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Philadelphia Refining Complex
Environmental Department

Philadelphia Energy Solutions
Refining and Marketing LLC
3144 Passyunk Avenue
Philadelphia, PA 19145-5208
215-339-2000

Electronic Delivery

July 28, 2017

Philadelphia Air Management Services
Facility Compliance & Enforcement Division
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

**RE: Philadelphia Energy Solutions Refining and Marketing LLC.
Continuous Emission Monitoring Reports (02Q17)**

Dear Sir or Madam:

Enclosed are the electronic Continuous Emissions Monitor Reports for the Second Quarter of 2017 for the Philadelphia Energy Solutions Refining and Marketing, LLC, Philadelphia Refining Complex. The files are for the CEMs listed below:

- 1) Point Breeze 210 NOx/O2 lb/MMBTU (01501B0)
- 2) Point Breeze 862 H2S ppm (01501A0)
- 3) Point Breeze 862 BTU mmbtu/scf (01501A1)
- 4) Point Breeze 867 TGU1 SO2/O2 ppm (hourly: 0150100, 12-hour: 0150101)
- 5) Point Breeze 867 TGU2 SO2/O2 ppm (hourly: 01501C0, 12-hour: 01501C1)
- 6) Point Breeze 868 SOx ppm (0150166)
- 7) Point Breeze 868 SOx lb/hr (0150167)
- 8) Point Breeze 868 NOx lb/hr (0150165)
- 9) Point Breeze 868 NOx ppm (0150164)
- 10) Point Breeze 868 CO ppm (0150162)
- 11) Point Breeze 868 CO lb/hr (0150161)
- 12) Point Breeze 868 Opacity percent (hourly: 0150160, excess: 015016A)
- 13) Point Breeze 868 H-101 H2S ppm (0150163)
- 14) Girard Point 137 F1/F2 NOx lb/MMBTU (0150131)
- 15) Girard Point 433 H-1 NOx lb/MMBTU (01501E0)
- 16) Girard Point 532 H2S ppm (0150111)
- 17) Girard Point 1232 COB SO2 ppm (0150152)
- 18) Girard Point 1232 COB SO2 lb/hr (0150154)
- 18) Girard Point 1232 COB NOx ppm (0150151)
- 20) Girard Point 1232 COB NOx lb/hr (0150156)
- 21) Girard Point 1232 COB CO ppm (0150153)
- 22) Girard Point 1232 COB CO lb/hr (0150155)
- 23) Girard Point 1332 H400/401 NOx lb/MMBTU (01501D0)
- 24) Girard Point 1332 H2S ppm (0150121)
- 25) Girard Point #3BH NOx lb/MMBTU (0150141)
- 26) Girard Point Boiler 45 NOx lb/MMBTU (01501F0)

Below is a list of exceedances of applicable emissions limitations:

- a) On Wednesday, April 12, 2017 during routine soot blowing activities at the 868 FCCU caused an instantaneous opacity reading of 65%. This exceeds the opacity limit of greater than 60% opacity at any time. Soot blowing activities were immediately stopped and investigated.
- b) On June 6, 2017, there were elevated opacity readings with more than the allowable minutes of >20% during the 12 am and 12 pm hours. During these hours there were no activities that would increase opacity readings and the unit was in steady state. The opacity readings ranged from 21% to 33% in the 12 am hour and 21% to 30% in the 12 pm hour.
- c) During the 5 pm hour on June 21, 2017, there were elevated opacity readings at the 868 FCCU. This event was during a period of heavy rain, which caused sixteen minutes of elevated opacity readings. The readings ranged from 20% to 25%.
- d) On June 24, 2017 during the 6 am hour, there were elevated opacity readings at the 868 FCCU. During this time, there was a heavy rain event, which is believed to have caused the five minutes of elevated opacity readings. The opacity readings ranged from 20% to 29%.

