



## SunCoke Energy

Indiana Harbor Coke Company  
3210 Watling Street  
East Chicago, IN 46312

October 31, 2019

Chief, Environmental Enforcement Section  
Environment and Natural Resources Division  
U.S. Department of Justice  
Box 7611 Ben Franklin Station  
Washington, DC 20044-7611  
Re: DOJ 90-5-2-1-08555/1

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Office of Civil Enforcement  
Air Enforcement Division  
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Washington, DC 20460

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U.S. Environmental Protection Agency – Region 5  
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[bzlatos@idem.in.gov](mailto:bzlatos@idem.in.gov)

RE: Consent Decree, *United States, et al. v. Indiana Harbor Coke Company, et al.*  
Indiana Harbor Coke Company, LLC (TV Permit T089-36826-00382)  
Submission of the 2<sup>nd</sup> 2019 Semi-Annual Report

To Whom It May Concern,

The United States, the State of Indiana, Indiana Harbor Coke Company (IHCC), SunCoke Energy, Inc. (SunCoke), and Cokenergy, LLC (Cokenergy) are parties to a Consent Decree (CD) lodged in federal court on January 25, 2018 with an Effective Date of October 25, 2018.

Pursuant to the CD, IHCC is submitting the 2<sup>nd</sup> 2019 Semi-Annual Report for IHCC. IHCC and SunCoke prepared the enclosed Report in accordance with Paragraph 51 of the CD. This Report contains the information required by Paragraphs 51.a. through q. of the CD, with respect to the time period from April 1, 2019 through September 30, 2019.



**SunCoke Energy**

Indiana Harbor Coke Company  
3210 Watling Street  
East Chicago, IN 46312

If you have any questions regarding this report, please contact me at (219) 378-3903 or email me at [nestrada@suncoke.com](mailto:nestrada@suncoke.com).

Sincerely,

Nancy Estrada  
Environmental Engineer

cc:

East Chicago Public Library  
2401 E. Columbus Drive  
East Chicago, IN 46312

East Chicago Public Library  
1008 W. Chicago Avenue  
East Chicago, IN 46312

**Indiana Harbor Coke Company  
SunCoke Energy, Inc.**

**Consent Decree  
Semi-Annual Report**

**Reporting Period: April 1, 2019 – September 30, 2019**

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## **1.0 Introduction**

The United States, the State of Indiana, Indiana Harbor Coke Company (IHCC), SunCoke Energy, Inc., and Cokenergy, LLC (Cokenergy), are parties to a Consent Decree (CD) lodged in the U.S. District Court for the Northern District of Indiana with an Effective Date of October 25, 2018. See *United States, et al. v. Indiana Harbor Coke Company, et al.*, Civil Action No. 2:18-cv-35.

This report is being submitted pursuant to Paragraph 51 of the CD, and includes all information required to be submitted. This report covers the period of April 1, 2019 – September 30, 2019.

**2.0 Work performed and progress made toward implementing the requirements of Section IV of the CD (Compliance Requirements), including completion of any milestones;**

**A. Coke Oven Rebuild Requirements, pursuant to Section IV.A. of the CD**

<b>Milestone Time</b>	<b>Milestone Description</b>	<b>Status</b>
On or about March 31, 2017	Complete five (5) Oven Rebuilds for Battery B ("Initial Oven Rebuilds")	Complete
On or before March 31, 2018	Evaluation of the five rebuilt Ovens in Battery B	Complete - Evaluation period 3/31/2017 - 2/28/2018
By April 30, 2018	Notify EPA and IDEM regarding Battery B Oven Rebuilds success	Complete - Notification of Oven Rebuild success submitted 3/21/2018
December 31, 2018	Complete all Oven Rebuilds for Batteries A, C, and D, or Idle any Ovens that will not be rebuilt	Complete – All ovens rebuilt on Batteries A, C, and D
By November 30, 2019	Complete all Oven Rebuilds for Battery B, or Idle any Ovens that will not be rebuilt	In Progress

## B. Coke Oven Leak Requirements

Please see section 6.0 for more information regarding compliance with emissions minimization requirements for Coke Oven Leaks from Rebuilt Ovens during the reporting period, pursuant to Paragraph 12 of the Consent Decree. Please see section 8.0 for a list of all Coke Oven Leak RCFAs performed during the reporting period, pursuant to Paragraph 13 of the Consent Decree. A copy of each RCFA report for Coke Oven Leaks from Rebuilt Ovens (as defined in Paragraph 8.k. of the CD) that occurred during the reporting period, if any, is included in Attachment A1.

Paragraph 11 of the Consent Decree contains compliance requirements for Coke Oven Leaks from Non-rebuilt Ovens. The Quarterly Deviation Reports included in Attachment E list all of the Coke Oven Leaks from Non-rebuilt Ovens during the reporting period along with the corrective actions taken. In addition, the following practices were implemented for all Coke Oven Leaks from Non-rebuilt Ovens during the reporting period:

- Appropriate response measures, such as adjusting oven damper position to optimize oven draft, were taken as soon as possible after the Leak was observed in order to minimize emissions;
- Coal charge at each affected Non-rebuilt Oven was reduced to no more than a thirty-seven and a half (37.5) ton average on a wet basis; and
- The sulfur content of the coal charged to each affected Non-rebuilt Oven was minimized to the extent practicable.

## C. Bypass Venting Requirements

Please see section 19.0 for more information regarding compliance with bypass venting limits and SO<sub>2</sub> limits during the reporting period, pursuant to Paragraphs 14, 15 and 16 of the Consent Decree. Please see section 7.0 for more information regarding emissions minimization during Bypass Venting Incidents during the reporting period, pursuant to Paragraph 17 of the Consent Decree. Please see section 8.0 for a list of all Bypass Venting Incident RCFAs performed during the reporting period, pursuant to Paragraph 18 of the Consent Decree. A copy of the RCFA report for each Bypass Venting Incident (as defined in Paragraph 8.d. of the CD) that occurred during the reporting period, if any, is included in Attachment A2.

## D. Enhanced Monitoring Requirements

Please see section 5.0 for more information regarding emissions monitoring and stack testing that occurred during the reporting period, pursuant to Paragraphs 19 - 22 of the Consent Decree.

## E. Preventative Maintenance and Operation (“PMO”) Plan

Please see section 10.0 for more information regarding the PMO plan required by Paragraph 23 of the Consent Decree. Please see section 11.0 for more information regarding submittal of the Compliance Assurance Plan (CAP) under section 23.c. of the Consent Decree.

**F. Mitigation Measures**

Please see section 20.0 for more information regarding Mitigation Measures required by Paragraph 24 of the Consent Decree.

**G. Permit Requirements**

Please see section 12.0 for more information regarding the status of permit applications, pursuant to Paragraphs 27 through 29 of the Consent Decree.

**3.0 Any significant modifications to previously-submitted design specifications of any pollution control system, or to monitoring equipment, required to comply with the requirements of Section IV (Compliance Requirements);**

At this time, no significant modifications to previously submitted design specifications of any pollution control system or to monitoring equipment are required for compliance with Section IV of this Consent Decree.

**4.0 Any significant problems encountered or anticipated in complying with the requirements of Section IV (Compliance Requirements), including implemented or proposed solutions;**

No significant problems have been encountered in complying with Section IV of this Consent Decree.

Any non-conformances to the PMO plan required under section IV.D are included in Section 10.0.

**5.0 A summary of the emissions monitoring and testing data collected to demonstrate compliance with a requirement of the Consent Decree;**

**A. Permanent Flow Monitor (Paragraph 19)**

Paragraph 19 of the CD requires installation of a permanent flow monitor to continuously measure the flow rate in the Main Stack within ninety (90) days of the Effective Date of the CD.

The required flow monitor was installed on June 12, 2018 and a Relative Accuracy Test Audit (RATA) was conducted in September 2018. The flow monitor RATA report was submitted to EPA and IDEM by Cokenergy on October 17, 2018 and a copy of the RATA report was included in the first semi-annual report submitted on April 30, 2019.

**B. Meteorological Station (Paragraph 20)**

Paragraph 20 of the CD requires installation of a meteorological station at the Facility or purchase of a handheld weather device within thirty (30) days of the Effective Date of the CD.

IHCC purchased twelve (12) new handheld weather devices to monitor and record wind speed and wind direction. These devices were ordered on March 29, 2018 and were received in April of 2018. The wind meters (HoldPeak 866B-WM Digital Anemometers) are being operated and maintained as required.

C. Emissions Tracking System (ETS) Updates (Paragraph 21)

Paragraph 21 of the CD requires IHCC to modify ETS in order to report emissions using the actual flow data from the Main Stack flow monitor within one hundred eighty (180) days of the installation of the Permanent Flow Monitor pursuant to Paragraph 19 of the CD.

ETS was modified to incorporate the new Main Stack flow monitor and began using actual flow data from the new flow monitor on November 28, 2018.

D. Bypass Vent Stack and Main Stack Testing (Paragraph 22)

Paragraph 22 of the CD requires stack testing measuring the emission rate of lead and VOCs from the Main Stack and at least one Bypass Vent Stack within five (5) years of the Effective Date of the CD. Two stack tests, separated by at least eighteen (18) months, are required for measuring the lead emissions and one test is required for VOCs.

Stack testing on the Bypass Vent Stack, pursuant to Paragraph 22, is expected to be conducted in conjunction with stack testing required under the Title V permit. Test notifications and test protocols will be submitted to EPA and IEPA as required by the CD. Cokenergy is scheduled to conduct stack testing on the Main Stack, pursuant to Paragraph 22 of the CD in December 2019. As outlined in the stack test protocol submitted on October 8, 2019, the proposed test dates are December 4 – 5, 2019.

**6.0 A list of all violations of Paragraph 12.a and 12.b, with the date, time and location of visible emissions and the status of any Coke Oven RCFA conducted;**

Paragraph 12.a requires that visible emissions from a Rebuilt Oven Coke Oven door must be stopped within fifteen (15) minutes on the push side and forty-five (45) minutes on the coke shed side. Visible emissions from a Coke Oven door may be stopped from the push side within forty-five (45) minutes from the time the visible emissions are first observed for a maximum of two times per Battery in any semi-annual reporting period.

Paragraph 12.b requires that visible emissions from a Rebuilt Coke Oven crown, or from any other part of the Coke Oven that is not the Coke Oven door, must be stopped within thirty (30) minutes. If visible emissions from a Coke Oven crown continue longer than thirty (30) minutes, a Method 9 observation must be conducted no later than one-hundred twenty (120) minutes from the time the visible emissions are first observed provided conditions identified in Method 9 allow for an observation pursuant to Method 9.

