18 22:00	11/22/18 21:00	462,514	79	6.8	0.0
11/21/18 23:00	11/22/18 22:00	535,811	78	7.8	0.0
11/22/18 0:00	11/22/18 23:00	601,257	75	8.7	0.0
11/22/18 1:00	11/23/18 0:00	679,223	78	9.7	0.1
11/22/18 2:00	11/23/18 1:00	767,870	87	11.1	0.1
11/22/18 3:00	11/23/18 2:00	846,056	90	12.3	0.1
11/22/18 4:00	11/23/18 3:00	947,725	96	14.0	0.1
11/22/18 5:00	11/23/18 4:00	950,991	17	14.0	0.1
11/22/18 6:00	11/23/18 5:00	953,853	11	14.0	0.1
11/22/18 7:00	11/23/18 6:00	953,774	11	14.0	0.1
11/22/18 8:00	11/23/18 7:00	953,695	14	14.1	0.1
11/22/18 9:00	11/23/18 8:00	953,615	14	14.1	0.1
11/22/18 10:00	11/23/18 9:00	953,541	14	14.1	0.1
11/22/18 11:00	11/23/18 10:00	953,447	14	14.1	0.1
11/22/18 12:00	11/23/18 11:00	953,344	15	14.1	0.1
11/22/18 13:00	11/23/18 12:00	953,229	15	14.1	0.1
11/22/18 14:00	11/23/18 13:00	953,135	14	14.1	0.1
11/22/18 15:00	11/23/18 14:00	953,067	13	14.1	0.1
11/22/18 16:00	11/23/18 15:00	936,101	13	13.9	0.1
11/22/18 17:00	11/23/18 16:00	866,256	14	12.9	0.1
11/22/18 18:00	11/23/18 17:00	799,874	14	12.0	0.1
11/22/18 19:00	11/23/18 18:00	728,508	15	10.8	0.1
11/22/18 20:00	11/23/18 19:00	652,475	18	9.6	0.1
11/22/18 21:00	11/23/18 20:00	578,541	21	8.5	0.0
11/22/18 22:00	11/23/18 21:00	520,325	61	7.7	0.0
11/22/18 23:00	11/23/18 22:00	527,757	109	8.2	0.0
11/23/18 0:00	11/23/18 23:00	529,515	112	8.7	0.0
11/23/18 1:00	11/24/18 0:00	527,270	113	9.1	0.0
11/23/18 2:00	11/24/18 1:00	508,552	114	9.1	0.0
11/23/18 3:00	11/24/18 2:00	501,845	107	9.3	0.0
11/23/18 4:00	11/24/18 3:00	470,698	105	8.9	0.0
11/23/18 5:00	11/24/18 4:00	539,776	104	10.2	0.1
11/23/18 6:00	11/24/18 5:00	592,174	103	11.2	0.1
11/23/18 7:00	11/24/18 6:00	673,398	105	12.7	0.1
11/23/18 8:00	11/24/18 7:00	774,039	119	14.7	0.1
11/23/18 9:00	11/24/18 8:00	846,390	122	16.3	0.1
11/23/18 10:00	11/24/18 9:00	918,302	133	18.0	0.1
11/23/18 11:00	11/24/18 10:00	974,531	121	19.2	0.1
11/23/18 12:00	11/24/18 11:00	1,032,405	105	20.2	0.1
11/23/18 13:00	11/24/18 12:00	1,088,122	98	21.2	0.1
11/23/18 14:00	11/24/18 13:00	1,149,446	91	22.2	0.1

