

UCAR CARBON CO, INC
Application No. 13-2567

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Ohio Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all

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Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities prove to be inadequate cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 15 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

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BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application and a \$15.00 application fee must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be made at least 90 days prior to start-up of the source.

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for **UCAR CARBON CO., INC** located in **Cuyahoga** County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

<u>Ohio EPA Source Number</u>	<u>Source Identification Description</u>
P016	A flexible graphite expansion and rolling line. Company ID is Rolling Line No. 2.

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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BAT
Determination

The BAT determination is a 900 ACFM packed tower scrubber with caustic scrubbing solution to control emissions of PM₁₀, sulfur dioxide and acidic gases.

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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	Applicable Federal & <u>OAC Rules</u>			
	3745-31-05 (A) (3)			
	3745-21-08			
	3745-31-05 (A) (3)			
	3745-23-06			
	3745-31-05 (A) (3)			
	3745-18-06			
	3745-31-05 (A) (3)			
	3745-17-11			
	3745-31-05 (A) (3)			
	3745-17-07			

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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Permit
Allowable Mass
Emissions
and/or
Control/Usage
Requirements

18.00 lbs
CO/hr
52.56 CO TPY

2.70 lbs
NO_x/hr
8.15 NO_x TPY

5.40 lbs
SO₂/hr
15.77 SO₂ TPY

1.10 lbs
PM₁₀/hr
4.82 PM₁₀ TPY

*

Less stringent
than OAC
3745-31-05 (A) (
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- * The visible particulate emissions from any exhaust shall not exceed ten per cent (10%) opacity as a six-minute average.

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
CO*	52.56
NO _x *	8.15
SO ₂ *	15.77
PM ₁₀	4.82

- * Allowables for these pollutants were not included in the original PTI.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the Cleveland Air Pollution Control, 1925 St. Clair, Cleveland, Ohio 44114.

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

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NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance test conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

A. Applicable Emission Limitation and/or Control Requirements

1. The CO, NO_x, SO₂ and PM₁₀ emission limitations for emissions unit P016 are identified in the Air Emission Summary Section of this Permit to Install (PTI). The limitations for CO, NO_x and SO₂ emissions are based on Synthetic Minor Determination.

B. Operational Restriction

1. The maximum annual production rate and emission limitations for this emissions unit shall not exceed those specified by the formulas listed below, based upon a rolling 12-month summation.

The permittee shall document the monthly emissions by tracking the monthly graphite flake feed input quantity with the appropriate CO, NO_x and SO₂ emission factors, for the existing production scenarios, and those developed for any new production scenarios, to calculate total monthly actual CO, NO_x and SO₂ emissions from P016. Any new production scenarios shall require the review and prior approval of Ohio EPA or its authorized representative in the area.

<u>Production Scenario</u>	<u>Emission Factor (EF)</u>
#1	34.2 pounds CO/ton of graphite
#2	72.7 pounds CO/ton of graphite
#1 & #2	15 pounds NO _x /ton of graphite
#1 & #2	12.6 pounds SO ₂ /ton of graphite

CO Emissions

Y

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$$\sum_{i=1} S_i = \text{total tons/month CO}$$

$$\sum_{j=1}^{12} E_j \leq 52.56 \text{ tons of CO per rolling 12-month period}$$

Where:

S = (pounds CO/ton EF) x (tons/month graphite flake fed) x
(1 ton/2000 pounds)

y = number of graphite flake feed scenarios

E = tons/month CO

NO_x Emissions
(15 pounds NO_x/ton) x (tons/month graphite flake fed) x (1
ton/2000 pounds) = tons/month NO_x

$$\sum_{k=1}^{12} E_k \leq 8.15 \text{ tons of NO}_x \text{ per rolling 12-month period}$$

Where:

E = tons/month NO_x

SO₂ Emissions
(12.6 pounds SO₂/ton) x (tons/month graphite flake fed) x (1
ton/2000 pounds) = tons/month SO₂

$$\sum_{m=1}^{12} E_m \leq 15.77 \text{ tons of SO}_2 \text{ per rolling 12-month period}$$

Where:

E=tons/month SO₂

2. Following issuance of this permit, the permittee shall demonstrate compliance with the rolling 12-month production rate and emissions restrictions immediately upon start-up, using the established emissions factors and records of graphite flake feed on file for the previous 12 month operating period.
3. During normal operation, the pH of the caustic scrubbing solution shall be maintained at 7.5 or greater. This pH control system will be calibrated weekly.
4. The pressure drop across the scrubber shall be maintained at 0.8 inch of water column or greater as measured by Magnehelic pressure gauge(s).
5. A scrubbing solution recirculation flow rate to the scrubber of

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not less 12 gallons scrubbing solution/minute shall be maintained and monitored by a flow switch located in the discharge line of the recirculation pump. The actuation of this flow switch at 12 gallons scrubbing solution/minute will be checked semi-annually.

C. Monitoring and Record Keeping Requirements

1. The permittee shall install, calibrate, operate, and maintain, in good working condition, systems of monitors, in accordance with the manufacturers' recommendations, with any modifications deemed necessary by the permittee. The monitoring devices shall be capable of accurately measuring the desired parameters. The permittee shall record on an hourly basis the following parameters whenever graphite is fed into the graphite rolling line process:
 - a. the pH levels of the caustic scrubbing solution;
 - b. the pressure drop across the scrubber; and,
 - c. the scrubbing solution recirculation rate in the scrubber via a flow switch located in the recirculation pump discharge piping.

