

Facility Name: **BASF Corporation – Attapulugus Operations**
City: Attapulugus
County: Decatur
AIRS #: 04-13-087-00037

Application #: TV-717804
Date Application Received: March 31, 2023
Permit No: 3295-087-0037-V-06-0

Program	Review Engineers	Review Managers
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Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description**A. Facility Identification**

1. Facility Name: BASF Corporation – Attapulugus Operations

2. Parent/Holding Company Name

BASF Corporation

3. Previous and/or Other Name(s)

Engelhard Corporation – Attapulugus Operations

4. Facility Location

141 Engelhard Road
Attapulugus, GA 39815

5. Attainment, Non-attainment Area Location, or Contributing Area

The facility is located in an attainment area.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/Effectiveness	Purpose of Issuance
3295-087-0037-V-05-0	October 3, 2018	Title V permit renewal.
Off-permit change	January 10, 2019	Like for like replacement of baghouse CC006.
3295-087-0037-V-05-1	September 5, 2019	The installation of a new blender, a new vacuum pipe system, and three baghouses.
3295-087-0037-V-05-2	February 11, 2020	The installation of a new conveying system and baghouse.
Off-permit change	March 8, 2022	Upgrade the burner controls on Boiler Nos. 4 and 5.

Off-permit change	January 25, 2024	Replacement of calciners 1, 2 and 4 with like-for-like components.
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D. Process Description

1. SIC Codes(s)

3295

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

The facility manufactures Fluid Cracking Catalyst (FCC) and Moving Bed Catalyst (MBC), that are used in petroleum refineries, from the processing of kaolin clay, nitric acid and caustic solutions.

3. Overall Facility Process Description

FCC Manufacturing

Kaolin "microspheres" (powder) are unloaded into Storage Silos (C023-C030, C034, C036, C038, C040, C044-C047, C053, C056-C059, C078, C079, C082, C086, C117, C118, C127, C129, C131, C132, C134, C136, D001, D003, D004, D019, D027-D040, D052, and D053). The microspheres are pneumatically transported via Transporters (C005, C032, C083, C122, C135, C137, and D002) to Make Down Tanks (C037 and D007) where they are slurried with caustic chemicals. The slurry is pumped to Zeolite Crystallization and Vacuum Filtration where the liquids are removed and pumped to Silicate Co-Products processes. The resulting catalyst (wet powder cake) is reslurried with ammonium nitrate, rare earth nitrate, and nitric acid from Liquid Raw Material Storage Tanks (C072 and D049). The slurry is pumped to Ion Exchange and Vacuum Filtration (C009, C084, C123, and D020) where the liquids are removed and pumped to Nitrate Co-Products. The catalyst (wet powder cake) is dried at Flash Drying (C006, C031, C039, and D026). The dried catalyst is pneumatically transferred via Transporters to Calcination (C035, C081, C121, C125, and D050). The calcined catalyst may be "multi-passed" through the Ion Exchange and Vacuum Filtration, Flash Drying, and Calcination steps prior to being pneumatically transported via Transporters to the Storage Silos. Finished catalyst is pneumatically transported via Transporters to Loadout (C041-C043, D042, and D043) for shipment to customers.

Silicate and Nitrate Co-Products Manufacturing

Liquids from the Ion Exchange and Vacuum Filtration (FCC) and Ion Exchange (MBC) processes are stored in various Liquid Raw Material Storage Tanks. The liquids are pumped to Clarifiers, Filter Press Filtration, Vacuum Filtration, and/or Fundabac Filtration where powder filter aids stored in Storage Silos (C068, C077, C114, and C116) may be used for filter drum precoating as well as a final drying step for the removed solids. Clarified liquid and filtered liquid is removed and pumped to the Concentrators (C002, C111, and D048). Concentrated sodium silicate is recycled as a raw material into the FCC manufacturing process. Concentrated ammonium/sodium nitrate is sold as a liquid fertilizer. The dry removed solids are disposed of in on-site landfills or sold as solid fertilizer, etc.