(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
11/23/18 15:00	11/24/18 14:00	1,208,743	85	23.1	0.1
11/23/18 16:00	11/24/18 15:00	1,262,414	97	24.0	0.1
11/23/18 17:00	11/24/18 16:00	1,262,458	19	24.0	0.1
11/23/18 18:00	11/24/18 17:00	1,262,831	18	24.0	0.1
11/23/18 19:00	11/24/18 18:00	1,263,240	17	24.0	0.1
11/23/18 20:00	11/24/18 19:00	1,263,647	17	24.0	0.1
11/23/18 21:00	11/24/18 20:00	1,263,213	17	24.0	0.1
11/23/18 22:00	11/24/18 21:00	1,249,977	17	23.8	0.1
11/23/18 23:00	11/24/18 22:00	1,170,005	17	22.3	0.1
11/24/18 0:00	11/24/18 23:00	1,103,590	17	21.0	0.1
11/24/18 1:00	11/25/18 0:00	1,028,689	17	19.5	0.1
11/24/18 2:00	11/25/18 1:00	959,571	17	18.1	0.1
11/24/18 3:00	11/25/18 2:00	888,915	18	16.8	0.1
11/24/18 4:00	11/25/18 3:00	819,207	18	15.5	0.1
11/24/18 5:00	11/25/18 4:00	774,478	119	14.8	0.1
11/24/18 6:00	11/25/18 5:00	795,492	139	15.7	0.1
11/24/18 7:00	11/25/18 6:00	799,896	141	16.3	0.1
11/24/18 8:00	11/25/18 7:00	782,674	152	16.4	0.1
11/24/18 9:00	11/25/18 8:00	791,815	81	16.0	0.1
11/24/18 10:00	11/25/18 9:00	811,521	88	15.7	0.1
11/24/18 11:00	11/25/18 10:00	832,313	91	15.8	0.1
11/24/18 12:00	11/25/18 11:00	836,382	97	15.7	0.1
11/24/18 13:00	11/25/18 12:00	816,359	101	15.4	0.1
11/24/18 14:00	11/25/18 13:00	760,526	12	14.5	0.1
11/24/18 15:00	11/25/18 14:00	709,067	7	13.6	0.1
11/24/18 16:00	11/25/18 15:00	730,434	19	12.9	0.1
11/24/18 17:00	11/25/18 16:00	860,237	9	13.1	0.1
11/24/18 18:00	11/25/18 17:00	860,522	7	13.1	0.1
11/24/18 19:00	11/25/18 18:00	860,753	8	13.1	0.1
11/24/18 20:00	11/25/18 19:00	861,142	12	13.0	0.1
11/24/18 21:00	11/25/18 20:00	861,430	10	13.0	0.1
11/24/18 22:00	11/25/18 21:00	861,524	12	13.0	0.1
11/24/18 23:00	11/25/18 22:00	861,391	15	13.0	0.1
11/25/18 0:00	11/25/18 23:00	861,307	15	13.0	0.1
11/25/18 1:00	11/26/18 0:00	861,243	18	13.0	0.1
11/25/18 2:00	11/26/18 1:00	861,229	16	13.0	0.1
11/25/18 3:00	11/26/18 2:00	861,238	13	13.0	0.1
11/25/18 4:00	11/26/18 3:00	861,291	15	13.0	0.1
11/25/18 5:00	11/26/18 4:00	834,534	15	12.4	0.1
11/25/18 6:00	11/26/18 5:00	759,145	16	10.5	0.1
11/25/18 7:00	11/26/18 6:00	674,516	17	8.5	0.0
11/25/18 8:00	11/26/18 7:00	592,128	15	6.2	0.0
11/25/18 9:00	11/26/18 8:00	511,691	15	5.1	0.0
11/25/18 10:00	11/26/18 9:00	421,127	16	3.7	0.0



**Subpart Ja Root Cause / Corrective Action Analysis**Incident Number: N/A*The information contained below satisfies the requirements of the NSPS Subpart Ja 60.108a(c)(6).*
 Report: Final  
 Refinery: Valero (Meraux)  
 Incident Type: Flaring (Flow)  
 Emissions Source(s): South Flare (EPN 3-77, EQT 0049)

 Date of Event: 12/28/18  
 Date Analysis Completed: N/A

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

**A description of the Discharge:***These discharges were a series of Nitrogen pulse purges conducted over several days.*

