



**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**


MEMORANDUM


October 26, 2017

TO: Files

THROUGH:  Rick Groshong, Environmental Programs Manager
Compliance and Enforcement Group

THROUGH:  Brad Flaming, Environmental Programs Manager
Surveillance Section

THROUGH:  Peer Review

FROM:  Jon Livermore, Environmental Programs Specialist
Compliance Section

CC: Todd Miller
Director – Safety, Health, & Environmental Affairs
333 Cypress Run, Suite 100
Houston, Texas 77094
(281) 647-3858

SUBJECT: Full Compliance Evaluation at **Continental Carbon Company
Carbon Black Production Facility**
1006 East Oakland Avenue
Ponca City, Kay County, Oklahoma.
Complaint Number 151133
PCE ID Number: 42574

Introduction

On September 21, 2017, from 1500 to 1600 hours, an unannounced partial compliance evaluation (“PCE”) was conducted at Continental Carbon Company (“CCC”) – Carbon Black Production Facility (“Facility”) in Kay County, Oklahoma. The inspection was conducted in response to complaint No. 151133 received by the Oklahoma Department of Environmental Quality (“DEQ”), regarding particulate matter coming from the Unit #1 thermal oxidizer (“TO”). The complaint was first investigated by the Environmental Complaints and Local Services Division (“ECLS”) who then referred the complaint to the Air Quality Division (“AQD”) on September 8, 2017 for further investigation.

Facility Description

The Facility is a carbon black manufacturing plant (Standard Industrial Classification Code 2895) currently operating under Air Quality Permit No. 2004-302-TVR (M-2) and 2004-302-C

(M-2) (**Attachment 1**). Carbon black is produced by burning residual oil pipelined from Phillips 66, Ponca City Refinery. The oil is burned in kilns and the soot (carbon black product) is separated from the waste stream using baghouses. The waste gases then exit the process through one of three TOs on-site. For a more detailed process description, refer to the memorandum of Permit No. 2004-302-TV (M-2) and 2004-302-C (M-2).

State/Federal Regulatory Applicability

OAC 252:100-9 (Excess Emission Reporting Requirements)

Excess emission reporting requirements such as immediate notices, 30 day reports, and Affirmative defenses.

An opacity event occurred at approximately 1500 hours on September 2, 2017. No visible emission observations (“VEO”) were performed due to it being Saturday and not having a certified reader on-site. From the pictures provided by the complainant it appears that the opacity was well above the 20% opacity threshold and that, potentially, a violation of OAC 252:100-25 did occur at the Facility (Attachment 2). A review of AQD records indicates that CCC did not report an excess emission (“EE”) for the event that occurred on September 2, 2017. While an EE was not reported there was likely an EE occurring at the Facility. Therefore, the failure of CCC to report an EE to the AQD will be listed as an AOC under the *Exit Interview/Summary* section of this report below.

OAC 252:100-25 (Visible Emissions and Particulate Matter)

No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

As stated above, no VEO was performed due to it being Saturday and not having a certified reader on-site. According to Jim Bennet, Environmental, Health and Safety Coordinator, a certified Method 9 reader was immediately called; however, by the time the certified reader reached the site the opacity event was no longer occurring. From the pictures provided by the complainant, it appears that the opacity was well above the 20% opacity threshold and that a violation of this Part, potentially, did occur at the Facility (Attachment 2). This is an AOC and will be listed under the *Exit Interview/Summary* section below. Also, see *On-site Evaluation* section for more information regarding the reasoning for the opacity.

OAC 252:100-29 (Fugitive Dust)

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. The permit will require the facility to take reasonable precautions to prevent causing a problem in this area.

No fugitive dust was seen beyond the property line during the inspection and none was reported by the Facility.

On-site Evaluation

At approximately 1500 hours on September 21, 2017, DEQ representatives arrived at CCC. Mr. Bennet represented CCC. Mr. Bennet was informed that the purpose of the visit was to follow-up on a complaint made on September 5, 2017 of opacity coming from Unit #1 TO.

Mr. Bennet stated that they had a power outage on September 2, 2017 which caused the Unit #1 TO to lose its flame. An internal email within CCC stated that they confirmed with OG&E that a power outage occurred around the same time that the opacity event happened (**Attachment 3**). As a result of the power outage and the TO losing its flame, there was opacity coming from Unit #1's stack. There was no Method 9 conducted due to it being Saturday and not have a certified reader on-site. According to Mr. Bennet, a certified Method 9 reader was immediately called; however, by the time the certified reader reached the site the opacity event was no longer occurring. The Unit #1 TO stack does not have a continuous opacity monitor; therefore, there was no emission data to collect.

Exit Interview/Summary

No violations were noted during the performance of this evaluation however, two AOCs were noted:

1. From the pictures provided by the complainant it appears that the opacity was well above the 20% opacity threshold and that, potentially, a violation of OAC 252:100-25 did occur at the Facility. A review of AQD records indicates that CCC did not report an EE for the event that occurred on September 21, 2017. A review of AQD records indicates that CCC did not report an EE for the event that occurred on September 2, 2017. While an EE was not reported there was likely an EE occurring at the Facility. Therefore, CCC failed to report an EE to the AQD.
2. From the pictures provided by the complainant it appears that the opacity was well above the 20% opacity threshold and that a violation of OAC 252:100-25, potentially, did occur at the Facility.

Attachments

1. Air Quality Permit No. 2004-302-TVR (M-2) and 2004-302-C (M-2)
2. Pictures from Complainant
3. Internal Email from CCC

ATTACHMENT 1

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

April 25, 2016

TO: Phillip Fielder, P.E., Permits and Engineering Group Manager

THROUGH: Phil Martin, P.E., Engineering Manager, Existing Source Permits Section

THROUGH: Peer Review

FROM: Jian Yue, P.E., New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2004-302-C (M-2)**
Continental Carbon Corporation
Carbon Black Production Facility
Facility ID: 333
Section 10, T25N, R2E
Ponca City, Kay County, Oklahoma
Located 1 mile south of the Intersection of SH60 and SH177

SECTION I. INTRODUCTION

Continental Carbon requested a construction permit for the Ponca City Carbon Black Production facility (SIC code 2895) to incorporate the requirements of Consent Decree 5:15-cv-00290F ("CD"), which was entered into with the EPA on May 7, 2015. The project will remove the three (3) thermal oxidizers which currently control the four (4) carbon black production units and replace them with two (2) clean gas and energy cogeneration units (CGEU) each consisting of one (1) cogeneration electric unit combusting the tail gas from the reactors, followed by one (1) selective catalytic reduction system (SCR) for control of nitrogen oxide (NOx) emissions, and one (1) dry scrubber for control of sulfur dioxide (SO₂) and secondary bag filters for particulate matter (PM) emissions. Additionally, there will be limits on the emissions from the main bag filters during the transition of oil in and out of the production units and additional PM control requirements for other operations.

Emission increases from this project will be less than PSD significance levels and this project does not require PSD review. However, a significant modification is also required for applications requesting modifications that qualify under OAC 252:100-8-7.2(b)(2). As part of this physical change, the applicant is proposing to establish a permit limit to avoid an otherwise applicable limit. Specifically, as part of the control equipment change the application proposes to install an SCR system and a dry scrubber with baghouse in addition to imposing new limits on the main bag filters. Since the new control devices and new baghouse limits are currently not part of a federally enforceable permit and these are needed for the project to remain below PSD significance levels, the project is considered significant with regard to the application and permit processing procedures, and qualifies for a Tier II modification.

This facility is currently operating under Permit No. 2004-302-TVR (M-1) issued on September 17, 2015.

SECTION II. PSD APPLICABILITY ANALYSIS

The proposed project is solely to comply with the EPA CD. The project does not result in any debottlenecks or equipment capacity increases. The project is a pollution control project. ODEQ considered this project as a modification or change in the method of operation of existing units - the four carbon black production units. The new boilers are part of the pollution control proposal. The boilers will be combusting the waste gas instead of the thermal oxidizers. As such, the appropriate method to review this project is to determine if it is a major modification under PSD based on the "actual-to-projected-actual" or "actual-to-potential" test.

Per OAC 252:100-8-31, major modification means any physical change in or change in the method of operation of a major stationary source that would result in a significant emissions increase of a regulated NSR pollutant and a significant net emission increase of the pollutant from the major stationary source. The project does not result in a significant emissions increase or a significant net emission increase.

The first step is to determine if the project results in a significant emission increase. Project emission increases include emission increases from new and modified sources and associated emission increases from existing and unmodified sources. For this project, Continental Carbon elected to calculate these emission increases based on potential to emit to baseline emissions.

The following table lists facility wide potential emissions after the project. While not all units are affected by the project, all facility units are included for a conservative evaluation.

EUG No.	Point No.	Emissions Unit Name	PM PM ₁₀ PM _{2.5}	SO ₂	NO _x	CO	VOC
			TPY	TPY	TPY	TPY	TPY
EUG 1	EPN 1	Boiler 1, 6.1 MMBTU/H	0.10	0.0079	1.32	1.1052	0.0724
EUG 1	EPN 2	Boiler 2, 6.28 MMBTU/H	0.10	0.0081	1.35	1.1378	0.0745
EUG 5	EPN 40	Clean Gas and Energy Unit 1	23.48	353.61	74.22	1.0955	22.2239
EUG 5	EPN 41	Clean Gas and Energy Unit 2	23.48	353.61	74.22	1.0955	22.2239
EUG 6	EPN 5	Dryer 11 Firebox Stack	0.16	--	1.05	0.0008	0.0037
EUG 6	EPN 8	Dryer 12 Firebox Stack	0.16	--	1.05	0.0008	0.0037
EUG 6	EPN 9	Dryer 21 Firebox Stack	0.33	--	2.18	0.0016	0.0077
EUG 6	EPN 12	Dryer 31 Firebox Stack	0.16	--	1.07	0.0008	0.0038
EUG 6	EPN 13	Dryer 32 Firebox Stack	0.16	--	1.07	0.0008	0.0038
EUG 6	EPN 21	Dryer 41 Firebox Stack	0.34	--	2.22	0.0016	0.0079
EUG 2	EPN 3	Production Unit 1 - Transition Events	0.09	0.10	0.55	156	6.96
EUG 2	EPN 7	Production Unit 2 - Transition Events	0.11	0.64	0.18	76	1.19
EUG 2	EPN 11	Production Unit 3 - Transition Events	0.09	0.10	0.56	159	7.08
EUG 2	EPN 20	Production Unit 4 - Transition Events	0.10	0.10	0.58	165	7.37
EUG 4	EPN 10	Clean-up Bagfilter 1	0.87	--	--	--	--
EUG 4	EPN 6	Clean-up Bagfilter 2	0.24	--	--	--	--
EUG 4	EPN 14	Clean-up Bagfilter 3	0.12	--	--	--	--
EUG 4	EPN 24	Clean-up Bagfilter 4	0.45	--	--	--	--
EUG 4	EPN 23	Shipping Dept. Clean-up Bagfilter 1	0.39	--	--	--	--
EUG 4	EPN 34	Shipping Dept. Clean-up Bagfilter 2	0.39	--	--	--	--
EUG 4	EPN 32	Sealed Bin Clean-up Bagfilter 1	0.04	--	--	--	--
EUG 4	EPN 35	Sealed Bin Clean-up Bagfilter 2	0.04	--	--	--	--
EUG 4	EPN 33	Transloading Clean-up Bagfilter	0.04	--	--	--	--
EUG 7	EPN 18	Oil Tanks (Breathing Losses)	--	--	--	--	0.3847
EUG 7	EPN 18	Oil Tanks (Working Losses)	--	--	--	--	1.9326
EUG 5	EPN 40	Clean Gas and Energy Unit 1 - Heat Load	0.07	0.0053	4.28	0.74	0.05
EUG 5	EPN 41	Clean Gas and Energy Unit 2 - Heat Load	0.07	0.0053	4.28	0.74	0.05
EUG 8	EPN 3	Reactor 11 - Heat Load	0.05	0.0042	3.43	0.59	0.04
EUG 8	EPN 3	Reactor 12 - Heat Load	0.05	0.0042	3.43	0.59	0.04
EUG 8	EPN 7	Reactor 21 - Heat Load	0.06	0.0045	3.67	0.63	0.04
EUG 8	EPN 11	Reactor 31 - Heat Load	0.06	0.0045	3.67	0.63	0.04
EUG 8	EPN 11	Reactor 32 - Heat Load	0.06	0.0045	3.67	0.63	0.04
EUG 8	EPN 20	Reactor 41 - Heat Load	0.11	0.0090	7.34	1.26	0.08
EUG 9	EPN 40 / 41	Waste Gas Combustor 11 - Heat Load	0.00	0.0002	0.18	0.03	0.00
EUG 9	EPN 40 / 41	Waste Gas Combustor 12 - Heat Load	0.00	0.0002	0.18	0.03	0.00
EUG 9	EPN 40 / 41	Waste Gas Combustor 21 - Heat Load	0.00	0.0002	0.18	0.03	0.00
EUG 9	EPN 40 / 41	Waste Gas Combustor 31 - Heat Load	0.01	0.0005	0.37	0.06	0.00
EUG 9	EPN 40 / 41	Waste Gas Combustor 32 - Heat Load	0.01	0.0005	0.37	0.06	0.00
EUG 9	EPN 40 / 41	Waste Gas Combustor 41 - Heat Load	0.01	0.0005	0.37	0.06	0.00
EUG 10		CB Storage Tanks	0.83	--	--	--	--
EUG 11		Emergency Generator Unit 1 & 2	0.000	0.0000	0.03	0.04	0.00
EUG 11		Emergency Generator Unit 3	0.000	0.0000	0.03	0.04	0.00
EUG 11		Emergency Generator Unit 4	0.001	0.0000	0.07	0.11	0.00
FACILITY-WIDE EMISSIONS			52.83	708.22	197.17	566.71	69.92

Baseline actual emissions are based on the average of 2006 and 2007 emissions. Continental Carbon identified errors in the calculation methodologies for the historic emissions inventories and submitted revised emission inventories for the baseline years. Specifically, for the baseline emission, Continental Carbon estimated emissions using (1) stack test data (conducted in 2004) excluding results in violation of permit limits to determine the appropriate emission factors and (2) the actual production for each unit for the baseline years. The following table lists the baseline emissions calculated as the average of 2006 and 2007. Startup and shutdown logs from the Pi Data Historian system were used to determine the number of transition events to be factored into the baseline.

EUG No.	Point No.	Emissions Unit Name	PM	SO ₂	NO _x	CO	VOC
			PM ₁₀ PM _{2.5}				
EUG 1	EPN 1	Boiler 1	0.017	0.001	0.227	0.191	0.012
EUG 1	EPN 2	Boiler 2	0.057	0.005	0.752	0.631	0.041
EUG5	EPN 25	Production Unit 1	38.828	1,156.223	153.061	0.016	2.138
EUG5	EPN 25	Production Unit 2	38.405	937.114	151.394	0.016	2.115
EUG5	EPN 26	Production Unit 3	22.132	1,275.050	246.295	0.000	2.870
EUG5	EPN 22	Production Unit 4	55.000	1,388.516	299.769	0.000	0.000
EUG 5	EPN 22	EBF 4	0.000	0.000	13.127	5.418	0.779
EUG 6	EPN 5	Dryer 11 Firebox Stack	0.388	0.000	1.531	0.000	0.021
EUG 6	EPN 8	Dryer 12 Firebox Stack	0.388	0.000	1.531	0.000	0.021
EUG 6	EPN 9	Dryer 21 Firebox Stack	0.768	0.000	3.028	0.000	0.042
EUG 6	EPN 12	Dryer 31 Firebox Stack	0.221	0.000	2.463	0.000	0.029
EUG 6	EPN 13	Dryer 32 Firebox Stack	0.221	0.000	2.463	0.000	0.029
EUG 6	EPN 21	Dryer 41 Firebox Stack	1.829	0.000	5.995	0.000	0.000
EUG2	EPN 3	Production Unit 1 - Transition Events	0.074	0.038	0.447	126.600	5.650
EUG2	EPN 7	Production Unit 2 - Transition Events	0.117	0.338	0.196	83.893	1.311
EUG2	EPN 11	Production Unit 3 - Transition Events	0.078	0.039	0.469	132.638	5.919
EUG2	EPN 20	Production Unit 4 - Transition Events	0.000	0.053	0.631	178.537	7.967
EUG2	EPN 3	Production Unit 1 - Excess Emissions	0.000	0.000	0.000	0.000	0.000
EUG2	EPN 7	Production Unit 2 - Excess Emissions	0.000	0.000	0.000	0.000	0.000
EUG2	EPN 11	Production Unit 3 - Excess Emissions	0.000	0.000	0.000	0.000	0.000
EUG2	EPN 20	Production Unit 4 - Excess Emissions	0.000	0.000	0.000	0.000	0.000
EUG4	EPN 10	Clean-up Bagfilter 1	0.530	0.000	0.000	0.000	0.000
EUG4	EPN 6	Clean-up Bagfilter 2	0.137	0.000	0.000	0.000	0.000
EUG4	EPN 14	Clean-up Bagfilter 3	0.074	0.000	0.000	0.000	0.000
EUG4	EPN 24	Clean-up Bagfilter 4	0.359	0.000	0.000	0.000	0.000
EUG4	EPN 23	Shipping Dept. Clean-up Bagfilter 1	0.239	0.000	0.000	0.000	0.000
EUG4	EPN 34	Shipping Dept. Clean-up Bagfilter 2	0.287	0.000	0.000	0.000	0.000
EUG4	EPN 32	Sealed Bin Clean-up Bagfilter 1	0.026	0.000	0.000	0.000	0.000
EUG4	EPN 35	Sealed Bin Clean-up Bagfilter 2	0.026	0.000	0.000	0.000	0.000

EUG4	EPN 33	Transloading Clean-up Bagfilter	0.026	0.000	0.000	0.000	0.000
EUG 5	EPN 25	Thermal Oxidizer 1-Heat Load	0.006	0.000	0.075	0.063	0.004
EUG 5	EPN 26	Thermal Oxidizer 2-Heat Load	0.016	0.001	0.211	0.177	0.012
EUG 5	EPN 22	Thermal Oxidizer 4-Heat Load	0.022	0.002	0.292	0.245	0.016
EUG7	EPN 18	Oil Tanks (Breathing Losses)	0.000	0.000	0.000	0.000	0.385
EUG7	EPN 18	Oil Tanks (Working Losses)	0.000	0.000	0.000	0.000	1.379
EUG 8	EPN 3	Reactor 11 - Heat Load	0.031	0.002	0.403	0.339	0.022
EUG 8	EPN 3	Reactor 12 - Heat Load	0.031	0.002	0.410	0.344	0.023
EUG 8	EPN 7	Reactor 21 - Heat Load	0.022	0.002	0.284	0.239	0.016
EUG 8	EPN 11	Reactor 31 - Heat Load	0.035	0.003	0.462	0.388	0.025
EUG 8	EPN 11	Reactor 32 - Heat Load	0.040	0.003	0.532	0.447	0.029
EUG 8	EPN 20	Reactor 41 - Heat Load	0.064	0.005	0.837	0.730	0.046
EUG 9	EPN 40 / 41	Waste Gas Combustor 11 - Heat Load	0.001	0.000	0.007	0.006	0.001
EUG 9	EPN 40 / 41	Waste Gas Combustor 12 - Heat Load	0.001	0.000	0.010	0.008	0.001
EUG 9	EPN 40 / 41	Waste Gas Combustor 21 - Heat Load	0.001	0.000	0.008	0.007	0.000
EUG 9	EPN 40 / 41	Waste Gas Combustor 31 - Heat Load	0.002	0.000	0.026	0.022	0.001
EUG 9	EPN 40 / 41	Waste Gas Combustor 32 - Heat Load	0.002	0.000	0.020	0.017	0.001
EUG 9	EPN 40 / 41	Waste Gas Combustor 41 - Heat Load	0.001	0.000	0.016	0.013	0.001
EUG10		CB Storage Tanks	0.552	0.000	0.000	0.000	0.000
EUG 11		Emergency Generator Unit 1 & 2	0.000	0.000	0.052	0.080	0.001
EUG 11		Emergency Generator Unit 3	0.000	0.000	0.052	0.080	0.001
EUG 11		Emergency Generator Unit 4	0.000	0.000	0.025	0.039	0.000
Facility Wide Emissions (Average of 2006 and 2007)			161.054	4,757.397	887.101	531.184	30.908

The following table lists project emission increases.

Pollutants	Facility Wide Potential Emissions	Facility Wide Baseline Emissions	Project Emission Increases	PSD Significance Levels
	TPY	TPY	TPY	TPY
NOx	197.17	887.101	0.0	40
CO	566.71	531.184	35.53	100
SO ₂	708.22	4,757.397	0.0	40
PM	52.83	161.054	0.0	25
PM ₁₀	52.83	161.054	0.0	15
PM _{2.5}	52.83	161.054	0.0	10
VOC	69.92	30.98	38.94	40
CO _{2e}	466,835.10	298,665.77	168,169.33	75,000

Project emission increases are below PSD significance levels except for CO_{2e}. However, PSD is not applicable if only greenhouse gases triggers the significance level.

SECTION III. PROCESS DESCRIPTION

Furnace carbon black is a large volume commodity chemical used primarily in the tire and rubber industry. Carbon black is produced from a high molecular weight, low vapor pressure, highly aromatic liquid hydrocarbon feedstock and other high carbon, low sulfur hydrocarbon products of commerce. This material is a by-product of the catalytic cracking of gas oil in a crude oil petroleum refinery and other suitable sources of feedstock. Feedstock for the production of carbon black is commonly referred to as carbon black oil (CBO). A large portion of the CBO for the Facility is supplied by a nearby refinery. This material is shipped to the site via pipeline. The remainder of the CBO is purchased from other refineries/sources and delivered to Ponca City by tank truck or rail.

CBO from crude oil refineries is received into a 65,000-barrel insulated cone roof tank. CBO received by pipeline from the nearby refinery or other suppliers is blended with the CBO in inventory upon receipt. Material from this tank is continuously circulated through a heater on each production unit in service and returned to the tank through an internal mixing nozzle which provides for uniform feed quality. The CBO from this tank is transferred to individual unit charge tanks or directly to the operating units, as required.

During cold reactor start/heat-up operations, the reactor is initially heated by combustion of natural gas using a low temperature warm-up lance and the normal natural gas ring burner. The air and gas flows are carefully controlled to specific rates and ratios to slowly increase to the desired temperature specified in the heating schedule. This is accomplished utilizing the plants DCS system and a supplier specified heating schedule to avoid spalling or steam bursting from entrapped moisture in the brick and refractory. During cold start/heat-up, the emissions generated due to combustion of natural gas are released via the Main Bag Filter (MBF) Vent Stack. Once the reactor is sufficiently warm, the warm-up lance is used to lite the reactors main ring burner for approximately four to twenty-four hours as the reactor temperature is slowly increased to operating temperatures. During this time, no CBO is injected into the reactor; therefore, only products of natural gas combustion are emitted. Also, during this time the dryer combustors are slowly heated with natural gas to slowly bring them up to temperatures at which waste gas from carbon black production can be safely introduced as a fuel to replace the natural gas. The flow of gasses from the dryer combustor, are directed to the outlet of the cogeneration boiler just prior to the SCR and scrubber.

During the warm-up period for the reactor, the cogeneration boiler is undergoing a similar warm-up operation utilizing natural gas as fuel. Once a safe operating temperature is reached, the natural gas flow is replaced with waste gas. The flow of gasses from the cogeneration boiler, are directed to the SCR and scrubber. When ready to begin carbon black production, CBO flow is initiated. There is a short transition period (10 minutes or less) which allows time for the automated valves controlling the flow of waste gas going to the boiler to open and going to the MBF vent stack to close. This short period is critical for process safety.

