

# EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 2975 and PSD-TX-778M2

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
SM01	No. 1 Smelt Tank Scrubber	PM <sub>10</sub>	10.90	47.74
		VOC (note a)	1.37	6.02
		SO <sub>2</sub>	3.28	14.37
		H <sub>2</sub> SO <sub>4</sub>	0.15	0.66
		TRS (note b)	1.80	7.88
		NO <sub>x</sub>	1.80	7.88
		NH <sub>3</sub>	2.51	8.99
SM02	No. 2 Smelt Tank Scrubber	PM <sub>10</sub>	19.85	86.94
		VOC	2.50	10.95
		SO <sub>2</sub>	6.78	29.70
		H <sub>2</sub> SO <sub>4</sub>	0.31	1.36
		TRS	3.28	14.35
		NO <sub>x</sub>	3.28	14.35
		NH <sub>3</sub>	4.57	16.37
LK01**	Lime Kiln No. 1	PM <sub>10</sub>	27.60	99.80
		VOC	2.20	8.10
		SO <sub>2</sub>	2.30	8.40
		H <sub>2</sub> SO <sub>4</sub>	0.06	0.13
		TRS	2.60	9.30
		NO <sub>x</sub>	18.90	49.50
		CO	6.80	14.20
PB01****	No. 1 Power Boiler (Natural Gas and Fuel Oil Firing)	PM <sub>10</sub>	61.21	185.22
		VOC	8.26	16.70
		NO <sub>x</sub>	567.60	1717.69
		SO <sub>2</sub>	841.20	1328.25
		CO	264.88	801.59
		H <sub>2</sub> SO <sub>4</sub>	4.03	4.43
		TRS	0.67	0.26

## 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
LK02**	Lime Kiln No. 2	PM <sub>10</sub>	26.30	115.19
		NO <sub>x</sub>	38.91	145.90
		SO <sub>2</sub>	1.20	5.26
		H <sub>2</sub> SO <sub>4</sub>	0.25	1.07
		CO	4.44	19.45
		TRS	2.50	10.95
		VOC	4.00	17.52
PB02***	Power Boiler No. 2 (note c)	PM <sub>10</sub>	108.70	466.58
		VOC	54.81	237.80
		NO <sub>x</sub>	326.10	1399.75
		SO <sub>2</sub>	770.00	780.66
		CO	1102.55	4732.57
		H <sub>2</sub> SO <sub>4</sub>	16.57	71.02
		TRS	1.66	6.74
RB01A**	No. 1 Recovery Furnace North Stack (Normal Ops)	PM <sub>10</sub>	26.58	116.43
		VOC	13.13	57.52
		NO <sub>x</sub>	63.12	276.45
		SO <sub>2</sub>	210.94	307.98
		H <sub>2</sub> SO <sub>4</sub>	9.69	14.14
		CO	122.97	538.61
		TRS	1.87	8.19
RB01A**	No. 1 Recovery Furnace North Stack (MSS)	PM <sub>10</sub>	52.00	0.65
RB01B**	No. 1 Recovery Furnace South Stack (Normal Ops)	PM <sub>10</sub>	26.58	116.43
		VOC	13.13	57.52
		NO <sub>x</sub>	63.12	276.45
		SO <sub>2</sub>	210.94	307.98
		H <sub>2</sub> SO <sub>4</sub>	9.69	14.14
		CO	122.97	538.61
		TRS	1.87	8.19
RB01B**	No. 1 Recovery Furnace South Stack (MSS)	PM <sub>10</sub>	52.00	0.65

