

**February 2015  
Project No. 14-579**

**REGULATION 13/30 PERMIT  
MODIFICATION APPLICATION  
R13-3039 & R30-03300001-2012**

**CONSTRUCT AND OPERATE A  
NATURAL GAS FIRED BOILER**

**GRAFTECH INTERNATIONAL HOLDINGS, INC.  
Anmoore, West Virginia  
Facility ID 033-00001**

**PREPARED BY:**

**MSES Consultants, Inc.  
P.O. Drawer 190  
Clarksburg, West Virginia 26302-0190  
(304) 624-9700**

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**DIVISION OF AIR QUALITY**

601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0475  
[www.dep.wv.gov/daq](http://www.dep.wv.gov/daq)

**APPLICATION FOR NSR PERMIT  
AND  
TITLE V PERMIT REVISION  
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION     MODIFICATION     RELOCATION  
 CLASS I ADMINISTRATIVE UPDATE     TEMPORARY  
 CLASS II ADMINISTRATIVE UPDATE     AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT     MINOR MODIFICATION  
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

**FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.**

**Section I. General**

1. Name of applicant (as registered with the WV Secretary of State's Office):  
Graftech International Holdings, Inc.

2. Federal Employer ID No. (FEIN):  
0 6 1 2 4 9 0 2 9

3. Name of facility (if different from above):  
Anmoore Facility

4. The applicant is the:  
 OWNER     OPERATOR     BOTH

5A. Applicant's mailing address:  
P.O. Box 120  
  
Anmoore, WV 26323-0120

5B. Facility's present physical address:  
101 North Philippi Pike  
  
Anmoore, WV 26323

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia?     YES     NO  
⇒ If YES, provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A**.  
⇒ If NO, provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A**.

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site*?     YES     NO

⇒ If YES, please explain:    Applicant owns the site.

⇒ If NO, you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Carbon and Graphite Manufacturing Facility

10. North American Industry Classification System (NAICS) code for the facility:  
  
335991

11A. DAQ Plant ID No. (for existing facilities only):  
0 3 3 - 0 0 0 0 1

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):  
R30-03300001-2012; R13-3039

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

12A.

- ⇒ For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- ⇒ For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP as Attachment B**.

From I-79 exit 117. Turn west onto Route 58. Straight to stop sign.

12.B. New site address (if applicable):

NA

12C. Nearest city or town:

Anmoore

12D. County:

Harrison

12.E. UTM Northing (KM): 4354

12F. UTM Easting (KM): 561

12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility: Remove 2 grandfathered boilers and install a new boiler

14A. Provide the date of anticipated installation or change: 04/01/2015

⇒ If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: / /

14B. Date of anticipated Start-Up if a permit is granted:

04/01/2015

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:

Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved?  **YES**  **NO**

17. **Risk Management Plans**. If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see [www.epa.gov/ceppo](http://www.epa.gov/ceppo)), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion**. List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

### **Section II. Additional attachments and supporting documents.**

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

⇒ Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

⇒ Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.

⇒ For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

<input type="checkbox"/> Bulk Liquid Transfer Operations	<input type="checkbox"/> Haul Road Emissions	<input type="checkbox"/> Quarry
<input type="checkbox"/> Chemical Processes	<input type="checkbox"/> Hot Mix Asphalt Plant	<input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities
<input type="checkbox"/> Concrete Batch Plant	<input type="checkbox"/> Incinerator	<input type="checkbox"/> Storage Tanks
<input type="checkbox"/> Grey Iron and Steel Foundry	<input checked="" type="checkbox"/> Indirect Heat Exchanger	
<input type="checkbox"/> General Emission Unit, specify		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

<input type="checkbox"/> Absorption Systems	<input type="checkbox"/> Baghouse	<input type="checkbox"/> Flare
<input type="checkbox"/> Adsorption Systems	<input type="checkbox"/> Condenser	<input type="checkbox"/> Mechanical Collector
<input type="checkbox"/> Afterburner	<input type="checkbox"/> Electrostatic Precipitator	<input type="checkbox"/> Wet Collecting System
<input type="checkbox"/> Other Collectors, specify		

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

➤ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES       NO

➤ If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

### Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

<input type="checkbox"/> Authority of Corporation or Other Business Entity	<input type="checkbox"/> Authority of Partnership
<input type="checkbox"/> Authority of Governmental Agency	<input type="checkbox"/> Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R**.