During this short transition period, the byproduct gases have to reach sufficient British Thermal Units (BTU) value for the induction and sustained combustion of the byproduct gases in the CGEUs. There is also a short period of transition when a reactor is taken off-line or carbon black

production is stopped. Other emissions generally may occur under Force Majeure conditions such as listed in the Start-up, Shutdown and Maintenance Plan (SSMP) (i.e., power failures or loss of control equipment due to the safety shutdown systems on the associated CGEU unit, SCR and scrubber).

No carbon black production occurs during warm-up or emergencies when there is no CBO in the reactor, hence the combustion gases are not carbon black-laden, nor do the gases have significant concentrations of VOC, CO, H₂S, CS₂, HCN, SO₂ and COS at these times.

During the production of carbon black, potassium carbonate (K₂CO₃) is injected at the reactor face plate in parts per million quantities as a product structure control additive. Also, during this process, carbon black and other products of incomplete combustion, including reduced sulfur compounds, are formed.

When the production units are in normal operation, the carbon-laden gases from the reactors are cooled by water quenching in the "quench" section of the reactors. These quenched flue gases then pass through the "residence section" and then into the air- and CBO-pre-heaters. The partially cooled flue gases (500°F) then go through the main bag filters (MBFs) for carbon black recovery. The MBFs collect 99.9 percent of the carbon black from the gases. Then approximately 20 percent of the filtered gases from the MBFs go to the waste gas combustors (WGC) and are combusted as fuel to heat the rotary dryers for drying the pelletized carbon black. The filtered waste gas has a BTU content of approximately 60-80 BTU/SCF. Although low in BTU content, the gas is easily combusted without supplemental fuel. The combustion efficiency in the WGCs is 98%. The combustion/dryer system on each unit uses the waste gases from the MBFs as the primary source of fuel. The combusted gases go around the outside then through the inside of the rotating drum, countercurrent to the carbon black flow. The gases, water vapor and any airborne particulate matter due to carbon black movement, are directed to the EBF where the particulate is separated from the gasses. The particulate is recycled and the gasses are directed to the outlet of the cogeneration boiler just prior to the SCR and Scrubber. The surplus waste gas (about 80 percent of the total reactor waste gas) not used in the waste gas combustors goes to the respective CGEU unit. The CGEUs are controlled by a selective catalytic reduction unit for NO_x and a scrubber for SO₂ and PM. The two (2) CGEUs will generate approximately 20 megawatts (MW) total. The facility expects to utilize 5 to 8 MW and the balance will be sold to the electric grid.

The carbon black is collected in the MBFs on all units and is pneumatically conveyed to pulverizers and then accumulator cyclones or Process Bag Filters (PBF) which separate the conveying gases from the carbon black. The conveying gases exit the cyclone and return to the inlet of the MBFs. The pneumatic conveying system is closed-loop. The system is hot due to the temperature of the waste gasses and is low in oxygen for safe operation. The carbon black collected from the cyclones (or PBF), flow by gravity into the unit's accumulator tank.

The carbon black then enters a stage called the "Wet Process," where the loose, fine carbon black is consolidated into pellets. Particulate matter collected from process conveying equipment, that is part of the dust management system, is collected in the clean-up bag filter (CUBF) that cold air exhausts through the CUBF stack while collected product empties into the pneumatic line and is

recycled. Carbon black flows into the accumulator tank and then into the pelletizer, where the carbon black is mixed with an equal weight of water and wetting agents and formed into small pellets. These wet pellets drop through a chute into one end of a rotary drying drum.

The dried carbon black pellets leaving the dryer drum are lifted by a bucket elevator system and mechanical conveying system to the top of closed storage tanks. Pellets are discharged from the bucket elevator across screen separators. These separators discharge the product carbon black pellets into closed screw systems and more bucket elevators, leading into the storage tanks. Potential emissions from conveying equipment are controlled by the unit's CUBF and are recycled.

The carbon black storage tanks are vented through a single stack fabric particulate filter. As specified in the consent decree, Appendix A, Paragraph D, these will be replaced and: *"PM emissions shall be directed to a cartridge device that achieves a PM collection efficiency of 99%."* Carbon black is gravity-loaded from the storage tanks into hopper cars, specialty bulk containers for bulk or semi-bulk shipments, or is bagged by existing valve bag packers for shipment in trailers. Existing shipping dock cleanup bag filters service all bulk loading sites. With the addition of the new clean-up bag filter (applied in application 98-176-TV(M-3)(PSD)), the existing system serves units 1 & 2, and the newer system serves units 3 & 4. The new system is a duplicate of the existing system.

Scheduled maintenance of all bag filters is performed periodically. Procedures are in place at the facility to minimize fugitive carbon black released during the change out in each bag compartment (following Best Management Practices, BMP); however, it is assumed that an insignificant amount of carbon black is released to the atmosphere during these operations.

SECTION IV. EQUIPMENT

EUG 1 Gas-Fired Boilers

EU	Point	Manufacturer	MMBTUH	Serial #	Const. Date
Boiler #1	EPN #1	Superior	6.1	8631	1980
Boiler #2	EPN #2	Superior	6.28	17817	2015

EUG 2 Main Bag Filters (MBF)

EU	Point	Name
MBF #1	EPN #3 (N/C)	Production Unit No. 1-Transition Events
MBF #2	EPN #7 (N/C)	Production Unit No. 2-Transition Events
MBF #3	EPN #11 (N/C)	Production Unit No. 3-Transition Events
MBF #4	EPN #20 (N/C)	Production Unit No. 4-Transition Events

N/C – Normally Closed, only open for transition events and reactor heat load

EUG 3 Exhaust Bag Filter

Vent stacks will be routed to the outlet of the proposed boilers prior to the SCR and scrubber system.

EUG 4 Cleanup Bag Filters (CUBF)

EU	Point	Name
CUBF #1	EPN #10	Clean Up Bag Filter 1
CUBF #2	EPN #6	Clean Up Bag Filter 2
CUBF #3	EPN #14	Clean Up Bag Filter 3
CUBF #4	EPN #24	Clean Up Bag Filter 4
CUBF #5	EPN #23	Shipping Dept. Clean Up Bag Filter 1
CUBF #6	EPN #34	Shipping Dept. Clean Up Bag Filter 2
CUBF #7	EPN#32	Sealed Bin Clean Up Bag Filter 1
CUBF #8	EPN#35	Sealed Bin Clean Up Bag Filter 2
CUBF #9	EPN#33	Transloading Clean Up Bag Filter

EUG 5 Clean Gas and Energy Units

EU	Point	Name	Const. Date
CGEU 1	EPN #40	Clean Gas and Energy Unit 1	TBD
CGEU 2	EPN #41	Clean Gas and Energy Unit 2	TBD
CGEUH 1	EPN #40	Clean Gas and Energy Unit 1- Heat Load	TBD
CGEUH 2	EPN #41	Clean Gas and Energy Unit 2- Heat Load	TBD

EUG 6 Firebox Stacks

EU	Point	Name	Const. Date
FS 11	EPN 5	Dryer 11 Firebox Stack	1954
FS 12	EPN 8	Dryer 12 Firebox Stack	1954
FS 21	EPN 9	Dryer 21 Firebox Stack	1954
FS 31	EPN 12	Dryer 31 Firebox Stack	1959
FS 32	EPN 13	Dryer 32 Firebox Stack	1959
FS 41	EPN 21	Dryer 41 Firebox Stack	1991

EUG 7 Feedstock Oil Tanks

EU	Point	Contents	Barrels	Gallons	Const. Date
FS Tanks	EPN #18a	Carbon Black Oil	5,000	210,000	1954
	EPN #18b	Carbon Black Oil	5,000	210,000	1954
	EPN #18c	Carbon Black Oil	5,000	210,000	1954
	EPN #18d	Carbon Black Oil	65,000	2,730,000	1968
	EPN #18e	Carbon Black Oil	500	21,000	1954
	EPN #18f	Carbon Black Oil	500	21,000	1954

EUG 8 Reactors

EU	Point	Unit No.	Const. Date
RX #11	EPN #3	Reactor 11- Heat Load	1955
RX #12	EPN #3	Reactor 12- Heat Load	1955
RX #21	EPN # 7	Reactor 21- Heat Load	1955
RX #31	EPN #11	Reactor 31- Heat Load	1959
RX #32	EPN #11	Reactor 32- Heat Load	1959
RX #41	EPN #20	Reactor 41- Heat Load	1991

EUG 9 Waste Gas Combustors (WGC)

EU	Points	Unit No.	MMBTUH	Const. Date
WGC #11	EPN 40/41	WGC 11- Heat Load	19.3	1954
WGC #12	EPN 40/41	WGC 12- Heat Load	19.3	1954
WGC #21	EPN 40/41	WGC 21- Heat Load	19.3	1954
WGC #31	EPN 40/41	WGC 31- Heat Load	19.3	1959
WGC #32	EPN 40/41	WGC 32- Heat Load	19.3	1959
WGC #41	EPN 40/41	WGC 41- Heat Load	24.75	1991

EUG 10 Carbon Black Tanks

EU	Point	Contents	Size (lbs)
CB Tanks	TK 11	Carbon Black	750,000
	TK 12	Carbon Black	125,000
	TK 13	Carbon Black	750,000
	TK 14-17	Carbon Black	375,000
	TK 21-22	Carbon Black	375,000
	TK 23	Carbon Black	750,000
	TK 31	Carbon Black	750,000
	TK 32	Carbon Black	125,000
	TK 33	Carbon Black	750,000
	TK 34-36	Carbon Black	375,000
	TK 41-47	Carbon Black	525,000
	TK 48	Carbon Black	125,000

	TK 49	Carbon Black	40,000
	TK OQ1	Carbon Black	125,000
	TK OQ2	Carbon Black	125,000
	TK OQ3	Carbon Black	125,000
	TK OQ4	Carbon Black	125,000
	SB 1 & SB2	Carbon Black	30,000
	DT 11	Day Tank	40,000
	DT 12	Day Tank	40,000
	DT 21	Day Tank	40,000
	DT 31	Day Tank	40,000
	DT 32	Day Tank	40,000
	DT 41	Day Tank	40,000

EUG 11 Natural Gas Fired Emergency Generators

Generators	Model	Serial #	HP	Manufactured Date
Unit 1&2	4569080100/4.3 L Chevy	2079790	63	10/26/2004
Unit 3	Generac 4129890100/4.3 L Chevy	2077604	63	6/10/2004
Unit 4	5373280100/7.1 L Ford	2083539	110	7/1/2005

Stack Parameters

EPN	Height (feet)	Diameter (inches)	Flow (ACFM)	Velocity (FPS)	Temperature (°F)
1	18	12	4,610	97.8	800
2	18	12	4,610	97.8	800
3 (N/C)	63	40	45,325	867	450
5	30	36			
6	38	12	5,000	106.1	70
7 (N/C)	60	40	45,325	867	450
8	75	36			
10	38	12	5,000	106.1	70
11 (N/C)	58	40	45,325	867	450
14	21	12	5,000	106.1	70
20 (N/C)	69	40	45,325	867	450
21	10	36	0	0	900
24	35	12	5,000	106.1	70
23	30	12	5,000	106.1	70
34	30	12	5,000	106.1	70

(N/C) – Normally Closed, only open for transition events and reactor heat load.

SECTION V. EMISSIONS

The primary pollutants from the facility are NO_x, CO, VOC, SO₂, PM, PM₁₀, and PM_{2.5}. All PM emissions are considered as PM₁₀ and PM_{2.5}.

Potential emissions from boilers 1 and 2 are based on the burner rating of 6.1 and 6.28 MMBTUH respectively, AP-42 (7/98), Chapter 1.4, and Superior boiler manufacturer's data.

The annual emissions from the reactors and associated equipment are based upon the carbon black production design capacity of all four units and seven reactors:

Unit	Carbon Black Production Design Capacity
No.	(million lb/yr)
1	80
2	100
3	80
4	100
Total	360

Potential emissions of SO₂, NO_x, and PM from the process system are based on the requirements of the Consent Decree as listed below. The process system is defined in the CD to mean, collectively, all tail gas generating and tail gas combustion equipment, including, all feedstock heaters, preheaters, reactors, dryers, thermal oxidizers, and boilers, necessary for the manufacture of carbon black. Process system operation means the operation of any process system or any of its constituent parts when there is oil feed to any reactor burners within such process system, and the reactor is manufacturing carbon black. Process system operation ends when oil feed to the reactor burners within such process system ceases. The process system exhausts from two emission points: EPN 40 and EPN 41 after the dry scrubbers. Emission limits listed in the following table are applicable to each of these two emission points (Paragraphs 17, 26, and 31 of CD).

Pollutants	7-Day Rolling Average Emission Limits	365-Day Rolling Average Emission Limits	3-hr Average Emission Limits
SO ₂ *	No less than 120 ppmvd and no greater than 158 ppmvd (at 0% oxygen)	No less than 80 ppmvd and no greater than 130 ppmvd (at 0% oxygen)	
NO _x	No greater than 54 ppmvd (at 0% oxygen)	No greater than 38 ppmvd (at 0% oxygen)	
PM			No greater than 0.0069 gr/dscf

*Option B in Paragraph 17 of the CD.

Reactor VOC and CO emissions are based on stack testing of the waste gases, and are proportional to the capacity of the reactors.

The dryer firebox stacks are only used for heat release in emergency situations. To be conservative, emissions are based on 0.5% of the main furnace exhausting through these stacks.

Potential PM/PM₁₀/PM_{2.5} emissions from the carbon black storage tanks are based on the maximum production rate and a 99.9% capture and control filter efficiency.

Potential emissions from the clean-up bag filters are based on the maximum production rate and a 99.9% capture and control filter efficiency or stack specific testing.

Potential emissions from the transition events are based on the maximum duration of 10 minutes, a maximum 190 events per year, maximum hourly production rates (worst case) and stack test data.

Potential emissions from the heat load events are based on the combustion of natural gas and a maximum natural gas throughput. As per the consent decree, NO_x emissions applicable to heat load operation, startup, and shutdown are limited to no greater than 50 tons (in total for all reactors and boilers) for the prior 365 days.

Estimated emissions for the FS tanks are based on AP-42 (1/95), Chapter 7.1.

Potential emissions from the gas-fired emergency generators are estimated using emission factors in AP-42 (7/00), Table 3.2-3 and 500 hours per year operation.

Fugitive VOC emissions are assumed to be insignificant because the only organic compound handled besides carbon black is the feedstock oil which has a very low vapor pressure and there are not many components at the facility.

TOTAL POTENTIAL CRITERIA POLLUTANT EMISSIONS

EU No.	Emissions Unit Name	NO _x		CO		VOC	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Boiler 1	Boiler 1, 6.1 MMBTU/H	0.60	1.32	0.5024	1.1052	0.0329	0.0724
Boiler 2	Boiler 2, 6.28 MMBTU/H	0.62	1.35	0.5172	1.1378	0.0339	0.0745
CGEU 1	Clean Gas and Energy Unit 1	24.08	74.22	0.2501	1.0955	5.0739	22.2239
CGEU 2	Clean Gas and Energy Unit 2	24.08	74.22	0.2501	1.0955	5.0739	22.2239
FS 11	Dryer 11 Firebox Stack	0.24	1.05	0.0002	0.0008	0.0008	0.0037
FS 12	Dryer 12 Firebox Stack	0.24	1.05	0.0002	0.0008	0.0008	0.0037
FS 21	Dryer 21 Firebox Stack	0.50	2.18	0.0004	0.0016	0.0018	0.0077
FS 31	Dryer 31 Firebox Stack	0.24	1.07	0.0002	0.0008	0.0009	0.0038
FS 32	Dryer 32 Firebox Stack	0.24	1.07	0.0002	0.0008	0.0009	0.0038
FS 41	Dryer 41 Firebox Stack	0.51	2.22	0.0004	0.0016	0.0018	0.0079
MBF 1	Production Unit 1 – Transition Events	44.99	0.55	12,734	156	568.26	6.96
MBF 2	Production Unit 2 – Transition Events	14.54	0.18	6,237	76	97.49	1.19
MBF 3	Production Unit 3 – Transition Events	45.78	0.56	12,958	159	578.28	7.08
MBF 4	Production Unit 4 – Transition Events	47.62	0.58	13,476	165	601.38	7.37
CUBF 1	Clean-up Bagfilter 1	--	--	--	--	--	--
CUBF 2	Clean-up Bagfilter 2	--	--	--	--	--	--
CUBF 3	Clean-up Bagfilter 3	--	--	--	--	--	--
CUBF 4	Clean-up Bagfilter 4	--	--	--	--	--	--
CUBF 5	Shipping Dept. Clean-up Bagfilter 1	--	--	--	--	--	--
CUBF 6	Shipping Dept. Clean-up Bagfilter 2	--	--	--	--	--	--
CUBF 7	Scaled Bin Clean-up Bagfilter 1	--	--	--	--	--	--
CUBF 8	Scaled Bin Clean-up Bagfilter 2	--	--	--	--	--	--
CUBF 9	Transloading Clean-up Bagfilter	--	--	--	--	--	--
FS Tanks	Oil Tanks (Breathing Losses)	--	--	--	--	0.0878	0.3847
FS Tanks	Oil Tanks (Working Losses)	--	--	--	--	0.4412	1.9326
CGEUH 1	Clean Gas and Energy Unit 1 - Heat Load	15.58	4.28	2.67	0.74	0.18	0.05
CGEUH 2	Clean Gas and Energy Unit 2 - Heat Load	15.58	4.28	2.67	0.74	0.18	0.05
Rx 11	Reactor 11 - Heat Load	12.46	3.43	2.14	0.59	0.14	0.04
Rx 12	Reactor 12 - Heat Load	12.46	3.43	2.14	0.59	0.14	0.04
Rx 21	Reactor 21 - Heat Load	13.35	3.67	2.29	0.63	0.15	0.04
Rx 31	Reactor 31 - Heat Load	12.24	3.67	2.10	0.63	0.14	0.04
Rx 32	Reactor 32 - Heat Load	12.24	3.67	2.10	0.63	0.14	0.04
Rx 41	Reactor 41 - Heat Load	29.38	7.34	5.04	1.26	0.33	0.08
WGC 11	Waste Gas Combustor 11 - Heat Load	0.67	0.18	0.11	0.03	0.01	0.00
WGC 12	Waste Gas Combustor 12 - Heat Load	0.67	0.18	0.11	0.03	0.01	0.00
WGC 21	Waste Gas Combustor 21 - Heat Load	0.67	0.18	0.11	0.03	0.01	0.00
WGC 31	Waste Gas Combustor 31 - Heat Load	1.22	0.37	0.21	0.06	0.01	0.00
WGC 32	Waste Gas Combustor 32 - Heat Load	1.22	0.37	0.21	0.06	0.01	0.00
WGC 41	Waste Gas Combustor 41 - Heat Load	1.47	0.37	0.25	0.06	0.02	0.00
CB Tanks	CB Storage Tanks	--	--	--	--	--	--
Unit 1 & 2	Emergency Generator Unit 1 & 2	0.11	0.03	0.17	0.04	0.00	0.00
Unit 3	Emergency Generator Unit 3	0.11	0.03	0.17	0.04	0.00	0.00
Unit 4	Emergency Generator Unit 4	0.27	0.07	0.42	0.11	0.00	0.00
FACILITY-WIDE EMISSIONS		333.97	197.17	45,429.44	566.71	1,857.61	69.92

TOTAL POTENTIAL CRITERIA POLLUTANT EMISSIONS

EU No.	Emissions Unit Name	PM/PM ₁₀ /PM _{2.5}		SO ₂	
		lb/hr	TPY	lb/hr	TPY
Boiler 1	Boiler 1, 6.1 MMBTU/H	0.05	0.10	0.0036	0.0079
Boiler 2	Boiler 2, 6.28 MMBTU/H	0.05	0.10	0.0037	0.0081
CGEU 1	Clean Gas and Energy Unit 1	5.36	23.48	98.12	353.61
CGEU 2	Clean Gas and Energy Unit 2	5.36	23.48	98.12	353.61
FS 11	Dryer 11 Firebox Stack	0.04	0.16	--	--
FS 12	Dryer 12 Firebox Stack	0.04	0.16	--	--
FS 21	Dryer 21 Firebox Stack	0.08	0.33	--	--
FS 31	Dryer 31 Firebox Stack	0.04	0.16	--	--
FS 32	Dryer 32 Firebox Stack	0.04	0.16	--	--
FS 41	Dryer 41 Firebox Stack	0.08	0.34	--	--
MBF 1	Production Unit 1 – Transition Events	7.48	0.09	7.84	0.10
MBF 2	Production Unit 2 – Transition Events	8.71	0.11	52.23	0.64
MBF 3	Production Unit 3 – Transition Events	7.62	0.09	7.98	0.10
MBF 4	Production Unit 4 – Transition Events	7.91	0.10	8.30	0.10
CUBF 1	Clean-up Bagfilter 1	--	0.87	--	--
CUBF 2	Clean-up Bagfilter 2	--	0.24	--	--
CUBF 3	Clean-up Bagfilter 3	--	0.12	--	--
CUBF 4	Clean-up Bagfilter 4	--	0.45	--	--
CUBF 5	Shipping Dept. Clean-up Bagfilter 1	--	0.39	--	--
CUBF 6	Shipping Dept. Clean-up Bagfilter 2	--	0.39	--	--
CUBF 7	Sealed Bin Clean-up Bagfilter 1	--	0.04	--	--
CUBF 8	Sealed Bin Clean-up Bagfilter 2	--	0.04	--	--
CUBF 9	Transloading Clean-up Bagfilter	--	0.04	--	--
FS Tanks	Oil Tanks (Breathing Losses)	--	--	--	--
FS Tanks	Oil Tanks (Working Losses)	--	--	--	--
CGEUH 1	Clean Gas and Energy Unit 1 - Heat Load	0.24	0.07	0.0191	0.0053
CGEUH 2	Clean Gas and Energy Unit 2 - Heat Load	0.24	0.07	0.0191	0.0053
Rx 11	Reactor 11 - Heat Load	0.19	0.05	0.0153	0.0042
Rx 12	Reactor 12 - Heat Load	0.19	0.05	0.0153	0.0042
Rx 21	Reactor 21 - Heat Load	0.21	0.06	0.0164	0.0045
Rx 31	Reactor 31 - Heat Load	0.19	0.06	0.0150	0.0045
Rx 32	Reactor 32 - Heat Load	0.19	0.06	0.0150	0.0045
Rx 41	Reactor 41 - Heat Load	0.46	0.11	0.0360	0.0090
WGC 11	Waste Gas Combustor 11 - Heat Load	0.01	0.00	0.0008	0.0002
WGC 12	Waste Gas Combustor 12 - Heat Load	0.01	0.00	0.0008	0.0002
WGC 21	Waste Gas Combustor 21 - Heat Load	0.01	0.00	0.0008	0.0002
WGC 31	Waste Gas Combustor 31 - Heat Load	0.02	0.01	0.0015	0.0005
WGC 32	Waste Gas Combustor 32 - Heat Load	0.02	0.01	0.0015	0.0005
WGC 41	Waste Gas Combustor 41 - Heat Load	0.02	0.01	0.0018	0.0005
CB Tanks	CB Storage Tanks	--	0.83	--	--
Unit 1 & 2	Emergency Generator Unit 1 & 2	0.00	0.000	0.0000	0.0000
Unit 3	Emergency Generator Unit 3	0.00	0.000	0.0000	0.0000
Unit 4	Emergency Generator Unit 4	0.00	0.001	0.0000	0.0000
FACILITY-WIDE EMISSIONS		44.85	52.83	272.76	708.22

POTENTIAL NON-CRITERIA AIR POLLUTANTS

EU	NH ₃		H ₂ S		CS ₂		COS	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
CGEU 1	1.65	7.23						
CGEU 2	1.65	7.23						
MBF 1			258.23	4.09	145.34	2.30	3.06	0.05
MBF 2			308.27	4.88	71.08	1.13	16.58	0.26
MBF 3			262.78	4.16	147.91	2.34	3.12	0.05
MBF 4			273.29	4.33	153.28	2.44	3.24	0.05
TOTAL	3.30	14.46	1,102.58	17.46	518.15	8.20	26.00	0.41

Continental Carbon has provided CO₂e emission estimates for this facility. Based on a review of these estimates, it has been determined that this facility is a major stationary source for greenhouse gas emissions.