The following table lists all of the Coke Oven Leaks on Rebuilt Ovens exceeding the time periods set forth in Paragraph 12.a or 12.b of the Consent Decree during this reporting period:

Battery	Oven #	Leak Location	Date	Time Noticed	Time Ended	Duration (hours:minutes)	RCFA Triggered?
C	67	Push Side Door	4/22/2019	9:35 PM	10:35 PM	1:00	N
C	33	Push Side Door	4/29/2019	6:36 AM	2:36 PM	8:00	N
C	32	Push Side Door	5/18/2019	9:52 PM	5:25 AM	7:33	N
C	32	Push Side Door	6/3/2019	7:26 AM	4:26 PM	9:00	N
C	31	Push Side Door	6/4/2019	7:58 AM	9:00 AM	1:02	N
B	3	Push Side Door	6/7/2019	12:17 PM	12:40 PM	0:23	N
C	17	Push Side Door	6/22/2019	7:50 AM	8:15 AM	0:25	N
C	33	Push Side Door	6/22/2019	7:50 AM	8:15 AM	0:25	N
C	30	Push Side Door	6/27/2019	1:06 PM	1:30 PM	0:24	N
C	32	Push Side Door	6/27/2019	1:06 PM	1:30 PM	0:24	N
C	34	Push Side Door	6/27/2019	1:06 PM	1:30 PM	0:24	N
C	50	Push Side Door	6/27/2019	1:06 PM	1:30 PM	0:24	N
C	32	Push Side Door	7/3/2019	12:30 PM	1:20 PM	0:50	N
B	55	Crown	7/25/2019	6:20 AM	7:08 AM	0:50	N
C	31	Push Side Door	8/9/2019	12:48 PM	1:20 PM	0:32	N
D	31	Push Side Door	8/9/2019	12:40 PM	1:00 PM	0:20	N
C	32	Push Side Door	8/16/2019	7:55 AM	8:30 AM	0:35	N
C	36	Push Side Door	8/16/2019	7:55 AM	8:28 AM	0:33	N
C	16	Push Side Door	9/5/2019	8:39 AM	9:00 AM	0:21	N
C	36	Push Side Door	9/5/2019	8:39 AM	9:00 AM	0:21	N
C	37	Push Side Door	9/5/2019	8:39 AM	9:00 AM	0:21	N
B	38	Crown	9/12/2019	6:47 AM	7:30 AM	0:43	N
B	34	Crown	9/12/2019	6:47 AM	7:20 AM	0:43	N
D	35	Push Side Door	9/19/2019	1:07 PM	1:23 PM	0:20	N

On two days during the reporting period, IHCC did not conduct a Method 9 reading for visible emissions from Coke Oven crowns lasting longer than 30 minutes. The dates and ovens included are September 28, 2019 (oven C16) and September 30, 2019 (ovens C16, C36, C48 and C52). This was due to a lack of communication between the operators and the contractor performing the Method 9 readings. IHCC personnel have been retrained on proper communication and the Method 9 reading requirements.

Coke Oven Leaks meeting the RCFA Trigger Level, if any, are indicated above and additional information on the RCFA(s) can be found in Section 8.0 and Attachment A. Note, the list above does not include Coke Oven Leaks caused by high winds, if any, which are listed in Attachment D.

**7.0 All failures to comply with the emissions minimization requirements of Paragraph 17 of the Consent Decree;**

Emissions Minimization Actions:

- (1) IHCC shall reduce coal charge at each Oven from which gases are being bypassed to no more than a forty (40) ton average on a wet basis, if practicable.

There were no Bypass Venting Incidents, as defined in Paragraph 8.d. of the CD, during the reporting period.

**8.0 All RCFAs required by Paragraphs 13 and 18 of this Consent Decree;**

- A. The following table provides a summary of the Coke Oven RCFAs completed during this reporting period, pursuant to Paragraph 13. Please see Attachment A1 for all Coke Oven RCFAs completed during this reporting period. Additionally, a table showing the status of all corrective actions identified from each RCFA is included in Attachment A3.

RCFA #	Start Date	Battery	Oven #	Leak Location	Duration	RCFA Status
		No Coke Oven RCFAs required during this reporting period.				

- B. The following table provides a summary of the Bypass Venting Incident RCFAs completed during this reporting period, pursuant to Paragraph 18. Please see Attachment A2 for all Bypass Venting Incident RCFAs completed during this reporting period. Additionally, a table showing the status of all corrective actions identified from each RCFA is included in Attachment A4.

RCFA #	Start Date	Description	RCFA Status
		No Bypass Venting Incidents, as defined in Paragraph 8.d., occurred during this reporting period.	

**9.0 The status of any corrective actions required under Paragraphs 13 and 18 that were not completed at the time of the submission of any previous report required under Paragraphs 13 and 18;**

Paragraph 51(h) requires reporting in this semi-annual report the status of all corrective actions not completed prior to the submission of the previous semi-annual report. Attachments A3 and A4 outline the status of all corrective actions identified from each Coke Oven Leak and Bypass Venting Incident RCFA in this semi-annual reporting period. Attachment A5 outlines the status of all corrective actions not completed prior to the submission of the previous semi-annual report.

**10.0 Any updated PMO Plan required by Paragraph 23 of this Consent Decree or any failure to follow a PMO Plan;**

The PMO Plan was submitted to EPA and IDEM on June 28, 2018. The PMO Plan was accepted by the agency on February 14, 2019.

There have been no failures to follow the PMO Plan requirements during this reporting period.

**11.0 Submittal of the CAP when required by Paragraph 23.c of this Consent Decree, any updates to the CAP, and any instances when the CAP had to be implemented to ensure compliance with PM or SO<sub>2</sub> limits;**

Paragraph 23.c of the CD requires IHCC to evaluate monthly production and monthly sulfur content of the dry coal to identify when they exceed the levels specified in the CD for “High Production Level Months” in two consecutive months. This requirement has been included in the PMO Plan. As outlined in the table below, no exceedances of the High Production Levels occurred during the reporting period.

Month/Year	Average Monthly Tons of Dry Coal Charged	Average Monthly Sulfur Content of Dry Coal
April 2019	116,342	0.92%
May 2019	118,587	0.87%
June 2019	109,499	0.84%
July 2019	111,821	0.85%
August 2019	119,409	0.88%
September 2019	118,237	0.88%

**12.0 Status of permit applications and a summary of all permitting activity pertaining to compliance with this Consent Decree;**

IHCC permitting status and compliance:

- The permit application to incorporate the required elements of the CD into the facility operating permit was submitted within ninety (90) days of the effective date on January 4, 2019 as required by Paragraph 27.a. A copy of the submitted application was included in the previous semi-annual report.

- The application seeking a site-specific revision to the Indiana State Implementation Plan (“SIP”) was submitted within ninety (90) days of the effective date on December 19, 2018 as required by Paragraph 27.b. A copy of the submitted application was included in the previous semi-annual report submitted on April 30, 2019.

**13.0 A description of all noncompliance with the requirements in Section VII (Supplemental Environmental Projects);**

This is a Cokenergy-only obligation; therefore, details are not included in this report.

**14.0 All failures to comply with the reporting requirements in Paragraphs 51 through 55;**

There were no failures to comply with the reporting requirements set forth in Paragraphs 51 through 55 of the Consent Decree during this reporting period.

**15.0 Copies of all Quarterly Deviation and Compliance Monitoring Reports and semi-annual and annual compliance certifications required under the Defendants’ Permits to both EPA and IDEM;**

For the IHCC facility, quarterly deviation and compliance monitoring reports submitted for the time period covered by this report are included in Attachment B1. All semi-annual and annual compliance certifications submitted during the reporting period are included in Attachment B2.

**16.0 The dates, times, and duration of any Lightning Stand-Downs during the reporting period;**

The dates, times, and duration of all Lightning Stand-Downs during the reporting period can be found in Attachment C.

**17.0 The dates, times, and duration of any power outages during the reporting period;**

There were no instances of power outages during the reporting period that affected compliance with CD requirements.

**18.0 The dates, times, and duration of any Coke Oven Leaks caused by high winds and wind speed and direction data for the time of the Coke Oven Leaks;**

The dates, times, and duration of all coke oven leaks caused by high winds during the reporting period can be found in Attachment D. For each coke oven leak caused by high winds, wind speed and direction data is also included.

**19.0 Compliance with Bypass Venting Limits**

Paragraph 14.a of the CD limits annual bypass venting to a maximum of 12% from January 1, 2017, through December 31, 2019. Paragraph 15 of the CD limits daily bypass venting to a maximum of 19% on a twenty-four (24) hour basis.

No exceedances of the annual or daily bypass venting limits occurred during the reporting period. The table below lists the actual annual venting for calendar years 2017 and 2018. Actual daily bypass venting percentages for each day during the reporting period are included in Attachment E.

<b>Year</b>	<b>Annual Bypass Venting</b>
2017	7.72%
2018	6.01%

**20.0 Mitigation Measures**

Paragraph 25 of the CD requires IHCC to maintain two rebuilt quench towers equipped with 1.5" thick, 2" x 6" wooden baffles placed 30 degrees to the gas stream, and placed 3" apart.

IHCC has maintained the two rebuilt quench towers as required during the reporting period.

**CERTIFICATION OF DOCUMENT**

*I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*



Patrick Nigl  
General Manager – Indiana Harbor and Coke Company

10/31/2019

Date

**Attachment A1**

**Coke Oven Leak RCFAs Completed**

No Coke Ovens Leaks meeting the Coke Oven Leak RCFA Trigger Level, as defined in Paragraph 8.l. of the CD, occurred during the reporting period.

**Attachment A2**  
**Bypass Venting RCFAs Completed**

No Bypass Venting Incidents, as defined in Paragraph 8.d. of the CD, occurred during the reporting period.

**Attachment A3**

**Coke Oven Leak RCFA Corrective Actions**

### Corrective Actions for Current Reporting Period Coke Oven Leak RCFAs

Site	Description of Corrective Action	RCFA Report No.	Reporting Period	Status	Estimated Completion Date	Actual Completion Date
	N/A – No coke oven leaks requiring an RCFA this reporting period.					

### Corrective Action Status for Prior Reporting Period Coke Oven Leak RCFAs

Site	Description of Corrective Action	RCFA Report No.	Reporting Period	Status	Estimated Completion Date	Actual Completion Date
IHCC	Rebuild Oven B6.	9089	1 <sup>st</sup> Semi-Annual Report 2019	IN PROGRESS	11/30/2019	-

**Attachment A4**  
**Bypass Venting RCFA Corrective Actions**

No Bypass Venting Incidents, as defined in Paragraph 8.d. of the CD, occurred during the reporting period, therefore, there are no corrective actions to report.

**Attachment B**

**Quarterly Deviation and Compliance Monitoring Reports**

**&**

**Semi-annual and Annual Compliance Certifications**



# SunCoke Energy

**SunCoke Energy, Inc.**

3210 Watling St.  
MC 2-990  
East Chicago, IN 46312  
219-378-3900 Phone  
219-378-4590 Fax

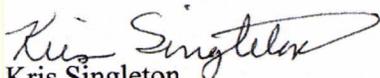
July 30, 2019

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, IN 46204 – 2251

RE: Operating Permit Certification – Permit No. T089-30034-00382

Attached you will find Indiana Harbor Coke Company's (IHCC's) Part 70 Operating Permit Certification, Quarterly report for coal charged, and Quarterly Deviation and Compliance Monitoring Report for the 2<sup>nd</sup> Quarter of 2019.