SO_x & H₂S CEM Metrics:

862 H2S	April	May	June	Quarter
INVALID TIME (Hours)	0	28	0	28
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	100.0%	96.24%	100.0%	98.72%
867 TGU1 SOx	April	May	June	Quarter
INVALID TIME (Hours)	2	0	0	2
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	99.72%	100.0%	100.0%	99.91%
867 TGU2 SOx	April	May	June	Quarter
INVALID TIME (Hours)	14	0	3	17
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	98.06%	100.0%	99.58%	99.22%
868 SO2	April	May	June	Quarter
INVALID TIME (Hours)	5	18	11	34
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	99.31%	97.58%	98.47%	98.44%
868 H2S	April	May	June	Quarter
INVALID TIME (Hours)	2	0	31	33
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	99.72%	100.00%	95.69%	98.49%
532 H2S	April	May	June	Quarter
INVALID TIME (Hours)	19	22	19	60
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	97.36%	97.04%	97.36%	97.25%

1232 SO2	April	May	June	Quarter
INVALID TIME (Hours)	12	41	15	68
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	98.33%	94.49%	97.92%	96.89%
1332 H2S	April	May	June	Quarter
INVALID TIME (Hours)	7	0	0	7
UNIT OPERATING (Hours)	720	744	720	2184
RELIABILITY (%)	99.03%	100.00%	100.0%	99.68%

Whenever a CEM fails its daily calibration or when a fault alarm occurs, corrective action and manual calibration is performed. Listed below are corrective actions that were performed on the above CEMS during this quarter¹

862 H₂S:

- On 05/23/17, the analyzer was OOS for data handling system malfunction.
- On 05/24/17, the analyzer was OOS for data handling system malfunction.
- On 05/30/17, the analyzer was OOS for quarterly calibration error tests.

867 (TGU1) SO_x/O₂:

- On 04/05/17, the analyzer was OOS for quarterly calibration error tests.

867 (TGU2) SO_x/O₂:

- On 04/04/17, the analyzer was OOS for required quarterly calibration error tests.
- On 04/05/17, the analyzer was OOS for recalibration due to failed daily calibration.
- On 04/07/17, the analyzer was OOS for required quarterly calibration error tests.
- On 04/11/17, the analyzer was OOS for maintenance and recalibration.
- On 04/23/17, the analyzer was OOS for recalibration due to failed daily calibration.
- On 04/28/17, the analyzer was OOS maintenance on pump and recalibration.
- On 04/29/17, the analyzer was OOS for recalibration due to failed daily calibration.
- On 04/30/17, the analyzer was OOS for maintenance and recalibration.
- On 06/13/17, the analyzer was OOS for recalibration due to failed daily calibration.
- On 06/14/17, the analyzer was OOS for recalibration of SO₂.

868 SO₂:

- On 04/06/17, the analyzer was OOS for required quarterly calibration error tests.
- On 04/07/17, the analyzer was OOS for failed daily calibration and required O₂ quarterly calibration error tests.
- On 05/05/17, the analyzer was OOS for preventative maintenance on sample system.
- On 05/20/17, the analyzer was OOS for recalibration due to failed daily calibration.
- On 05/21/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 06/20/17, the analyzer was OOS for data loss and PLC upgrade.
- On 06/27/17, the analyzer was OOS for recalibration.

¹ Please note the out of service hours listed are included in the determination for compliance with the data availability criteria.

532 H2S:

- On 04/02/17, the analyzer was OOS due to daily auto calibration.
- On 04/05/17, the analyzer was OOS due to daily auto calibration.
- On 04/06/17, the analyzer was OOS due to daily auto calibration.
- On 04/09/17, the analyzer was OOS due to daily auto calibration.
- On 04/10/17, the analyzer was OOS due to daily auto calibration.
- On 04/13/17, the analyzer was OOS due to daily auto calibration.
- On 04/14/17, the analyzer was OOS due to daily auto calibration.
- On 04/17/17, the analyzer was OOS due to daily auto calibration.
- On 04/18/17, the analyzer was OOS due to daily auto calibration.
- On 04/22/17, the analyzer was OOS due to daily auto calibration.
- On 04/23/17, the analyzer was OOS due to daily auto calibration.
- On 04/24/17, the analyzer was OOS due to daily auto calibration.
- On 04/25/17, the analyzer was OOS due to data handling system malfunction.
- On 04/26/17, the analyzer was OOS due to daily auto calibration.
- On 04/27/17, the analyzer was OOS due to daily auto calibration.
- On 04/30/17, the analyzer was OOS due to daily auto calibration.
- On 05/01/17, the analyzer was OOS due to daily auto calibration.
- On 05/02/17, the analyzer was OOS due to daily auto calibration.
- On 05/03/17, the analyzer was OOS due to daily auto calibration.
- On 05/04/17, the analyzer was OOS due to daily auto calibration.
- On 05/07/17, the analyzer was OOS due to daily auto calibration.
- On 05/08/17, the analyzer was OOS due to daily auto calibration.
- On 05/11/17, the analyzer was OOS due to daily auto calibration.
- On 05/12/17, the analyzer was OOS due to daily auto calibration.
- On 05/15/17, the analyzer was OOS due to daily auto calibration.
- On 05/16/17, the analyzer was OOS due to daily auto calibration.
- On 05/17/17, the analyzer was OOS due to daily auto calibration.
- On 05/20/17, the analyzer was OOS due to daily auto calibration.
- On 05/21/17, the analyzer was OOS due to daily auto calibration.
- On 05/23/17, the analyzer was OOS due to daily auto calibration.
- On 05/26/17, the analyzer was OOS due to daily auto calibration.
- On 05/27/17, the analyzer was OOS due to daily auto calibration.
- On 05/28/17, the analyzer was OOS due to daily auto calibration.
- On 05/30/17, the analyzer was OOS due to daily auto calibration.
- On 05/31/17, the analyzer was OOS for required quarterly calibration error tests.
- On 06/02/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 06/03/17, the analyzer was OOS due to daily auto calibration.
- On 06/05/17, the analyzer was OOS due to daily auto calibration.
- On 06/06/17, the analyzer was OOS due to daily auto calibration.
- On 06/07/17, the analyzer was OOS due to daily auto calibration.
- On 06/08/17, the analyzer was OOS due to daily auto calibration.
- On 06/09/17, the analyzer was OOS due to daily auto calibration.
- On 06/10/17, the analyzer was OOS due to daily auto calibration.