SECTION VI. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application are duplicated below. Appropriate recordkeeping of activities indicated below with "*" is specified in the Specific Conditions. Any activity to which a state or federal applicable requirement applies is not insignificant even if it is included in this list.

1. * Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. The facility has one diesel tank and one gasoline tank that are used to store and dispense fuel to equipment operated solely for facility owned vehicles. Average monthly throughput does not exceed 2,175 gallons/day. The facility has three other diesel tanks used for trace additions to the mixing box/pelletizers used in wet process, on 1,000-gallon tank, and two 500-gallon tanks which are not used for vehicle fueling.
2. * Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The facility currently has two 21,000 gallon tanks used to store fuel oil used to make carbon black and others may be used in the future based. These tanks were last used in 1984.
3. Cold degreasing operations utilizing solvents that are denser than air. There are two parts washers located at the facility which use a solvent (Safety Kleen) that is denser than air, and removed and recycled by Vendor.
4. * Activities that have the potential to emit no more than 5 TPY (actual) of any criteria pollutant. Reactor refractory curing, reactor product sampling, and bag filter replacement emissions are less than 5 TPY of respective pollutants. Other activities may be identified in the future.

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This Subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories have been submitted and fees paid for the past years.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units either that are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emissions limitations have been incorporated from the previously issued permits and updated to reflect current operations.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for affirmative defense, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
 Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
 252:100-19-4, Allowable particulate matter emission rates from fuel-burning units. This section specifies a particulate matter (PM) emissions limitation of 0.6 lb/MMBTU from existing fuel-burning equipment with a rated heat input of 10 MMBTUH or less. AP-42 (7/98), Table 1.4-2, lists the total PM emissions for natural gas to be 7.6 lb/MMft³ or about 0.0076 lb/MMBTU. The permit requires the use of natural gas for the boilers and the sections of the reactors which combust natural gas to heat the feedstock to produce carbon black to ensure compliance with Subchapter 19.

252:100-19-12, Allowable particulate matter emission rates from directly fired fuel-burning units and industrial processes. For process rates up to 60,000 lb/hr (30 TPH), the emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P) and the formula in Appendix G ($E = 4.10 * P^{(0.67)}$). For process rates greater than 60,000 lb/hr (30 TPH), the emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P) and the formula in Appendix G ($E = 55.0 * P^{(0.11)-40}$).

The emission points from the clean gas and energy units combine emissions from reactor sections used to convert the feedstock into carbon black, main bag filters, boilers, and waste gas combustors. Therefore, Total allowable PM is the sum of the allowable for each directly fired fuel-burning unit and industrial process.

The following table indicates that permitted emissions are in compliance with allowable emissions.

Point	Controlled Processes	Weight Rate	Allowable PM Emissions	Permitted PM Emissions
		TPH	lb/hr	lb/hr
EPN #40	Reactors 1&2	11.3	20.76	23.48
	MBF #1 & #2	11.3	20.76	
	WGC #11, #12, & #22	11.3	20.76	
	CGEU 1	11.3	20.76	
	Total		83.04	
EPN #41	Reactors 3&4	11.3	12.0	23.48
	MBF #3 & #4	11.3	12.0	
	WGC #31, #32, & #4	11.3	12.0	
	CGEU 2	11.3	12.0	
	Total		83.04	

OAC 252:100-25 (Visible Emissions and Particulate Matter) [Applicable]
 No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed

three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

The boilers burn natural gas. When burning natural gas, there is very little possibility of the opacity standards being exceeded.

Paragraph 33 of CD requires daily Method 22's for all PM emission equipment identified in Appendix B to the CD. If visible emissions are detected, Continental Carbon shall identify, address, and resolve the source of visible emissions as expeditiously as practicable. If the visible emissions event is not resolved within 24 hours, a six minute observation in accordance with Method 9 is required at least once every eight hours (during daylight hours), until visible emissions are less than 5% over the six minute average.

OAC 252:100-29 (Fugitive Dust) [Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards.

Continental Carbon is currently required to do (using BMP) the following so as to minimize fugitive emissions of carbon black: 1) maintain and repair Unit No. 4 bagfilter system to prevent excessive temperatures (this is no longer a concern due to plant operation changes on controls), 2) conduct product loading operations in such a manner to minimize any fugitive emissions of carbon black, 3) promptly clean any and all areas within the facility where carbon black has been spilled, blown, deposited, or accumulated, 4) place bagfilters into sealed containers, when possible, prior to removal or replacement of bagfilters from their compartments, and 5) conduct a routine inspection program wherein all high speed processing equipment within the facility is inspected and lubricated. Further, Continental Carbon has installed a pulse jet bagfilter system within the shipping department loading area at the facility to further control the release of fugitive carbon black emissions.

OAC 252:100-31 (Sulfur Compounds) [Applicable]

Part 2 (31-7(b)) specifies that emissions of hydrogen sulfide from any new or existing source shall not result in a 24-hour average ambient air concentration of H₂S at any given point of 0.2 ppm (278.6 µg/m³) or greater. Continental Carbon performed AERSCREEN modeling which resulted in a concentration of 128.78µg/m³ or 0.09 ppm H₂S.

ID	Height (ft)	Diameter (ft)	Flowrate (acfm)	Temp (°F)	H ₂ S (lb/hr)	Adjusted H ₂ S (lb/hr)*	1-hr Impacts (µg/m ³)
Stack 3	63	3.33	45,325	450	258.23	21.52	32.62
Stack 7	60	3.33	45,325	450	308.27	17.36	28.63
Stack 11	58	3.33	45,325	450	262.78	21.90	38.27
Stack 20	69	3.33	45,325	450	273.29	22.77	29.26
Total							128.78

*Adjusted H₂S (lb/hr) = H₂S (lb/hr) x (2 events/ 24 hours)

Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels, the limit is 0.2 lb/MMBTU heat input. The section of the reactor in Unit 4 which combusts natural gas to heat the feedstock to produce carbon black is subject to this standard. The AP-42 (7/98), Chapter 1.4, Table 1.4-2 emission factor of 0.6 pound of SO₂ per million cubic feet equates to approximately 0.0006 lb/MMBTU which is in compliance with this subchapter. The permit requires the fuel-burning section of the reactor of Unit 4 to be fired with commercial grade natural gas.

OAC 252:100-37 (Volatile Organic Compounds) [Part 7 is Applicable]

Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. All of the tanks constructed after 1974 store liquids with vapor pressures less than 1.5 psia except for the gasoline/diesel tanks which have a capacity of 300 gallons or more.

Part 3 requires VOC loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. This facility does not have the physical equipment (loading arm and pump) to conduct this type of loading and is not subject to this requirement.

Part 5 limits the VOC content of coatings. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment which is exempt.

Part 7 requires fuel-burning equipment to be operated and maintained so as to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]

This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained unless a modification is approved by the Director. Since no AOC has been designated anywhere in the state, there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]

This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive

use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-7	Permits for Minor Facilities	not in source category
OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-33	Nitrogen Dioxides	not in source category
OAC 252:100-35	Carbon Monoxide	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable]
 Total potential emissions for NO_x, CO, PM, and SO₂ are greater than the threshold level of 100 TPY for carbon black manufacturing. PSD applicability for this modification has been addressed in Section II of this Memorandum. Any future emission increases must be evaluated for PSD if they exceed a significance level (40 TPY NO_x, 100 TPY CO, 40 TPY VOC, 15 TPY PM₁₀, and 10 TPY PM_{2.5}).

NSPS, 40 CFR Part 60 [Not Applicable]
Subpart A, General Control Device Standards: The standards contained within Section 60.18 for control devices are not applicable to the proposed thermal oxidizers since they receive no emissions from any equipment subject to NSPS.
Subparts D, Da, Electric Utility Steam Generating Units. The boilers at this facility are not affected units because they are not electric utility steam generating units as defined by Subparts D and Da.
Subparts Db, Dc, Industrial-Commercial-Institutional Steam Generating Units. The boilers at this facility are not affected units because they have heat capacities less than 10 MMBTUH, applicability thresholds of these subparts.
Subparts E, Ea, and O, Incinerators, Municipal Waste Combustors, and Sewage Treatment Plants. This facility does not combust solid waste, tires, fuel derived from tires, or sewage sludge.
Subparts K, Ka, Kb, VOL Storage Vessels. The carbon black oil tanks at this site are not subject because they were constructed prior to the effective date of Subpart K (June 11, 1973).
Subpart BBB, Rubber Tire Manufacturing Industry. This facility manufactures carbon black and is not a tire manufacturer.
Subpart IIII (Stationary Compression Ignition Internal Combustion Engines) affects stationary compression ignition (CI) internal combustion engines (ICE) based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005.

For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. No applicable equipment were identified at the site.

Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI-ICE). This subpart was published in the Federal Register on January 18, 2008. It promulgates emission standards for new SI engines ordered after June 12, 2006, that are manufactured after certain dates, and for SI engines modified or reconstructed after June 12, 2006. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and manufacture date. Engine manufacturers are required to certify certain engines to meet the emission standards and may voluntarily certify other engines. An initial notification is required only for owners and operators of engines greater than 500 HP that are non-certified. Emergency engines will be required to be equipped with a non-resettable hour meter and are limited to 100 hours per year of operation excluding use in an emergency (the length of operation and the reason the engine was in operation must be recorded).

There are three emergency generators at the facility and the following table lists their horse powers and manufactured dates.

Generators	Model	Serial #	HP	Manufactured Date
Unit 1&2	4569080100/4.3 L Chevy	2079790	63	10/26/2004
Unit 3	Generac 4129890100/4.3 L Chevy	2077604	63	6/10/2004
Unit 4	5373280100/7.1 L Ford	2083539	110	7/1/2005

Since each generator has a maximum engine power less than 500-hp and was manufactured before July 1, 2008, they are not subject to this subpart.

NESHAP, 40 CFR Part 61

[Not Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides or vinyl chloride.

Subparts J, BB, Equipment Leaks of Benzene and Benzene Transfer operations. No benzene has been detected in any stream at the facility.

NESHAP, 40 CFR Part 63

[Subparts YY, ZZZZ, and DDDDD Applicable]

Subpart YY, National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards. Pursuant to §63.1103(f), Part 63, Subpart YY is applicable to each new and existing carbon black production process unit located at a major source, as defined in section 112(a) of the ACT.

Carbon black production unit means the equipment assembled and connected by hard-piping or duct work to process raw materials to manufacture, store, and transport a carbon black product. For the purpose of this subpart, a carbon black production process unit includes reactors and associated operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. It also includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems.

Table 8 to §63.1103(f) specifies the carbon black production control standards applicability for existing and new sources. The control standards are only applicable to a carbon black production main unit filter process vent. Main unit filter is defined in §63.1103(f)(2) as the filter that separates the carbon black from the tail gas. Process vent is defined in §63.1101 as the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream from a unit operation within a source category subject to this subpart. The definition of process vent further excludes gas streams transferred for fuel value (i.e., net positive heating value), use, reuse, or sale for fuel value, use, or reuse.

The gas stream sent to the waste gas combustor qualifies for the exemption for gas streams transferred for fuel value and is not subject to the control requirements of Table 8 to §63.1103(f). The entry point to the thermal oxidizers meets the definition of a "process vent" and must meet the requirements in Table 8 of §63.1103(f)(3): reduce emissions of total HAP by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to any combination of control devices meeting the requirements of §63.982(a)(2).

Performance testing of the facility's thermal oxidizers was conducted in 2004 as required by Permit No. 98-176-TV (PSD) (M-2). Such testing included the determination of H₂S, COS, and CS₂ pursuant to Method 15 of 40 CFR Part 60, Appendix A, as well as a determination of non-methane, non-ethane total gaseous organic concentrations using a flame ionization analyzer pursuant to Method 25A of 40 CFR Part 60, Appendix A. A copy of the stack test results (as well as the test methods employed) was previously submitted to DEQ by letter dated September 17, 2004. The results indicated emissions H₂S, COS, CS₂, and non-methane hydrocarbon from each thermal oxidizer were below 20 ppmv even if it is assumed that all NMHC are HAP. The proposed CGEUs will operate in the same temperature ranges as the thermal oxidizers; therefore, the change to the CGEUs should provide the same level or greater control of HAP emissions.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. Of the three emergency generators, Unit 1/2 is a new unit (constructed after 6/12/2006), and the only requirement is to comply with NSPS Subpart JJJJ requirements. However, the unit was manufactured before July 1, 2008, and is not subject to NSPS Subpart JJJJ, thus there is no applicable requirements for this unit.

Units 1-4 fall under existing units (constructed before 6/12/2006) located at a major HAP source category and shall comply with applicable emission limitations and operating limitations. Initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart shall be conducted within 180 days after the compliance date. Specific requirements in §63.6602 are listed in the following table.

Engine Category	Requirements From Table 2c to Subpart ZZZZ of Part 63
Emergency stationary CI RICE and black start stationary CI RICE.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
Emergency stationary SI RICE and black start stationary SI RICE	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters. On January 31, 2013, the EPA took final action on its reconsideration of certain issues in the emission standards for the control of HAP from industrial, commercial, and institutional boilers and process heaters at major sources of HAP. The compliance dates for the rule are January 31, 2016, for existing sources and, January 31, 2013, or upon startup, whichever is later, for new sources. The new waste gas boilers fall under the carbon black MACT only.

A boiler or process heater is new or reconstructed if construction or reconstruction of the boiler or process heater commenced on or after June 4, 2010.

Unit(s) designed to burn gas 1 subcategory includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels.

Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 MMBTUH and less than 10 MMBTUH must complete a tune-up every 2 years as specified in §63.7540. Units in the gas 1 subcategories will conduct these tune-ups as a work practice for all regulated emissions under Subpart DDDDD. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 of Subpart DDDDD, or the operating limits in Table 4 of Subpart DDDDD.

Existing boilers and process heaters located at a major source facility, not including limited use units must have a one-time energy assessment performed by a qualified energy assessor.

Boilers #1 and #2 at this facility are subject to this subpart as the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 MMBTUH and less than 10

MMBTUH. These boilers will be subject to work practice standards including boiler tune-ups and a one-time energy assessment.

Subpart CCCCCC, National Emissions Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF) that is located at an area source. This facility is a major source for HAPs, thus is not subject to this subpart.

CAM, 40 CFR Part 64 [Applicable]
 Compliance Assurance Monitoring (CAM), as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source that is required to obtain a Title V permit, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY

The proposed CGEUs at the facility are used to control emissions of NO_x, CO, PM, VOCs, SO₂, and other air toxic compounds (H₂S, CS₂, COS, and HCN). The CAM plan for the CGEUs will be addressed in the operating permit.

The waste gas combustors (driers) are also used to control emissions from the carbon black furnaces. However, emissions from the driers are exhausted after the boilers and prior to the SCR and scrubber. Therefore, no CAM requirements are applicable to these emission units.

Emissions from the main and exhaust baghouses are exhausted through the CGEUs, no CAM requirements are applicable to these control devices.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
 This source does not store more than the applicable threshold of any of the regulated substances. Therefore, this facility is not subject to this standard. More information on this federal program is available at the web site: <http://www.epa.gov/ceppo/>.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F Applicable]
 These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030. This facility does not utilize any Class I & II substances.

Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.

The Standard Conditions of the permit address the requirements specified at §82.156 for persons opening appliances for maintenance, service, repair, or disposal; §82.158 for equipment used during the maintenance, service, repair, or disposal of appliances; §82.161 for certification by an approved technician certification program of persons performing maintenance, service, repair, or disposal of appliances; §82.166 for recordkeeping; § 82.158 for leak repair requirements; and §82.166 for refrigerant purchase records for appliances normally containing 50 or more pounds of refrigerant.

SECTION IX. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a Tier II based on the request for a modification that requires a construction permit for a Part 70 source.

The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the real property.

The applicant published a "Notice of Filing a Tier II Application" and a "Notice of Draft Tier II Permit" in *The Ponca City News*, a daily newspaper in the City of Ponca City, Kay County, Oklahoma, on March 23, 2016 and December 14, 2015 respectively. The notices stated that the application and the draft permit can be reviewed at the Kay County, Ponca City Library at 515 East Grand Avenue, Ponca City, OK 74601 or at the Air Quality Division's main office. The draft permit was also available on the Air Quality section of the DEQ web page at www.deq.state.ok.us. This facility is located within 50 miles of the Oklahoma – Kansas border and the State of Kansas has been notified of the draft permit. No comments were received from the public or the State of Kansas.

The draft permit was also sent to EPA for a 45-day concurrent review. Comments were received from the EPA Region VI and a response to those comments is provided below.

Response to Comments from EPA Region VI on the Proposed Permit

The following comments, dated January 29, 2016, were received from Jeff Robinson of EPA Region VI.

EPA Comment #1

EPA has requested clarification of the PSD review steps taken to review the project. EPA has clarified that “netting” cannot be done in step 1. If the decreases are needed to avoid PSD review, these should be done in “Step 2” with all contemporaneous increases and decreases from the facility considered.

ODEQ Response

The proposed project is solely to comply with the EPA CD. The project does not result in any debottlenecks or equipment capacity increases. The project is a pollution control project. As identified on page 1 of this Memorandum, the project consists of the following:

“The project will remove the three (3) thermal oxidizers which currently control the four (4) carbon black production units and replace them with two (2) clean gas and energy cogeneration units (CGEU) each consisting of one (1) cogeneration electric unit combusting the tail gas from the reactors, followed by one (1) selective catalytic reduction system (SCR) for control of nitrogen oxide (NOx) emissions, and one (1) dry scrubber for control of sulfur dioxide (SO2) and secondary bag filters for particulate matter (PM) emissions. Additionally, there will be limits on the emissions from the main bag filters during the transition of oil in and out of the production units and additional PM control requirements for other operations.”

ODEQ considered this project as a modification or change in the method of operation of existing units - the four carbon black production units. The new boilers are part of the pollution control proposal. The boilers will be combusting the waste gas instead of the thermal oxidizers. As such, the appropriate method to review this project is the “actual-to-projected-actual” or “actual-to-potential” test.

As indicated on page 2 of this Memorandum, the review was based on the “actual-to-potential” test. The new potential emissions are based on the proposal to comply with the CD. The CD requirements are being made federally enforceable as part of this permitting action. The step 1 review indicated project emissions are below PSD and no step 2 netting is required.

EPA Comment #2

Potential errors in the “netting” analysis done for the proposed project.

- a. Use of a “baseline” outside of the 10 years preceding project construction.
- b. Failure to exclude noncompliant emissions, or those emissions exceeding the “allowable” emissions, from the “baseline” emissions.

The applicant is using 2005 through 2006 as the “Contemporaneous” period for calculating a net emissions decrease. To be used in netting, the baseline emissions must be a twenty-four month period “within the ten year period immediately proceeding when the owner or operator begins actual construction of the project.” The two-year period CCC and ODEQ use to calculate emissions baseline appears to be outside of the allowed ten-year period since permit application was received by ODEQ on August 26, 2015 and revised facility-wide emissions were received on November 5, 2015.

At a minimum, the application and the permit record should include monthly emissions data for each month of the baseline period including data for the months with and without the CEMS operating. For the period without CEMS data, the application should show how emissions were estimated for that period including a discussion on the sources and appropriateness of any emission factors used.

The application notes that ODEQ has issued two consent orders to address violations found through a series of inspection of the facility. Consent Order No. 04-325 was issued on December 9, 2004. Consent Order No. 06-365 was issued on November 29, 2006 and superseded, closed, and terminated Consent Order No. 04-325. The 2006 Consent Decree required CCC to revise permit and include requirements of Consent Order No. 06-365 which were incorporated in the permit:

1. Incorporate an inspection/fugitive dust plan as set forth in Exhibit 2 of the Consent Order.
2. Incorporate a baghouse recordkeeping plan as set forth in Exhibit 3 of the Consent Order.
3. Incorporate emission limits for Boilers #1 and #2.
4. Maintain and operate particulate monitoring/sensing devices installed on the exhaust stream associated with each of the facility’s main bag filter and exhaust bag filter systems.
5. Results of performance testing for PM (inclusive of filterable and condensable) on exhaust gases from thermal oxidizer #1, #2, and #4 utilizing EPA reference methods 202 and 5, including a 35% safety factor, shall be used to establish permit PM emission limitations for thermal oxidizers (TO) #1, #2, and #4 in this permit.

The PSD regulations at 40 C.F.R. 52.21(b)(48)(ii)(c) require that the baseline actual emissions be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the emission unit must currently comply. The applicant and ODEQ should explain, with supporting data, how it adjusted the baseline actual emissions downward for each CEMS and non-CEMS measurement that would have exceeded any emission limit that currently applies, consistent with the averaging period of the currently applicable emission limit.

ODEQ Response

Response to Comment 2.a

Continental has replaced the baseline actual emissions with the average of the 2006 and 2007 calendar year emissions to be in the 10 year window. In addition, Continental Carbon over

estimated the number of transition events in calculating potential emissions in the original permit application and has adjusted it downward based on historical number of transition events. The permit has been updated accordingly for both potential emissions and baseline emissions. The previous conclusion is not changed.

Response to Comment 2.b

In preparing the application, Continental Carbon identified errors in the calculation methodologies for the historic emissions inventories and submitted revised emission inventories for the baseline years. Specifically, for the baseline emission, Continental Carbon estimated emissions using (1) stack test data (conducted in 2004), unless specified in the discussion below about consent orders, to determine the appropriate emission factors, (2) the actual production for each unit for the baseline years, (3) and estimated emissions were in compliance with current permit limits. No excess emission events were included in the determination of the baseline emissions. Continental Carbon did include the transition event emissions in the baseline, since they are existing emission sources. There is no CEMS for any pollutants at the facility currently. Startup and shutdown logs from the Pi Data Historian system were used to determine the number of transition events to be factored into the baseline. The methodologies used for these calculations were discussed with the ODEQ emissions inventory group and were agreed upon.

Continental Carbon was issued consent orders in 2004 and 2006, the following summarizes the content of these orders and how baseline emissions were determined in accordance.

CO-04-325 - CO-04-325 was filed on December 9, 2004 – The violations alleged in this CO were related to the temperature of the thermal oxidizers, replaced bag filters that were not placed in sealed containers, spilled carbon black material that was not cleaned up, and various record keeping matters. This CO does not contain any allegations of excess emissions from the production units, and thus no excess emissions were utilized in the baseline emissions.

CO-06-365 - CO-06-365 was filed on November 29, 2006 – The violations alleged in this CO relate to alleged emission exceedances in stack tests as follows: (1) PM emissions from TO #1 during the July 20-21, 2004 stack test, (2) PM from TO #4 during the August 3-5, 2004 stack test, (3) NO_x from TO#4 during the July 27, 2004 stack test, and (4) various opacity reading, onsite demolition and record keeping matters.

PM emissions from TO #1. The July 20-21, 2004 stack test resulted in PM (front half + back half organic) emissions of 20.8 lb/hr from TO #1. The permit effective at the time (Permit No. 98-176-TV(PSD)(M-2)) had a limit of 23 lb/hr. The consent order alleged that total PM should include back half inorganics which would result in a PM emission of 29.77, in violation of permit limit at effect. However, the baseline emissions calculated in this permit for TO #1 are based 20.8 lb/hr and 73.97 TPY which are in compliance with the permit limit in effect at the time of the baseline years. Therefore, no excess emissions were utilized in estimating the baseline from TO#1.

