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Date: April 1, 1999

From: Gregg Griffith

Subj: Alder VOC Test Results

To: Scott Inloes, SWAPCA

Scott,

Enclosed you will find Horizon Engineering's second round VOC test report for Alder drying at Centralia and Longview. Sorry it took so long to complete, but you are aware of the hold ups that occurred.

Thanks

Gregg

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Project No. 843

SOURCE EVALUATION TEST REPORT

NORTHWEST HARDWOODS

Dry Kiln VOC Emission Factors

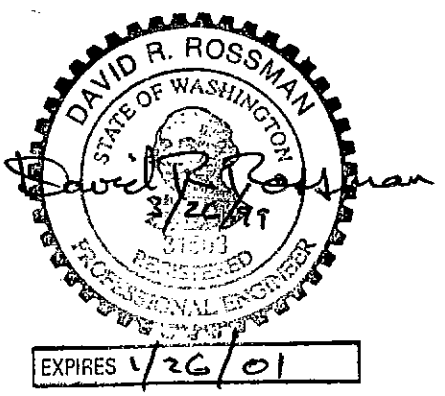
January 19-20, 1999

Prepared for

Northwest Hardwoods
3000 Galvin Road
Centralia, WA 98531

by

Kate Krisor &
David R. Rossman P.E.



Introduction

On January 19 and 20, 1999, a sample of lumber from Northwest Hardwoods was dried in Horizon Engineering's laboratory dry kiln. About 12 board feet of Alder lumber was dried. Volatile organic compounds (measured as total gaseous organic compounds, TGOC) were continuously measured in the test kiln using the Dettinger/Horizon Method. The laboratory test was done instead of a source test due to the expense and uncertainties involved in source testing an actual dry kiln.

Although Alder had been test-dried before, this test was required by SWAPCA to determine if there is seasonal variation in VOC emissions from the wood.

Greg S. Griffith of Northwest Hardwoods arranged for the work and prepared the lumber sample. Horizon Engineering personnel David Broderick did the testing and Michael Wallace assisted in the data processing. A copy of the original test method has been included in the Appendix.

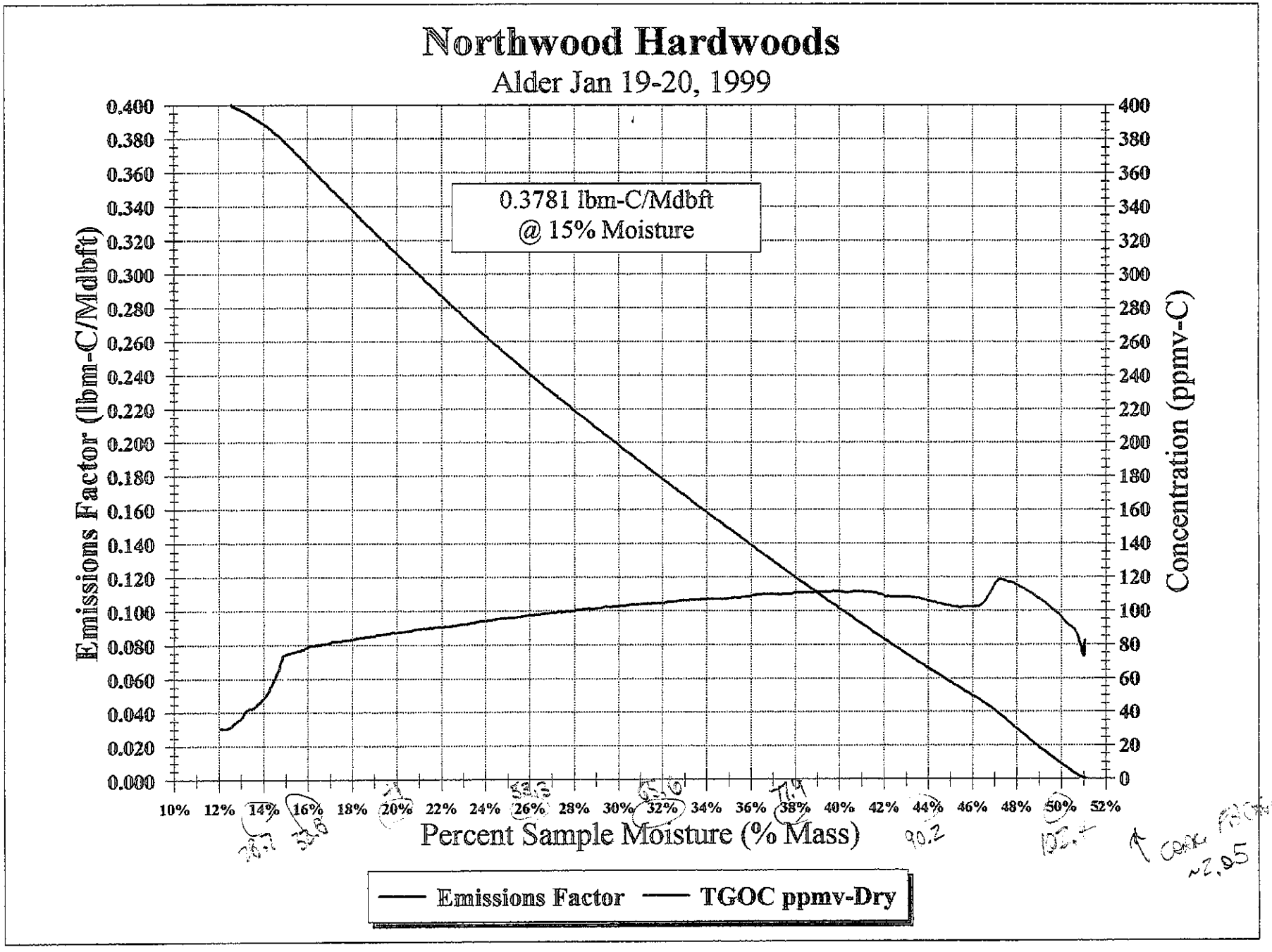
Summary of Results

Table 1 summarizes the results of the testing. Figure 1 is a plot of the calculated emission factors for the range of percentage H_2O (wet basis) of the wood samples. The emission factor plot ranges between 51% (raw wet boards) and 12% (dry boards). It should be noted that the results are based on an actual board-foot basis, not the nominal dimensions of each sample board.

Detailed results and sampling parameters are included in the Appendix.

Table 1
Summary of Results

Results	**Units**	
Species		Alder
Dates		Jan. 19 & 20, 1999
Sample Size	bd ft (dry)	11.7
Initial Weight	lb	54.7
Weight Loss	lb	21.3
Test Time to 12% H_2O	hr	12.5
Avg VOC (Dry)	ppmvC	88
Max VOC (Wet)	ppmvC	69
Emission Factor		
@ 15% Moisture	lbC/Mbdft	0.38
@ 12% Moisture	lbC/Mbdft	0.40


Northwood Hardwoods
Alder Jan 19-20, 1999
0.3781 lbm-C/Mdbft
@ 15% Moisture
Emissions Factor (lbm-C/Mdbft)
Concentration (ppmv-C)
Percent Sample Moisture (% Mass)
Emissions Factor
TGOC ppmv-Dry

Purpose for the Laboratory Test Method

Northwest Hardwoods uses dry kilns to dry cut lumber. Testing the actual kilns would be difficult, costly, and there would be many uncertainties when using the standard EPA Method 25A on a dry kiln. The following conditions make dry kiln testing difficult:

a.) Lumber drying can take over 100 hours to process one load.

b.) Most dry kilns have multiple vents and often have significant leakage around the loading doors.

c.) The venting process is periodic. The vents open to release moisture and VOCs in an irregular pattern.

The multiple-vent configuration of most dry kilns and the periodic venting makes it difficult to quantify the total exhaust rate. Leakage from doors and other gaps is difficult to measure and would thus produce inaccurate results. Additionly, tests would need to be repeated for every species of wood the plant dries.

Sampling and Analytical Procedures

Testing Method The Dettinger/Horizon Method, applied to the test kiln, employs EPA Method 25A in a controlled manner to measure TGOC emissions. The method is assumed to be a worst case analysis, drying to the highest temperature for a normal drying cycle. The test chamber humidity is not controlled but inlet air humidity and volume rate is measured. Normal maximum temperature in a dry kiln is about 200°F but this varies for species and by kiln site. This method allows sample drying times of approximately 36 to 48 hours. Actual drying cycles may take between 36 to over 100 hours.

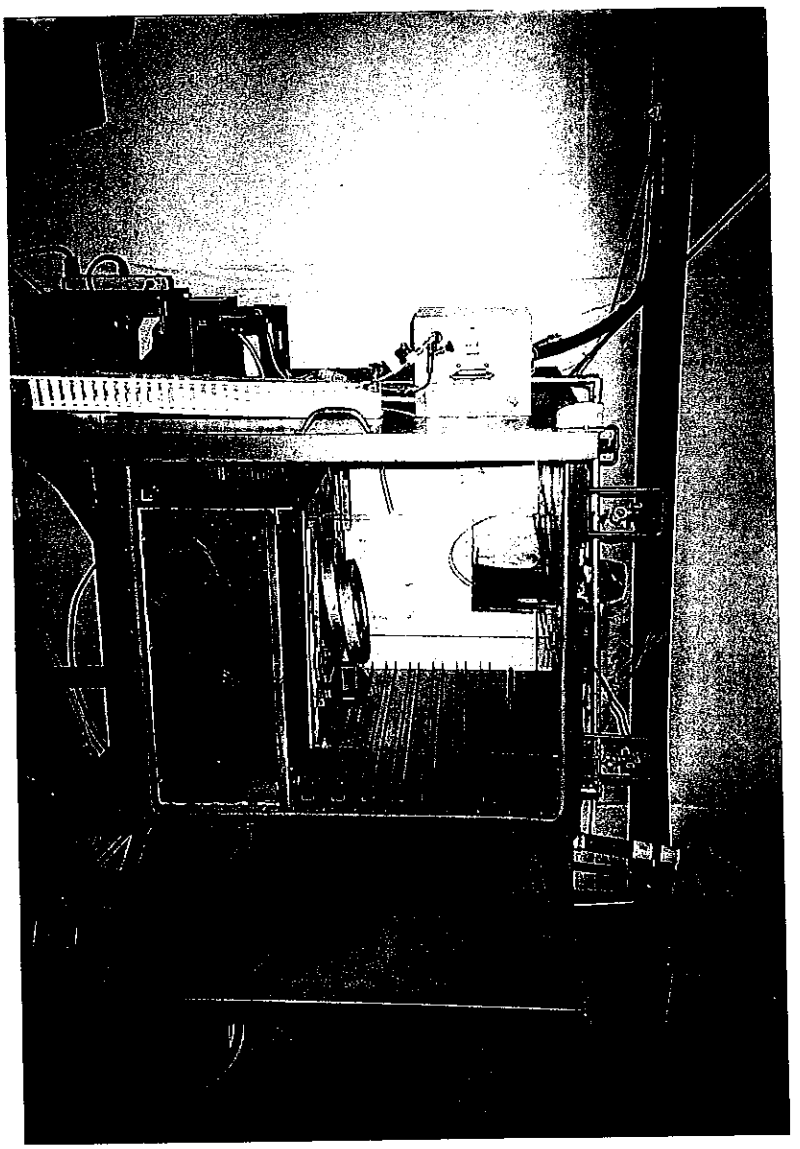
We refined the Dettinger/Horizon Method for this work to obtain dry air flow rates from moisture data rather than measurement of in-flow air. This is described in detail in the flow rate section below.

General The test kiln schematic is in the Test Method in the Appendix. A Grieve 27-ft^3 industrial convection oven was used to dry the wood. Four Rice Lake Weighing Systems 0-100 lb load cells are used to continuously monitor the weight of the drying lumber. Figure 2 shows the kiln during calibrations of the load cells. Weight loss (moisture loss) was recorded until a stable weight was

recorded, indicating that the load was dry. Temperatures were monitored with k-type thermocouples.

