

Facility Name: **TSNA Grit Plant**
 City: Andersonville
 County: Sumter
 AIRS #: 04-13-261-00070

Application #: TV- 13480
 Date Application Received: December 17, 2001
 Date Application Deemed Administratively Complete: February 26, 2002
 Date of Draft Permit:
 Permit No: 3255-261-0047-V-01-0

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TOXICS	n/a	n/a

Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Part 70 operating permit. Complex issues and unusual items are explained herein simpler terms and/or greater detail than is sometimes possible in the actual permit. This 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 Amendments of 1990. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Chapter I of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to TSNA Grit Plant and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, the applicable requirements and their significance, and the methods for determining compliance with those applicable requirements. This 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: TSNA Grit Plant.
2. Parent/Holding Company Name: Imerys.
3. Previous and/or Other Name(s): Previously known as C-E Minerals / Mulcoa Plant 2.
4. Facility Location: Highway 195
Andersonville, Georgia 31711
(Sumter County)
5. Attainment or Non-attainment Area Location: Located outside the ozone non-attainment area.
6. Class I Area Impacts: The facility is not located within 100 km of a Class I area.

B. Site Determination

C-E Minerals Plant 1, C-E Minerals Plant 2 and TSNA (Treibacher Schleifmittel North America) Grit Plant have been determined to be one part 70 site. The following summarizes the basis for EPD's (Environmental Protection Division) determination:

1. C-E Minerals Plant 1, C-E Minerals Plant 2 and TSNA Grit Plant are owned by one entity (Imerys) and are therefore under common control.
2. C-E Minerals Plant 2 and TSNA Grit Plant are located on the same property. The properties on which C-E Minerals Plants 1 and 2 are located are separated only by a roadway. Therefore, by definition, the facilities lie on contiguous property.
3. While the plants may have multiple Standard Industrial Classification (SIC) codes, the Plants are comprised of pollutant-emitting activities belong to the same industrial grouping. The primary process at C-E Minerals Plants 1 and 2 include manufacturing of refractory materials with an SIC code of 3255. The primary process at TSNA Grit Plant includes size reduction of fused white alumina aggregate with an SIC code of 3291.

C-E Minerals Plant 1, C-E Minerals Plant 2, and TSNA Grit Plant have historically been treated as one site by EPD.

On December 15, 1989, EPD considered C-E Minerals Plant 1 and C-E Minerals Plant 2 as one site when establishing limits to avoid a permit review otherwise required by PSD (40CFR Part 52.21 *Prevention of Significant Deterioration*). EPD's site determination did not have a consequential affect on any other permitted activity.

Facility AIRS Numbers:

C-E Minerals - Plant 1:	04-13-261-00003
C-E Minerals - Plant 2:	04-13-261-00047
TSNA Grit Plant:	04-13-261-00070

This Title V Permit will cover only TSNA Grit Plant. C-E Minerals Plant 1 has applied for a separate Title V Permit under application No. TV-9374. C-E Minerals Plant 2 has applied for a separate Title V Permit under application No. TV-9372.

C. Existing Permits

Table 1 below lists all current permits, as amended, issued to the facility. Based on a comparative review of Item 19 in Section 1.10 of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office, comments are listed in Table 2 below.

Table 1: List of Current Permits, as Amended

Permit Number	Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
			Yes	No
None	NA	NA	X	

Table 2: Comments on Specific Permits

Permit Number	Comments
NA	The company listed Air Quality Permit 3295-261-0047-E-02-0 dated June 22, 1998, which was correct until the Division issued a new Air Quality Permit 3295-261-0047-E-03-0 on October 25, 2001, which revoked the previous permits. The new permit specifically excludes the Grit Plant. Application 12719 was submitted requested a SIP permit for the Grit Plant. However, processing this SIP application at this time would only delay issuance of the TV permit. Air Quality Permit 3295-261-047-E-02-0 dated June 22, 1998 will be used as the basis for originating applicable permit requirements.

D. Process Description

1. SIC Codes(s)

SIC Code(s), if applicable

1459/3255/3291/3295

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) for the TSNA Grit Plant

Fused white alumina aggregate in containers are received at the Grit Plant and undergo a reduction process consisting of repeated crushing and sizing operations.

3. Overall Facility Process Description for TSNA Grit Plant

Fused white alumina is received from an off site processing facility by way of rail or truck in containers. The alumina is processed using crushers, screens, belt conveyors, bins, and packaging stations. The Crushing System is controlled by baghouse BH01. The Screening & Packaging system is controlled by baghouse BH02.

E. Regulatory Status

1. Plant 1, Plant 2, and TSNA Grit Plant are considered to be a major source under part 70 and PSD having the potential to emit PM, PM-10 (PM less than 10 microns in diameter), NO_x (nitrogen oxides), and SO₂ (sulfur dioxides) greater than 250 tpy. This PSD major source is not one of the 28 named source categories under PSD. The regulatory status of this facility is most effectively understood by examining the permit history with regard to PSD and NSPS (40CFR Part 60 *New Source Performance Standards*) applicability. The following is a permitting chorology provided to facilitate the reader's understanding of how PSD and NSPS requirements have been applied by EPD:

Plant 1. **On March 5, 1976**, Permit 9395-129-4391-0 was issued for the Plant 1 operation. This was a preexisting source built around 1971. The primary emission sources were permitted as follows:

- Cage Mill (CM1) controlled by a cyclone (CM1C) and scrubber (CM1S) in series
- Roller Mill (RM1) controlled by a cyclone (RM1C) and baghouse (RM1S) in series
- Kilns (K1 & K2) each kiln is controlled by a multicyclone and scrubber (1KZ & 2KZ) used in series
- Coolers (K1 & K2) each cooler is controlled by a multicyclone (1KCC & 2 KCC)
- Steel Ball System (SBM) controlled by a baghouse (BHM)

The kilns were permitted to burn natural gas and #2 oil.

Plant 2. **On March 5, 1976**, Permit 9395-129-4392-0 was issued for the Plant 2 operation. This was a preexisting source built around 1972. The primary emission sources were permitted as follows:

- Cage Mill (CM2) controlled by a cyclone (CM1C) scrubber (CM1S)
- Roller Mill (RM2) controlled by a cyclone (RM2C) and baghouse (RM2S) in series
- Kilns (K1, K2 & K3) each kiln controlled by multicyclone and scrubber (1KZ, 2KZ & 3KZ) in series
- Coolers (K1, K2 & K3) each cooler is controlled by a multicyclone (1KCC, 2 KCC, & 3KCC)

The kilns were permitted to burn natural gas and #2 oil.

Plant 2. **On October 9, 1980**, Permit 3295-129-7631-C was issued in accordance with PSD, which allowed the construction of two new kilns with cooler systems (K4 & K5) and allowed all of the kilns (K1, K2, K3, K4, and K5) to burn coal. The source was determined to be major as defined by PSD for PM, NO_x and SO₂. Burning coal was determined to be a major modification with a significant increase of PM, NO_x, and SO₂ emissions. BACT (Best Available Control Technology) for PM from each kiln firing coal was determined to be a multicyclone and scrubber in series. BACT for PM from the new coolers (K4 and K5) was determined to be a

multicyclone. A PM limit of 9.42 lb/hr was set on each of the new coolers (K4 & K5). BACT for NO_x formed from combustion of coal fired in the kilns included proper operations that would minimize combustion temperatures. BACT for SO₂ formed from combustion of coal in the kilns included the multicyclone scrubber controls and a limit of sulfur content of coal to less than or equal to 1% by weight. The sulfur content limit and SO₂ emissions limit ensured that a significant increase in SO₂ ambient impact did not occur. (I.e., the increase in the SO₂ ambient impact did not exceed the allowable PSD increment). The permit contained an expiration date of April 14, 1981.

Plant 1. On April 1, 1981, Permit 3295-129-7886-C was issued in accordance with PSD, which allowed the kilns (K1 & K2) to burn coal. The source was determined to be major for PM, NO_x and SO₂. Burning coal was determined to cause a significant increase of PM, NO_x, and SO₂ emissions. BACT for PM from each kiln firing coal was determined to be a multicyclone and scrubber in series. BACT for NO_x formed from combustion of coal fired in the kilns included minimizing combustion temperatures. BACT for SO₂ formed from combustion of coal in the kilns included the multicyclone scrubber controls and a limit of sulfur content of coal to less than or equal to 1% by weight. The sulfur content limit and SO₂ emissions limit ensured that a significant increase in SO₂ ambient impact did not occur. (I.e., the increase in the SO₂ ambient impact did not exceed the allowable PSD increment). The permit contained an expiration date of April 14, 1981.

Plant 1. On March 24, 1982, Permit 3295-129-8674 was issued to permit existing sources located at the plant. The emission sources permitted are as follows:

- Tyler System (TYLS) controlled by a new baghouse (BHS)
- Investment Casting System (IC1) controlled by baghouse (BHM)

Plant 1. On July 28, 1983, Permit 3295-129-8674 was issued to allow the company to burn coal with higher sulfur content than 1%. The Division approved the request based on the installation of a new lime injection system used to control SO₂ emissions, which would ensure the BACT remained intact. Additionally, the permit incorporated an SO₂ limit of 80 lb/hr for each kiln to reasonably assure compliance is maintained with the SO₂ increment. Daily SO₂ monitoring was required. Permit 3295-129-4321-0 was revoked. The operating permit number revoked should have been Permit 3295-129-4391-0.