PM emissions from TO #4. The consent order alleged that the stack testing conducted on August 3-5, 2004 on TO #4 indicated an average rate of total PM emissions of 50.68 lb/hr, in violation of permit limit of 13 lb/hr contained in Permit No. 98-176-TV(PSD)(M-2) which was in effect at the time of the baseline years. The baseline actual emissions for PM from TO #4 were not based on the August 3 to 5, 2004 stack test. Instead of using the stack test results, the baseline PM emissions used for TO #4 in this permit were adjusted downward and are based on the maximum permit limit of 55 tpy to ensure that no excess emissions are included in the baseline calculations. ODEQ confirmed that for each hour in 2006/2007 emission exceeded the 13 lb/hr. Based on this review, the 55 TPY is acceptable for baseline.

NOx from TO#4 July 27, 2004 stack test. The consent order alleged that the test results indicated the average rate of NOx emissions of 212.47 lb/hr in violation of the permit limit of 178 lb/hr contained in Permit No. 98-176-TV(PSD)(M-2) which was in effect at the time of the baseline years. These data were also not used in this permit application. The baseline actual emissions for NOx from TO#4 were based on the NOx emission rate from the August 4 and 5, 2004 stack test (165.17 lb/hr tested, emission factor developed from this test data resulted in an average 80.35 lb/hr NOx emission for baseline years of 2006 and 2007, based on the actual oil rate of the baseline years). There were no NOx emissions exceedances during this test. No other unit had allegations of failed stack tests for NOx and the appropriate 2004 stack test was utilized to develop the emissions factors.

EPA Comment #3

EPA has stated that there is a prohibition on the use of CD emission reduction and requirements related to baseline adjustments. EPA specifically cites page 40 of the CCC consent decree as stated following:

“defendant shall neither generate nor use any CD Emission Reductions: as netting reductions; as emission offsets; to apply for, obtain, or sell any emission reduction credits; or in determining whether a project would result in a significant emissions increase or significant net emission increase in any PSD, Non-attainment NSR, and/or minor New Source Review permit or permit proceeding”

EPA has stated that the permit memorandum is unclear with regard to the CD requirements and netting and has requested a rationale for all corrections made to the baseline emissions.

ODEQ Response

The CD limits CCC from using CD emission reductions in any PSD or NSR review, including when CCC is determining if a project would result in a significant emission increase or significant net emission increase.

EPA has requested clarification with regard to “CD reductionrelated to Baseline adjustments.” Baseline numbers were clarified in response to Question #2. The baselines were

not adjusted for any purpose related to the CD. The CD requirements have yet to be implemented. Additionally, no company would want to lower the baseline as this would only result in higher project emissions. The issue should be related to CCC inflating the baseline by including non-compliant emissions and thereby reducing project emissions. The response to question #2 addresses this concern.

EPA has requested updated clarification of the baseline and any adjustments made. The baseline details can be found in the response to question #2.

With regard to netting and fulfilling CD requirements, netting was not used in the PSD review as detailed in response to question #1. However, the review did use CD limitations for the purpose of determining post project PTE. Since these limits are considered new limits taken to avoid PSD, ODEQ considered this a significant change and required public review of the permit. As detailed on page 5, consideration of the new limits resulted in either no increase or an increase below a PSD significance level of each pollutant. CCC is not taking credit for any reductions as a result of the CD but only proposing to add/change pollution controls and take limits that are required by the CD. Requiring CCC to review this project without consideration of CD controls would require the review to account for emissions that will not occur.

Any future project would not be allowed to take credit for CD reductions as compared to any historical baseline and as detailed in the CD.

ODEQ believes the regulatory review meets the intent of the CD.

ODEQ received follow up comments at a conference call on April 1, 2016. The following is a response to those comments.

EPA Comment #1

PTE changed for CO and VOC from the version that went through public comment period, does the permit need to go through public review again?

ODEQ Response to Comment #1

Since baseline years were changed to 2006 and 2007, which resulted in lower baseline emissions, Continental carbon is taking lower emission limits for transition events to avoid PSD applicability. Potential transition event emissions are based on the number of events occurred, maximum oil load, and the maximum duration of 10 minutes for each event. But in reality, oil load is much lower at start up and a lot of events last a lot shorter than 10 minutes, which offered the room for the downward adjustment of transition event emissions. Since the lower emission limits are more restrictive than emission limits that went through public review, the revised draft permit does not need to go through public review again.

EPA Comment#2

How are emissions from transition events calculated? Explain why transition event emissions in baseline years are higher than PTE from transition events in the permit. Transition event emissions were not previously permitted, are transition event emissions included in baseline emissions in compliance with permit limits at effect?

ODEQ Response to Comment #2

Transition event emissions are startup emissions and are calculated based on oil rate, number of events, and duration time of each event.

The main reason for the difference in transition event emissions is related to the historical ability to track event lengths. While transition events typically occur much faster than 10 minutes per event, CCC had no method to track the actual event length. As a result, the maximum event duration of 10 minutes was used for each event. CCC does track the number of events. CCC will now track the actual transition event durations. This allows CCC to reduce emissions associated with these activities.

Transition event emissions were not previously permitted, but Continental Carbon has records for the number of transition events occurred in a given year through the startup and shutdown logs with the Pi Data Historian system. Even though transition event emissions were not permitted separately in previous permits, permit limits apply at all times. The following table lists the comparison of baseline emissions from the reactors including transition event emissions and their permit limits from Permit No. 96-176-TV (PSD) (M-2) effective in baseline years. They are in compliance with permit limits.

Emission Units	PM/PM ₁₀ /PM _{2.5}		SO ₂		NO _x		CO		VOC	
	Baseline TPY	Limit TPY	Baseline TPY	Limit TPY	Baseline TPY	Limit TPY	Baseline TPY	Limit TPY	Baseline TPY	Limit TPY
Production Unit 1	77.424	96	2093.71	8089	305.098	1135	240.525	1995	11.214	69
Production Unit 2										
Production Unit 3	22.21	44	1275.09	3763	246.764	597	132.638	1308	8.789	58
Production Unit 4	55	55	1388.57	4704	300.4	746	178.537	1634	7.967	73

EPA Comment #3

- a. Clearly state in the memorandum the standing of treating the new project as replacement of control equipment, thus a physical change to the existing emission units-the reactors, not installation of a new emission unit.

- b. Clearly state in the memorandum that startup and shutdown logs from the PI Data Historian system were used to determine the number of transition events to be factored into the baseline.

ODEQ Response to Comment #3

- a. Permit Memorandum has been updated to include the following wording as the first paragraph under **SECTION II. PSD APPLICABILITY ANALYSIS:**

The proposed project is solely to comply with the EPA CD. The project does not result in any debottlenecks or equipment capacity increases. The project is a pollution control project. ODEQ considered this project as a modification or change in the method of operation of existing units - the four carbon black production units. The new boilers are part of the pollution control proposal. The boilers will be combusting the waste gas instead of the thermal oxidizers. As such, the boilers are considered a replacement of the thermal oxidizers. The appropriate method to review this project is to determine if it is a major modification under PSD based on the "actual-to-projected-actual" or "actual-to-potential" test.

- b. Permit Memorandum has been updated to include "Startup and shutdown logs from the PI Data Historian system were used to determine the number of transition events to be factored into the baseline" in the baseline emission discussion.

Fees Paid

Construction permit fee of \$5,000.

SECTION X. SUMMARY

The applicant has demonstrated the ability to achieve compliance with all applicable Air Quality Rules and Regulations. Ambient air quality standards are not threatened at this site. There is no other active Air Quality compliance or enforcement issues other than those noted above. Issuance of the construction permit is recommended.

**PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**Continental Carbon Corporation
Carbon Black Production Facility**

Permit Number 2004-302-C (M-2)

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on August 26, 2015. The Evaluation Memorandum dated April 25, 2016, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction and continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. Points of emissions and limitations for each point: [OAC 252:100-8-6(a)(1)]

EUG 1: Emission units (EU) Boiler #1 and Boiler #2.

The boilers shall only be fueled with commercial grade natural gas.

EU	Point	Manufacturer	MMBTUH	Serial #	Const. Date
Boiler #1	EPN #1	Superior	6.1	8631	1980
Boiler #2	EPN #2	Superior	6.28	17817	2015

EU	NO _x		CO		VOC		PM ₁₀ /PM _{2.5}	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Boiler #1	0.63	2.76	0.53	2.32	0.03	0.13	0.05	0.22
Boiler #2	0.63	2.76	0.53	2.32	0.03	0.13	0.05	0.22

EUG 2: Main Bag Filters (MBF)

Emissions from these emission points include transition emissions of the production units and reactor heat load emissions.

Summary of Emission Sources

EUG 2 Main Bag Filters (MBF)

EU	Point	Name
MBF #1	EPN #3 (N/C)	Unit No. 1
MBF #2	EPN #7 (N/C)	Unit No. 2
MBF #3	EPN #11 (N/C)	Unit No. 3
MBF #4	EPN #20 (N/C)	Unit No. 4

N/C – Normally Closed

EUG 8 Reactors

EU	Point	Unit No.	Const. Date
RX #11	EPN #3, 40, or 41	Unit No. 1 - Reactor #11	1955
RX #12	EPN #3, 40, or 41	Unit No. 1 - Reactor #12	1955
RX #21	EPN #4, 40, or 41	Unit No. 2 - Reactor #21	1955
RX #31	EPN #11, 13, 40, or 41	Unit No. 3 - Reactor #31	1959
RX #32	EPN #11, 13, 40, or 41	Unit No. 3 - Reactor #32	1959
RX #41	EPN #20, 40, or 41	Unit No. 4 - Reactor #4	1991

- a. During periods other than heat load operation, reactor startup, shutdown, and malfunction, the main bag filter heat load vents shall be closed.
- b. All carbon black product and PM emissions generated by the reactor shall be vented to a main bag filter. Direct venting to the atmosphere of any carbon black product or PM emissions generated by the reactor is prohibited at all times.

Emission Limitations

Point	EU No.	Emissions Unit Name	NO _x		CO		VOC	
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
EPN 3	MBF 1	Production Unit 1 – Transition Events	69.91	7.41	12,738	157.18	568.54	7.04
	Rx 11	Reactor 11 - Heat Load						
	Rx 12	Reactor 12 - Heat Load						
EPN 7	MBF 2	Production Unit 2 – Transition Events	27.89	3.85	6,239.29	76.63	97.64	1.23
	Rx 21	Reactor 21 - Heat Load						
EPN 11	MBF 3	Production Unit 3 – Transition Events	70.26	7.90	12,962.20	160.26	578.55	7.16
	Rx 31	Reactor 31 - Heat Load						
	Rx 32	Reactor 32 - Heat Load						
EPN 20	MBF 4	Production Unit 4 – Transition Events	77.00	7.92	13,481.04	166.26	601.71	7.45
	Rx 41	Reactor 41 - Heat Load						

Point	EU No.	Emissions Unit Name	PM/PM ₁₀ /PM _{2.5}		SO ₂	
			lb/hr	TPY	lb/hr	TPY
EPN 3	MBF 1	Production Unit 1 – Transition Events	7.86	0.19	7.87	0.11
	Rx 11	Reactor 11 - Heat Load				
	Rx 12	Reactor 12 - Heat Load				
EPN 7	MBF 2	Production Unit 2 – Transition Events	8.92	0.17	52.23	0.64
	Rx 21	Reactor 21 - Heat Load				
EPN 11	MBF 3	Production Unit 3 – Transition Events	8.00	0.21	8.01	0.11
	Rx 31	Reactor 31 - Heat Load				
	Rx 32	Reactor 32 - Heat Load				
EPN 20	MBF 4	Production Unit 4 – Transition Events	8.37	0.21	8.34	0.11
	Rx 41	Reactor 41 - Heat Load				

- a. Transition event duration shall not exceed 10 minutes per event when transitioning between (A) an operational mode in which oil, natural gas, and combustion air are all fed to the reactor burner and the reactor is manufacturing carbon black and generating Tail Gas, and (B) an operational mode, including, but not limited to, during periods of Startup and Shutdown, in which no oil but only natural gas and combustion air are supplied to the reactor.
- b. Records of duration of each transition event and number of transition events in any 12 months shall be maintained.

EUG 4: Cleanup Bag Filters (CUBF)

Point	Emission Unit	Emission Unit Name	PM/PM ₁₀ /PM _{2.5}	
			lb/hr	TPY
EPN #10	CBF #1	Unit No. 1	0.20	0.87
EPN #6	CBF #2	Unit No. 2	0.05	0.24
EPN #14	CBF #3	Unit No. 3	0.03	0.12
EPN #24	CBF #4	Unit No. 4	0.10	0.45
EPN #23	CBF #5	Shipping Dock	0.09	0.39
EPN #34	CBF #6	Shipping Dock	0.09	0.39
EPN #35	CBF #7	Sealed Bin #1	0.01	0.04
EPN #35	CBF #8	Sealed Bin #2	0.01	0.04
EPN #33	CBF #9	Transloading	0.01	0.04

EUG 5: Clean Gas and Energy Units

Emissions from these emission points include emissions from EUG 2: Main Bag Filters, EUG 3: Exhaust Bag Filters, EUG 5: CGEUs, EUG 6: Pellet Dryers, EUG 8: Reactors, and EUG 9: waste gas combustors.

Summary of Emission Sources

EUG 5 Clean Gas and Energy Units (CGEU)

EU	Point	Name	Const. Date
CGEU 1	EPN #40	Clean Gas and Energy Unit 1	TBD
CGEU 2	EPN #41	Clean Gas and Energy Unit 2	TBD
CGEUH 1	EPN #40	Clean Gas and Energy Unit 1-Heat Load	TBD
CGEUH 2	EPN #41	Clean Gas and Energy Unit 2-Heat Load	TBD

- a. The clean gas and energy units shall each consist of a tail gas boiler, selective catalytic reduction system, and a dry scrubber with a baghouse.

EUG 6 Pellet Dryers

EU	Point	Unit No.	Const. Date
Dryer #11	EPN #40	Unit No. 1	1954
Dryer #12	EPN #40	Unit No. 1	1954
Dryer #21	EPN #40	Unit No. 2	1954
Dryer #31	EPN #41	Unit No. 3	1959
Dryer #32	EPN #41	Unit No. 3	1959
Dryer #41	EPN #41	Unit No. 4	1991

EUG 9 Waste Gas Combustors (WGC)

EU	Points	Name	MMBTUH	Const. Date
WGC #11	EPN #40	WGC 11- Heat Load	19.3	1954
WGC #12	EPN #40	WGC 12- Heat Load	19.3	1954
WGC #22	EPN #40	WGC 21- Heat Load	19.3	1954
WGC #31	EPN #41	WGC 31- Heat Load	19.3	1959
WGC #32	EPN #41	WGC 32- Heat Load	19.3	1959
WGC #41	EPN #41	WGC 41- Heat Load	24.75	1991

Emission Limitations

Emission limitations for the clean gas energy units are listed in the following table.

Pollutants	7-Day Rolling Average Emission Limits	365-Day Rolling Average Emission Limits	3-hr Average Emission Limits
SO ₂	No less than 120 ppmvd and no greater than 158 ppmvd (at 0% oxygen)	No less than 80 ppmvd and no greater than 130 ppmvd (at 0% oxygen)	
NO _x	No greater than 54 ppmvd (at 0% oxygen)	No greater than 38 ppmvd (at 0% oxygen)	
PM			No greater than 0.0069 gr/dscf
NO _x Limits for Heat Load, Startup, and Shutdown: No greater than 50 TPY			

The following table lists combined emissions from Emission Points 40 and 41.

Point	NO _x		CO		VOC		PM/PM ₁₀ /PM _{2.5}		SO ₂	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
EPN 40	41.67	79.04	3.25	1.93	5.28	22.27	5.63	23.56	98.14	353.62
EPN 41	43.57	79.61	3.59	2.02	5.29	22.27	5.66	23.58	98.14	353.62

- a. Each of the dry scrubbers shall be designed to achieve 95% removal of SO₂ emissions at all times.

- b. Permittee shall demonstrate compliance with the control efficiency by monitoring operating parameters as specified in Appendix B of this permit.
- c. Permittee shall follow the protocol specified in Appendix B of this permit for control design, optimization and demonstration, and compliance with final emission limits.
- d. Permittee shall use a CEMS to monitor SO₂ and NO_x emissions for each of the two emission points during process system operation. Permittee shall install, calibrate, certify, maintain, and operate all CEMS in accordance with the equipment manufacturer's specifications and reference methods specified in 40 CFR 60.13 that are applicable to CEMS, and Part 60, Appendixes A and F, and the applicable performance specification test of 40 CFR Part 60, Appendix B, to demonstrate compliance with the SO₂ and NO_x emission limits. Per Appendix F to Part 60, Paragraph 5.1.1, Relative Accuracy Test Audit (RATA) must be conducted at least once every four calendar quarters.
- e. Beginning no later than 3/31/2019, and continuing annually thereafter, permittee shall conduct a stack test for PM. No two annual tests shall be conducted less than 11 months apart. The reference methods and procedures for performing PM stack tests and for determining compliance with the applicable PM 3-hour average emission limit shall be those specified in 40 CFR 60.8(f) and 40 CFR Part 60, Appendix A-3, Reference Method 5/5B. Each test shall consist of three separate runs performed under representative operating conditions, not including periods of startup, shutdown, or malfunction. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume of each run shall be 30 ft³ (dry volume, standard temperature basis).

EUG 6: Dryer Firebox Stacks (N/C)

EU	Point	Name	Const. Date
FS 11	EPN 5	Dryer 11 Firebox Stack	1954
FS 12	EPN 8	Dryer 12 Firebox Stack	1954
FS 21	EPN 9	Dryer 21 Firebox Stack	1954
FS 31	EPN 12	Dryer 31 Firebox Stack	1959
FS 32	EPN 13	Dryer 32 Firebox Stack	1959
FS 41	EPN 21	Dryer 41 Firebox Stack	1991

EU No.	Emissions Unit Name	NO _x		CO		VOC		PM/PM ₁₀ /PM _{2.5}	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
FS 11	Dryer 11 Firebox Stack	0.24	1.05	0.0002	0.0008	0.0008	0.0037	0.04	0.16
FS 12	Dryer 12 Firebox Stack	0.24	1.05	0.0002	0.0008	0.0008	0.0037	0.04	0.16
FS 21	Dryer 21 Firebox Stack	0.50	2.18	0.0004	0.0016	0.0018	0.0077	0.08	0.33
FS 31	Dryer 31 Firebox Stack	0.24	1.07	0.0002	0.0008	0.0009	0.0038	0.04	0.16
FS 32	Dryer 32 Firebox Stack	0.24	1.07	0.0002	0.0008	0.0009	0.0038	0.04	0.16
FS 41	Dryer 41 Firebox Stack	0.51	2.22	0.0004	0.0016	0.0018	0.0079	0.08	0.34

- a. All PM emissions from each dryer other than from the firebox shall be directed to the Exhaust Bag Filters for recovery of product. The exhaust bag filters shall not vent to the atmosphere and shall be directed to the outlet of the CGEU boiler outlets prior to the SCR.

EUG 7: Feedstock Oil Tanks are grandfathered. There is no lb/hr or TPY emission limits applied to these units under Title V but they are limited to the existing equipment as they are.

EU	Point	Contents	Barrels	Gallons
FS Tanks	EPN #18a	Carbon Black Oil	5,000	210,000
	EPN #18b	Carbon Black Oil	5,000	210,000
	EPN #18c	Carbon Black Oil	5,000	210,000
	EPN #18d	Carbon Black Oil	65,000	2,730,000
	EPN #18e	Carbon Black Oil	500	21,000
	EPN #18e	Carbon Black Oil	500	21,000

EUG 10: Carbon Black Tanks

EU	Point	Contents
CB Tanks	TK 11	Carbon Black
	TK 12	Carbon Black
	TK 13	Carbon Black
	TK 14-15	Carbon Black
	TK 16-17	Carbon Black
	TK 21-22	Carbon Black
	TK 23	Carbon Black
	TK 31	Carbon Black
	TK 32	Carbon Black
	TK 33-36	Carbon Black
	TK 41-44, OQ4	Carbon Black
	TK 45-49	Carbon Black
	TK OQ1	Carbon Black
	TK OQ2	Carbon Black
	TK OQ3	Carbon Black
	SB Tanks	Carbon Black

- a. The carbon black tanks shall be controlled by either a fabric filtration device that is equipped with cartridge filters specified by their supplier to achieve PM collection efficiency at least 99%. Per the CD, Appendix A and Appendix D, the facility shall spend at least \$475,000 in project dollars for the purchase, installation, and use of continuous-duty, cartridge dust collector technology (“Dust Collectors”) to minimize PM emissions from the carbon black product storage tanks. The Dust Collectors shall replace existing bag filters and shall include cartridge filters utilizing nanofiber technology to provide high removal efficiency of PM.
 - b. Permittee shall monitor the control device as specified in Specific Condition 15.
2. Upon issuance of an operating permit, the facility shall be authorized to operate this facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)(1)]
 3. Each boiler in EUG 1 shall have a permanent identification plate attached which shows the make, model number, and serial number. [OAC 252:100-45]

4. The carbon black reactors associated with Units No. 1, 2, and 3 shall be fired with pipeline grade natural gas or feedstock oil. The section of the carbon black reactor, associated with Unit No. 4, which is used to provide heat to the reactor to convert the feedstock into carbon black, shall be fired with pipeline-grade natural gas. All supplemental fuel supplied to the waste gas combustors and thermal oxidizers shall also be pipeline-grade natural gas. [OAC 252:100-31]

5. The bypass stacks on the MBF's and the Dryer firebox stacks shall be utilized only during heat load operation, transition, start-up, shut-down, and malfunction of the facility. [OAC 252:100-8-6(a)(1)]

6. All off-gases from the carbon black reactors at the facility shall be oxidized in either the CGEUs and/or the waste gas combustors. The waste gas combustors may be taken off-line during normal operation, however, waste gas shall be routed to the CGEUs during these times. [OAC 252:100-8-6(a)(1)]

7. Total NOx emissions from heat load operation, startup, and shutdown from the reactors and boilers shall not exceed 50 tons for the prior 365 days. Permittee shall demonstrate compliance with this 365-day rolling sum emission limit by performing the following calculation for each day, summing as described, to derive cumulative NOx emissions in tons.

$$X = \sum_{i=1}^{365} \left[\frac{\phi * consumption_i}{2000 \text{ lbs}} \right]$$

Where:

“X” = cumulative NOx emissions (tons) during preceding 365 days

“φ” = 0.48 lbs NOx/MMBtu

“i” = each Day in the preceding 365 Days

consumption_i = the amount of energy input from natural gas and feedstock (in MMBtu) to the Process System per Day for each Day *i* of Heat Load Operation, Startup, or Shutdown. For any Day in which no Heat Load Operation, Startup, or Shutdown occur, consumption_i shall equal zero.

8. Except for periods of start-up, shut-down, or malfunction of air pollution control equipment, the permittee shall operate and maintain the CGENs (boiler, SCR, and scrubber) and waste gas combustors as follows: [OAC 252:100-8-6(a)(3)(A)]

- a. Operate at a temperature of 1,500 °F or greater when waste gas is being injected into the equipment as detailed by the control circuitry.
- b. The temperature shall be monitored and recorded continuously using a thermocouple (at least four times an hour and averaged over the hour with a minimum data availability of 90 percent).
- c. The residence time of the stack gases shall be defined by the combustion section of the boiler design.
- d. Proper operation of the thermocouple shall be verified annually by an instrument which is calibrated annually.

- e. The CGEUs shall be operated in conjunction with the reactors while the reactors are producing carbon black. This requires oil to be injected into the reactors.
- f. The CGEUs shall only be fueled with pipeline quality natural gas or waste gas from carbon black production for warm-up.