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

**35A. Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

**Certification of Truth, Accuracy, and Completeness**

I, the undersigned  **Responsible Official** /  **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

**Compliance Certification**

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE \_\_\_\_\_  
(Please use blue ink)

DATE: 3/11/15  
(Please use blue ink)

35B. Printed name of signee: Craig Taylor

35C. Title: Site Manager

35D. E-mail: Craig.Taylor@graftech.com

36E. Phone: 304-624-1200

36F. FAX: 304-624-1336

36A. Printed name of contact person (if different from above): Jared Knight

36B. Title: Plant Engineer

36C. E-mail: Jared.Knight@graftech.com

36D. Phone: 304-624-1200

36E. FAX: 304-624-1336

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate               | <input type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet                       |
| <input checked="" type="checkbox"/> Attachment B: Map(s)                             | <input type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s)                                |
| <input type="checkbox"/> Attachment C: Installation and Start Up Schedule            | <input type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s)                       |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion              | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations                |
| <input type="checkbox"/> Attachment E: Plot Plan                                     | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s)   | <input checked="" type="checkbox"/> Attachment P: Public Notice                                    |
| <input checked="" type="checkbox"/> Attachment G: Process Description                | <input type="checkbox"/> Attachment Q: Business Confidential Claims                                |
| <input type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS)            | <input type="checkbox"/> Attachment R: Authority Forms   |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table               | <input checked="" type="checkbox"/> Attachment S: Title V Permit Revision Information              |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee  |

*Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.*

**FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:**

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
  - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
  - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
  - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
  - NSR permit writer should notify a Title V permit writer of draft permit,
  - Public notice should reference both 45CSR13 and Title V permits,
  - EPA has 45 day review period of a draft permit.

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

**ATTACHMENT A**  
**Business Certificate**



## Certificate

*I, Natalie E. Tennant, Secretary of State of the  
State of West Virginia, hereby certify that*

**GRAFTECH INTERNATIONAL HOLDINGS INC.**

a corporation formed under the laws of Delaware filed an application to be registered as a foreign corporation authorizing it to transact business in West Virginia. The application was found to conform to law and a "Certificate of Authority" was issued by the West Virginia Secretary of State on December 15, 1988.

I further certify that the corporation has not been revoked by the State of West Virginia nor has a Certificate of Withdrawal been issued to the corporation by the West Virginia Secretary of State.