MBC Manufacturing

Kaolin "microspheres" (powder) are unloaded into Storage Silos (B005 and B010). The microspheres are pneumatically transported via Transporters (B003 and B007) to Make Down and Extrusion (B004) where they are mixed with caustic chemicals and extruded into pellets. The pellets are pumped to Zeolite Crystallization and reacted in oil baths using oil stored and recycled in the Mineral Oil Storage Tanks. The resulting catalyst pellets are pumped to Ion Exchange where the liquids are removed and pumped to Nitrate Co-Products. The catalyst pellets are transported via belt conveyors and bucket elevators to Calcination (B012). Calcined catalyst pellets are transported via belt conveyors and bucket elevators to Storage Silos and Loadout for shipment to customers.

Rare Earth Nitrate Manufacturing

Rare earth carbonate (powder) and/or rare earth oxide (powder) is unloaded into the Rare Earth Carbonate/Oxide Feed Hopper (C069). The rare earth is reacted in the Rare Earth Make Down Tank (C126) with nitric acid from the Nitric Acid Storage Tanks. The product, rare earth nitrate (liquid), is pumped to storage tanks for subsequent use in the FCC and MBC manufacturing processes.

Steam Generation

Adjacent to the Silicate and Nitrate Co-Products manufacturing process are the Boilers (C001A, C001B, and C113) used for steam generation. These boilers provide steam needed for various operations within the catalyst manufacturing process.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

E. Regulatory Status**1. PSD/NSR**

BASF Corporation – Attapulugus Operations has the potential to emit nitrogen oxides (NO_x) at a rate in excess of 250 tons per year. The facility is considered a major source under the PSD regulations and is subject to PSD review for modifications in which any pollutant increase is more

than the significance level. The facility has never undergone a PSD review. Condition Nos. 3.2.1 to 3.2.5 and 3.2.8 to 3.2.10 of the current permit contain PSD avoidance limits.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes	✓		
PM ₁₀	Yes	✓		
PM _{2.5}	Yes	✓		
SO ₂	Yes	✓		
VOC	Yes			✓
NO _x	Yes	✓		
CO	Yes	✓		
TRS	n/a			
H ₂ S	n/a			
Individual HAP	Yes			✓
Total HAPs	Yes			✓

3. MACT Standards

The facility is not a major source of HAP emissions. The facility has taken limits to avoid being subject to 40 CFR 63 Subpart JJJJJ - "National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers."

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	No
Program Code 8 – Part 61 NESHAP	No
Program Code 9 - NSPS	Yes
Program Code M – Part 63 NESHAP	No
Program Code V – Title V	Yes

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

The current Title V permit, Permit No. 3295-087-0037-V-05-0 limits the use of distillate fuel oil to 3,000,000 gallons for any twelve-consecutive month period for PSD avoidance. This limit is carried over into this Title V renewal permit.

B. Applicable Rules and Regulations

All equipment subject to NSPS Part 60 must comply with the provisions of Subpart A - “General Provisions.”

40 CFR 60 Subpart A – General Provisions

Subpart A to Part 60 includes general provisions that may be applicable to a source that is subject to another subpart of Part 60. It should be noted, however, that the applicability or non-applicability of every Subpart A provision is specifically addressed on a case-by-case basis in the other Subparts. Therefore, portions of Subpart A may be applicable in cases where other subparts are applicable.

C. Compliance Status

The facility has not indicated any non-compliance issues.

D. Permit Conditions

Condition 2.1.1, limiting the use of distillate fuel oil to 3,000,000 gallons during any twelve-consecutive month period for PSD avoidance, is carried over into this Title V permit without any changes.

Condition 2.2.1, establishing the applicability of 40 CFR 60 Subpart A - “General Provisions” to the facility, is carried over into this Title V permit without any changes.

