



Louisville Metro Air Pollution Control District
 701 West Ormsby Avenue, Suite 303
 Louisville, Kentucky 40203-3137



07 March 2018

Title V Statement of Basis

Owner: Clariant Corporation (Louisville South Plant)
Source: Clariant Corporation

Plant Location: 4900 Crittenden Drive, Louisville, Kentucky 40209

Date Application Received: See Table 4 **Date Admin Complete:** 03/23/2017

Date of Draft Permit: 21 January 2018 **Date of Proposed Permit:** 21 January 2018

District Engineer: Jenny Rhodes **Permit No:** 27759-14-TV(R2)

Plant ID: 0042 **SIC Code:** 2819 **NAICS:** 325188

Introduction:

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

This is a significant permit revision to change monitoring parameters for several control devices and incorporate the Environmental Acceptability Demonstration received December 17, 2017.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment area for sulfur dioxide (SO₂).

Application Type/Permit Activity:

- Initial Issuance
- Permit Revision
 - Administrative
 - Minor
 - Significant
- Permit Renewal

Compliance Summary:

- Compliance certification signed
- Source is out of compliance
- Compliance schedule included
- Source is operating in compliance

I Source Information

1. **Product Description:** This source manufactures customized precipitated catalysts and catalyst carriers.
2. **Process Description:** Various wet metal oxides are mixed with various additives to make catalysts. The wet catalyst is dried in box dryers, calcined, milled, screened, and packaged.
3. **Site Determination:** Clariant Corporation is the parent company, operates two facilities in Louisville, the South plant at 4900 Crittenden Drive and the West plant at South 12th Street. Based on information obtained from the company and the criteria used by EPA to make single source determinations, the District has determined that both locations are separate sources. Both locations would have to meet the following three criteria in order to be considered one single source for Title V and PSD/NSR applicability:
 - Same industrial grouping,
 - Common ownership or control, and
 - Contiguous or adjacent locations.

Both locations have the same first two digit SIC code (28)

Both are 100% owned and operated by their parent company.

Neither location is contiguous or adjacent. Each plant acts independently of the other, operating separate production lines, with minimal transfer of material between plants that is commercially available from other suppliers. Furthermore, there are no Clariant Corporation dedicated transportation links between the plants.

4. **Emission Unit Summary:**

Emission Unit	Equipment Description
EU 101-S01 and 101-S02	Mixing System; mixing of wet metal oxides with various additives
EU 101-S03 and 101-S14	Mixing and weighing of raw materials
EU 101-S06, 101-S07, 101-S08 and 101-S09	Box Dryers, low temperature drying of catalysts
EU 101-S11 and 101-S12	Dryers, drying of wet, formed and loose catalysts
EU 101-S13	Catalyst System; precipitation of cobalt catalyst in lump form from solution
EU 101-S15	101-S15 Catalyst System; Catalyst production including mixing, drying, milling, calcining, screening, and packaging
EU 101-S16	Precipitating, spray drying and calcining metal catalysts
EU 101-S17	Reaction, precipitation, washing, drying, calcining and packaging
EU 101-S18	North System; impregnating catalyst carriers with various

Emission Unit	Equipment Description
	metal ions
EU 101-S19	North 101-S19 Catalyst System; impregnating catalyst carriers with various metal ions
EU 101-S21 and 101-S28	Catalyst Mixing Systems; catalysts ingredients are combined. Extruded rework is reground in a hammermill for reuse in the process.
EU 101-S22 and 101-S29	Screening System
EU 101-S23	Material handling system; transfer of dry catalyst material from dryers to drums
EU 101-S24 and 101-S25	Calcining System; calcining of catalysts
EU 102-S30, 102-S31, 102-S32 and 102-S33	Reduction furnace systems; metal oxide reduction to elemental metal
EU 102-S34 and 102-S36	Process tanks
EU 102-S35	Stabilization System; air stabilization of reduced metal catalyst products
EU 102-S37	Hydrochloric acid tank; unloading hydrochloric acid from tanker trucks
EU 102-S38	Dissolving Metallic Nickel
EU 102-S39	Stabilization of reduced metal catalyst products
EU 103-S40	Warehouse Packaging System; product transfer from drums to supersacks
EU 101-S10	Two (2) natural gas fired boilers
EU 101-S04	Box Dryer #2, low temperature drying of catalysts, electric
EU 101-S20	Unloading of nitric acid from tanker trucks to storage tanks
EU 101-S27	South 101-S27 System; impregnation of catalyst carriers with various metal ions, using drum dumper, hopper and basket from EU 101-S19
EU 104-S41	Wastewater Treatment System. Collection, chemical precipitation, pH adjustment, and equalization of plant wastewater prior to discharge

5. **Fugitive Sources:** There are fugitive PM/PM10, VOC, HAP, NO_x and TAC emissions from the manufacturing of customized precipitated catalysts, impregnated catalysts, and catalyst carriers.

6. **Permit Revisions:**

Table 1- Title V Permit Revisions

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	27759-14-TV	4/10/14	2/22/14	Initial	Entire Permit	Initial Permit Issuance
R1	27759-14-TV(R1)	2/20/17	NA	Administrative	EU 101-S24 and EU 101-S25	Incorporate Construction Permit C-0042-1000-16-V
R2	27759-14-TV(R2)	3/07/18	01/21/18	Significant	Entire Permit	General administrative updates such as updating the format of the permit, significant changes to control devices monitoring parameters for ED-101-NOX-007, DC-101-S15-114, DC-101-NOX-120, SC-101-S17-001, V-101-S17-001, ED-101-S17-002, ED-101-S17-001, and SC-102-S34-100, updating the STAR language in the Plantwide Specific Conditions, and incorporating the EA demonstration received 12/7/2017.

Table 2 - FEDOOP Permit 0074-97-F Revisions

Revision	Issuance Date	Public Notice Date	Type	Description
5	11/05/2012	09/21/2012	Renewal	Permit Renewal
4	08/15/2003	06/08/2003	Renewal	Permit Renewal
6	07/31/2000	06/06/2000	Administrative	Attachment voided
2	06/20/2000	05/14/2000	Administrative	Name Change
1	05/30/2000	03/05/2000	Minor	Incorporate revisions to General Conditions (GC) 4, and 11, 12 and 13; new GC 13 and 14
NA	07/16/1997	04/22/1997	Initial	Initial Permit Issuance

7. **Construction Permit History:**

Permit No.	Effective Date	Description
C-0042-10 00-16-V	10/31/2016	Calciner 6 (101-S24), Calciner 8 (101-S25), and associated process equipment

8. **Permit Related Documents**

Document Number	Date Received	Description
75493	2/26/2016	Certificate of Authorization
76264/76265	4/7/2016	Permit Modification Application Control Device Range Change Requests (Public and Confidential versions)
83034	3/23/2017	Corrected Public version of the April 7, 2016 Permit Modification Application Control Device Range Change Requests
89448	12/07/17	Updated EA Demonstration for fugitive ammonia emissions.