Accordingly, I hereby issue this

## CERTIFICATE OF AUTHORIZATION



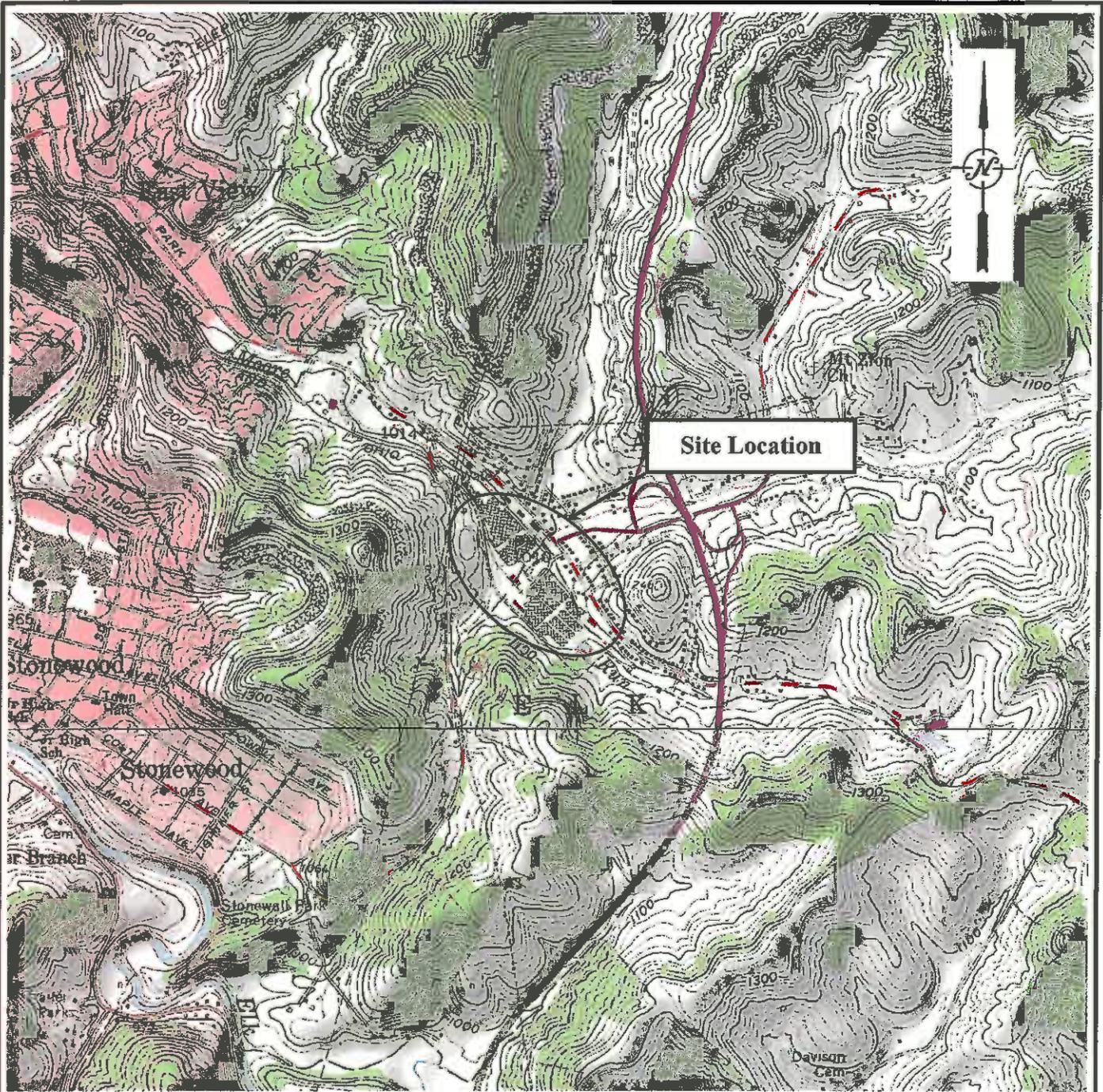
*Given under my hand and the  
Great Seal of the State of  
West Virginia on this day of  
October 24, 2012*

*Natalie E. Tennant*

*Secretary of State*

# **ATTACHMENT B**

**Map(s)**



Reference:  
 3-D TopoQuads © DeLorme,  
 Yarmouth, Me 04096  
 Source Data:  
 7.5 Minute USGS  
 Topographic Quadrangles

Mount Clare, WV  
 Clarksburg, WV

## Vicinity Map

Scale 1" = 2000'

*MSES Consultants, Inc.*  
 Clarksburg, West Virginia

**GRAFTECH  
 INTERNATIONAL  
 HOLDINGS, INC.**  
**Anmoore, WV Site**

**AIR PERMIT  
 MODIFICATION**

Project No. 14-579

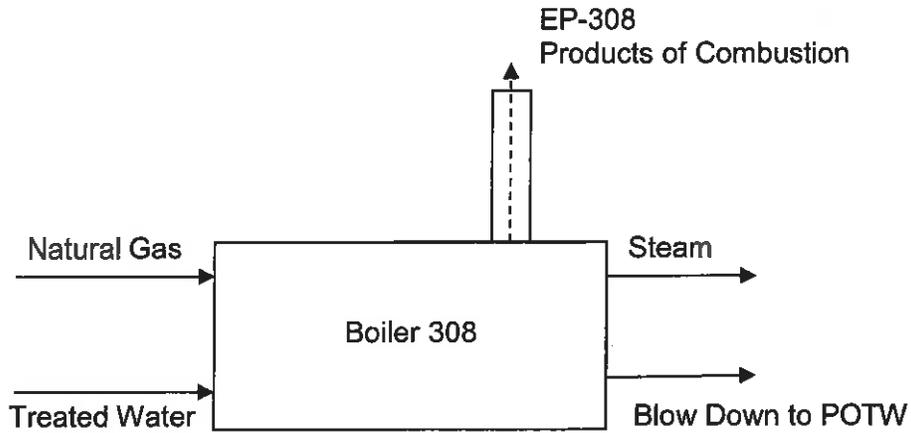
**ATTACHMENT B**

**ATTACHMENT F**

**Detailed Process Flow Diagram(s)**

# ATTACHMENT F

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## **LEGEND**

PROCESS FLOW                      

AIR EMISSIONS FLOW              

EP-001                              EMISSION POINT

FIGURE 2  
PROCESS FLOW DIAGRAM  
GrafTech International Holdings, Inc.  
Anmoore, WV Facility

**ATTACHMENT G**  
**Process Description**

# ATTACHMENT G

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## PROCESS DESCRIPTION

GrafTech operates four (4) natural gas fired boilers to produce process steam for the Anmoore, West Virginia facility. Three of the four boilers are grandfathered with respect to NSPS and 45CSR13 permitting requirements.