III. Regulated Equipment Requirements

A. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
Boilers				
C01A	Boiler No. 4	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
C01B	Boiler No. 5	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
C113	Boiler No. 6	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 40 CFR 60 Subpart A 40 CFR 60 Subpart Dc	None	N/A
Rare Earth Nitrate Manufacturing FCC Raw Material				
C069	Rare Earth Carbonate Feed Hopper	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC069	Baghouse
C126	Rare Earth Make Down Tank	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC126	Venturi/Packed Tower Scrubber
FCC Manufacturing				
C023	D1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC023	Baghouse
C030	C4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC030	Baghouse
C036	B1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC036	Baghouse
C038	A2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC038	Baghouse
C040	B2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC040	Baghouse
C044	I1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC044	Baghouse
C053	A1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC053	Baghouse
C056	B3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC056	Baghouse
C057	B4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC057	Baghouse
C059	A4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC059	Baghouse
D001	E6 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD001	Baghouse
D003	F5 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD003	Baghouse
D004	E5 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD004	Baghouse
D019	SRC Surge Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD019	Baghouse
D040	I4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD040	Baghouse
C032	Make Down Transporter	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC037	Baghouse
C083	Loadout Transporter No. 2	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC083	Baghouse
C122	Loadout Transporter No. 3	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC141	Baghouse
D002	100 Transporter System	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD002	Baghouse

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
C037	FCC 123 Make Down Tank	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC037	Baghouse
D005	MS1 Weigh Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD005	Baghouse
D006	MS2 Weigh Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD006	Baghouse
D007	FCC 4 Make Down Tank	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD007	Baghouse
C009	Reslurry Tank No. 3	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC006	Baghouse
C047	Reslurry Tank No. 1 Feed Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC047	Baghouse
C084	Reslurry Tank No. 1	391-3-1-.02(2)(p)1	CC039	Baghouse
C132	Reslurry Tank No. 77 Feed Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC132	Baghouse
C123	Reslurry Tank No. 77	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC031	Baghouse
D020	Reslurry Tank No. 7	391-3-1-.02(2)(p)1	CD026	Baghouse
C033	Calciner No. 1 Combustion Gases	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
C034	Calciner No. 1 Feed Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC034	Baghouse
C035	Calciner No. 1	NSPS UUU 391-3-1-.02(2)(p)1	CC035	Baghouse
C127	Calciner No. 1 Product Bin	391-3-1-.02(2)(p)1	CC035	Baghouse
C079	Calciner No. 2 Feed Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC079	Baghouse
C080	Calciner No. 2 Combustion Gases	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
C081	Calciner No. 2	NSPS UUU 391-3-1-.02(2)(p)1	CC081	Baghouse
C082	Calciner No. 2 Product Bin	391-3-1-.02(2)(p)1	CC081	Baghouse
C117	Calciner No. 3 Feed Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC117	Baghouse
C118	Calciner No. 3 Product Bin	391-3-1-.02(2)(p)1	CC121	Baghouse
C119	Calciner No. 3 Combustion Gases	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
C121	Calciner No. 3	NSPS UUU 391-3-1-.02(2)(p)1	CC121	Baghouse
C129	Calciner No. 4 Feed Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC129	Baghouse
C124	Calciner No. 4 Combustion Gases	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
C125	Calciner No. 4	NSPS UUU 391-3-1-.02(2)(p)1	CC125A	Baghouse
C131	Calciner No. 4 Product Bin	391-3-1-.02(2)(p)1	CC125A	Baghouse
D027	Calciner No. 5 Feed Bin #1	391-3-1-.02(2)(b) 391-3-1-.02(2)(p)1	CD027	Baghouse
D028	Calciner No. 5 Feed Bin #2	391-3-1-.02(2)(b) 391-3-1-.02(2)(p)1	CD027	Baghouse
D051	Calciner No. 5 Combustion Gases	391-3-1-.02(2)(d) 391-3-1-.02(2)(g)	None	N/A
D050	Calciner No. 5	NSPS UUU 391-3-1-.02(2)(p)1	CD050	Baghouse
D052	Calciner No. 5 Product Bin #1	391-3-1-.02(2)(b) 391-3-1-.02(2)(p)1	CD050	Baghouse
D053	Calciner No. 5 Product Bin #2	391-3-1-.02(2)(b) 391-3-1-.02(2)(p)1	CD050	Baghouse