Test parameters were read every 30 seconds during the tests by a Keithley Metrabyte DAS-801 data acquisition board installed in a personal computer and customized with Test Point programming software. Data acquisition system (DAS) printouts are in the Appendix.

Figure 2
Test Kiln, with Load Cell Calibration Weights



VOC A J.U.M. Engineering VE-7 total hydrocarbon analyzer with heated flame ionization detector and heated sample line was used to measure TGOC concentrations at oven conditions. Gas sample for the analyzer was taken from a fixed sampling probe in the oven. The analyzer output was read every 30 seconds and two-minute averages were recorded by the DAS. Emission factors were only calculated down to 12% moisture.

Zero, span, calibration error (linearity) and bias checks were made on the TGOC monitor at the beginning and end of the test.

The VOC analyzer concentrations are corrected for minor instrument drift according to the time when calibrations were done and when the test run was made. System calibration response (bias check) values are used as the basis for these corrections.

Moisture Kiln moisture was calculated from the wet and dry bulb temperatures as indicated by k-type thermocouples. Wet bulb temperature was maintained with a wick and a reservoir supplied with water from outside the kiln. The thermocouples were monitored continuously but the outputs were read every 30 seconds and two-minute averages were recorded by the DAS.

Flow Rate The flow rate used in TGOC rate calculation was obtained from the moisture content of the air in the kiln. Knowing the percentage moisture in the kiln air and the rate that water in the lumber was evaporated in the kiln (measured by the load cells), the volume of dry air can be determined using EPA's moisture content equation, Eq. 5-3:

$$MoistureContent = \frac{VolumeWater(std)}{VolumeAir(std) + VolumeWater(std)}$$

Example calculations are in the Appendix.

Due to the nature of the load cells used, the lumber weight loss was not a perfectly smooth curve. The jumps in weight loss caused swings in the ongoing calculated dry air rate through the kiln. To remove these swings, a best-fit method was used to derive a smooth (conditioned) curve for the weight loss.

Board Volume The sample boards were measured individually and the board-foot amount was based on a board foot being 144 cubic inches of actual wood.

Discussion

The final moisture content (wet basis) of the actual kiln-dried lumber should be used to enter the plots of the results figures. Annual emissions of TGOC (as carbon) can be calculated based on production of dried lumber.

The quantity of VOC from this sample was about 0.40 lb/1000 bd ft at 12% moisture. The last Alder sample from Northwest Hardwoods that we processed (in August of 1996) was about 0.24 lb/1000 bd ft. at the same moisture.

APPENDIX

Nomenclature & Drift Correction Documentation

Lab Data

- Sampling Record
- Calculated Results & DAS Tables
- Example Calculations
- Temperature-Humidity Plot
- Weight-Moisture Plot

Calibration Information

- Thermocouples

Test Method

NOMENCLATURE
AND
DRIFT CORRECTION
DOCUMENTATION

Nomenclature

Constants	Value	s	Definition	Ref
Pstd(1)	29.92129	inHg	Standard Pressure	CRC
Pstd(2)	2116.22	lbf / ft²		CRC
Tstd	527.67	°R	Standard Temperature	CRC
R	1545.33	ft lbf / lbmol °R	Ideal Gas Constant	CRC
MWatm	28.965	lbm / lbmole	Atmospheric (20.946 %O2, 0.033% CO2, Balance N2+Ar)	
MWc	12.011	lbm / lbmole	Carbon	CRC
MWco	28.010	lbm / lbmole	Carbon Monoxide	CRC
MWco2	44.010	lbm / lbmole	Carbon Dioxide	CRC
MWh2o	18.015	lbm / lbmole	Water	CRC
MWno2	46.006	lbm / lbmole	Nitrogen Dioxide	CRC
MWo2	31.999	lbm / lbmole	Oxygen	CRC
MWso2	64.063	lbm / lbmole	Sulfur Dioxide	CRC
MWn2+ar	28.154	lbm / lbmole (Balance with 98.82% N2 & 1.18% Ar)	Emission balance	
C1	385.3211	ft³ / lbmol	Ideal Gas Constant @ Standard Conditions	
C2	816.5455	inHg in²/ °R ft³	Isokinetics units correction constant	
Kp	5129.4	ft / min [(inHg lbm/mole) / (°R inH2O)] ^½	Pitot tube constant	Ref 2.5.1

Symbol	Units	Definition	Calculating Equation or Source of Data	EPA
As	in²	Area, Stack		
An	in²	Area, Nozzle		
Bws	%	Moisture, % Stack gas	[100 Vw(std) / [Vw(std)+Vm(std)]]	Eq. 5-3
C	ppmv-C	Carbon (General Reporting Basis for Organics)		
C1	ft3/lbmol	Gas Constant @ Standard Conditions	[R Tstd / Pstd(2)]	
C2	inHg in²/ °R ft²		[14,400 Pstd / Tstd]	
Cd	lbm-GAS / MMdscf	Mass of gas per unit volume	[Cgas MWgas / C1]	
cg	gr/dscf	Grain Loading, Actual	[15.432 mn / Vm(std) 1,000]	Eq. 5-6
cg @ X%CO2	gr/dscf	Grain Loading Corrected to X% Carbon Dioxide	[X% / CO2%]	
cg @ X%O2	gr/dscf	Grain Loading Corrected to X% Oxygen	[(20.946-X%) / (20.946-O2%)]	
Cgas	ppmv, %	Gas Concentration, (Corrected)		
Cgas @ X%CO2	ppmv	Gas Concentration Correction to X% Carbon Dioxide	[X% / CO2%]	
Cgas @ X%O2	ppmv	Gas Concentration Correction to X% Oxygen	[(20.946-X%) / (20.946-O2%)]	
CO	ppmv	Carbon Monoxide		
Co	ft	Outer Circumference of Circular Stack		
Ci	ft	Inner Circumference of Circular Stack		
CO2	%	Carbon Dioxide		
Cp		Pitot tube coefficient		
Ct	lb/hr	Particulate Mass Emissions	[60 cg Qsd/ 7,000]	
dH	in H2O	Pressure differential across orifice		
Dn	in	Diameter, Nozzle		
dp^½		Average square root of velocity pressure		
Ds	in	Diameter, Stack		
E	lb / MMBtu	Pollutant Emission Rate	Cgas Fd MWgas (20.946 / (20.946-O2%)) / (1,000,000 C1)	
Fd	dscf / MMBtu	F Factor for Various Fuels		Table 19-1
I	%	Percent Isokinetic	[C2 Ts(abs) Vm(std) / (vs Ps mfg An Ø)]	Eq. 5-8*
Md	lbm / lbmole	Molecular weight, Dry Stack Gas	[(1-%O2-%CO2)(MWn2+ar)+(%O2 MWo2)+(%CO2 MWco2)	Eq. 3-1*
mfg		Mole fraction of dry stack gas	[1-Bws/100]	
Mgas	lbm/hr	Gaseous Mass Emissions	[60 Cgas(ppmv) MW Pstd(2) Qsd / 1,000,000 R Tstd]	
mn	mg	Particulate lab sample weight		
Ms	lbm / lbmole	Molecular weight, Wet Stack	[Md mfg +MWh2o (1-mfg)]	Eq. 2-5
MW	lbm / lbmole	Molecular Weight		
NO2	ppmv-NO2	Nitrogen Dioxide (General Reporting Basis for NOx)		
NOx	ppmv-NO2	Nitrogen Oxides (Reported as NO2)		
O2	%	Oxygen		
OPC	%	Opacity		
Pbar	in Hg	Pressure, Barometric		
Pg	in H2O	Pressure, Static Stack		
Po	in Hg	Pressure, Absolute across Orifice	[Pbar+dH/13.5955]	
Ps	in Hg	Pressure, Absolute Stack	[Pbar+Pg/13.5955]	Eq. 2-6*
Qa	acf/min	Volumetric Flowrate, Actual	[As vs / 144]	
Qsd	dscf/min	Volumetric Flowrate, Dry Standard	[Qa Tstd mfg Ps] / [Pstd(1) Ts(abs)]	Eq 2-10*
Rf	MMBtu/hr		[1,000,000 Mgas (20.946-O2)]/ [Cd Fd 20.946]	
SO2	ppmv-SO2	Sulfur Dioxide		
t	in	Wall thickness of a stack or duct		
TGOC	ppmv-C	Total Gaseous Organic Concentration (Reported as C)		
Tm	°F	Temperature, Dry gas meter		
Tm(abs)	°R	Temperature, Absolute Dry Meter	[Tm + 459.67]	
Ts	°F	Temperature, Stack gas		
Ts(abs)	°R	Temperature, Absolute Stack gas	[Ts + 459.67]	
Vlc	ml	Volume of condensed water		
Vm	dcf	Volume, Gas sample		
Vm(std)	dscf	Volume, Dry standard gas sample	[Y Vm Tstd Po]/ [Pstd(1) Tm(abs)]	Eq. 5-1
vs	fpm	Velocity, Stack gas	Kp Cp dp^½ [Ts(abs) / (Ps Ms)]^ ½	Eq. 2-9*
Vw(std)	scf	Volume, Water Vapor	0.04707 Vlc	Eq. 5-2
Y		Dry gas meter calibration factor		Fig. 5.6
Ø	min	Time, Total sample		

* Based on equation.

DRIFT CORRECTION DOCUMENTATION

EPA Drift Equations

Method 3a : Oxygen and Carbon Dioxide

[1] With low level cal. gas greater than zero.

$$Cgas = \frac{(Cma - Coa) * (C - Cm)}{(Cm - Co)} + Cma \quad ; Coa > 0 \quad \text{(Eq. 3a-1)}$$

[2] With low level cal. gas equal to zero. See equation (Eq. 6c-1) ; Coa = 0 (Eq. 6c-1)

Method 6c : Sulfur Dioxide

$$Cgas = \frac{Cma * (C - Co)}{(Cm - Co)} \quad ; Coa = 0 \quad \text{(Eq. 6c-1)}$$

Method 7e : Nitrogen Oxides

Section 8, Method 7e; " Follow Section 8 of Method 6c (Eq. 6c-1)."

Method 10 : Carbon Monoxide

The EPA does not currently address Gas Filter Correlation Instruments therefore there are no current standards.

Method 25a : Total Gaseous Organic Concentration (TGOC)

This method does not mention correcting for drift although there are established limits.

Horizon Engineering Drift Correction Equations.

$$Cgas = \frac{(Cid - Zx) * (Cma - Coa)}{(Sx - Zx) * R} \qquad Sx = \frac{(Cmf - Cmi) * (Tx - Tci)}{(Tcf - Tci)} + Cmi \quad ; R \text{ is for TGOC.}$$

$$Tx = (Tte - Tts) / 2 + Tts \qquad Zx = \frac{(Cof - Coi) * (Tx - Tci)}{(Tcf - Tci)} + Coi$$

EPA	Definition	Horizon Engineering
Cgas	Effluent gas concentration, dry basis (Except where stated).	Cgas
Cma	Actual upscale calibration gas concentration.	Cma
Coa	Actual low calibration gas or zero.	Coa
Cm	Average of initial and final system upscale calibration bias responses.	
	Initial system upscale calibration bias response.	Cmi
	Final system upscale calibration bias response.	Cmf
Co	Average of initial and final system zero/low calibration bias responses.	
	Initial system zero/low calibration bias response.	Coi
	Final system zero/low calibration bias response.	Cof
C	Average gas concentration indicated by gas analyzer, dry basis (Ciw is wet basis).	Cid
	Starting test time	Tts
	Ending test time.	Tte
	Initial system bias calibration response time.	Tci
	Final system bias calibration response time.	Tcf
	Mid-point ot test time or gas sampling interval to be analyzed.	Tx
	Approximate upscale response at mid-point test time.	Sx
	Approximate zero/low response at mid-point test time.	Zx
K	Carbon count of TGOC calibration gas.. (CH4 = 1, C3H8 = 3 ...)	K
	Carbon response factor basis on a state basis. (ie Propane carbon basis)	R

Notes of Exception:

1] TGOC is first recorded on a wet basis then corrected to a dry basis.