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

 Date and Time the discharge was first identified 12/28/18 15:09  
 Date/Time the discharge had ceased 1/2/19 5:43  
 Duration of Discharge (Calculated) 110.6 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. Additional purges and Nitrogen volume was required to comply with the maintenance vent provisions of 40 CFR 63.643 as well as additional supplemental natural gas required to comply with the Net Heating Value of the Combustion Zone limit (> 270 Btu/scf) of 40 CFR 63.670, which will become effective on January 30, 2019.*

(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>Yes</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>Yes</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)  
 N/A

(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? No (Yes/No)  
 N/A

(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.**

N/A

(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
12/27/18 15:00	12/28/18 14:00	108,198	1	0.1	0.0
12/27/18 16:00	12/28/18 15:00	140,954	53	0.5	0.0
12/27/18 17:00	12/28/18 16:00	194,881	54	1.0	0.0
12/27/18 18:00	12/28/18 17:00	244,918	49	1.5	0.0
12/27/18 19:00	12/28/18 18:00	290,477	50	1.9	0.0
12/27/18 20:00	12/28/18 19:00	351,708	55	2.6	0.0
12/27/18 21:00	12/28/18 20:00	401,145	54	3.1	0.0
12/27/18 22:00	12/28/18 21:00	439,930	52	3.5	0.0
12/27/18 23:00	12/28/18 22:00	491,429	56	4.0	0.0
12/28/18 0:00	12/28/18 23:00	541,056	56	4.6	0.0
12/28/18 1:00	12/29/18 0:00	600,634	57	5.2	0.0
12/28/18 2:00	12/29/18 1:00	638,992	52	5.6	0.0
12/28/18 3:00	12/29/18 2:00	677,979	54	6.0	0.0
12/28/18 4:00	12/29/18 3:00	720,870	57	6.5	0.0
12/28/18 5:00	12/29/18 4:00	740,900	49	6.8	0.0
12/28/18 6:00	12/29/18 5:00	740,160	8	6.8	0.0
12/28/18 7:00	12/29/18 6:00	739,419	6	6.8	0.0
12/28/18 8:00	12/29/18 7:00	738,692	5	6.8	0.0
12/28/18 9:00	12/29/18 8:00	737,974	4	6.8	0.0
12/28/18 10:00	12/29/18 9:00	737,259	5	6.8	0.0
12/28/18 11:00	12/29/18 10:00	736,554	5	6.8	0.0
12/28/18 12:00	12/29/18 11:00	735,862	5	6.8	0.0
12/28/18 13:00	12/29/18 12:00	735,162	5	6.8	0.0
12/28/18 14:00	12/29/18 13:00	734,462	5	6.8	0.0
12/28/18 15:00	12/29/18 14:00	733,331	5	6.8	0.0
12/28/18 16:00	12/29/18 15:00	699,847	5	6.4	0.0
12/28/18 17:00	12/29/18 16:00	645,239	5	5.9	0.0
12/28/18 18:00	12/29/18 17:00	594,480	4	5.4	0.0
12/28/18 19:00	12/29/18 18:00	548,198	4	5.0	0.0
12/28/18 20:00	12/29/18 19:00	486,236	6	4.3	0.0
12/28/18 21:00	12/29/18 20:00	436,042	6	3.8	0.0
12/28/18 22:00	12/29/18 21:00	396,807	7	3.4	0.0
12/28/18 23:00	12/29/18 22:00	400,302	54	3.4	0.0
12/29/18 0:00	12/29/18 23:00	405,641	54	3.5	0.0
12/29/18 1:00	12/30/18 0:00	396,567	54	3.4	0.0
12/29/18 2:00	12/30/18 1:00	414,724	56	3.6	0.0
12/29/18 3:00	12/30/18 2:00	426,295	55	3.7	0.0
12/29/18 4:00	12/30/18 3:00	434,613	57	3.7	0.0
12/29/18 5:00	12/30/18 4:00	466,124	59	4.1	0.0
12/29/18 6:00	12/30/18 5:00	520,731	58	4.7	0.0
12/29/18 7:00	12/30/18 6:00	567,651	57	5.2	0.0
12/29/18 8:00	12/30/18 7:00	611,039	62	5.7	0.0
12/29/18 9:00	12/30/18 8:00	677,142	62	6.5	0.0
12/29/18 10:00	12/30/18 9:00	735,581	58	7.1	0.0
12/29/18 11:00	12/30/18 10:00	791,739	55	7.7	0.0
12/29/18 12:00	12/30/18 11:00	791,993	9	7.7	0.0
12/29/18 13:00	12/30/18 12:00	792,245	5	7.7	0.0
12/29/18 14:00	12/30/18 13:00	792,485	5	7.7	0.0