9. **Removed/Disassembled Equipment:**

Wash Tank T-101-S17-023, waste sludge dryer DR-101-S17-001, waste drum PD-101-S17-004, product drum PD-102-S36-001, spray dryer SD-102-S36-001, Calciner #4 HT-102-S36-001, silos S-102-S36-001 and S-102-S36-002, drum dumper DD-102-S36-001, and 15.0 MMBtu/hr Ames Boiler EU B-101-S10-003

10. **Emission Summary:**

Pollutant	District Calculated Actual Emissions (tpy) 2015 Data	Pollutant that triggered Major Source Status (based on PTE) ¹
CO	6.29	Yes
NO _x	10.99	Yes
SO ₂	0.06	No
PM ₁₀	10.46	Yes
VOC	0.51	No
Total HAPs	2.23	Yes
Single HAP > 1 tpy		
Antimony	0.00006	Yes
Cobalt	0.0165	Yes
Hydrochloric Acid	0.84	No

¹ To preclude the requirements of Regulation 2.04, Construction or Modification of Major Sources In or Impacting Upon Non-Attainment Areas, and Regulation 2.05, Prevention of Significant Deterioration of Air Quality, the source has accepted synthetic minor limits.

Pollutant	District Calculated Actual Emissions (tpy) 2015 Data	Pollutant that triggered Major Source Status (based on PTE) ¹
Nickel	1.23	Yes
Radionuclides (Uranium-238)	0.00002	Yes

11. **Applicable Requirements:**

- PSD 40 CFR 60 SIP 40 CFR 63
 NSR 40 CFR 61 District-Origin Other

12. **Referenced MACT Federal Regulations:** 40 CFR 63 Subpart VVVVVV, National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources

13. **Referenced non-MACT Federal Regulations:** There are no non-MACT federal regulations.

II Regulatory Analysis

1. **Acid Rain Requirements:** Clariant Corporation (Louisville South Plant) is not subject to the Acid Rain Program.

2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Clariant Corporation (Louisville South Plant) does not manufacture, sell, or distribute any of the listed chemicals. The source’s use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. **Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.

4. **40 CFR Part 64 Applicability Determination:** The source is not a major source, because the source has taken synthetic minor limits for all criteria pollutants; therefore, this source is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.

5. **Basis of Regulation Applicability**

a. Plantwide

The Clariant South Plant has potential major source emissions of PM₁₀/PM_{2.5}, NO_x, SO₂, CO, single HAP, and total HAPs. To preclude the

requirements of Regulation 2.04, Construction or Modification of Major Sources In or Impacting Upon Non-Attainment Areas, and Regulation 2.05, Prevention of Significant Deterioration of Air Quality, the source is subject to a plant-wide limit of less than 100 tons during any consecutive 12-month period for PM/PM₁₀/PM_{2.5}, NOX, CO, and SO₂. Pursuant to Regulation 2.16, section 4.1.1, the source is required to limit the plant-wide emissions of any individual HAP to less than 10 tons during any consecutive 12-month period. For all HAPs combined, the source is required to limit the plant-wide emissions of all HAPs to less than 25 tons during any consecutive 12-month period.

Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. Clariant submitted their Category 1 and 2 TAC Environmental Acceptability Demonstration to the District on September 30, 2008. Regulation 5.21, section 4.14 exempts Category 2 TACs that were not reported on a company's Toxic Release Inventory (TRI) Report. The source did not report aluminum, hydrochloric acid, manganese, and sulfuric acid on their 2007 TRI Report. This includes hydrochloric acid emissions from EU 102-S37. Natural gas combustion sources at this facility are *de minimis* in accordance with Regulation 5.21, section 2.7. For TACs listed as compounds, the BAC was developed for the base element, and therefore, all analysis for these TACs was done in terms of the amount of base metal present in the compound. Regulation 5.21, section 4.2.3.1 allows controlled PTE as an alternative measure to demonstrate environmental acceptability. Regulation 5.21, section 4.3 requires alternative measures to be established as emission limits in the permit for the process or process equipment. Any time a controlled PTE was compared to *de minimis* levels in the environmental acceptability demonstration, *de minimis* was added as a limit to the permit per Regulation 5.21, section 4.3 along with a requirement to operate controls at all times. Any time a controlled PTE was modeled (Tier 3 or Tier 4) pursuant to Regulation 5.22, section 1.4; the modeled emission rate, converted from a lb per hour to a pound per 12-consecutive month, was incorporated into the permit as a limit. Clariant submitted an updated EA Demonstration dated November 17, 2017, for ammonia. Uncontrolled fugitive ammonia emissions from Emission Units 101-S16, 101-S17, and 102-S38 were modeled using Tier 3 (SCREEN 3) modeling.

Regulation 2.16, section 4.1.9, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.16, section 4.3.5, requires stationary sources for which a Title V permit is issued to submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.16, section 4.1.9.3, the source shall submit a semi-annual Compliance

Report to show compliance with the permit, by March 1 and August 29 of every year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.16, section 3.5.11.

- b. **EU 101-S01 and 101-S02** – Mixing System; mixing of wet metal oxides with various additives

i. **Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S01	T-101-S01-001	Mixer Tank, 500 gal	1993	STAR
	T-101-S01-002	Mixer Scale Tank	1993	7.08 & STAR
	T-101-S01-003	Mixer Drain Tank	1993	
	T-101-S01-004	Aisle Traveling Tank	1993	
	MX-101-S01-001	#1 Mixer	1993	
101-S02	DD-101-S02-001	Drum Dumper	1993	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
	H-101-S02-001	Mixer Feed Hopper	1993	
	MX-101-S02-001	#2 Mixer	1993	
	T-101-S02-001	Mixer Tank, 120 gal	1993	7.08 & STAR
	T-101-S02-002	Mixer Scale/Drain Tank, 120 gal	1993	7.08 & STAR
	T-101-S02-004	Nitrate Tank, 120 gal	1993	STAR

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) Except where a Tier 4 analysis is noted, the potential TAC emissions for the emission points in the table below are less than the *de minimis* levels in Regulation 5.21, with the listed levels of control.

EU	Emission Point	NH ₃	Co	Cu	Mn	Ni	HNO ₃
101-S01	MX-101-S01-001	*	Tier 4	1 st	1 st	Tier 4	--
	T-101-S01-001	*	--	--	--	--	*
	T-101-S01-002, T-101-S01-003 and T-101-S01-004	*	--	--	--	--	*
	Fugitives	*	--	--	--	--	--
101-	DD-101-S02-001 and	--	Tier 4	1 st	Tier 4	Tier 4	--

EU	Emission Point	NH ₃	Co	Cu	Mn	Ni	HNO ₃
S02	H-101-S02-001						
	MX-101-S02-001	--	Tier 4	1 st	1 st	Tier 4	--
	T-101-S02-001	*	--	--	--	--	*
	T-101-S02-002 and T-101-S02-004	--	--	--	--	--	*

(c) With the exception of MX-101-S02-001 which meets the standard uncontrolled, the potential controlled PM emissions are below the hourly emission standard in Regulation 7.08.

2) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

(a) Regulation 5.21, section 3 establishes environmental acceptability goals for TACs that are not *de minimis* as defined in Regulation 5.21, section 2. Because the potential controlled emissions of cobalt and nickel from EP MX-101-S01-001, DD-101-S02-001, H-101-S02-001 and MX-101-S02-001 and manganese from EP DD-101-S02-001 and H-101-S02-001 are above the *de minimis* levels, the source performed a Tier 4 analysis, resulting in the following risks and hazard quotients.

