

Facility Name: **SSC Augusta, LLC**

City: Augusta

County: Richmond

AIRS #: 04-13-245-00008

Application #: 668750

Date SIP Application Received: August 11, 2022

Date Title V Application Received: August 11, 2022

Permit No: 2819-245-0008-V-08-1

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## Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public comment period and EPA review process will be described in an addendum to this narrative.

**I. Facility Description**

## A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Description
2819-245-0008-V-08-0	May 11, 2022	Name and ownership change for the operation of a single absorption contact sulfuric acid plant

## B. Regulatory Status

## 1. PSD/NSR/RACT

Sulfuric acid plants are listed in 40 CFR 52.21(b)(1)(i)(a) as a source category that has a major source threshold of 100 tpy for SO<sub>2</sub> emissions instead of 250 tpy.

The facility has taken several PSD avoidance limits in the past. In 1996, the facility accepted a limit of 0.08 lb H<sub>2</sub>SO<sub>4</sub> acid mist per ton of acid produced (based on 850 ton/day maximum) to avoid PSD review when the acid production capacity was doubled. In 2007, the facility accepted a lower H<sub>2</sub>SO<sub>4</sub> emissions limit of 0.07 lb acid mist per ton of acid produced in order to avoid PSD review when they increased sulfuric acid production from 850 tpd to 1,200 tpd.

The facility is located in an attainment area.

## 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 <sub>10</sub>	Yes			✓
PM <sub>2.5</sub>	Yes			✓
SO <sub>2</sub>	Yes	✓		
VOC	Yes			✓
NO <sub>x</sub>	Yes			✓
CO	Yes			✓
TRS	No			
H <sub>2</sub> S	No			
Individual HAP	Yes			✓
Total HAPs	Yes			✓

**II. Proposed Modification**

## A. Description of Modification

SSC Augusta, LLC (SSC) has submitted an application for the reactivation of a sulfuric acid plant which was idled in November 2017. SSC purchased the sulfuric acid plant from Chemtrade Solutions LLC – Augusta Plant (Chemtrade) in early 2022 with the intention of restarting the sulfuric acid plant. This application contains the PSD emissions review to assure that the potential emissions from the restart of the plant minus the baseline actual emissions from prior to shutdown are below PSD significant emission rates.

Per 40 CFR 60 Subpart H, the entire sulfuric acid manufacturing line is considered a single sulfuric acid production emissions unit. It is assumed to be the same for PSD purposes.

Historically, EPA policy on the reactivation of sources has considered that a major stationary source shutdown of two or more years is presumed to be permanently shut down. Per the Limetree Bay Terminals memo dated April 5, 2018, signed by EPA Assistant Administrator William Wehrum, it stated that the two-year period is rebuttable, however, based on the premise of intention to restart the facility. This premise would be dependent on many factors, including but not limited, to the length of time shutdown, the details for restarting, the cause of the shutdown, status of environmental permits, on-going maintenance and inspections, and time and money needed to reactivate the unit.

Chemtrade did indeed maintain the Air Quality Permit for the sulfuric acid plant until early 2022, when it was beginning discussions with SSC to purchase the unit. However, it would take EPD some time to fully investigate maintenance and inspection records, previous owner intent, emission inventories, capital required, etc. Time is of the essence since the facility was idled in November 2017. The PSD contemporaneous period is defined as the five years prior to construction of the particular change [40 CFR 52.21(b)(3)(ii)]. To be conservative, the facility has assumed that the reactivation of the sulfuric acid plant is considered a “new major stationary source” under PSD review, and therefore the five-year PSD contemporaneous window ends in November 2022.

Additionally, the facility has slightly modified the process. They have removed the oleum production plant, including oleum tank scrubber SC-1. Additionally, they requested that the name “soda ash” be removed from the name of scrubber SC-2, as both caustic and soda ash will be used. They will also be replacing the cooling tower at the facility. No permit modifications are required for any of these changes, except for the SC-2 name change in Table 3.1.1 equipment table.

## B. Emissions Change

As a new major stationary source, the potential emissions from the sulfuric acid plant for sulfur dioxide (SO<sub>2</sub>), sulfuric acid mist (SAM), PM<sub>10</sub>, and PM<sub>2.5</sub> are in excess of their PSD significant emission rates. As a listed source category, fugitive emissions must also be included. Fugitive sources include storage tank breathing losses, product handling, and road traffic, which contribute very little quantifiable emissions. The netting analysis which considers all actual emissions increases and decreases during the allowed 5-year contemporaneous period, as well as the baseline actual emissions from a 10-year lookback period, result in only SO<sub>2</sub> emissions exceeding the significant emission rate. Therefore, the facility has proposed reducing the limit for daily acid production from 1,200 tons/day to 800 tons/day, which based on the currently permitted emission limit of 2.6 lb SO<sub>2</sub>/ton acid, allows for 379.6 tpy of SO<sub>2</sub>. In all cases, the facility has assumed that PM/PM<sub>10</sub>/PM<sub>2.5</sub> are all equivalent to SAM emissions.

The new limit of 800 tpd acid allows for 292,000 tpy acid manufactured. During the baseline periods as listed below, the facility had operated as high as 330,873 tpy, so the facility will actually be emitting less than in the past.