2] There is no standard basis of carbon. At Horizon all unknown TGOC responses are corrected to a Propane carbon basis even if the calibration gas is methane. A 1ppmv carbon propane basis will cause 1ppmv methane to be recorded as 1.037 ppmv. When spanning with methane the result is corrected to indicate a propane basis carbon count. R = 1.037 when spanning with methane.

09/05/97

LAB DATA

Client: Northwest Hardwoods
Species: Alder
Run: 1
Start Time: 1835
Start Date: 1-19-99
Y of meter: 983

Pbar	29.90	1007 hPa				
Date	1-19	1-20				

# of boards: 10
dim of boards:
dim of total load:
Bdft (note if dry or wet):

I ✓ with Scale = 26.0
↓
End
load 26.3 lbs

JUM #	actual	start bias	end bias
span	84	250.6	227.8
mid	50.5	149.3	133.3
mid	27.92	83.3	73.2
zero	0	.38	-3.8
time & date	0.	18:25/1-19	10:44/1-22

LOAD CELL	actual	start check	end check
high	50	50.0	50.12
zero	0	0.08	0.07
time & date		1827/1-19	1048/1-22

Meter Reading	Time	Date	Load Weight	To (ΔT)
498.900	1835	1-19	54.74	-40
503.700	1852	1-19	55.18	-45
535.3	2043*	1-19	52.06	-30
762.7	0713*	1-20	35.36	-80
870.800	1118	1-20	33.22	-80
	1212	VOC =	132.9	
990.800	1548	1-20	31.42	-90
438.2	832	1-21	28.2	-105
580.2	1351	1-21	27.7	-110
651.500	1632	1-21	27.7	-110
093.200	905	1-22	26.8	

High RM VOCs → Painting

* increased inlet a small amount

Northwest Hardwood
Alder
19-Jan-99
mew/drb

m/c 104.7%

54.94	lbm	Starting Mass	
26.84	lbm	Ending Mass	
28.10	lbm	WATER Total Mass Displaced	

0.9830	Meter (Y)		
29.9000	inHg		
101.25	kPa		

TGOC analyzer calib					
	Span	84	250.6	227.8	ppmv
	Zero	0	0.38	-3.8	ppmv
Load cell calibration	Span	50	50	50.12	lbm
	Zero	0	0.08	0.07	lbm

19.77	Start.Cal Tim
22.45	End Cal Tim
DBFT 11.714057	Chamber 30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
18:36	18:38	2.0	124.52	95.77	67.45	77.23	49.20	54.67	54.90	54.905		51.1%	498.9	0.5647	0.5491	98.9%	0.1304	0.0061	27.088
18:38	18:40	2.0	128.09	98.38	67.51	77.39	48.97	54.71	54.90	54.904	0.48	51.1%		0.5647	0.5491	98.9%	0.1300	0.0061	26.924
18:40	18:42	2.0	134.78	102.83	67.74	76.29	49.06	54.76	54.90	54.903	0.61	51.1%		0.5647	0.5488	98.9%	0.1312	0.0062	26.620
18:42	18:44	2.0	142.48	108.46	68.08	75.59	49.23	54.84	54.90	54.901	0.61	51.1%		0.5647	0.5483	98.9%	0.1331	0.0063	26.280
18:44	18:46	2.0	144.87	111.26	68.25	74.75	49.00	54.90	54.90	54.900	0.61	51.1%		0.5647	0.5482	98.9%	0.1333	0.0063	26.265
18:46	18:48	2.0	145.48	112.93	68.07	73.64	48.54	54.87	54.90	54.899	0.61	51.1%		0.5647	0.5484	98.9%	0.1312	0.0062	26.150
18:48	18:50	2.0	146.69	114.56	68.02	72.32	48.62	54.87	54.90	54.898	0.61	51.1%		0.5647	0.5485	98.9%	0.1313	0.0062	26.098
18:50	18:52	2.0	148.59	116.41	68.09	70.62	48.85	54.87	54.90	54.896	0.61	51.1%		0.5647	0.5484	98.9%	0.1322	0.0062	26.016
18:52	18:54	2.0	150.68	118.22	68.03	69.19	49.08	54.86	54.89	54.895	0.61	51.1%	503.7	0.5694	0.5530	98.9%	0.1336	0.0063	25.927
18:54	18:56	2.0	152.86	120.07	67.92	68.20	48.86	54.83	54.89	54.894	0.61	51.1%		0.5694	0.5531	98.9%	0.1325	0.0062	25.835
18:56	18:58	2.0	155.10	122.01	67.94	67.45	49.04	54.83	54.89	54.893	0.61	51.1%		0.5694	0.5531	98.9%	0.1331	0.0063	25.741
18:58	19:00	2.0	157.02	123.80	68.01	66.17	49.01	54.80	54.89	54.891	0.61	51.1%		0.5694	0.5530	98.9%	0.1333	0.0063	25.660
19:00	19:02	2.0	158.29	125.45	68.08	65.08	48.75	54.76	54.89	54.889	0.82	51.1%		0.5694	0.5529	98.9%	0.1329	0.0063	25.608
19:02	19:04	2.0	159.16	126.84	68.20	64.03	48.58	54.73	54.89	54.888	0.56	51.0%		0.5694	0.5528	98.9%	0.1330	0.0063	25.572
19:04	19:06	2.0	159.69	128.08	68.37	63.03	48.55	54.69	54.89	54.887	0.49	51.0%		0.5694	0.5526	98.9%	0.1337	0.0063	25.550
19:06	19:08	2.0	160.10	129.04	68.39	62.57	47.91	54.61	54.88	54.886	0.77	51.0%		0.5694	0.5527	98.9%	0.1320	0.0062	25.533
19:08	19:10	2.0	160.50	130.00	68.75	62.34	48.24	54.67	54.88	54.884	0.93	51.0%		0.5694	0.5522	98.9%	0.1344	0.0063	25.516
19:10	19:12	2.0	160.55	130.80	69.12	61.94	48.09	54.72	54.88	54.880	1.81	51.0%		0.5694	0.5517	98.9%	0.1356	0.0064	25.514
19:12	19:14	2.0	160.79	131.62	69.20	61.60	48.38	54.70	54.87	54.875	2.29	51.0%		0.5694	0.5516	98.8%	0.1368	0.0065	25.504
19:14	19:16	2.0	162.08	132.68	69.29	61.45	48.44	54.71	54.87	54.870	2.36	51.0%		0.5694	0.5514	98.8%	0.1374	0.0065	25.452
19:16	19:18	2.0	164.01	133.96	69.54	61.09	48.35	54.77	54.86	54.863	3.13	51.0%		0.5694	0.5511	98.8%	0.1382	0.0065	25.373
19:18	19:20	2.0	166.15	135.48	69.60	61.22	48.18	54.75	54.85	54.853	4.50	51.0%		0.5694	0.5511	98.8%	0.1380	0.0065	25.286
19:20	19:22	2.0	168.55	137.04	69.56	61.71	48.49	54.73	54.84	54.841	5.25	51.0%		0.5694	0.5511	98.8%	0.1387	0.0065	25.189
19:22	19:24	2.0	171.13	138.65	69.81	62.64	48.76	54.74	54.83	54.828	6.08	50.9%		0.5694	0.5507	98.8%	0.1406	0.0066	25.086
19:24	19:26	2.0	172.58	140.02	70.02	63.50	48.73	54.73	54.81	54.809	8.60	50.9%		0.5694	0.5505	98.8%	0.1415	0.0067	25.029
19:26	19:28	2.0	173.51	141.20	70.41	64.32	48.41	54.75	54.79	54.787	9.98	50.9%		0.5694	0.5500	98.8%	0.1424	0.0067	? ?
19:28	19:30	2.0	174.06	142.19	70.88	65.64	48.42	54.78	54.76	54.765	9.91	50.8%		0.5694	0.5494	98.8%	0.1445	0.0068	? ?
19:30	19:32	2.0	174.41	143.10	71.35	66.58	48.10	54.80	54.74	54.741	11.23	50.8%		0.5694	0.5489	98.8%	0.1458	0.0069	24.957
19:32	19:34	2.0	174.42	143.78	71.57	67.42	47.59	54.73	54.71	54.714	12.31	50.7%		0.5694	0.5487	98.8%	0.1452	0.0068	24.956
19:34	19:36	2.0	174.70	144.48	71.88	68.29	47.55	54.70	54.68	54.686	12.57	50.7%		0.5694	0.5483	98.8%	0.1466	0.0069	24.945
19:36	19:38	2.0	174.81	145.18	72.09	68.86	47.38	54.69	54.65	54.657	13.35	50.6%		0.5694	0.5481	98.8%	0.1470	0.0069	24.941
19:38	19:40	2.0	174.87	145.72	72.49	69.23	47.25	54.68	54.62	54.625	14.37	50.6%		0.5694	0.5476	98.7%	0.1485	0.0070	24.939
19:40	19:42	2.0	174.56	145.96	72.30	69.51	46.93	54.62	54.59	54.592	14.92	50.5%		0.5694	0.5479	98.8%	0.1466	0.0069	24.951
19:42	19:44	2.0	174.26	146.34	72.29	69.92	46.90	54.64	54.56	54.559	15.05	50.4%		0.5694	0.5479	98.8%	0.1465	0.0069	24.963
19:44	19:46	2.0	173.90	146.63	72.32	69.98	46.55	54.65	54.52	54.524	16.04	50.4%		0.5694	0.5479	98.8%	0.1455	0.0069	24.977
19:46	19:48	2.0	173.45	146.87	72.32	70.48	46.33	54.62	54.49	54.489	15.74	50.3%		0.5694	0.5479	98.8%	0.1448	0.0068	24.995
19:48	19:50	2.0	173.30	147.21	72.37	70.52	46.22	54.61	54.45	54.454	15.87	50.3%		0.5694	0.5479	98.8%	0.1447	0.0068	25.000
19:50	19:52	2.0	173.52	147.69	72.63	71.23	45.88	54.54	54.41	54.418	16.63	50.2%		0.5694	0.5476	98.8%	0.1448	0.0068	24.992
19:52	19:54	2.0	173.96	148.08	73.01	71.80	45.58	54.49	54.38	54.378	18.01	50.1%		0.5694	0.5472	98.8%	0.1457	0.0069	24.974
19:54	19:56	2.0	174.59	148.52	73.40	72.37	45.49	54.48	54.34	54.338	18.10	50.0%		0.5694	0.5467	98.7%	0.1472	0.0069	24.950
19:56	19:58	2.0	175.06	148.89	73.68	73.07	45.52	54.41	54.29	54.296	19.16	50.0%		0.5694	0.5463	98.7%	0.1486	0.0070	24.931
19:58	20:00	2.0	175.15	149.06	73.57	73.86	45.80	54.28	54.25	54.250	20.75	49.9%		0.5694	0.5464	98.7%	0.1490	0.0070	24.928
20:00	20:02	2.0	175.13	149.24	73.53	74.29	45.73	54.25	54.20	54.203	21.67	49.8%		0.5694	0.5465	98.7%	0.1486	0.0070	24.928
20:02	20:04	2.0	175.27	149.47	73.66	75.13	45.69	54.22	54.15	54.153	22.69	49.7%		0.5694	0.5463	98.7%	0.1491	0.0070	24.923
20:04	20:06	2.0	175.18	149.53	73.63	75.52	45.27	54.08	54.10	54.100	24.04	49.6%		0.5694	0.5464	98.7%	0.1476	0.0070	24.926
20:06	20:08	2.0	174.97	149.59	73.76	76.41	45.15	54.02	54.04	54.045	24.65	49.5%		0.5694	0.5463	98.7%	0.1477	0.0070	24.935