Sincerely,

  
Kris Singleton  
Corporate Engineer

cc:

Clifford Yukawa w/attachments  
IDEM/Northwest Regional Office  
330 W US Highway 30, Suite F  
Valparaiso, IN 46385

Attachments:  
Part 70 Operating Permit Certification  
Quarterly Report for Coal Charged  
Quarterly Deviation & Compliance Monitoring Report

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT  
CERTIFICATION

Source Name: Indiana Harbor Coke Company L.P., a contractor of ArcelorMittal  
Source Address: 3210 Watling Street, East Chicago, Indiana 46312  
Part 70 Permit Renewal No.: T089-30043-00382

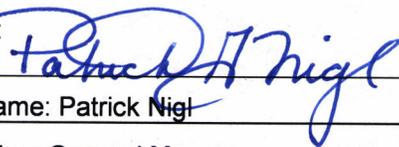
**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Quarterly Report for 2<sup>nd</sup> Quarter 2019
- Notification (specify)
- Affidavit (specify)
- Other (specify)

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

Signature:



Printed Name: Patrick Nigl

Title/Position: General Manager

Phone: (219) 378-3902

Date: July 30, 2019

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT SECTION**

**Part 70 Quarterly Report**

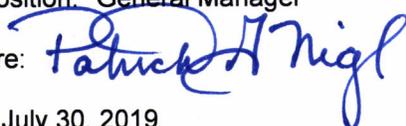
Source Name: Indiana Harbor Coke Company L.P., a contractor of ArcelorMittal  
 Source Address: 3210 Watling Street, East Chicago, Indiana 46312  
 Part 70 Permit Renewal No.: T089-30043-00382  
 Source/Facility: IHCC  
 Limit: 2,040,000 tons of dry coal charged per twelve (12) consecutive month period with compliance determined at the end of each month

**Quarter: 2<sup>nd</sup> Year: 2019**

Month	12 Month Rolling Sum Tons of Coal Charged	1st Quarter Tons	2nd Quarter Tons	3rd Quarter Tons	4th Quarter Tons
January	1,330,357	121,424			
February	1,341,953	109,227			
March	1,351,139	120,331			
April	1,364,225		116,342		
May	1,379,196		118,587		
June	1,383,206		109,499		
July					
August					
September					
October					
November					
December					

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.  
 Deviation has been reported on:

Submitted by: Patrick Nigl  
 Title / Position: General Manager

Signature: 

Date: July 30, 2019  
 Phone: (219)-378-3902  
 Attached a signed certification to complete this report

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE and ENFORCEMENT BRANCH**

**PART 70 OPERATING PERMIT  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Indiana Harbor Coke Company L.P., a contractor of ArcelorMittal  
 Source Address: 3210 Watling Street, East Chicago, Indiana 46312  
 Part 70 Permit Renewal No.: T089-30043-00382

**Reporting Period: April 1, 2019 – June 30, 2019**

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

**Permit Requirement** (specify permit condition #): C.5(k)

**Dates of Deviation:** 04/22, 05/12, 05/27, 06/05,  
06/09, 06/23

**Duration of Deviation:** 9, 3-minute averages

**Number of Deviations:** 9

**Probable Cause of Deviation:** IHCC's certified Method 9 observer recorded fugitive visible emissions from charging operations exceeding the twenty percent (20%) opacity standard as a three (3) minute average.

**Response Steps Taken:** In addition to rebuilding coke ovens, IHCC is continuing to implement an on-going oven maintenance and repair program.

<b>Permit Requirement</b> (specify permit condition #): D.1.12(b)	
<b>Dates of Deviation:</b> 04/02, 04/03, 04/07, 04/10, 04/12, 04/14, 04/16, 04/19, 04/20, 04/22, 04/23, 04/28, 04/29, 05/01, 05/05, 05/10, 05/13, 05/14, 05/23, 05/25, 05/26, 05/30, 06/03, 06/05, 06/07, 06/09, 06/11, 06/14, 06/18, 06/20, 06/30	<b>Duration of Deviation:</b> Please see Table 1 (attached)
<b>Number of Deviations:</b> 39	
<b>Probable Cause of Deviation:</b> IHCC personnel recorded that certain oven dampers did not properly function to open when the charging process was initiated. Thus, they were not positioned to maximize draft (i.e. at the minimum position) during charging activities on 39 occasions during the reporting period. The uptake dampers are programmed to open fully once the charging sequence on an oven is initiated; however, in these instances, the dampers malfunctioned and were not able to fully open. For specific dates and oven numbers, please see the oven uptake information in Table 1 attached to this quarterly report. 31 of these deviations occurred on non-rebuilt coke ovens.	
<b>Response Steps Taken:</b> Personnel inspect all uptakes prior to pushing ovens to maximize proper operation. IHCC maintenance personnel execute a daily oven damper maintenance and repair program to ensure dampers are functional. Additionally, IHCC is installing a new damper positioning system as ovens are rebuilt to ensure dampers are able to function and be positioned to maximize draft during charging.	

<b>Permit Requirement</b> (specify permit condition #): D.1.13, D.1.18	
<b>Dates of Deviation:</b> 04/01-04/13, 04/15, 04/24, 04/26, 04/29-05/02, 05/05, 05/08, 05/15, 05/19, 05/23, 06/07, 06/13, 06/17-06/19, 06/24	<b>Duration of Deviation:</b> Please see Table 2 (attached)
<b>Number of Deviations:</b> 31	
<b>Probable Cause of Deviation:</b> For a total of 31 days, IHCC was unable to maintain 1200 to 2400 degree Fahrenheit temperature in the common tunnels on B, C, and D Batteries. For B Battery, the (22) low common tunnel temperature readings are a result of multiple ovens that are out of service as part of a rebuild process, and therefore, the overall heat load to the common tunnel is reduced. For C and D Batteries, the (21) common tunnel temperature readings are a result of air in-leakage into the system.	
<b>Response Steps Taken:</b> IHCC has taken several response measures to increase the common tunnel temperatures including installing gas lances in the ovens. IHCC is continuing to implement its on-going oven maintenance and repair program as well as scheduling to begin repairs on common tunnel, all of which will increase common tunnel temperatures.	

<b>Permit Requirement (specify permit condition #) E.2.2 (c)</b>	
<b>Dates of Deviation:</b> 04/01, 04/02, 04/04, 04/06-04/09, 04/11, 04/12, 04/20, 04/29, 04/30, 05/01, 05/02, 05/04-05/11, 05/13, 05/15, 05/18-05/21, 05/23, 05/24, 05/28, 05/29, 06/02, 06/04, 06/06, 06/08, 06/09, 06/11, 06/12, 06/14	<b>Duration of Deviation:</b> Varies
<b>Number of Deviations:</b> 39	
<b>Probable Cause of Deviation:</b> On 39 occasions, IHCC personnel observed positive pressure on A, B, C, and/or D Battery common tunnels. <p>A battery positive pressure readings are attributed to erroneous readings caused by high winds.</p> <p>B battery positive pressure readings are a result of on-going oven rebuild and common tunnel repairs.</p> <p>C battery positive pressure readings are attributed to erroneous readings caused by water infiltration into our instrumentation equipment and are also partially attributable to fouling in Cokenergy's heat recovery steam generators (HRSGs) which leads to low draft.</p> <p>D battery positive pressure readings are a result of both HRSG fouling and common tunnel blockage that resulted in low draft and are also partially attributable to fouling in Cokenergy's heat recovery steam generators (HRSGs) which leads to low draft.</p>	
<b>Response Steps Taken:</b> IHCC operations personnel monitor oven conditions to maintain negative draft within the common tunnel. C battery instrumentation piping was repaired eliminating water infiltration into the system. In addition to the items noted above IHCC plans to replace certain sections of the C and D common tunnels in the second half of 2019 and into 2020.	

<b>Permit Requirement</b> (specify permit condition #) E.2.2 (c)	
<b>Dates of Deviation:</b> 04/01-04/03, 04/05-04/13, 04/15-04/17, 04/19, 04/21-05/03, 05/05-05/14, 05/16, 05/17, 05/19-05/24, 05/27-06/20, 06/22,06/23, 06/27	<b>Duration of Deviation:</b> Please see Table 4 (attached)
<b>Number of Deviations:</b> 184	
<b>Probable Cause of Deviation:</b> Door fires that occurred during the reporting period and lasted longer than 15 minutes on the push side or 45 minutes on coke side are the result of aging non-rebuilt coke ovens. Corrective actions were taken, but operators were unable to stop the leaks within the allowed 15 minutes or 45 minutes on certain ovens for the dates mentioned above. 175 of the 184 deviations occurred on aging non-rebuilt coke ovens which will be rebuilt in 2019. 8 deviations occurred on rebuilt ovens, 3 of which were related to oven conditions and 5 which were related to common tunnel blockage and insufficient/low draft due to HRSG fouling which are expected to be resolved through common tunnel repairs.	
<b>Response Steps Taken:</b> IHCC personnel monitor the ovens and perform all necessary mitigation steps to try to stop any door leaks. In addition to rebuilding coke ovens, IHCC maintains an on-going oven maintenance and repair program, which includes inspecting and cleaning the common tunnel to maintain sufficient draft. C and D common tunnel sections are scheduled to be replaced in the 3 <sup>rd</sup> and 4 <sup>th</sup> quarters of 2019.	