EU	TAC	Location	Risk	Status	HQ	Status
101-S01	Co	industrial	--	--	0.85	< 3.0
		unadjusted	--	--	0.33	< 1.0
	Ni	industrial	1.45	< 10.0	0.11	< 3.0
		unadjusted	0.39	< 1.0	0.030	< 1.0
101-S02	Co	industrial	--	--	1.98	< 3.0
		unadjusted	--	--	0.70	< 1.0
	Ni	industrial		< 10.0	0.23	< 3.0
		unadjusted		< 1.0	0.063	< 1.0
	Mn	industrial		< 10.0	0.78	< 3.0
		unadjusted		< 1.0	0.22	< 1.0

Limiting the processing rate of cobalt containing raw materials to 800 lb/hr and manganese containing raw materials to 250 lb/hr as an alternative measure to demonstrate environmental acceptability per Regulation 5.21, section 4.2.3.4 and 4.3 keeps the hazard quotients environmentally acceptable for EU 101-S01.

- (b) Controlled potential copper emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting copper emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.
- (c) Cobalt emissions from DD-101-S02-001, H-101-S02-001, and MX-101-S02-001 combined were modeled at a controlled emission rate of 0.04783 lb/hr; therefore, emissions are limited to 129.50 lb per 12 consecutive months (0.04783 lb/hr x 8760 hr/year) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emissions remain environmentally acceptable.
- (d) Controlled potential manganese emissions from MX-101-S201-001 and MX-101-S02-001 each were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.
- (e) Manganese emissions from DD-101-S02-001 and H-101-S02-001 combined were modeled at a controlled emission rate of 0.011432 lb/hr; therefore, emissions are limited to 100.14 lb per 12 consecutive months (0.011432 lb/hr x 8760 hr/year) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emissions remain environmentally acceptable.
- (f) Nickel emissions from MX-101-S01-001 were modeled at a controlled emission rate of 0.0023 lb/hr; therefore, emissions are limited to 20.15 lb per 12 consecutive months (0.0023 lb/hr x 8760 hr/year) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emissions remain environmentally acceptable.

- (g) Nickel emissions from DD-101-S02-001, H-101-S02-001, and MX-101-S02-001 combined were modeled at a controlled emission rate of 0.004819 lb/hr; therefore, emissions are limited to 42.21 lb per 12 consecutive months (0.004819 lb/hr x 8760 hr/year) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emissions remain environmentally acceptable.

c. EU 101-S03 and 101-S14 – Mixing and weighing of raw materials

i. Equipment:

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S03	H-101-S03-001	South Mixer Hopper,	2007	7.08, STAR, 40 CFR 63 Subpart VVVVVV
	DD-101-S03-001	South Mixer Drum Dumper	2007	
	MX-101-S03-001	South Mixer Feeder/Mixer	2007	
	CV-101-S03-001	Screw Conveyor	2007	
	T-101-S03-001	Scale Tank, 120 gal	2007	7.08 & STAR
	T-101-S03-002	Liquid Additive Tank, 1000 gal	2007	
101-S14	DD-101-S14-001/ H-101-S14-001	Drum Dumper/Hopper	1998	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
	PD-101-S14-001	Product Drum	1998	
	H-101-S14-002	Hopper on Scale	1998	7.08 & STAR

ii. Standards/Operating Limits

1) Control Device Operation

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential TAC emissions are below the *de minimis* levels in Regulation 5.21. The control devices needed are listed in the table below.

EU	EP	NH ₃	Co	Cu	Mn	Ni	HNO ₃
101-S03	T-101-S03-001	*	--	--	--	--	*
	T-101-S03-002	*	--	--	--	--	*
	H-101-S03-001	--	2 nd	1 st	2 nd	2 nd	--
	DD-101-S03-001	--	2 nd	1 st	2 nd	2 nd	--
	MX-101-S03-001	--	2 nd	1 st	1 st	2 nd	--
	CV-101-S03-001	--	2 nd	1 st	1 st	2 nd	--

EU	EP	NH ₃	Co	Cu	Mn	Ni	HNO ₃
101-S14	DD-101-S14-001/ H-101-S14-001	--	--	*	--	2 nd	--
	PD-101-S14-001	--	--	*	--	2 nd	--

* This emission point can meet the *de minimis* value without a control device.

- (c) The potential controlled hourly PM emissions after the first control device meet the applicable emission standard in Regulation 7.08.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

- (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

- (a) Controlled potential cobalt, copper, manganese, and nickel emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

d. **EU 101-S06, 101-S07, 101-S08 and 101-S09** – Box Dryers, low temperature drying of catalysts

i. **Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S06	HT-101-NOX-006	Dryer #6, 0.645 MM Btu/hr	1956	6.09
101-S07	HT-101-NOX-007	Dryer #7, 0.645 MMBtu/hr	1956	6.09
101-S08	HT-101-NOX-008	Dryer #8, 0.645 MMBtu/hr	1956	6.09
101-S09	HT-101-NOX-009	Dryer #9, 0.645 MMBtu/hr	1956	6.09

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For HT-101-NOX-006, HT-101-NOX-007, HT-101-NOX-008 and HT-101-NOX-009, the potential controlled emissions of NOX meet the

applicable emission standard in Regulation 6.09 after the first control device.

- 2) **NOx**
 - (a) Regulation 6.09, section 4.1 establishes a standard for NOx not to exceed 300 ppmv expressed as NO₂.
- 3) **Opacity**
 - (a) Regulation 6.09, section 3.3.1 establishes a standard for Opacity to not equal or exceed 20%.

e. EU 101-S11 and 101-S12 – Dryers, drying of wet, formed and loose catalysts

i. Equipment:

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S11	HT-101-NOX-001	Dryer #1, 1.2 MM Btu/hr	1956	5.02, 6.09, 6.10, STAR, 40 CFR 63 Subpart VVVVVV
	H-101-S11-001	Discharge Hopper	1957	5.02, 6.09, STAR, 40 CFR 63 Subpart VVVVVV
	PD-101-S11-001	Product Drumming	1957	
101-S12	HT-101-NOX-002	Dryer #2, 0.50 MMBtu/hr	1981	5.02, 7.08, 7.09, STAR, 40 CFR 63 Subpart VVVVVV
	H-101-S12-001	Discharge Hopper	1981	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
	PD-101-S12-001	Product Drumming	1981	

ii. Standards/Operating Limits

1) Control Device Operation

- (a) The potential controlled TAC emissions are below the *de minimis* levels in Regulation 5.21. The control devices needed are listed in the table below.

Emission Point	Co	Cr(VI)	Cu	Mn	Ni	HCl
HT-101-NOX-001	2 nd	2 nd	2 nd	2 nd	2 nd	2 nd
H-101-S11-001	2 nd	2 nd	1 st	1 st	2 nd	--
PD-101-S11-001	2 nd	2 nd	1 st	1 st	2 nd	--
HT-101-NOX-002	2 nd	2 nd	*	2 nd	2 nd	1 st
H-101-S12-001	1 st	1 st	*	1 st	1 st	*
PD-101-S12-001	1 st	1 st	*	1 st	1 st	*

* This emission point can meet the *de minimis* value without a control device.

2) NOx

- (a) Regulation 6.09, section 4.1 and Regulation 7.08, section 4.1 establish a standard for NOx not to exceed 300 ppmv expressed as NO₂.