c/f 2.05

Cm ft³													
A	B	E	J		D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
F	G			I									
VMc	VWc	Wood H2 Volume VWW	Inlet Air Moisture BWSi	Psycho BWSc	VWi	VMi	Ve	Cgas(wet)	Mass TGOC Mgas	Cgas(Dry)	Mass TGOC Mgas Accum	Emission Factor EF	Emission Factor EF Accum
dscf	scf	scf	%	%	scf	dscf	wscf	ppmv	lbm-C	ppmv	lbm-C	lbm/Mdbft	lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
25.839	1.250		1.107	4.613	0.000	0.000	0.164						
25.566	1.358	0.023	1.104	5.042	0.000	0.000	0.326	77.9	7.9E-07	82.0	7.91E-07	6.8E-05	0.0001
25.066	1.555	0.029	1.115	5.840	0.000	0.000	0.369	76.8	8.8E-07	81.5	1.67E-06	7.5E-05	0.0001
24.428	1.852	0.029	1.132	7.048	0.000	0.000	0.133	76.0	3.1E-07	81.8	1.99E-06	2.7E-05	0.0002
24.141	2.035	0.029	1.133	7.774	0.000	0.000	0.055	75.2	1.3E-07	81.6	2.12E-06	1.1E-05	0.0002
23.989	2.160	0.029	1.116	8.261	0.000	0.000	0.081	74.1	1.9E-07	80.8	2.30E-06	1.6E-05	0.0002
23.818	2.280	0.029	1.116	8.736	0.000	0.000	0.110	72.8	2.5E-07	79.7	2.55E-06	2.1E-05	0.0002
23.602	2.414	0.029	1.124	9.279	0.000	0.000	0.118	71.1	2.6E-07	78.3	2.82E-06	2.2E-05	0.0002
23.379	2.548	0.029	1.127	9.827	0.000	0.000	0.121	69.6	2.6E-07	77.2	3.08E-06	2.2E-05	0.0003
23.144	2.690	0.029	1.117	10.414	0.000	0.000	0.123	68.6	2.6E-07	76.6	3.34E-06	2.2E-05	0.0003
22.894	2.847	0.029	1.122	11.060	0.000	0.000	0.109	67.9	2.3E-07	76.3	3.57E-06	2.0E-05	0.0003
22.661	2.999	0.029	1.124	11.689	0.000	0.000	0.081	66.6	1.7E-07	75.4	3.74E-06	1.4E-05	0.0003
22.456	3.152	0.039	1.121	12.309	0.000	0.000	0.075	65.5	1.5E-07	74.7	3.89E-06	1.3E-05	0.0003
22.284	3.287	0.027	1.122	12.855	0.000	0.000	0.048	64.5	9.7E-08	74.0	3.99E-06	8.3E-06	0.0003
22.135	3.414	0.023	1.128	13.364	0.000	0.000	0.040	63.5	7.9E-08	73.3	4.07E-06	6.8E-06	0.0003
22.017	3.516	0.037	1.113	13.772	0.000	0.000	0.053	63.0	1.0E-07	73.1	4.17E-06	8.9E-06	0.0004
21.897	3.619	0.044	1.135	14.184	0.000	0.000	0.046	62.8	9.0E-08	73.2	4.26E-06	7.6E-06	0.0004
21.804	3.710	0.085	1.146	14.542	0.000	0.000	0.095	62.4	1.8E-07	73.0	4.45E-06	1.6E-05	0.0004
21.701	3.803	0.108	1.156	14.911	0.000	0.000	0.161	62.0	3.1E-07	72.9	4.76E-06	2.7E-05	0.0004
21.541	3.911	0.112	1.161	15.365	0.000	0.000	0.190	61.9	3.7E-07	73.1	5.13E-06	3.1E-05	0.0004
21.334	4.039	0.147	1.169	15.919	0.000	0.000	0.234	61.5	4.5E-07	73.2	5.58E-06	3.8E-05	0.0005
21.089	4.197	0.212	1.167	16.597	0.000	0.000	0.309	61.7	5.9E-07	74.0	6.17E-06	5.1E-05	0.0005
20.828	4.362	0.247	1.173	17.316	0.001	0.064	0.415	62.2	8.0E-07	75.2	6.97E-06	6.9E-05	0.0006
20.551	4.535	0.286	1.190	18.078	0.004	0.325	0.672	63.1	1.3E-06	77.0	8.30E-06	1.1E-04	0.0007
20.330	4.699	0.405	1.198	18.775	0.011	0.928	1.382	64.0	2.8E-06	78.8	1.11E-05	2.4E-04	0.0009
20.144	4.848	0.471	1.206	19.397	0.016	1.271	1.779	64.8	3.6E-06	80.4	1.46E-05	3.1E-04	0.0013
19.991	4.979	0.467	1.225	19.940	0.016	1.259	1.756	66.1	3.6E-06	82.6	1.83E-05	3.1E-04	0.0016
19.854	5.103	0.530	1.237	20.448	0.020	1.613	2.163	67.1	4.5E-06	84.3	2.28E-05	3.9E-04	0.0019
19.754	5.202	0.580	1.233	20.844	0.022	1.758	2.372	67.9	5.0E-06	85.8	2.78E-05	4.3E-04	0.0024
19.645	5.300	0.593	1.245	21.248	0.022	1.749	2.368	68.8	5.1E-06	87.4	3.29E-05	4.3E-04	0.0028
19.539	5.402	0.630	1.249	21.661	0.025	1.955	2.611	69.4	5.7E-06	88.6	3.85E-05	4.8E-04	0.0033
19.456	5.483	0.678	1.262	21.984	0.030	2.308	3.003	69.8	6.5E-06	89.4	4.51E-05	5.6E-04	0.0038
19.426	5.525	0.704	1.246	22.143	0.029	2.273	2.993	70.1	6.5E-06	90.0	5.16E-05	5.6E-04	0.0044
19.376	5.587	0.710	1.245	22.382	0.029	2.325	3.050	70.5	6.7E-06	90.8	5.83E-05	5.7E-04	0.0050
19.339	5.638	0.756	1.237	22.572	0.031	2.501	3.271	70.5	7.2E-06	91.1	6.55E-05	6.1E-04	0.0056
19.313	5.682	0.742	1.231	22.732	0.029	2.355	3.121	71.1	6.9E-06	92.0	7.24E-05	5.9E-04	0.0062
19.263	5.737	0.748	1.230	22.948	0.028	2.247	3.032	71.1	6.7E-06	92.3	7.91E-05	5.7E-04	0.0068
19.183	5.809	0.784	1.232	23.242	0.030	2.405	3.237	71.8	7.2E-06	93.6	8.64E-05	6.2E-04	0.0074
19.111	5.863	0.849	1.240	23.476	0.032	2.561	3.466	72.4	7.8E-06	94.6	9.42E-05	6.7E-04	0.0080
19.028	5.922	0.853	1.253	23.734	0.033	2.581	3.486	73.0	7.9E-06	95.7	1.02E-04	6.8E-04	0.0087
18.959	5.973	0.903	1.266	23.956	0.037	2.858	3.801	73.7	8.7E-06	96.9	1.11E-04	7.5E-04	0.0095
18.930	5.998	0.978	1.269	24.061	0.039	3.068	4.085	74.5	9.5E-06	98.1	1.20E-04	8.1E-04	0.0103
18.900	6.028	1.022	1.266	24.181	0.040	3.157	4.225	74.9	9.9E-06	98.8	1.30E-04	8.4E-04	0.0111
18.860	6.063	1.070	1.270	24.326	0.044	3.414	4.524	75.8	1.1E-05	100.2	1.41E-04	9.1E-04	0.0120
18.852	6.074	1.134	1.257	24.368	0.046	3.609	4.780	76.2	1.1E-05	100.7	1.52E-04	9.7E-04	0.0130
18.848	6.087	1.163	1.259	24.410	0.047	3.689	4.912	77.1	1.2E-05	102.0	1.64E-04	1.0E-03	0.0140

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94 lbm Starting Mass
26.84 lbm Ending Mass
28.10 lbm Total Mass Displaced

0.9830 Meter (Y)
29.9000 inHg
101.25 kPa

TGOC analyzer calib Span 84 250.6 227.8 ppmv
Zero 0 0.38 -3.8 ppmv
Load cell calibration Span 50 50 50.12 lbm
Zero 0 0.08 0.07 lbm