In 2013, GrafTech replaced an 8.6 million Btu per hour boiler, designated as Boiler 301, with a 12.6 million Btu per hour boiler (R13-3039).

With this permit application GrafTech seeks to remove the two oldest boilers (308 and 309) and replace one of them with a 12.902 million Btu per hour natural gas fired boiler. The new boiler will be designated as 308.

This new boiler will be subject to 40CFR60, Subpart Dc. The new boiler will not result in an increase in production for the facility.

**ATTACHMENT I**  
**Emission Units Table**



**ATTACHMENT J**

**Emission Points Data Summary  
Sheet**

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
308	Upward Vertical Stack	308	Boiler	None	None	NA	NA	CO, NOx, PM, SO2, VOC, CO2, CH4, N2O	1.08, 1.28, 0.10, 0.01, 0.07, 1548, 0.03, 0.03	4.75, 5.65, 0.44, 0.03, 0.31, 6780, 0.13, 0.12	NA	NA	Gas/Vapor and Solid	EE (AP-42)	

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (i.e., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
- Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m<sup>3</sup>) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO<sub>2</sub>, use units of ppmv (See 45CSR10).



**ATTACHMENT L**

**Emissions Unit Data Sheet(s)**

**Attachment L**  
**Emission Unit Data Sheet**  
**(INDIRECT HEAT EXCHANGER)**

Control Device ID No. (must match List Form): none

**Equipment Information**

1. Manufacturer: Cleaver-Brooks	2. Model No. CBEX Serial No.
3. Number of units: 1	4. Use process steam
5. Rated Boiler Horsepower: 350 hp	6. Boiler Serial No.:
7. Date constructed:	8. Date of last modification and explain: NA
9. Maximum design heat input per unit: 12.902 $\times 10^6$ BTU/hr	10. Peak heat input per unit: 12.902 $\times 10^6$ BTU/hr
11. Steam produced at maximum design output: LB/hr 100 psig	12. Projected Operating Schedule: Hours/Day 24 Days/Week 7 Weeks/Year 52
13. Type of firing equipment to be used: <input type="checkbox"/> Pulverized coal <input type="checkbox"/> Spreader stoker <input type="checkbox"/> Oil burners <input checked="" type="checkbox"/> Natural Gas Burner <input type="checkbox"/> Others, specify	14. Proposed type of burners and orientation: <input type="checkbox"/> Vertical <input type="checkbox"/> Front Wall <input type="checkbox"/> Opposed <input checked="" type="checkbox"/> Tangential <input type="checkbox"/> Others, specify
15. Type of draft: <input checked="" type="checkbox"/> Forced <input type="checkbox"/> Induced	16. Percent of ash retained in furnace: 0 %
17. Will flyash be reinjected? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	18. Percent of carbon in flyash: 0 %

**Stack or Vent Data**

19. Inside diameter or dimensions: ft.	20. Gas exit temperature: 423 °F
21. Height: ft.	22. Stack serves: <input checked="" type="checkbox"/> This equipment only <input type="checkbox"/> Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent)
23. Gas flow rate: 4,566 ft <sup>3</sup> /min	
24. Estimated percent of moisture: %	



**Emissions Stream**

37. What quantities of pollutants will be emitted from the boiler before controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	1.08			
Hydrocarbons	--			
NO <sub>x</sub>	1.29			
Pb	--			
PM <sub>10</sub>	0.10			
SO <sub>2</sub>	0.01			
VOCs	0.07			
Other (specify)	--			
Carbon Dioxide	1548			
Methane	0.03			
Nitrous Oxide	0.03			

38. What quantities of pollutants will be emitted from the boiler after controls?

Pollutant	Pounds per Hour lb/hr	grain/ACF	@ °F	PSIA
CO	Same as Above			
Hydrocarbons	"			
NO <sub>x</sub>	"			
Pb	"			
PM <sub>10</sub>	"			
SO <sub>2</sub>	"			
VOCs	"			
Other (specify)	"			
Carbon Dioxide	"			
Methane	"			
Nitrous Oxide	"			

39. How will waste material from the process and control equipment be disposed of?

Not Applicable

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit. NA

41. Have you included the *air pollution rates* on the Emissions Points Data Summary Sheet? Yes

**42. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING PLAN:** Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

Compliance with the PM and SO<sub>2</sub> emissions limits shall be demonstrated by utilizing only pipeline quality natural gas as boiler fuel.

