



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Gateway Energy & Coke Company, LLC c/o SunCoke Energy, Granite
City, Illinois

FROM: Carlo Demma, Physical Scientist (Env.)
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: SunCoke Energy - Granite City Operations

Facility Location: 2585 Edwardsville Road, Granite City IL 62040

Date of Inspection: September 7, 2023

EPA Inspector(s):

1. Carlo Demma, Physical Scientist (Env.)
2. Valeria, Apolinario, Environmental Engineer

Other Attendees:

1. Brandon Whitman, Corporate HES Manager, SunCoke Energy
2. Ralph Kremer, General Manager, SunCoke Energy
3. Edward Glass, Operations Manager, SunCoke Energy
4. Chris Taylor, Operations Area Owner, SunCoke Energy
5. Brandon Koch, Heat Recovery Area Lead, SunCoke Energy

Contact Email Address: Brandon Whitman - BEWHITMAN@SUNCOKE.COM

Purpose of Inspection: EPA conducted this inspection to determine compliance with the air pollution requirements of the Illinois State Implementation Plan (IL SIP), and SunCoke Company's Construction Permit No: 06070020 relating to charging fugitive emissions and coke oven door regulations.

Facility Name: SunCoke Energy Granite City Operations
Facility Location: 2585 Edwardsville Road, Granite City IL 62040
Date of Inspection: September 7, 2023

Facility Type: Stationary heat recovery coal carbonization facility.

Regulations Central to Inspection: The facility is subject to SunCoke Company's Construction Permit No: 06070020 and 40 CFR 63.303(d)(1), which states, the owner or operator shall not discharge or cause to be discharged to the atmosphere from charging operations any fugitive emissions that exhibit an opacity greater than 20 percent. Pursuant to the Illinois SIP at 35 IAC 212.443(d)(1), and SunCoke Company's Construction Permit No: 06070020, no person shall cause or allow visible emissions from more than 10 percent of all coke oven doors at any time.

Arrival Time: 8:00 AM

Departure Time: 9:30 AM

Inspection Type:

- ☐ Unannounced Inspection
- ☒ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☒ Small Business Resource Information Sheet not provided. Reason: **Not a small business.**
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Brandon Whitman and Ralph Kremer unless otherwise noted:

Process Description:

SunCoke – Granite City (SunCoke) operates 120 ovens arranged in three 40-oven batteries at this site, labeled A, B, and C Battery. Coal is placed inside the one hundred twenty (120) nonrecovery coke ovens, and is then heated by recirculating combusted gas, but can also be supplemented by natural gas. The combusted flue gas is directed through heat recovery steam generators (HRSGs) where the residual heat is extracted, and steam is produced. The batteries are referred to as “non-recovery” and are operated under constant negative pressure, with emissions controlled by one lime spray dryer desulfurization unit (FGD) and one baghouse that removes entrained ash. Carbon is injected into the gas stream upstream of the spray dryer absorber to remove mercury. All waste gas emissions exhaust through one main stack, and occasionally through some of the seven bypass vent stacks distributed over the three batteries. One HRSG typically serves 20 ovens when gas sharing is not available. After coal carbonization is complete, the finished coke is pushed from the oven, quenched with water, screened to remove very fine material and delivered to the customer.

Staff Interview: SunCoke is preparing for a full FGD maintenance outage scheduled for October 3, 2023. SunCoke's West Extractor (Coke Side) has a baghouse filter attached to it,

whereas the East Extractor does not. SunCoke only runs the East Extractor the minimum extent possible to ensure that it still operates correctly in the event of a malfunction or equipment failure of the West Extractor. The East Extractor typically operates once per week. SunCoke has begun filling the port hole openings on each oven and has also prioritized the missing Kaowool insulation, and door damages identified in EPA's May 16, 2023 inspection report.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Photos and/or Videos: were taken during the inspection.

- EPA photographed a degraded door on Oven 92. The upper left corner of the jam of the door was fully melted (Photo 1). EPA did not notate any visible emissions associated with the damaged door. EPA's second inspector recorded video of all coal charging runs (Attachment A).

Field Measurements: were taken during this inspection.

- EPA performed Alternative Method – 082 (DCOT) on the Pusher Charger Machine (PCM) baghouse stack and its associated fugitive emissions while charging.