<b>(8.)</b>					
<b>The measured or calculated cumulative quantity of gas discharged over the discharge duration.</b>					
<i>Note: Measured sulfur concentrations are shown as flow-weighted averages if multiple measurement devices were used.</i>					
		(60.108a(c)(6)(iii))	(60.108a(c)(6)(iv))	(60.108a(c)(6)(vii))	(60.108a(c)(6)(vii))
<b>First hour of 24-hr Period</b>	<b>Last hour of 24-hr Period</b>	<b>24-hr cumulative volume of flared gas above Baseline</b>	<b>TRS or H2S ppm (24-hr average, flow-weighted)</b>	<b>24-hr cumulative SO2</b>	<b>24-hr cumulative reduced sulfur</b>
		SCF	ppmv	lbs	lbs as H2S
12/29/18 15:00	12/30/18 14:00	792,726	5	7.7	0.0
12/29/18 16:00	12/30/18 15:00	792,974	5	7.7	0.0
12/29/18 17:00	12/30/18 16:00	793,161	3	7.7	0.0
12/29/18 18:00	12/30/18 17:00	793,393	5	7.7	0.0
12/29/18 19:00	12/30/18 18:00	793,395	8	7.7	0.0
12/29/18 20:00	12/30/18 19:00	793,331	8	7.7	0.0
12/29/18 21:00	12/30/18 20:00	793,309	8	7.7	0.0
12/29/18 22:00	12/30/18 21:00	792,980	8	7.7	0.0
12/29/18 23:00	12/30/18 22:00	737,200	7	7.1	0.0
12/30/18 0:00	12/30/18 23:00	681,453	7	6.6	0.0
12/30/18 1:00	12/31/18 0:00	630,157	8	6.1	0.0
12/30/18 2:00	12/31/18 1:00	572,860	8	5.5	0.0
12/30/18 3:00	12/31/18 2:00	521,489	8	4.9	0.0
12/30/18 4:00	12/31/18 3:00	469,498	7	4.4	0.0
12/30/18 5:00	12/31/18 4:00	450,013	46	4.1	0.0
12/30/18 6:00	12/31/18 5:00	456,499	52	4.1	0.0
12/30/18 7:00	12/31/18 6:00	472,147	51	4.2	0.0
12/30/18 8:00	12/31/18 7:00	488,631	58	4.3	0.0
12/30/18 9:00	12/31/18 8:00	485,993	52	4.2	0.0
12/30/18 10:00	12/31/18 9:00	478,041	51	4.0	0.0
12/30/18 11:00	12/31/18 10:00	488,812	72	4.3	0.0
12/30/18 12:00	12/31/18 11:00	560,321	58	5.1	0.0
12/30/18 13:00	12/31/18 12:00	639,291	56	5.9	0.0
12/30/18 14:00	12/31/18 13:00	704,749	50	6.5	0.0
12/30/18 15:00	12/31/18 14:00	704,902	20	6.5	0.0
12/30/18 16:00	12/31/18 15:00	704,384	16	6.5	0.0
12/30/18 17:00	12/31/18 16:00	703,853	15	6.5	0.0
12/30/18 18:00	12/31/18 17:00	703,355	15	6.5	0.0
12/30/18 19:00	12/31/18 18:00	703,087	17	6.6	0.0
12/30/18 20:00	12/31/18 19:00	702,918	18	6.6	0.0
12/30/18 21:00	12/31/18 20:00	702,757	18	6.6	0.0
12/30/18 22:00	12/31/18 21:00	702,590	17	6.6	0.0
12/30/18 23:00	12/31/18 22:00	702,426	18	6.6	0.0
12/31/18 0:00	12/31/18 23:00	702,255	18	6.6	0.0
12/31/18 1:00	1/1/19 0:00	702,073	19	6.6	0.0
12/31/18 2:00	1/1/19 1:00	701,912	18	6.7	0.0
12/31/18 3:00	1/1/19 2:00	701,737	18	6.7	0.0
12/31/18 4:00	1/1/19 3:00	701,563	19	6.7	0.0
12/31/18 5:00	1/1/19 4:00	680,697	42	6.5	0.0
12/31/18 6:00	1/1/19 5:00	673,421	57	6.5	0.0
12/31/18 7:00	1/1/19 6:00	666,869	57	6.5	0.0
12/31/18 8:00	1/1/19 7:00	660,788	64	6.5	0.0
12/31/18 9:00	1/1/19 8:00	650,142	57	6.5	0.0
12/31/18 10:00	1/1/19 9:00	658,588	57	6.6	0.0
12/31/18 11:00	1/1/19 10:00	646,396	56	6.3	0.0
12/31/18 12:00	1/1/19 11:00	632,852	56	6.1	0.0
12/31/18 13:00	1/1/19 12:00	603,901	54	5.9	0.0
12/31/18 14:00	1/1/19 13:00	542,495	34	5.3	0.0