The unit for pressure drop is inches of water column. The unit for scrubbing solution recirculation rate is gallons per minute. The monitors shall be installed, calibrated, operated and maintained in accordance with the manufacturers' recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall collect and record on an hourly basis the following information for each day for the emission control equipment when the emissions unit is in operation (when graphite flake is being fed into the rolling line process):
 - a. total pressure drop across the scrubber;
 - b. pH readings of the caustic scrubbing solution; and,
 - c. the scrubbing solution recirculation flow switch position (i.e., the switch is either "made" or "not made." "Made" means the scrubbing solution is flowing).
3. The permittee shall maintain most the records of the graphite

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flake feed rate and all other information needed under term 1. of B. Operational Restrictions, to determine compliance on a rolling 12-month basis.

D. Reporting Requirements

The permittee shall submit semi-annually written reports which identify all deviations (excursions), exceedance(s) and non-compliance periods of time of the following unless specified otherwise below:

1. the rolling 12-month limitations on the carbon monoxide, oxides of nitrogen and sulfur dioxide emissions.
2. All pressure drop readings less than 0.8 inch of water column.
3. All pH readings of the caustic scrubbing solution less than 7.5.
4. Any time period the scrubbing solution recirculation flow switch was "not made" (i.e., scrubbing solution was not flowing) when the emissions unit was in operation.

The written semi-annual reports shall be submitted by January 31 and July 31 of each year and shall address the data obtained during the previous calendar semi-annual reporting period (July through December and January through June, respectively) to the Director (Cleveland Air Pollution Control). If reports or documented material(s) contain confidential information, submit a sanitized version for public record along with the required reports.

E. Testing Requirements and Compliance Method Determinations:

The following test method(s) shall be employed to demonstrate compliance with the following limits:

<u>Production Scenario</u>	<u>Emission Factor (EF)</u>
#1	34.2 pounds CO/ton of graphite
#2	72.7 pounds CO/ton of graphite
#1 & #2	15.0 pounds NO _x /ton of graphite

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#1 & #2

12.6 pounds SO₂/ton of graphite

1. Testing shall be conducted while this emissions unit is venting SO₂, NO_x, CO and PM emissions to the scrubber. This emissions unit shall be operated at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA, Central Office.

2. Emission Limitation:

18.0 pounds CO/hour

Applicable Compliance Methods:

Methods 1 to 4 and 10 or 10B of 40 CFR Part 60, Appendix A. If applicable, alternative U.S. EPA test methods may be used with prior approval from the Ohio EPA.

3. Emission Limitation:

2.79 pounds NO_x/hour

Applicable Compliance Methods:

Methods 1 to 4 and 7E of 40 CFR Part 60, Appendix A. If applicable, alternative U.S. EPA test methods may be used with prior approval from the Ohio EPA.

4. Emission Limitation:

5.40 pounds SO₂/hour

Applicable Compliance Methods:

The following test methods shall be employed to determine the control efficiency of the SO₂ emission control equipment (i.e., the percent of reduction in mass emissions between the inlet and the outlet of the emission control equipment) serving this emissions unit: OAC rule 3745-18-04 (A) using the Methods 1 to 4 and 6C of 40 CFR Part 60, Appendix A. If applicable, alternative U.S. EPA test methods may be used with prior approval from the Ohio EPA.

5. Emission Limitation:

1.10 pounds PM/hour

Applicable Compliance Methods:

OAC rule 3745-17-03 (B) (10) using the Methods 1 to 5 of 40

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CFR Part 60, Appendix A. If applicable, alternative U.S. EPA test methods may be used with prior approval from the Ohio EPA.

6. Emission Limitation:

52.56 tons CO/year

Applicable Compliance Methods:

Calculation of the monthly and rolling 12-month emissions using records of restricted amount of material processed and emission factors using the equations as follows:

CO Emissions:

$$\sum_{i=1}^y S_i = \text{total tons/month CO}$$

$$\sum_{j=1}^{12} E_j \leq 52.56 \text{ tons of CO per rolling 12-month period}$$

Where:

S = (pounds CO/ton EF) X (tons/month graphite flake fed) X
(1 ton/2000 pounds)

y = number of graphite flake feed scenarios

E = tons/month CO

7. Emission Limitation:

8.15 tons NO_x/hour

Applicable Compliance Methods:

Calculation of the monthly and rolling 12-month emissions using records of restricted amount of material processed and emission factors using the equations as follows:

NO_x Emissions:

(15.0 pounds NO_x/ton graphite) X (ton/month graphite flake fed) X (1 ton/2000 pounds)=tons/month, NO_x

$$\sum_{k=1}^{12} E_k \leq 8.15 \text{ tons NO}_x \text{ emissions per rolling 12-month period}$$

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$$k=1$$

Where:

$$E = \text{tons/month, NO}_x$$

8. Emission Limitation:

$$15.77 \text{ SO}_2 \text{ tons/year}$$

Applicable Compliance Method:

Calculation of the monthly and rolling 12-month emissions using records of restricted amount of material processed and emission factors using the equations as follows:

SO₂ Emissions:

$$(12.6 \text{ pounds SO}_2/\text{ton graphite}) \times (\text{ton/month graphite flake fed}) \times (1 \text{ ton}/2000 \text{ pounds}) = \text{tons/month, SO}_2$$

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$$\sum_{m=1}^{12} E_m \leq 15.77 \text{ tons SO}_2 \text{ emissions per rolling 12-month period}$$

Where:

$$E = \text{tons/month, SO}_2$$