- 3) **Opacity**
 - (a) Regulations 6.09, section 3.3.1 and 7.08, section 3.1.1 establish a standard for opacity to not equal or exceed 20%.
 - 4) **PM/PM₁₀/PM_{2.5}**
 - (a) Regulation 6.09, section 3.2 establishes PM standards for process equipment. Per Table 1 to Regulation 6.09, the maximum allowable emission rate is 2.58 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.
 - (b) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.
 - 5) **SO₂**
 - (a) Regulation 6.10, section 4 establishes a standard for SO₂ to not exceed 10 grains per 100 dry standard cubic feet of gas at 0% oxygen for process gas streams construction or being constructed before April 19, 1972.
 - (b) Regulation 7.09, section 4 establishes a standard for SO₂ to not exceed 28.63 grains per 100 dscf at 0% excess oxygen unless the resulting emission of sulfur dioxide is less than 40 tons per year and a modeling demonstration pursuant to Regulation 2.11 is made showing attainment and maintenance of the NAAQS for sulfur dioxide for process gas streams constructed on or after April 19, 1972.
 - 6) **TAC**
 - (a) Controlled potential cobalt, chromium VI, copper, manganese, nickel, and hydrochloric acid emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.
- f. **EU 101-S13** – Catalyst System; precipitation of cobalt catalyst in lump form from solution
- i. **Equipment:**

Emission Point	Description	Construction Date	Applicable Regulations
T-101-S13-001	Tank	1985	STAR
T-101-S13-002	Tank, 2000 gal	1985	7.08
DD-101-S13-001	Drum Dumper	1985	7.08 & STAR
T-101-S13-003	Tank, 3670 gal	1985	STAR
T-101-S13-004	Tank, 5870 gal	1985	
T-101-S13-005	Press Filtrate Tank, 4500 gal	1985	
T-101-S13-006	NH ₃ Recovery Tank, 5000 gal	1985	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential controlled TAC emissions are below the *de minimis* levels in Regulation 5.21. The control devices needed are listed in the table below.

Emission Point	Co	NH ₃
DD-101-S13-001	3 rd	--
T-101-S13-001	--	*
T-101-S13-003	--	2 nd
T-101-S13-004	--	2 nd
T-101-S13-006	--	*

* This emission point can meet the *de minimis* value without a control device.

- (c) The potential controlled PM emissions from EP DD-101-S13-001 meet the applicable emission standard in Regulation 7.08 after the first control device. The potential uncontrolled PM emissions from EP T-101-S13-002 meet the applicable emission standard.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

(a) Controlled potential ammonia emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

(b) Cobalt emissions from DD-101-S13-001 were modeled at a controlled emission rate of 0.0012 lb/hr; therefore, emissions are limited to 10.94 lb per 12 consecutive months (0.0012 lb/hr x 8760 hr/year) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emission remain environmentally acceptable.

g. **EU 101-S15** – Catalyst production including mixing, drying, milling, calcining, screening, and packaging

i. **Equipment:**

EP	Description	Construction Date	Applicable Regulations
DD-101-S15-001	South Drum Dumper	1982	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
MX-101-S15-001	South Mixer	1982	
DD-101-S15-002	North Drum Dumper	1982	
MX-101-S15-002	North Mixer	1982	
DR-101-S15-001a	Dryer Feed End, 4.4 MMBtu/hr	1982	
DR-101-S15-001b	Dryer Discharge End, 4.4 MM Btu/hr	1982	
DD-101-S15-003	Drum Dumper	1982	
H-101-S15-003	Hopper #3	1982	
FD-101-S15-002	Feeder	1982	
CV-101-S15-002	Conveyor	1982	
H-101-S15-004	Feed Hopper	1982	
PD-101-S15-001	Product/Fines Drum	1982	
HT-101-S15-001	#9 Calciner, 1 MMBtu/hr	1982	
VS-101-S15-001	Screener	2000	
PD-101-S15-002	Fines Drum	1990	
H-101-S15-06/CV-101-S15-005/PD-101-S1	Weigh Out Station (Supersack Hopper/Screw Conveyor/ Portable	2007	

EP	Description	Construction Date	Applicable Regulations
5-004	Product Drum)		
DD-101-S15-004	Drum Dumper	1990	
H-101-S15-005	Screener Feed Hopper	1982	
M-101-S15-002	Hammermill	1982	
M-101-S15-006	Hopper from SuperSack to Drum	1993	
PD-101-S15-003	Milled Fines Drum	1993	
VS-101-S15-002	Screener	1993	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

(a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.

(b) All potential controlled trivalent chromium emissions are below the *de minimis* levels in Regulation 5.21, with the exception of the Weigh Out Station (H-101-S15-006, CV-101-S15-005 and PD-101-S15-004). Therefore, the source performed a Tier 3 analysis, resulting in the following hazard quotients.

TAC	Location	Risk	Status	HQ	Status
Cr(III)	industrial	--	--	0.25	< 3.0
	unadjusted	--	--	0.081	< 1.0

(c) The potential controlled PM emissions after the first control device are below the applicable standard in Regulation 7.08.

2) **NOx**

(a) Regulation 7.08, section 4.1 establishes a standard for NOx not to exceed 300 ppmv expressed as NO₂.

3) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

- 4) **PM/PM₁₀/PM_{2.5}**
 - (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

- 5) **TAC**
 - (a) Controlled potential trivalent chromium emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.
 - (b) Chromium III emissions were modeled at a controlled emission rate of 0.0293 lb/hr from the Weigh-Out Station (H-101-S15-006, CV-101-S15-005 and PD-101-S15-004) combined; therefore, emissions are limited to 256.67 lb per 12 consecutive months (0.0293 lb/hr x 8760 hr/year) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emissions remain environmentally acceptable.

h. EU 101-S16 – Precipitating, spray drying and calcining metal catalysts

i. Equipment:

EU	Description	Construction Date	Applicable Regulations
T-102-S38-010	South Tank 10	1970	STAR
T-102-S38-012	North Tank 12	1970	
T-102-S38-011	South Tank 11	1970	6.09
T-102-S38-013	North Tank 13	1970	
T-102-S38-014	Raw Material Tank 14	1970	6.09
T-102-S38-016	Raw Material Tank 16	1970	
T-102-S38-017	Raw Material Tank 17	1970	
SD-101-S16-001	Dryer	1958	5.02, 6.09, STAR, 40 CFR 63 Subpart VVVVVV
HT-101-S16-001	Calciner #3, 3 MMBtu/hr natural gas-fired	1995	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
T-101-S16-101	Feed Storage Tank	1993	
T-101-S16-102	Feed Storage Tank	1993	
PD-101-S16-001	Product Drum	1993	

ii. Standards/Operating Limits**1) Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential controlled nickel emissions after the final control device are below the *de minimis* levels in Regulation 5.21. The potential controlled ammonia emissions from T-102-S38-010 and T-102-S38-012 are above the *de minimis* levels in Regulation 5.21. Therefore, a tier 3 analysis was completed, resulting in an industrial hazard quotient of 0.047 (less than the goal of 3.0) and an unadjusted hazard quotient of 0.054 (less than the goal of 1.0).
- (c) The potential controlled hourly PM emissions are below the applicable emission standard for EP SD-101-S16-001, HT-101-S16-001, PD-101-S16-001, T-101-S16-101 and T-101-S16-102 after the first control device. The potential uncontrolled hourly PM emissions are below the applicable emission standard for EP T-102-S38-011, T-102-S38-013, T-102-S38-014, T-102-S38-016 and T-102-S38-017.

2) NO_x

- (a) Regulation 7.08, section 4.1 establishes a standard for NO_x not to exceed 300 ppmv expressed as NO₂.