19.77 Start Cal Tim
22.45 End Cal Tim
DBFT 11.714057
Chamber 30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
20:08	20:10	2.0	175.31	149.67	74.15	77.31	44.95	53.99	53.99	53.989	25.84	49.4%		0.5694	0.5458	98.7%	0.1489	0.0070	24.922
20:10	20:12	2.0	175.32	149.74	74.14	78.20	44.55	53.87	53.93	53.930	26.44	49.3%		0.5694	0.5459	98.7%	0.1475	0.0070	24.921
20:12	20:14	2.0	175.15	149.77	74.02	79.07	44.30	53.77	53.87	53.871	27.13	49.2%		0.5694	0.5461	98.8%	0.1462	0.0069	24.928
20:14	20:16	2.0	175.03	149.91	73.91	79.91	44.41	53.74	53.81	53.812	26.73	49.1%		0.5694	0.5462	98.8%	0.1460	0.0069	24.932
20:16	20:18	2.0	175.19	150.10	73.86	80.35	44.14	53.64	53.75	53.751	27.64	49.0%		0.5694	0.5463	98.8%	0.1449	0.0068	24.926
20:18	20:20	2.0	175.03	150.16	73.71	80.99	44.08	53.55	53.68	53.688	28.40	48.9%		0.5694	0.5465	98.8%	0.1440	0.0068	24
20:20	20:22	2.0	174.90	150.33	73.67	81.82	43.77	53.46	53.62	53.625	28.62	48.7%		0.5694	0.5466	98.8%	0.1429	0.0067	24....
20:22	20:24	2.0	175.07	150.37	73.85	82.33	43.96	53.41	53.56	53.562	28.77	48.6%		0.5694	0.5464	98.8%	0.1443	0.0068	24.931
20:24	20:26	2.0	175.01	150.43	73.98	82.98	43.84	53.29	53.49	53.495	30.20	48.5%		0.5694	0.5462	98.8%	0.1445	0.0068	24.933
20:26	20:28	2.0	174.96	150.46	74.20	83.79	43.77	53.28	53.42	53.428	30.43	48.4%		0.5694	0.5459	98.8%	0.1453	0.0068	24.935
20:28	20:30	2.0	174.82	150.48	74.05	84.42	43.54	53.19	53.36	53.362	30.16	48.3%		0.5694	0.5462	98.8%	0.1438	0.0068	24.941
20:30	20:32	2.0	175.06	150.51	74.06	84.99	43.39	53.18	53.29	53.292	31.87	48.1%		0.5694	0.5462	98.8%	0.1433	0.0068	24.931
20:32	20:34	2.0	175.05	150.48	74.00	85.86	43.51	53.11	53.22	53.219	32.80	48.0%		0.5694	0.5462	98.8%	0.1435	0.0068	24.932
20:34	20:36	2.0	175.12	150.45	74.08	86.34	43.43	53.08	53.14	53.148	32.24	47.9%		0.5694	0.5462	98.8%	0.1436	0.0068	24.929
20:36	20:38	2.0	175.09	150.34	73.89	86.83	43.20	52.99	53.07	53.077	32.51	47.7%		0.5694	0.5464	98.8%	0.1420	0.0067	24.930
20:38	20:40	2.0	175.18	150.28	73.68	87.24	43.29	52.91	53.00	53.004	32.86	47.6%		0.5694	0.5467	98.8%	0.1413	0.0067	24.926
20:40	20:42	2.0	176.11	150.30	73.44	87.78	43.23	52.80	52.93	52.932	32.65	47.5%		0.5694	0.5470	98.8%	0.1401	0.0066	24.890
20:42	20:44	2.0	177.67	150.60	73.22	87.94	42.91	52.69	52.86	52.860	32.76	47.4%	535.3	0.6991	0.6720	98.8%	0.1694	0.0080	24.829
20:44	20:46	2.0	179.55	151.01	72.81	87.68	42.88	52.58	52.78	52.786	33.76	47.2%		0.7219	0.6946	98.8%	0.1726	0.0081	24.756
20:46	20:48	2.0	181.57	151.50	72.56	86.06	42.50	52.51	52.70	52.709	35.06	47.1%		0.7219	0.6950	98.9%	0.1698	0.0080	24.678
20:48	20:50	2.0	183.85	152.22	72.46	83.04	42.77	52.43	52.62	52.627	36.93	46.9%		0.7219	0.6952	98.9%	0.1703	0.0080	24.591
20:50	20:52	2.0	185.39	153.05	72.58	79.90	42.79	52.40	52.54	52.543	38.26	46.8%		0.7219	0.6950	98.9%	0.1710	0.0081	24.532
20:52	20:54	2.0	186.00	153.63	72.46	76.89	43.04	52.36	52.45	52.459	37.97	46.6%		0.7219	0.6951	98.9%	0.1713	0.0081	24.509
20:54	20:56	2.0	186.43	154.12	72.66	75.07	43.41	52.33	52.37	52.377	37.37	46.5%		0.7219	0.6947	98.8%	0.1739	0.0082	24.493
20:56	20:58	2.0	186.64	154.55	72.56	73.73	43.77	52.22	52.29	52.296	36.64	46.3%		0.7219	0.6948	98.8%	0.1748	0.0082	24.484
20:58	21:00	2.0	186.98	155.05	72.56	73.17	43.86	52.14	52.22	52.221	34.31	46.2%		0.7219	0.6948	98.8%	0.1752	0.0083	24.471
21:00	21:02	2.0	187.11	155.35	72.86	72.79	43.66	52.11	52.15	52.150	32.03	46.1%		0.7219	0.6944	98.8%	0.1760	0.0083	24.467
21:02	21:04	2.0	187.06	155.55	72.94	72.61	43.32	52.04	52.08	52.083	30.54	45.9%		0.7219	0.6943	98.8%	0.1751	0.0083	9
21:04	21:06	2.0	187.01	155.72	72.88	72.52	43.27	51.93	52.01	52.016	30.55	45.8%		0.7219	0.6944	98.8%	0.1746	0.0082	24.471
21:06	21:08	2.0	187.33	155.98	73.29	72.28	43.15	51.91	51.95	51.950	29.71	45.7%		0.7219	0.6938	98.8%	0.1764	0.0083	24.458
21:08	21:10	2.0	187.10	156.09	73.78	72.22	43.19	51.91	51.88	51.883	30.70	45.6%		0.7219	0.6930	98.8%	0.1793	0.0085	24.467
21:10	21:12	2.0	186.89	156.11	73.56	71.98	43.36	51.74	51.81	51.814	31.08	45.4%		0.7219	0.6933	98.8%	0.1788	0.0084	24.475
21:12	21:14	2.0	187.29	156.24	73.58	72.16	43.26	51.59	51.74	51.742	32.55	45.3%		0.7219	0.6933	98.8%	0.1785	0.0084	24.460
21:14	21:16	2.0	187.64	156.44	74.03	71.98	42.93	51.59	51.67	51.671	32.29	45.2%		0.7219	0.6926	98.8%	0.1796	0.0085	24.446
21:16	21:18	2.0	187.77	156.67	74.10	72.16	42.48	51.56	51.59	51.599	32.95	45.1%		0.7219	0.6926	98.8%	0.1781	0.0084	24.442
21:18	21:20	2.0	187.54	156.69	73.86	72.52	42.45	51.45	51.52	51.527	32.75	44.9%		0.7219	0.6930	98.8%	0.1767	0.0083	24.450
21:20	21:22	2.0	187.41	156.69	73.41	72.56	42.55	51.34	51.45	51.456	31.92	44.8%		0.7219	0.6937	98.8%	0.1746	0.0082	24.455
21:22	21:24	2.0	186.88	156.68	73.03	72.93	42.22	51.30	51.38	51.389	30.36	44.7%		0.7219	0.6944	98.9%	0.1711	0.0081	24.475
21:24	21:26	2.0	186.32	156.57	72.47	73.34	42.09	51.18	51.32	51.325	29.45	44.6%		0.7219	0.6953	98.9%	0.1676	0.0079	24.497
21:26	21:28	2.0	185.92	156.39	71.79	73.50	41.78	50.93	51.26	51.261	28.63	44.4%		0.7219	0.6964	98.9%	0.1628	0.0077	24.512
21:28	21:30	2.0	185.74	156.41	71.08	73.94	41.76	50.69	51.19	51.199	28.48	44.3%		0.7219	0.6975	98.9%	0.1591	0.0075	24.519
21:30	21:32	2.0	186.14	156.56	71.24	73.88	41.74	50.54	51.13	51.137	28.02	44.2%		0.7219	0.6973	98.9%	0.1598	0.0075	24.503
21:32	21:34	2.0	186.71	156.56	72.02	74.28	41.45	50.45	51.07	51.074	28.61	44.1%		0.7219	0.6961	98.9%	0.1627	0.0077	24.482
21:34	21:36	2.0	187.20	156.68	72.75	74.38	41.30	50.41	51.00	51.010	28.86	44.0%		0.7219	0.6950	98.9%	0.1659	0.0078	24.463
21:36	21:38	2.0	187.57	156.79	73.55	74.69	41.37	50.44	50.94	50.945	29.74	43.9%		0.7219	0.6937	98.9%	0.1705	0.0080	24.449
21:38	21:40	2.0	188.04	156.88	74.47	74.96	41.29	50.55	50.87	50.880	29.40	43.7%		0.7219	0.6923	98.8%	0.1752	0.0083	24.432
21:40	21:42	2.0	188.27	156.92	75.12	75.44	41.17	50.67	50.81	50.815	29.52	43.6%		0.7219	0.6913	98.8%	0.1783	0.0084	24.423

Cm ft³														
A	B	E	J		D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor						
F	G			I										
VMc	VWc	Wood H2 Volume VWW	Inlet Air Moisture BWSi	Psycho BWSc	VWi	VMi	Ve	Cgas(wet)	Mass TGOC Mgas	Cgas(Dry)	Mass TGOC Mgas Accum	Emission Factor EF	Emission Factor EF Accum
dscf	scf	scf	%	%	scf	dscf	wscf	ppmv	lbm-C	ppmv	lbm-C	lbm/Mdbft	lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
18.827	6.095	1.218	1.270	24.457	0.050	3.865	5.134	78.0	1.2E-05	103.2	1.77E-04	1.1E-03	0.0151
18.816	6.105	1.247	1.258	24.499	0.051	3.966	5.257	78.9	1.3E-05	104.5	1.89E-04	1.1E-03	0.0162
18.814	6.114	1.279	1.247	24.525	0.050	3.973	5.298	79.8	1.3E-05	105.7	2.03E-04	1.1E-03	0.0173
18.794	6.139	1.260	1.245	24.621	0.049	3.868	5.183	80.6	1.3E-05	107.0	2.16E-04	1.1E-03	0.0184
18.761	6.166	1.304	1.235	24.736	0.051	4.065	5.413	81.1	1.4E-05	107.7	2.29E-04	1.2E-03	0.0196
18.754	6.178	1.339	1.227	24.781	0.051	4.075	5.460	81.7	1.4E-05	108.7	2.43E-04	1.2E-03	0.0208
18.729	6.209	1.350	1.217	24.898	0.052	4.199	5.607	82.6	1.4E-05	109.9	2.58E-04	1.2E-03	0.0220
18.718	6.213	1.357	1.230	24.920	0.052	4.197	5.604	83.1	1.5E-05	110.7	2.72E-04	1.2E-03	0.0232
18.710	6.223	1.424	1.232	24.959	0.055	4.422	5.899	83.8	1.5E-05	111.6	2.88E-04	1.3E-03	0.0246
18.706	6.229	1.435	1.239	24.980	0.056	4.457	5.942	84.6	1.6E-05	112.7	3.03E-04	1.3E-03	0.0259
18.706	6.234	1.422	1.226	24.996	0.055	4.416	5.902	85.2	1.6E-05	113.6	3.19E-04	1.3E-03	0.0272
18.696	6.235	1.503	1.222	25.010	0.058	4.708	6.268	85.8	1.7E-05	114.4	3.36E-04	1.4E-03	0.0287
18.702	6.230	1.547	1.223	24.988	0.060	4.849	6.459	86.7	1.7E-05	115.6	3.53E-04	1.5E-03	0.0301
18.705	6.224	1.520	1.224	24.968	0.060	4.835	6.414	87.2	1.7E-05	116.2	3.71E-04	1.5E-03	0.0316
18.723	6.208	1.533	1.210	24.900	0.059	4.856	6.453	87.7	1.8E-05	116.7	3.88E-04	1.5E-03	0.0331
18.730	6.196	1.550	1.204	24.857	0.060	4.881	6.526	88.1	1.8E-05	117.2	4.06E-04	1.5E-03	0.0347
18.706	6.184	1.540	1.193	24.844	0.056	4.637	6.293	88.6	1.7E-05	117.9	4.24E-04	1.5E-03	0.0362
18.623	6.206	1.545	1.175	24.996	0.054	4.526	6.198	88.8	1.7E-05	118.4	4.41E-04	1.5E-03	0.0376
18.514	6.242	1.592	1.158	25.215	0.053	4.544	6.267	88.5	1.7E-05	118.4	4.58E-04	1.5E-03	0.0391
18.388	6.290	1.653	1.139	25.488	0.052	4.476	6.268	86.9	1.7E-05	116.6	4.75E-04	1.4E-03	0.0405
18.220	6.371	1.741	1.142	25.907	0.052	4.498	6.350	83.9	1.7E-05	113.2	4.92E-04	1.4E-03	0.0420
18.047	6.485	1.804	1.147	26.436	0.055	4.723	6.605	80.7	1.7E-05	109.7	5.08E-04	1.4E-03	0.0434
17.936	6.573	1.790	1.149	26.819	0.054	4.645	6.505	77.7	1.6E-05	106.2	5.24E-04	1.3E-03	0.0447
17.842	6.651	1.762	1.167	27.154	0.054	4.533	6.357	75.9	1.5E-05	104.1	5.39E-04	1.3E-03	0.0460
17.763	6.721	1.727	1.172	27.451	0.051	4.315	6.107	74.5	1.4E-05	102.7	5.53E-04	1.2E-03	0.0472
17.669	6.802	1.618	1.175	27.797	0.049	4.102	5.773	73.9	1.3E-05	102.4	5.66E-04	1.1E-03	0.0484
17.614	6.852	1.510	1.181	28.006	0.046	3.843	5.397	73.6	1.2E-05	102.2	5.79E-04	1.1E-03	0.0494
17.580	6.889	1.440	1.175	28.154	0.043	3.654	5.136	73.4	1.2E-05	102.1	5.91E-04	1.0E-03	0.0504
17.550	6.920	1.440	1.171	28.279	0.042	3.576	5.071	73.3	1.2E-05	102.2	6.02E-04	9.9E-04	0.0514
17.498	6.960	1.401	1.185	28.456	0.042	3.544	4.979	73.1	1.1E-05	102.1	6.14E-04	9.7E-04	0.0524
17.484	6.983	1.448	1.205	28.539	0.045	3.715	5.199	73.0	1.2E-05	102.2	6.25E-04	1.0E-03	0.0534
17.485	6.990	1.466	1.201	28.561	0.045	3.691	5.217	72.8	1.2E-05	101.9	6.37E-04	1.0E-03	0.0544
17.453	7.006	1.535	1.199	28.645	0.046	3.793	5.387	73.0	1.2E-05	102.3	6.49E-04	1.0E-03	0.0554
17.410	7.037	1.523	1.208	28.784	0.045	3.709	5.282	72.8	1.2E-05	102.2	6.61E-04	1.0E-03	0.0565
17.366	7.075	1.554	1.198	28.948	0.047	3.908	5.501	73.0	1.3E-05	102.7	6.74E-04	1.1E-03	0.0575
17.367	7.083	1.544	1.188	28.970	0.047	3.902	5.488	73.3	1.3E-05	103.3	6.86E-04	1.1E-03	0.0586
17.371	7.085	1.505	1.173	28.969	0.045	3.792	5.322	73.4	1.2E-05	103.3	6.99E-04	1.0E-03	0.0596
17.383	7.092	1.432	1.149	28.978	0.043	3.682	5.135	73.8	1.2E-05	103.9	7.10E-04	1.0E-03	0.0607
17.414	7.082	1.388	1.124	28.911	0.041	3.636	5.051	74.2	1.2E-05	104.4	7.22E-04	1.0E-03	0.0616
17.454	7.058	1.350	1.090	28.793	0.038	3.412	4.793	74.4	1.1E-05	104.4	7.33E-04	9.5E-04	0.0626
17.454	7.064	1.343	1.064	28.813	0.036	3.309	4.703	74.8	1.1E-05	105.1	7.44E-04	9.4E-04	0.0635
17.420	7.084	1.321	1.069	28.908	0.036	3.350	4.729	74.7	1.1E-05	105.1	7.55E-04	9.4E-04	0.0645
17.407	7.075	1.349	1.090	28.898	0.037	3.332	4.736	75.2	1.1E-05	105.7	7.66E-04	9.5E-04	0.0654
17.375	7.088	1.361	1.113	28.974	0.038	3.363	4.776	75.3	1.1E-05	106.0	7.78E-04	9.6E-04	0.0664
17.349	7.100	1.402	1.146	29.039	0.040	3.467	4.927	75.6	1.2E-05	106.5	7.89E-04	9.9E-04	0.0674
17.323	7.109	1.386	1.179	29.097	0.041	3.460	4.897	75.9	1.2E-05	107.0	8.01E-04	9.9E-04	0.0684
17.312	7.111	1.392	1.202	29.115	0.042	3.458	4.886	76.3	1.2E-05	107.7	8.12E-04	9.9E-04	0.0693

