

Faircloth Forest Products
Appendix C - Calculations FINAL
Post-Project - Two Kilns

Table 5. Dry Kiln 1

Pollutant	Throughput	Factor	Units	tpy	Notes
CO	92 MMBF	0.434	lb/MBF	20.0	[1]
NOX		0.276		12.7	
PM		0.140		6.44	
PM10		0.104		4.78	[2]
PM2.5		0.104		4.78	
VOC		4		184	[3]
Acetaldehyde		4.50E-02		2.07	[4]
Acrolein		6.00E-03		0.28	[1]
Formaldehyde		3.86E-02		1.78	[2]
Methanol		1.61E-01		7.41	
Phenol	40 MMBtu	1.03E-02	lb/MMBtu	0.47	[1]
SO2		2.50E-02		4.38	[5]
CO2e		1.05E+02		36,714	[6][7]

[1] NCASI February 2013 Wood Products Air Emission Factor Database.

[2] See agency narrative in support of application TV-517390. All PM10 assumed to be PM2.5.

[3] GA EPD suggested VOC emission factor for lumber dry kilns.

[4] NCASI Technical Bulletin 845.

[5] AP 42, Chapter 1.6 Wood Residue Combustion in Boilers.

[6] 40 CFR 98 - Mandatory Greenhouse Gas Reporting Rule Tables C-1 and C-2.

[7] Adjusted for GWP and converted to short tons.

Table 6. Dry Kiln 2

Pollutant	Throughput	Factor	Units	tpy	Notes
CO	80 MMBF	0.434	lb/MBF	17.4	[1]
NOX		0.276		11.0	
PM		0.140		5.60	
PM10		0.104		4.16	[2]
PM2.5		0.104		4.16	
VOC		4		160	[3]
Acetaldehyde		4.50E-02		1.80	[4]
Acrolein		6.00E-03		0.24	[1]
Formaldehyde		3.86E-02		1.54	[2]
Methanol		1.61E-01		6.44	
Phenol	40 MMBtu	1.03E-02	lb/MMBtu	0.41	[1]
SO2		2.50E-02		4.38	[5]
CO2e		1.05E+02		36,714	[6][7]

[1] NCASI February 2013 Wood Products Air Emission Factor Database.

[2] See agency narrative in support of application TV-517390. All PM10 assumed to be PM2.5.

[3] GA EPD suggested VOC emission factor for lumber dry kilns.

[4] NCASI Technical Bulletin 845.

[5] AP 42, Chapter 1.6 Wood Residue Combustion in Boilers.

[6] 40 CFR 98 - Mandatory Greenhouse Gas Reporting Rule Tables C-1 and C-2.

[7] Adjusted for GWP and converted to short tons.

Table 7. Sawmill

Operation	Throughput	Units	PM Factor	PM10 Factor	PM2.5 Factor	Units	PM tpy	PM10 tpy	PM2.5 tpy	Notes	
Debarker	1,533,000	tons	0.024	0.012	0.006	lb/ton	3.68	1.84	0.92	[1][2][3]	
Bark Hog	91,980						1.10	0.55	0.28		
Chippers	486,344						5.84	2.92	1.46		
Log Sawing	1,441,020		0.35	0.175	0.0875		12.6	6.30	3.15	[1][4]	
Conveyance	740,439						0.02	0.01	0.001		
Truck Loading	648,459		4.3703E-05	2.067E-05	3.1301E-06		0.01	0.01	0.001	[1][4]	

[1] Throughput values per application TV-517390.

[2] https://www.epa.gov/sites/default/files/2016-09/documents/smppteef_memo.pdf.

[3] Assumes 80% enclosure on Debarker and 95% enclosure on Log Sawing.

[4] See agency narrative in support of application TV-517390. See also AP 42, Chapter 13.2.4.

Table 8. Reman Mill

Operation	Throughput	Units	PM Factor	PM10 Factor	PM2.5 Factor	Units	PM tpy	PM10 tpy	PM2.5 tpy	Notes
Board Sawing	474,617	tons	0.35	0.175	0.0875	lb/ton	4.15	2.08	1.04	[1][2][3]
Reman Hog	71,193		0.024	0.012	0.006		0.85	0.43	0.21	
Truck Loading			4.16E-04	1.97E-04	2.98E-05		0.01	0.01	0.001	
Conveyance	40,000	acfm	0.01	0.005	0.005	gr/cf	15.0	7.51	7.51	[1][4]

[1] Throughput values per application TV-517390 (2 kilns) apportioned to 1 kiln capacity.

[2] https://www.epa.gov/sites/default/files/2016-09/documents/smppteef_memo.pdf.

[3] Assumes 95% enclosure on Board Sawing.

[4] CD01 post-project airflow and assumed grain loadings.

Table 9. Facility PTE - Double Kiln Operation

Pollutant	tpy
CO	37.3
NOX	23.7
PM	55.3
PM10	30.6
PM2.5	23.5
VOC	344
Acetaldehyde	3.87
Acrolein	0.52
Formaldehyde	3.32
Methanol	13.8
Phenol	0.89
SO2	8.76
CO2e	73,428