9. The permittee shall maintain and operate the particulate monitoring/sensing devices installed on the exhaust stream associated with each of the facility's main bag filter:

- a. The permittee shall operate the particulate monitoring/sensing devices continuously except during periods of device unit shutdown, maintenance, calibration, testing, malfunction and/or failure. Individual monitoring/sensing devices shall not be required to be operate during periods when production within the identified unit is ceased (i.e., oil is not injected into the unit reactor). The continuous particulate monitoring/sensing devices shall be operated in the normal operating range recommended by the manufacturer or as agreed in writing per the CD.
- b. If a continuous particulate monitoring/sensing device signals that there has been an exceedance of a defined particulate level, immediate action shall be taken to determine and isolate the source until repairs can be made.
- c. The permittee shall keep particulate monitoring/sensing device replacement parts on hand for any equipment failures.
- d. The permittee shall keep and maintain the Baghouse Recordkeeping Plan for each of the MBFs.
 - (1). Identity of the baghouse (by production unit and type),
 - (2). Date(s) on which maintenance is performed, type of maintenance, and
 - (4). Disposal used bagfilters to a licensed landfill.

10. All air discharges from the bagging operation, screening operation, and associated conveying equipment shall be processed by a baghouse or an equivalent PM emissions control device with a design efficiency of 99% or more. The permittee shall maintain accessible monitoring equipment to verify the pressure drop across the baghouse.

[OAC 252:100-8-6(a)(3)(A&B)]

11. The permittee shall take all reasonable precautions to minimize emissions of fugitive dust and prevent visible fugitive dust emissions from crossing the boundary of the property on which those emissions originated. These actions shall include, but not be limited to: [OAC 252:100-29]

- a. Implement the Particulate Emissions Best Management Practices Control Plan in accordance with Consent Decree 5:15-cv-00290-F, dated May 7, 2015.
 - (1). All operations and maintenance personnel shall be trained to both recognize leaks and spills of carbon black, and to report them to the proper plant personnel for response. Visual observation of the physical condition of plant process equipment that conveys, stores, loads, unloads, and packages carbon black, including at connection points between equipment and/or sections of piping, and of the physical condition of containers and bags used to package carbon black, shall be part of the

daily responsibilities of the operations and maintenance personnel to help ensure that potential leaks are addressed before they occur.

(2). All carbon black product shall be stored in tanks, silos, or closed bags. No carbon black product shall be stored in open piles.

(3). All product and off-quality carbon black shall be shipped off-site in closed bags, sealed cardboard boxes (or landfill), or sealed rail cars, hoppers, or bulk transport trucks.

(4). All process equipment at the facility shall be designed, operated, and maintained in a manner intended to minimize leaks and spills of carbon black and fugitive particulate emissions. In addition, the facility shall develop and implement practices to collect carbon black dust otherwise emitted from product conveyance, packaging, and storage operations, and either recycle it back into the manufacturing process or convey it to a packaging system. Where practicable, the operation of such equipment, including carbon black product conveyors, elevators, and packing units, shall be conducted under negative pressure and served by vacuum systems that collect carbon black.

(5). All process equipment shall be located either indoors or in outdoor areas that have paved or rock/gravel ground surfaces.

(6). Events that trigger the PM Early Warning system shall be handled pursuant to the protocol in appendix D of the consent decree. Leaks and spills of all carbon black that are otherwise identified shall be investigated and addressed (cleaned up and repaired) either immediately upon discovery or as quickly as practicable. When immediate repair or isolation is not feasible, the actions taken to complete the repair shall be documented. Incident reports for spills or leaks of carbon black shall be created to document cause and corrective actions.

(7). Special precautions shall be taken during maintenance actions to minimize particulate emissions from the equipment on which maintenance is being performed. Prior to conducting maintenance or baghouse bag replacement on equipment that is prone to accumulation of carbon black on its interior surfaces, including, but not limited to, on the Main Bag Filters, elevators, and conveyors, and storage tanks and silos, the responsible maintenance personnel shall identify and take steps necessary to minimize the generation of particulate emissions at the equipment being maintained during the maintenance or bag replacement activity. The specific approaches taken to minimize particulate emissions during maintenance or bag replacement shall be developed on a case-specific basis based on the judgment of the maintenance personnel and shall include, as relevant, but need not be limited to, activities such as the following:

- Vacuuming carbon black from the equipment prior to beginning the maintenance,
- Vacuuming or washing down the equipment when an appropriate stage in the maintenance activity has been reached,
- If units are equipped with vents, closing vents during maintenance to prevent drafting of PM, except when conducting a safety or hazard analysis and concluding in writing that closing the vent would create an unsafe or unhealthy work atmosphere, and
- Sealing filter bags removed from Main Bag Filters inside plastic bags.

(8). Accessible floor and/or grounds surfaces in the carbon black production areas shall be swept or washed as needed in order to minimize particulate emissions attributable to leaks or spills of carbon black that are not otherwise identified and/or addressed during the daily visual assessments. All material collected through these actions shall either be incorporated into the production process, or used as product of commercial distribution, or properly disposed of in accordance with applicable regulatory standards.

- b. Conduct product loading operations in such a manner so as to minimize, to the extent possible, any fugitive emissions of carbon black.
- c. Maintain a routine inspection program whereby all high speed processing equipment, including all large blowers, within the facility are inspected and lubricated according to a schedule of inspection.

12. The permittee shall install and continuously operate a PM Early Warning System to monitor the PM emitted from each PM monitor point in accordance with Appendix A of this permit.

13. For each of the following PM emission units listed in the table below, the permittee shall conduct a Method 22 visual assessment once each operating day to determine if there are any detectable visible emissions.

Emission Unit Group	Name
EUG 2	Main Bag Filters
EUG 6	Carbon Black Pellet Dryers
EUG 8	Reactors
EUG 10	Carbon Black Product Storage Tanks, Silos, or Bins

- a. In the event that any visible emissions are observed, permittee shall identify, address, and resolve the source of visible emissions as expeditiously as practicable.
- b. If the visible emissions event occurs after the date of continuous operation of the PM early warning system, the event shall be considered resolved once the PM early warning system alarm is below the action level.
- c. If the visible emissions event is not resolved within 24 hours, once visibility conditions are sufficient for a Method 9 observation, permittee shall conduct a six minute observation in accordance with Method 9 at least once every eight (8) hours (during daylight hours), until visible emissions from the PM emission unit that triggered the event are less than 5% over the six minute average.
- d. Permittee shall maintain a record of each visual assessment conducted.

14. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) Subpart YY including but not limited to:

- a. §63.1100 Applicability.
- b. §63.1101 Definitions.
- c. §63.1102 Compliance schedule.
- d. §63.1103 Source category-specific applicability, definitions, and requirements.

- e. §63.1104 Process vents from continuous unit operations: applicability assessment procedures and methods.
- f. §63.1107 Equipment leaks: applicability assessment procedures and methods.
- g. §63.1108 Compliance with standards and operation and maintenance requirements.
- h. §63.1109 Recordkeeping requirements.
- i. §63.1110 Reporting requirements.
- j. §63.1111 Startup, shutdown, and malfunction.
- k. §63.1112 Extension of compliance, and performance test, monitoring, recordkeeping and reporting waivers and alternatives.
- l. §63.1113 Procedures for approval of alternative means of emission limitation.
- m. §63.1114 Implementation and enforcement.

15. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) for Stationary Reciprocating Internal Combustion Engines (RICE), Subpart ZZZZ, for each affected engine, including but not limited to: [40 CFR 63.6580 through 63.6675]

What This Subpart Covers

- a. § 63.6580 What is the purpose of subpart ZZZZ?
- b. § 63.6585 Am I subject to this subpart?
- c. § 63.6590 What parts of my plant does this subpart cover?
- d. § 63.6595 When do I have to comply with this subpart?

Emission and Operating Limitations

- e. § 63.6600 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE with a site rating of more than 500 brake HP located at an area source of HAP emissions?
- f. § 63.6601 What emission limitations and operating limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at an area source of HAP emissions?
- g. § 63.6602 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at an area source of HAP emissions?
- h. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
- i. § 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

General Compliance Requirements

- j. § 63.6605 What are my general requirements for complying with this subpart?

Testing and Initial Compliance Requirements

- k. § 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?
- l. § 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI

stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

- m. § 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?
- n. § 63.6615 When must I conduct subsequent performance tests?
- o. § 63.6620 What performance tests and other procedures must I use?
- p. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
- q. § 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?

Continuous Compliance Requirements

- r. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
- s. § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

Notifications, Reports, and Records

- t. § 63.6645 What notifications must I submit and when?
- u. § 63.6650 What reports must I submit and when?
- v. § 63.6655 What records must I keep?
- w. § 63.6660 In what form and how long must I keep my records?

Other Requirements and Information

- x. § 63.6665 What parts of the General Provisions apply to me?
- y. § 63.6670 Who implements and enforces this subpart?
- z. § 63.6675 What definitions apply to this subpart?

16. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) for Industrial, Commercial and Institutional Boilers and Process Heaters, Subpart DDDDD, for each affected boiler, including but not limited to: [40 CFR 63.7480 through 63.7575]

- a. §63.7480 What is the purpose of this subpart?
- b. §63.7485 Am I subject to this subpart?
- c. §63.7490 What is the affected source of this subpart?
- d. §63.7491 Are any boilers or process heaters not subject to this subpart?
- e. §63.7495 When do I have to comply with this subpart?
- f. §63.7499 What are the subcategories of boilers and process heaters?
- g. §63.7500 What emission limitations, work practice standards, and operating limits must I meet?
- h. §63.7501 Affirmative Defense for Violation of Emission Standards During Malfunction.
- i. §63.7505 What are my general requirements for complying with this subpart?
- j. §63.7510 What are my initial compliance requirements and by what date must I conduct them?
- k. §63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?
- l. §63.7520 What stack tests and procedures must I use?
- m. §63.7521 What fuel analyses, fuel specification, and procedures must I use?
- n. §63.7522 Can I use emissions averaging to comply with this subpart?

- o. §63.7525 What are my monitoring, installation, operation, and maintenance requirements?
- p. §63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?
- q. §63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?
- r. §63.7535 Is there a minimum amount of monitoring data I must obtain?
- s. §63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?
- t. §63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?
- u. §63.7545 What notifications must I submit and when?
- v. §63.7550 What reports must I submit and when?
- w. §63.7555 What records must I keep?
- x. §63.7560 In what form and how long must I keep my records?
- y. §63.7565 What parts of the General Provisions apply to me?
- z. §63.7570 Who implements and enforces this subpart?
- aa. §63.7575 What definitions apply to this subpart?

17. To demonstrate compliance with OAC 252:100-31-7(b), emissions of H₂S from the main bagfilters during transition periods shall not exceed 2,205.15 lb/24 hr rolling period. The Permittee shall demonstrate compliance by

- a. Either showing less than 8 transition events for all reactors in a 24-hour period at no greater than 4% sulfur content of the feedstock or by preparing daily calculations of H₂S emissions based on actual number and duration of transition events occurred, actual sulfur content, and amount of oil fed to the reactors, assuming 70% sulfur becomes H₂S (based on previous stack test data showing 25-40% sulfur retention and industry standard).
- b. Analyzing sulfur content of feedstock oils being processed at least once during every operating week (exclusive of analysis on holidays and weekends) day in which oil is received (within 24-hours of receipt). If the pipeline is operating and plant receiving oil from Phillips, or if vendor oil trucks make delivery over the weekend, oil sampling shall be required within 24-hours of receipt.

18. The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. [OAC 252:100-8-6 (a)(3)(B)]

- a. Continuously-recorded temperature in the CGEUs and waste gas combustors as required by Specific Condition 10(b).
- b. Records of annual calibrations of the thermocouple verification device and annual verification of the thermocouple as required by Specific Condition 10(d).
- c. Operation and maintenance of the CGEUs.
- d. All occasions when operating temperatures of the CGEUs and waste gas combustors fall outside the established temperature range.

- e. Records of oil feed to all units and fuel sulfur content of all feedstock required by Specific Condition 17.
- f. Total natural gas usage for each boiler (natural gas consumed is metered and stored on Data Historian, hours are monitored and third-party services the boilers).
- g. Total amount of Carbon Black Oil used (monthly and 12 month rolling total).
- h. Operation, maintenance, and inspection logs for the grandfathered emission units in EUG1.
- i. Records required by NESHAP Subparts YY, DDDDD, and ZZZZ.
- j. Records required by Specific Conditions No. 9, 11, 13, and 15.
- k. Records of transition events for each production unit.
- l. Records of NO_x and SO₂ CEMS data.
- m. Records of CEMS RATA tests data.
- n. Records of annual stack test data.
- o. Records as required by Appendix A of this permit.
- p. Records of monitored operating parameters as specified in Appendix B of this permit.

19. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations which qualify as Trivial Activities.

[OAC 252:100-8-6 (a)(3)(B)]

- a. Receipts for fuel storage/dispensing equipment operated solely for facility owned vehicles: Records of the type and amount of fuel dispensed (annual) via purchasing records as dispensing stations do not have flow meters.
- b. For fluid storage tanks with a capacity of less than 39,894 gallons and a true vapor pressure less than 1.5 psia: Records of the capacity of the tanks and the contents.
- c. For activities (except for trivial activities) that have the potential to emit less than 5 TPY (actual) of any criteria pollutant: The type of activity and the amount of emissions or a surrogate measure of the activity (annual).

20. Notwithstanding the issuance date of the original Title V permit (April 21, 2000), there is hereby established an alternative date of July 31st for Annual Compliance Certification and Semi-annual Reporting submittal purposes. Pursuant to such alternative date, the permittee shall submit to the Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit no later than 30 days after July 31st of each year.

[OAC 252:100-8-6 (c)(5)(A) & (D)]

21. No later than 30 days after each six (6) month period, after the alternative date of July 31st, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Permittee shall assure that no semi-annual report is filed longer than 6 months.

[OAC 252:100-8-6 (a)(3)(C)(i) and (ii)]

22. No later than 180 days after initial startup of the proposed project, the permittee shall conduct initial performance test(s) and submit a written report of the results to the AQD.

- a. Performance testing by the permittee shall use the following test methods specified in 40 CFR Part 60.

Method 1: Sample and Velocity Traverses for Stationary Sources.

Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.

Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.

Method 4: Determination of Moisture in Stack Gases.

Method 5: Determination of PM Emissions from Stationary Sources.

Method 6C: Determination of SO₂ Emissions from Stationary Sources.

Method 7E: Determination of NO_x Emissions from Stationary Sources.

Method 10: Determination of CO Emissions from Stationary Sources.

Method 202: Determination of Condensable Particulate Matter.

- b. A copy of the test plan shall be provided to AQD at least 30 days prior to each test date.
- c. Performance testing shall be conducted while each reactor is operating within 10% of the rate at which operating permit authorization will be sought.

23. The permittee shall submit a request for modification of the current Title V operating permit application within 180 days of commencement of operations.

APPENDIX A: PM EARLY WARNING SYSTEM

1. Permittee shall install a PM Early Warning System at the Facility to monitor the PM emitted from each PM Monitor Point. Each PM Monitor Point shall be set to a specific alarm action level, such that an alarm is triggered when the PM at a PM Monitor Point exceeds the normal range of PM according to the manufacturer's recommendations during operation of the Process System.

2. Permittee shall operate each PM Early Warning System at all times of Heat Load Operation and Process System Operation, except for during system breakdowns, repairs, maintenance, calibration checks, and zero and span adjustments of the applicable PM Early Warning System. The minimum degree of data availability shall be at least 90 percent for the first three years following the Effective Date of the Consent Decree, and 95% thereafter, based on a quarterly average of the operating time of the emission unit or activity being monitored.

3. In the event that an alarm is triggered for any PM Early Warning System, Defendant shall investigate the cause of the alarm as expeditiously as practicable by performing each of the following tasks:

- a. Reviewing the data output for the relevant PM Early Warning System to determine whether the alarm corresponds to an actual exceedance of the alarm action level;
- b. If review of the data confirms an exceedance of the alarm action level, Permittee shall conduct a visual assessment (Method 22) of the equipment monitored by the pertinent PM Early Warning System to determine if there are any detectable visual emissions. Defendant shall also conduct an appropriate equipment inspection to seek to identify the source of the alarm.
- c. If the visual assessment or other observations identify a process, equipment or other condition(s) causing an increase in PM emissions that may be responsible for triggering the relevant alarm, determining whether the relevant equipment can be isolated to reduce the excess PM emissions below alarm levels, without requiring a Process System Shutdown;
- d. If the relevant equipment can be isolated without requiring Process System Shutdown, isolating and repairing such equipment prior to returning it to service;
- e. If the relevant equipment cannot be isolated without requiring Process System Shutdown, such as if there is a leak from a dryer, a broken bag in a baghouse, or a Malfunction of any other component that cannot be isolated to the extent necessary to prevent continued excess PM emissions, shutting down the relevant equipment and only returning it to service after it has been repaired;
- f. If the triggering event has not been identified and resolved within 24 hours, having a Method 9 Trained Observer (i) conduct a visual assessment of the equipment monitored by the pertinent PM Early Warning System to determine if there are any detectable visual emissions, and, (ii) in the event that any such visible emissions are observed, conduct a six minute observation in accordance with Method 9 to determine if opacity levels are greater than 20%, and (iii) if

- g. opacity levels are greater than 20%, conduct a six minute observation in accordance with Method 9 once every 8 hours (during daylight hours) until visible emissions are less than 20% of opacity levels;
 - h. If, after investigation, the source of any elevated PM emissions cannot be identified, shutting down the subject equipment as soon as practicable to prevent further alarms and to minimize emissions and ensure the safety of employees and the community and only returning the equipment to service after the source of the excess emissions has been identified and repaired.
4. Notwithstanding the foregoing, to the extent that recorded information for the relevant PM Early Warning System indicates that operations have returned to normal operating ranges, below levels triggering an alarm condition, Defendant is not otherwise obligated to continue with implementation of the steps listed above, and may continue operation of the relevant equipment.
5. Permittee shall maintain a record of any event that triggers the alarm for any PM Early Warning System sufficient to meet the requirements in Section XIII (Recordkeeping and Reporting Requirements) of this Consent Decree.
6. Permittee shall perform routine maintenance of each PM Early Warning System installed in accordance with any manufacturer recommendations and the following requirements:
- a. On at least a semiannual basis, Permittee shall visually inspect and clean each sensor within the PM Early Warning System, in accordance with manufacturer recommendations, to ensure continued effective operation of the PM Early Warning System.
 - b. On at least an annual basis, Permittee shall comprehensively inspect the PM Early Warning System and make any necessary repairs.
7. The PM Early Warning System shall not be required to quantitatively measure PM emissions.

APPENDIX B: PROTOCOL FOR SETTING FINAL SO₂ EMISSION LIMITS

1. If Permittee elects to comply with the applicable Final 7-day Rolling Average Emissions Limits and Final 365-day Rolling Average Emissions Limits for SO₂ set forth in Section VI (SO₂ Control Technology, Emissions Limits, and Monitoring Requirements) of the Consent Decree, pursuant to Option B, the Permittee shall follow the protocol specified in this Appendix.

2. Design Considerations. Permittee's proposed design for each DGS shall consider, at a minimum, the following parameters:

- a. Absorber Vessel
 - i. Volume
 - ii. Dimensions
 - iii. Pressure Drop
 - iv. Internal Configuration
 - v. Location in Process Train
- b. Sorbent Injection (for DGS only)
 - i. Type and chemical composition of sorbent
 - ii. Sorbent injection rate
- c. Flue Gas Characteristics
 - i. Inlet/Outlet SO₂/SO₃ Concentrations
 - ii. Flue Gas Volumetric Flow
 - iii. Inlet/Outlet Temperature Range
 - iv. Inlet/Outlet Particulate Loading and Characteristics
- d. Designed to Removal Efficiency
- e. Safety Considerations

If Permittee elects to pursue installation of an Alternative Equivalent Pollution Control Technology, Permittee shall propose a list of design considerations and operating parameters with supporting rationale for use in lieu of those listed in Paragraphs 2 and 3 of this Appendix for the Alternative Equivalent Pollution Control Technology that includes design considerations and operating parameters that have a significant effect on percent removal of SO₂. Permittee shall submit this information when Permittee submits the proposal for approval of the Alternative Equivalent Pollution Control Technology in accordance with Paragraph 19 of this Consent Decree.

3. Optimization and Demonstration Study. Permittee shall conduct an 18 Month Optimization and Demonstration Study, which shall begin no later than the applicable Date of Continuous Operation set forth in Paragraph 17 of this Consent Decree. Defendant shall submit a protocol consistent with the applicable design considerations for each Optimization and Demonstration Study to EPA no later than 3 Months prior to commencement of the Optimization and Demonstration Study, which shall identify, at a minimum, the operating parameters set forth in 3.a. and 3.b. below. During the first 3 Months of each Optimization and Demonstration Study, Defendant shall operate the applicable DGS or Alternative Equivalent Pollution Control Technology consistent with the protocol submitted by Permittee, with the objective of

establishing optimum operating levels to minimize SO₂ emissions for, at a minimum, the following parameters:

- a. Sorbent Injection (for DGS only)
 - i. Type and chemical composition of sorbent
 - ii. Sorbent injection rate
- b. Pressure drop
- c. Emission Rates
 - i. Outlet SO₂ Concentration
 - ii. Actual Removal Efficiency

Within 30 Days of completion of the first 3 Months of each Optimization and Demonstration Study, Permittee shall submit to EPA a written report that documents any conclusions that it reached in its analysis of the data from that period, and provides any relevant data supporting those conclusions.

During the last 15 Months of each Optimization and Demonstration Study, Permittee shall operate the applicable DGS or Alternative Equivalent Pollution Control Technology in a manner consistent with the conclusions reflected in the written report of the Optimization and Demonstration Study, with the objective of minimizing SO₂ emissions to the extent practicable based on the design criteria.

4. Optimization and Demonstration Study Report. Permittee shall submit the results of the complete Optimization and Demonstration Study to EPA in a written report no later than 60 Days after the completion of the Optimization and Demonstration Study. The report shall include the following information:

- a. Each hourly average SO₂ and O₂ concentration at the point of emission to the atmosphere and at the inlet to the DGS or Alternative Equivalent Pollution Control Technology, as measured by a CEMS during the Optimization and Demonstration Study, and each hourly average value for each of the operating parameters listed in Paragraph 2 of this Appendix.
- b. An evaluation of the effect, and identification of the optimum operating level, of each operating parameter listed in Paragraph 2 of this Appendix, on the minimization of SO₂ emissions from the relevant Process System.
- c. A proposed final 7-day Rolling Average Emissions Limit (in ppmvd, at 0% oxygen), and a proposed final 365-day Rolling Average Emissions Limit for SO₂ (in ppmvd, at 0% oxygen), within the range set forth for Option B in the applicable cell in the table in Paragraph 17, to optimize operation of the DGS or Alternative Equivalent Pollution Control Technology and minimize SO₂ emissions to the extent practicable.

Permittee shall supplement the report with any other information that EPA identifies as relevant to its evaluation of the Optimization and Demonstration Study.

5. Compliance with Proposed Final Emissions Limits. Permittee shall immediately upon submission of the Optimization and Demonstration Study to EPA, and, continuing thereafter, until such time as Permittee is required to comply with the applicable Final 7- day Rolling

Average Emissions Limit and Final 365-day Rolling Average Emissions Limit established pursuant to Paragraphs 6 and 7 of this Appendix, Continuously Operate, a DGS or Alternative Equivalent Pollution Control Technology on the Process System, so as to achieve and maintain the applicable proposed final 7-day Rolling Average Emissions Limit and proposed final 365-day Rolling Average Emissions Limit.

6. EPA Establishment of Final Emission Limits. EPA shall establish Final 7-day Rolling Average Emissions Limits and Final 365-day Rolling Average Emissions Limits for SO₂ within the range set forth for Option B in the applicable cell in the table in Paragraph 17. EPA shall base its determination on: (i) the level of performance of the applicable DGS or WGS or Alternative Equivalent Pollution Control Technology during the Optimization and Demonstration Study; (ii) a reasonable certainty of compliance; and (iii) any other available and relevant information.