## 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
RB02A**	No. 2 Recovery Furnace West Stack (Normal Ops)	PM <sub>10</sub>	42.59	177.23
		VOC	23.92	99.51
		NO <sub>x</sub>	112.42	467.76
		SO <sub>2</sub>	375.71	521.11
		H <sub>2</sub> SO <sub>4</sub>	17.25	23.93
		CO	219.02	911.34
		TRS	3.33	13.86
RB02A**	No. 2 Recovery Furnace West Stack (MSS)	PM <sub>10</sub>	79.00	0.99
RB02B**	No. 2 Recovery Furnace East Stack (Normal Ops)	PM <sub>10</sub>	42.59	177.23
		VOC	23.92	99.51
		NO <sub>x</sub>	112.42	467.76
		SO <sub>2</sub>	375.71	521.11
		H <sub>2</sub> SO <sub>4</sub>	17.25	23.93
		CO	219.02	911.34
		TRS	3.33	13.86
RB02B**	No. 2 Recovery Furnace East Stack (MSS)	PM <sub>10</sub>	79.00	0.99
BG01	Lime System Baghouse No. 1	PM <sub>10</sub>	0.06	0.21
BG02	Lime System Baghouse No. 2	PM <sub>10</sub>	0.10	0.44
LS01	No. 1 Lime Slaker	PM <sub>10</sub>	0.02	0.08
		VOC	0.39	1.41
		NH <sub>3</sub>	9.39	33.63
LS02	No. 2 Lime Slaker	PM <sub>10</sub>	0.02	0.10
		VOC	0.68	2.99
		NH <sub>3</sub>	17.10	61.24
BP0351	Methanol Storage Tank	CH <sub>3</sub> OH	19.03	0.73
BP0368	Hydrogen Peroxide Tank	H <sub>2</sub> O <sub>2</sub>	2.21	0.09

## 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
NCG01	NCG Oxidation Unit Scrubber	VOC	0.12	0.53
		NO <sub>x</sub>	3.08	13.51
		SO <sub>2</sub>	15.84	69.37
		CO	6.25	27.40
		H <sub>2</sub> SO <sub>4</sub>	6.01	26.28
		TRS	0.99	4.36
NCG02	Combined Contaminated Condensate Tank	TRS	<0.10	0.40
NCGF1	NCG Fugitives (4)	TRS	0.36	1.56
DIG1	Batch Digestor Fugitives (4)	VOC	4.80	19.19
		TRS	0.87	3.46
WWTS1	Waste Water Treatment Fugitives (4)	VOC	348.16	740.78
		TRS	22.82	81.72
BP14#	B-Line Bleach Plant Scrubber (North) (5)	Cl <sub>2</sub>	0.07	0.32
		ClO <sub>2</sub>	4.23	18.51
		CO	29.22	117.37
		VOC	3.06	12.28
		TRS	0.09	0.37
BP15#	B-Line Bleach Plant Scrubber (South) (5)	Cl <sub>2</sub>	0.07	0.32
		ClO <sub>2</sub>	4.23	18.51
		CO	29.22	117.37
		VOC	3.06	12.28
		TRS	0.09	0.37
BP16#	A-Line Bleach Plant Scrubber (5)	Cl <sub>2</sub>	0.20	0.86
		ClO <sub>2</sub>	11.31	49.51
		CO	39.00	117.37
		VOC	4.17	12.28
		TRS	0.12	0.37

## 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
BP01	Bleach Plant Fugitives (4)	Cl <sub>2</sub>	0.2	1.0
		ClO <sub>2</sub>	0.2	1.0
CLT01	No. 1 Concentrated Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
CLT02	No. 2 Concentrated Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
WLT01	No. 1 Weak Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
WLT02	No. 2 Weak Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
HLT01	No. 1 Strong/Heavy Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
HLT02	No. 2 Strong/Heavy Liquor Storage Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
SCT01	No. 1 Soap Conc. Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SCT02	No. 2 Soap Conc. Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SS01	No. 1 Soap Separator (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SS02	No. 2 Soap Separator (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SST01	No. 1 Soap Storage Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
SST02	No. 2 Soap Storage Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21