Plant 2. On September 28, 1983, Permit 3295-129-8675 was issued to allow the company to burn coal with higher sulfur content than 1%. The Division approved the request based on the installation of a new lime injection system used to control SO₂ emissions, which would ensure the BACT remained intact. Additionally, the permit incorporated an SO₂ limit of 80 lb/hr for each kiln to reasonably assure compliance is maintained with the SO₂ increment. Daily SO₂ monitoring was required. Permit 3295-129-4392-0 was voided.

Plant 1. On January 20, 1984, Permit 3295-129-8674 was amended to change SO₂ monitoring frequency from daily to weekly.

Plant 2. On January 20, 1984, Permit 3295-129-8675 was amended to change SO₂ monitoring frequency from daily to weekly.

Plant 1. On July 18, 1984, Permit 3295-129-8674 was amended to allow the addition of a lime bin as part of the lime injection system needed to control SO₂ emissions.

Plant 2. On July 18, 1984, Permit 3295-129-8675 was amended to allow the addition of a lime bin as part of the lime injection system needed to control SO₂ emissions.

December 15, 1989 PSD Avoidance Project (BG29, IC40, IC43 and BC13)

Plant 1. On **December 15, 1989**, Permit 3295-129-8674 was amended to allow the installation of the following:

- Bauxite Grinding Circuit (BG29) controlled by baghouse (BH29)

The baghouse is required to meet NSPS Subpart OOO limits. The NSPS PM limit and a 5200 hrs/yr of operation limit ensures the project remains below PSD significant levels for PM/PM10.

Plant 2. On **December 15, 1989**, Permit 3295-129-8674 was amended to allow the installation of the following:

- Barmac (BC13) controlled by baghouse (BH13)
- Barmac (IC40) controlled by baghouse (BH40)
- Casting System (IC43) controlled by baghouse (BH 43)

The baghouses (BH13, BH40, and BH43) are required to meet NSPS Subpart OOO limits. The NSPS limit 0.02 grains/dscf is equivalent to 1.71 lb/hr limit. The 1.71 lb/hr limit and limits on the number of operational hours ensures a PSD review is not required. The Barmac (BC13) was limited to 2000 hrs/yr. The Barmac (IC40) and Casting System (IC43) were limited to 5200 hrs/yr. The PSD avoidance calculations were based on the project modifications occurring at both plants. The PM emissions were limited to 12.2 tons/yr, which is below the 15 tons/yr trigger value for a PSD major modification. More detailed calculations are in the appendix.

Plant 1. On **March 6, 1990**, Permit 3295-129-10423 was issued to change the SO₂ limit on the Kilns (K1 and K2) from 80 lb/hr to 116 lb/hr. The 80 lb/hr limit was set to reasonably assure compliance with the PSD increment for SO₂. Data was provided showing that the clays contained sulfur that contributed to the SO₂ emissions in the area. Since the clay production had not changed, the increment would only include the SO₂ increase resulting from burning coal, and the SO₂ from clay would be considered part of the baseline level for that area. The new limit accounts for increment consuming emissions only. Permit 3295-129-8674 was revoked.

Plant 2. On **March 6, 1990**, Permit 3295-129-10420 was issued to change the SO₂ limit on the Kilns (K1, K2, and K3) from 80 lb/hr to 116 lb/hr. The 80 lb/hr limit was set to reasonably assure compliance with the PSD increment for SO₂. Data was provided showing that the clays contained sulfur that contributed to the SO₂ emissions in the area. Since the clay production had not changed for Kilns K1, K2 and K3 the increment would only include the SO₂ increase resulting from burning coal, and the SO₂ from clay would be considered part of the baseline level for that area. The new limit accounts for increment consuming emissions that result from firing coal in Kilns K1, K2, and K3 plus emissions from the new Kilns K4 and K5. Permit 3295-129-8675 was revoked.

Plant 2. On **August 6, 1990**, Permit 3295-129-10420 was amended to allow for production of meta kaolin and bauxitic clays. The permit allowed for the following:

- Cooler (K4) controlled by a baghouse (CBH4) while producing a 47 MK product.

Note that the Title V application shows that both Coolers (K1 and K4) in actual practice may produce the meta kaolin and bauxitic clays while venting to baghouse (CBH1). However, the original permit application 4431 and resulting permit did not account for this arrangement. This discrepancy will be addressed in the "Permit Condition" section of this narrative. A PSD review would be required if the modification resulted in emissions equal to or greater than 15 tons per year of PM10. A limit will be established to ensure that this change is not a major modification. The Coolers (K1 & K4) controlled by baghouse (CBH4) will have a 3.12 lb/hr PM emission limit. This will limit the potential emissions to 13.7 tons/yr. The mass emission rate equates to a grain loading limit of 0.013 grains/dscf. A properly operated baghouse should not have any problem complying with this limit. The Coolers (K1 & K4) emissions do not contain any emissions that result from drying or calcining. Hence, the Coolers (K1 & K4) would not be subject to NSPS Subpart UUU. The cooler uses a vibrating grate type conveying mechanism which does not meet any of the defined affected facility types listed in NSPS Subpart OOO.

Plant 2. **On November 4, 1992**, Permit 3295-129-10420 was amended to allow the installation of baghouse (CMB2) to replace the existing scrubber controlling emissions from the cage mill (CM2).

Plant 2. **On November 25, 1992**, Permit 3295-129-10420 was amended to allow the operation of the following:

- Loadout (FG21) controlled by baghouse (BH21).

The original narrative for this permit amendment shows that the loading spout was pre-NSPS and installed prior to 1983. An inspection conducted on September 1, 1992 also shows that this loading spout (FG21) was pre-NSPS. However, all documents submitted by the company shows that the Loadout (FG21) is NSPS. Application 5734 shows November of 1992 as the installation date for the loading spout. The Title V Permit application shows that this loading spout was installed in 1991. Hence, this source appears to be subject to the NSPS requirements, but was never tested to determine compliance. The Title V Permit will incorporate the needed NSPS requirements. See “permit condition” section for NSPS testing requirements.

Plant 1. **On November 30, 1992**, Permit 3295-129-10423 was amended to reduce the allowable SO₂ for each Kiln (K1 and K2) from 116 lb/hr to 80 lb/hr. This permit change was for the purpose of reducing permit fees.

Plant 2. **On November 30, 1992**, Permit 3295-129-10420 was amended to reduce the allowable SO₂ for each Kiln (K1, K2, and K3) from 116 lb/hr to 80 lb/hr. This permit change was for the purpose of reducing permit fees.

November 23, 1993 PSD Avoidance Project (RM3)

Plant 2. **On November 23, 1993**, Permit 3295-129-10420 was amended to allow the replacement of the cage mill baghouse (CMB2) and following equipment subject to NSPS Subpart OOO:

- Roller Mill (RM3) controlled by baghouse (RMB3)

The NSPS Subpart OOO PM emission limit is equivalent to 5.3 lb/hr limit. The 5.3 lb/hr limit and the 5600 hrs/yr operational limit ensure the Roller Mill (RM3) project is not a PSD major modification. This project has the potential to emit 13.8 tons/yr of PM/PM10, 16.7 tons/yr of SO₂, and 4.72 tons/yr NO_x, 1.18 tons/yr CO, and 0.07 tons/yr of VOC. A PSD review would be required if the trigger values were exceeded (15 tons/yr PM10, 40 tons/yr SO₂, 40 tons/yr NO_x, 100 tons/yr CO, or 40 tons/yr VOC). Detailed calculations are in the appendix.

December 4, 1995 PSD Avoidance Project (ICTL, I10, I12, and I13)

Plant 2. **On December 4, 1995**, Permit 3295-129-10420 was amended to allow the installation of the following equipment subject to NSPS Subpart OOO:

- Loadout (ICTL) controlled by baghouse (B244)
- Jaw Crusher (I10) controlled by baghouse (I11)
- Barmac Crushing Circuit (I12) controlled by baghouse (B12)
- Sizing and Bagging (I13) controlled by baghouse (B13)

The NSPS Subpart OOO limit, 1.02 lb/hr limit on I10, 2.57 lb/hr limit on I12 and I13, and a limit of 3000 hrs/yr ensures this project is not a major PSD modification. The project will result in potential emissions of 13.8 tons/yr of PM/PM10, which is less than the PSD trigger value of 15 tons/yr of PM10. Hence, this project is not a major PSD modification. Detailed calculations are in the appendix.

Plant 2. **On April 24, 1996**, Permit 3295-129-10420 was amended to allow the installation and operation of

NSPS equipment including a new 60-ton bin, bagger, and 2 enlarged bins as part of the December 4, 1995 PSD Avoidance Project. The permit already included sufficient limits to ensure the project was not a PSD major modification.