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
C006	Flash Dryer No. 3	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	CC006	Baghouse
C133	Flash Dryer No. 3 Fines Reclaim Receiver	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC133	Baghouse
C031	Flash Dryer No. 2	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	CC031	Baghouse
C078	Flash Dryer No. 2 Surge Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC031	Baghouse
C086	100 Ton Flash Dryer No. 3 Surge Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC006	Baghouse
C039	Flash Dryer No. 1	NSPS UUU 391-3-1-.02(2)(p)1 391-3-1-.02(2)(g)	CC039	Baghouse
C005	Flash Dryer No. 1 Transporter	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC005	Baghouse
D018	Flash Dryer No. 4	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	CD018	Baghouse
D026	Flash Dryer No. 5	NSPS UUU 391-3-1-.02(2)(p)1 391-3-1-.02(2)(g)	CD026	Baghouse
C024	D2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC024	Baghouse
C025	D3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC025	Baghouse
C026	D4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC026	Baghouse
C027	C1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC027	Baghouse
C028	C2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC028	Baghouse
C029	C3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC029	Baghouse
C045	I2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC045	Baghouse
C046	I3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC046	Baghouse
C058	A3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC058	Baghouse
D029	F4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD029	Baghouse
D030	E4 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD030	Baghouse
D031	F3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD031	Baghouse
D032	E3 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD032	Baghouse
D033	F2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD033	Baghouse
D034	E2 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD034	Baghouse
D035	F1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD035	Baghouse
D036	E1 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD036	Baghouse
D037	I7 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD037	Baghouse

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
D038	I6 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD038	Baghouse
D039	I5 Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD039	Baghouse
C041	Blender No. 1	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC041	Baghouse
C042	Blender No. 2	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC042	Baghouse
C043	Blender No. 3	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC043	Baghouse
D042	Blender No. 4	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD042	Baghouse
D043	Blender No. 4 Loading Spout and Air Slide	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD043	Baghouse
D044	Blender No. 5	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CD044	Baghouse
C134	MS1 Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC134	Baghouse
C135	MS1 Transporter MS1 East Transporter	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC134 or CC142	Baghouse
C136	MS2 Bin	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC136	Baghouse
C137	WIP Transporter	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC137	Baghouse
C138	Tote Bin Vacuum System Transporter	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC138	Baghouse
C139	Loadout No. 5	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	None	N/A
C140	Loadout Transporter No. 1	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC140	Baghouse
MBC Manufacturing				
B005	South Denning Silo	391-3-1-.02(2)(p)2 391-3-1-.02(2)(b)	CB005	Baghouse
B007	South Denning Silo Transport System	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CB007	Baghouse
B006	Rail Car Unloading Transport System	391-3-1-.02(2)(p)2 391-3-1-.02(2)(b)	CB006	Baghouse
B010	North Denning Silo	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CB010	Baghouse
B003	MBC Use Bin Transport System	391-3-1-.02(2)(p)2 391-3-1-.02(2)(b)	CB003	Baghouse
B012	Electric Calciner	NSPS UUU 391-3-1-.02(2)(p)1	CB012	Baghouse
B004	Denning Building	391-3-1-.02(2)(p)2 391-3-1-.02(2)(b)	CB004	Baghouse
Silicate and Nitrate Co-Products Manufacturing				
C068	Filter Aid Bin No. 1	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC068	Baghouse
C114	Filter Aid Bin No. 2	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC114	Baghouse
C077	Fines Tank No. 3	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC077	Baghouse
C116	Fines Tank No. 4	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	CC116	Baghouse
C002	Concentrator No. 2 Cooling Tower	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	None	N/A
D048	Concentrator No. 3 Cooling Tower	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	None	N/A

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
C111	Concentrator No. 4 Cooling Tower	391-3-1-.02(2)(p)1 391-3-1-.02(2)(b)	None	N/A

B. Equipment & Rule Applicability

Equipment and Rule Applicability for this renewal permit is based on the requirements for the emission units as permitted in existing Permit No. 3295-087-0037-V-05-0 as discussed below.

Emission and Operating Caps:

BASF Corporation – Attapulugus Operations is a PSD major source for NO_x. The facility has taken limits to avoid PSD review.

Condition Nos. 3.2.1 to 3.2.5 and 3.2.8 to 3.2.10 of the current permit contain PSD avoidance limits. These conditions contain limits for particulate matter emissions, nitrogen oxide emissions, visible emissions, feed rates, production rates, and fuel type for PSD avoidance. Conditions 3.2.6 and 3.2.7 contain limits for ammonia emissions at the company's request.