3) Opacity

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

4) PM/PM₁₀/PM_{2.5}

- (a) Regulation 6.09, section 3.2 establishes PM standards for process equipment. Per Table 1 to Regulation 6.09, the maximum allowable emission rate is 2.58 lb PM/hr for equipment with a process

weight rate of less than or equal to 1,000 pounds per hour.

- (b) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

5) **TAC**

- (a) Controlled potential nickel and ammonia emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

i. **EU 101-S17 – Reaction, precipitation, washing, drying, calcining and packaging**

i. **Equipment:**

EU	Description	Construction Date	Applicable Regulations
T-101-S17-001	HNO ₃ Tank, 370 gal	1974	STAR
T-101-S17-003	NH ₃ Tank, 1150 gal	1974	
T-101-S17-004	Reactor Tank, 3250 gal	1974	7.08, STAR
T-101-S17-005	Reactor Condensate Tank, 350 gal	1974	7.08, STAR
FR-101-S17-001	Filter Receiver	2000	
T-101-S17-009	Metering Tank, 5 gal	1984	STAR
T-101-S17-010	Raw Material Tank, 60 gal	1984	7.08, STAR
FR-101-S17-002	Rework Filter Receiver	2000	
T-101-S17-011	Metering Tank, 20 gal	1984	STAR
T-101-S17-012	Slurry Hold Tank, 2490 gal	1984	7.08, STAR
SD-101-S17-001	Dryer #1	1957	
SEP-101-S17-003	Elutriator	1985	
FR-101-S17-003	Filter Receiver	2005	
H-101-S17-002	Storage Hopper/Silo, 8000 gal	1984	
HT-101-S17-001 a	Calciner #2 (Feed End)	1966	
HT-101-S17-001 b	Calciner #2 (Combustion), 1.2 MMBTU/hr	1966	
HT-101-S17-002	Calciner #2 (Discharge End)	1966	
PD-101-S17-002	Product Dust Drum	1984	
PD-101-S17-001	Rework Drum	1984	
PD-101-S17-003	Product Drum	1984	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) The potential uncontrolled nitric acid emissions from EP T-101-S17-001 and T-101-S17-004 and the potential uncontrolled ammonia emissions from EP T-101-S17-003, SD-101-S17-001, T-101-S17-004, T-101-S17-009, T-101-S17-010, T-101-S17-011, FR-101-S17-002, T-101-S17-012, and T-101-S17-015 are below the *de minimis* levels in Regulation 5.21. The company modeled (SCREEN 3) uncontrolled potential fugitive ammonia emissions; therefore, no limit for fugitives was included in the permit. The potential TAC emissions of antimony and uranium are below the *de minimis* levels, using a Clariant derived BAC_C for uranium of 0.00065 ug/m³. The control devices needed are listed in the table below.

Emission Point	Sb	U
SD-101-S17-001, SEP-101-S17-003 and T-101-S17-004	Final	Final
FR-101-S17-001	1 st	1 st
FR-101-S17-002 and T-101-S17-012	1 st	Final
PD-101-S17-001	1 st	1 st
PD-101-S17-003	1 st	Final
PD-101-S17-002	*	1 st
H-101-S17-002 and HT-101-S17-001	Final	Final
FR-101-S17-003 and HT-101-S17-002	1 st	Final

* This emission point can meet the *de minimis* value without a control device.

- (b) For EP SD-101-S17-001, SEP-101-S17-003, T-101-S17-004, FR-101-S17-002, PD-101-S17-003, H-101-S17-002, FR-101-S17-003, the potential controlled hourly PM emissions are below the applicable emission standard in Regulation 7.08 after the first control device. For the remaining emission points, the potential uncontrolled hourly PM emissions are below the standard.

2) **NO_x**

- (a) Regulation 7.08, section 4.1 establishes a standard for NO_x not to exceed 300 ppmv expressed as NO₂.

- 3) **Opacity**
 - (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.
- 4) **PM/PM₁₀/PM_{2.5}**
 - (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.
- 5) **TAC**
 - (a) Controlled potential antimony (Sb) and uranium (U) emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

j. EU 101-S18 – North System; impregnating catalyst carriers with various metal ions

i. Equipment:

EP	Description	Construction Date	Applicable Regulations
DD-101-S18-001/ H-101-S18-001	Drum Dumper/ Hopper	1996	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
FD-101-S18-001	Feeder	1996	
H-101-S18-002	Weigh Hopper	1996	
PD-101-S18-001	Product Drumming	1996	

ii. Standards/Operating Limits

- 1) **Control Device Operation**
 - (a) The potential uncontrolled TAC emissions of copper from all EP DD-101-S18-001, H-101-S18-001, FD-101-S18-001, H-101-S18-002 and PD-101-S18-001 and ammonia from EP PD-101-S18-001 are below the *de minimis* levels in Regulation 5.21. The potential HEPA-controlled nickel emissions are below the *de minimis* levels in Regulation 5.21.
 - (b) The potential controlled hourly PM emissions after the first control device are below the applicable standards in Regulation 7.08.

- 2) **Opacity**
 - (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.
- 3) **PM/PM₁₀/PM_{2.5}**
 - (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.
- 4) **TAC**
 - (a) Controlled potential nickel emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

k. EU 101-S19 – North 101-S19 Catalyst System; impregnating catalyst carriers with various metal ions

i. Equipment:

EU	Description	Construction Date	Applicable Regulations
DD-101-S19-001	Drum Dumper	1979	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
DB-101-S19-001	Basket	1979	
H-101-S19-001	Hopper	1979	
T-101-S19-001	North Tank	1979	STAR

ii. Standards/Operating Limits

- 1) **Control Device Operation**
 - (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
 - (b) The potential controlled emissions of trivalent chromium, copper and manganese are below the *de minimis* levels in Regulation 5.21 after the first

control device. The potential HEPA-controlled emissions of hexavalent chromium and nickel are below the *de minimis* levels in Regulation 5.21. The potential uncontrolled nitric acid emissions from EP T-101-S19-001 are below the *de minimis* levels in Regulation 5.21.

- (c) This potential controlled PM emissions after the first control device are below the applicable standards in Regulation 7.08.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

- (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

- (a) Controlled potential chromium III, chromium VI, copper, and manganese emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

i. EU 101-S21 and 101-S28 – Catalyst Mixing Systems; catalysts ingredients are combined. Extruded rework is reground in a hammermill for reuse in the process.

i. Equipment:

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S21	DD-101-S21-001	North Drum Dumper	1979	7.08 & STAR
	MX-101-S21-001	North Mixer	1956	
101-S28	DD-101-S28-001	South Drum Dumper	1956	7.08 & STAR
	MX-101-S28-001	South Mixer	1956	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential HEPA-controlled cobalt emissions are below the *de minimis* levels in Regulation 5.21.
- (c) The potential controlled hourly PM emissions after the first control device are below the applicable hourly PM emission standard in Regulation 7.08.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

- (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

- (a) Controlled potential cobalt emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

m. **EU 101-S22 and 101-S29 – Screening System**

i. **Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S22 (North Screening)	DD-101-S22-001/ H-101-S22-001	Drum Dumper/Hopper	1994	5.02, 7.08, STAR, 40 CFR 63
	FD-101-S22-001	Feeder		

EU	Emission Point	Description	Construction Date	Applicable Regulations
System)	VS-101-S22-001	Screeener		Subpart VVVVVV
	PD-101-S22-001	Product Drum		
	H-101-S22-002	Supersack Hopper		
	PD-101-S22-002	Supersack Drum		
101-S29 (South Screening System)	DD-101-S29-001/ H-101-S29-001	Drum Dumper/Hopper	1994	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
	FD-101-S29-001	Feeder		
	VS-101-S29-001	Screeener		
	PD-101-S29-001	Product Drum		

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential TAC emissions for the emission points listed in the table below are less than the *de minimis* levels in Regulation 5.21, with the exception of the Tier 3 analyses for the noted emission points. The control devices needed are listed in the table below.