**Signature:**

**Form Completed By:** Kris Singleton  
**Title/Position:** Corporate Environmental Engineer  
**Phone:** (513)-649-1371  
**Date:** July 30, 2019

**Attachments:**

**Table 1: D.1.12(b) - Uptake damper position indicated closed following the charge of the oven:**

<b>Incident Date / Time</b>	<b>Description / Asset</b>
4/2/2019	B19
4/3/2019	B28
4/7/2019	B28
4/10/2019	B16
4/12/2019	B19
4/14/2019	B28
4/16/2019	B19
4/19/2019	D60
4/20/2019	B19
4/22/2019	B28
4/23/2019	B(16, 32)
4/28/2019	D46
4/29/2019	B16
5/1/2019	B (32)
5/5/2019	B(16, 32)
5/10/2019	C (23)
5/13/2019	B (16)
5/14/2019	B (31, 32)
5/23/2019	B (16)
5/25/2019	B (19)
5/26/2019	B (32)
5/30/2019	B (32)
6/3/2019	B (32)
6/5/2019	D (40)
6/7/2019	B (32), D (40)
6/9/2019	B ( 33) D (41)
6/11/2019	B (32) D (41)
6/14/2019	B (32)
6/18/2019	B (32)
6/20/2019	B (5)
6/30/2019	C (63)

**Table 2: D.1.13, D.1.18 – Common tunnel temperature out of the 1200 to 2400 degree Fahrenheit**

<b>Incident Date / Time</b>	<b>Description / Asset</b>
<b>4/1/2019</b>	B, C Battery
<b>4/2/2019</b>	B Battery
<b>4/3/2019</b>	B, C Battery
<b>4/4/2019</b>	B, C Battery
<b>4/5/2019</b>	B, C, D Battery
<b>4/6/2019</b>	B Battery
<b>4/7/2019</b>	B, C Battery
<b>4/8/2019</b>	B, C Battery
<b>4/9/2019</b>	B, C Battery
<b>4/10/2019</b>	B, C Battery
<b>4/11/2019</b>	B Battery
<b>4/12/2019</b>	B, C Battery
<b>4/13/2019</b>	B Battery
<b>4/15/2019</b>	B Battery
<b>4/24/2019</b>	B Battery
<b>4/26/2019</b>	C Battery
<b>4/29/2019</b>	C Battery
<b>4/30/2019</b>	C Battery
<b>5/1/2019</b>	B, C Battery
<b>5/2/2019</b>	B, C Battery
<b>5/5/2019</b>	B Battery
<b>5/8/2019</b>	B Battery
<b>5/15/2019</b>	C Battery
<b>5/19/2019</b>	D Battery
<b>5/23/2019</b>	B Battery
<b>6/7/2019</b>	C Battery
<b>6/13/2019</b>	B Battery
<b>6/17/2019</b>	C Battery
<b>6/18/2019</b>	C Battery
<b>6/19/2019</b>	C Battery
<b>6/24/2019</b>	B Battery

**Table 4: E.2.2(c) – Door Fire (required 15 min PS / 45 min CS)**

Date	Battery	Oven #	Time Observed	PS	CS	Duration	cause(s)	corrective action(s)
4/1/2019	B	32	7:13 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/1/2019	B	6	7:14 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	27	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	24	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	23	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	20	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	19	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/3/2019	B	31	2:19 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/5/2019	B	32	12:23 PM	X		8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	24	1:10 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	25	1:10 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	31	1:11 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	32	1:11 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/6/2019	B	23	7:09 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/6/2019	B	21	7:09 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	31	7:30 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	25	7:30 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	19	7:30 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	6	7:31 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	6	8:25 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	25	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	27	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	28	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	31	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/9/2019	B	33	6:11 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/9/2019	B	20	6:11 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/10/2019	B	32	1:02 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/12/2019	B	31	1:33 PM	X		8 hr	sole flues blocked	adjusted uptakes, door holes
4/12/2019	B	27	1:33 PM	X		8 hr	sole flues blocked	adjusted uptakes, door holes
4/12/2019	B	19	1:34 PM	X		8 hr	sole flues blocked	adjusted uptakes, door holes
4/13/2019	B	6	6:25 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
4/15/2019	B	32	6:12 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/15/2019	B	6	7:05 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/16/2019	B	20	6:05 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/16/2019	B	12	6:05 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	20	12:33 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	24	12:33 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	25	12:33 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	31	12:34 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	32	12:34 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	19	1:08 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/19/2019	B	6	12:35 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/19/2019	B	16	12:35 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	31	7:19 AM	X	X	8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	23	7:19 AM	X		8 hr	sole flues plugged	adjusted uptakes

4/21/2019	B	19	7:19 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	6	7:19 AM	X	X	8 hr	sole flues plugged	adjusted uptakes
4/23/2019	B	25	6:15 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
4/24/2019	B	32	12:38 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/25/2019	B	6	6:06 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/27/2019	B	21	6:41 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/30/2019	B	27	6:20 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/30/2019	B	20	6:20 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/30/2019	B	19	6:20 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	6	12:44 PM	X	X	8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	16	12:44 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	27	12:49 PM		X	8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	31	12:49 PM		X	8 hr	sole flues plugged	adjusted uptakes
5/2/2019	B	21	2:07 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/2/2019	B	32	2:07 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/3/2019	B	20	12:47 PM	X		8 hr	sole flues plugged	adjusted door dampers
5/3/2019	B	16	12:47 PM	X		8 hr	sole flues plugged	adjusted door dampers
5/5/2019	B	12	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	19	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	21	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	24	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	25	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	31	6:46 AM	X	X	8 hr	sole flues plugged	adjusted uptakes
5/6/2019	B	23	6:23 AM	X	X	8 hr	sole flues blocked	adjusted uptakes, door holes
5/7/2019	B	6	6:13 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
5/9/2019	B	24	12:58 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/9/2019	B	23	12:58 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/9/2019	B	19	12:58 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/10/2019	B	32	8:05 AM	X		8 hr	soles blocked	adjust door holes and uptakes
5/10/2019	B	31	8:05 AM	X		8 hr	soles blocked	adjust door holes and uptakes
5/13/2019	B	25	6:23 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/13/2019	B	6	6:23 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/16/2019	B	19	12:41 PM	X		8 hr	soles blocked	adjust uptakes and door holes
5/16/2019	B	24	12:42 PM	X		8 hr	soles blocked	adjust uptakes and door holes
5/16/2019	B	25	12:42 PM	X		8 hr	soles blocked	adjust uptakes and door holes
5/17/2019	B	27	12:33 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	16	12:33 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	6	1:07 PM		X	8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	24	1:08 PM		X	8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	27	1:08 PM		X	8 hr	soles blocked	adjust door holes and uptakes
5/19/2019	B	6	7:40 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/19/2019	B	27	8:21 AM		X	8 hr	sole flues blocked	adjusted uptakes
5/19/2019	B	32	8:21 AM		X	8 hr	sole flues blocked	adjusted uptakes
5/19/2019	B	33	8:21 AM		X	8 hr	sole flues blocked	adjusted uptakes
5/20/2019	B	32	6:46 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/20/2019	B	19	6:46 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/23/2019	B	24	1:37 PM	X	X	8 hr	Sole flues blocked	adjusted uptakes and door holes
5/23/2019	B	32	1:37 PM	X	X	8 hr	Sole flues blocked	adjusted uptakes and door holes

5/23/2019	B	31	1:37 PM	X		8 hr	Sole flues blocked	adjusted uptakes and door holes
5/24/2019	B	32	1:50 PM	X		8 hr	Sole flues blocked	adjusted uptakes and door holes
5/27/2019	B	31	6:20 AM	X		8 hr	Sole flues blocked	sole flues plugged and adjusted uptakes
5/27/2019	B	32	6:20 AM	X		8 hr	Sole flues blocked	sole flues plugged and adjusted uptakes
5/27/2019	B	6	6:21 AM	X		8 hr	Sole flues blocked	sole flues plugged and adjusted uptakes
5/28/2019	B	31	5:56 AM		X	8 hr	Sole flues blocked	adjusted uptakes
5/30/2019	B	23	1:22 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/31/2019	B	23	8:26 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/31/2019	B	31	8:26 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/31/2019	B	32	8:26 AM	X		8 hr	sole flues blocked	adjusted uptakes
6/1/2019	B	19	7:43 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/1/2019	B	24	7:43 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	25	9:19 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	6	9:20 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	6	9:55 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	24	9:56 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	25	9:56 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	27	9:56 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/3/2019	C	32	7:26 AM	X		>15 min	One buck stay failure, lintel failure, and two door jam failures.	replaced one buck stay, one lintel, and two door jams
6/4/2019	C	31	4:45 AM	X		>15 min	Low Draft	adjusted sole flues and uptakes
6/5/2019	B	32	9:00 AM	X		>15 min	Sole flues plugged	adjusted uptakes
6/5/2019	B	24	9:00 AM	X		>15 min	Sole flues plugged	adjusted uptakes
6/6/2019	B	19	1:22 PM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
6/7/2019	B	3	12:19 PM	X		8 hr	sole flues blocked	adjusted uptakes
6/8/2019	B	32	6:52 AM	X		8 hr	sole flues blocked	adjusted uptakes
6/9/2019	B	31	7:19 AM		X	8 hr	sole flues blocked	adjusted uptakes and door holes
6/9/2019	B	32	7:19 AM		X	8 hr	sole flues blocked	adjusted uptakes and door holes
6/10/2019	B	27	8:31 AM	X		8 hr	sole flues blocked	adjusted uptake and door holes
6/10/2019	B	6	8:32 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
6/12/2019	B	32	12:40 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/13/2019	B	1	12:52 PM	X		>15 min	Sole flues plugged	adjusted uptakes
6/13/2019	B	3	12:52 PM	X		>15 min	Sole flues plugged	adjusted uptakes
6/13/2019	B	31	12:53 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/13/2019	B	6	1:00 PM		X	8 hr	Sole flues plugged	adjusted uptakes
6/13/2019	B	31	1:12 PM		X	8 hr	Sole flues plugged	adjusted uptakes
6/14/2019	B	24	12:12 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/15/2019	B	32	7:00 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/16/2019	B	6	7:55 AM	X	X	8 hr	Sole flues plugged	adjusted uptakes
6/16/2019	B	32	8:30 AM	X	X	8 hr	Sole flues plugged	adjusted uptakes
6/17/2019	B	25	6:51 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/18/2019	B	31	6:35 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/19/2019	B	32	12:28 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/22/2019	B	27	7:12 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/22/2019	C	17	7:50 AM	X		>15 min	Low Draft	adjusted sole flues and uptakes

6/22/2019	C	33	7:50 AM	X		>15 min	One buck stay failure, lintel failure, and two door jam failures.	replaced one buck stay, one lintel, and two door jams
6/23/2019	B	6	7:05 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/23/2019	B	6	8:05 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/23/2019	B	27	8:06 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/23/2019	B	33	8:06 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/27/2019	C	30	1:06 PM	X		>15 min	Sole flues plugged. Low Draft	adjusted sole flues and uptakes
6/27/2019	C	32	1:06 PM	X		>15 min	One buck stay failure, lintel failure, and two door jam failures.	replaced one buck stay, one lintel, and two door jams
6/27/2019	C	34	1:06 PM	X		>15 min	Low Draft	adjusted sole flues and uptakes
6/27/2019	C	50	1:06 PM	X		>15 min	Low Draft	adjusted sole flues and uptakes



**SunCoke Energy™**

**Indiana Harbor Coke Company, L.P.**  
3210 Watling Street, MC 2-990  
East Chicago, IN 46312  
(219) 378-3949 FAX (219) 397-4590

July 30, 2019

Mr. David Cline  
Compliance Data Section  
Indiana Department of Environmental Management  
100 North Senate Avenue, Mail Code 61 – 53 IGCN – 1003  
Indianapolis, IN 46204 – 2551

**40 CFR 63, Subparts L and CCCCC**  
**2018 Second Semi-Annual Compliance Certification**

Dear Mr. Cline:

Indiana Harbor Coke Company, L.P. (IHCC) operates a coke production facility located in East Chicago, Indiana. The facility is subject to the National Emissions Standards for Coke Oven Batteries (MACT L) and the National Emissions Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks (MACT CCCCC).