July 1, 1996 PSD Avoidance Project 8385 (BD2, BD5, & BD8)

July 1, 1996 PSD Avoidance Project 8480 (A1, B1, and C1)

Plant 2. On July 1, 1996, Permit 3295-129-10420 was amended to allow the installation of the following equipment:

- Rotary Dryer (BD2) controlled by baghouse (BD3)
- Loading Chute Rotary Dryer System (BD5) controlled by baghouse (BD7)
- Loading Rotary Dryer System (BD8) controlled by baghouse (BD7)
- Pug Mill Extruders (DE1) uncontrolled
- Mixing Bay (A1) controlled by baghouses (A8, A9 and A10) that vent inside the building
- Blending Bay (B1) controlled by baghouse (B6) that vents inside the building
- Blending System Bay (C1) controlled by baghouse (C7) that vents inside the building.

The Rotary Dryer is subject to NSPS Subpart UUU. All other systems are subject to NSPS Subpart OOO. The Division considered application 8385 and 8480 as separate projects for the purpose of the PSD applicability determination. The NSPS limits, a 1,200 hrs/yr limit on the Rotary Dryer, and fuel usage limit (natural gas, propane, or # 2 oil) ensured the July 1, 1996 PSD Avoidance Project 8385 (BD2, BD5, & BD8) was not a major PSD modification. This project was determined to have the potential to emit 14.2 tons/yr PM/PM10, 18.3 tons/yr SO₂, 5.14 tons/yr NO_x, 1.29 tons/yr CO, and 0.08 tons/yr VOC. A PSD review would be required if the trigger values were exceeded (15 tons/yr PM10, 40 tons/yr SO₂, 40 tons/yr NO_x, 100 tons/yr CO, or 40 tons/yr VOC). The July 1, 1996 PSD Avoidance Project 8385 (BD2, BD5, and BD8) was latter revised by permit amendments issued on February 6, 1997 and September 18, 1997. The NSPS limits ensure that the July 1, 1996 PSD Avoidance Project 8480 (A1, B1, and C1) is not a major PSD modification. This project has the potential to emit 12.2 tons/yr PM/PM10, which is less than the 15 tons/yr PSD trigger value. Detailed calculations are in the appendix.

August 16, 1996 PSD Avoidance Project (DDL & DDR)

Plant 1. On August 16, 1996, Permit 3295-129-10423 was amended to allow the following:

- Deduster (DDL & DDR) controlled by baghouse (BH1)

The Deduster (DDL & DDR) baghouses (BH1) must meet NSPS Subpart OOO stack limit. The potential emissions based on the NSPS Subpart OOO stack limit is 11.3 tons/yr, which is below the 15 tons/yr trigger value for a PSD major modification. Hence, this project is not a PSD major modification. Detailed calculations are in the appendix.

Plant 2. On February 6, 1997, Permit 3295-129-10420 was amended to allow for additional operational flexibility. July 1, 1996 PSD Avoidance Project 8385 (BD2, BD5, & BD8) was revisited and new limits were set that provided more operational flexibility while ensuring the project was not a PSD major modification. The permit limited the Dryer (BD2) to 5,500 hrs/yr of total operation with a limit of 1,200 hrs/yr of operation while firing #2 oil. The loading chute (BD5) was limited to 1,000 hrs/yr. The Rotary Dryer is subject to NSPS Subpart UUU and limited to burn natural gas, propane or #2 oil. All other systems are subject to NSPS Subpart OOO. The NSPS limits and operational limits were set to ensure this project was not a major PSD modification. This project was determined to have the potential to emit 14.8 tons/yr PM/PM10, 18.3 tons/yr SO₂, 23.2 tons/yr NO_x, 5.8 tons/yr CO, and 0.83 tons/yr VOC. A PSD review would be required if the trigger

values were exceeded (15 tons/yr PM₁₀, 40 tons/yr SO₂, 40 tons/yr NO_x, 100 tons/yr CO, or 40 tons/yr VOC). The July 1, 1996 PSD Avoidance Project 8385 (BD2, BD5, and BD8) was latter revised by permit amendment issued September 18, 1997. Detailed calculations are in the appendix.

Plant 2. On September 18, 1997, Permit 3295-261-0047-E-01-0 was issued to allow for operation of pre-existing equipment installed at the site prior to 1972 as follows:

- Hooper Loadout HL2 controlled by baghouse BL2
- Hopper Loadout HL3 controlled by baghouse BL3

Note that PSD avoidance limits were set for the Hopper Loadouts (HL2 and HL2). The limit was not needed because these sources were installed and operational at the plant site prior to 1972 making the Hopper Loadouts pre-PSD. These sources were simply not previously listed in a specific permit. Limits set for PSD avoidance for BL2 and BL3 will be removed. The permit provided additional operational flexibility by revising the December 4, 1995 PSD Avoidance Project (ICTL, I10, I12, and I13). The limit for the hours of operation on the Barmac Crushing Circuit (I12) controlled by baghouse B12 was changed from 3000 to 5500. The limit on hours of operation was offset by a lower PM emission limit (0.40 lb/hr). The limit for the hours of operation on the Sizing and Bagging (I13) controlled by baghouse B13 was changed from 3000 to 5500. Again, the limit on hours of operation was offset by a lower PM emission limit (0.30 lb/yr). The limit on the hours of operation and PM emissions will ensures this project is not a major PSD modification. The project will result in potential emissions of 7.96 tons/yr of PM/PM₁₀, which is less than the PSD trigger value of 15 tons/yr of PM₁₀. Hence, this project is not a major PSD modification. Detailed calculations are in the appendix. The July 1, 1996 PSD Avoidance Project 8385 (BD2, BD5, & BD8) was revisited again and new limits were set that provided more operational flexibility while ensuring the project was not a PSD major modification. As requested in the application, the permit established limits on the Dryer (BD2), which included a 2.45 lb/hr emission limit, a limit on fuel usage (natural gas, propane, or #2 oil), a 5,500 hrs/yr of total Dryer operation limit and a 1,200 hrs/yr of Dryer operation limit while firing #2 oil. As requested in the application, the permit established limits on the loading chute (BD5), which included a 0.86 lb/hr emission limit and a 5,500 hrs/yr operational limit. The operational limit for the loading chute (BD5) increased from 1,000 hrs/yr to 5,500 hrs/yr, which was allowed by lowering the emission limits from NSPS levels to 2.45 lb/hr for the Dryer and 0.86 lb/hr for the loading chute. This project was determined to have the potential to emit 9.10 tons/yr PM/PM₁₀, 18.3 tons/yr SO₂, 23.2 tons/yr NO_x, 5.8 tons/yr CO, and 0.83 tons/yr VOC. A PSD review would be required if the trigger values were exceeded (15 tons/yr PM₁₀, 40 tons/yr SO₂, 40 tons/yr NO_x, 100 tons/yr CO, or 40 tons/yr VOC). Detailed calculations are in the appendix.

June 22, 1998 PSD Avoidance Project (Grit Plant)

Plant 2. On June 22, 1998, Permit 3295-261-0047-E-02-0 was issued to allow for the operation of the Grit Plant containing equipment originally thought to be subject to NSPS Subpart OOO. The application shows that the plant was processing mineral aggregate. The Division assumed that the mineral aggregate was a nonmetallic mineral as defined by NSPS Subpart OOO, which was incorrect. Based on the application TV-13480, the mineral aggregate is fused alumina oxide, which is actually subject to NSPS Subpart LL. The emission limits are the same for both NSPS standards except that Subpart OOO has additional requirements for affected facilities located inside buildings. The following is a list of relevant equipment:

- Bulk Unloaded (BU01), enclosed conveyors (EC01-EC10), Roll Crushers (RC01, RC02 & RC03), Crushing (CS01), Screens (PS01-PS02), Vibrating Screens (VS01-VS7), GMS Screen (GMS1) and Bins (BN1-BN6) controlled by baghouse (BH01)
- Screening and Packaging System (SP01), enclosed conveyors (EC11-EC16), Screens (DS1-DS2), Screens

(PS03-PS07), Vibrating Screens (VS08-VS16), Packaging Machine (PM01), and Bins (BN7-BN29) controlled by baghouse (BH02)

- Classifier (EG01) controlled by baghouse (BH03)
- Packaging Machine (PM02) and Gravity Mill (GM01), which are uncontrolled

The NSPS limit (0.02 grains/dscf) and a limit of 4500 hrs/yr was set to ensure this project would not trigger PSD review. The potential emissions may be calculated as 13.4 tons/yr of PM/PM10, which is less than the PSD trigger value of 15 tons/yr of PM10. Hence, this project is not a major PSD modification. Detailed calculations are in the appendix.