**Table 3: Emissions Change Due to Modification**

Pollutant	Is the Pollutant Emitted?	PTE based on 1,200 tpd acid limit (tpy) prior to Nov 2017	PTE based on 800 tpd acid limit (tpy) – the “new” source	Baseline Actual Emissions (tpy) – prior to Nov 2017	Net Actual Emissions Increase (Decrease)* (tpy)	Net Potential Emissions Increase (Decrease)^ (tpy)	PSD Sign. Emission Rate (tpy)
PM	Yes	15.48	10.37	11.18	(0.81)	(5.1)	25
PM <sub>10</sub>	Yes	15.48	10.37	11.18	(0.81)	(5.1)	15
PM <sub>2.5</sub>	Yes	15.48	10.37	11.18	(0.81)	(5.1)	10
SO <sub>2</sub>	Yes	569.40	379.6	344.48	35.12	(189.8)	40
VOC	--	--	--	--	--	--	--
NO <sub>x</sub>	Yes	0.97	0.67	0.75	(0.08)	(0.3)	40
CO	Yes	0.08	0.08	0	0.08	0	100
TRS	No	--	--	--	--	--	--
H <sub>2</sub> S	No	--	--	--	--	--	--
Individual HAP - SAM	Yes	15.47	10.36	11.18	(0.82)	(5.1)	7
Total HAPs	Yes	15.47	10.36	11.18	(0.82)	(5.1)	--

\* Net Actual Emissions – Plantwide PTE based on 800 tpd acid production minus Baseline Actual Emissions of the plant prior to November 2017.

^ Net Potential Emissions – Plantwide PTE based on 800 tpd acid production minus Plantwide PTE based on 1200 tpd acid production (prior to November 2017)

### C. PSD/NSR Applicability

The “new” facility has the same throughput capacity and operation as the previous “old” facility (without production restrictions). Based on those emissions, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and SAM are above their listed PSD significant emission rate. The facility then looked at actual emissions from the plant prior to the shutdown and found the highest 24 consecutive month emissions in the baseline period (going back to January 2010).

Pollutant	Baseline Period	Baseline actual emissions (tpy) (BAE)	PTE at 800 tpd minus BAE (tpy)	PSD Sign. Emission Rate (tpy)
PM <sub>10</sub>	1/2013 – 12/2014	11.18	(0.81)	15
PM <sub>2.5</sub>	1/2013 – 12/2014	11.18	(0.81)	10
SO <sub>2</sub>	1/2014 – 12/2015	344.48	35.12	40
SAM	1/2013 – 12/2014	11.18	(0.81)	7

**III. Facility Wide Requirements**

There are no existing nor any new facility-wide requirements due to this modification.

**IV. Regulated Equipment Requirements**

Process Description

Sulfur is brought into the plant by railcar. To unload the rail car, the sulfur is heated to a molten state. The molten sulfur enters a sulfur burner where it is burned with air to form sulfur dioxide (SO<sub>2</sub>). The gas enters a four-pass converter containing vanadium pentoxide catalyst, where the SO<sub>2</sub> reacts with excess oxygen (O<sub>2</sub>) in the gas to form sulfur trioxide (SO<sub>3</sub>). All the gas flows to the first pass of converter where the SO<sub>2</sub> in the gas is converted to SO<sub>3</sub>, heat is removed and all the gas passes through the second pass of converter where more SO<sub>2</sub> is converted to SO<sub>3</sub>, heat is removed, and the gas flow splits to enter the third and fourth passes for final conversion. All of the SO<sub>3</sub> gas formed in third pass flows to the Interpass Tower (IPAT) where any remaining SO<sub>3</sub> is absorbed in water to form sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>). The SO<sub>3</sub> gas leaving the fourth pass of the converter flows through the Final Absorbing Tower (FAT) where the SO<sub>3</sub> is absorbed in H<sub>2</sub>SO<sub>4</sub>.

The tail gas from the Final Tower and the Interpass Tower is scrubbed with soda ash or caustic in a SO<sub>2</sub> Scrubber (Source Code SC2) to produce a concentrated sodium bisulfite solution. The discharge gas then exhausts via stack (Stack S01) before being vented to the atmosphere. This stack has a Continuous Emissions Monitor (CEMS) for SO<sub>2</sub> emissions. This stack also has a pad-type entrainment separator (Source Code ES1) to reduce particulate matter and sulfuric acid mist emissions.

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
K01	Sulfuric Acid Plant (Stack S01)	391-3-1-.02(2)(a)1 391-3-1-.02(2)(b) 391-3-1-.02(2)(j) 40 CFF 60 Subpart A 40 CFR 60 Subpart H	SC-1 V04 SC-2 ES1	<del>Oleum Tank Scrubber,</del> Mist Eliminators <del>Soda Ash</del> SO <sub>2</sub> Scrubber Entrainment Separator

\* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards and corresponding permit conditions are intended as a compliance tool and may not be definitive.

**C. Equipment & Rule Applicability**

The sulfuric acid plant will continue to be applicable to 40 CFR 60 Subpart H. There are no different requirements under 60 Subpart H for new versus existing emission units. All applicable requirements for this regulation are already included in the existing Permit.

**D. Permit Conditions**

Permit Condition 3.2.1 was modified to reflect the lower daily production limit to 800 tons acid per day, which caps SO<sub>2</sub> and sulfuric acid mist potential emissions from the reactivated emission unit (minus baseline actual emissions prior to the shut down) to less than PSD significant emission rates.

**V. Testing Requirements (with Associated Record Keeping and Reporting)**

There are no new testing requirements nor modification of existing requirements due to this modification. The facility is already required to conduct testing for sulfuric acid mist emissions within 180 days of startup, as well as annual testing going forward.

**VI. Monitoring Requirements (with Associated Record Keeping and Reporting)**

There are no new monitoring requirements nor modification of existing requirements due to this modification. The existing monitoring requirements will still be valid after the reactivation.

**VII. Other Record Keeping and Reporting Requirements**

Permit Condition 6.1.7.b.i was modified to reflect the lower daily production limit to 800 tons acid per day.

**VIII. Specific Requirements**

A cooling tower is being replaced as part of the reactivation; however, no changes need to be made to Section 7.0 or the Insignificant Activities list. There are no other new or modified requirements.

**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.//