Per applicable reporting and recordkeeping provisions of 40 CFR 63.311 and 40 CFR 63.7341, IHCC is providing the following information for the semiannual compliance period of January 1, 2019 through June 30, 2019.

- IHCC did not experience any malfunction events with respect to the standards of MACT L during the current reporting period.
- IHCC experienced deviations from the work practice standards listed in MACT L and incorporated in the facility's Work Practice Plan pursuant to 40 CFR 63.303(b)(3). IHCC is reporting these deviations in Table 1 below.

**TABLE 1. DEVIATIONS FROM MACT L WORK PRACTICE STANDARDS**

Dates	Event Description	Corrective Action
01/04, 01/06, 01/07, 01/10, 01/17, 01/20, 01/23-01/28, 01/30, 02/01, 02/02, 02/04, 02/06, 02/08-02/10, 02/13, 02/14, 02/16, 02/18, 02/20-02/22, 02/24-03/02, 03/04, 03/05, 03/07, 03/09, 03/12, 03/16, 03/17, 03/19, 03/21, 03/24, 04/02, 04/03, 04/07, 04/10, 04/12, 04/14, 04/16, 04/19, 04/20, 04/22, 04/23, 04/28, 04/29, 05/01, 05/05, 05/10, 05/13, 05/14, 05/23, 05/25, 05/26, 05/30, 06/03, 06/05, 06/07, 06/09, 06/11, 06/14, 06/18, 06/20, 06/30	IHCC personnel recorded that the oven damper was not positioned to maximize draft during charging activities on the listed dates.	IHCC is installing a new damper positioning system to ensure dampers are positioned to maximize draft during charging. Additionally, IHCC performs maintenance and repairs on the existing uptake damper assemblies daily. Please see Attachment A for more details.
01/01, 01/02, 01/05-01/08, 01/10-01/12, 01/14-01/17, 01/21, 01/22, 01/24-01/31, 02/02-02/26, 02/28, 03/01-03/11, 03/13, 03/15-03/21, 03/23-03/27, 03/31-04/02, 04/04, 04/06-04/09, 04/11, 04/12, 04/20, 04/29, 04/30, 05/02, 05/05, 05/07, 05/08, 05/10, 05/11, 05/13, 05/15, 05/18-05/21, 05/23, 05/24, 05/28, 05/29, 06/02, 06/04, 06/06, 06/08, 06/09, 06/11, 06/12, 06/24	IHCC personnel observed positive pressure on A, B, C and/or D Battery common tunnel attributable to inadequate condensation drainage in the differential pressure cell line, weather, fluctuating process conditions involving the ovens, and the heat recovery steam generators (HRSGs).	IHCC operations personnel monitor oven conditions to maintain negative draft within the common tunnel. Cleaning and maintenance has been performed on the common tunnel that is expected to improve the performance of the pressure gauges measuring tunnel draft as well as make adjustments for improved condensation drainage.

- IHCC experienced deviations from the work practice standards established for the observation of coke oven doors for leaks as required by 40 CFR 63.303(c)(2). Please see Attachment B for more details.
- IHCC did not experience any malfunction events with respect to the standards of MACT CCCCC during the current reporting period.
- During the current reporting period, IHCC did not experience any deviations from the emission limitations, work practice standards, or operation and maintenance requirements listed in MACT CCCCC. The coke oven batteries operated for 4,344 hours during this semi-annual compliance period.

As the responsible official, I certify that based on information and belief formed after reasonable inquiry, the statements and information in the above are true, accurate, and complete.

Sincerely,

  
Patrick Nigl  
General Manager

cc:  
Clifford Yukawa  
IDEM/Northwest Regional Office  
330 W US Highway 30, Suite F  
Valparaiso, IN 46385

Edward Nam  
Air and Radiation Division US EPA Region 5  
77 West Jackson Boulevard (A-18J)  
Chicago, IL 60604

**ATTACHMENT A:****UPTAKE DAMPER POSITION DEVIATIONS**

**Uptake damper position indicated closed following the charge of the oven**

Incident Date / Time	Description / Asset
1/4/2019	B45
1/6/2019	B(40, 43)
1/7/2019	B(19, 45)
1/10/2019	B43
1/17/2019	B45
1/20/2019	B19
1/23/2019	B43
1/24/2019	B(19, 45)
1/25/2019	B(34, 40)
1/26/2019	B(43, 45)
1/27/2019	B19
1/28/2019	B40
1/30/2019	B(43, 45)
2/1/2019	B45, C50
2/2/2019	D51
2/4/2019	B40
2/6/2019	B(19, 43, 45)
2/8/2019	B28
2/9/2019	B(3, 45)
2/10/2019	D34
2/13/2019	B43
2/14/2019	B(19, 45)
2/16/2019	B(34, 45), D11
2/18/2019	B(34, 40)
2/20/2019	B(34, 43)
2/21/2019	B45
2/22/2019	B(19, 34)
2/24/2019	B(34, 40)
2/25/2019	B(28, 31)
2/26/2019	B45
2/27/2019	B(27, 40, 43)
2/28/2019	B28
3/1/2019	B34
3/2/2019	B(19, 40)
3/4/2019	B34
3/5/2019	B(28, 40, 45)

3/7/2019	B(19, 34)
3/9/2019	B34
3/12/2019	B34
3/16/2019	B19
3/17/2019	C26
3/19/2019	B41
3/21/2019	B19
3/24/2019	B19
4/2/2019	B19
4/3/2019	B28
4/7/2019	B28
4/10/2019	B16
4/12/2019	B19
4/14/2019	B28
4/16/2019	B19
4/19/2019	D60
4/20/2019	B19
4/22/2019	B28
4/23/2019	B(16, 32)
4/28/2019	D46
4/29/2019	B16
5/1/2019	B (32)
5/5/2019	B(16, 32)
5/10/2019	C (23)
5/13/2019	B (16)
5/14/2019	B (31, 32)
5/23/2019	B (16)
5/25/2019	B (19)
5/26/2019	B (32)
5/30/2019	B (32)
6/3/2019	B (32)
6/5/2019	D (40)
6/7/2019	B (32), D (40)
6/9/2019	B ( 33) D (41)
6/11/2019	B (32) D (41)
6/14/2019	B (32)
6/18/2019	B (32)
6/20/2019	B (5)
6/30/2019	C (63)

**ATTACHMENT B:****DOOR LEAK DEVIATIONS****Door Fire (required 15 min PS / 45 min CS)**

Date	Battery	Oven #	Time Observed	PS	CS	Duration	cause(s)	corrective action(s)
4/1/2019	B	32	7:13 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/1/2019	B	6	7:14 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	27	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	24	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	23	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	20	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/2/2019	B	19	6:45 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/3/2019	B	31	2:19 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/5/2019	B	32	12:23 PM	X		8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	24	1:10 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	25	1:10 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	31	1:11 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/5/2019	B	32	1:11 PM		X	8 hr	sole flues blocked	adjusted uptakes
4/6/2019	B	23	7:09 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/6/2019	B	21	7:09 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	31	7:30 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	25	7:30 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	19	7:30 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	6	7:31 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	6	8:25 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	25	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	27	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	28	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/7/2019	B	31	8:26 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/9/2019	B	33	6:11 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/9/2019	B	20	6:11 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/10/2019	B	32	1:02 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/12/2019	B	31	1:33 PM	X		8 hr	sole flues blocked	adjusted uptakes, door holes
4/12/2019	B	27	1:33 PM	X		8 hr	sole flues blocked	adjusted uptakes, door holes
4/12/2019	B	19	1:34 PM	X		8 hr	sole flues blocked	adjusted uptakes, door holes
4/13/2019	B	6	6:25 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
4/15/2019	B	32	6:12 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/15/2019	B	6	7:05 AM		X	8 hr	sole flues plugged	adjusted uptakes
4/16/2019	B	20	6:05 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/16/2019	B	12	6:05 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	20	12:33 PM		X	8 hr	sole flues plugged	adjusted uptakes

4/17/2019	B	24	12:33 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	25	12:33 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	31	12:34 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	32	12:34 PM		X	8 hr	sole flues plugged	adjusted uptakes
4/17/2019	B	19	1:08 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/19/2019	B	6	12:35 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/19/2019	B	16	12:35 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	31	7:19 AM	X	X	8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	23	7:19 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	19	7:19 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/21/2019	B	6	7:19 AM	X	X	8 hr	sole flues plugged	adjusted uptakes
4/23/2019	B	25	6:15 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
4/24/2019	B	32	12:38 PM	X		8 hr	sole flues plugged	adjusted uptakes
4/25/2019	B	6	6:06 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/27/2019	B	21	6:41 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/30/2019	B	27	6:20 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/30/2019	B	20	6:20 AM	X		8 hr	sole flues plugged	adjusted uptakes
4/30/2019	B	19	6:20 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	6	12:44 PM	X	X	8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	16	12:44 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	27	12:49 PM		X	8 hr	sole flues plugged	adjusted uptakes
5/1/2019	B	31	12:49 PM		X	8 hr	sole flues plugged	adjusted uptakes
5/2/2019	B	21	2:07 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/2/2019	B	32	2:07 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/3/2019	B	20	12:47 PM	X		8 hr	sole flues plugged	adjusted door dampers
5/3/2019	B	16	12:47 PM	X		8 hr	sole flues plugged	adjusted door dampers
5/5/2019	B	12	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	19	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	21	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	24	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	25	6:46 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/5/2019	B	31	6:46 AM	X	X	8 hr	sole flues plugged	adjusted uptakes
5/6/2019	B	23	6:23 AM	X	X	8 hr	sole flues blocked	adjusted uptakes, door holes
5/7/2019	B	6	6:13 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
5/9/2019	B	24	12:58 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/9/2019	B	23	12:58 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/9/2019	B	19	12:58 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/10/2019	B	32	8:05 AM	X		8 hr	soles blocked	adjust door holes and uptakes
5/10/2019	B	31	8:05 AM	X		8 hr	soles blocked	adjust door holes and uptakes
5/13/2019	B	25	6:23 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/13/2019	B	6	6:23 AM	X		8 hr	sole flues plugged	adjusted uptakes
5/16/2019	B	19	12:41 PM	X		8 hr	soles blocked	adjust uptakes and door holes
5/16/2019	B	24	12:42 PM	X		8 hr	soles blocked	adjust uptakes and door holes