7. Compliance with Final Emission Limits. Permittee shall immediately, or, if the EPA established Final 7-day Rolling Average Emissions Limit or Final 365-day Rolling Average Emissions Limit for SO₂ for the applicable Process System is different from Permittee's proposed final Emissions Limits, no later than 30 Days after receipt of written notice from EPA, and, continuing thereafter, Continuously Operate, a DGS or Alternative Equivalent Pollution Control Technology on each Process System, so as to achieve and maintain the applicable Final 7-day Rolling Average Emissions Limit and Final 365-day Rolling Average Emissions Limit.

8. Emissions Limits Option. At any time, Permittee may notify the EPA and Plaintiff-Intervenors in writing in accordance with the notice provisions of Section XXI (Notices) of the Consent Decree that it will accept and agree to immediately, and continuing thereafter Continuously Operate, a DGS or Alternative Equivalent Pollution Control Technology on the Process System, so as to achieve and maintain the Final 7-day Rolling Average Emissions Limits and Final 365-day Rolling Average Emissions Limits for SO₂ set forth for Option A in the applicable cell in the table in Paragraph 17 of the consent decree.



PART 70 PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2004-302-C (M-2)

Continental Carbon Company,

having complied with the requirements of the law, is hereby granted permission to modify the Carbon Black Production Facility at Ponca City, Section 10, T25N, R2E, Kay County, Oklahoma, subject to standard conditions dated July 21, 2009 and specific conditions, both attached.

In the absence of construction commencement, this permit shall expire 18 months from the issuance date, except as authorized under Section VIII of the Standard Conditions.

Division Director
Air Quality Division

Date



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

Mr. Todd Miller, Corporate Director – Environmental, Health, and Safety
Continental Carbon Company
16850 Park Row
Houston, TX 77084

SUBJECT: Permit No: **2004-302-C (M-2)**
Carbon Black Production Facility, Ponca City, Kay County
Facility ID: 333

Dear Mr. Miller:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to the certain standards and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at (405) 702-4205.

Sincerely,

Jian Yue, P.E.,
New Source Permits Section
AIR QUALITY DIVISION

Enclosures



Mr. Todd Miller, Corporate Director – Environmental, Health, and Safety
Continental Carbon Company
16850 Park Row
Houston, TX 77084

SUBJECT: Permit No: **2004-302-C (M-2)**
Carbon Black Production Facility, Ponca City, Kay County
Facility ID: 333

Dear Mr. Miller:

Air Quality Division has completed the initial review of your permit application referenced above. This application has been determined to be a **Tier II**. In accordance with 27A O.S. § 2-14-301 & 302 and OAC 252:4-7-13(c) the application and enclosed draft permit are now ready for public review. The requirements for public review include the following steps which you must accomplish:

1. Publish at least one legal notice (one day) of “Notice of Tier II Permit Application Filing” and “Notice of Tier II Draft Permit” in at least one newspaper of general circulation within the county where the facility is located. (Instructions enclosed)
2. Provide for public review (for a period of 30 days following the date of the newspaper announcement) a copy of this draft permit and a copy of the application at a convenient location (preferably a public location) within the county of the facility.
3. Send to AQD a copy of the proof of publication notice from Item#1 above together with any additional comments or requested changes which you may have on the draft permit.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at (405) 702-4100 or the permit writer, Jian Yue, at (405) 702-4205.

Sincerely,

Phillip Fielder, P.E.,
Permits and Engineering Group Manager
AIR QUALITY DIVISION
Enclosure



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

KDHE, BAR
Forbes Field, Building 283
Topeka, KS 66620

SUBJECT: Permit No: **2004-302-C (M-2)**
Carbon Black Production Facility, Ponca City, Kay County
Facility ID: 333

Dear Sir / Madame:

The subject facility has requested a construction permit. Air Quality Division has completed the initial review of the application and prepared a draft permit for public review. Since this facility is within 50 miles of the Oklahoma - Kansas border, a copy of the proposed permit will be provided to you upon request. Information on all permit and a copy of this draft permit are available for review by the public in the Air Quality Section of DEQ Web Page: <http://www.deq.state.ok.us>.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder, P.E.,
Permits and Engineering Group Manager
AIR QUALITY DIVISION



**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

March 29, 2016

TO: Phillip Fielder, P.E., Permits and Engineering Group Manager

THROUGH: Phil Martin, P.E., Engineering Manager, Existing Source Permits Section

THROUGH: Peer Review

FROM: Jian Yue, P.E., New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2004-302-TVR (M-2)**
Continental Carbon Corporation
Carbon Black Production Facility
Facility ID: 333
Section 10, T25N, R2E
Ponca City, Kay County, Oklahoma
Located 1 mile south of the Intersection of SH60 and SH177

SECTION I. INTRODUCTION

Continental Carbon requested a minor modification to their Title V renewal operating permit for the Ponca City Carbon Black Production facility (SIC code 2895) for the like kind replacement of Boiler #1. This facility is currently operating under Permit No. 2004-302-TVR (M-1) issued on September 17, 2015, which authorized the replacement of Boiler #2.

This facility is an existing PSD facility and the boiler replacement is a physical change, therefore, PSD applicability was reviewed. The first step is to determine if the project emission increases are significant (exceeding PSD significance levels), based on the “actual-to-potential” test for the replacement boiler and any possible associated emission increases. For the replacement boiler, emission increases are its potential emissions as listed below:

EU	NO _x		CO		VOC	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Boiler #1	0.63	2.76	0.53	2.32	0.03	0.15

The primary purposes of the steam boiler is to provide safe heat to facility water lines in winter to prevent freezing and to add heat to the trace coils which surround the mixing boxes in wet process. The heat for the mixing boxes is to keep them at 212 F° or less due to cooling created in the mix box by the drafting of air from the drum exhaust fan. By using multi-helix pin mixers the powdered carbon black is mechanically moved into the feed side of the mixer, becomes agitated and forms pills of density of 27-29 lb/ft³ whereas powdered carbon black has a density of 2 lb/ft³. This serves two purposes, one to control dust by making the “pill”, and secondly makes transport and handling much simpler as a pill rather than a powder which creates fugitive dust problems.

Without steam to heat and keep the mix boxes warmed, there would be a dust problem as pills don't like to form when the material is cool. Boiler #1 is operated alternatively with Boiler #2, the only time that both boilers would be "off line" would be during a total plant power failure, in which case, the plant would be shut down. Therefore, no increased up time is expected with the replacement and no associated emissions are expected from this replacement.

Since emissions from the replacement boiler are less than 5 TPY for each regulated pollutants and no associated emissions are expected, this boiler replacement is not subject to further PSD review and qualifies for a Tier I minor modification.

SECTION II. PROCESS DESCRIPTION

Furnace carbon black is a large volume commodity chemical used primarily in the tire and rubber industry. Carbon black is produced from a high molecular weight, low vapor pressure, highly aromatic liquid hydrocarbon feedstock and other high carbon, low sulfur hydrocarbon products of commerce. This material is a by-product of the catalytic cracking of gas oil in a crude oil petroleum refinery and other suitable sources of feedstocks. A large portion of the feedstock for the permittee's plant is supplied by the nearby ConocoPhillips Ponca City refinery. This material is shipped to the site via pipeline. The remainder of the feedstock is purchased from other refineries and is delivered to Ponca City by tank truck or rail.

Feedstock oil from crude oil refineries is received into a 65,000-barrel insulated cone roof tank. Fresh oil, received by pipeline from the nearby Conoco refinery or other delivery is blended with the oil in inventory upon receipt. Material from this tank is circulated through a heater on each production unit in service and returned to the tank through an internal mixing nozzle which provides for uniform feed quality. The oil from this tank is transferred to the individual unit charge tanks or directly to the operating units, as required.

During cold reactor start-up operations, the reactor is initially heated by combustion of natural gas using a rose-bud burner tip to light the reactor's main natural gas ring burner, then slowly bring up the operating temperature on a DCS controlled schedule to avoid spaulding or steam bursting from entrapped moisture in the brick and refractory. During cold start-up, the exterior burner emissions are released via the one online Main Bag Filter (MBF) compartment and the MBF Vent Stack (N/C). Once the reactor is sufficiently warm, the reactor ring burner is utilized for approximately four to twenty-four hours as the reactor temperature continues to increase to operating temperatures. During this time, no feedstock oil is injected into the reactor; therefore, only warm carbon dioxide, water, air and products of natural gas combustion are within the reactor. When the reactors reach appropriate temperature, the feedstock oil flows to the reactor burners from the outlet of the oil preheater where the oil is partially combusted at 2,800 °F to 3500 °F. During the period prior to feedstock oil injection and the start-up of production, the thermal oxidizer (TOx) is in a warm-up period to 1500 °F on natural gas only. At the same time, valves are opened to the thermal oxidizer and closed to the main bag filter vent stack. Uncontrolled emissions due to oil charge into the reactor will not reach the atmosphere through the main bag filter stacks on Units 1, 2, 3, and 4 with the minimal amount of time between the closing of the control knife gate valves cycling. However, due to unit configuration and equipment operation, uncontrolled emissions due to the initial venting of waste gas from the

Reactors main bag filter stack during system start-up may occur briefly prior to the complete manual opening of the thermal oxidizer control device valve and closing of the main bag filter stack as the byproduct gases have to reach sufficient Btu value for the induction and sustained combustion of the byproduct gases in the TOx. There are no emissions associated with shutdown of a reactor except under Force Majeure conditions such as listed in the SSMP (i.e., power failures or loss of control equipment due to the safety shutdown systems on the associated TOx).

During this incomplete or partial combustion of oils and production of carbon black, potassium carbonate (K_2CO_3) is injected at the reactor face plate in parts per million quantities as a product structure control additive. Also during this process, carbon black and other products of incomplete combustion, including reduced sulfur compounds, are formed.

During reactor maintenance, castable and/or brick refractory may be replaced in one or more of the sections of each reactor. The normal change-out time is 8 to 10 hours, and then the unit is heated back to temperature in accordance to the manufacturers' recommendations.

The carbon-laden gases from the reactor are cooled to about 1,000-1,500°F by water quenching in the "quench" section of the reactor. These quenched flue gases then pass through the "residence section" and then into the oil- and air-pre-heaters, as previously described. The partially cooled flue gases (500°F) then go through the main bag filters (MBFs) for carbon black recovery. The MBFs collect 99.9 percent of the carbon black from the gases. No carbon black production occurs during warm-up or emergencies when there is no oil in the reactor, hence the combustion gases are not carbon black-laden, nor do the gases have significant concentrations of VOC, CO, H_2S , CS_2 , HCN, SO_2 and COS at these times.

While in production, about 20 percent of the filtered gases from the MBFs go to the waste gas combustor (WGC) and then to the rotary dryers for drying the pelletized carbon black. The filtered waste gas has a Btu content of about 60-80 Btu/Scf. While low in Btu content, the gas is easily combusted without supplemental fuel. The combustion efficiency in the WGCs is 98%. The combustion/dryer system on each unit uses the waste gases from its respective MBFs as the primary source of fuel. The combusted gases go around the outside of the rotating drying drum, then through the inside of the rotating drum, countercurrent to the carbon black flow. The gases, plus water vapor from the dried pellets and any airborne particulate matter due to carbon black movement, then go to the associated thermal oxidizer for the unit, where the gases undergo a second high temperature combustion process. All old stacks associated with the dryers were removed before 2004. The surplus waste gas (about 80 percent of the total reactor wasted gas) not used in the waste gas combustors goes to the respective thermal oxidizers. The combustion zone temperature for the thermal oxidizers ranges from 1,500°F to 2,100°F, depending on the specific product being made.

The carbon black is collected in the MBFs on all units and is pneumatically conveyed to accumulator cyclones or associated Process Bag Filter (PBF) which separates the conveying gases from the carbon black. The conveying gases exit the cyclone and return to the inlet of the MBFs. The pneumatic conveying system is a closed-loop system. The system is heated and must remain void of oxygen for safe operation. No air leakage is permitted. The deposits of

carbon black, from the cyclones (or PBF), flow by gravity through air locks into the unit's accumulator tank.

The carbon black then enters a stage called the "Wet Process," where the loose, fine carbon black is consolidated into pellets. Particulate matter scavenged from process conveying equipment that is part of the dust management system is collected in the cleanup bag filter (CUBF) that cold air exhausts through the CUBF stack while collected product empties into the pneumatic line. Carbon black flows through a pulverizer into the accumulator tank and then into the pelletizer, where the carbon black is mixed with an equal weight of water and wetting agents and formed into small pellets. These wet pellets drop through a chute into one end of a rotary drying drum.

The dried carbon black pellets leaving the dryer drum are lifted by a bucket elevator system to the top of closed storage tanks. Pellets are discharged from the bucket elevator across screen separators. These separators discharge the product carbon black pellets into closed screw systems, leading into the storage tanks. Potential emissions from conveying equipment are controlled by the unit's CUBF.

The carbon black storage tanks are vented through a single stack fabric particulate filter. Carbon black is gravity-loaded from the storage tanks into hopper cars, specialty bulk containers for bulk or semi-bulk shipments, or is bagged by existing valve bag packers for shipment in boxcars or trailers. Existing shipping dock cleanup bag filters service all 4 bulk loading sites. With the addition of the new clean-up bag filter (applied in application 98-176-TV(M-3)(PSD)) now, the existing system serves units 1 & 2, and the newer system serves units 3 & 4. The new system is a duplicate of the existing system.

Scheduled maintenance of all bag filters is performed periodically. Procedures are in place at the facility to minimize fugitive carbon black released during the change out in each bag compartment; however, it is assumed that an insignificant amount of carbon black is released to the atmosphere during these operations.

SECTION III. EQUIPMENT

EUG 1 Gas-Fired Boilers

EU	Point	Manufacturer	MMBTUH	Serial #	Const. Date
Boiler #1	EPN #1	Superior	6.28	18066	2015
Boiler #2	EPN #2	Superior	6.28	17817	2015

EUG 2 Main Bag Filters (MBF)

EU	Point	Name
MBF #1	EPN #3 (N/C)	Unit No. 1
MBF #2	EPN #7 (N/C)	Unit No. 2
MBF #3	EPN #11 (N/C)	Unit No. 3
MBF #4	EPN #20 (N/C)	Unit No. 4

N/C – Normally Closed

EUG 3 Exhaust Bag Filters (EBF) Vent Stacks Removed from Service.

EUG 4 Cleanup Bag Filters (CUBF)

EU	Point	Name
CBF #1	EPN #10	Unit No. 1
CBF #2	EPN #6	Unit No. 2
CBF #3	EPN #14	Unit No. 3
CBF #4	EPN #24	Unit No. 4
CBF #5	EPN #23	Shipping Dock
CBF #6	EPN #34	Shipping Dock
CBF #7	EPN#35	Shipping Dept. #2

EUG 5 Thermal Oxidizers (TO)

EU	Point	Name	MMBTUH	Const. Date
TO #1	EPN #25	Thermal Oxidizer No. 1 (for Production Units 1 & 2)	147	1997
TO #2	EPN #26	Thermal Oxidizer No. 2 (for Production Unit #3)	87	1997
TO #4	EPN #22	Unit No. 4 Thermal Oxidizer	93	1990

EUG 6 (Dryers) Waste Gas Combustors

These dryers no longer have stacks to vent outside. All emissions from these dryers are routed to each associated thermal oxidizer.

EUG 7 Feedstock Oil Tanks

EU	Point	Contents	Barrels	Gallons	Const. Date
FS Tanks	EPN #18a	Carbon Black Oil	5,000	210,000	1954
	EPN #18b	Carbon Black Oil	5,000	210,000	1954
	EPN #18c	Carbon Black Oil	5,000	210,000	1954
	EPN #18d	Carbon Black Oil	65,000	2,730,000	1966
	EPN #18e	Carbon Black Oil	500	21,000	1954
	EPN #18f	Carbon Black Oil	500	21,000	1954

EUG 8 Reactors

EU	Point	Unit No.	Const. Date
RX #11	EPN #3, 25	Unit No. 1 - Reactor #11	1955
RX #12	EPN #3, 25	Unit No. 1 - Reactor #12	1955
RX #21	EPN #7, 25	Unit No. 2 - Reactor #21	1955
RX #31	EPN #11, 13, 26	Unit No. 3 - Reactor #31	1959
RX #32	EPN #11, 13, 26	Unit No. 3 - Reactor #32	1959
RX #41	EPN #22	Unit No. 4 - Reactor #4	1991

EUG 9 Waste Gas Combustors (WGC)

EU	Points	Unit No.	MMBTUH	Const. Date
WGC #11	EPN #25	Unit No. 1	19.3	1954
WGC #12	EPN #25	Unit No. 1	19.3	1954
WGC #22	EPN #25	Unit No. 2	19.3	1954
WGC #31	EPN #13, 26	Unit No. 3	19.3	1959
WGC #32	EPN #13, 26	Unit No. 3	19.3	1959
WGC #4	EPN #22	Unit No. 4	24.75	1991

EUG 10 Carbon Black Tanks

EU	Point	Contents
CB Tanks	TK 11	Carbon Black
	TK 12	Carbon Black
	TK 13	Carbon Black
	TK 14-15	Carbon Black
	TK 16-17	Carbon Black
	TK 21-22	Carbon Black
	TK 23	Carbon Black
	TK 31	Carbon Black
	TK 32	Carbon Black
	TK 33-36	Carbon Black
	TK 41-44, OQ4	Carbon Black
	TK 45-49	Carbon Black
	TK OQ1	Carbon Black
	TK OQ2	Carbon Black
	TK OQ3	Carbon Black
	SB Tanks	Carbon Black

EUG 11 Natural Gas Fired Emergency Generators

Generators	Model	Serial #	HP	Manufactured Date
Unit 1&2	4569080100/4.3 L Chevy	2079790	63	10/26/2004
Unit 3	Generac 4129890100/4.3 L Chevy	2077604	63	6/10/2004
Unit 4	5373280100/7.1 L Ford	2083539	110	7/1/2005
Pond 1	QT05554KW Windsor LVL 351	SNA/Ford 4886956	86	9/1/2007

Stack Parameters

EPN	Height (feet)	Diameter (inches)	Flow (ACFM)	Velocity (FPS)	Temperature (°F)
1	18	12	4,610	97.8	800
2	18	12	4,610	97.8	800
3 (N/C)	61	39	39,284	76.6	420
10	38	12	5,000	106.1	70
6	38	12	5,000	106.1	70
14	21	12	5,000	106.1	70
18	Tanks				
19	22	12	124	2.6	800
21 (N/C)	10	36	0	0	900
22	213	84	369,200	159.9	1,700
24	35	12	5,000	106.1	70
23	30	12	5,000	106.1	70
25	150	138 OD	606,000	109.0	1,700
26	150	114 OD	381,000	104.0	1,700
CBF #7,					
29 (N/C)	20	24	0	0	420
30 (N/C)	4	14	0	0	400
34	30	12	5,000	106.1	70

(N/C) – Normally Closed and routed to Thermal Oxidizer #1/#2 (EPN 25) or Thermal Oxidizer #3 (EPN 26).

SECTION IV. EMISSIONS

Regular Operation Emissions

Emission estimates for the boilers fired with natural gas are based on emission factors for uncontrolled small boilers (<100 MMBTUH) in AP-42 (7/98), Table 1.4-1, and firing rate of 6,276 scf/hr.

The annual emissions from the reactors and associated equipment are based upon the carbon black production design capacity of all four units and seven reactors:

Unit	Carbon Black Production Design Capacity
No.	(million lb/yr)
1	80
2	100
3	80
4	100
Total	360

SO₂ emissions from combustion of the feedstock in the reactors, to produce carbon black, have been estimated using an estimated 30% retention of sulfur in the carbon black (the balance of the sulfur - 70% becomes SO₂), as determined from previous stack tests, reactor yield, capacity, and sulfur content of the feedstock. SO₂ emissions from combustion of the feedstock in the reactors of units 1, 2, and 3, to fire the reactors, have been estimated using AP-42 (1/95), Section 1.3 and a maximum sulfur content of 3.0% by weight.

PM emissions from thermal oxidizers are based on stack tests conducted by METCO Environmental on May 1, 2, and 5, 2007 and a safety factor of 35%. Other PM emissions have been estimated assuming a 99.9% control efficiency for the baghouses.

NO_x emissions from the reactors are based upon stack testing, reactor yield, and waste gas distribution. NO_x emissions from the thermal oxidizers are based on NO_x production in the reactors and combustion of the waste gas generated based on stack testing.

Reactor VOC emissions are based on distribution of the waste gases, stack testing of the waste gases, and are proportional to the capacity of the reactors. Emissions from the waste gas combustors are based on the BTU content of the waste gas and AP-42 (7/98), Chapter 1.4, Tables 1.4-1 and 2. Estimated emissions for the tanks are based on AP-42 (1/95), Chapter 7.1.

Fugitive VOC emissions are assumed to be insignificant because the only organic compound handled besides carbon black is the feedstock oil which has a very low vapor pressure and there are not many components at the facility.

Emissions from the gas-fired emission generators are estimated using emission factors in AP-42 (7/00), Table 3.2-3 and 500 hours per year operation.

TOTAL POTENTIAL CRITERIA POLLUTANT EMISSIONS

EU	<u>NOx</u>		<u>CO</u>		<u>VOC</u>	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Boiler #1	0.63	2.76	0.53	2.32	0.03	0.15
Boiler #2	0.63	2.76	0.53	2.32	0.03	0.15
CBF #1	----	----	----	----	----	----
CBF #2	----	----	----	----	----	----
CBF #3	----	----	----	----	----	----
CBF #4	----	----	----	----	----	----
CBF #5	----	----	----	----	----	----
CBF#6	----	----	----	----	----	----
CBF#7						
TO #1	270.05	1,134.22	474.42	1,994.97	16.43	69.09
TO #2	142.07	596.70	310.94	1,307.22	13.88	58.34
TO #4	177.60	745.92	388.68	1,634.03	17.35	72.92
CB Tanks	----	----	----	----	----	----
FS Tanks	----	----	----	----	6.90	29.12
Pre-heater	0.60	2.52	0.12	0.50	0.03	0.13
Emergency Generators	1.81	0.10	3.06	0.17	0.03	0.002
TOTAL	593.33	2,484.76	1,178.22	4,941.31	54.72	230.06

TOTAL POTENTIAL CRITERIA POLLUTANT EMISSIONS

EU	<u>SO₂</u>		<u>PM</u>		<u>PM₁₀/PM_{2.5}</u>	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Boiler #1	0.01	0.02	0.05	0.21	0.05	0.21
Boiler #2	0.01	0.02	0.05	0.21	0.05	0.21
CBF #1	----	----	1.00	1.75	1.00	1.75
CBF #2	----	----	1.00	1.75	1.00	1.75
CBF #3	----	----	1.00	1.75	1.00	1.75
CBF #4	----	----	1.00	1.75	1.00	1.75
CBF #5	----	----	1.00	4.20	1.00	4.20
CBF#6	----	----	1.00	4.20	1.00	4.20
CBF#7	----	----	1.00	4.20	1.00	4.20
TO #1	2,567.74	8,088.62	45.40	190.68	40.97	172.07
TO #2	1,194.48	3,762.89	44.47	186.77	41.96	176.23
TO #4	1,493.23	4,703.67	54.34	228.23	37.60	157.92
CB Tanks	----	----	6.27	26.49	6.27	26.49
FS Tanks	----	----	0	0	0	0
Pre-heater	0.01	0.01	0.03	0.11	0.03	0.11
Emergency Generators	----	----	----	----	----	----
TOTAL	5,255.48	16,555.2	157.61	652.30	133.93	552.84

POTENTIAL NON-CRITERIA AIR POLLUTANTS

EU	TRS		H ₂ S		CS ₂		COS	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TO 1	20.30	63.96	14.39	45.30	5.41	17.05	0.05	0.16
TO 2	9.93	31.28	6.31	19.86	3.55	11.18	0.07	0.24
TO 4	12.41	39.09	7.88	24.83	4.44	13.97	0.09	0.29
TOTAL	42.19	132.88	28.58	89.99	13.40	42.20	0.21	2.14

Start-up, Shut-down, and Maintenance Emissions

1. Reactor Preheat Emissions

During cold reactor start-up operations, the reactor is initially heated by combustion of natural gas using a rose-bud burner tip to light the reactor’s main natural gas ring burner, then slowly bring up the operating temperature on a DCS controlled schedule to avoid spaulding or steam bursting from entrapped moisture in the brick and refractory. During cold start-up, the reactor ring burner emissions are vented through the main bag filter stack. The applicant estimated 210 start-ups per year. This number is based on a conservative estimation of cold start-ups at the facility following reactor down time from historical records. It was estimated ring burners operate for an average of 16 hours per start-up and consume approximately 0.048 mmscf of natural gas per start-up (50 ft³/min). Emissions are calculated based on the time, natural gas usage, and emission factors from AP-42 (7/98), Section 1.4.