Rules and Regulations Assessment:

40 CFR 60 Subpart Dc – Small Steam Generating Units

NSPS Subpart Dc regulates small steam generating units with maximum heat input capacities greater than 10 million British thermal unit per hour (MMBtu/hr) and less than 100 MMBtu/hr for which construction, modification, or reconstruction was commenced after June 9, 1989. Boiler No. 6 (C113) is subject to Subpart Dc as it is a steam generating unit for which construction, modification, or reconstruction commenced after June 9, 1989, and has a maximum design heat input capacity of 91 MMBtu/hr. The rule limits SO₂ emissions to 0.50 lbs/MMBtu and opacity to 20 percent (except one 6-minute period not to exceed 27 percent). The plant will comply with this rule by only combusting natural gas and fuel oil with a sulfur content of 0.5 percent by weight or less.

40 CFR 60 Subpart UUU – Calciners and Dryers in Mineral Industries

NSPS Subpart UUU applies to the dryers and calciners constructed or reconstructed after April 23, 1986. This regulation limits particulate matter emissions from dryers to 0.025 grains/dscf and 10 percent opacity. PM and visible emissions from calciners, and calciners and dryers installed in series are limited to 0.04 gr/dscf and 10 percent opacity.

40 CFR 63 Subpart JJJJJ – NESHAP for Area Sources: Industrial, Commercial, and Institutional Boilers

This rule regulates boilers at area sources of HAP. The plant operates Boiler Nos. 4, 5, and 6 that combust natural gas with distillate fuel oil backup. Since these boilers were constructed prior to June 4, 2010, they are considered existing sources per 40 CFR 63.11194(c). As fuel oil is only combusted during supply interruptions or curtailments and up to 48 hours per year for testing and maintenance purposes, the units meet the definition of “gas-fired” and are exempt from 40 CFR 63 Subpart JJJJJ according to 40 CFR 63.11195(e).

Georgia Rules and Regulations

391-3-1.02(2)(b) – Visible Emissions

This rule limits opacity from emission points and structures to 40 percent, except in cases where another rule or regulation applies a more stringent requirement. Properly operated baghouses will ensure compliance with the 40 percent opacity limit.

391-3-1.02(2)(d) – Fuel-Burning Equipment

This rule limits particulate emissions from fuel burning equipment. For units constructed after January 1, 1972, the following standards apply:

$P = 0.5(10/R)^{0.5}$ pounds per million BTU heat input for equipment, equal to or greater than 10 MMBTU heat input per hour, and equal to or less than 250 MMBTU heat input per hour, where P is the allowable in pounds of PM/MMBtu, and R is the input in MMBtu/hr. This applies to Boiler Nos. 4, 5, and 6 and the Calciner Combustion Gases C033, C080, and C124. This rule also limits opacity to 20 percent except for one six-minute period per hour of not more than 27 percent opacity.

391-3-1.02(2)(g) – Sulfur Dioxide

This rule limits the sulfur content of the fuels used in combustion to 2.5 percent by weight. The plant uses natural gas and fuel oil Numbers 1 and 2 (limited to 0.5 percent sulfur by weight) to ensure compliance.

391-3-1.02(2)(p) – Particulate Emissions from Kaolin and Fuller's Earth Process

This rule limits PM emissions from manufacturing processes based on a process rate. For all process equipment put into operation or extensively after January 1, 1972, particulate matter emissions may not equal or exceed the allowable rates specified in the below equations.

$E = 3.59 \times P^{0.62}$; for process input weight rate up to and including 30 tons/hour.

$E = 17.31 \times P^{0.16}$; for process input weight rate above 30 tons/hour

For equipment put into operation or extensively altered on or before January 1, 1972, particulate matter emissions may not equal or exceed the allowable rates specified in the below equations.

$E = 4.1 \times P^{0.67}$; for process input weight rate up to and including 30 tons/hour.

$E = 55 \times P^{0.11} - 40$; for process input weight rate above 30 tons/hour

Where

E = The allowable emission rate is in pounds per hour.