5/16/2019	B	25	12:42 PM	X		8 hr	soles blocked	adjust uptakes and door holes
5/17/2019	B	27	12:33 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	16	12:33 PM	X		8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	6	1:07 PM		X	8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	24	1:08 PM		X	8 hr	soles blocked	adjust door holes and uptakes
5/17/2019	B	27	1:08 PM		X	8 hr	soles blocked	adjust door holes and uptakes
5/19/2019	B	6	7:40 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/19/2019	B	27	8:21 AM		X	8 hr	sole flues blocked	adjusted uptakes
5/19/2019	B	32	8:21 AM		X	8 hr	sole flues blocked	adjusted uptakes
5/19/2019	B	33	8:21 AM		X	8 hr	sole flues blocked	adjusted uptakes
5/20/2019	B	32	6:46 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/20/2019	B	19	6:46 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/23/2019	B	24	1:37 PM	X	X	8 hr	Sole flues blocked	adjusted uptakes and door holes
5/23/2019	B	32	1:37 PM	X	X	8 hr	Sole flues blocked	adjusted uptakes and door holes
5/23/2019	B	31	1:37 PM	X		8 hr	Sole flues blocked	adjusted uptakes and door holes
5/24/2019	B	32	1:50 PM	X		8 hr	Sole flues blocked	adjusted uptakes and door holes
5/27/2019	B	31	6:20 AM	X		8 hr	Sole flues blocked	sole flues plugged and adjusted uptakes
5/27/2019	B	32	6:20 AM	X		8 hr	Sole flues blocked	sole flues plugged and adjusted uptakes
5/27/2019	B	6	6:21 AM	X		8 hr	Sole flues blocked	sole flues plugged and adjusted uptakes
5/28/2019	B	31	5:56 AM		X	8 hr	Sole flues blocked	adjusted uptakes
5/30/2019	B	23	1:22 PM	X		8 hr	sole flues plugged	adjusted uptakes
5/31/2019	B	23	8:26 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/31/2019	B	31	8:26 AM	X		8 hr	sole flues blocked	adjusted uptakes
5/31/2019	B	32	8:26 AM	X		8 hr	sole flues blocked	adjusted uptakes
6/1/2019	B	19	7:43 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/1/2019	B	24	7:43 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	25	9:19 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	6	9:20 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	6	9:55 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	24	9:56 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	25	9:56 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/2/2019	B	27	9:56 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/3/2019	C	32	7:26 AM	X		>15 min	One buck stay failure, lintel failure, and two door jam failures.	replaced one buck stay, one lintel, and two door jams
6/4/2019	C	31	4:45 AM	X		>15 min	Low Draft	adjusted sole flues and uptakes
6/5/2019	B	32	9:00 AM	X		>15 min	Sole flues plugged	adjusted uptakes
6/5/2019	B	24	9:00 AM	X		>15 min	Sole flues plugged	adjusted uptakes
6/6/2019	B	19	1:22 PM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
6/7/2019	B	3	12:19 PM	X		8 hr	sole flues blocked	adjusted uptakes
6/8/2019	B	32	6:52 AM	X		8 hr	sole flues blocked	adjusted uptakes
6/9/2019	B	31	7:19 AM		X	8 hr	sole flues blocked	adjusted uptakes and door holes

6/9/2019	B	32	7:19 AM		X	8 hr	sole flues blocked	adjusted uptakes and door holes
6/10/2019	B	27	8:31 AM	X		8 hr	sole flues blocked	adjusted uptake and door holes
6/10/2019	B	6	8:32 AM	X		8 hr	sole flues blocked	adjusted uptakes and door holes
6/12/2019	B	32	12:40 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/13/2019	B	1	12:52 PM	X		>15 min	Sole flues plugged	adjusted uptakes
6/13/2019	B	3	12:52 PM	X		>15 min	Sole flues plugged	adjusted uptakes
6/13/2019	B	31	12:53 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/13/2019	B	6	1:00 PM		X	8 hr	Sole flues plugged	adjusted uptakes
6/13/2019	B	31	1:12 PM		X	8 hr	Sole flues plugged	adjusted uptakes
6/14/2019	B	24	12:12 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/15/2019	B	32	7:00 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/16/2019	B	6	7:55 AM	X	X	8 hr	Sole flues plugged	adjusted uptakes
6/16/2019	B	32	8:30 AM	X	X	8 hr	Sole flues plugged	adjusted uptakes
6/17/2019	B	25	6:51 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/18/2019	B	31	6:35 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/19/2019	B	32	12:28 PM	X		8 hr	Sole flues plugged	adjusted uptakes
6/22/2019	B	27	7:12 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/22/2019	C	17	7:50 AM	X		>15 min	Low Draft	adjusted sole flues and uptakes
6/22/2019	C	33	7:50 AM	X		>15 min	One buck stay failure, lintel failure, and two door jam failures.	replaced one buck stay, one lintel, and two door jams
6/23/2019	B	6	7:05 AM	X		8 hr	Sole flues plugged	adjusted uptakes
6/23/2019	B	6	8:05 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/23/2019	B	27	8:06 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/23/2019	B	33	8:06 AM		X	8 hr	Sole flues plugged	adjusted uptakes
6/27/2019	C	30	1:06 PM	X		>15 min	Sole flues plugged. Low Draft	adjusted sole flues and uptakes
6/27/2019	C	32	1:06 PM	X		>15 min	One buck stay failure, lintel failure, and two door jam failures.	replaced one buck stay, one lintel, and two door jams
6/27/2019	C	34	1:06 PM	X		>15 min	Low Draft	adjusted sole flues and uptakes
6/27/2019	C	50	1:06 PM	X		>15 min	Low Draft	adjusted sole flues and uptakes



# SunCoke Energy

**SunCoke Energy, Inc.**  
3210 Watling St.  
MC 2-990  
East Chicago, IN 46312  
219-378-3900 Phone  
219-378-4590 Fax

October 30, 2019

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, IN 46204 – 2251

RE: Operating Permit Certification – Permit No. T089-36982-00382

Attached you will find Indiana Harbor Coke Company's (IHCC's) Part 70 Operating Permit Certification, Quarterly Report for Coal Charged, and Quarterly Deviation and Compliance Monitoring Report for the 3<sup>rd</sup> Quarter of 2019.

Sincerely,

Nancy Estrada  
Environmental Engineer

cc:

Clifford Yukawa w/attachments  
IDEM/Northwest Regional Office  
330 W US Highway 30, Suite F  
Valparaiso, IN 46385

Attachments:  
Part 70 Operating Permit Certification  
Quarterly Report for Coal Charged  
Quarterly Deviation & Compliance Monitoring Report

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY**

**PART 70 OPERATING PERMIT  
CERTIFICATION**

Source Name: Indiana Harbor Coke Company L.P., a contractor of ArcelorMittal  
Source Address: 3210 Watling Street, East Chicago, Indiana 46312  
Part 70 Permit Renewal No.: T089-36982-00382

**This certification shall be included when submitting monitoring, testing reports/results  
or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Quarterly Report for 3<sup>rd</sup> Quarter 2019
- Notification (specify)
- Affidavit (specify)
- Other (specify)

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

Signature:

Printed Name: Patrick Nigl

Title/Position: General Manager

Phone: (219) 378-3902

Date: October 30, 2019

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT SECTION**

**Part 70 Quarterly Report**

Source Name: Indiana Harbor Coke Company L.P., a contractor of ArcelorMittal  
 Source Address: 3210 Watling Street, East Chicago, Indiana 46312  
 Part 70 Permit Renewal No.: T089-36982-00382  
 Source/Facility: IHCC  
 Limit: 2,040,000 tons of dry coal charged per twelve (12) consecutive month period with compliance determined at the end of each month

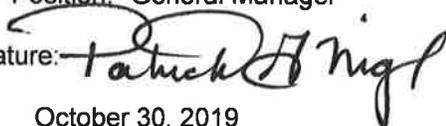
Quarter: 3<sup>rd</sup> Year: 2019

Month	12 Month Rolling Sum Tons of Coal Charged	1st Quarter Tons	2nd Quarter Tons	3rd Quarter Tons	4th Quarter Tons
January	1,330,357	121,424			
February	1,341,953	109,227			
March	1,351,139	120,331			
April	1,364,225		116,342		
May	1,379,196		118,587		
June	1,383,206		109,499		
July	1,387,758			111,821	
August	1,398,760			119,409	
September	1,407,136			118,237	
October					
November					
December					

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.  
 Deviation has been reported on:

Submitted by: Patrick Nigl  
 Title / Position: General Manager

Signature: 

Date: October 30, 2019  
 Phone: (219)-378-3902  
 Attached a signed certification to complete this report

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE and ENFORCEMENT BRANCH**

**PART 70 OPERATING PERMIT  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Indiana Harbor Coke Company L.P., a contractor of ArcelorMittal  
 Source Address: 3210 Watling Street, East Chicago, Indiana 46312  
 Part 70 Permit Renewal No.: T089-36982-00382

**Reporting Period: July 1, 2019 – September 30, 2019**

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

**Permit Requirement (specify permit condition #):** D.1.6 (a)(4)

**Dates of Deviation:** 07/29, 08/04, 08/11, 08/25, 09/1, 09/3, 09/8, 09/12

**Duration of Deviation:** 13, 3-minute averages

**Number of Deviations:** 13

**Probable Cause of Deviation:** IHCC's certified Method 9 observer recorded fugitive visible emissions from charging operations exceeding the twenty percent (20%) opacity standard as a three (3) minute average.

**Response Steps Taken:** In addition to rebuilding coke ovens, IHCC is continuing to implement an on-going oven maintenance and repair program. Additionally, IHCC is also replacing certain sections of C common tunnel in October 2019 and certain sections of D common tunnel in 2020.

<b>Permit Requirement (specify permit condition #):</b> D.1.13(b)	
<b>Dates of Deviation:</b> 07/02, 07/13, 07/25, 07/26, 07/27, 07/28, 07/29, 09/26	<b>Duration of Deviation:</b> Please see Table 1 (attached)
<b>Number of Deviations:</b> 9	
<b>Probable Cause of Deviation:</b> IHCC personnel recorded that certain oven dampers did not properly function to fully open when the charging process was initiated. Thus, they were not positioned to maximize draft (i.e. at the minimum position) during charging activities on 9 occasions during the reporting period. The uptake dampers are programmed to open fully once the charging sequence on an oven is initiated; however, in these instances, the dampers malfunctioned and were not able to fully open. For specific dates and oven numbers, please see the oven uptake information in Table 1 attached to this quarterly report.	
<b>Response Steps Taken:</b> Personnel inspect all uptakes prior to pushing ovens to maximize proper operation. IHCC maintenance personnel execute a daily oven damper maintenance and repair program to ensure dampers are functional. Additionally, IHCC is installing a new damper positioning system as ovens are rebuilt to ensure dampers are able to function and be positioned to maximize draft during charging.	

