

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Rates* Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission</u> lb/hr	TPY
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Permit Numbers 9654A, PSD-TX-684M3, PSD-TX-833M3, and N-60M2

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.

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Emission Rates * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission</u> lb/hr	TPY
1A	No. 1 Recovery Furnace	PM	59.62	261.15
		PM ₁₀	45.79	200.56
		VOC	19.60	85.84
		NO _x	88.71	337.53
		SO ₂	408.58	1,566.62
		CO	266.61	1,167.76
		TRS	16.78	73.49
		H ₂ SO ₄	0.01	0.03
1B	No. 2 Recovery Furnace	PM	59.62	261.15
		PM ₁₀	45.79	200.56
		VOC	19.60	85.84
		NO _x	88.71	337.53
		SO ₂	408.58	1,566.62
		CO	266.61	1,167.76
		TRS	16.78	73.49
		H ₂ SO ₄	0.01	0.03
2	Bark Boiler	PM	59.74	225.93
		PM ₁₀	59.74	225.93

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Emission Rates* Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission lb/hr	TPY
		VOC	11.15	41.70
		NO _x	108.62	406.12
		SO ₂	7.44	28.18
		CO	262.40	981.12
		TRS	0.01	0.05
		NH ₃	16.19	70.93
		H ₂ SO ₄	0.53	1.93
2A	No. 1 PFI Boiler	PM	3.00	13.00
		PM ₁₀	3.00	13.00
	VOC	10.00	44.00	
		NO _x	55.53	219.70
		SO ₂	5.71	22.18
		CO	70.00	307.00
3	No. 1 Dissolving Tank	PM	11.54	50.55
		PM ₁₀	10.36	45.40
	VOC	0.83	3.64	
		NO _x	1.15	5.06
	SO ₂	0.29	1.26	
		CO	0.46	2.02
		TRS	0.35	1.52
		NH ₃	6.93	30.33
4	No. 2 Dissolving Tank	PM	11.54	50.55
		PM ₁₀	10.36	45.40
	VOC	0.83	3.64	
		NO _x	1.15	5.06
	SO ₂	0.29	1.26	
		CO	0.46	2.02
		TRS	0.35	1.52
		NH ₃	6.93	30.33
9	Lime Silo	PM	0.53	0.68
		PM ₁₀	0.53	0.68

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Emission Rates* Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission</u> lb/hr	TPY
10	No. 1 Slaker ^{A1}	PM	0.31	1.36
		PM ₁₀	0.31	1.36
		VOC	0.90	1.50
		NH ₃	5.24	8.69
11	Lime Kiln	PM	31.58	104.78
		PM ₁₀	27.28	90.53
		VOC	0.70	2.34
		NO _x	43.09	147.77
		SO ₂	7.00	24.24
		CO	2.99	9.92
		TRS	6.11	20.28
		H ₂ SO ₄	0.46	1.53
13	No. 2 Slaker ^{A1}	PM	0.31	1.36
		PM ₁₀	0.31	1.36
		VOC	0.90	1.50
		NH ₃	5.24	8.69
16/17***	Brown Stock Washers A and B ^{B1}	VOC	71.55	139.53
		TRS	1.03	2.01
16/17#	Brown Stock Washers A and B ^{B1}	VOC	27.06	10.82
		TRS	0.39	0.16
27	Brine Storage Tank	VOC	<0.01	<0.01
		TRS	<0.01	<0.01
29	No. 2 Tall Oil Settling Tank	VOC	0.20	0.09
		TRS	0.08	0.03
30	No. 1 Tall Oil Storage Tank ^{A2}	VOC	0.21	0.05
		TRS	0.02	0.01
31	No. 2 Tall Oil Storage Tank ^{A2}	VOC	0.21	0.05
		TRS	0.02	0.01

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Emission Rates* Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission</u> lb/hr	TPY
32	Turpentine Storage Tank ^{B2}	VOC	0.03	0.12
36	No. 5 White Liquor Tank Vent ^{A3}	VOC	0.08	0.07
39	South Mud Tank ^{A4}	VOC	0.03	0.05
		TRS	<0.01	<0.01
40	North Mud Tank ^{A4}	VOC	0.03	0.05
		TRS	<0.01	<0.01
41	No. 3 Green Liquor Clarifier	VOC	0.03	0.10
		TRS	<0.01	0.01
43	Weak Wash Storage Tank	VOC	0.08	0.27
44	Scrubber Water Clarifier	VOC	0.03	0.09
		TRS	<0.01	<0.01
45	No. 1 White Liquor Storage Tank (East) ^{A3}	VOC	0.08	0.07
46	No. 2 White Liquor Storage Tank (West) ^{A3}	VOC	0.08	0.07
47	No. 1 Green Liquor Storage Tank ^{A5}	VOC	0.03	0.05
		TRS	<0.01	<0.01
49	No. 2 Green Liquor Storage Tank ^{A5}	VOC	0.03	0.05
		TRS	<0.01	<0.01
50	Green Liquor Equalization Tank	VOC	0.03	0.10
		TRS	<0.01	0.01
51	No. 3 Green Liquor Storage Tank	VOC	0.03	0.10
		TRS	<0.01	0.01