Data Collected and Observations:

EPA's primary goal was to witness the push and resultant charge of five ovens at the B and C Batteries. On-site opacity observations were conducted in accordance with EPA Alternative Method 082 on the PCM stack and its associated fugitive emissions at the Facility during the morning of September 7, 2023.

SunCoke charged 5 ovens while EPA was on-site. Visible emissions were analyzed in accordance with EPA Alternative Method 082. Each production run took about 8-minutes to complete; EPA analyzed the highest opacity in a 6-minute interval during each run. The results of each 6-minute observation run are indicated below:

1. 16% opacity on a six-minute average for run #1 on B Battery, Oven 80 (Attachment B).
Start: 8:22 AM
Stop: 8:30 AM
Coal charge: 42.5 tons
2. 9% opacity on a six-minute average for run #2 on C Battery, Oven 88 (Attachment C).
Start: 8:33 AM
Stop: 8:40 AM
Coal charge: 45.0 tons
3. 20% opacity on a six-minute average for run #3 on C Battery, Oven 96 (Attachment D).
Start: 8:40 AM
Stop: 8:48 AM
Coal charge: 44.5 tons
4. 18% opacity on a six-minute average for run #4 on C Battery, Oven 104 (Attachment E).
Start: 8:50 AM
Stop: 9:00 AM
Coal charge: 43.5 tons
5. 9% opacity on a six-minute average for run #5 on C Battery, Oven 120 (Attachment F).
Start: 9:03 AM

Facility Name: SunCoke Energy Granite City Operations
Facility Location: 2585 Edwardsville Road, Granite City IL 62040
Date of Inspection: September 7, 2023

Stop: 9:11 AM
Coal charge: 42.5 tons

All Visible Emission Observation Reports are included in Attachments B to F.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility.

Concerns: After the C-Battery was pushed and ovens 96 and 104 were charged, the SunCoke PCM operator struggled to latch the door back onto the Battery. This resulted in extra minutes of excess emissions to escape from the battery. EPA notified SunCoke personnel of these concerns while on-site.

DIGITAL SIGNATURES

Report Author: **CARLO DEMMA**  Digitally signed by CARLO DEMMA
Date: 2023.10.20 13:33:14 -05'00'

Section Supervisor: **DAVID SUTLIN**  Digitally signed by DAVID SUTLIN
Date: 2023.10.20 15:00:37 -05'00' (Acting)

Facility Name: SunCoke Energy Granite City Operations
Facility Location: 2585 Edwardsville Road, Granite City IL 62040
Date of Inspection: September 7, 2023

APPENDICES AND ATTACHMENTS

1. Attachment A. Digital Image and Digital Video Log
2. Attachment B. Visible Emission Observation Report
3. Attachment C. Visible Emission Observation Report
4. Attachment D. Visible Emission Observation Report
5. Attachment E. Visible Emission Observation Report
6. Attachment F. Visible Emission Observation Report

Facility Name: SunCoke Energy Granite City Operations
Facility Location: 2585 Edwardsville Road, Granite City IL 62040
Date of Inspection: May 16, 2023

ATTACHMENT A: DIGITAL IMAGE AND DIGITAL VIDEO LOG

1. Inspector Name: Carlo Demma	2. Archival Record Location: Region 5 Electronic Records center
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Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	IMG_1004	9/7/2023 8:32AM	Oven 96 partially melted door.
2	MVI_0350	9/7/2023 N/A	Run #1 on B Battery, Oven 80
3	MVI_0351	9/7/2023 N/A	Run #2 on C Battery, Oven 88
4	MVI_0352	9/7/2023 N/A	Run #3 on C Battery, Oven 96
5	MVI_0353	9/7/2023 N/A	Run #4 on C Battery, Oven 104
6	MVI_0354	9/7/2023 N/A	Run #4 on C Battery, Oven 104 (Extended)
7	MVI_0355	9/7/2023 N/A	Run #5 on C Battery, Oven 120

Attachment B

VISIBLE EMISSION OBSERVATION FORM

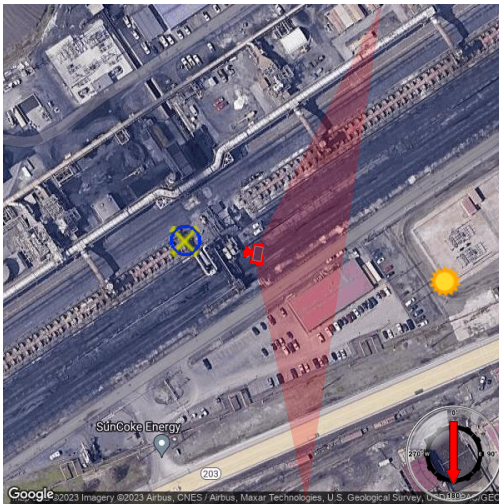
Method Used Alternative Method -082		
Equipment Owner Start n/a		
Facility Name SunCoke Energy Granite City Operations		
EO Street Address 2585 Edwardsville Road,		
EO City Granite City	EO Region US-IL	EO Zip 62040