## 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
BLDF01	Black Liquor Digester Fill Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
CT01	Spill Collection Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
ST01	Swing Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
SLST01	No. 1 Spare Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
SLST02	No. 2 Spare Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
SLST03	No. 3 Spare Liquor Storage Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
BOT01	Evaporator Boil Out Tank (5)	VOC	0.11	0.48
		TRS	0.19	0.84
DT01	Black Liquor Dump Tank (5)	VOC	0.54	2.37
		TRS	0.12	0.51
WLSC01	Weak Liquor Soap Conc Tank (5)	VOC	0.03	0.12
		TRS	0.05	0.21
FOT	Fuel Oil Tank (5)	VOC	1.52	6.64
		TRS	0.19	0.84
CPFUG (note d)	Caustic Plant Fugitives (4)	NH <sub>3</sub>	7.31	26.17
		VOC	16.25	68.30
		TRS	3.18	13.91
CP01	No. 1 Causticizer Tanks (5)	NH <sub>3</sub>	2.59	9.28
		VOC	0.01	0.03
CP02	No. 2 Causticizer Tanks (5)	NH <sub>3</sub>	4.72	16.89
		VOC	0.01	0.06

## 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
WLOXT1	White Liquor Oxidation Tank (5)	NH <sub>3</sub>	0.10	0.44
		VOC	0.26	1.16
		TRS	0.56	2.45
KNCONV	A- and B-Line Knotter Conveyor (4)	VOC	0.01	0.04
AQS	A-Line Quaternary Screen (4)	VOC	<0.01	0.01
		TRS	<0.01	<0.01
BQS	B-Line Quaternary Screen (4)	VOC	0.01	0.03
		TRS	<0.01	<0.01
ASDT	A-Line Screen Dilution Tank (5)	VOC	0.01	0.02
		TRS	<0.01	<0.01
BSDT	B-Line Screen Dilution Tank (5)	VOC	<0.01	0.01
		TRS	<0.01	<0.01
ADHV1/ADSP1	A-Line Decker Hood Vent and A-Line Decker Seal Pit Vent (5)	VOC	9.24	27.20
		TRS	4.06	11.95
BDHV1/BDSP1	B-Line Decker Hood Vent and B-Line Decker Seal Pit Vent (5)	VOC	13.55	54.41
		TRS	5.95	23.89
CPS1 (note e)	Chip/Bark Handling Fugitives (4)	PM	3.35	13.59
		PM <sub>10</sub>	1.58	6.43
REJBIN2	Rejects Bin	CH <sub>3</sub> OH	0.03	0.10
LOG-1A	Log Processing 1A (4)	PM	0.73	3.20
		PM <sub>10</sub>	0.22	0.96
HDST1	No. 1 Brown Stock High Density Stock Tank (5)	VOC	4.80	21.02
		TRS	0.44	1.94
HDST2	No. 2 Brown Stock High	VOC	4.80	21.02

## 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
	Density Stock Tank (5)	TRS	0.44	1.94
ALDST	A-Line Low Density Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
BLDST	B-Line Low Density Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
AWTST	A-Line Waste Stock Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
BWTST	B-Line Waste Stock Chest (5)	VOC	4.80	21.02
		TRS	0.44	1.94
(note f)	Extruder No. 5 Vents and Fugitives (4)	PM <sub>10</sub>	3.18	13.91
		VOC	2.07	9.05
		NO <sub>x</sub>	0.29	1.29
		CO	0.25	1.08
		SO <sub>2</sub>	<0.01	0.01
(note f)	Extruder No. 7 Vents and Fugitives (4)	PM <sub>10</sub>	3.18	13.92
		VOC	2.07	9.05
		NO <sub>x</sub>	0.30	1.33
		CO	0.26	1.12
		SO <sub>2</sub>	<0.01	0.01
(note g)	Nos. 1 and 3 Paper Machines and Dryer Exhaust (5)	PM <sub>10</sub>	0.19	0.83
		VOC	8.74	38.27
		NO <sub>x</sub>	2.50	10.93
		CO	2.10	9.18
		SO <sub>2</sub>	0.01	0.07
TNK0115, TNK0116, and TNK0175	Starch Silo Nos. 1 - 3	PM <sub>10</sub>	0.02	0.02
PAINTYD	Sitewide Painting Activities (4)	PM <sub>10</sub>	70.31	32.72
		VOC	96.05	28.94