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94	lbm	Starting Mass	
26.84	lbm	Ending Mass	
28.10	lbm	Total Mass Displaced	

0.9830	Meter (Y)		
29.9000	inHg		
101.25	kPa		

TGOC analyzer calib	Span	84	250.6	227.8	ppmv
	Zero	0	0.38	-3.8	ppmv
Load cell calibration	Span	50	50	50.12	lbm
	Zero	0	0.08	0.07	lbm

19.77	Start Cal Tim
22.45	End Cal Tim
DBFT	Chamber
11.714057	30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
21:42	21:44	2.0	188.10	156.95	75.11	75.40	41.75	50.72	50.74	50.750	29.79	43.5%		0.7219	0.6912	98.8%	0.1808	0.0085	24.429
21:44	21:46	2.0	188.06	156.96	74.94	75.57	41.32	50.66	50.68	50.684	29.57	43.4%		0.7219	0.6915	98.8%	0.1780	0.0084	24.431
21:46	21:48	2.0	187.94	156.96	74.92	75.80	41.37	50.62	50.61	50.621	28.96	43.3%		0.7219	0.6916	98.8%	0.1780	0.0084	24.435
21:48	21:50	2.0	187.72	156.87	74.78	75.79	41.01	50.52	50.55	50.556	29.13	43.2%		0.7219	0.6918	98.8%	0.1757	0.0083	24.444
21:50	21:52	2.0	187.22	156.68	74.42	76.02	41.35	50.40	50.48	50.491	29.74	43.0%		0.7219	0.6923	98.8%	0.1752	0.0083	24.463
21:52	21:54	2.0	186.79	156.44	74.03	76.22	41.39	50.25	50.42	50.427	29.07	42.9%		0.7219	0.6929	98.8%	0.1732	0.0082	24
21:54	21:56	2.0	186.37	156.25	73.66	76.21	41.36	50.20	50.36	50.364	28.63	42.8%		0.7219	0.6935	98.9%	0.1711	0.0081	24.4..
21:56	21:58	2.0	185.86	156.14	73.06	76.27	41.18	50.12	50.29	50.299	29.52	42.7%		0.7219	0.6945	98.9%	0.1671	0.0079	24.514
21:58	22:00	2.0	185.39	155.95	72.58	76.43	41.03	50.04	50.23	50.233	29.87	42.6%		0.7219	0.6953	98.9%	0.1640	0.0077	24.532
22:00	**22:02**	**2.0**	**185.35**	**155.85**	**72.72**	**76.58**	**41.08**	**50.03**	**50.16**	**50.168**	**29.68**	**42.4%**		**0.7219**	**0.6951**	**98.9%**	0.1649	0.0078	24.533
22:02	22:04	2.0	185.31	155.85	73.11	76.77	41.27	50.07	50.10	50.103	29.32	42.3%		0.7219	0.6944	98.9%	0.1677	0.0079	24.535
22:04	22:06	2.0	185.25	155.92	73.57	76.77	41.24	50.04	50.03	50.039	29.30	42.2%		0.7219	0.6937	98.9%	0.1701	0.0080	24.537
22:06	22:08	2.0	185.28	155.79	73.96	76.80	40.91	50.00	49.97	49.976	28.62	42.1%		0.7219	0.6932	98.9%	0.1708	0.0081	24.536
22:08	22:10	2.0	185.37	155.85	74.16	77.20	40.74	49.95	49.91	49.917	26.48	42.0%		0.7219	0.6929	98.8%	0.1712	0.0081	24.533
22:10	22:12	2.0	185.32	155.97	74.14	77.30	40.50	49.91	49.86	49.863	24.76	41.9%		0.7219	0.6930	98.9%	0.1701	0.0080	24.535
22:12	22:14	2.0	185.25	155.94	73.99	77.56	40.53	49.83	49.80	49.810	23.92	41.8%		0.7219	0.6932	98.9%	0.1694	0.0080	24.537
22:14	22:16	2.0	185.26	155.96	73.96	77.84	40.93	49.76	49.75	49.755	25.05	41.7%		0.7219	0.6931	98.9%	0.1709	0.0081	24.537
22:16	22:18	2.0	185.56	156.15	74.27	77.89	41.25	49.66	49.69	49.697	26.22	41.6%		0.7219	0.6926	98.8%	0.1739	0.0082	24.525
22:18	22:20	2.0	185.86	156.27	74.81	78.10	41.27	49.57	49.63	49.637	27.49	41.5%		0.7219	0.6917	98.8%	0.1770	0.0083	24.514
22:20	22:22	2.0	186.20	156.20	75.27	78.17	40.96	49.48	49.56	49.572	29.37	41.4%		0.7219	0.6911	98.8%	0.1783	0.0084	24.501
22:22	22:24	2.0	186.78	156.33	75.57	78.13	40.60	49.43	49.50	49.503	31.30	41.2%		0.7219	0.6907	98.8%	0.1784	0.0084	24.479
22:24	22:26	2.0	187.10	156.39	75.73	78.18	40.38	49.38	49.43	49.433	31.76	41.1%		0.7219	0.6905	98.8%	0.1783	0.0084	24.467
22:26	22:28	2.0	187.13	156.32	75.76	78.26	40.50	49.32	49.36	49.365	30.63	41.0%		0.7219	0.6904	98.8%	0.1790	0.0084	24.466
22:28	22:30	2.0	186.89	156.18	75.75	78.42	40.83	49.29	49.29	49.297	30.92	40.9%		0.7219	0.6904	98.8%	0.1804	0.0085	24.475
22:30	22:32	2.0	186.67	156.07	75.62	78.58	40.83	49.24	49.22	49.230	30.54	40.7%		0.7219	0.6906	98.8%	0.1797	0.0085	24.483
22:32	22:34	2.0	186.20	155.97	75.70	78.46	40.59	49.13	49.16	49.165	29.76	40.6%		0.7219	0.6905	98.8%	0.1790	0.0084	24.501
22:34	22:36	2.0	185.90	155.77	75.70	78.38	40.73	49.01	49.09	49.100	29.42	40.5%		0.7219	0.6905	98.8%	0.1797	0.0085	24.513
22:36	22:38	2.0	185.82	155.71	75.58	78.35	40.63	48.94	49.02	49.033	30.53	40.4%		0.7219	0.6907	98.8%	0.1785	0.0084	.3
22:38	22:40	2.0	185.71	155.73	75.51	78.33	40.76	48.87	48.96	48.966	30.25	40.3%		0.7219	0.6908	98.8%	0.1787	0.0084	24.520
22:40	22:42	2.0	185.93	155.77	75.54	78.64	40.72	48.78	48.89	48.899	30.48	40.1%		0.7219	0.6907	98.8%	0.1787	0.0084	24.511
22:42	22:44	2.0	186.38	155.85	75.67	78.55	40.58	48.70	48.82	48.831	30.87	40.0%		0.7219	0.6905	98.8%	0.1788	0.0084	24.494
22:44	22:46	2.0	186.78	155.97	75.73	78.49	40.18	48.67	48.75	48.761	31.60	39.9%		0.7219	0.6905	98.8%	0.1774	0.0084	24.479
22:46	22:48	2.0	187.22	156.06	75.79	78.73	39.61	48.61	48.69	48.693	30.85	39.8%		0.7219	0.6906	98.8%	0.1752	0.0083	24.463
22:48	22:50	2.0	187.69	155.98	75.88	78.51	39.67	48.55	48.62	48.623	31.79	39.6%		0.7219	0.6904	98.8%	0.1760	0.0083	24.445
22:50	22:52	2.0	187.95	155.85	75.88	78.47	40.10	48.47	48.55	48.553	31.79	39.5%		0.7219	0.6903	98.8%	0.1779	0.0084	24.435
22:52	22:54	2.0	188.03	155.67	75.84	78.61	39.83	48.39	48.47	48.483	31.99	39.4%		0.7219	0.6904	98.8%	0.1765	0.0083	24.432
22:54	22:56	2.0	188.02	155.45	75.53	78.71	39.55	48.20	48.40	48.412	31.91	39.2%		0.7219	0.6910	98.8%	0.1735	0.0082	24.432
22:56	22:58	2.0	187.67	155.17	75.08	78.89	39.51	48.05	48.33	48.342	32.09	39.1%		0.7219	0.6917	98.8%	0.1709	0.0081	24.445
22:58	23:00	2.0	187.15	154.95	75.08	79.01	38.91	47.97	48.26	48.272	31.73	39.0%		0.7219	0.6918	98.9%	0.1684	0.0079	24.465
23:00	23:02	2.0	186.74	154.93	75.16	79.07	39.24	47.91	48.19	48.200	32.50	38.9%		0.7219	0.6916	98.9%	0.1702	0.0080	24.481
23:02	23:04	2.0	186.27	154.92	75.12	78.88	39.63	47.85	48.12	48.127	33.38	38.7%		0.7219	0.6916	98.8%	0.1716	0.0081	24.498
23:04	23:06	2.0	186.06	154.89	75.28	78.92	40.13	47.86	48.04	48.051	34.12	38.6%		0.7219	0.6912	98.8%	0.1747	0.0082	24.506
23:06	23:08	2.0	186.46	154.92	75.98	78.84	39.85	47.91	47.97	47.975	34.64	38.5%		0.7219	0.6902	98.8%	0.1773	0.0084	24.491
23:08	23:10	2.0	186.98	155.01	76.33	78.72	39.53	47.84	47.89	47.899	34.62	38.3%		0.7219	0.6897	98.8%	0.1779	0.0084	24.472
23:10	23:12	2.0	187.52	155.07	76.25	78.75	39.45	47.78	47.81	47.823	34.61	38.2%		0.7219	0.6899	98.8%	0.1770	0.0083	24.451
23:12	23:14	2.0	187.82	154.92	76.29	78.79	38.94	47.72	47.74	47.746	34.65	38.0%		0.7219	0.6899	98.8%	0.1750	0.0083	24.440
23:14	23:16	2.0	187.98	154.84	76.08	78.62	38.68	47.61	47.66	47.672	33.78	37.9%		0.7219	0.6903	98.8%	0.1726	0.0081	24.434