- On 06/13/17, the analyzer was OOS due to daily auto calibration.
- On 06/14/17, the analyzer was OOS due to daily auto calibration.
- On 06/17/17, the analyzer was OOS due to daily auto calibration.
- On 06/18/17, the analyzer was OOS due to daily auto calibration.
- On 06/21/17, the analyzer was OOS due to daily auto calibration.
- On 06/22/17, the analyzer was OOS due to daily auto calibration.
- On 06/23/17, the analyzer was OOS due to daily auto calibration.
- On 06/25/17, the analyzer was OOS due to daily auto calibration.
- On 06/26/17, the analyzer was OOS due to daily auto calibration.
- On 06/27/17, the analyzer was OOS due to daily auto calibration.
- On 06/28/17, the analyzer was OOS due to daily auto calibration.
- On 06/30/17, the analyzer was OOS due to daily auto calibration.

1232 SO₂:

- On 04/01/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 04/04/17, the analyzer was OOS for required SO₂ quarterly calibration error tests.
- On 04/05/17, the analyzer was OOS for required O₂ quarterly calibration error tests.
- On 04/14/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 04/16/17, the analyzer was OOS for maintenance and recalibration.
- On 04/17/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 04/18/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/02/17, the analyzer was OOS for maintenance and recalibration.
- On 05/04/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/08/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/11/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/13/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/14/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/15/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/17/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/19/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/20/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/21/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/22/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/23/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/24/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/25/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 05/26/17, the analyzer was OOS for preventative maintenance on sample system.
- On 06/23/17, the analyzer was OOS for recalibration due to failed daily auto calibration.
- On 06/28/17, the analyzer was OOS for recalibration due to maintenance on sample system.
- On 06/29/17, the analyzer was OOS for recalibration due to failed daily auto calibration.

1332 H₂S:

- On 04/10/17, the analyzer was OOS for required quarterly calibrations error tests.
- On 04/25/17, the analyzer was OOS for data handling system malfunction.

Items of note during the first quarter of 2017:

- a. The flares H₂S analyzers have not yet been certified, no performance information for the analyzers is included in this report.


Should there be any questions or comments regarding this data, please contact Janet Ferris at (215) 339-7146.

"Record Keeping and Reporting" Statement

I am authorized to make this submission on behalf of the owners and operators of the affected facility or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment. I understand that DEP or AMS may reject any electronic data submission if it does not conform to the formatting requirements specified by DEP or AMS. To the extent that information has been submitted in electronic format, I acknowledge that DEP will rely solely on electronic information as accurate and complete information. I certify that the data provided in electronic format with this submission contains correct and current data and is consistent with all current hardcopy information. Subject to the penalties of Title 18 Pa. C.S. Section 4904 and 35 P.S. Section 4009 (b) (2), I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this report are true, accurate, and complete.



Mark O. Brandon
Vice President & General Manager
Philadelphia Refinery
Philadelphia Energy Solutions Refining and Marketing, LLC



Date