Plant 2. On October 25, 2001, Permit 3295-261-0047-E-03-0 was issued to allow for the operation of the IC-3 Roll Crusher Addition and removed the operation of the Grit Plant. The NSPS Subpart OOO is applicable. The following is a list of relevant equipment:

- Screw Auger (I50), Bin (I51), Belt Feeder (I52), Roll Crusher (I53), Screw Auger (I54), Bucket Elevator (I55), Screen (I56) and Bagger (I58) controlled by Dust Collector (I57)

Revised June 22, 1998 PSD Avoidance Project (Grit Plant)

Grit Plant. On December 17, 2001, Application TV-13480 was received for the Treibacher Schleifmittel Grit Plant. The company has requested more restrictive PM emission limits that will eliminate the hours of operation limits. Baghouse BH01 will have a 2.14 lb/hr emission limit and Baghouse BH02 will have a 1.01 lb/hr limit. The Classifier (EG01) controlled by baghouse (BH03) has been permanently shut down. See letter from TSNA Grit Plant dated March 20, 2002. The project will result in potential emissions of 13.8 tons/yr of PM/PM10, which is less than the PSD trigger value of 15 tons/yr of PM10. Hence, this project is not a major PSD modification. Detailed calculations are in the appendix. The Grit Plant operation was originally permitted as part of Plant 2 on June 22, 1998 under Permit 3295-261-0047-E-02-0. As requested, the Division will issue a separate permit for the Grit Plant.

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's Title V status?		
		Major Source Status	Major Source requesting SM Status	Non-Major Source Status
PM	Y	Y		
PM ₁₀	Y	Y		
SO ₂	Y	Y		
VOC	Y			Y
NO _x	Y	Y		
CO	Y			Y
TRS	n/a			
H ₂ S	n/a			
Individual	n/a			

HAP				
Total HAPs	n/a			

3. MACT Standards

No MACT standards apply to this facility.

4. Program Applicability

Program	Program Code	Applicable?
PSD	6	Yes
Part 61 NESHAP	8	No
NSPS	9	Yes
Part 63 NESHAP	M	No
Title V	V	Yes

Regulatory Analysis

II. Requirements for Entire Facility

A. Emission and Operating Caps

There are no facility wide emission or operating caps applicable to the facility.

B. Applicable Rules and Regulations

There are no specific facility wide rules or regulations applicable to this facility.

C. Compliance Status

There are no current compliance issues for this facility.

D. Operational Flexibility

The facility did not request any alternate operating scenarios for any of its equipment or processes.

E. Permit Conditions

There are no specific facility wide Permit Conditions for this facility.

III. Requirements for Emission Units

A. Brief Process Description

The Crushing System (CS01) and Screening & Packaging (SP01) are processes controlled by baghouses BH01 and BH02 respectively that involves a variety of equipment including, but is not necessarily limited to crushers, screens, bucket elevators, conveyor belt transfer points, product packaging stations, and storage bins. The emission units are identified by the primary processing function as shown in the table of emission units. The Gravity Mill (GM01) and Packaging Machine 2 (PM02) are specific uncontrolled emission units.

B. Equipment List for the Process

Emission Unit(s)						
ID No.	Description	Applicable Requirement(s) / Standard(s)*	Applicable Permit Condition No.(s)*	Control ID No.(s)	Stack ID No.(s)	Control Description
Building 6 Area						
CS01	Crushing System	40 CFR Part 60 LL	2.2.1, 3.2.1, 3.3.1, 3.5.1, 3.5.2, 4.2.1, 5.2.1, 5.2.2, 5.2.3, 5.2.5, 6.1.7, 6.2.1	BH01	ST01	Baghouse
SP01	Screening & Packaging	40 CFR Part 60 LL	2.2.1, 3.2.1, 3.3.1, 3.5.1, 3.5.2, 4.2.1, 5.2.1, 5.2.2, 5.2.3, 5.2.5, 6.1.7, 6.2.1	BH02	ST02	Baghouse
GM01	Gravity Mill	40 CFR Part 60 LL	2.2.1, 3.3.1, 4.2.1, 5.2.4, 5.2.5, 6.1.7, 6.1.8, 6.2.1	NA	NA	None
PM02	Packaging Machine 2	40 CFR Part 60 LL	2.2.1, 3.3.1, 4.2.1, 5.2.4, 5.2.5, 6.1.7, 6.1.8, 6.2.1	NA	NA	None

* Generally applicable requirements contained in this permit may also apply to emission units listed above.

C. Compliance Status

There are no current compliance issues for this facility.

D. Operational Flexibility

The company did not request any alternate operating scenarios for any of its equipment or processes.

E. Permit Conditions

The following conditions have been included in the Title V permit and are equipment specific:

- As required by Condition 7 of Air Quality Permit 3295-261-0047-E-02-0, Condition 3.2.1 establishes limits to ensure that the Grit Plant expansion is not a Major Modification as defined by PSD. The hours of operation limits have been removed, and more restrictive PM emission limits has been set to ensure that the project does not have a potential increase that would equal or exceed 15 tons/yr of PM10. The two baghouses will be limited to 13.8 tons/yr of PM. The limits have been set on a mass rate basis. The approximate equivalent PM concentration limit is 0.014 grains/dscf for each stack, which should be readily achievable using baghouse type control technology. The most recent testing for Baghouse BH01 shows that the emissions were 0.00061 grains/dscf (0.093 lb/hr). The most recent testing for Baghouse BH02 shows that the emissions were 0.0021 grains/dscf (0.167 lb/hr). The more restrictive PM limits are not expected to

cause an unreasonable compliance burden, and eliminating the limits on the hours of operation will provide the maximum operational flexibility to the Company.

- Condition 3.3.1 limits PM and visible emissions from equipment according to the NSPS requirements of the 40 CFR Part 60 Subpart LL “New Source Performance Standard for Metallic Mineral Processing Facilities.”

IV. Testing Requirements (with Associated Record keeping and Reporting)

A. General Testing Requirements

This permit specifies that testing may be required by the Division to determine if emissions are in compliance with the Act, and rules promulgated there under. Any required test must be completed within 30 days. All expected testing methods that may be needed for this facility are listed. A general condition requires notification of any test and for the submission of a test plan 30 days prior to testing.

B. Specific Testing Requirements

Condition 4.2.1 requires testing of equipment in accordance with the 40 CFR 60.8. This condition will provide requirements to address equipment installed as part of the operational flexibility and off permit changes as allowed by the permit. The current air quality permit allows certain changes to be made to the facility without permit revision. These changes may include installing new equipment and replacing existing equipment.

Testing was conducted of the TSNA Grit Plant based on the original SIP permit, which incorrectly identified the 40 CFR Part 60 Subpart OOO as the applicable requirement. The Grit Plant is actually subject to 40 CFR Part 60 Subpart LL. A visible emission standard of 10% opacity applies to process fugitive emissions for affected facilities located inside the building. Method 9 is the specified testing required in the 40 CFR Part 60 Subpart LL. However, EPD has obtained verbal confirmation, written forthcoming, from EPA that Method 22 on the building will sufficiently satisfy the 40 CFR Part 60 Subpart LL testing requirements for process fugitive emission sources located inside the building. Method 22 was conducted on entire Grit Plant operation on March 31, 1999 showing that the Grit Plant building exhibited no visible emissions.

V. Monitoring Requirements (Related to Data Collection)

A. General Monitoring Requirements

This permit specifies that any monitoring systems installed should be in continuous operation and that downtime due to maintenance should be minimized.

B. Specific Monitoring Requirements

Baghouses are used to control emission units at the TSNA Grit Plant are subject to the 40 CFR Part 60 Subpart LL. See the equipment list in this document identifying sources controlled by baghouses and the applicable regulatory requirement. Monitoring visible emissions exhibited by baghouses has been found to be the most direct and reliable method for ensuring proper operating conditions such that the applicable limits can be met.

Small baghouses, bin vents and those baghouses which operate infrequently are not required to perform detailed monitoring due to the unlikelihood of significant particulate matter emissions and opacity. At this time, silos with dedicated bin vents, wet screening operations, bucket elevators, screw conveyors, bagging operations, and pneumatic conveyors have been determined to be equipment that fall in this exempt category. There are no baghouses at the TSNA Grit Plant that are part of the exemption categories.

On the larger frequently operated baghouses, visible emissions are checked at least once each day of operation. The visible emissions must be below a given opacity action level or corrective action is required. The opacity action levels selected correspond to properly operated and maintained baghouses indicative of compliance with the applicable particulate matter standard. This approach allows the company to track and identify any problems with the baghouse and correct the situation as part of proper operation and maintenance. Any two consecutive visible emission checks requiring a corrective action on the same source is considered a reportable excursion. An excursion, in this case, indicates that a baghouse may not have been operated and maintained as needed to reasonably assure compliance with the emission standard(s). A Preventive Maintenance Program is an important part of the overall monitoring strategy that provides a reasonable assurance of compliance by tracking proper baghouse maintenance. As a minimum, this program requires weekly maintenance checks, including pressure drop readings. All required information must be retained by the Permittee and must be provided upon request by the Division. These baghouse monitoring requirements provide a reasonable assurance of compliance with the particulate matter and opacity standards.