P = The process input weight rate is in tons per hour.

C. Permit Conditions

Recordkeeping and reporting requirements for this renewal permit are based on the requirements for the emission units as currently permitted in Permit No. 3295-087-0037-V-05-0 and Amendment Nos. 3295-087-0037-V-05-1 and 3295-087-0037-V-05-2. See table below.

Condition No.	Title V Permit/Amendment That Included such Condition	Comments
3.2.1	3295-087-0037-V-05-0 3295-087-0037-V-05-2	No change to condition. Limits PM emissions to 0.015 grains/dscf from the specified sources.
3.2.2	3295-087-0037-V-05-0 3295-087-0037-V-05-1	No change to condition. Limits PM emissions to 0.02 grains/dscf from the specified sources.
3.2.3	3295-087-0037-V-05-0	No change to condition. Limits the lb/hr PM emissions from the specified sources.
3.2.4	3295-087-0037-V-05-0	No change to condition. Limits the feed rate into the Electric Calciner (B012) to 1.20 tons per hour.
3.2.5	3295-087-0037-V-05-0	Modified condition. Limits the production rate for the specified calciners and flash dryers.
3.2.6	3295-087-0037-V-05-0	No change to condition. Limits ammonia emissions from the calciners to 931.9 lb/hour total.
3.2.7	3295-087-0037-V-05-0	No change to condition. Limits ammonia emissions from Reslurry Tank No. 1 to 0.5 lb/hour.
3.2.8	3295-087-0037-V-05-0	No change to condition. Limits NOx emissions from the specified calciners and flash dryers.
3.2.9	3295-087-0037-V-05-0	No change to condition. Lists the fuels that may be combusted in the specified sources.
3.2.10	3295-087-0037-V-05-0	No change to condition. Limits visible emissions from the specified sources to seven percent opacity.
3.3.1	3295-087-0037-V-05-0	No change to condition. Establishes applicability of 40 CFR 60 Subpart UUU.
3.3.2	3295-087-0037-V-05-0	No change to condition. Establishes applicability of 40 CFR 60 Subpart Dc.
3.3.3	3295-087-0037-V-05-0	No change to condition. Limits the opacity of Boiler No. 6 in accordance with 40 CFR 60 Subpart Dc.
3.3.4	3295-087-0037-V-05-0	No change to condition. Limits the PM emissions of Boiler No. 6 in accordance with 40 CFR 60 Subpart Dc.
3.3.5	3295-087-0037-V-05-0	No change to condition. Limits the sulfur content of fuel oil used in Boiler No. 6 in accordance with 40 CFR 60 Subpart Dc.
3.3.6	3295-087-0037-V-05-0	No change to condition. Lists the requirements for 40 CFR 63 Subpart JJJJJ avoidance.
3.4.1	3295-087-0037-V-05-0	No change to condition. Establishes applicability of Georgia Rule (p).
3.4.2	3295-087-0037-V-05-0	No change to condition. Establishes applicability of Georgia Rule (b).
3.4.3	3295-087-0037-V-05-0	No change to condition. Establishes applicability of Georgia Rule (g).
3.4.4	3295-087-0037-V-05-0	No change to condition. Establishes applicability of Georgia Rule (d).
3.5.1	3295-087-0037-V-05-0	No change to condition. Requires operation of baghouses at all times associated equipment is operating to control PM emissions.
3.5.2	3295-087-0037-V-05-0	No change to condition. Requires the facility to maintain an inventory of replacement filter bags.
3.5.3	3295-087-0037-V-05-0	No change to condition. Requires the facility to record and maintain records of routine maintenance.

Permit conditions that have been modified in this Title V renewal permit are discussed below.

Condition 3.2.5, limiting the production rate for the specified calciners and flash dryers, has been modified to revise these limits to the two-hour average maximum instead of the one hour maximum as requested in the application. This allows additional flexibility to the operation but does not increase or exceed the emission limits currently set.

IV. Testing Requirements (with Associated Record Keeping and Reporting)**A. General Testing Requirements**

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

Condition 4.2.1, which requires performance testing for new NSPS sources, is carried over from the current permit.