<b>Permit Requirement (specify permit condition #):</b> D.1.19	
<b>Dates of Deviation:</b> 07/01- 09/30	<b>Duration of Deviation:</b> Please see Table 2 (attached)
<b>Number of Deviations:</b> 92	
<b>Probable Cause of Deviation:</b> For a total of 92 days, IHCC was unable to maintain a temperature of 1200 to 2400 degrees Fahrenheit temperature in the common tunnels on A, B, C, and D Batteries at various times.	
For A Battery, the low common tunnel temperature readings are a result of boilers being down for scheduled maintenance by Coke Energy.	
For B Battery, the low common tunnel temperature readings are a result of multiple ovens that are out of service as part of a rebuild process, and therefore, the overall heat load to the common tunnel is reduced.	
For C Battery, the low common tunnel temperature readings are a result of inlet and transition repairs, a coal belt repair, a hot car derailing and a lightning alert which caused production delays.	
For D Battery, the common tunnel temperature readings are a result of boilers being down for scheduled maintenance by Coke Energy; a coal belt repair, a hot car derailing, and a lightning alert which caused production delays	
<b>Response Steps Taken:</b> IHCC has taken several response measures to increase the common tunnel temperatures including installing gas lances in the ovens. IHCC is continuing to implement its on-going oven maintenance and repair program as well as scheduling to begin repairs on the common tunnel in October 2019, all of which will help to maintain common tunnel temperatures.	

<b>Permit Requirement</b> (specify permit condition #) E.2.2 (c)	
<b>Dates of Deviation:</b> 07/01-07/05, 07/07, 07/08, 07/11, 07/12, 07/14, 07/15, 07/20, 07/25, 07/26, 07/28, 08/03, 08/05, 08/07, 08/30, 09/13, 09/15, 09/23, 09/25, 09/29	<b>Duration of Deviation:</b> Varies
<b>Number of Deviations:</b> 24	
<p><b>Probable Cause of Deviation:</b> On 24 occasions, IHCC personnel observed positive pressure on B and/or D Battery common tunnels.</p> <p>B battery positive pressure readings are mainly a result of on-going oven rebuilds, along with instrumentation calibration issues that were repaired.</p> <p>D battery positive pressure readings are a result of HRSG fouling and common tunnel blockage that resulted in low draft.</p>	
<p><b>Response Steps Taken:</b> IHCC operations personnel monitor oven conditions to maintain negative draft within the common tunnel. B battery instrumentation was re-calibrated and oven rebuild is scheduled to be completed by November 30, 2019. In addition to the items noted above IHCC plans to replace certain sections of D common tunnel in 2020.</p>	

<b>Permit Requirement (specify permit condition #) E.2.2 (c)</b>	
<b>Dates of Deviation:</b> 07/03, 07/06, 07/08, 08/07, 08/09, 08/16, 09/05, 09/19	<b>Duration of Deviation:</b> Please see Table 3 (attached)
<b>Number of Deviations:</b> 10	
<p><b>Probable Cause of Deviation:</b> Door fires that occurred during the reporting period and lasted longer than 15 minutes on the push side or 45 minutes on coke side are the result of insufficient draft, on-going oven rebuild and maintenance repairs. Corrective actions were taken, but operators were unable to stop the leaks within the allowed 15 minutes or 45 minutes on certain ovens for the dates shown in Table 3. 1 of the 10 deviations occurred on aging non-rebuilt coke ovens which will be rebuilt by the end of November 2019. 2 of the 10 deviations on rebuilt coke ovens occurred due to maintenance repairs and the remaining deviations were related to common tunnel blockage and insufficient/low draft due to HRSO fouling which are expected to be resolved through common tunnel repairs.</p>	
<p><b>Response Steps Taken:</b> IHCC personnel monitor the ovens and perform all necessary mitigation steps to try to stop any door leaks. In addition to rebuilding coke ovens, IHCC maintains an on-going oven maintenance and repair program, which includes inspecting and cleaning the common tunnel to maintain sufficient draft. In addition to the items noted above IHCC has scheduled to begin repairs on C common tunnel in October 2019 and to replace certain sections of D common tunnel in 2020.</p>	

**Signature:**

**Form Completed By:** Nancy Estrada  
**Title/Position:** Environmental Engineer  
**Phone:** (219) 895-5976  
**Date:** October 28, 2019

**Attachments:**

**Table 1: D.1.12(b) - Uptake damper position indicated closed following the charge of the oven:**

<b>Incident Date / Time</b>	<b>Description / Asset</b>
<b>7/2/2019</b>	C (24)
<b>7/13/2019</b>	B (67, 59)
<b>7/25/2019</b>	D (41)
<b>7/26/2019</b>	B (1)
<b>7/27/2019</b>	B (66)
<b>7/28/2019</b>	B (1)
<b>7/29/2019</b>	D (41)
<b>9/26/2019</b>	B (52)

**Table 2: D.1.13, D.1.18 – Common tunnel temperature out of the 1200 to 2400 degree Fahrenheit**

Incident Date / Time	Description / Asset
7/1/2019	B common tunnel
7/2/2019	B common tunnel
7/3/2019	B common tunnel
7/4/2019	B common tunnel
7/5/2019	B common tunnel
7/6/2019	B common tunnel
7/7/2019	B, C common tunnel
7/8/2019	B common tunnel
7/9/2019	B common tunnel
7/10/2019	A, B common tunnel
7/11/2019	A, B common tunnel
7/12/2019	A, B common tunnel
7/13/2019	A, B common tunnel
7/14/2019	A, B common tunnel
7/15/2019	A, B common tunnel
7/16/2019	A, B common tunnel
7/17/2019	A, B common tunnel
7/18/2019	A, B common tunnel
7/19/2019	A, B common tunnel
7/20/2019	A, B common tunnel
7/21/2019	A, B common tunnel
7/22/2019	A, B common tunnel
7/23/2019	A, B common tunnel
7/24/2019	A, B common tunnel
7/25/2019	A, B common tunnel
7/26/2019	A, B, D common tunnel
7/27/2019	A, B, D common tunnel
7/28/2019	A, B, D common tunnel
7/29/2019	A, B, D common tunnel
7/30/2019	A, B, D common tunnel
7/31/2019	A, B, D common tunnel
8/1/2019	A, B, D common tunnel
8/2/2019	A, B common tunnel
8/3/2019	A, B common tunnel
8/4/2019	A, B common tunnel
8/5/2019	A, B common tunnel
8/6/2019	A, B common tunnel

8/7/2019	A, B common tunnel
8/8/2019	B common tunnel
8/9/2019	B common tunnel
8/10/2019	B common tunnel
8/11/2019	B common tunnel
8/12/2019	B common tunnel
8/13/2019	B common tunnel
8/14/2019	B common tunnel
8/15/2019	B common tunnel
8/16/2019	B common tunnel
8/17/2019	B, C common tunnel
8/18/2019	B, C common tunnel
8/19/2019	B, C common tunnel
8/20/2019	B, C common tunnel
8/21/2019	B, C common tunnel
8/22/2019	B, C common tunnel
8/23/2019	B, C common tunnel
8/24/2019	B, C common tunnel
8/25/2019	B, C common tunnel
8/26/2019	B, C common tunnel
8/27/2019	B, C common tunnel
8/28/2019	B, C common tunnel
8/29/2019	A, B, C common tunnel
8/30/2019	B, C common tunnel
8/31/2019	B, C common tunnel
9/1/2019	B, C common tunnel
9/2/2019	B, C common tunnel
9/3/2019	B, C common tunnel
9/4/2019	B, C common tunnel
9/5/2019	B, C common tunnel
9/6/2019	B, C common tunnel
9/7/2019	B, C common tunnel
9/8/2019	B, C common tunnel
9/9/2019	B, C common tunnel
9/10/2019	B common tunnel
9/11/2019	B common tunnel
9/12/2019	B common tunnel
9/13/2019	B common tunnel
9/14/2019	B common tunnel
9/15/2019	B common tunnel
9/16/2019	B common tunnel
9/17/2019	B common tunnel
9/18/2019	B, C common tunnel
9/19/2019	B, C common tunnel

9/20/2019	B, C common tunnel
9/21/2019	B, C common tunnel
9/22/2019	B, C common tunnel
9/23/2019	A, B, C common tunnel
9/24/2019	A, B, C common tunnel
9/25/2019	A, B, C common tunnel
9/26/2019	A, B, C common tunnel
9/27/2019	A, B, C common tunnel
9/28/2019	C, D common tunnel
9/29/2019	C common tunnel
9/30/2019	B, C common tunnel

**Table 3: E.2.2(c) – Door Fire (required 15 min PS / 45 min CS)**

Date	Battery	Oven #	PS	CS	Duration	cause(s)	corrective action(s)
07/03/2019	C	32	X		>15 min	Insufficient Draft	adjusted uptakes
07/08/2019	B	6	X		>15 min	sole flues plugged	adjusted uptakes
08/09/2019	C	31	X		>15 min	Insufficient Draft	adjusted uptakes
08/09/2019	D	31	X		>15 min	Insufficient Draft	adjusted uptakes
08/16/2019	C	32	X		>15 min	Insufficient Draft	adjusted uptakes
08/16/2019	C	36	X		>15 min	Insufficient Draft	adjusted uptakes
09/05/2019	C	16	X		>15 min	Insufficient Draft	adjusted uptakes
09/05/2019	C	36	X		>15 min	Insufficient Draft	adjusted uptakes
09/05/2019	C	37	X		>15 min	Insufficient Draft	adjusted uptakes
09/19/2019	D	35	X		>15 min	Insufficient Draft	adjusted uptakes

**Attachment C**  
**List of Lightning Stand-downs**

Date	Delay	A/B PCM Delay (minutes)	C/D PCM Delay (minutes)	Shift	Lightning Stand Down Start Time	Lightning Stand Down End Time
04/02/2019	Lightning Stand Down	60	60	T1	-	-
04/11/2019	Lightning Stand Down	0	0	T3	21:22	1:06
04/11/2019	Lightning Stand Down	0	0	T1	22:52	01:27
04/18/2019	Lightning Stand Down	0	0	T1	04:33	01:18
04/22/2019	Lightning Stand Down	0	0	T3	19:00	20:17
04/23/2019	Lightning Stand Down	0	0	T3	-	-
04/29/2019	Lightning Stand Down	0	0	T2	07:09	07:50
04/29/2019	Lightning Stand Down	0	0	T2	07:54	09:43
04/29/2019	Lightning Stand Down	0	0	T2	09:47	10:17
04/30/2019	Lightning Stand Down	0	0	T2	13:54	14:31
04/30/2019	Lightning Stand Down	0	0	T3	14:59	16:21
05/28/2019	Lightning Stand Down	0	60	T3	-	-
05/29/2019	Lightning Stand Down	120	120	T1	-	-
06/02/2019	Lightning Stand Down	0	60	T3	-	-
06/29/2019	Lightning Stand Down	0	60	T3	-	-
07/18/2019	Lightning Stand Down	60	0	T3	-	-