The permit requires a daily check for obvious mechanical failure and for the presence of visible emissions for all uncontrolled sources except boilers and air heaters. The permit includes a requirement to take corrective action and keep records. If problems are revealed during the daily check, they must be reported if not corrected within 24 hours. This provides a reasonable assurance of compliance with the applicable particulate matter and opacity standards.

C. Record Keeping and Reporting Requirements.

Record keeping and reporting is required for all units that have a monitoring protocol. The records must be retained for at least five years and reports of excess emissions, exceedances, and excursions must be submitted semiannually.

VI. Other Record keeping and Reporting Requirements

Section 6.1 of the Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and the prompt reporting of all related information to deviations from applicable requirements.

A written report is required within seven days of any time a malfunction or breakdown of process, fuel during, or emissions control equipment results in excessive emissions for more than four hours. The Permit also requires semiannual reporting of any departure from an indicator range or value established for monitoring consistent with any averaging period specified for averaging the results of monitoring. The permit specifically defined excess emissions, exceedances and excursions that must be reported.

The permit requires recordkeeping of actions taken to control fugitive dust. In particular, dates, times and actions taken to prevent fugitive emissions from roads and storage piles. Condition 8.22.1 and 8.22.2 contain specific requirements to minimize and limit fugitive dust emissions.

VII. Specific Requirements

A. Operational Flexibility

Other than standard conditions 7.1.1, 7.2.1, and 7.2.2, operational flexibility provisions have not been incorporated into this Title V Permit. The applicant did not include any alternative operating scenarios in their Title V application nor did they request any specific operational flexibility conditions.

B. Alternative Requirements

There are no alternative requirements that need to be incorporated into the Title V Permit.

C. Insignificant Activities

The following two tables are lists of the facility's insignificant activities.

INSIGNIFICANT ACTIVITIES CHECKLIST

Category	Description of Insignificant Activity	Quantity
Laboratories and Testing	Research and development facilities, quality control testing facilities and/or small pilot projects, where combined daily emissions from all operations are not individually major or are support facilities not making significant contributions to the product of a collocated major manufacturing facility.	3
Storage Tanks and Equipment	All petroleum liquid storage tanks with a capacity of less than 10,000 gallons storing a petroleum liquid.	1

INSIGNIFICANT ACTIVITIES BASED ON EMISSION LEVELS

Description of Emission Units / Activities	Quantity
Magnetic Separator	1
Dust Collection Waste	3

Generic Emission Groups/Emission Units

There are no generic emission groups or emission units.

D. Temporary Sources

No temporary sources were indicated in the Title V application.

E. Short-Term Activities

The company did not identify any short-term activities for the Grit Plant.

F. Emissions Trading

The company did not identify or report any non-compliance in section 11.10 of the application.

G. Emissions Trading

Not applicable.

H. Acid Rain Requirements

The facility is not subject to Acid Rain requirements.

I. Prevention of Accidental Releases

No applicability indicated.

J. Stratospheric Ozone Protection Requirements

No applicability indicated in Section 3.11 of the application.

K. Pollution Prevention

The facility has not indicated any additional pollution prevention controls.

L. Specific Conditions

All conditions have been covered elsewhere in the review.

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.

Appendix (Supporting Calculations for Application Review)

Calculations For Plant 1, Plant 2, & Grit Plant.

12/15/89 PSD Avoidance Project (BG29, IC40, IC43, and BC13).

NSPS 40 CFR Part 60 Subpart OOO Limit: $\text{standard} := 0.02 \cdot \frac{\text{grains}}{\text{dscf}}$

Temperature (T): $T := 68\text{F}$ Moisture Content(ϕ): $\phi := 0\%$

For BG29,

Air flow rate: $V := 10000 \text{ acfm}$

Hourly Allowable: $\text{PM_BG29} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_BG29} = 1.71 \cdot \frac{\text{lb}}{\text{hr}}$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 5000 \cdot \text{hr}$

Potential Emissions From BG29: $\text{PM_BG29} := \text{PM_BG29} \cdot t_{\text{limit}}$ $\text{PM_BG29} = 4.286 \cdot \text{ton}$

For IC40,

Air flow rate: $V := 10000 \text{ acfm}$

Hourly Allowable: $\text{PM_IC40} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_IC40} = 1.71 \cdot \frac{\text{lb}}{\text{hr}}$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 2000 \cdot \text{hr}$

Potential Emissions From IC40: $\text{PM_IC40} := \text{PM_IC40} \cdot t_{\text{limit}}$ $\text{PM_IC40} = 1.714 \cdot \text{ton}$

For IC43,

Air flow rate: $V := 10000 \text{ acfm}$

Hourly Allowable: $\text{PM_IC43} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_IC43} = 1.71 \cdot \frac{\text{lb}}{\text{hr}}$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 2000 \cdot \text{hr}$

Potential Emissions From IC43: $\text{PM_IC43} := \text{PM_IC43} \cdot t_{\text{limit}}$ $\text{PM_IC43} = 1.714 \cdot \text{ton}$

For BC13,

Air flow rate: $V := 10000 \text{ acfm}$

Hourly Allowable: $\text{PM_BC13} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_BC13} = 1.71 \cdot \frac{\text{lb}}{\text{hr}}$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 5200 \cdot \text{hr}$

Potential Emissions From BC13: $\text{PM_BC13} := \text{PM_BC13} \cdot t_{\text{limit}}$ $\text{PM_BC13} = 4.457 \cdot \text{ton}$

Potential emissions from 3/15/89 PSD Avoidance Project:

$\text{PM_project031589} := \text{PM_BG29} + \text{PM_IC40} + \text{PM_IC43} + \text{PM_BC13}$ $\text{PM_project031589} = 12.2 \cdot \text{ton}$

11/23/93 PSD Avoidance Project (RM3).

Potential emissions from 11/23/93 PSD Avoidance Project:

Limit on hours of operation per 12 months: $t_{\text{limit}} := 5200 \cdot \text{hr}$

For the Roller Mill (RM3),

#2 fuel oil will result in the highest level of potential emissions from fuel combustion as follows:

Heating Value of #2 oil: $HV := 140000 \cdot \frac{\text{BTU}}{\text{gal}}$ Rated Capacity of Dryer: $R := 12.7 \cdot 10^6 \cdot \frac{\text{BTU}}{\text{hr}}$ Max % sulfur content of #2 oil: $S := .5$ Maximum Fuel Consumption Rate: $V := \frac{R}{HV}$ $V = 90.7 \cdot \frac{\text{gal}}{\text{hr}}$

Potential combustion emissions based on AP-42 factors for fuel burning:

$$\text{CO} := V \cdot \left\{ \frac{5.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} \quad \text{CO} = 0.454 \cdot \frac{\text{lb}}{\text{hr}} \quad \text{CO} := \text{CO} \cdot t_{\text{limit}} \quad \text{CO} = 1.18 \cdot \text{ton}$$

$$\text{NOx} := V \cdot \left\{ \frac{20.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} \quad \text{NOx} = 1.814 \cdot \frac{\text{lb}}{\text{hr}} \quad \text{NOx} := \text{NOx} \cdot t_{\text{limit}} \quad \text{NOx} = 4.72 \cdot \text{ton}$$

$$\text{TOC} := V \cdot \left\{ \frac{0.3 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} \quad \text{TOC} = 0.027 \cdot \frac{\text{lb}}{\text{hr}} \quad \text{TOC} := \text{TOC} \cdot t_{\text{limit}} \quad \text{TOC} = 0.07 \cdot \text{ton}$$

$$\text{SO}_2 := 142 \cdot S \cdot V \cdot \left\{ \frac{\text{lb}}{10^3 \cdot \text{gal}} \right\} \quad \text{SO}_2 = 6.441 \cdot \frac{\text{lb}}{\text{hr}} \quad \text{SO}_2 := \text{SO}_2 \cdot t_{\text{limit}} \quad \text{SO}_2 = 16.7 \cdot \text{ton}$$

$$\text{PM}_{\text{project112393}} := 5.3 \cdot \frac{\text{lb}}{\text{hr}} \cdot t_{\text{limit}} \quad \text{PM}_{\text{project112393}} = 13.8 \cdot \text{ton}$$

12/04/95 PSD Avoidance Project.