**TESTING PLAN:** Please describe any proposed emissions testing for this process equipment or air pollution control device.

Conduct testing per 40CFR60, Subpart Dc.

**RECORDKEEPING:** Please describe the proposed recordkeeping that will accompany the monitoring.

Maintain records of boiler's operating log. Also keep records of quality and quantity of fuel consumed.

**REPORTING:** Please describe the proposed frequency of reporting of the recordkeeping.

Submit notification of initial startup. Submit stack test report.

**43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.**

# **ATTACHMENT N**

## **Supporting Emissions Calculations**

# GRAFTECH INTERNATIONAL HOLDINGS, INC.

## New 350HP CBEX Cleaver-Brooks Boiler

<b>Air Emissions from a 12.9 mmBtu/hr Boiler Natural Gas</b>			
<b>Pollutant</b>	<b>AP-42 Emission Factor</b>	<b>Total Emissions</b>	
	<b>(lb/10<sup>6</sup> ft<sup>3</sup>)</b>	<b>(lb/hr)</b>	<b>(tons/yr)</b>
CO	84	1.08	4.75
Nox	100	1.29	5.65
SO <sub>2</sub>	0.6	0.01	0.03
PM	7.6	0.10	0.43
VOC	5.5	0.07	0.31
CO <sub>2</sub>	120000	1548	6780
Methane	2.3	0.03	0.13
Nitrous Oxide	2.2	0.03	0.12
Benzene	0.0021	0.00003	0.00012
Formaldehyde	0.075	0.00097	0.0042

**Notes:**

Emission factors from AP-42 Chapter 1, Section 4

<p>1.29E+07 btu/hr 1000 btu/cuft 1.29E+04 cuft/hr 8760 hr/yr</p>	<p>fuel consumption Btu natural gas heating value fuel usage annual operating hours</p>
--	---

350 HP CBK

Cleaver-Brooks Boiler Expected Emission Data					
Producing Steam Firing		Nat Gas		Boiler Model	
BACKGROUND INFORMATION				CBEX Elite	
Date	10/31/14			Altitude (feet)	700
Author	Michael Lutestanski			Operating Pressure (psig)	100.00
Customer	Graf Tech			Furnace Volume (cu ft)	138.50
City & State	Anmore, WV			Furnace Heat Release (btu/hr/cu ft)	93,155
				Heating Surface (sqft)	1122
				Nox System	30
Nat Gas		Firing Rate			
		26%	60%	78%	100%
Heat power		88	175	263	350
Input, Btu/hr		3,219,000	6,385,000	9,624,000	12,902,000
CO	ppm	10	10	10	10
	lb/MMBtu	0.0075	0.0075	0.0075	0.0075
	lb/hr	0.02	0.05	0.07	0.10
	tpy	0.106	0.210	0.316	0.424
NOx	ppm	30	30	30	30
	lb/MMBtu	0.0350	0.0350	0.0350	0.0350
	lb/hr	0.11	0.22	0.34	0.45
	tpy	0.493	0.979	1.475	1.978
NO	ppm	25.5	25.5	25.5	25.5
	lb/MMBtu	0.030	0.030	0.030	0.030
	lb/hr	0.10	0.19	0.29	0.38
	tpy	0.39	0.78	1.18	1.58
NO <sub>2</sub>	ppm	4.5	4.5	4.5	4.5
	lb/MMBtu	0.005	0.005	0.005	0.005
	lb/hr	0.02	0.03	0.05	0.07
	tpy	0.10	0.20	0.30	0.40
SOx	ppm	0.34	0.34	0.34	0.34
	lb/MMBtu	0.0006	0.0006	0.0006	0.0006
	lb/hr	0.0019	0.0038	0.0057	0.0078
	tpy	0.008	0.016	0.025	0.033
VOCs (Non-Methane Only)	ppm	9	9	9	9
	lb/MMBtu	0.0038	0.0038	0.0038	0.0038
	lb/hr	0.012	0.024	0.036	0.048
VOCs does not include any background VOC emissions.	tpy	0.053	0.105	0.158	0.212
PM10 (Filterable)	ppm	N/A	N/A	N/A	N/A
	lb/MMBtu	0.0061	0.0061	0.0061	0.0061
	lb/hr	0.020	0.039	0.058	0.078
	tpy	0.086	0.170	0.256	0.343
PM10 (Condensable)	lb/MMBtu	0.0074	0.0074	0.0074	0.0074
	lb/hr	0.024	0.047	0.071	0.095
	tpy	0.104	0.206	0.310	0.416
PM2.5 (Filterable)	lb/MMBtu	0.0061	0.0061	0.0061	0.0061
	lb/hr	0.020	0.039	0.058	0.078
	tpy	0.086	0.170	0.256	0.343
PM2.5 (Condensable)	lb/MMBtu	0.0074	0.0074	0.0074	0.0074
	lb/hr	0.024	0.047	0.071	0.095
	tpy	0.104	0.206	0.310	0.416
<b>Exhaust Data</b>					
Temperature, F		359	381	402	423
Flow	ACFM	1,185	2,146	3,322	4,666
	SCFM (70 Degrees Fah.)	785	1,387	2,091	2,803
	DSCFM	707	1,232	1,856	2,489
	lb/hr	3,634	6,242	9,408	12,813
Velocity	ft/sec	8.29	11.40	17.63	24.23
	ft/min	377	684	1,058	1,454