**Attachment D**

**List of Coke Oven Leaks Caused by High Winds**

Battery	Oven #	Leak location	Date	Time Noticed	Time Ended	Duration (hours:mins)	Wind Dir	Wind Speed	High Winds?
B	6, 32	Push Side Door	4/1/2019	7:13 AM	3:13 PM	8:00	SE/SSE	6 - 17, gusts 30	Y
B	19, 20, 23,24,27	Push Side Door	4/2/2019	6:45 AM	2:45 PM	8:00	S/SSW	10 - 24, gusts 39	Y
B	31	Push Side Door	4/3/2019	2:19 PM	10:19 PM	8:00	W/WSW/WNW/N	10 - 20, gusts 23	Y
B	32	Push Side Door	4/10/2019	1:02 PM	9:02 PM	8:00	NNE/NE	13 - 20, gusts 35	Y
C	33	Push Side Door	4/11/2019	8:18 AM	8:40 AM	0:22	E	23	Y
B	27, 31	Push Side Door	4/12/2019	1:33 PM	9:33 PM	8:00	SSW/SW	5 - 29, gusts 51	Y
B	19	Push Side Door	4/12/2019	1:34 PM	9:34 PM	8:00	SSW/SW	5 - 29, gusts 51	Y
B	6	Push Side Door	4/13/2019	6:25 AM	2:25 PM	8:00	W/WSW/SW	5 - 15, gusts 29	Y
B	32	Push Side Door	4/15/2019	6:12 AM	2:12 PM	8:00	NNW/NW/WNW	8 - 15	Y
B	6	Coke Side Door	4/15/2019	7:05 AM	3:05 PM	8:00	NNW/NW/WNW	8 - 15	Y
B	12, 20	Push Side Door	4/16/2019	6:05 AM	2:05 PM	8:00	S	10 - 16	Y
B	20, 24, 25	Coke Side Door	4/17/2019	12:33 PM	8:33 PM	8:00	N/SE	10 - 15, gusts 25	Y
B	31, 32	Coke Side Door	4/17/2019	12:34 PM	8:34 PM	8:00	N/SE	10 - 15, gusts 25	Y
B	19	Push Side Door	4/17/2019	1:08 PM	9:08 PM	8:00	N/SE	10 - 15, gusts 25	Y
B	6, 16	Push Side Door	4/19/2019	12:35 PM	8:35 PM	8:00	NNW	20-29, gusts 24	Y
B	25	Push Side Door	4/23/2019	6:15 AM	2:15 PM	8:00	SSW/SW/WSW	6-15, gusts 31	Y
C	33	Push Side Door	4/29/2019	6:36 AM	2:36 PM	8:00	SSE/ESE	5-17, gusts 26	Y
B	19, 20, 27	Push Side Door	4/30/2019	6:20 AM	2:20 PM	8:00	N/NE/NNE/ENE	8-13, gusts 21	Y
B	6	Push Side / Coke Side Door	5/1/2019	12:44 PM	8:44 PM	8:00	E/ESE/SE/SW	5-17, gusts 32	Y
B	16	Push Side Door	5/1/2019	12:44 PM	8:44 PM	8:00	E/ESE/SE/SW	5-17, gusts 32	Y
B	27, 31	Coke Side Door	5/1/2019	12:49 PM	8:49 PM	8:00	E/ESE/SE/SW	5-17, gusts 32	Y
B	6	Push Side Door	5/7/2019	6:13 AM	2:13 PM	8:00	N/NNW/NW/NNE	6-16, gusts 23	Y
B	19, 23, 24	Push Side Door	5/9/2019	12:58 PM	8:58 PM	8:00	variable	10-17, gusts 35	Y
B	6	Push Side Door	5/19/2019	7:40 AM	3:40 PM	8:00	SSE/S	8-18, gusts 30	Y
B	27, 32, 33	Coke Side Door	5/19/2019	8:21 AM	4:21 PM	8:00	SSE/S	8-18, gusts 30	Y
B	19, 32	Push Side Door	5/20/2019	6:46 AM	2:46 PM	8:00	W	10 - 16	Y
B	24, 32	Push Side / Coke Side Door	5/23/2019	1:37 PM	9:37 PM	8:00	SW/SSW/W	9-27, gusts 32	Y
B	31	Push Side Door	5/23/2019	1:37 PM	9:37 PM	8:00	SW/SSW/W	9-27, gusts 32	Y
B	31	Coke Side Door	5/28/2019	5:56 AM	1:56 PM	8:00	variable	7 - 16	Y
B	19, 24	Push Side Door	6/1/2019	7:43 AM	3:43 PM	8:00	SSW/SW	5-12, gusts 23	Y

Battery	Oven #	Leak location	Date	Time Noticed	Time Ended	Duration (hours:mins)	Wind Dir	Wind Speed	High Winds?
C	32	Push Side Door	6/3/2019	7:26 AM	4:26 PM	9:00	N/NNE	6-12, gusts 18	Y
C	31	Push Side Door	6/4/2019	7:58 AM	9:00 AM	1:02	SW	12-16	Y
B	27	Push Side Door	6/10/2019	8:31 AM	4:31 PM	8:00	W/WNW/NW	7 - 17	Y
B	6	Push Side Door	6/10/2019	8:32 AM	4:32 PM	8:00	W/WNW/NW	7 - 17	Y
B	32	Push Side Door	6/12/2019	12:40 PM	8:40 PM	8:00	S/SSW	6 - 17	Y
B	1	Push Side Door	6/13/2019	12:52 PM	1:10 PM	0:18	WNW	17-18, gusts 30	Y
B	3	Push Side Door	6/13/2019	12:52 PM	1:10 PM	0:18	WNW	17-18, gusts 30	Y
B	6	Coke Side Door	6/13/2019	1:00 PM	9:00 PM	8:00	WNW/NW/NNW	0 - 20, gusts 33	Y
B	31	Push Side / Coke Side Door	6/13/2019	12:53 PM	9:12 PM	8:19	WNW/NW/NNW	0 - 20, gusts 33	Y
B	24	Push Side Door	6/14/2019	12:12 PM	8:12 PM	8:00	variable	12-26, gusts 35	Y
B	6	Push Side / Coke Side Door	6/23/2019	7:05 AM	4:05 PM	9:00	SE/ESE	5-17, gusts 25	Y
B	27, 33	Coke Side Door	6/23/2019	8:06 AM	4:06 PM	8:00	SE/ESE	5-17, gusts 25	Y

**Attachment E**  
**Daily Bypass Venting Percentages**

<b>Date</b>	<b>Daily Venting (%)</b>
4/1/2019	6.25
4/2/2019	8.00
4/3/2019	7.42
4/4/2019	6.25
4/5/2019	3.77
4/6/2019	0.00
4/7/2019	0.00
4/8/2019	0.81
4/9/2019	0.68
4/10/2019	0.00
4/11/2019	1.90
4/12/2019	4.69
4/13/2019	4.69
4/14/2019	5.68
4/15/2019	4.73
4/16/2019	4.86
4/17/2019	4.69
4/18/2019	5.03
4/19/2019	4.69
4/20/2019	4.69
4/21/2019	4.69
4/22/2019	4.81
4/23/2019	4.89
4/24/2019	4.69
4/25/2019	10.01
4/26/2019	11.26
4/27/2019	11.06
4/28/2019	10.94
4/29/2019	11.17
4/30/2019	11.01
5/1/2019	12.35
5/2/2019	10.97
5/3/2019	7.45
5/4/2019	4.69
5/5/2019	4.91
5/6/2019	4.69
5/7/2019	4.69
5/8/2019	4.69
5/9/2019	8.99
5/10/2019	10.94
5/11/2019	11.08

5/12/2019	10.94
5/13/2019	10.94
5/14/2019	10.94
5/15/2019	8.99
5/16/2019	10.40
5/17/2019	10.94
5/18/2019	11.01
5/19/2019	11.80
5/20/2019	11.03
5/21/2019	11.04
5/22/2019	10.94
5/23/2019	7.77
5/24/2019	4.70
5/25/2019	4.69
5/26/2019	4.82
5/27/2019	11.30
5/28/2019	4.69
5/29/2019	4.69
5/30/2019	12.88
5/31/2019	4.69
6/1/2019	4.69
6/2/2019	3.91
6/3/2019	3.91
6/4/2019	3.91
6/5/2019	3.91
6/6/2019	3.91
6/7/2019	3.91
6/8/2019	3.91
6/9/2019	6.45
6/10/2019	3.91
6/11/2019	4.17
6/12/2019	3.91
6/13/2019	4.37
6/14/2019	3.52
6/15/2019	3.52
6/16/2019	3.52
6/17/2019	3.65
6/18/2019	3.71
6/19/2019	3.80
6/20/2019	4.11
6/21/2019	2.73
6/22/2019	1.56
6/23/2019	1.56

6/24/2019	2.19
6/25/2019	0.00
6/26/2019	0.23
6/27/2019	0.00
6/28/2019	0.03
6/29/2019	0.00
6/30/2019	0.00
7/1/2019	0.47
7/2/2019	2.37
7/3/2019	0.00
7/4/2019	0.00
7/5/2019	0.00
7/6/2019	0.41
7/7/2019	2.94
7/8/2019	4.90
7/9/2019	5.19
7/10/2019	5.45
7/11/2019	9.03
7/12/2019	11.54
7/13/2019	13.97
7/14/2019	14.71
7/15/2019	14.71
7/16/2019	14.95
7/17/2019	15.58
7/18/2019	12.00
7/19/2019	6.25
7/20/2019	6.25
7/21/2019	6.90
7/22/2019	6.25
7/23/2019	6.87
7/24/2019	11.12
7/25/2019	12.52
7/26/2019	12.28
7/27/2019	12.13
7/28/2019	12.13
7/29/2019	12.20
7/30/2019	12.13
7/31/2019	12.44
8/1/2019	10.22
8/2/2019	6.25
8/3/2019	6.58
8/4/2019	6.81
8/5/2019	6.32

8/6/2019	9.46
8/7/2019	3.36
8/8/2019	0.00
8/9/2019	0.00
8/10/2019	0.74
8/11/2019	1.47
8/12/2019	1.84
8/13/2019	5.68
8/14/2019	8.09
8/15/2019	8.09
8/16/2019	8.15
8/17/2019	8.14
8/18/2019	8.09
8/19/2019	8.09
8/20/2019	8.09
8/21/2019	9.72
8/22/2019	8.09
8/23/2019	8.28
8/24/2019	8.09
8/25/2019	8.09
8/26/2019	7.67
8/27/2019	8.78
8/28/2019	9.15
8/29/2019	9.17
8/30/2019	7.51
8/31/2019	6.25
9/1/2019	6.25
9/2/2019	6.25
9/3/2019	6.25
9/4/2019	6.34
9/5/2019	6.32
9/6/2019	6.95
9/7/2019	6.25
9/8/2019	6.25
9/9/2019	4.30
9/10/2019	2.15
9/11/2019	5.15
9/12/2019	5.15
9/13/2019	4.46
9/14/2019	0.52
9/15/2019	1.10
9/16/2019	1.17
9/17/2019	1.10

9/18/2019	1.10
9/19/2019	4.81
9/20/2019	7.46
9/21/2019	7.35
9/22/2019	7.35
9/23/2019	16.14
9/24/2019	13.24
9/25/2019	13.24
9/26/2019	13.24
9/27/2019	13.24
9/28/2019	13.60
9/29/2019	10.59
9/30/2019	9.57