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
BSS1 - BSS5	Nos. 1 - 5 Bleached Stock Storage Tanks (4)	VOC	0.04	0.17
(note h)	Paper Machine Tanks and Chests (4)	VOC	0.16	0.68
HVLC-1	HVLC Vent	VOC	157.78	23.09
		CO	3.19	0.51
		TRS	33.30	4.77
AWSST	A-Line Washed Stock Chest (5)	VOC	0.72	3.16
		TRS	0.28	1.21
BWSST	B-Line Washed Stock Chest (5)	VOC	0.74	3.26
		TRS	0.28	1.21

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

- (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, suspended in the atmosphere, including PM<sub>10</sub>.  
PM<sub>10</sub> - particulate matter equal to or less than 10 microns in diameter. When PM is not listed, it shall be assumed that no particulate matter greater than 10 microns is emitted.  
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code ' 101.1  
SO<sub>2</sub> - sulfur dioxide  
H<sub>2</sub>SO<sub>4</sub> - sulfuric acid  
TRS - total reduced sulfur  
NO<sub>x</sub> - nitrogen oxides  
NH<sub>3</sub> - ammonia  
Cl<sub>2</sub> - chlorine  
ClO<sub>2</sub> - chlorine dioxide (chlorine peroxide)  
CO - carbon monoxide  
H<sub>2</sub>S - hydrogen sulfide  
CH<sub>3</sub>OH - methanol  
H<sub>2</sub>O<sub>2</sub> - hydrogen peroxide  
CHCl<sub>3</sub> - chloroform  
CHBrCl<sub>2</sub> - bromodichloromethane
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) The VOC and TRS emission rates for this point are considered to be estimates only and are not intended to be enforceable limits.

\* Unless otherwise specified, emission rates are based on operating 8,760 hours per year or 817,803 air dried unbleached tons per year 736,022 bone dry unbleached tons per year of pulp.

\*\* Pound per hour rates, TRS emissions based on a 12-hour averaging time, PM/PM<sub>10</sub> and SO<sub>2</sub> based on a 3-hour averaging time, all other pollutants are based on a 24-hour averaging time.

\*\*\* Pound per hour rates, SO<sub>2</sub> and NO<sub>x</sub> emissions are based on a 3-hour averaging time while all other pollutants are based on a 24-hour averaging time.

\*\*\*\* Pounds per hour rates, SO<sub>2</sub> emissions are based on a 3-hour averaging time while all other pollutants are based on a 24-hour averaging time.

# Emissions from the Bleach Plant Scrubbers (EPNs BP14, BP15, and BP16) should be summed up when determining compliance since individual emissions may vary.

**Notes:**

- (a) All VOCs are reported as carbon unless otherwise specified.
- (b) All TRS emission rates are reported as H<sub>2</sub>S unless otherwise specified.
- (c) The SO<sub>2</sub> hourly rates for the Power Boiler No. 2 include combustion of total reduced sulfur compounds during periods when the NCG oxidizer is inoperable.
- (d) Green liquor clarifiers (2), green liquor storage tanks (3), weak wash storage tanks (2), white liquor clarifiers (2), white liquor storage tanks (4), white liquor/digestor fill tank, mud washers (2), mud storage tanks (2), mud precoat filters (2), and dregs filter.
- (e) These fugitives occur from the chip and RDF handling operations.
- (f) Includes the pre-treater stacks (EX5PRE1, EX5PRE2, EX7PRE1, EX7PRE2), the laminator stack (EX5LAM1, EX5LAM2, EX7LAM1, EX7LAM2), the post-treater stack (EX5POSTTR, EX7POSTTR), and fugitives (EXFUG5, EXFUG7) for each extruder.
- (g) The Paper Machine Nos.1 and 3 consist of 18 exhaust vents and fugitive emissions.
- (h) Includes pine tanks (PINETK3, PINETK1S, PINETK1), hardwood tanks (HDWD1, HDWD3), machine chests (MACHCH1, MACHCH3), and broken storage tanks (BRST1A, BRST1B, BRST3A).

Dated \_\_\_\_\_