Potential emissions from 12/04/95 PSD Avoidance Project:

For ICTL, NSPS 40 CFR Part 60 Subpart OOO Limit: $\text{standard} := 0.02 \cdot \frac{\text{grains}}{\text{dscf}}$ Temperature (T): $T := 68 \cdot \text{F}$ Moisture Content(ϕ): $\phi := 0 \cdot \%$ Air flow rate: $V := 6000 \cdot \text{acfm}$ Hourly Allowable: $\text{PM_ICTL} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_ICTL} = 1.03 \cdot \frac{\text{lb}}{\text{hr}}$ No limit on hours: $\text{yr} = 8760 \cdot \text{hr}$ $\text{PM_ICTL} = 4.505 \cdot \frac{\text{ton}}{\text{yr}}$

Potential for I11, I12, & I13,

$$\text{PM_I11} := 1.02 \cdot \frac{\text{lb}}{\text{hr}} \cdot \left\{ 3000 \cdot \frac{\text{hr}}{\text{yr}} \right\} \quad \text{PM_I11} = 1.53 \cdot \frac{\text{ton}}{\text{yr}}$$

$$\text{PM_I12} := 2.57 \cdot \frac{\text{lb}}{\text{hr}} \cdot \left\{ 3000 \cdot \frac{\text{hr}}{\text{yr}} \right\} \quad \text{PM_I12} = 3.855 \cdot \frac{\text{ton}}{\text{yr}}$$

$$\text{PM_I13} := 2.57 \cdot \frac{\text{lb}}{\text{hr}} \cdot \left\{ 3000 \cdot \frac{\text{hr}}{\text{yr}} \right\} \quad \text{PM_I13} = 3.855 \cdot \frac{\text{ton}}{\text{yr}}$$

Potential for 12/04/95 PSD Avoidance Project:

$$\text{PM_project120495} := \text{PM_ICTL} + \text{PM_I11} + \text{PM_I12} + \text{PM_I13} \quad \text{PM_project120495} = 13.75 \cdot \frac{\text{ton}}{\text{yr}}$$

7/1/96 PSD Avoidance Project 8385 (BD2, BD5, & BD8)

Limit on hours of operation per 12 months: $t_{\text{limit}} := 1200 \cdot \text{hr}$

For the Dryer (BD2) controlled by baghouse BD3,

#2 fuel oil will result in the highest level of potential emissions from fuel combustion as follows:

Heating Value of #2 oil: $HV := 140000 \cdot \frac{\text{BTU}}{\text{gal}}$ Rated Capacity of Dryer: $R := 60 \cdot 10^6 \cdot \frac{\text{BTU}}{\text{hr}}$

Max % sulfur content of #2 oil: $S := .5$

Maximum Fuel Consumption Rate: $V := \frac{R}{HV}$ $V = 428.6 \cdot \frac{\text{gal}}{\text{hr}}$

Emissions Based on fuel burning AP-42 Factors:

$\text{CO} := V \cdot \left\{ \frac{5.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\}$ $\text{CO} = 2.143 \cdot \frac{\text{lb}}{\text{hr}}$ $\text{CO} := \text{CO} \cdot t_{\text{limit}}$ $\text{CO} = 1.29 \cdot \text{ton}$

$\text{NOx} := V \cdot \left\{ \frac{20.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\}$ $\text{NOx} = 8.571 \cdot \frac{\text{lb}}{\text{hr}}$ $\text{NOx} := \text{NOx} \cdot t_{\text{limit}}$ $\text{NOx} = 5.14 \cdot \text{ton}$

$\text{TOC} := V \cdot \left\{ \frac{0.3 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\}$ $\text{TOC} = 0.129 \cdot \frac{\text{lb}}{\text{hr}}$ $\text{TOC} := \text{TOC} \cdot t_{\text{limit}}$ $\text{TOC} = 0.08 \cdot \text{ton}$

$\text{SO}_2 := 142 \cdot S \cdot V \cdot \left\{ \frac{\text{lb}}{10^3 \cdot \text{gal}} \right\}$ $\text{SO}_2 = 30.429 \cdot \frac{\text{lb}}{\text{hr}}$ $\text{SO}_2 := \text{SO}_2 \cdot t_{\text{limit}}$ $\text{SO}_2 = 18.3 \cdot \text{ton}$

NSPS 40 CFR Part 60 Subpart UUU Limit: standard := $0.025 \cdot \frac{\text{grains}}{\text{dscf}}$

Temperature (T): $T := 230 \text{ F}$ Moisture Content (ϕ): $\phi := 0\%$ Air flow rate: $V := 30000 \cdot \text{acfm}$

Hourly Allowable: $\text{PM}_{\text{BD3}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM}_{\text{BD3}} = 4.92 \cdot \frac{\text{lb}}{\text{hr}}$

Potential Annual PM Emissions: $\text{PM}_{\text{BD3}} := \text{PM}_{\text{BD3}} \cdot t_{\text{limit}}$ $\text{PM}_{\text{BD3}} = 2.952 \cdot \text{ton}$

The Chute System (BD5) and Loading System (BD8) are controlled by baghouse B7:

NSPS 40 CFR Part 60 Subpart OOO Limit: standard := $0.02 \cdot \frac{\text{grains}}{\text{dscf}}$

Temperature (T): $T := 68 \text{ F}$ Moisture Content (ϕ): $\phi := 0\%$

Air flow rate: $V := 15000 \cdot \text{acfm}$

Hourly Allowable: $\text{PM}_{\text{BD7}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM}_{\text{BD7}} = 2.57 \cdot \frac{\text{lb}}{\text{hr}}$

No operational constraint on source going to BD7: $t_{\text{limit}} := 8760 \cdot \text{hr}$

Potential Annual Emissions PM emission: $\text{PM}_{\text{BD7}} := \text{PM}_{\text{BD7}} \cdot t_{\text{limit}}$ $\text{PM}_{\text{BD7}} = 11.263 \cdot \text{ton}$

The potential emissions from project 8535 is: $\text{PM}_{8535} := \text{PM}_{\text{BD7}} + \text{PM}_{\text{BD3}}$

$\text{PM}_{8535} = 14.2 \cdot \text{ton}$

7/1/96 PSD Avoidance Project 8480 (A1, B1, C1)

NSPS 40 CFR Part 60 Subpart OOO Limit: $\text{standard} := 0.02 \cdot \frac{\text{grains}}{\text{dscf}}$

Temperature (T): $T := 68\text{F}$ Moisture Content(ϕ): $\phi := 0\%$

There is no production time constraint: $t_{\text{limit}} := 8760 \cdot \text{hr}$

For A1 venting to Baghouses A8, A9, & A10,

Combined air flow rate A8, A9, & A10: $V := (6000 + 1000 + 2000) \cdot \text{acfm}$

Hourly Allowable: $\text{PM_A1} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_A1} = 1.54 \cdot \frac{\text{lb}}{\text{hr}}$

Potential Annual Emissions PM emission: $\text{PM_A1} := \text{PM_A1} \cdot t_{\text{limit}}$ $\text{PM_A1} = 6.758 \cdot \text{ton}$

For B1 venting to baghouse B6, Air flow rate: $V := 5000 \cdot \text{acfm}$

Hourly Allowable: $\text{PM_B6} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_B6} = 0.86 \cdot \frac{\text{lb}}{\text{hr}}$

Potential Annual Emissions PM emission: $\text{PM_B6} := \text{PM_B6} \cdot t_{\text{limit}}$ $\text{PM_B6} = 3.754 \cdot \text{ton}$

For C1 venting to Baghouse C7, Air flow rate: $V := 2000 \cdot \text{acfm}$

Hourly Allowable: $\text{PM_C7} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_C7} = 0.34 \cdot \frac{\text{lb}}{\text{hr}}$

Potential Annual Emissions PM emission: $\text{PM_C7} := \text{PM_C7} \cdot t_{\text{limit}}$ $\text{PM_C7} = 1.502 \cdot \text{ton}$

Potential PM/PM10 emissions from 7/1/96 PSD Avoidance Project:

$\text{PM_project8480} := \text{PM_A1} + \text{PM_B6} + \text{PM_C7}$

$\text{PM_project031589} = 12.17 \cdot \text{ton}$

8/16/96 PSD Avoidance Project (DDL & DDR).

NSPS 40 CFR Part 60 Subpart OOO Limit: standard := $0.02 \cdot \frac{\text{grains}}{\text{dscf}}$

T := 68F Moisture Content(ϕ): $\phi := 0\%$ Stack Flow: V := 15000·acfm

Hourly Allowable: PM_BH1 := (standard)·(V)·(1 - ϕ)· $\frac{68 + 460}{T + 460}$ PM_BH1 = $2.57 \cdot \frac{\text{lb}}{\text{hr}}$

Potential Emissions From BG29: PM_BH1 := PM_BH1 PM_BH1 = $11.263 \cdot \frac{\text{ton}}{\text{yr}}$

7/1/96 PSD Avoidance Project 8385 (BD 2, BD 5, BD8) revisited and revised 2/6/97.