Cm ft³													
A	B	E	J		D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
F	G			I									
VMc	VWc	Wood H2 Volume VWW	Inlet Air Moisture BWSi	Psycho BWSc	VWi	VMi	Ve	Cgas(wet)	Mass TGOC Mgas	Cgas(Dry)	Mass TGOC Mgas Accum	Emission Factor EF	Emission Factor EF Accum
dscf	scf	scf	%	%	scf	dscf	wscf	ppmv	lbm-C	ppmv	lbm-C	lbm/Mdbft	lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
17.309	7.121	1.405	1.218	29.148	0.043	3.518	4.965	76.3	1.2E-05	107.7	8.24E-04	1.0E-03	0.0704
17.309	7.122	1.394	1.199	29.150	0.042	3.488	4.921	76.5	1.2E-05	108.0	8.36E-04	1.0E-03	0.0714
17.312	7.124	1.365	1.199	29.154	0.042	3.478	4.878	76.7	1.2E-05	108.3	8.48E-04	1.0E-03	0.0724
17.331	7.112	1.374	1.184	29.096	0.043	3.578	4.976	76.7	1.2E-05	108.2	8.59E-04	1.0E-03	0.0734
17.376	7.087	1.402	1.179	28.971	0.044	3.718	5.149	76.9	1.2E-05	108.3	8.72E-04	1.1E-03	0.0744
17.428	7.051	1.371	1.165	28.804	0.043	3.622	5.019	77.2	1.2E-05	108.4	8.84E-04	1.0E-03	0.0755
17.470	7.025	1.350	1.150	28.678	0.041	3.526	4.898	77.2	1.2E-05	108.2	8.96E-04	1.0E-03	0.0765
17.500	7.014	1.392	1.122	28.614	0.042	3.709	5.125	77.2	1.2E-05	108.2	9.08E-04	1.1E-03	0.0775
17.543	6.989	1.408	1.100	28.488	0.041	3.716	5.164	77.4	1.2E-05	108.2	9.20E-04	1.1E-03	0.0786
17.562	6.971	**1.400**	**1.106**	**28.414**	0.041	3.628	5.067	**77.5**	1.2E-05	108.3	9.33E-04	1.0E-03	0.0796
17.564	6.971	1.382	1.126	28.414	0.040	3.525	4.945	77.7	1.2E-05	108.6	9.45E-04	1.0E-03	0.0806
17.551	6.986	1.382	1.143	28.471	0.043	3.681	5.106	77.7	1.2E-05	108.7	9.57E-04	1.1E-03	0.0817
17.574	6.962	1.350	1.149	28.373	0.040	3.464	4.857	77.8	1.2E-05	108.6	9.69E-04	1.0E-03	0.0827
17.561	6.971	1.249	1.152	28.416	0.037	3.150	4.433	78.2	1.1E-05	109.2	9.80E-04	9.2E-04	0.0836
17.542	6.993	1.168	1.144	28.503	0.035	3.035	4.235	78.3	1.0E-05	109.5	9.90E-04	8.8E-04	0.0845
17.548	6.989	1.128	1.139	28.485	0.033	2.901	4.063	78.6	9.9E-06	109.9	1.00E-03	8.5E-04	0.0854
17.544	6.993	1.181	1.149	28.500	0.034	2.924	4.151	78.8	1.0E-05	110.3	1.01E-03	8.7E-04	0.0862
17.505	7.020	1.236	1.170	28.624	0.037	3.087	4.371	78.9	1.1E-05	110.6	1.02E-03	9.2E-04	0.0871
17.476	7.038	1.296	1.192	28.710	0.041	3.384	4.734	79.1	1.2E-05	111.0	1.03E-03	1.0E-03	0.0881
17.482	7.019	1.385	1.202	28.647	0.042	3.477	4.926	79.2	1.2E-05	111.0	1.04E-03	1.0E-03	0.0892
17.448	7.031	1.476	1.203	28.722	0.045	3.736	5.270	79.2	1.3E-05	111.1	1.06E-03	1.1E-03	0.0903
17.431	7.037	1.498	1.203	28.760	0.047	3.877	5.423	79.2	1.3E-05	111.2	1.07E-03	1.1E-03	0.0914
17.442	7.024	1.444	1.208	28.711	0.046	3.802	5.283	79.3	1.3E-05	111.2	1.08E-03	1.1E-03	0.0926
17.472	7.003	1.458	1.217	28.614	0.047	3.829	5.326	79.5	1.3E-05	111.3	1.10E-03	1.1E-03	0.0937
17.495	6.988	1.440	1.212	28.542	0.046	3.789	5.257	79.6	1.3E-05	111.4	1.11E-03	1.1E-03	0.0948
17.524	6.977	1.403	1.208	28.477	0.046	3.783	5.221	79.5	1.3E-05	111.2	1.12E-03	1.1E-03	0.0959
17.566	6.947	1.387	1.212	28.341	0.045	3.661	5.090	79.5	1.3E-05	110.9	1.14E-03	1.1E-03	0.0970
17.577	6.938	1.440	1.204	28.302	0.046	3.745	5.226	79.4	1.3E-05	110.8	1.15E-03	1.1E-03	0.0981
17.576	6.944	1.426	1.205	28.319	0.045	3.704	5.184	79.4	1.3E-05	110.8	1.16E-03	1.1E-03	0.0992
17.565	6.946	1.437	1.205	28.338	0.045	3.694	5.193	79.7	1.3E-05	111.2	1.17E-03	1.1E-03	0.1003
17.540	6.954	1.456	1.206	28.391	0.045	3.708	5.224	79.6	1.3E-05	111.2	1.19E-03	1.1E-03	0.1014
17.511	6.968	1.490	1.197	28.465	0.046	3.802	5.355	79.6	1.3E-05	111.2	1.20E-03	1.1E-03	0.1025
17.486	6.977	1.455	1.182	28.520	0.046	3.840	5.358	79.8	1.3E-05	111.7	1.21E-03	1.1E-03	0.1037
17.492	6.953	1.499	1.188	28.445	0.048	4.001	5.558	79.6	1.4E-05	111.3	1.23E-03	1.2E-03	0.1048
17.510	6.925	1.499	1.200	28.341	0.049	4.049	5.600	79.6	1.4E-05	111.1	1.24E-03	1.2E-03	0.1060
17.539	6.893	1.509	1.191	28.214	0.050	4.136	5.695	79.7	1.4E-05	111.1	1.26E-03	1.2E-03	0.1072
17.578	6.854	1.505	1.170	28.054	0.050	4.196	5.737	79.8	1.4E-05	111.0	1.27E-03	1.2E-03	0.1084
17.635	6.810	1.513	1.152	27.859	0.049	4.195	5.737	80.0	1.4E-05	110.9	1.28E-03	1.2E-03	0.1097
17.683	6.782	1.496	1.134	27.721	0.046	4.024	5.551	80.1	1.4E-05	110.9	1.30E-03	1.2E-03	0.1109
17.695	6.786	1.532	1.147	27.719	0.048	4.119	5.681	80.2	1.4E-05	111.0	1.31E-03	1.2E-03	0.1121
17.707	6.791	1.574	1.157	27.720	0.050	4.252	5.868	80.0	1.5E-05	110.7	1.33E-03	1.2E-03	0.1133
17.717	6.789	1.609	1.178	27.704	0.051	4.317	5.993	80.1	1.5E-05	110.8	1.34E-03	1.3E-03	0.1146
17.703	6.788	1.633	1.197	27.718	0.053	4.345	6.051	80.0	1.5E-05	110.7	1.36E-03	1.3E-03	0.1159
17.677	6.794	1.632	1.202	27.765	0.053	4.352	6.058	79.9	1.5E-05	110.6	1.37E-03	1.3E-03	0.1172
17.655	6.796	1.632	1.196	27.794	0.055	4.505	6.203	79.9	1.5E-05	110.7	1.39E-03	1.3E-03	0.1185
17.674	6.765	1.634	1.182	27.682	0.054	4.481	6.174	80.0	1.5E-05	110.6	1.40E-03	1.3E-03	0.1198
17.686	6.748	1.593	1.165	27.616	0.052	4.396	6.018	79.8	1.5E-05	110.2	1.42E-03	1.3E-03	0.1211

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94	lbm	Starting Mass	
26.84	lbm	Ending Mass	
28.10	lbm	Total Mass Displaced	

0.9830	Meter (Y)		
29.9000	inHg		
101.25	kPa		

TGOC analyzer calib	Span	84	250.6	227.8 ppmv
	Zero	0	0.38	-3.8 ppmv
Load cell calibration	Span	50	50	50.12 lbm
	Zero	0	0.08	0.07 lbm