EU	Emission Point	Co	Cr(III)	Cr(VI)	Cu	Mn	Ni
101-S22	DD-101-S22-001/ H-101-S22-001	2 nd	2 nd	Tier 3	2 nd	2 nd	2 nd
	FD-101-S22-001	2 nd	1 st	2 nd	1 st	2 nd	2 nd
	VS-101-S22-001	2 nd	2 nd	2 nd	1 st	2 nd	2 nd
	PD-101-S22-001	2 nd	2 nd	2 nd	1 st	2 nd	2 nd
	H-101-S22-002	2 nd	2 nd	2 nd	1 st	2 nd	2 nd
	PD-101-S22-002	2 nd	2 nd	2 nd	1 st	2 nd	2 nd
101-S29	DD-101-S29-001/ H-101-S29-001	2 nd	2 nd	Tier 3	2 nd	2 nd	2 nd
	FD-101-S29-001	2 nd	1 st	2 nd	1 st	2 nd	2 nd
	VS-101-S29-001	2 nd	2 nd	2 nd	1 st	2 nd	2 nd
	PD-101-S29-001	2 nd	2 nd	2 nd	1 st	2 nd	2 nd

- (c) The potential controlled hexavalent chromium emissions from EP DD-101-S22-001/H-101-S22-001 and

DD-101-S29-001/H-101-S29-001 are above the *de minimis* levels in Regulation 5.21. Therefore, the source performed a Tier 3 analysis of the risk in the application dated 3/1/2010, resulting in the following cancer risks.

EU	Emission Point	TAC	Location	Risk	EAG _C	HQ	EAG _{NC}
101-S22	DD-101-S22-001/H-101-S22-001	Cr(VI)	industrial	0.38	< 10.0	0.004	< 3.0
			unadjusted	0.17	< 1.0	0.002	< 1.0
101-S29	DD-101-S29-001/H-101-S29-001	Cr(VI)	industrial	0.38	< 10.0	0.004	< 3.0
			unadjusted	0.17	< 1.0	0.002	< 1.0

(d) This process meets the standards in Regulation 7.08 controlled after the first control device.

2) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

(a) Controlled potential cobalt, chromium III, and chromium VI emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

n. **EU 101-S23** – Material handling system; transfer of dry catalyst material from dryers to drums

i. **Equipment:**

Emission Point	Description	Construction Date	Applicable Regulations
DD-101-S23-101	Drum Dumper with Hopper	2008	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
PD-101-S23-101	Product Drumming	2008	

ii. Standards/Operating Limits**1) Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential HEPA-controlled TAC emissions of cobalt, manganese and nickel are below the *de minimis* levels in Regulation 5.21. The potential controlled emissions of copper and sulfuric acid after the first control device are below the *de minimis* levels in Regulation 5.21.
- (c) The potential controlled hourly PM emissions after the first control device are below the applicable PM emission standard.

2) Opacity

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) PM/PM₁₀/PM_{2.5}

- (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) TAC

- (a) Controlled potential cobalt, manganese, nickel, copper, and sulfuric acid emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

o. EU 101-S24 and 101-S25 – Calcining System; calcining of catalysts**i. Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S24	DD-101-S24-003	#6 Drum Dumper	1975	5.02, STAR, 7.08, 40 CFR 63 Subpart VVVVVV
	FD-101-S24-001	#6 Circle Feeder	1975	
	HT-101-NOX-003	#6 Calciner, Bartlett & Snow, 2 MMBtu/hr	1975	5.02, STAR, 7.08, 7.09, and 40 CFR 63 Subpart VVVVVV
	VS-101-S24-001	Screener	2009	5.02, STAR, 7.08, 40 CFR 63 Subpart VVVVVV
	PD-101-S24-001	Product Drumming	1975	
101-S25	DD-101-S25-004	#8 Drum Dumper	1977	5.02, STAR, 7.08, 40 CFR 63 Subpart VVVVVV
	FD-101-S25-001	#8 Circle Feeder	1977	
	HT-101-NOX-004	#8 Calciner, Bartlett & Snow, 2 MMBtu/hr	1977	5.02, STAR, 7.08, 7.09, 40 CFR 63 Subpart VVVVVV
	VS-101-S25-002	Screener	2009	5.02, STAR, 7.08, 40 CFR 63 Subpart VVVVVV
	PD-101-S25-001	Product Drumming	1977	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential controlled TAC emissions are below the *de minimis* levels in Regulation 5.21. The control devices needed are listed in the table below.

Emission Point	Co	Cr(VI)	Cu	Ni
DD-101-S24-003, FD-101-S24-001, HT-101-NOX-003, VS-101-S24-001, PD-101-S24-001, DD-101-S25-004, FD-101-S25-001, VS-101-S25-001, PD-101-S25-001	2 nd	2 nd	1 st	2 nd
HT-101-NOX-004	2 nd	2 nd	2 nd	2 nd

- (c) The potential controlled emissions after the first control device are below the standard in Regulation 7.08.

2) **NOx**

- (a) Regulation 7.08, section 4.1 establishes a standard for NOx not to exceed 300 ppmv expressed as NO₂.
- (b) The potential controlled NO_x emissions after the second control device are below the applicable emission standard.

- 3) **Opacity**
 - (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.
- 4) **PM/PM₁₀/PM_{2.5}**
 - (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.
- 5) **SO₂**
 - (a) Regulation 7.09, section 4 establishes a standard for SO₂ to not exceed 28.63 grains per 100 dscf at 0% excess oxygen unless the resulting emission of sulfur dioxide is less than 40 tons per year and a modeling demonstration pursuant to Regulation 2.11 is made showing attainment and maintenance of the NAAQS for sulfur dioxide for process gas streams constructed on or after April 19, 1972.
- 6) **TAC**
 - (a) Controlled potential chromium VI, cobalt, copper, nickel, and ammonia emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

p. **EU 102-S30, 102-S31, 102-S32 and 102-S33** – Reduction furnace systems; metal oxide reduction to elemental metal

i. **Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
102-S30	DD-102-S30-101	Drum Dumper	1986	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
	H-102-S30-101	Feed Hopper	1986	
	T-102-S30-104	Feed Tank	1986	
	T-102-S30-105	Discharge Tank	1986	
102-S31	DD-102-S31-101	Drum Dumper	1986	
	H-102-S31-001	Feed Hopper	1986	
	T-102-S31-106	Feed Tank	1986	
	T-102-S31-107	Discharge Tank	1986	
102-S32	DD-102-S32-001	Drum Dumper	1986	
	PD-102-S32-001	Product	1986	

EU	Emission Point	Description	Construction Date	Applicable Regulations
		Drumming		
102-S33	DD-102-S33-001	Drum Dumper	1988	
	PD-102-S33-001	Product Drumming	1988	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) Except where a tier 3 analysis is noted, the potential TAC emissions for the emission points in the table below are less than the *de minimis* levels in Regulation 5.21, with the listed levels of control.