For the Dryer (BD2) controlled by baghouse BD3,

$$\text{Rated Capacity of Dryer: } R := 60 \cdot 10^6 \cdot \frac{\text{BTU}}{\text{hr}}$$

$$\text{Heating Value of \#2 oil: } \text{HV}_{\text{oil}} := 140000 \cdot \frac{\text{BTU}}{\text{gal}} \quad \text{Heating Value of gas: } \text{HV}_{\text{gas}} := 1000 \cdot \frac{\text{BTU}}{\text{ft}^3}$$

$$\text{Max \% sulfur content of \#2 oil: } S := .5$$

$$\text{Maximum Fuel Oil Consumption Rate: } \text{Voil} := \frac{R}{\text{HV}_{\text{oil}}} \quad \text{Voil} = 428.6 \cdot \frac{\text{gal}}{\text{hr}}$$

$$\text{Maximum Natural Gas Consumption Rate: } \text{V}_{\text{gas}} := \frac{R}{\text{HV}_{\text{gas}}} \quad \text{V}_{\text{gas}} = 60000 \cdot \frac{\text{ft}^3}{\text{hr}}$$

#2 fuel oil will result in the highest level of potential emissions from fuel combustion then the remaining time the potential emissions will result from natural gas combustion as follows:

$$\text{Limit on the time Dryer (BD3) may operate: } t_{\text{limit}} := 5500 \cdot \text{hr}$$

$$\text{Limit on the time \#2 oil may be fired in Dryer (BD3): } t_{\text{oil}} := 1200 \cdot \text{hr}$$

$$\text{Amount of time Dryer (BD3) could operate on natural gas: } t_{\text{gas}} := t_{\text{limit}} - t_{\text{oil}} \quad t_{\text{gas}} = 4300 \cdot \text{hr}$$

Annual Potential Emissions Based on fuel burning AP-42 Factors:

$$\text{CO} := \text{Voil} \cdot t_{\text{oil}} \cdot \left\{ \frac{5.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} + \text{V}_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{35 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{CO} = 5.8 \cdot \text{ton}$$

$$\text{NOx} := \text{Voil} \cdot t_{\text{oil}} \cdot \left\{ \frac{20.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} + \text{V}_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{140 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{NOx} = 23.2 \cdot \text{ton}$$

$$\text{TOC} := \text{Voil} \cdot t_{\text{oil}} \cdot \left\{ \frac{0.3 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} + \text{V}_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{5.8 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{TOC} = 0.83 \cdot \text{ton}$$

$$\text{SO}_2 := 142 \cdot S \cdot \text{Voil} \cdot t_{\text{oil}} \cdot \left\{ \frac{\text{lb}}{10^3 \cdot \text{gal}} \right\} + \text{V}_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{0.6 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{SO}_2 = 18.3 \cdot \text{ton}$$

$$\text{NSPS 40 CFR Part 60 Subpart UUU Limit: } \text{standard} := 0.025 \cdot \frac{\text{grains}}{\text{dscf}}$$

$$\text{Temperature (T): } T := 230 \text{ F} \quad \text{Moisture Content } (\phi): \phi := 0 \cdot \% \quad \text{Air flow rate: } V := 30000 \cdot \text{acfm}$$

$$\text{Hourly Allowable: } \text{PM}_{\text{BD3}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{\text{BD3}} = 4.92 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{The dryer operational limit is: } t_{\text{limit}} := 5500 \cdot \text{hr}$$

$$\text{Potential Annual PM Emissions: } \text{PM}_{\text{BD3}} := \text{PM}_{\text{BD3}} \cdot t_{\text{limit}} \quad \text{PM}_{\text{BD3}} = 13.528 \cdot \text{ton}$$

For BD5 and BD8 controlled by baghouse BD7,

$$\text{Hourly Allowable: NSPS 40 CFR Part 60 Subpart OOO Limit: } \text{standard} := 0.02 \cdot \frac{\text{grains}}{\text{dscf}}$$

$$\text{Temperature (T): } T := 68 \text{ F} \quad \text{Moisture Content } (\phi): \phi := 0 \cdot \% \quad \text{Air flow rate: } V := 15000 \cdot \text{acfm}$$

$$\text{PM}_{\text{BD7}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{\text{BD7}} = 2.57 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{Time limit on Loading Chute BD5: } t_{\text{limit}} := 1000 \cdot \text{hr}$$

$$\text{Potential Annual Emissions PM emission: } \text{PM}_{\text{BD7}} := \text{PM}_{\text{BD7}} \cdot t_{\text{limit}} \quad \text{PM}_{\text{BD7}} = 1.286 \cdot \text{ton}$$

Potential PM/PM10 emissions from 7/1/96 PSD 8385 Avoidance Project:

$$\text{PM}_{\text{8385}} := \text{PM}_{\text{BD3}} + \text{PM}_{\text{BD7}} \quad \text{PM}_{\text{8385}} = 14.8 \cdot \text{ton}$$

12/04/95 PSD Avoidance Project revisited and revised 9/18/97.

Potential emissions from 12/04/95 PSD Avoidance Project:

For ICTL, NSPS 40 CFR Part 60 Subpart OOO Limit: $\text{standard} := 0.02 \cdot \frac{\text{grains}}{\text{dscf}}$ Temperature (T): $T := 68\text{-F}$ Moisture Content (ϕ): $\phi := 0\text{-}\%$ Air flow rate: $V := 6000 \cdot \text{acfm}$ Hourly Allowable: $\text{PM_ICTL} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_ICTL} = 1.03 \cdot \frac{\text{lb}}{\text{hr}}$ No limit on hours: $\text{yr} = 8760 \cdot \text{hr}$ $\text{PM_ICTL} = 4.505 \cdot \frac{\text{ton}}{\text{yr}}$

Potential for I11, I12, & I13,

$$\text{PM_I11} := 1.02 \cdot \frac{\text{lb}}{\text{hr}} \cdot \left\{ 3000 \cdot \frac{\text{hr}}{\text{yr}} \right\} \quad \text{PM_I11} = 1.53 \cdot \frac{\text{ton}}{\text{yr}}$$

$$\text{PM_I12} := 0.40 \cdot \frac{\text{lb}}{\text{hr}} \cdot \left\{ 5500 \cdot \frac{\text{hr}}{\text{yr}} \right\} \quad \text{PM_I12} = 1.1 \cdot \frac{\text{ton}}{\text{yr}}$$

$$\text{PM_I13} := 0.30 \cdot \frac{\text{lb}}{\text{hr}} \cdot \left\{ 5500 \cdot \frac{\text{hr}}{\text{yr}} \right\} \quad \text{PM_I13} = 0.825 \cdot \frac{\text{ton}}{\text{yr}}$$

Potential for 12/04/95 PSD Avoidance Project:

$$\text{PM_project120495} := \text{PM_ICTL} + \text{PM_I11} + \text{PM_I12} + \text{PM_I13} \quad \text{PM_project120495} = 7.96 \cdot \frac{\text{ton}}{\text{yr}}$$

7/1/96 PSD Avoidance Project 8385 (BD 2, BD 5, BD8) revisited and revised 9/18/97.

For the Dryer (BD2) controlled by baghouse BD3,

$$\text{Rated Capacity of Dryer: } R := 60 \cdot 10^6 \cdot \frac{\text{BTU}}{\text{hr}}$$

$$\text{Heating Value of \#2 oil: } HV := 140000 \cdot \frac{\text{BTU}}{\text{gal}} \quad \text{Max \% sulfur content of \#2 oil: } S := .5$$

$$\text{Maximum Fuel Oil Consumption Rate: } V_{\text{oil}} := \frac{R}{HV} \quad V_{\text{oil}} = 428.6 \cdot \frac{\text{gal}}{\text{hr}}$$

$$\text{Heating Value of gas: } HV := 1000 \cdot \frac{\text{BTU}}{\text{ft}^3} \quad \text{Max \% sulfur content of \#2 oil: } S := .5$$

$$\text{Maximum Natural Gas Consumption Rate: } V_{\text{gas}} := \frac{R}{HV} \quad V_{\text{gas}} = 4.488 \cdot 10^5 \cdot \frac{\text{gal}}{\text{hr}}$$

\#2 fuel oil will result in the highest level of potential emissions from fuel combustion then the remaining time the potential emissions will result from natural gas combustion as follows:

$$\text{Limit on the time Dryer (BD3) may operate: } t_{\text{limit}} := 5500 \cdot \text{hr}$$

$$\text{Limit on the time \#2 oil may be fired in Dryer (BD3): } t_{\text{oil}} := 1200 \cdot \text{hr}$$

$$\text{Amount of time Dryer (BD3) could operate on natural gas: } t_{\text{gas}} := t_{\text{limit}} - t_{\text{oil}} \quad t_{\text{gas}} = 4300 \cdot \text{hr}$$

Annual Potential Emissions Based on fuel burning AP-42 Factors:

$$\text{CO} := V_{\text{oil}} \cdot t_{\text{oil}} \cdot \left\{ \frac{5.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} + V_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{35 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{CO} = 5.8 \cdot \text{ton}$$

$$\text{NOx} := V_{\text{oil}} \cdot t_{\text{oil}} \cdot \left\{ \frac{20.0 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} + V_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{140 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{NOx} = 23.2 \cdot \text{ton}$$

$$\text{TOC} := V_{\text{oil}} \cdot t_{\text{oil}} \cdot \left\{ \frac{0.3 \cdot \text{lb}}{10^3 \cdot \text{gal}} \right\} + V_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{5.8 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{TOC} = 0.83 \cdot \text{ton}$$

$$\text{SO}_2 := 142 \cdot S \cdot V_{\text{oil}} \cdot t_{\text{oil}} \cdot \left\{ \frac{\text{lb}}{10^3 \cdot \text{gal}} \right\} + V_{\text{gas}} \cdot t_{\text{gas}} \cdot \left\{ \frac{0.6 \cdot \text{lb}}{10^6 \cdot \text{ft}^3} \right\} \quad \text{SO}_2 = 18.3 \cdot \text{ton}$$

$$\text{Requested limit: } PM_{\text{BD3}} := 2.45 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{The dryer operational limit is: } t_{\text{limit}} := 5500 \cdot \text{hr}$$

$$\text{Potential Annual PM Emissions: } PM_{\text{BD3}} := PM_{\text{BD3}} \cdot t_{\text{limit}} \quad PM_{\text{BD3}} = 6.737 \cdot \text{ton}$$