Process Coal Manufacturing	Unit B-Battery	Operating Mode Push
Control Equipment Baghouse	Operating Mode Operating	

Describe Emission Point N/A	
Height of Emiss. Pt Start 25 End Same	Height of Emiss. Pt. Rel. to Observer Start 20 End Same
Distance to Emiss. Pt Start 127.57 End Same	Direction to Emiss. Pt (Degrees) Start 281.11 End Same

Vertical Angle to Obs. Pt. Start 7.93 End Same	Direction to Obs. Pt Start 279.7 End Same
Distance and Direction to Observation Point from Emission Point Start 3.15 / 180.52 End Same	
Describe Emissions Start Fugitive End Same	
Emission Color Start Black End Same	Water Droplet Plume Attached: () Detached: () N/A: (X)

Describe Plume Background Start blue sky End Same	
Background Color Start Blue End Same	Sky Conditions Start Broken End Same
Wind Speed Start 5 End Same	Wind Direction Start 45 End Same
Ambient Temp. Start 83 End Same	Wet Bulb Temp. Start 61 End Same
RH Percent Start 63 End Same	



Longitude 090.07.51.916.W	Latitude 38.41.47.121.N	Declination
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Observation Date 9/7/2023	Time Zone CDT	Start Time 08:22:03	End Time 08:29:18
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					Comments
1	10	0	5	10	
2	10	5	5	10	
3	15	15	10	0	Avg Opacity = 16%
4	10	15	15	5	
5	15	15	15	5	
6	20	20	20	75	
7	55	10	25	5	
8	5	0			
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Observers Name (Print) Carlo Demma	
Observers Signature Carlo Demma	Date 9/7/2023
Organization USEPA Region 5	
Certified By Carlo Demma	Date 10/13/2023

Attachment C

VISIBLE EMISSION OBSERVATION FORM

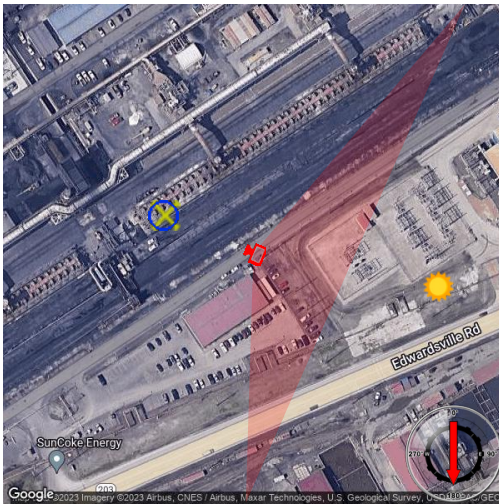
Method Used Alternative Method -082		
Equipment Owner Start n/a		
Facility Name SunCoke Energy Granite City Operations		
EO Street Address 2585 Edwardsville Road,		
EO City Granite City	EO Region US-IL	EO Zip 62040

Process Coal Manufacturing	Unit C-Battery	Operating Mode Push
Control Equipment Baghouse	Operating Mode Operating	

Describe Emission Point N/A			
Height of Emiss. Pt Start 25 End Same		Height of Emiss. Pt. Rel. to Observer Start 20 End Same	
Distance to Emiss. Pt Start 179.3 End Same		Direction to Emiss. Pt (Degrees) Start 293.07 End Same	

Vertical Angle to Obs. Pt. Start 5.68 End Same		Direction to Obs. Pt. Start 293.23 End Same	
Distance and Direction to Observation Point from Emission Point Start 3.15 / 241.63 End Same			
Describe Emissions Start Fugitive End Same			
Emission Color Start Black End Same		Water Droplet Plume Attached: () Detached: () N/A: (X)	

