

# EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 4351

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 *	Source	Air Contaminant	Emission Rates	
Point No. (1)	Name (2)	Name (3)	lb/hr	TPY
ANI-FLR373	NO <sub>x</sub> Flare Discharge (6)	VOC	0.27	0.40
		Aniline	0.02	0.09
		Benzene	0.81	2.00
		Nitrobenzene	0.08	0.18
		Cyclohexanone	< 0.01	0.02
		NO <sub>x</sub>	77.38	168.49
		CO	5.95	8.43
		SO <sub>2</sub>	0.60	0.89
		H <sub>2</sub> S	< 0.01	< 0.01
		NH <sub>3</sub>	0.01	0.03
ANI-FLR296	DHN Emergency Flare	Emergency Use Only		
ANI-ABS62	Ammonia Scrubber	Aniline	< 0.01	< 0.01
		Benzene	0.43	1.31
		Nitrobenzene	0.02	0.05
		Phenol	< 0.01	< 0.01
		NH <sub>3</sub>	2.40	10.51
ANI-FDHN	DHN Fugitives (4)	Benzene	1.06	4.63
		Nitrobenzene	0.44	1.92
ANI-FANMFG	Aniline Fugitives (4)	Aniline	1.26	5.52
		Benzene	0.19	0.85
		Nitrobenzene	0.55	2.42
		m-phenylenediamine	< 0.01	0.02
ANI-TFX261	Nitrobenzene Storage	Nitrobenzene	0.60	0.14
ANI-VNT297	DHN Sump	Benzene	< 0.01	< 0.01

Permit No. 4351  
Page 2

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES  
AIR CONTAMINANTS DATA

Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
		Nitrobenzene	< 0.01	< 0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES  
AIR CONTAMINANTS DATA

Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
ANI-VNT298	PNP Extractor (5)	Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
		Nitric Acid	< 0.01	< 0.01
ANI-TFX299	PNP Extractor Storage (5) < 0.01	Nitrobenzene		0.01
ANI-FIL190	Filter and Thickener Vent	Aniline	0.50	2.19
ANI-FNOXFL	NO <sub>x</sub> Flare Fugitive (4)	Aniline	< 0.01	< 0.01
		Benzene	0.01	0.06
		Nitrobenzene	< 0.01	0.01
		NH <sub>3</sub>	< 0.01	< 0.01
ANI-STR69A	Wastewater Column Vent No. 1 < 0.01	Aniline		< 0.01
		Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-STR69B	Wastewater Column Vent No. 2 < 0.01	Aniline		< 0.01
		Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-TFL75	Benzene Bulk Storage Tank 1.73 Vent	Benzene		0.59
ANI-TFX290	Reactor Nitrobenzene Feed Tank	Benzene	0.01	< 0.01
		Nitrobenzene	0.05	< 0.01
ANI-TFX282	Purge Column Feed Tank Vent	Aniline	< 0.01	0.01
ANI-TFX193	West Aniline Extractor	Aniline	< 0.01	< 0.01

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AIR CONTAMINANTS DATA

Emission *	Source	Air Contaminant	<u>Emission Rates</u>	
<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>
	Hold Tank Vent			
ANI-TF189E	East Wastewater Tank Vent	Aniline	< 0.01	
	< 0.01	Benzene	0.04	0.01
		Nitrobenzene	< 0.01	< 0.01

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AIR CONTAMINANTS DATA

Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			<u>lb/hr</u>	<u>TPY</u>
ANI-TF2561	Aniline Crude Analysis Tank Vent No. 1	Aniline	0.37	0.22
ANI-TF2562	Aniline Crude Analysis Tank Vent No. 2	Aniline	0.37	0.22
ANI-TFX74	Wastewater Column OVHD Separator	Aniline	< 0.01	< 0.01
		Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-TFX194	Aniline Extractor Feed Tank Vent	Aniline	< 0.01	< 0.01
ANI-TFX255	Aniline Rework Storage Tank Vent	Aniline	0.14	0.11
ANI-TFX259	Aniline Safety Tank Vent	Aniline	0.08	0.01
ANI-TFX260	Crude Aniline Storage Tank Vent	Aniline	0.63	0.19
ANI-TFX283	Coarse Water Feed Tank Vent	Aniline	< 0.01	< 0.01
ANI-TFX73	East Aniline Extractor Hold Tank Vent	Aniline	< 0.01	< 0.01
ANI-TFX72	Water Draw-Off Tank Vent	Aniline	< 0.01	< 0.01
ANI-TFX70	Catalyst Mix Tank Vent	Aniline	0.04	< 0.01
ANI-LSH340	Aniline Ship Loading	Aniline	0.58	< 0.01
ANI-LTR98	Aniline Truck Loading	Aniline	0.28	0.01
		Benzene	0.37	< 0.01
		Nitrobenzene	0.02	< 0.01