V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

Monitoring requirements for this renewal permit are based on the requirements for the emission units as currently permitted in Permit No. 3295-087-0037-V-05-0 and Amendment Nos. 3295-087-0037-V-05-1 and 3295-087-0037-V-05-2.

Calciner Nos. 1-5 are subject to the NO_x limits in Condition 3.2.8 for PSD avoidance. Since the formation of NO_x occurs at increasingly higher temperatures, the permit requires monitoring the exit temperature of each calciner. The exit temperature established for each calciner is used to reasonably ensure that the NO_x limits are not exceeded. Each three-hour period during which the average temperature exceeds the established temperature is reported as an excursion.

Calciner Nos. 1-4 are subject to the ammonia emission limits in Condition 3.2.6. These limits were added at the company's request to keep ambient concentrations below the acceptable ambient concentration (AAC) levels. Dispersion modeling and performance tests conducted on the calciners showed that the ammonia AAC levels and permit limits were not exceeded, so no monitoring was required. The company also requested ammonia emission limits for Reslurry Tank No.1, which are listed in Condition 3.2.7. Ammonia is not a regulated pollutant; therefore, no other regulations apply.

Flash Dryer No. 5 is subject to a NO_x limit of 5.40 lbs/hr for PSD avoidance in Condition 3.2.8. Flash Dryer No. 5 was tested, and actual emissions were less than 19 percent of the allowable. Since the retention time is low in the flash dryer, significant NO_x formation in excess of the permitted level is not likely to occur. Therefore, periodic monitoring is not required for this source.

Condition 5.2.1 requires operation of COMS on the specified sources in accordance with 40 CFR 60 Subpart UUU.

Condition 5.2.2 contains the requirement to monitor and record the outlet temperature of the calciners.

Condition 5.2.3 requires the Permittee to perform a daily visible emission VE check of emissions from all baghouses listed in Section 3.1 of the permit.

Condition 5.2.4 requires the implementation of the Preventive Maintenance program for all baghouses listed in Section 3.1 of the permit.

BASF requested a change for Condition 5.2.4:

“BASF is requesting to reduce the frequency of maintenance checks for many of their baghouses from a weekly basis for to a biweekly, monthly, or quarterly basis.

EPD Response: This is a standard baghouse monitoring condition used in similar permitted facilities. The Division does not believe these requirements are overly burdensome to the company. No changes have been made to this condition.

Condition 5.2.5 requires continuous monitoring of the temperature on the inlet of each baghouse receiving hot exhaust from the calciners and dryers and recording exceedances of the baghouse design temperature for baghouses listed in this condition. Condition 6.1.7c.iii. requires reporting of these exceedances as excursions. This condition also allows the permittee to monitor a surrogate temperature that is indicative of the baghouse inlet temperature.

Condition 5.2.6 requires the Permittee to inspect all uncontrolled sources at the facility each day by performing a walk-through of the facility and noting the occurrence of any visible emission (VE) in a daily VE log.

Condition 5.2.7 contains 40 CFR 60 Subpart Dc requirements for measuring and recording fuel consumption in Boiler No. 6. The condition has been updated to include the Dc alternative fuel monitoring and recordkeeping requirements allowed by Subpart Dc.

Conditions 5.2.8 and 5.2.9 contain the Compliance Assurance Monitoring (CAM) requirements. Condition 5.2.8 has been updated to include Blender No. 5 (D044).

Conditions 5.2.10, 5.2.11, and 5.2.12 contain visible emissions monitoring and recordkeeping requirements for Boiler No. 6.

C. Compliance Assurance Monitoring (CAM)

CAM requirements from the existing Title V permit, Permit No. 3295-087-0037-V-05-0, are carried over into this Title V permit without any changes.

Each emission unit controlled by a control device that "has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source," as defined by 40 CFR 64.2(a)(3) is subject to CAM. Specifically, the following pollutant specific emission units (PSEU) were found to be subject to the Compliance Assurance Monitoring:

Emission Unit	Pollutant
C037, FCC 123 Makedown Tank	PM
C041, C042, C043, D042, and D044 (Blenders Nos. 1,2,3, 4, and 5)	PM
D007 FCC4 Makedown Tank	PM
D043 Blender No. 4 Loadout Spout & Airslide	PM

Conditions 5.2.8 and 5.2.9 contain the applicable Compliance Assurance Monitoring (CAM) requirements.