(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
12/31/18 15:00	1/1/19 14:00	541,840	19	5.3	0.0
12/31/18 16:00	1/1/19 15:00	541,874	18	5.3	0.0
12/31/18 17:00	1/1/19 16:00	541,924	18	5.3	0.0
12/31/18 18:00	1/1/19 17:00	541,944	19	5.3	0.0
12/31/18 19:00	1/1/19 18:00	541,971	19	5.3	0.0
12/31/18 20:00	1/1/19 19:00	541,958	17	5.3	0.0
12/31/18 21:00	1/1/19 20:00	541,938	18	5.3	0.0
12/31/18 22:00	1/1/19 21:00	541,923	19	5.3	0.0
12/31/18 23:00	1/1/19 22:00	541,915	18	5.3	0.0
1/1/19 0:00	1/1/19 23:00	541,914	18	5.3	0.0
1/1/19 1:00	1/2/19 0:00	560,196	34	5.5	0.0
1/1/19 2:00	1/2/19 1:00	628,154	48	6.0	0.0
1/1/19 3:00	1/2/19 2:00	693,175	50	6.6	0.0
1/1/19 4:00	1/2/19 3:00	752,137	49	7.1	0.0
1/1/19 5:00	1/2/19 4:00	806,036	51	7.6	0.0
1/1/19 6:00	1/2/19 5:00	792,959	52	7.4	0.0
1/1/19 7:00	1/2/19 6:00	736,710	20	6.9	0.0
1/1/19 8:00	1/2/19 7:00	682,713	17	6.2	0.0
1/1/19 9:00	1/2/19 8:00	629,655	16	5.7	0.0
1/1/19 10:00	1/2/19 9:00	574,169	77	5.2	0.0
1/1/19 11:00	1/2/19 10:00	519,311	66	4.7	0.0
1/1/19 12:00	1/2/19 11:00	460,809	33	4.1	0.0

Appendix B

Subpart Db, 40 CFR 60.49b(g)  
and 60.49b(i)