

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 9626

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## AIR CONTAMINANTS DATA

Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
FCC-3A	Feed Hopper Bag Filter	PM	<0.1	0.2
FCC-5A	Calciner	VOC	0.46	2.02
		NO <sub>x</sub>	1.85	8.09
		SO <sub>2</sub>	0.01	0.04
		PM	0.08	0.34
		CO	0.54	2.36
FCC-8	Flash Dryer Bag Filter	VOC	0.05	0.22
		NO <sub>x</sub>	1.39	6.08
		SO <sub>2</sub>	0.01	0.03
		PM	1.0	4.4
		CO	0.19	0.85
FCC-9	Molsieve Calciner	VOC	0.03	0.11
		NO <sub>x</sub>	0.69	3.01
		SO <sub>2</sub>	<0.01	<0.01
		PM	0.02	0.11
		CO	0.10	0.42
FCC-9A	Final Product Bag Filter	PM	1.6	7.2
FCC-10	Flash Dryer Bag Filter	VOC	0.05	0.22
		NO <sub>x</sub>	1.39	6.08
		SO <sub>2</sub>	<0.01	0.03
		PM	1.0	4.4
		CO	0.19	0.85
FCC-11	Reslurry Tank Bag Filter	PM	0.3	1.2

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
FCC-11A	Calciner Scrubber	NH <sub>3</sub>	2.4	10.5
		PM	<0.10	<0.10
FCC-12	Molsieve Calciner	VOC	0.03	0.11
		NO <sub>x</sub>	0.69	3.01
		SO <sub>2</sub>	<0.01	0.01
		PM 0.02	0.11	
		CO 0.10	0.42	
FCC-14	HCl Scrubber	HCl	<0.10	<0.10
FCC-15	Ammonia Scrubber	NH <sub>3</sub>	1.96	8.58
FCC-16	Portaclay/Reslurry Bag Filter 0.24		PM	0.05
FCC-17	Sulfuric Acid Storage Tank	H <sub>2</sub> SO <sub>4</sub>	<0.01	<0.01
		SO <sub>3</sub>	<0.01	<0.01
FCC-18	Strike Tanks Vent	PM <sub>10</sub>	0.46	0.63
FCC-19	Kaolin Dosing Bag Hopper	PM 0.3	1.3	
FCC-20	Kaolin Silo Bag Filter	PM <sub>10</sub>	0.26	0.28
FCC-21	Spray Dryer Scrubbers (Five)	VOC	0.34	1.50
		NO <sub>x</sub>	15.80	69.40
		SO <sub>2</sub>	0.04	0.30
		PM <sub>10</sub>	12.92	56.60
		CO 3.81	16.70	
21.1-21.3	Crude Product Bag Filter	PM 0.1	0.6	
FCC-23	Separator Fines Bag Filter	PM	0.2	0.8
FCC-27	Steam Boiler	VOC	0.2	0.8
		NO <sub>x</sub>	7.3	32.2

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			lb/hr	TPY
		SO <sub>2</sub>	<0.1	0.2
		PM 0.3	1.3	
		CO 2.1	9.4	
FCC-34	Ammonia Absorber	NH <sub>3</sub>	<0.01	0.03
FCC-40	Kaolin Unloading Bag Filter 0.19		PM <sub>10</sub>	0.13
FCC-41	Sulfuric Acid Storage Tank	H <sub>2</sub> SO <sub>4</sub>	<0.01	<0.01
		SO <sub>3</sub>	<0.01	<0.01
FCC-42	Filter Hoods Vent (5)	NH <sub>3</sub>	0.08	0.35
FCC-43	Ammonium Chloride Tank (5)	NH <sub>3</sub>	<0.01	0.02
RDL-1	Spray Dryer No. 1 (6)	PM <sub>10</sub>	0.46	0.93
		SiO <sub>2</sub> (4)	<0.01	<0.01
		Na <sub>2</sub> SO <sub>4</sub> (4)	0.06	0.12
		NO <sub>x</sub>	0.77	1.54
		CO 1.11	2.22	
		formic acid	0.09	0.19
		Other VOC	0.01	0.01
		SO <sub>2</sub>	<0.01	<0.01
RDL-2	Spray Dryer No. 2 (6)	PM <sub>10</sub> (4)	0.46	0.93
		SiO <sub>2</sub> (4)	<0.01	<0.01
		Na <sub>2</sub> SO <sub>4</sub> (4)	0.06	0.12
		NO <sub>x</sub>	0.77	1.54
		CO 1.11	2.22	
		formic acid	0.09	0.19
		Other VOC	0.01	0.01
		SO <sub>2</sub>	<0.01	<0.01
RDL-3	Ammonia Scrubber	PM <sub>10</sub> (4)	0.46	0.70
		SiO <sub>2</sub> (4)	<0.01	<0.01
		Na <sub>2</sub> SO <sub>4</sub> (4)	0.02	0.03
		NO <sub>x</sub>	3.96	2.97

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
		NH <sub>3</sub>	0.04	0.03
RDL-5	Steam Boiler	PM <sub>10</sub>	<0.01	0.01
		NO <sub>x</sub>	0.05	0.20
		CO <0.01	0.04	
		VOC	<0.01	0.01
		SO <sub>2</sub>	<0.01	<0.01
RDL-6	Caustic Scrubber (6)	PM <sub>10</sub> (4)	0.09	0.19
		SiO <sub>2</sub> (4)	<0.01	<0.01
		Na <sub>2</sub> SO <sub>4</sub> (4)	0.01	0.02
		NO <sub>x</sub>	1.54	3.08
		CO 4.92	9.83	
		formic acid	0.08	0.16
		Other VOC	0.01	0.02
		SO <sub>2</sub>	<0.01	<0.01
RDL-7	Dust Collection System	PM <sub>10</sub> (4)	<0.001	0.002
		SiO <sub>2</sub> (4)	<0.001	0.002
		Na <sub>2</sub> SO <sub>4</sub> (4)	<0.001	<0.001
		NO <sub>x</sub>	1.54	3.08
		CO 1.01	3.936	
		formic acid	0.08	0.33
		Other VOC	0.09	0.02
		SO <sub>2</sub>	<0.01	<0.001

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) PM - particulate matter
  - PM<sub>10</sub> - particulate matter less than 10 microns
  - VOC - volatile organic compounds as defined in 30 TAC Section 101.1
  - NO<sub>x</sub> - total oxides of nitrogen
  - SO<sub>2</sub> - sulfur dioxide

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CO - carbon monoxide  
NH<sub>3</sub> - ammonia  
HCl - hydrochloric acid  
H<sub>2</sub>SO<sub>4</sub> - sulfuric acid  
SiO<sub>2</sub> - silicon oxide (crystalline quartz)  
Na<sub>2</sub>SO<sub>4</sub> - sodium sulfate  
SO<sub>3</sub> - sulfur trioxide

- (4) Overall PM<sub>10</sub> emission rates include SiO<sub>2</sub> and Na<sub>2</sub>SO<sub>4</sub> emission rates.  
(5) Emission points incorporated into permit from Standard Exemption Registration No. 26870.  
(6) Emissions from Spray Dryer Nos. 1 and 2 can be vented through the caustic scrubber or dust collector depending upon process conditions as defined in confidential application submittals dated May 21 and July 16, 1999.

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

8,760 Hrs/year

Dated\_\_\_\_\_