Sources	NO _x	CO	VOC	PM ₁₀	SO ₂
	TPY	TPY	TPY	TPY	TPY
Reactors (7)	0.50	0.42	0.03	0.04	0.003

2. Unit No. 4 Reactors Start-up

Units 1-4 currently have system configurations and equipment design that allows the opening of the associated thermal oxidizer vent and simultaneous closing of the main bag filter vent during start-up without venting any waste gas as oil is introduced to the reactors. Valves are pneumatically manipulated, during start-up, to introduce reactor emissions to the thermal oxidizer, it is possible that a small amount of reactor waste gas is vented through the main bag filter vent to the atmosphere. The waste gas emissions have a reactor yield similar to when the reactor is operating at less than normal reactor levels of feedstock oil. Assuming normal feedstock levels in the reactor allows for conservatively high emission estimations. Actual operational scenarios will likely have very low levels of feedstock oil in the reactor prior to normal operation of the thermal oxidizer. Regular emissions are based on stack test conducted in 1989, and 2004. In 2007, the ODEQ committed to increase of PM emissions based on Yr. 2007 base case and adding 35% for what was to represent the back-half of the EPA Reference Method 5 sampling train. Previous emissions were scaled to accommodate the increased production over the years as well as adjustment for feedstock sulfur content. Start-up emissions are based on number of startups and the duration of each startup discussed above.

Pollutants	Reactor 4 Yield 100	Start-up
	MMlbs/yr Tread	Emissions
	lb/hr	TPY
VOC	868.10	0.22
CO	19,452.75	4.86
H ₂ S	295.58	0.07
CS ₂	166.37	0.04
COS	3.51	0.001
SO ₂	8.98	0.002
NO _x	68.67	0.02

3. Bag Filter Replacement

During bag filter maintenance, bag filters are replaced by compartment. There are 56 bag filter compartments at the site. Each compartment will normally not be replaced more than 2 times per year though due to poor seams stitching, fabric failure, cuff failure, the rate of changes can occur more often. Procedures are in place to minimize fugitive carbon black from escaping to the atmosphere; however, for purposes of permitting, a conservative estimate of 15 lbs of carbon black is estimated to be lost during bag filter replacement at each compartment. PM₁₀ emissions are calculated as 0.84 TPY (PM₁₀(TPY)=56 compartment/replacement x 2 replacements/yr x 15 lb PM₁₀/compartment x ton/2000lb). The facility uses a procedure to minimize fugitive emissions. Filter bags are placed in garbage bags inside the compartment (space permitting) prior to being removed from the compartment. Watering of compartment filters is also used to control dusts if the bags are unable to be bagged internally to lower fugitives as well.

4. Maintenance Painting

Periodically, the facility is painted as a general maintenance practice. Surface coating is performed using rollers, brushes or pads, and compressed air spray equipment. A maximum of 200 gallons per year or 50 gallons per day is utilized. Surface coating for maintenance purposes such as roll/brush/pad coating, painting with aerosol cans, spray airless, and conventional spray painting are considered trivial activities per Appendix J OAC 252: 100.

5. Summary of Startup and Maintenance Emissions

Sources	NO _x	CO	VOC	PM ₁₀	SO ₂
	TPY	TPY	TPY	TPY	TPY
Reactors (7) Preheat Emissions	0.50	0.42	0.03	0.04	0.003
Unit 4 Reactor Startup Emissions	0.02	4.86	0.22	-	0.002
Reactor Refractory Curing	0.25	0.21	0.01	0.02	0.002
Bag Filter Replacement	-	-	-	0.84	-
Total	0.77	5.49	0.26	0.90	0.007

Since the startup emissions are less than regular operation emissions as listed in the latter section, it is not necessary to include them in specific conditions. They are addressed here for reference purposes.

Green House Gas Emissions

Continental Carbon has provided CO₂e emission estimates for this facility. Based on a review of these estimates, it has been determined that this facility is a major stationary source for greenhouse gas emissions.

SECTION V. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application are duplicated below. Appropriate recordkeeping of activities indicated below with "*" is specified in the Specific Conditions.

1. * Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. The facility has four diesel tanks and one gasoline tank that are used to store and dispense fuel to equipment operated solely for facility owned vehicles. Average monthly throughput does not exceed 2,175 gallons/day.
2. * Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The facility currently has two 21,000 gallon tanks used to store oil used to make carbon black and others may be used in the future. These tanks were last used in 1984.
3. Cold degreasing operations utilizing solvents that are denser than air. There are two parts washers located at the facility which use a solvent (Safety Kleen) that is denser than air.
4. * Activities that have the potential to emit no more than 5 TPY (actual) of any criteria pollutant. Each of the carbon black storage tanks emissions (vents are equipped with fabric filters to prevent fugitives, reactor preheat and startup emissions, reactor refractory curing, each of the four emergency generators, and bag filter replacement emissions are less than 5 TPY of respective pollutants. Other activities may be identified in the future.

SECTION VI. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions)

[Applicable]

Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This Subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories have been submitted and fees paid for the past years.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emissions limitations have been incorporated from the previously issued permits and updated to reflect current operations.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for affirmative defense, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
252:100-19-4, Allowable particulate matter emission rates from fuel-burning units. This section specifies a particulate matter (PM) emissions limitation of 0.6 lb/MMBTU from existing fuel-

burning equipment with a rated heat input of 10 MMBTUH or less. AP-42 (7/98), Table 1.4-2, lists the total PM emissions for natural gas to be 7.6 lb/MMft³ or about 0.0076 lb/MMBTU. The permit requires the use of natural gas for the boilers and the sections of the reactors which combust natural gas to heat the feedstock to produce carbon black to ensure compliance with Subchapter 19.

252:100-19-12, Allowable particulate matter emission rates from directly fired fuel-burning units and industrial processes. For process rates up to 60,000 lb/hr (30 TPH), the emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P) and the formula in Appendix G ($E = 4.10 * P^{(0.67)}$). For process rates greater than 60,000 lb/hr (30 TPH), the emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P) and the formula in Appendix G ($E = 55.0 * P^{(0.11)} - 40$).

The emission point from the thermal oxidizer combines emissions from thermal oxidizer, reactor section used to convert the feedstock into carbon black, main bag filters, and waste gas combustor. Therefore, Total allowable PM is the sum of the allowable for each directly fired fuel-burning unit and industrial process.

The following table indicates that permitted emissions are in compliance with allowable emissions.

Point	Controlled Processes	Weight Rate	Allowable PM Emissions	Permitted PM Emissions
		TPH	lb/hr	lb/hr
EPN #25	Reactors 1&2	11.3	20.76	45.4
	MBF #1 & #2	11.3	20.76	
	WGC #11, #12, & #22	11.3	20.76	
	TO #1	11.3	20.76	
	Total		83.04	
EPN #26	Reactor 3	5.0	12.0	44.47
	MBF #3	5.0	12.0	
	WGC #31 & #32	5.0	12.0	
	TO #2	5.0	12.0	
	Total		48	
EPN #22	Reactor 4	6.3	14.0	54.34
	MBF #4	6.3	14.0	
	WGC #4	6.3	14.0	
	TO #3	6.3	14.0	
	Total		56	

OAC 252:100-25 (Visible Emissions and Particulate Matter) [Applicable]
 No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity.

The boilers burn natural gas. When burning natural gas, there is very little possibility of the opacity standards being exceeded.

The use of PM sensors has removed the need to perform daily Method 22's, as previously required and removed from the permit by Consent Order #06-365. If visible emissions are detected, the permit will require opacity readings to be conducted using Method 9. The permit will also include reduced visible emission observation requirements if no visible emissions are detected or if visible emissions observations using Method 9 are below the 20 % opacity limitation.

OAC 252:100-29 (Fugitive Dust)

[Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards.

Continental Carbon is currently required to do the following so as to minimize fugitive emissions of carbon black: 1) maintain and repair Unit No. 4 bagfilter system to prevent excessive temperatures (this is no longer a concern due to plant operation changes on controls), 2) conduct product loading operations in such a manner to minimize any fugitive emissions of carbon black, 3) promptly clean any and all areas within the facility where carbon black has been spilled, blown, deposited, or accumulated, 4) place bagfilters into sealed containers, when possible, prior to removal or replacement of bagfilters from their compartments, and 5) conduct a routine inspection program wherein all high speed processing equipment within the facility is inspected and lubricated. Further, Continental Carbon has installed a pulse jet bagfilter system within the shipping department loading area at the facility to further control the release of fugitive carbon black emissions.

OAC 252:100-31 (Sulfur Compounds)

[Applicable]

Part 2 (b) specifies that emissions of hydrogen sulfide from any new or existing source shall not result in a 24-hour average ambient air concentration of H₂S at any given point of 0.2 ppm or greater. Screen3 modeling resulted in a concentration of 0.0001 ppm H₂S.

Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input. The section of the reactor in Unit 4 which combusts natural gas to heat the feedstock to produce carbon black is subject to this standard. The AP-42 (7/98), Chapter 1.4, Table 1.4-2 emission factor of 0.6 pound of SO₂ per million cubic feet equates to approximately 0.0006 lb/MMBTU which is in compliance with this subchapter. The permit requires the fuel-burning section of the reactor of Unit 4 to be fired with commercial grade natural gas.

OAC 252:100-37 (Volatile Organic Compounds)

[Part 7 is Applicable]

Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. All of the tanks store liquids with vapor pressures less than 1.5 psia except for the gasoline tank which has a capacity of 300 gallons.

Part 3 requires VOC loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling of tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. This facility does not have the physical equipment (loading arm and pump) to conduct this type of loading and is not subject to this requirement.

Part 5 limits the VOC content of coatings. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment which is exempt.

Part 7 requires fuel-burning equipment to be operated and maintained so as to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained unless a modification is approved by the Director. Since no AOC has been designated anywhere in the state, there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-7	Permits for Minor Facilities	not in source category
OAC 252:100-11	Alternative Emissions Reduction	not requested
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain Elevators	not in source category
OAC 252:100-33	Nitrogen Dioxides	not in source category
OAC 252:100-35	Carbon Monoxide	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category

SECTION VII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable]
 Total potential emissions for NO_x, CO, PM and SO₂ are greater than the threshold level of 100 TPY for carbon black manufacturing. Any future emission increases must be evaluated for PSD if they exceed a significance level (40 TPY NO_x, 100 TPY CO, and 40 TPY VOC).

NSPS, 40 CFR Part 60 [Not Applicable]
Subpart A, General Control Device Standards. The standards contained within Section 60.18 for control devices are not applicable to the thermal oxidizers since they receive no emissions from any equipment subject to NSPS.

Subparts D, Da, Electric Utility Steam Generating Units. The boilers at this facility are not affected units because they are not electric utility steam generating units as defined by Subparts D and Da.

Subparts Db, Dc, Industrial-Commercial-Institutional Steam Generating Units. The boilers at this facility are not affected units because they have heat capacities less than 10 MMBTUH, applicability thresholds of these Subparts.

Subparts E, Ea, and O, Incinerators, Municipal Waste Combustors, and Sewage Treatment Plants. This facility does not combust solid waste, tires, fuel derived from tires, or sewage sludge.

Subparts K, Ka, Kb, VOL Storage Vessels. The carbon black oil tanks at this site are not subject because they were constructed prior to the effective date of Subpart K (June 11, 1973).

Subpart BBB, Rubber Tire Manufacturing Industry. This facility manufactures carbon black and is not a tire manufacturer.

Subpart IIII (Stationary Compression Ignition Internal Combustion Engines) affects stationary compression ignition (CI) internal combustion engines (ICE) based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. No applicable equipment were identified at the site.

Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI-ICE). This subpart was published in the Federal Register on January 18, 2008. It promulgates emission standards for new SI engines ordered after June 12, 2006, that are manufactured after certain dates, and for SI engines modified or reconstructed after June 12, 2006. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based

on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and manufacture date. Engine manufacturers are required to certify certain engines to meet the emission standards and may voluntarily certify other engines. An initial notification is required only for owners and operators of engines greater than 500 HP that are non-certified. Emergency engines will be required to be equipped with a non-resettable hour meter and are limited to 100 hours per year of operation excluding use in an emergency (the length of operation and the reason the engine was in operation must be recorded).

There are four emergency generators at the facility and the following table lists their horse powers and manufactured dates.

Generators	Model	Serial #	HP	Manufactured Date
Unit 1&2	4569080100/4.3 L Chevy	2079790	63	10/26/2004
Unit 3	Generac 4129890100/4.3 L Chevy	2077604	63	6/10/2004
Unit 4	5373280100/7.1 L Ford	2083539	110	7/1/2005
Pond 1	QT05554KW SNA/Ford Windsor LVL 351	4886956	86	9/1/2007

Since each generator has a maximum engine power less than 500-hp and was manufactured before July 1, 2008, they are not subject to this subpart.

NESHAP, 40 CFR Part 61 [Not Applicable]
 There are no emissions of any of the regulated pollutants: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides or vinyl chloride.
Subparts J, BB, Equipment Leaks of Benzene and Benzene Transfer operations. No benzene has been detected in any stream at the facility.

NESHAP, 40 CFR Part 63 [Subparts YY & ZZZZ Applicable]
Subpart YY, National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards. Pursuant to §63.1103(f), Part 63, Subpart YY is applicable to each new and existing carbon black production process unit located at a major source, as defined in section 112(a) of the ACT.

Carbon black production unit means the equipment assembled and connected by hard-piping or duct work to process raw materials to manufacture, store, and transport a carbon black product. For the purpose of this subpart, a carbon black production process unit includes reactors and associated operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. It also includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems.

Table 8 to §63.1103(f) specifies the carbon black production control standards applicability for existing and new sources. The control standards are only applicable to a carbon black production main unit filter process vent. Main unit filter is defined in §63.1103(f)(2) as the filter that separates the carbon black from the tail gas. Process vent is defined in §63.1101 as the point of discharge to the atmosphere (or the point of entry into a control device, if any) of a gas stream

from a unit operation within a source category subject to this subpart. The definition of process vent further excludes gas streams transferred for fuel value (i.e., net positive heating value), use, reuse, or sale for fuel value, use, or reuse.

The gas stream sent to the waste gas combustor qualifies for the exemption for gas streams transferred for fuel value and is not subject to the control requirements of Table 8 to §63.1103(f). The entry point to the thermal oxidizers meets the definition of a "process vent" and must meet the requirements in Table 8 of §63.1103(f)(3): reduce emissions of total HAP by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to any combination of control devices meeting the requirements of §63.982(a)(2).

Performance testing of the facility's thermal oxidizers was conducted in 2004 as required by Permit No. 98-176-TV (PSD) (M-2). Such testing included the determination of H₂S, COS, and CS₂ pursuant to Method 15 of 40 CFR Part 60, Appendix A, as well as a determination of non-methane, non-ethane total gaseous organic concentrations using a flame ionization analyzer pursuant to Method 25A of 40 CFR Part 60, Appendix A. A copy of the stack test results (as well as the test methods employed) was previously submitted to DEQ by letter dated September 17, 2004. The results indicated emissions H₂S, COS, CS₂, and non-methane hydrocarbon from each thermal oxidizer were below 20 ppmv even if it is assumed that all NMHC are HAP. No process changes have been made since the testing that would impact the resulting emissions. The testing was conducted at maximum operating conditions, which in all instances represented operating conditions exceeding those associated with normal source operation.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. Of the four emergency generators, Unit Pond 1 is a new unit (constructed after 6/12/2006), and the only requirement is to comply with NSPS Subpart JJJ requirements. However, the unit was manufactured before July 1, 2008 and is not subject to NSPS Subpart JJJ, thus there is no applicable requirements for this unit.

Units 1-4 fall under existing units (constructed before 6/12/2006) located at an area HAP source category and shall comply with applicable emission limitations and operating limitations no later than October 19, 2013. Initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart shall be conducted within 180 days after the compliance date. Specific requirements in §63.6603 are listed in the following table.

Engine Category	Requirements From Table 2d to Subpart ZZZZ of Part 63
Emergency stationary CI RICE and black start stationary CI RICE.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.	a. Change oil and filter every 500 hours of operation or annually, whichever comes first; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Subpart DDDDD, Industrial, Commercial and Institutional Boilers and Process Heaters. On January 31, 2013, the EPA took final action on its reconsideration of certain issues in the emission standards for the control of HAP from industrial, commercial, and institutional boilers and process heaters at major sources of HAP. The compliance dates for the rule are January 31, 2016, for existing sources and, January 31, 2013, or upon startup, whichever is later, for new sources.

A boiler or process heater is new or reconstructed if construction or reconstruction of the boiler or process heater commenced on or after June 4, 2010.

Unit(s) designed to burn gas 1 subcategory includes any boiler or process heater that burns only natural gas, refinery gas, and/or other gas 1 fuels.

Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour must complete a tune-up every 2 years as specified in §63.7540. Units in the gas 1 subcategories will conduct these tune-ups as a work practice for all regulated emissions under Subpart DDDDD. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 of Subpart DDDDD, or the operating limits in Table 4 of Subpart DDDDD.

Existing boilers and process heaters located at a major source facility, not including limited use units must have a one-time energy assessment performed by a qualified energy assessor.

Boilers #1 and #2 at this facility are subject to this subpart as the units are designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour and shall comply with all applicable requirements.

CAM, 40 CFR Part 64

[Applicable]

Compliance Assurance Monitoring (CAM), as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source that is required to obtain a Title V permit, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant
- It uses a control device to achieve compliance with the applicable emission limit or standard
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY

The thermal oxidizers at the facility are used to control emissions of CO, PM, VOCs, and other toxic sulfur compounds. The CAM plan for the thermal oxidizers requires continuous monitoring and recording of the temperature of the combustion chamber of the thermal oxidizers, during operation of the furnaces, with a tungsten matrix. The temperature of the combustion chamber, measured at the outlet of the combustion chamber, of the thermal oxidizer is to be maintained between 1,700 °F and 2,100 °F with a minimum accuracy of $\pm 3\%$ and safety required minimum internal heat value of 1,500 °F derived by burning of natural gas for actual introduction of the byproduct gases in order to sustain combustion. The permit requires these conditions to be met, annual calibration of the thermocouple, and a daily visible emission observation of the stack. The permit will also require a quality improvement plan (QIP) to be developed and implemented if there are six excursions, within six months, from the established temperature range or visible emission limitation for any of the thermal oxidizers.

The waste gas combustors (driers) are also used to control emissions from the carbon black furnaces. However, emissions from the driers are exhausted through the thermal oxidizers and PM emissions from the individual driers are below 100 TPY. Therefore, no CAM requirements are applicable to these emission units but the permit will require that the driers temperature be monitored and recorded and that they are also maintained between 1,700 °F and 2,100 °F and safety required minimum internal heat value of 1500 °F derived by burning of natural gas for actual introduction of the byproduct gases in order to sustain combustion.

The baghouses at the facility used to capture the products are used to control PM emissions (except for the Shipping Department CUBFs and any portable vacuum systems for cleaning of the facility). However, emissions from the baghouses are exhausted through the thermal oxidizers and PM emissions from the individual baghouses are below 100 TPY. Therefore, no CAM requirements are applicable to these control devices at this time.

Chemical Accident Prevention Provisions, 40 CFR Part 68

[Not Applicable]

This source does not store more than the applicable threshold of any of the regulated substances. Therefore, this facility is not subject to this standard. More information on this federal program is available at the web site: <http://www.epa.gov/ceppo/>.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030. This facility does not utilize any Class I & II substances.

SECTION VIII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a Tier I based on the request for a minor modification to a Part 70 operating permit.

The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the real property.

The proposed permit was sent to EPA for a 45-day review. No comments were received from the EPA

Inspection

On March 11, 2014, Alex McCumber and Preston Loving of Air Quality performed a compliance inspection and Janet Handwerk, Corporate Environmental Health and Safety Specialist, along with Todd Miller, Director – Safety, Health, and Environmental Affairs, joined the inspection via speaker phone, representing Continental Carbon. The inspection indicated some recordkeeping and reporting violations, but there are no active enforcement cases currently established for the facility

Fees Paid

Minor modification permit fee of \$3,000.

SECTION IX. SUMMARY

The facility was constructed and operated as described in the permit application. Ambient air quality standards are not threatened at this site. There is no active Air Quality compliance or enforcement issues concerning this facility. Issuance of the operating permit is recommended.

**PERMIT TO OPERATE
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**Continental Carbon Corporation
Carbon Black Production Facility**

Permit Number 2004-302-TVR (M-2)

The permittee is authorized to operate in conformity with the specifications submitted to Air Quality on December 9, 2015. The Evaluation Memorandum dated March 29, 2016, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. Points of emissions and limitations for each point: [OAC 252:100-8-6(a)(1)]

EUG 1: Emission units (EU) Boiler #1 and Boiler #2.

The boilers shall only be fueled with commercial grade natural gas.

EU	Point	Manufacturer	MMBTUH	Serial #	Const. Date
Boiler #1	EPN #1	Superior	6.28	18066	2015
Boiler #2	EPN #2	Superior	6.28	17817	2015

EU	NO _x		CO		VOC		PM ₁₀ /PM _{2.5}	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Boiler #1	0.63	2.76	0.53	2.32	0.03	0.13	0.05	0.22
Boiler #2	0.63	2.76	0.53	2.32	0.03	0.13	0.05	0.22

EUG 2: Main Bag Filters (MBF), **EUG 3:** Exhaust Bag Filters (EBF), **EUG 6:** Dryers, **EUG 8:** Reactors, and **EUG 9:** Waste Gas Combustors (WGC) as identified below are all exhausted through **EUG 5:** Thermal Oxidizers. Estimated emissions from the thermal oxidizers are listed below.