EU	Emission Point	Co	Cr(III)	Cr(IV)	Cu	Ni
102-S30	DD-102-S30-101	2 nd	NA	NA	NA	2 nd
	H-102-S30-101	2 nd	NA	NA	NA	2 nd
	T-102-S30-104	2 nd	NA	NA	NA	2 nd
	T-102-S30-105	1 st	NA	NA	NA	Tier 3
102-S31	DD-102-S31-101	2 nd	NA	NA	NA	2 nd
	H-102-S31-001	2 nd	NA	NA	NA	2 nd
	T-102-S31-106	2 nd	NA	NA	NA	2 nd
	T-102-S31-107	1 st	NA	NA	NA	Tier 3
102-S32	DD-102-S32-001	NA	1 st	2 nd	1 st	2 nd
	PD-102-S32-001	NA	1 st	2 nd	1 st	2 nd
102-S33	DD-102-S33-001	NA	1 st	2 nd	1 st	2 nd
	PD-102-S33-001	NA	1 st	2 nd	1 st	2 nd

- (c) Potential controlled nickel emissions from EP T-102-S30-105 and T-102-S31-107 are above the averaging period *de minimis* level. Therefore, the source performed a Tier 3 analysis, resulting in the following risks and hazard quotients.

EU	Location	Risk	Status	HQ	Status
102-S30	industrial	0.95	< 10.0	0.072	< 3.0

EU	Location	Risk	Status	HQ	Status
	unadjusted	0.24	< 1.0	0.018	< 1.0
102-S31	industrial	0.29	< 10.0	0.022	< 3.0
	unadjusted	0.13	< 1.0	0.010	< 1.0

(d) These processes meets the standards in Regulation 7.08 controlled after the first control device.

2) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

(a) Controlled potential cobalt, chromium III, chromium VI, copper, and nickel emissions (except nickel emissions from T-102-S30-105 and T-102-S31-107) were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

(b) Nickel emissions were modeled controlled from T-102-S30-105 or T-102-S31-107 each; therefore, emissions are limited to 10.32 lb per 12 consecutive month period ((0.001178 lb/hr x 8760 hr/year)) per Regulations 5.22, section 1.4 and 5.21, section 4.3 to ensure emission remain environmentally acceptable.

q. **EU 102-S34 and 102-S36 – Process tanks**

i. **Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
102-S34	T-102-S34-100	NH ₃ Storage Tank 100, 4500 gal	1980	STAR
	T-102-S34-101	NH ₃ Storage Tank 101, 4500 gal	1980	
	T-102-S34-102	Scrubber Water Make-up Tank 102, 1000 gal	1980	
	T-102-S34-103	NH ₃ Recovery Hold Tank 103, 7700 gal	1980	
	T-102-S34-104	Scrubber Water Return Tank 104, 13,000 gal	1980	
	T-101-AQNH-001	Aqueous Ammonia Storage Tank, 66,000 lb	1969	

EU	Emission Point	Description	Construction Date	Applicable Regulations
102-S36	T-102-S38-007	Slurry Tank, 2000 gal	1985	7.08
	T-102-S36-008	South Tank, 6000 gal	1988	STAR
	T-102-S36-009	North Tank, 6000 gal	1988	
	T-102-S36-018 - 019	East and West Tanks, 4500 gal each	1985	STAR

ii. **Standards/Operating Limits**

1) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

2) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

3) **TAC**

(a) The potential uncontrolled NH₃ emissions from EU T- 102-S34-100, T- 102-S34-101, T- 102-S34-102, T- 102-S34-103, T-102-S34-104, and T-101-AQNH-001 are below the *de minimis* levels in Regulation 5.21. Controlled NH₃ emissions from T-102-S36-008 are T-102-S36-009 are below the *de minimis* levels after the 2nd control device; therefore, *de minimis* was included as a limit per Regulation 5.21, section 4.3. The company modeled (SCREEN 3) uncontrolled potential fugitive ammonia emissions from Emission Unit 102-S36; therefore, no limit for fugitives was included in the permit.

(b) The company elected to remove nickel products from Emission Unit 102-S36 as part of their Regulation 5.21, section 4.16 Category 1 TAC compliance plan. Regulation 5.21, section 4.20 establishes the requirement to incorporate compliance plans into the permit for the affected process or process equipment; therefore, a standard was included to prohibit the company from processing nickel containing products.

r. **EU 102-S35 – Stabilization System; air stabilization of reduced metal catalyst products**

i. **Equipment:**

EU	Description	Construction Date	Applicable Regulations
T-102-S35-108	Bagger Discharge Tank	1982	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
T-102-S35-109	Drummer Discharge Tank	1982	
V-102-S35-001	Stabilizer	1982	
SSD-102-S35-001	Supersacker/Drummer	1982	
PT-102-S35-001 and PD-102-S35-001	Product Tote and Product Drum	1982	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential controlled nickel emissions are below the *de minimis* levels in Regulation 5.21 after the second control device.
- (c) The potential controlled PM emissions are below the applicable standards in Regulation 7.08 after the first control device.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

- (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

- (a) Controlled potential nickel emissions were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per

Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

- s. **EU 102-S37** – Hydrochloric acid tank; unloading hydrochloric acid from tanker trucks

- i. **Equipment:**

EP	Description	Construction Date	Applicable Regulations
T-102-S37-001	Hydrochloric acid storage tank, 8000 gal	1995	5.14

- t. **EU 102-S38** – Dissolving Metallic Nickel

- i. **Equipment:**

EU	Description	Construction Date	Applicable Regulations
T-102-S38-001	Solution Make-up Tank, 4,353 gal	1970	STAR
T-102-S38-002	East Tank, 5891 gal	1994	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
T-102-S38-003	Central Tank, 5891 gal	1994	
T-102-S38-004	Upper Hold Tank, 5157 gal	1994	STAR
T-102-S38-005	Lower Hold Tank, 5891 gal	1994	STAR

- ii. **Standards/Operating Limits**

- 1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
 - (b) The potential HEPA-controlled nickel emissions from EU T-102-S38-002 and T-102-S38-003 are below the *de minimis* levels in Regulation 5.21. The potential controlled ammonia emissions from EP T-102-S38-001, T-102-S38-004 and T-102-S38-005 after the first control device are below the *de minimis* levels in Regulation 5.21. Potential controlled ammonia emissions from EP T-102-S38-002 and T-102-S38-003 are less than the averaging period *de*

minimis level per the EA demonstration dated 11/27/17 and replaces the previous Tier 3 analysis.

EP	Location	Risk	Status	HQ	Status
102-S38	industrial	--	--	1.78	< 3.0
Fugitives	unadjusted	--	---	0.27	< 1.0

(c) The potential controlled PM emissions after the first control device from EU T-102-S38-002 and T-102-S38-003 are below the applicable PM emission standards.

2) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

(a) Controlled potential emissions of nickel and ammonia were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

u. **EU 102-S39 – Stabilization of reduced metal catalyst products**

i. **Equipment:**

EP	Description	Construction Date	Applicable Regulations
MX-102-S39-001	Blender	1990	5.02, 7.08, STAR, 40 CFR 63 Subpart VVVVVV
VS-102-S39-001	Screener	1990	7.08
CV-102-S39-001	Conveyor	1990	
H-102-S39-001	Hopper	1990	
VS-102-S39-002	Screener	1990	
PD-102-S39-001	Product Drum	1990	7.08

ii. **Standards/Operating Limits**

1) **Control Device Operation**

- (a) For all metal HAP process vents from each CMPU with collective uncontrolled metal HAP emissions equal to or greater than 400 lb/year, 40 CFR 63.11495(f) establishes the requirement for the owner operator to reduce collective uncontrolled emissions of total metal HAP emissions by ≥ 95 percent by weight by routing emissions from a sufficient number of the metal process vents through a closed-vent system to any combination of control devices.
- (b) The potential controlled TAC emissions of cobalt and nickel from EU MX-102-S39-001 are below the *de minimis* levels in Regulation 5.21.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

- (a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

4) **TAC**

- (a) Controlled potential emissions cobalt and nickel were compared to *de minimis* levels as an alternative measure per Regulation 5.21, section 4.2.3.1; therefore, limiting emissions to *de minimis* per Regulation 5.21, section 4.3 ensures emissions remain environmentally acceptable.

v. **EU 103-S40 – Warehouse Packaging System; product transfer from drums to supersacks**

i. **Equipment:**

Emission Point	Description	Construction Date	Applicable Regulations
DD-103-S40-001	Drum Dumper	1994	7.08
H-103-S40-001/PA-103-S40-001	Hopper/Packager	1994	

ii. **Standards/Operating Limits**

1) **Control Device Operation**

(a) The potential controlled hourly PM emissions are below the applicable emission standard in Regulation 7.08.

2) **Opacity**

(a) Regulation 7.08, section 3.1.1 establishes a standard for opacity to not equal or exceed 20%.

3) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

w. **EU 101-S10 – Two natural gas fired boilers**

i. **Equipment:**

EU	Description	Construction Date	Applicable Regulations
B-101-S10-001	Boiler, Superior, 25.14 MMBtu/hr	1973	7.06, STAR
B-101-S10-002	Boiler, Superior, 25.14 MMBtu/hr	1973	7.06, STAR

ii. **Standards/Operating Limits**

1) **Opacity**

(a) Regulation 7.06, section 4.2 establishes a standard for opacity to not equal or exceed 20%.

2) **PM/PM₁₀/PM_{2.5}**

(a) Regulation 7.06, section 4.1.3 establishes a PM standard of 0.36 lb per million BTU actual heat input capacity for total heat input values above 10 million BTU per hour and less than 250 million BTU per hour per the following equation:

$$\text{Standard (lb/million BTU)} = 0.9634 [(\text{Total Actual Heat Input Capacity})^{-0.2356}]$$

3) **SO₂**

(a) Regulation 7.06, section 5.1.1 establishes a SO₂ standard of 1 lb per million BTU actual heat input

capacity for a total heat input capacity of 145 million BTU per hour or less.

4) **TAC**

- (a) Emissions from the combustion of natural gas are *de minimis* by definition per Regulation 5.21, section 2.7.

x. **EU 101-S04, 101-S20, 101-S27, 104-S41**

- 101-S04: Box Dryer #2, low temperature drying of catalysts, electric
- 101-S20: Unloading of nitric acid from tanker trucks to storage tanks
- 101-S27: South 101-S27 System; impregnation of catalyst carriers with various metal ions, using drum dumper, hopper and basket from EU 101-S19
- 104-S41: Wastewater Treatment System. Collection, chemical precipitation, pH adjustment, and equalization of plant wastewater prior to discharge

i. **Equipment:**

EU	Emission Point	Description	Construction Date	Applicable Regulations
101-S04	HT-101-S04-001	Dryer #2, electric	1956	STAR
101-S20	T-101-S20-001	HNO ₃ Storage Tank	NA	STAR
101-S27	T-101-S27-001	Nickel Nitrate Tank, 841 gal	1977	STAR
101-S27	T-101-NOX-007	Nickel Nitrate Scale Tank, 1523 gal	1977	STAR
101-S27	T-101-NOX-009	Nickel Nitrate Make-up Tank, 1734 gal	1977	STAR
104-S41	T-104-S41-002	H ₂ SO ₄ Tank, 8500 gal	2009	STAR
	EQ-104-S41-001	Equalization Basin, 37,500 gal	NA	STAR

ii. **Standards/Operating Limits**

1) **TAC**

- (a) From EU 101-S20, The potential HNO₃ emissions are above the *de minimis* levels in Regulation 5.21. Therefore, the source performed a Tier 3 analysis of the hazard quotient, HQ, using SCREEN3 air dispersion modeling, resulting in an HQ of 0.087, which is less than the EAGNC of 1.0, and an HQ of 0.44 for industrial property, which is less than the industrial EAGNC of 3.0.
- (b) From EU 101-S27, the potential uncontrolled TAC emissions of nitric acid from EP T-101-S27-001, T-101-S27-009 and T-101-S27-007 are below the *de minimis* levels in Regulation 5.21.

- (c) From EU 104-S41, the potential uncontrolled emissions of sulfuric acid from EP T-104-S41-002 and ammonia from EP EQ-104-S41-001 are below the *de minimis* levels in Regulation 5.21.
- (d) The source modeled potential uncontrolled fugitive ammonia emissions from emission unit 104-S41; therefore, there are no limits in the permit.

III Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Alternative Operating Scenarios:** The source did not request any alternative operating scenarios.
5. **Compliance History:**

Date	Regulation Violated	Settlement
3/1/2002	Reg. 2.17, section 3	Agreement, \$4,500
5/21/2007	Reg. 2.17, section 3.1	Agreement, \$1,500

6. **Calculation Methodology or Other Approved Method:**

PM emissions are calculated assuming a 1% loss. HAP/TAC emissions are calculated based on the HAP/TAC% in the material times the PM emissions. Emission factors for natural gas combustion are from AP-42 Table 1.4-1 and 3.2 lb ammonia/MMft³ is from FIRE. AP-42, Chapter 7 or ideal gas law can be used to calculate emissions from storage tanks.

7. **Insignificant Activities**

Description	Quantity	Basis (Regulation 1.02, Appendix A)
Combustion sources < 10 MMBtu/hr	23	Section 1.1
Internal combustion engines, fixed or mobile ²	3	Section 2.
Brazing, soldering, or welding equipment, potential emissions less than 5.01 tpy of a regulated pollutant or 1000.0 lbs/year of a HAP	7	Section 3.4
Lab ventilating and exhausting systems for	27	Section 3.11

² These engines are not subject to 40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, or 40 CFR 63 Subpart ZZZZ.

Description	Quantity	Basis (Regulation 1.02, Appendix A)
nonradioactive materials, potential emissions less than 5 tpy of a regulated pollutant or 1000.0 lbs/year of a HAP		
Research & Development facilities, potential emissions less than 5.01 tpy of a regulated pollutant or 1000.0 lbs/year of a HAP	1	Section 3.27

- 1) Insignificant activities identified in District Regulation 1.02 Appendix A may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16 section 3.5.4.1.4.
- 2) Insignificant activities identified in District Regulation 1.02 Appendix A shall comply with generally applicable requirements as required by Regulation 2.16 section 4.1.9.4.
- 3) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year pursuant to Regulation 2.16 section 4.3.5.3.6.
- 6) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.
- 7) The District has determined pursuant to Regulation 2.16 section 4.1.9.4 that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.