- Notes:
- All ppm levels are corrected to dry at 3% oxygen.
  - Emission data based on actual boiler efficiency.
  - % H<sub>2</sub>O, by volume in exhaust gas is 17.24
  - Water vapor in exhaust gas is 98.91
  - CO<sub>2</sub> produced is 116.31
  - Particulate is exclusive of any particulates in combustion air or other sources of residual particulates from material. PM level indicated on this form is based on combustion air and fuel being clean and turndown up to 4:1.
  - Heat input is based on high heating value (HHV).
  - Emission produced in tons per year (tpy) is based on 24 hours per day for 365 days = 8,760 hours per year
  - Exhaust data is based on a clean and properly sealed boiler.
  - Emission data is based on a burner turndown of 4 to 1.

14) Fuel High Heating Value = 1000 Btu/FT<sup>3</sup>

**ATTACHMENT P**

**Public Notice**

## **AIR QUALITY PERMIT NOTICE**

### **Notice of Application**

Notice is given that GrafTech International Holdings, Inc. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Construction Permit, for a natural gas fueled boiler located at 101 North Philippi Pike, in Anmoore, in Harrison County, West Virginia. The latitude and longitude coordinates are: 39.255861 degrees north, and -80.293361 degrees west.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be: 4.75 tons per year of carbon monoxide, 5.65 tons per year of oxides of nitrogen, 0.43 tons per year of particulate matter, 0.03 tons per year of sulfur dioxide, 0.31 tons per year of volatile organic compounds.

Startup of operation is planned to begin on or about the 1<sup>st</sup> day of April, 2015. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 27th day of February, 2015.

By: Craig Taylor  
Site Manager  
GrafTech International Holdings, Inc.  
P.O. Box 120  
Anmoore, WV 26323-0120



**3. Suggested Title V Draft Permit Language**

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision?  Yes  No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

**4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision**

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
None	MM/DD/YYYY	
	/ /	
	/ /	

**5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision**

Permit or Consent Order Number	Date of Issuance	Permit/Consent Order Condition Number
None	MM/DD/YYYY	
	/ /	
	/ /	

**6. Change in Potential Emissions**

Pollutant	Change in Potential Emissions (+ or -), TPY
Carbon Monoxide (CO)	+4.75
Oxides of Nitrogen (NOx)	+5.65
Particulate Matter (PM)	+0.43
Sulfur Dioxide (SO <sub>2</sub> )	+0.03
Volatile Organic Compounds (VOC)	+0.31

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

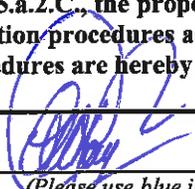
**7. Certification For Use Of Minor Modification Procedures (Required Only for Minor Modification Requests)**

**Note:** This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows.

- i. Proposed changes do not violate any applicable requirement;
- ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
- iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
- v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
- vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

(Signed):  Date: 03 / 11 / 15  
 (Please use blue ink) (Please use blue ink)

Named (typed): Craig Taylor Title: Site Manager

**Note: Please check if the following included (if applicable):**

- Compliance Assurance Monitoring Form(s)
- Suggested Title V Draft Permit Language

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