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

Recordkeeping and reporting requirements for this renewal permit are based on the requirements for the emission units as currently permitted in Permit No. 3295-087-0037-V-05-0 and Amendment Nos. 3295-087-0037-V-05-1 and 3295-087-0037-V-05-2. See table below.

Condition No.	Title V Permit/Amendment That Included such Condition	Comments
6.1.7	3295-087-0037-V-05-0 3295-087-0037-V-05-1 3295-087-0037-V-05-2	Reportable excess emissions, exceedances, and excursions.
6.2.1	3295-087-0037-V-05-0	Requires notifications for NSPS equipment as required by 40 CFR 60 Subpart A.
6.2.2	3295-087-0037-V-05-0	Contains recordkeeping for hourly production rates for the calciners and flash dryers.
6.2.3	3295-087-0037-V-05-0	Record and keep records of the hourly feed into the Electric Calciner (B012).
6.2.4	3295-087-0037-V-05-0	Recordkeeping requirements for quantity of fuel oil combusted throughout the facility.
6.2.5	3295-087-0037-V-05-0	Recordkeeping requirements for fuel oil verification in Boiler No. 6 (C113).
6.2.6	3295-087-0037-V-05-0	Recordkeeping requirements for fuel combustion in Boiler No. 6 (C113).
6.2.7	3295-087-0037-V-05-0	Reporting requirements for fuel combustion in Boiler No. 6 (C113).
6.2.8	3295-087-0037-V-05-0	Recordkeeping requirements for fugitive dust.
6.2.9	3295-087-0037-V-05-0	Reporting requirements for fuel oil certifications.
6.2.10	3295-087-0037-V-05-0	Reporting requirements for fuel oil combustion.
6.2.11	3295-087-0037-V-05-0	Reporting requirements for VE observations.
6.2.12	3295-087-0037-V-05-0	Requires facility to keep records of fuel oil usage in the three boilers.

Permit conditions that have been modified and eliminated in this Title V renewal permit are discussed below.

Condition 6.1.7a.i. has been modified to change the reference from the Federal Rule to the limit in the permit condition.

Condition 6.1.7b.iv. has been modified to remove references to Condition 3.3.5 because the exceedance limit is already listed in the condition.

Condition 6.1.7c.iv. has been modified to include Calciner No. 5. The typical maximum operating outlet temperature of 1600 °F for Calciner Nos. 1 to 4 is specified based on the normal operating temperature range established for the calciners. Any three-hour average temperature exceeding 1600 °F is reported as a temperature excursion for the calciner. This maximum operating temperature limit accommodates temperature spikes that could be expected during startup, shutdown and periods of unstable operations. In the calcining process increased temperatures do not result in increased NO_x emissions since NO_x reacts with excess ammonia and is reduced to inert nitrogen.

Currently, Condition 6.1.7c.vi. requires reporting each occurrence when the three-hour average temperature at the outlet of Calciner No. 5 exceeds the threshold established in accordance with Condition 5.2.2. The temperature should have been established in previous permitting actions. Calciner No. 5 is subject to the same requirements as Calciner Nos. 1-4, so it has been moved to Condition 6.1.7c.iv. This condition has been removed and the remaining conditions renumbered accordingly.

Condition 6.2.6 has been modified to include the alternative fuel recordkeeping requirements allowed by Subpart Dc.

VII. Specific Requirements

A. Operational Flexibility

- Not applicable

B. Alternative Requirements

- Not applicable

C. Insignificant Activities

See Permit Application on GEOS website.
See Attachment B of the permit

D. Temporary Sources

- Not applicable

E. Short-Term Activities

- Not applicable

F. Compliance Schedule/Progress Reports

- Not applicable

G. Emissions Trading

- Not applicable

H. Acid Rain Requirements

- Not applicable

I. Stratospheric Ozone Protection Requirements

- Not applicable

J. Pollution Prevention

- Not applicable

K. Specific Conditions

- Not applicable

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//