Summary of Emission Sources

EUG 2 Main Bag Filters (MBF)

EU	Point	Name
MBF #1	EPN #3 (N/C)	Unit No. 1
MBF #2	EPN #7 (N/C)	Unit No. 2
MBF #3	EPN #11 (N/C)	Unit No. 3
MBF #4	EPN #20 (N/C)	Unit No. 4

N/C – Normally Closed

EUG 5 Thermal Oxidizers (TO)

EU	Point	Name	MMBTUH	Const. Date
TO #1	EPN #25	Thermal Oxidizer No. 1	147	1997
TO #2	EPN #26	Thermal Oxidizer No. 2	87	1997
TO #4	EPN #22	Unit No. 4 Thermal Oxidizer	93	1990

EUG 8 Reactors

EU	Point	Unit No.	Const. Date
RX #11	EPN #3, 25	Unit No. 1 - Reactor #11	1955
RX #12	EPN #3, 25	Unit No. 1 - Reactor #12	1955
RX #21	EPN #7, 25	Unit No. 2 - Reactor #21	1955
RX #31	EPN #11, 26	Unit No. 3 - Reactor #31	1959
RX #32	EPN #11, 26	Unit No. 3 - Reactor #32	1959
RX #4	EPN #22	Unit No. 4 - Reactor #4	1991

EUG 9 Waste Gas Combustors (WGC)

EU	Points	Unit No.	MMBTUH	Const. Date
WGC #11	EPN # 25	Unit No. 1	19.3	1954
WGC #12	EPN #25	Unit No. 1	19.3	1954
WGC #22	EPN # 25	Unit No. 2	19.3	1954
WGC #31	EPN #12, 13, 26	Unit No. 3	19.3	1959
WGC #32	EPN #12, 13, 26	Unit No. 3	19.3	1959
WGC #41	EPN #22	Unit No. 4	24.75	1991

Emission Limitations

Emission Unit	Permitted Emissions						
		NO _x	CO	VOC	PM	PM ₁₀ /PM _{2.5}	SO ₂
TO #1 (Unit #1 & Unit #2)	lb/hr	270	475	17	45.40	40.97	2,568
	TPY	1,135	1,995	69	190.68	172.07	8,089
TO #2 (Unit #3)	lb/hr	142	311	14	44.47	41.96	1,195
	TPY	597	1,308	58	186.77	176.23	3,763
TO #4 (Unit #4)	lb/hr	178	389	18	54.34	37.60	1,494
	TPY	746	1,634	73	228.23	157.92	4,704

Emission Unit	Permitted Emissions				
		TRS	H ₂ S	CS ₂	COS
TO #1	lb/hr	20.30	14.39	5.41	0.05
Unit #1 & Unit #2	TPY	63.96	45.30	17.05	0.16
TO #2	lb/hr	9.93	6.31	3.55	0.07
Unit #3	TPY	31.28	19.86	11.18	0.24
TO #4	lb/hr	12.41	7.88	4.44	0.09
	TPY	39.09	24.83	13.97	0.29

EUG 4: Cleanup Bag Filters (CUBF) Emission limitations for EUs CBF #1, CBF #2, CBF #3, CBF #4, CBF #5.

EU	Point	Name
CBF #1	EPN #10	Unit No. 1
CBF #2	EPN #6	Unit No. 2
CBF #3	EPN #14	Unit No. 3
CBF #4	EPN #24	Unit No. 4
CBF #5	EPN #23	Shipping Dock
CBF #6	EPN #34	Shipping Dock
CBF #7	EPN #35	Shipping Dept. #2

Emission Unit	Permitted Emissions	
	Units	PM/PM ₁₀ /PM _{2.5}
CBF #1	lb/hr	1.00
	TPY	1.75
CBF #2	lb/hr	1.00
	TPY	1.75
CBF #3	lb/hr	1.00
	TPY	1.75
CBF #4	lb/hr	1.00
	TPY	1.75
CBF #5	lb/hr	1.00
	TPY	4.20
CBF #6	lb/hr	1.00
	TPY	4.20
CBF #7	lb/hr	1.00
	TPY	4.20

EUG 7: Feedstock Oil Tanks are grandfathered. There is no lb/hr or TPY emission limits applied to these units under Title V but they are limited to the existing equipment as they are.

EU	Point	Contents	Barrels	Gallons
FS Tanks	EPN #18a	Carbon Black Oil	5,000	210,000
	EPN #18b	Carbon Black Oil	5,000	210,000
	EPN #18c	Carbon Black Oil	5,000	210,000
	EPN #18d	Carbon Black Oil	65,000	2,730,000
	EPN #18e	Carbon Black Oil	500	21,000
	EPN #18f	Carbon Black Oil	500	21,000

EUG 10: Carbon Black Tanks emissions are considered insignificant based on existing equipment items and do not have a specific limitation.

EU	Point	Contents
CB Tanks	TK 11	Carbon Black
	TK 12	Carbon Black
	TK 13	Carbon Black
	TK 14-15	Carbon Black
	TK 16-17	Carbon Black
	TK 21-22	Carbon Black
	TK 23	Carbon Black
	TK 31	Carbon Black
	TK 32	Carbon Black
	TK 33-36	Carbon Black
	TK 41-44, OQ4	Carbon Black
	TK 45-49	Carbon Black
	TK OQ1	Carbon Black
	TK OQ2	Carbon Black
	TK OQ3	Carbon Black
	SB Tanks	Carbon Black

2. The facility shall be authorized to operate this facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)(1)]

3. Each boiler in EUG 1 shall have a permanent identification plate attached which shows the make, model number, and serial number. [OAC 252:100-45]

4. The sulfur content of carbon black feedstock oils processed at the facility shall not exceed 3.0% by weight on an annual average basis. No carbon black feedstock oil shall be processed which exceeds 4.0% sulfur content by weight. [OAC 252:100-8-6(a)(1)]

5. At least once during every operating day, the permittee shall take a sample of the sulfur content of feedstock oils being processed and the resulting carbon black product to determine a weekly average sulfur content. The composite results from these measurements shall be used in conjunction with reactor feed rates to calculate an average hourly sulfur dioxide emissions rate.

[OAC 252:100-8-6(a)(1)]

6. The carbon black reactors associated with Units No. 1, 2, and 3 shall be fired with pipeline grade natural gas or feedstock oil meeting the conditions of Specific Condition 4. The section of the carbon black reactor, associated with Unit No. 4, which is used to provide heat to the reactor to convert the feedstock into carbon black, shall be fired with pipeline-grade natural gas. All supplemental fuel supplied to the waste gas combustors and thermal oxidizers shall also be pipeline-grade natural gas.

[OAC 252:100-31]

7. The bypass stacks on the MBF's and the Drying Drums shall be utilized only during start-up, shut-down, and malfunction of the facility.

[OAC 252:100-8-6(a)(1)]

8. All off-gases from the carbon black reactors at the facility shall be oxidized in either the thermal oxidizers and/or the waste gas combustors. The waste gas combustors may be taken off-line during normal operation, however, waste gas shall be routed to the thermal oxidizers during these times.

[OAC 252:100-8-6(a)(1)]

9. Except for periods of start-up, shut-down, or malfunction of air pollution control equipment, the permittee shall operate and maintain the thermal oxidizers and waste gas combustors as follows:

[OAC 252:100-8-6(a)(3)(A)]

- a. Operate at a temperature of 1,500 °F or greater when waste gas is being injected into the equipment as detailed by the control circuitry.
- b. The temperature shall be monitored and recorded continuously using a thermocouple (at least four times an hour and averaged over the hour with a minimum data availability of 90 percent).
- c. The residence time of the stack gases shall be at least 1 (one) second.
- d. Proper operation of the thermocouple shall be verified annually by an instrument which is calibrated annually.
- e. The thermal oxidizers shall be operated in conjunction with the reactors while the reactors are producing carbon black. This requires oil to be injected into the reactors.
- f. The thermal oxidizers shall only be fueled with pipeline quality natural gas.

10. All air discharges from the dryer, bagging operation, screening operation, and associated conveying equipment shall be processed by a baghouse or an equivalent PM emissions control device with a design efficiency of 98% or more. The permittee shall maintain accessible monitoring equipment to verify the pressure drop across the baghouse.

[OAC 252:100-8-6(a)(3)(A&B)]

11. The permittee shall maintain and operate the particulate monitoring/sensing devices installed on the exhaust stream associated with each of the facility’s main bag filter identified below:

EUG 2 Main Bag Filters (MBF)

EU	Point	Name
MBF #1	EPN #3 (N/C)	Unit No. 1
MBF #2	EPN #7 (N/C)	Unit No. 2
MBF #3	EPN #11 (N/C)	Unit No. 3
MBF #4	EPN #20 (N/C)	Unit No. 4

N/C – Normally Closed

- a. The permittee shall operate the particulate monitoring/sensing devices continuously except during periods of device maintenance, calibration, testing, malfunction and/or failure. Individual monitoring/sensing devices shall not be required to be operate during periods when production within the identified unit is ceased (i.e., oil is not injected into the unit reactor). The continuous particulate monitoring/sensing devices shall be operated in the normal operating range recommended by the manufacturer.
- b. If a continuous particulate monitoring/sensing device signals that there has been an exceedance of a particulate level, immediate action shall be taken to determine and isolate the source until repairs can be made.
- c. The permittee shall keep particulate monitoring/sensing device replacements on hand for any equipment failures.
- d. The permittee shall keep and maintain the Baghouse Recordkeeping Plan for each of the MBFs as set forth in Exhibit 3 of Consent Order 06-365 issued on November 29, 2006.
 - (1). Identity of the baghouse (by production unit and type),
 - (2). Type of bagfilters utilized and manufacturer specifications for each type of bagfilter,
 - (3). Date(s) on which maintenance is performed, type of maintenance, and reason for performing the maintenance, and
 - (4). General means of disposing of used bagfilters.
 Such records shall be recorded in electronic format and/or in hard copy and shall be maintained at the facility for a minimum of two years following the date of recording and shall be provided to regulatory personnel upon request.

12. The permittee shall take all reasonable precautions to minimize emissions of fugitive dust and prevent visible fugitive dust emissions from crossing the boundary of the property on which those emissions originated. These actions shall include, but not be limited to: [OAC 252:100-29]

- a. Maintain and repair Unit No. 4 Bagfilter System so as to prevent excessive temperatures.
- b. Conduct product loading operations in such a manner so as to minimize, to the extent possible, any fugitive emissions of carbon black.
- c. Promptly clean any and all areas within the facility where carbon black has been spilled, blown, deposited, or accumulated so as to prevent the same from becoming wind-borne and/or air-borne.

- d. Conduct removal and replacement of bagfilters in such a manner that the replaced bagfilters, when sufficient space is available within the baghouse compartment, are placed into sealed containers (or wetted down when insufficient space is not available internally of the compartment) prior to removal of the bagfilter from said compartment.
- e. Institute a routine inspection program whereby all high speed processing equipment, including all large blowers, within the facility are inspected and lubricated according to a schedule of inspection.
- f. Implement the Inspection/Fugitive Dust Plan as set forth in Exhibit 2 of Consent Order 06-365 issued on November 29, 2006.

13. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) Subpart YY including but not limited to: [40 CFR 63.1100 through 63.1114]

- a. §63.1100 Applicability.
- b. §63.1101 Definitions.
- c. §63.1102 Compliance schedule.
- d. §63.1103 Source category-specific applicability, definitions, and requirements.
- e. §63.1104 Process vents from continuous unit operations: applicability assessment procedures and methods.
- f. §63.1107 Equipment leaks: applicability assessment procedures and methods.
- g. §63.1108 Compliance with standards and operation and maintenance requirements.
- h. §63.1109 Recordkeeping requirements.
- i. §63.1110 Reporting requirements.
- j. §63.1111 Startup, shutdown, and malfunction.
- k. §63.1112 Extension of compliance, and performance test, monitoring, recordkeeping and reporting waivers and alternatives.
- l. §63.1113 Procedures for approval of alternative means of emission limitation.
- m. §63.1114 Implementation and enforcement.

14. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) for Stationary Reciprocating Internal Combustion Engines (RICE), Subpart ZZZZ, for each affected engine, including but not limited to: [40 CFR 63.6580 through 63.6675]

What This Subpart Covers

- a. § 63.6580 What is the purpose of subpart ZZZZ?
- b. § 63.6585 Am I subject to this subpart?
- c. § 63.6590 What parts of my plant does this subpart cover?
- d. § 63.6595 When do I have to comply with this subpart?

Emission and Operating Limitations

- e. § 63.6603 What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

General Compliance Requirements

- f. § 63.6605 What are my general requirements for complying with this subpart?

Testing and Initial Compliance Requirements

- g. § 63.6625 What are my monitoring, installation, operation, and maintenance requirements?
- h. § 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?

Continuous Compliance Requirements

- i. § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

Notifications, Reports, and Records

- j. § 63.6650 What reports must I submit and when?
- k. § 63.6655 What records must I keep?
- l. § 63.6660 In what form and how long must I keep my records?

Other Requirements and Information

- m. § 63.6665 What parts of the General Provisions apply to me?
- n. § 63.6670 Who implements and enforces this subpart?
- o. § 63.6675 What definitions apply to this subpart?

15. The permittee shall comply with all applicable requirements of the NESHAP (40 CFR Part 63) for Industrial, Commercial and Institutional Boilers and Process Heaters, Subpart DDDDD, for each affected boiler, including but not limited to: [40 CFR 63.7480 through 63.7575]

- a. §63.7480 What is the purpose of this subpart?
- b. §63.7485 Am I subject to this subpart?
- c. §63.7490 What is the affected source of this subpart?
- d. §63.7491 Are any boilers or process heaters not subject to this subpart?
- e. §63.7495 When do I have to comply with this subpart?
- f. §63.7499 What are the subcategories of boilers and process heaters?
- g. §63.7500 What emission limitations, work practice standards, and operating limits must I meet?
- h. §63.7501 Affirmative Defense for Violation of Emission Standards During Malfunction.
- i. §63.7505 What are my general requirements for complying with this subpart?
- j. §63.7510 What are my initial compliance requirements and by what date must I conduct them?
- k. §63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?
- l. §63.7520 What stack tests and procedures must I use?
- m. §63.7521 What fuel analyses, fuel specification, and procedures must I use?
- n. §63.7522 Can I use emissions averaging to comply with this subpart?
- o. §63.7525 What are my monitoring, installation, operation, and maintenance requirements?
- p. §63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?
- q. §63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?
- r. §63.7535 Is there a minimum amount of monitoring data I must obtain?
- s. §63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?

- t. §63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?
- u. §63.7545 What notifications must I submit and when?
- v. §63.7550 What reports must I submit and when?
- w. §63.7555 What records must I keep?
- x. §63.7560 In what form and how long must I keep my records?
- y. §63.7565 What parts of the General Provisions apply to me?
- z. §63.7570 Who implements and enforces this subpart?
- aa. §63.7575 What definitions apply to this subpart?

16. The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. [OAC 252:100-8-6 (a)(3)(B)]

- a. Continuously-recorded temperature in the thermal oxidizers and waste gas combustors as required by Specific Condition 9(b).
- b. Records of annual calibrations of the thermocouple verification device and annual verification of the thermocouple as required by Specific Condition 9(d).
- c. Operation and maintenance of the thermal oxidizers.
- d. All occasions when operating temperatures of the thermal oxidizers and waste gas combustors fall outside the established temperature range.
- e. Weekly records of average sulfur content by weight of oils processed.
- f. Weekly records of oil feed to all units, fuel sulfur content of all feedstock, sulfur content of the products, and daily carbon black production in each unit. These records shall be used to calculate an average hourly SO₂ emission rate for each operating week.
- g. Total natural gas usage for each boiler (natural gas consumed is metered and stored on Data Historian, hours are monitored and third-party services the boilers).
- h. Total amount of Carbon Black Oil used (monthly and 12 month rolling total).
- i. Operation, maintenance, and inspection logs for the grandfathered emission units in EUG1.
- j. Records required by NESHAP Subparts YY, ZZZZ, and DDDDD.
- k. Records required by Specific Condition No. 11.

17. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations which qualify as Trivial Activities.

[OAC 252:100-8-6 (a)(3)(B)]

- a. For fuel storage/dispensing equipment operated solely for facility owned vehicles: Records of the type and amount of fuel dispensed (annual) via purchasing records as dispensing stations do not have flow meters.
- b. For fluid storage tanks with a capacity of less than 39,894 gallons and a true vapor pressure less than 1.5 psia: Records of the capacity of the tanks and the contents.
- c. For activities (except for trivial activities) that have the potential to emit less than 5 TPY (actual) of any criteria pollutant: The type of activity and the amount of emissions or a surrogate measure of the activity (annual).

18. Notwithstanding the issuance date of the original Title V permit (April 21, 2000), there is hereby established an alternative date of July 31st for Annual Compliance Certification and Semi-annual Reporting submittal purposes. Pursuant to such alternative date, the permittee shall submit to the Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit no later than 30 days after July 31st of each year, except for 2013. For the year of 2013, the permittee shall submit to the Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit no later than 30 days after both April 21st and July 31st to ensure no annual compliance certification is submitted longer than a year.

[OAC 252:100-8-6 (c)(5)(A) & (D)]

19. No later than 30 days after each six (6) month period, after the alternative date of July 31st, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. As in Specific Condition No. 16, permittee shall assure that no semi-annual report is filed longer than 6 months.

[OAC 252:100-8-6 (a)(3)(C)(i) and (ii)]

20. Since Emission points TO #1, TO #2, and TO #3 each has emissions greater than 500 TPY, the permittee shall conduct performance testing on these stacks once a year and submit a written report of the results to the AQD.

A. Performance testing by the permittee shall use the following test methods specified in 40 CFR Part 60.

- Method 1: Sample and Velocity Traverses for Stationary Sources.
- Method 2: Determination of Stack Gas Velocity and Volumetric Flow Rate.
- Method 3: Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight.
- Method 4: Determination of Moisture in Stack Gases.
- Method 5: Determination of PM Emissions from Stationary Sources.
- Method 6C: Determination of SO₂ Emissions from Stationary Sources.
- Method 7E: Determination of NO_x Emissions from Stationary Sources.
- Method 10: Determination of CO Emissions from Stationary Sources.
- Method 25A: Determination of VOC Emissions from Stationary Sources.
- Method 202: Determination of Condensable Particulate Matter.

B. A copy of the test plan shall be provided to AQD at least 30 days prior to each test date.

C. Performance testing shall be conducted while each reactor is operating within 10% of the rate at which operating permit authorization will be sought.

21. The thermal oxidizers (TOx) are subject to Compliance Assurance Monitoring (CAM) and shall comply with all applicable requirements and shall perform monitoring as approved below.

	Indicator No. 1
I. Indicator	Operating temperature of the combustion chamber.
Measurement Approach	Combustion chamber temperature is measured continuously with at minimum a Type K thermocouple.
II. Indicator Range	The indicator range for the combustion chamber temperature is between 1,700 °F and 2,100 °F with a minimum accuracy of ± 3%.
III. Performance Criteria	
A. Data Representativeness	The TOx shall consist of at minimum a Type K thermocouple which shall be maintained in accordance with the manufacturer's specifications.
B. Verification of Operational Status	TOx in operation-verified by daily checks. Alarms are also in place to indicate any malfunction in proper operation of the unit.
C. QA/QC Practices and Criteria	Checks and maintenance on the TOx will be conducted in accordance with the manufacturer's recommendations. A quality improvement plan (QIP) shall be developed and implemented for each thermal oxidizer if there are six excursions, within a six month period, from the established temperature range in Specific Condition 9 or from the established opacity limitation of 20 percent. Excursions do not include periods of startup or shutdown. The QIP shall comply with the requirements of § 64.8(b) through (e).
D. Monitoring Frequency	Temperature is measured continuously.
Data Collection Procedures	Temperature data are recorded continuously on Data Historian. Excursions trigger alarms up to and including shutdown of all operations. Corrective action, logging and reporting in semiannual report will be triggered if controlled shutdowns fail in the event of an excursion or during a Force Majeure event.
Averaging Period	None, not to exceed min. and max.

22. This permit supersedes Permit No. 2004-302-TVR (M-1), which is now cancelled.



PART 70 PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2004-302-TVR (M-2)

Continental Carbon Company,

having complied with the requirements of the law, is hereby granted permission to operate the Carbon Black Production Facility at Ponca City, Section 10, T25N, R2E, Kay County, Oklahoma, subject to standard conditions dated July 21, 2009 and specific conditions, both attached.

This permit shall expire five (5) years from the 12/13/2012, the issuance date of Permit No. 2004-302-TVR, except as authorized under Section VIII of the Standard Conditions.

Phillip Fielder, P.E.

Date

Permits and Engineering Group Manager

Mr. Todd Miller, Corporate Director – Environmental, Health, and Safety
Continental Carbon Company
16850 Park Row
Houston, TX 77084

SUBJECT: Title V Operating Permit No: **2004-302-TV (M-2)**
Carbon Black Production Facility, Ponca City, Kay County
Facility ID: 333

Dear Mr. Miller:

Enclosed is the permit authorizing operation of the referenced facility. Please note that this permit is issued subject to the certain standards and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at (405) 702-4205.

Sincerely,

Jian Yue, P.E., New Source Permits Section
AIR QUALITY DIVISION

Enclosures



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor



ATTACHMENT 2

Complaint #151133

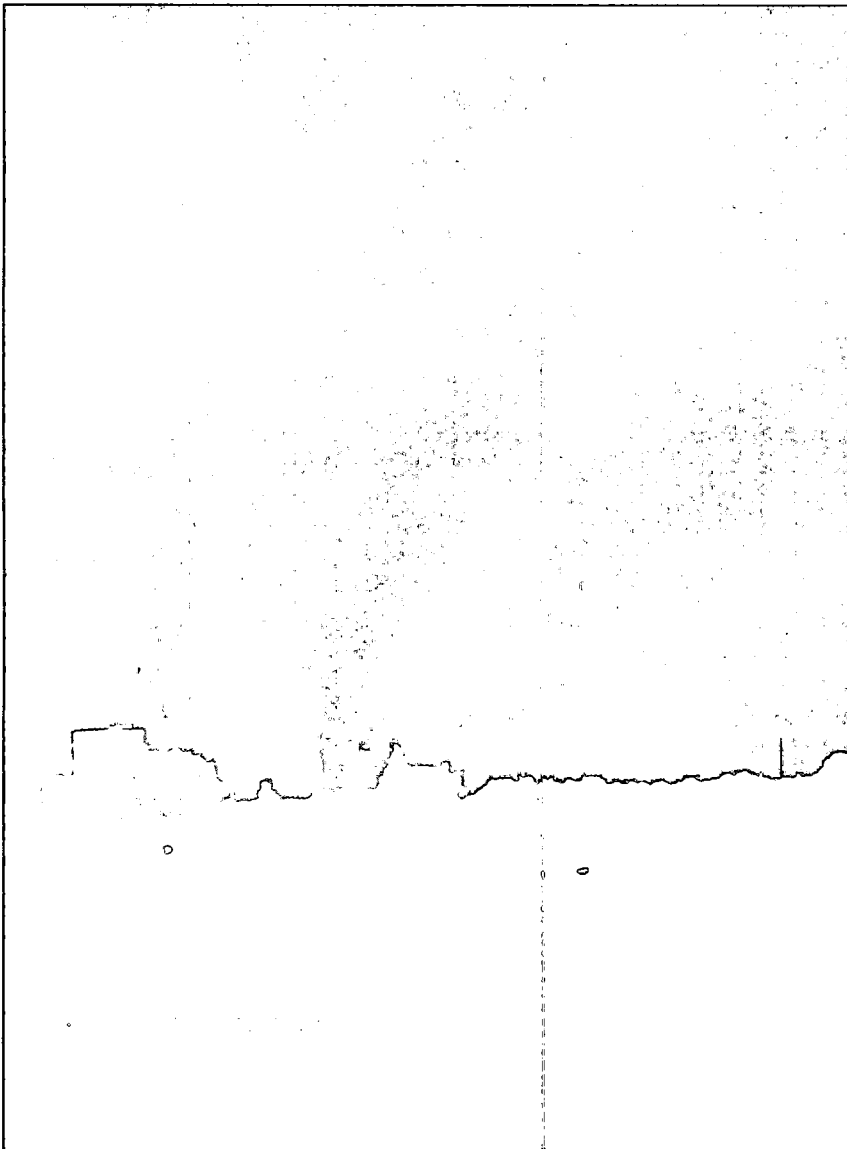
RP: Continental Carbon Company

Picture#1

Picture Taken 9-2-17 by CP.

Picture taken facing southeast.

Picture showing close up of yellow smoke/emissions.



ATTACHMENT 3

Bennett, Jim

From: Bennett, Jim
Sent: Wednesday, September 06, 2017 1:48 PM
To: 'dakota.mcneill@deq.ok.gov'
Subject: FW: Power Blip On Saturday

Some more information on the 9/2 event

From: Lamb, Charles
Sent: Wednesday, September 06, 2017 7:42 AM
To: Bennett, Jim <jbennett@continentalcarbon.com>
Subject: Power Blip On Saturday

Steve Calvert our contract for OG&E finally called me back yesterday. He said they did show an event just after 3pm that did cause the circuit to open and close. He said there is no way they can tell anymore than that because they typically will not even send someone out to even look. He said it could have been a branch or a bird or something like that.

Sent from my Verizon 4G LTE smartphone