For BD5 and BD8 controlled by baghouse BD7,

$$\text{Requested limit: } PM_{\text{BD7}} := 0.86 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{Time limit on Loading Chute BD5: } t_{\text{limit}} := 5500 \cdot \text{hr}$$

$$\text{Potential Annual Emissions PM emission: } PM_{\text{BD7}} := PM_{\text{BD7}} \cdot t_{\text{limit}} \quad PM_{\text{BD7}} = 2.365 \cdot \text{ton}$$

Potential PM/PM10 emissions from 7/1/96 PSD 8385 Avoidance Project:

$$PM_{\text{8385}} := PM_{\text{BD3}} + PM_{\text{BD7}} \quad PM_{\text{8385}} = 9.102 \cdot \text{ton}$$

8/6/90 PSD Avoidance Project K1 & K4 (CBH4) revisited and revised current

Potential Emissions from this project were not limited for PSD avoidance. The project involves partially calcined clays that may cause more dust in the coolers (K1 & K2) controlled by baghouse CBH4.

The grain loading for this type of operation should be able to meet a standard such as:

$$\text{standard} := 0.013 \cdot \frac{\text{grains}}{\text{dscf}}$$

Temperature (T): $T := 68 \cdot \text{F}$ Moisture Content (ϕ): $\phi := 0 \cdot \%$

For A8,

Air flow rate: $V := 28000 \cdot \text{acfm}$

$$\text{Hourly Allowable: } \text{PM_A8} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM_A8} = 3.12 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: } \text{yr} = 8760 \cdot \text{hr} \quad \text{PM_A8} = 13.67 \cdot \frac{\text{ton}}{\text{yr}}$$

6/22/98 PSD Avoidance Project Grit Plant CS01, SP01, CC01 (BH01, BH02, BH03)

Potential Emissions from this project were limited for PSD avoidance. The project involves the Grit Plant controlled by three baghouses. The NSPS limit and hours of operation limits were set for PSD avoidance as follows:

The grain loading for this type of operation should be able to meet a standard such as:

$$\text{standard} := 0.02 \cdot \frac{\text{grains}}{\text{dscf}}$$

Temperature (T): $T := 68\text{-F}$ Moisture Content(ϕ): $\phi := 0\%$

For CS01 vented to BH01,

Air flow rate: $V := 17850\text{-acfm}$

$$\text{Hourly Allowable: PM}_{\text{CS01}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{\text{CS01}} = 3.06 \cdot \frac{\text{lb}}{\text{hr}}$$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 4500\text{-hr}$

$$\text{Potential PM, PM}_{\text{CS01}} := \text{PM}_{\text{CS01}} \cdot t_{\text{limit}} \quad \text{PM}_{\text{CS01}} = 6.88 \cdot \text{ton}$$

For SP01 vented to BH02,

Air flow rate: $V := 8400\text{-acfm}$

$$\text{Hourly Allowable: PM}_{\text{CP01}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{\text{CP01}} = 1.44 \cdot \frac{\text{lb}}{\text{hr}}$$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 4500\text{-hr}$

$$\text{Potential PM, PM}_{\text{CP01}} := \text{PM}_{\text{CP01}} \cdot t_{\text{limit}} \quad \text{PM}_{\text{CP01}} = 3.24 \cdot \text{ton}$$

For CC01 vented to BH03,

Air flow rate: $V := 8400\text{-acfm}$

$$\text{Hourly Allowable: PM}_{\text{CC01}} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{\text{CC01}} = 1.44 \cdot \frac{\text{lb}}{\text{hr}}$$

Limit on hours of operation per 12 months: $t_{\text{limit}} := 4500\text{-hr}$

$$\text{Potential PM, PM}_{\text{CC01}} := \text{PM}_{\text{CC01}} \cdot t_{\text{limit}} \quad \text{PM}_{\text{CC01}} = 3.24 \cdot \text{ton}$$

Potential PM/PM10 emissions from 6/22/98 PSD Avoidance Project for the Grit Plant:

$$\text{PM}_{062298} := \text{PM}_{\text{CS01}} + \text{PM}_{\text{CP01}} + \text{PM}_{\text{CC01}} \quad \text{PM}_{062298} = 13.365 \cdot \text{ton}$$

Revised 6/22/98 PSD Avoidance Project Grit Plant CS01, SP01, CC01 (BH01, BH02, BH03)

Potential Emissions from this project were limited for PSD avoidance. The project included the Grit Plant originally controlled by three baghouses. However, the Classifier (EG01) controlled by baghouse (BH03) has been permanently shut down. The NSPS limit and hours of operation limits originally prevented a PSD review. The company would like to remove the limits on the hours of operation, and are confident that they can meet a more restrictive PM limit as follows:

Requested grain loading limit: $\text{standard} := 0.014 \cdot \frac{\text{grains}}{\text{dscf}}$

Temperature (T): $T := 68 \cdot \text{F}$ Moisture Content(ϕ): $\phi := 0 \cdot \%$

For CS01 vented to BH01,

Air flow rate: $V := 17850 \cdot \text{acfm}$

Hourly Allowable: $\text{PM_CS01} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_CS01} = 2.14 \cdot \frac{\text{lb}}{\text{hr}}$

No limit on hours: $\text{yr} = 8760 \cdot \text{hr}$ $\text{PM_CS01} = 9.38 \cdot \frac{\text{ton}}{\text{yr}}$

For SP01 vented to BH02,

Air flow rate: $V := 8400 \cdot \text{acfm}$

Hourly Allowable: $\text{PM_CP01} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460}$ $\text{PM_CP01} = 1.01 \cdot \frac{\text{lb}}{\text{hr}}$

No limit on hours: $\text{yr} = 8760 \cdot \text{hr}$ $\text{PM_CP01} = 4.42 \cdot \frac{\text{ton}}{\text{yr}}$

Potential PM/PM10 emissions from 6/22/98 PSD Avoidance Project for the Grit Plant:

$\text{PM_062298} := \text{PM_CS01} + \text{PM_CP01}$ $\text{PM_062298} = 13.797 \cdot \frac{\text{ton}}{\text{yr}}$

Potential Emissions from small baghouses inside buildings for purposes of considering monitoring:

For ICTL, NSPS 40 CFR Part 60 Subpart OOO Limit: standard := $0.02 \cdot \frac{\text{grains}}{\text{dscf}}$

Temperature (T): T := 68-F Moisture Content(ϕ): $\phi := 0\%$

For A8,

Air flow rate: V := 6000·acfm

$$\text{Hourly Allowable: PM}_{A8} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{A8} = 1.03 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{A8} = 4.505 \cdot \frac{\text{ton}}{\text{yr}}$$

For A9,

Air flow rate: V := 1000·acfm

$$\text{Hourly Allowable: PM}_{A9} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{A9} = 0.17 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{A9} = 0.751 \cdot \frac{\text{ton}}{\text{yr}}$$

For A10,

Air flow rate: V := 2000·acfm

$$\text{Hourly Allowable: PM}_{A10} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{A10} = 0.34 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{A10} = 1.502 \cdot \frac{\text{ton}}{\text{yr}}$$

For B6,

Air flow rate: V := 5000·acfm

$$\text{Hourly Allowable: PM}_{B6} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{B6} = 0.86 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{B6} = 3.754 \cdot \frac{\text{ton}}{\text{yr}}$$

For C7,

Air flow rate: V := 2000·acfm

$$\text{Hourly Allowable: PM}_{C7} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{C7} = 0.34 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{C7} = 1.502 \cdot \frac{\text{ton}}{\text{yr}}$$

For B244,

Air flow rate: V := 6000·acfm

$$\text{Hourly Allowable: PM}_{B244} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{B244} = 1.03 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{B244} = 4.505 \cdot \frac{\text{ton}}{\text{yr}}$$

For I57,

Air flow rate: V := 6000·acfm

$$\text{Hourly Allowable: PM}_{I57} := (\text{standard}) \cdot (V) \cdot (1 - \phi) \cdot \frac{68 + 460}{T + 460} \quad \text{PM}_{I57} = 1.03 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{No limit on hours: yr} = 8760 \cdot \text{hr} \quad \text{PM}_{I57} = 4.505 \cdot \frac{\text{ton}}{\text{yr}}$$

Addendum to Narrative

EPD issued draft Title V Permit 3255-261-0070-V-01-0 to TSNA Grit Plant located in Andersonville on November 12, 2002. The public notice for this Title V Permit was published in the Americus Times-Recorder on December 10, 2002. The public comment period expired January 9, 2003. No comments were received. No changes were made to the draft permit.