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AIR CONTAMINANTS DATA

Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
ANI-LBA96	Aniline Barge Loading	Aniline	1.75	0.33
ANI-LRC195	Rework Rail Car Loading	Aniline	0.26	< 0.01
ANI-LRC97	Aniline Rail Car Loading	Aniline	0.36	0.06
		Nitrobenzene	0.19	0.01
ANI-LTR99	Tar Loading	Aniline	0.04	< 0.01
		m-phenylenediamine	< 0.01	< 0.01
ANI-VNT196	Aniline Building Process Water Sump Vent	Aniline	0.07	0.30
		Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	0.01
		Phenol	< 0.01	< 0.01
ANI-TFX301	Consolidated Effluent Tank Vent	Aniline	< 0.01	< 0.01
		Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-ADS76E	East Desulfur Drum Vent	H <sub>2</sub> S	0.09	0.40
ANI-ADS76W	West Desulfur Drum Vent	H <sub>2</sub> S	0.09	0.40
ANI-CT208A	Aniline Cooling Tower South Stack	VOC	0.21	0.91
ANI-CT208B	Aniline Cooling Tower Center Stack	VOC	0.21	0.91
ANI-CT208C	Aniline Cooling Tower North Stack	VOC	0.21	0.91
ANI-CT208D	Aniline Cooling Tower New Stack	VOC	0.24	1.05

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AIR CONTAMINANTS DATA

Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
ANI-FCOOLT	Aniline Cooling Tower Fugitive	VOC	0.04	0.20
ANI-CTF286	Centrifuge Vent	Benzene	< 0.01	0.01
		Nitrobenzene	0.04	0.18
ANI-DCN257	Aniline Product Decanter	Aniline	< 0.01	< 0.01
ANI-DCN258	Aniline Off-Spec Decanter < 0.01 Vent	Aniline	< 0.01	
ANI-F1304	Aniline T/C Spot 1304 Fugitive (4)	Aniline	0.02	0.10
ANI-FANAL	Aniline Analysis Area Fugitive (4)	Aniline	0.13	0.57
ANI-FANBLK	Aniline Bulk Storage Area Fugitive (4)	Aniline	0.12	0.51
ANI-FBARGE	Aniline Barge Loading Fugitive (4)	Aniline	0.01	0.03
		Benzene	0.08	0.36
ANI-FBZBLK	Aniline Benzene Bulk Storage Tank Fugitive (4)	Benzene	0.04	0.18
ANI-FCRDTF	Aniline Crude Tank Farm Fugitive (4)	Aniline	0.19	0.84
		Benzene	0.01	0.06
		Nitrobenzene	0.35	1.53
ANI-FPRCBL	Aniline PRC Battery Limit Fugitive (4)	Aniline	< 0.01	0.02
		Benzene	< 0.01	0.02
		Nitrobenzene	0.01	0.04
ANI-FRRTUN	Aniline RR/Truck Unload	Aniline	0.06	0.26

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
	Fugitive (4)	Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	0.05
ANI-FSHIP	Aniline Ship Loading Fugitive (4)	Aniline	< 0.01	0.02
ANI-FSITE	Aniline OSBL Fugitive (4) 0.06	Aniline		0.01
		Benzene	0.03	0.14



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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
ANI-RFM77	Hydrogen Reformer Exhaust 0.96		VOC	0.22
		NO <sub>x</sub>	10.91	47.77
		CO	2.73	11.94
		SO <sub>2</sub>	0.05	0.20
		PM <sub>10</sub>	0.39	1.71
ANI-STK169	Ammonia Blowdown Pot Vent 0.06		NH <sub>3</sub>	4.79
ANI-STK83	AOP Abater Discharge	VOC	1.84	8.05
		NO <sub>x</sub>	44.28	126.47
		SO <sub>2</sub>	1.63	7.15
ANI-TFX84	Reactor Catalyst Feed Tank 0.02		Aniline	0.18
ANI-TFX85	Thickener Feed Storage Tank	Aniline	0.12	0.01
ANI-TFX90	Alternate Wastewater Diversion Tank	Aniline	< 0.01	< 0.01
		Benzene	0.03	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-TFX91A	Aniline Bulk Storage Tank - North	Aniline	1.49	0.27
ANI-TFX91B	Aniline Bulk Storage Tank - South	Aniline	1.49	0.27
ANI-TFX92A	Aniline No. 1 Analysis Storage Tank	Aniline	0.73	0.10
ANI-TFX92B	Aniline No. 2 Analysis Storage Tank	Aniline	0.73	0.10

