



west virginia department of environmental protection

Division of Air Quality
601 57th Street, SE
Charleston, WV 25304-2345
Phone: 304 926 0475 • Fax: 304 926 0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION/FACT SHEET

B BACKGROUND INFORMATION

Application No.:	R13-3039
Plant ID No.:	033-00001
Applicant:	GrafTech International Holdings Inc.
Facility Name:	Anmoore
Location:	Anmoore
NAICS Code:	335991
Application Type:	Modification
Received Date:	January 22, 2013
Engineer Assigned:	Edward S. Andrews, P.E.
Fee Amount:	\$2000.00
Date Received:	February 1, 2013
Complete Date:	February 21, 2013
Due Date:	May 21, 2013
Applicant Ad Date:	January 29, 2013
Newspaper:	<i>The Exponent Telegram</i>
UTM's:	Easting: 560.9 km Northing: 4,354.1 km Zone: 17
Description:	The application is for the replacement of an existing natural gas boiler rated at 8.6 MMBtu/hr with a new unit rated at 12.6 MMBtu/hr.

DESCRIPTION OF PROCESS

GrafTech International Holdings Inc. (GrafTech) operates four (4) natural gas fired boilers to produce process heat energy for the manufacturing operation at the Anmoore Plant located in Anmoore, West Virginia. All four of these existing units predate the minor source permitting requirements prescribed in 45 CSR 13 based on the installation dates of the units.

GrafTech seeks to replace Boiler 301, which has a heat input rating of 8.6 million British Thermal Units (MMBtu) per hour. The replacement boiler will be a Series 400 Boiler manufactured by Hurst Boiler & Welding Co. The unit is rated at 300boiler horsepower (bhp), which requires a maximum heat input of 12.6 MMBtu/hr. This particular boiler uses a three-pass

wet back design. Basically, the exhaust from the burner makes three passes in the heat exchanger before being routed out of the stack. The burner for this replacement unit will be configured to burn natural gas.

SITE INSPECTION

The Anmoore Facility is an existing major Title V Facility and is targeted for periodic compliance inspections. The last full on site compliance inspection was conducted on November 11, 2011 by Ms. Lou Ann Lee, an inspector assigned to the North Central Regional Office of the Compliance and Enforcement Section. Ms. Lee determined that the facility has been operating in compliance.

This proposed change is nearly a like for like replacement of a natural gas fired boiler. The writer determined that an actual site inspection is not necessary for this permitting action.

ESTIMATE OF EMISSION BY REVIEWING ENGINEER

The applicant supplied emissions estimates from the manufacturer and used emissions factors from Chapters 1.4 (natural gas fired) of AP-42 to estimate emissions from the new boiler. The emissions listed in the following table are manufacturer’s estimates:

Table #1 – Potential Emissions from the New Boiler		
Pollutant	Hourly Rate (lb/hr)	Annual Rate (TPY)
Particulate Matter (PM) /Particulate Matter Less Than 10 microns (PM ₁₀)/Particulate Matter less than 2.5 microns (PM _{2.5})	0.10	0.44
Sulfur Dioxide (SO ₂)	0.01	0.04
Oxides of Nitrogen (NO _x)	1.26	5.52
Carbon Monoxide (CO)	1.06	4.64
Volatile Organic Compounds (VOCs)	0.07	0.31
Total Hazardous Air Pollutants (HAPs)	0.001	0.11
Carbon Dioxide Equivalent (CO _{2e})	1,512	6,623

REGULATORY APPLICABILITY

This facility is a major source subject to Title V. According to the DAQ's policy on Rule 13 Guidance for Natural Gas Combustion Sources, these replacement boilers would not need to obtain a Rule 13 for firing on natural gas. The estimated emissions confirm that none of the hourly emissions are above 6 pounds per hour.

It is understood that these sources burning natural gas are significantly below the applicable allowable limitations in Rule 2 and Rule 10, which are the State of West Virginia's rules addressing particulate matter (PM) and sulfur dioxide (SO₂) from boilers, regardless of the size of the unit. This understanding is confirmed with the provisions in Rules 2A and 10A, which exempts such sources for conducting periodic testing and monitoring for the purpose of demonstrating compliance with the limitations under these rules.

The writer is recommending monitoring with the DAQ's policy on Rule 13 Guidance for Natural Gas Combustion Sources.

Natural gas fired boilers over 10 MMBtu/hr is defined as a affected source under 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. However, the only requirements for a natural gas boiler is 40 CFR §60.48c(g)(2), which requires monthly records of natural gas usage by the unit.

GrafTech prepared and submitted a complete application, paid the filing fee, and published a Class I Legal ad in *The Exponent Telegram* on January 29, 2013. This proposed modification does not trigger any additional rule or regulations.

The Anmoore Facility is a major source as defined in 45 CSR 14 (i.e. Potential to emit more than 100 tons per year of CO, PM₁₀, PM, and SO₂). This new boiler does not have the potential to emit of any one of the New Source Review Pollutants above the significance levels as defined in Rule 14. Therefore, no New Source Review is required to be conduct for this project.

For Hazardous Air Pollutants (HAPs), the Anmoore Plant has the potential to emit just 11 tons per year of total HAPs with the largest single HAP release being phenol at 1.4 tons per year. Thus, the Anmoore Plant is classified as an area source of HAPs. This project will not change this status and therefore the facility will remain classified as an area source of HAPs.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

This replacement of Boiler 301 will not emit any pollutants that aren't already being emitted by another emission source at the facility. Therefore, no information about the toxicity of the hazardous air pollutants (HAPs) is presented in this evaluation.

Engineering Evaluation of R13-3039
GrafTech International Holdings Inc.
Anmoore
Non-confidential

AIR QUALITY IMPACT ANALYSIS

The writer deemed that an air dispersion modeling study or analysis was not necessary, because the proposed modification does not meet the definition of a major modification of a major source as defined in 45CSR14.

MONITORING OF OPERATIONS

The writer recommends the following monitoring requirements:

- Facility total natural usage for each month. This is required by Rule 2, 10, and Subpart Dc.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates the proposed modification of the facility will meet all the requirements of the applicable rules and regulations when operated in accordance with the permit application. Therefore, the writer recommends granting GrafTech a Rule 13 modification permit for their graphite products manufacturing facility located in Anmoore, WV.

Edward S. Andrews, P.E.
Engineer

March 1, 2013
Date

Engineering Evaluation of R13-3039
GrafTech International Holdings Inc.
Anmoore

Non-confidential