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
56	"A" Blend Tank ^{A6, B3}	VOC	0.06	0.23
		TRS	0.01	0.02
57	"B" Blend Tank ^{A6, B3}	VOC	0.03	0.12
		TRS	<0.01	0.01
58	Reject Tank ^{B4}	VOC	0.10	0.37
		TRS	<0.01	<0.01
63	No. 1 Weak Black Liquor Storage Tank	VOC	0.67	2.93
		TRS	0.12	0.51
64	No. 2 Weak Black Liquor Storage Tank	VOC	0.67	2.93
		TRS	0.12	0.51
65	Black Liquor Swing Tank	VOC	0.11	0.48
		TRS	0.19	0.84
66	No. 1 Heavy Black Liquor Storage Tank	VOC	0.11	0.48
		TRS	0.19	0.84
67	No. 2 Heavy Black Liquor Storage Tank	VOC	0.11	0.48
		TRS	0.19	0.84
68	Boilout Tank	VOC	0.54	2.37
		TRS	0.19	0.84
72	Gasoline Tank	VOC [†]	-	0.20
80	Wood Yard (4)	PM	7.13	16.07
		PM ₁₀	2.87	6.56
81	Truck Traffic Fugitives (4)	PM	-	123.69
		PM ₁₀	-	34.37

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
88	No. 1 Causticizer	VOC	0.02	0.06
		NH ₃	2.41	7.99
89	No. 2 Causticizer	VOC	0.02	0.06
		NH ₃	2.41	7.99
90	No. 3 Causticizer	VOC	0.02	0.06
		NH ₃	2.41	7.99
91	No. 4 Causticizer	VOC	0.02	0.06
		NH ₃	2.41	7.99
92	No. 5 Causticizer	VOC	0.02	0.06
		NH ₃	2.41	7.99
93 - 98	Wastewater Collection and Treatment (4)	VOC	24.95	91.06
		TRS	3.10	11.32
99	No. 3 Power Boiler	PM	3.13	13.71
		PM ₁₀	3.13	13.71
		VOC	2.26	9.92
		NO _x	21.00	91.98
		SO ₂	0.25	1.44
		CO	37.80	165.56
100	Chemi-Washer (4) ^{B5}	VOC	0.01	0.03
		TRS	<0.01	0.02
101-130 and 132-158	Nos. 1 and 2 Linerboard Machines ^{B6}	VOC	31.72	103.48
		TRS	0.53	1.94
159-166	Secondary Fiber System	VOC	0.31	1.13
192	Lime Kiln Precoat Filter	VOC	0.09	0.30
		TRS	0.01	0.02
193	Precoat Mud Filter Vacuum Pump West	VOC	0.40	1.31
		TRS	0.03	0.10

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Emission * Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates</u>	
			lb/hr	TPY
194	Precoat Mud Filter Vacuum Pump East	VOC TRS	0.40 0.03	1.31 0.10
205	No. 4 White Liquor Storage Tank ^{A3}	VOC	0.08	0.07
210	West Black Liquor Storage Tank	VOC TRS	0.54 0.19	2.37 0.84
211	Center Black Liquor Storage Tank	VOC TRS	0.54 0.19	2.37 0.84
212	East Black Liquor Storage Tank	VOC TRS	0.54 0.19	2.37 0.84
213	Eco-Filter White Liquor Feed Tank	VOC	0.08	0.27
214	White Liquor Eco-Filter	VOC	0.08	0.27
215	Eco-Filter White Liquor Standpipe	VOC	0.08	0.27
216	Eco-Filter Lime Mud Dilution Tank	VOC TRS	0.03 <0.01	0.09 <0.01
217	Eco-Filter Mud Washer	VOC TRS	0.08 <0.01	0.28 0.01
218	Eco-Filter Weak Wash Standpipe	VOC	0.08	0.27
224	Lime Mud Reclaim System (4)	PM PM ₁₀ VOC TRS	0.02 0.01 0.09 0.01	0.05 0.03 0.30 0.02
225	No. 2 Fuel Oil Tank	VOC [†]	--	0.20
232	Green Liquor Dregs Filter and	VOC	0.03	0.10