Describe Plume Background Start blue sky End Same			
Background Color Start Blue End Same		Sky Conditions Start Scattered End Same	
Wind Speed Start 5 End Same		Wind Direction Start 45 End Same	
Ambient Temp. Start 83 End Same	Wet Bulb Temp. Start 61 End Same	RH Percent Start 63 End Same	



Longitude 090.07.49.483.W	Latitude 38.41.47.408.N	Declination
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Observation Date 9/7/2023	Time Zone CDT	Start Time 08:33:24	End Time 08:39:54
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					Comments
1	5	0	5	5	
2	5	15	0	15	
3	10	15	0	15	Avg Opacity = 9%
4	10	10	5	0	
5	0	10	5	50	
6	5	10	10	5	
7	5	0			
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Observers Name (Print) Carlo Demma	
Observers Signature Carlo Demma	Date 9/7/2023
Organization USEPA Region 5	
Certified By Carlo Demma	Date 10/13/2023

Attachment D

VISIBLE EMISSION OBSERVATION FORM

Method Used Alternative Method -082		
Equipment Owner Start n/a		
Facility Name SunCoke Energy Granite City Operations		
EO Street Address 2585 Edwardsville Road,		
EO City Granite City	EO Region US-IL	EO Zip 62040

Process Coal Manufacturing	Unit C-Battery	Operating Mode Push
Control Equipment Baghouse	Operating Mode Operating	

Describe Emission Point N/A	
Height of Emiss. Pt Start 25 End Same	Height of Emiss. Pt. Rel. to Observer Start 20 End Same
Distance to Emiss. Pt Start 195.93 End Same	Direction to Emiss. Pt (Degrees) Start 300.96 End Same

Vertical Angle to Obs. Pt. Start 5.2 End Same	Direction to Obs. Pt Start 299.86 End Same
Distance and Direction to Observation Point from Emission Point Start 6.83 / 206.17 End Same	
Describe Emissions Start Fugitive End Same	
Emission Color Start Black End Same	Water Droplet Plume Attached: () Detached: () N/A: (X)

Describe Plume Background Start blue End Same	
Background Color Start Blue End Same	Sky Conditions Start Broken End Same
Wind Speed Start 5 End Same	Wind Direction Start 45 End Same
Ambient Temp. Start 83 End Same	Wet Bulb Temp. Start 61 End Same
RH Percent Start 63 End Same	



Longitude 090.07.47.087.W	Latitude 38.41.48.458.N	Declination
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Observation Date 9/7/2023	Time Zone CDT	Start Time 08:40:24	End Time 08:48:00
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					Comments
1	0	0	0	0	
2	10	0	10	10	
3	70	60	10	10	Avg Opacity = 20%
4	0	0	20	20	
5	15	15	30	45	
6	15	10	45	65	
7	10	10	0	10	
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Observers Name (Print) Carlo Demma	
Observers Signature Carlo Demma	Date 9/7/2023
Organization USEPA Region 5	
Certified By Carlo Demma	Date 10/13/2023

Attachment E

VISIBLE EMISSION OBSERVATION FORM

Method Used Alternative Method -082		
Equipment Owner Start n/a		
Facility Name SunCoke Energy Granite City Operations		
EO Street Address 2585 Edwardsville Road,		
EO City Granite City	EO Region US-IL	EO Zip 62040

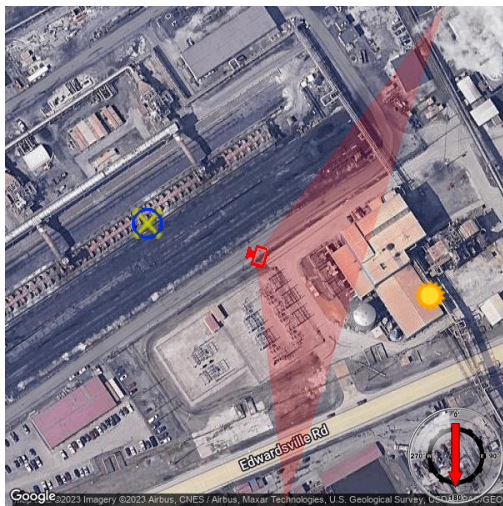
Process Coal Manufacturing	Unit C-Battery	Operating Mode Push
Control Equipment N/A	Operating Mode N/A	

Describe Emission Point N/A			
Height of Emiss. Pt Start 25 End Same		Height of Emiss. Pt. Rel. to Observer Start 20 End Same	
Distance to Emiss. Pt Start 207.3 End Same		Direction to Emiss. Pt (Degrees) Start 286.7 End Same	