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
ANI-TFX92C	Aniline No. 3 Analysis Storage Tank	Aniline	0.33	0.05
ANI-XTR288	1st Stage Aniline Extractor Vent	Aniline	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-XTR289	2nd Stage Aniline Extractor Vent	Aniline	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
ANI-TFX192	Tar Tank Vent	Aniline	< 0.01	< 0.01
		m-phenylenediamine	< 0.01	< 0.01
ANI-VNT78	Hydrogen Plant Vent Header Discharge	VOC	1.72	1.09
		NO <sub>x</sub>	5.02	3.16
		CO	5.47	3.45
ANI-TFX205	Acid Recovery Tank Vent	Benzene	< 0.01	< 0.01
		Nitrobenzene	< 0.01	< 0.01
		H <sub>2</sub> SO <sub>4</sub>	< 0.01	< 0.01
ANI-VNT264	AOP NO <sub>x</sub> Analyzer Vent	NO	< 0.01	< 0.01
ANI-VT263A	AOP Oxygen Analyzer Vent	NO	< 0.01	< 0.01
		N <sub>2</sub> O	< 0.01	< 0.01
		NO <sub>x</sub>	< 0.01	< 0.01
ANI-VNT99	Calgon Steamer Organic Tank Vent	Aniline	2.2	< 0.01
		Benzene	1.85	< 0.01
		Nitrobenzene	2.2	< 0.01
ANI-GAUZHS	Gauze Pickling House Vent < 0.01	HCl		< 0.01
		Formic Acid	< 0.01	< 0.01
ANI-LTR95	Nitric Truck Loading	NO <sub>x</sub>	0.25	0.01

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			<u>lb/hr</u>	<u>TPY</u>
ANI-TFX101	Strong H <sub>2</sub> SO <sub>4</sub> Storage Tank Vent	H <sub>2</sub> SO <sub>4</sub>	< 0.01	< 0.01
ANI-VT263B	AOP Methane Analyzer Vent < 0.01		NO <sub>x</sub>	< 0.01
ANI-STR186	Regeneration Column Vent	Diethanolamine	1.71	7.5
ANI-FANFLR	Aniline Flare Fugitives (4) 0.02	Aniline	< 0.01	
		Cyclohexanone	< 0.01	< 0.01

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY
ANI-FLR374	Aniline Flare (6)	VOC	1.01	4.42
		Aniline	0.14	0.60
		Benzene	0.06	0.25
		Cyclohexanone	0.01	0.06
		NO <sub>x</sub>	4.82	21.12
		CO	18.79	82.32
		SO <sub>2</sub>	< 0.01	0.02
		NH <sub>3</sub>	0.01	0.02
ANI-AN262A	Aniline Reactor Off-Gas Analyzer Vent	Aniline	< 0.01	< 0.01
		Benzene	< 0.01	< 0.01
		Cyclohexanone	< 0.01	< 0.01
		Phenol	< 0.01	< 0.01
		NH <sub>3</sub>	< 0.01	< 0.01

- (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) VOC - volatile organic compounds as defined in General Rule 101.1
  - NO<sub>x</sub> - total oxides of nitrogen
  - CO - carbon monoxide
  - SO<sub>2</sub> - sulfur dioxide
  - H<sub>2</sub>S - hydrogen sulfide
  - NH<sub>3</sub> - ammonia
  - PM<sub>10</sub> - particulate matter less than 10 microns in diameter
  - H<sub>2</sub>SO<sub>4</sub> - hydrogen sulfate
  - NO - nitrogen oxide
  - N<sub>2</sub>O - nitrous oxide
  - HCl - hydrogen chloride
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) Hours of operation are limited to 2,190 hours per year.
- (6) The VOC emission estimates do not include emissions of VOC which are specifically identified by chemical name.

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<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>

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

\_\_\_\_\_ Hrs/day    \_\_\_\_ Days/week    \_\_\_\_ Weeks/year or 8,760 Hrs/year

Dated \_\_\_\_\_