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			lb/hr	TPY
	Vacuum Pump (4)	TRS	<0.01	0.01
235	Liquor Loading (4)	VOC [†]	1.49	1.62
	TRS [†]	0.13	0.21	
279	Fuel Oil Day Tank	VOC [†]	0.07	0.01
280	Fuel Oil Storage Tank	VOC [†]	0.07	0.04
281	Pet Coke Silo	PM	0.26	1.13
		PM ₁₀	0.26	1.13
282	Bark Boiler Ash Bin	PM	0.26	1.13
		PM ₁₀	0.26	1.13
283	Cooling Tower No. 1	VOC	0.98	4.30
284	Cooling Tower No. 2	VOC	0.09	0.38
285	Polysulfide Liquor System (Orange Liquor Reactor)	VOC	0.01	0.06
		NH ₃	0.82	3.57
286	Caustic Solution Tank	NaSH/Na ₂ S##	0.04	0.04
NCG-FUG 1	Switching LVHC and HVLC	VOC [†]	145.00	0.25
	NCG Venting for Bypass and	Acetone	2.40	0.02
	Preventive Maintenance (4) (5)	TRS [†]	0.06	<0.01
P-VBURNER	Propane Vaporizer Burner	PM ₁₀	0.12	0.03
		VOC	0.06	0.02
		NO _x	3.73	0.97
		SO ₂	0.10	0.03
		CO	0.63	0.16

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- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
- (2) Specific point source names. For fugitive sources use area name or fugitive source name.
- (3) PM - particulate matter, suspended in the atmosphere, include PM₁₀

PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where 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

NO_x - total oxides of nitrogen

SO₂ - sulfur dioxide

CO - carbon monoxide

TRS - total reduced sulfur

H₂SO₄ - sulfuric acid

NH₃ - ammonia

NaSH - sodium hydrosulfide

Na₂S - sodium sulfide

- (4) Fugitive emissions are an estimate only.

- (5) Emissions resulting from re-routing non-condensable gases between combustion sources (Lime Kiln and Bark Boiler).

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

24 Hrs/day 7 Days/week 52 Weeks/year 8,760 Hrs/year

** Emissions based on the following:

See Special Condition Nos. 1 and 22 for production limits.

VOC and TRS are represented as carbon and H₂S, respectively, unless otherwise indicated.

† VOC and TRS are represented as the sum of species.

A1 For determination of compliance, the annual emissions should be summed for the No. 1 Slaker (EPN 10) and No. 2 Slaker (EPN 13).

B1-B6 Hourly emission rates are based on 24-hour averaging time.

A2 For determination of compliance, the annual emissions should be summed for the No. 1 Tall Oil Storage Tank (EPN 30) and the No. 2 Tall Oil Storage Tank (EPN 31).

A3 For determination of compliance, the annual emissions should be summed for the Nos. 1, 2, 4, and 5 White Liquor Storage Tanks (EPNs 36, 45, 46, and 205).

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- A4 For determination of compliance, the annual emissions should be summed for the South Mud Tank (EPN 39) and the North Mud Tank (EPN 40).
- A5 For determination of compliance, the annual emissions should be summed for the No. 1 Green Liquor Storage Tank (EPN 47) and the No. 2 Green Liquor Storage tank (EPN 49).
- A6 For determination of compliance, the annual emissions should be summed for the "A" Blend Tank (EPN 56) and the "B" Blend Tank (EPN 57).

*** Brown Stock Washers A and B emissions prior to Phase 2 of 2008 project based on annual average throughput of 1,913 air dry pulps tons per day (ADTPD). EPNs to be deleted by permit alteration prior to implementation of any post-Phase 1 modifications.

Prior to any post-Phase 1 modifications of 2008 project, the Brown Stock Washers A and B must be hooded and controlled by Bark Boiler (EPN 2).

Emissions conservatively assumed to be 100 percent NaSH or 100 percent Na₂S.

The following registrations/standard permits are incorporated into the permit and voided:

Permit/Registration No.	EPN	Affected Sources
81632	80	Wood Yard (PBR Portion)
56642	56 and 57	'A' and 'B' Blend Tanks
78708	10 and 13	Replacement of Scrubbers on both Slakers
79697	9	<u>Lime Silo</u>
106.261/262	88	No. 1 Causticizer
106.261/262	89	No. 2 Causticizer
106.261/262	90	No. 3 Causticizer
106.261/262	91	No. 4 Causticizer
106.261/262	92	No. 5 Causticizer
	217	Eco-Filter Mud Wash
	214	Eco-Filter, White Liquor
	215	Eco-Filter, White Liquor Standpipe
	218	Eco-Filter, Weak Wash Standpipe
	216	Eco-Filter Lime Mud Dilution Tank

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106.472	213	Eco-Filter White Liquor Feed Tank
	224	Lime Mud Reclaim System
	30	No. 1 Tall Oil Storage Tank
	31	No. 2 Tall Oil Storage Tank
	29	No. 2 Tall Oil Settling Tank
	27	Brine Storage Tank
106.371	283	Cooling Tower No. 1