Vertical Angle to Obs. Pt. Start 4.92 End Same		Direction to Obs. Pt Start 286.7 End Same	
Distance and Direction to Observation Point from Emission Point Start / End Same			

Describe Emissions Start Fugitive End Same			
Emission Color Start Black End Same		Water Droplet Plume Attached: () Detached: () N/A: (X)	

Describe Plume Background Start blue sky End Same			
Background Color Start Blue End Same		Sky Conditions Start Scattered End Same	
Wind Speed Start 5 End Same		Wind Direction Start 45 End Same	
Ambient Temp. Start 83 End Same	Wet Bulb Temp. Start 61 End Same	RH Percent Start 63 End Same	



Longitude 090.07.45.928.W	Latitude 38.41.49.196.N	Declination
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Observation Date 9/7/2023	Time Zone CDT	Start Time 08:49:51	End Time 09:00:01
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					Comments
1	5	0	0	0	
2	10	10	30	5	
3	10	10	5	0	Avg Opacity = 18%
4	5	5	5	5	
5	5	10	10	5	
6	10	45	15	15	
7	20	20	5	10	
8	10	15	45	75	
9	75	15	10	5	
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Observers Name (Print) Carlo Demma	
Observers Signature Carlo Demma	Date 9/7/2023
Organization USEPA Region 5	
Certified By Carlo Demma	Date 10/13/2023

Attachment F

VISIBLE EMISSION OBSERVATION FORM

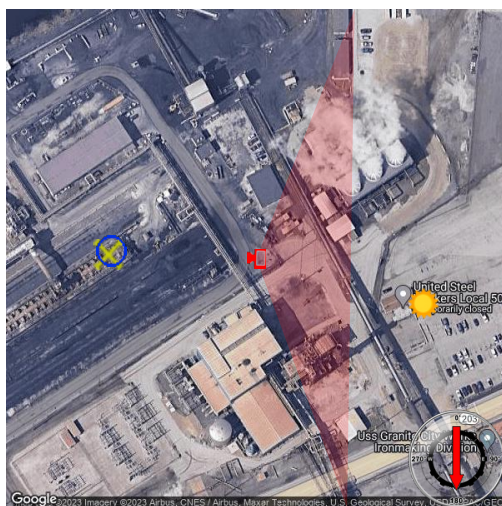
Method Used Alternative Method -082		
Equipment Owner Start n/a		
Facility Name SunCoke Energy Granite City Operations		
EO Street Address 2585 Edwardsville Road,		
EO City Granite City	EO Region US-IL	EO Zip 62040

Process Coal Manufacturing	Unit C-Battery	Operating Mode Push
Control Equipment Baghouse	Operating Mode Operating	

Describe Emission Point N/A			
Height of Emiss. Pt Start 25 End Same		Height of Emiss. Pt. Rel. to Observer Start 20 End Same	
Distance to Emiss. Pt Start 265.99 End Same		Direction to Emiss. Pt (Degrees) Start 273.02 End Same	

Vertical Angle to Obs. Pt. Start 3.84 End Same		Direction to Obs. Pt Start 271.67 End Same	
Distance and Direction to Observation Point from Emission Point Start 8.64 / 157.19 End Same			
Describe Emissions Start Fugitive End Same			
Emission Color Start Black End Same		Water Droplet Plume Attached: () Detached: () N/A: (X)	

Describe Plume Background Start blue sky End Same			
Background Color Start Blue End Same		Sky Conditions Start Clear End Same	
Wind Speed Start 5 End Same		Wind Direction Start 45 End Same	
Ambient Temp. Start 83 End Same	Wet Bulb Temp. Start 61 End Same	RH Percent Start 63 End Same	



Longitude 090.07.42.550.W	Latitude 38.41.51.228.N	Declination
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Observation Date 9/7/2023	Time Zone CDT	Start Time 09:01:31	End Time 09:10:00
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					Comments
1	0	5	15	15	
2	0	5	0	10	
3	15	5	0	5	Avg Opacity = 9%
4	15	10	10	0	
5	0	0	10	5	
6	5	10	10	10	
7	15	35	25	10	
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Observers Name (Print) Carlo Demma	
Observers Signature Carlo Demma	Date 9/7/2023
Organization USEPA Region 5	
Certified By Carlo Demma	Date 10/13/2023