19.77	Start Cal Tim
22.45	End Cal Tim
DBFT	Chamber
11.714057	30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
23:16	23:18	2.0	187.39	154.71	75.52	78.42	38.98	47.46	47.59	47.600	32.70	37.8%		0.7219	0.6911	98.8%	0.1710	0.0081	24.456
23:18	23:20	2.0	186.92	154.55	75.34	78.53	39.06	47.40	47.52	47.528	32.50	37.6%		0.7219	0.6914	98.9%	0.1704	0.0080	24.474
23:20	23:22	2.0	186.75	154.36	75.30	78.71	39.17	47.30	47.45	47.455	33.23	37.5%		0.7219	0.6914	98.8%	0.1706	0.0080	24.480
23:22	23:24	2.0	186.78	154.21	75.37	78.37	38.53	47.26	47.38	47.384	32.20	37.4%		0.7219	0.6914	98.9%	0.1682	0.0079	24.479
23:24	23:26	2.0	187.03	154.21	75.58	78.53	39.08	47.23	47.30	47.313	32.13	37.2%		0.7219	0.6910	98.8%	0.1718	0.0081	24.470
23:26	23:28	2.0	187.40	154.35	76.32	78.47	39.76	47.27	47.23	47.241	32.81	37.1%		0.7219	0.6897	98.8%	0.1789	0.0084	24
23:28	23:30	2.0	187.73	154.43	76.24	78.64	39.66	47.14	47.16	47.168	32.96	37.0%		0.7219	0.6898	98.8%	0.1779	0.0084	24.[illegible]
23:30	23:32	2.0	187.49	154.31	75.81	78.63	39.35	47.09	47.09	47.097	32.24	36.9%		0.7219	0.6906	98.8%	0.1742	0.0082	24.452
23:32	23:34	2.0	187.53	154.37	75.93	78.40	39.80	47.03	47.02	47.025	32.73	36.7%		0.7219	0.6903	98.8%	0.1769	0.0083	24.451
23:34	23:36	2.0	187.43	154.38	76.02	78.63	39.55	46.96	46.94	46.953	32.89	36.6%		0.7219	0.6902	98.8%	0.1762	0.0083	24.455
23:36	23:38	2.0	187.43	154.22	75.75	78.56	39.51	46.88	46.87	46.884	31.34	36.5%		0.7219	0.6906	98.8%	0.1745	0.0082	24.454
23:38	23:40	2.0	187.57	153.96	75.78	78.58	39.71	46.80	46.81	46.816	30.58	36.3%		0.7219	0.6906	98.8%	0.1756	0.0083	24.449
23:40	23:42	2.0	187.73	153.87	75.87	78.53	39.67	46.65	46.74	46.748	31.18	36.2%		0.7219	0.6904	98.8%	0.1759	0.0083	24.443
23:42	23:44	2.0	187.40	153.70	75.59	78.52	39.48	46.48	46.67	46.681	30.29	36.1%		0.7219	0.6909	98.8%	0.1736	0.0082	24.456
23:44	23:46	2.0	187.21	153.55	75.46	78.34	38.96	46.36	46.60	46.614	30.32	36.0%		0.7219	0.6912	98.8%	0.1706	0.0080	24.463
23:46	23:48	2.0	187.22	153.49	75.62	78.25	38.79	46.26	46.54	46.547	30.72	35.8%		0.7219	0.6910	98.8%	0.1707	0.0080	24.463
23:48	23:50	2.0	187.25	153.55	75.70	78.12	39.09	46.21	46.47	46.476	32.26	35.7%		0.7219	0.6908	98.8%	0.1724	0.0081	24.461
23:50	23:52	2.0	187.31	153.48	75.86	78.02	38.98	46.18	46.40	46.406	31.68	35.6%		0.7219	0.6906	98.8%	0.1728	0.0081	24.459
23:52	23:54	2.0	187.37	153.47	75.91	77.69	38.79	46.12	46.33	46.338	30.97	35.5%		0.7219	0.6905	98.8%	0.1723	0.0081	24.457
23:54	23:56	2.0	187.34	153.47	75.82	77.92	38.80	46.09	46.26	46.270	30.60	35.3%		0.7219	0.6907	98.8%	0.1718	0.0081	24.458
23:56	23:58	2.0	187.38	153.41	75.79	78.00	38.76	46.07	46.19	46.203	30.68	35.2%		0.7219	0.6907	98.8%	0.1714	0.0081	24.457
23:58	00:00	2.0	187.27	153.32	75.75	77.84	38.57	46.01	46.13	46.136	30.10	35.1%		0.7219	0.6908	98.9%	0.1704	0.0080	24.460
00:00	00:02	2.0	186.98	153.23	75.38	77.55	38.54	45.88	46.06	46.072	29.36	35.0%		0.7219	0.6914	98.9%	0.1683	0.0079	24.472
00:02	00:04	2.0	186.91	153.15	75.74	77.54	38.46	45.89	46.00	46.007	29.45	34.9%		0.7219	0.6909	98.9%	0.1699	0.0080	24.474
00:04	00:06	2.0	187.12	153.17	75.90	77.41	38.25	45.81	45.93	45.940	30.38	34.7%		0.7219	0.6907	98.9%	0.1698	0.0080	24.466
00:06	00:08	2.0	187.04	153.18	75.91	77.47	38.45	45.71	45.86	45.873	30.43	34.6%		0.7219	0.6906	98.8%	0.1707	0.0081	24.469
00:08	00:10	2.0	186.97	153.17	75.95	77.49	38.47	45.65	45.80	45.805	30.60	34.5%		0.7219	0.6905	98.8%	0.1710	0.0081	24.472
00:10	00:12	2.0	187.21	153.11	76.20	77.56	38.48	45.64	45.73	45.737	30.97	34.4%		0.7219	0.6901	98.8%	0.1724	0.0081	[illegible]
00:12	00:14	2.0	187.43	153.04	76.07	77.81	38.49	45.52	45.66	45.667	31.73	34.2%		0.7219	0.6904	98.8%	0.1717	0.0081	24.455
00:14	00:16	2.0	187.34	152.90	75.94	77.58	38.58	45.43	45.59	45.599	30.75	34.1%		0.7219	0.6905	98.8%	0.1715	0.0081	24.458
00:16	00:18	2.0	187.45	152.80	75.99	77.70	38.27	45.38	45.52	45.533	30.36	34.0%		0.7219	0.6905	98.8%	0.1704	0.0080	24.454
00:18	00:20	2.0	187.56	152.65	75.96	77.54	38.21	45.30	45.45	45.465	30.62	33.9%		0.7219	0.6906	98.9%	0.1699	0.0080	24.449
00:20	00:22	2.0	187.39	152.62	75.55	77.63	38.61	45.17	45.39	45.399	30.12	33.8%		0.7219	0.6911	98.9%	0.1695	0.0080	24.456
00:22	00:24	2.0	187.15	152.58	75.71	77.52	38.61	45.18	45.33	45.336	28.33	33.6%		0.7219	0.6909	98.9%	0.1704	0.0080	24.465
00:24	00:26	2.0	187.49	152.65	75.94	77.41	38.50	45.12	45.26	45.275	27.83	33.5%		0.7219	0.6906	98.8%	0.1711	0.0081	24.452
00:26	00:28	2.0	187.49	152.60	75.99	77.49	38.71	45.10	45.20	45.214	27.58	33.4%		0.7219	0.6904	98.8%	0.1723	0.0081	24.452
00:28	00:30	2.0	187.44	152.58	75.85	77.50	38.82	45.00	45.14	45.155	26.97	33.3%		0.7219	0.6906	98.8%	0.1720	0.0081	24.454
00:30	00:32	2.0	187.27	152.57	76.10	77.49	38.37	44.99	45.08	45.095	27.42	33.2%		0.7219	0.6903	98.8%	0.1714	0.0081	24.461
00:32	00:34	2.0	187.73	152.63	76.41	77.25	38.27	44.99	45.02	45.034	27.44	33.1%		0.7219	0.6899	98.8%	0.1726	0.0081	24.443
00:34	00:36	2.0	187.91	152.62	76.46	77.25	38.12	44.97	44.96	44.975	26.84	33.0%		0.7219	0.6898	98.8%	0.1722	0.0081	24.437
00:36	00:38	2.0	187.73	152.43	76.16	77.26	38.36	44.85	44.90	44.915	27.24	32.9%		0.7219	0.6902	98.8%	0.1717	0.0081	24.443
00:38	00:40	2.0	187.45	152.31	76.03	77.10	38.46	44.75	44.84	44.854	27.45	32.8%		0.7219	0.6904	98.8%	0.1714	0.0081	24.454
00:40	00:42	2.0	187.74	152.28	76.19	77.02	38.72	44.76	44.78	44.795	27.12	32.7%		0.7219	0.6901	98.8%	0.1735	0.0082	24.443
00:42	00:44	2.0	187.79	152.18	76.15	76.85	38.20	44.65	44.73	44.736	26.52	32.6%		0.7219	0.6903	98.8%	0.1709	0.0081	24.441
00:44	00:46	2.0	187.47	151.88	75.79	76.81	38.06	44.52	44.67	44.676	27.26	32.4%		0.7219	0.6909	98.9%	0.1683	0.0079	24.453
00:46	00:48	2.0	187.52	151.76	75.92	76.92	38.34	44.49	44.61	44.616	27.18	32.3%		0.7219	0.6906	98.9%	0.1703	0.0080	24.451
00:48	00:50	2.0	187.86	151.78	76.14	76.91	38.38	44.51	44.55	44.557	27.18	32.2%		0.7219	0.6903	98.8%	0.1717	0.0081	24.438

Cm ft³													
A F	B G	E	J	I	D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
VMc dscf	VWc scf	Wood H2 Volume VWW scf	Inlet Air Moisture BWSi %	Psycho BWSc %	VWi scf	VMi dscf	Ve wscf	Cgas(wet) ppmv	Mass TGOC Mgas lbm-C	Cgas(Dry) ppmv	Mass TGOC Mgas Accum lbm-C	Emission Factor EF lbm/Mdbft	Emission Factor EF Accum lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
17.721	6.735	1.542	1.153	27.539	0.050	4.295	5.869	79.6	1.5E-05	109.8	1.43E-03	1.2E-03	0.1223
17.758	6.716	1.533	1.149	27.443	0.050	4.332	5.909	79.7	1.5E-05	109.9	1.45E-03	1.3E-03	0.1236
17.795	6.686	1.567	1.150	27.310	0.051	4.426	6.046	79.9	1.5E-05	109.9	1.46E-03	1.3E-03	0.1249
17.819	6.660	1.518	1.134	27.205	0.048	4.196	5.772	79.6	1.4E-05	109.3	1.48E-03	1.2E-03	0.1261
17.814	6.656	1.515	1.158	27.201	0.048	4.088	5.664	79.7	1.4E-05	109.5	1.49E-03	1.2E-03	0.1273
17.783	6.673	1.547	1.208	27.286	0.051	4.207	5.818	79.7	1.4E-05	109.6	1.51E-03	1.2E-03	0.1285
17.762	6.681	1.554	1.201	27.334	0.053	4.358	5.956	79.8	1.5E-05	109.9	1.52E-03	1.3E-03	0.1298
17.787	6.665	1.520	1.175	27.257	0.049	4.148	5.719	79.8	1.4E-05	109.8	1.53E-03	1.2E-03	0.1310
17.777	6.674	1.544	1.194	27.295	0.051	4.233	5.824	79.6	1.4E-05	109.5	1.55E-03	1.2E-03	0.1322
17.777	6.678	1.551	1.189	27.307	0.053	4.395	5.999	79.9	1.5E-05	109.8	1.56E-03	1.3E-03	0.1335
17.804	6.650	1.478	1.178	27.195	0.051	4.303	5.837	79.8	1.5E-05	109.6	1.58E-03	1.2E-03	0.1347
17.847	6.603	1.442	1.185	27.006	0.049	4.106	5.604	79.8	1.4E-05	109.3	1.59E-03	1.2E-03	0.1359
17.859	6.585	1.470	1.187	26.938	0.051	4.245	5.754	79.8	1.4E-05	109.2	1.61E-03	1.2E-03	0.1372
17.894	6.562	1.428	1.171	26.832	0.049	4.141	5.611	79.8	1.4E-05	109.0	1.62E-03	1.2E-03	0.1383
17.923	6.539	1.430	1.150	26.732	0.048	4.095	5.573	79.6	1.4E-05	108.6	1.63E-03	1.2E-03	0.1395
17.933	6.529	1.448	1.151	26.691	0.047	4.063	5.560	79.5	1.4E-05	108.4	1.65E-03	1.2E-03	0.1407
17.923	6.539	1.521	1.163	26.731	0.051	4.368	5.943	79.4	1.5E-05	108.3	1.66E-03	1.3E-03	0.1420
17.933	6.526	1.494	1.166	26.681	0.050	4.260	5.807	79.3	1.4E-05	108.1	1.68E-03	1.2E-03	0.1432
17.935	6.522	1.460	1.163	26.666	0.049	4.141	5.648	78.9	1.4E-05	107.7	1.69E-03	1.2E-03	0.1444
17.934	6.524	1.443	1.159	26.674	0.049	4.153	5.646	79.2	1.4E-05	108.0	1.71E-03	1.2E-03	0.1456
17.944	6.512	1.446	1.157	26.627	0.049	4.190	5.682	79.3	1.4E-05	108.0	1.72E-03	1.2E-03	0.1468
17.962	6.498	1.420	1.150	26.566	0.048	4.115	5.571	79.1	1.4E-05	107.7	1.73E-03	1.2E-03	0.1479
17.983	6.488	1.385	1.135	26.514	0.046	4.024	5.452	78.8	1.3E-05	107.3	1.75E-03	1.1E-03	0.1491
17.998	6.476	1.389	1.146	26.462	0.046	3.982	5.425	78.8	1.3E-05	107.2	1.76E-03	1.1E-03	0.1502
17.991	6.475	1.433	1.146	26.467	0.048	4.100	5.577	78.7	1.4E-05	107.0	1.77E-03	1.2E-03	0.1514
17.990	6.479	1.435	1.152	26.478	0.048	4.123	5.604	78.8	1.4E-05	107.1	1.79E-03	1.2E-03	0.1526
17.994	6.478	1.443	1.154	26.473	0.049	4.197	5.698	78.8	1.4E-05	107.2	1.80E-03	1.2E-03	0.1537
17.999	6.464	1.461	1.165	26.426	0.050	4.273	5.792	78.9	1.4E-05	107.2	1.82E-03	1.2E-03	0.1550
18.007	6.448	1.496	1.159	26.367	0.052	4.433	5.977	79.1	1.5E-05	107.5	1.83E-03	1.3E-03	0.1562
18.032	6.426	1.450	1.157	26.272	0.050	4.285	5.789	78.9	1.4E-05	107.0	1.84E-03	1.2E-03	0.1574
18.045	6.409	1.432	1.150	26.207	0.050	4.295	5.782	79.0	1.4E-05	107.1	1.86E-03	1.2E-03	0.1587
18.068	6.381	1.444	1.147	26.100	0.049	4.253	5.740	78.9	1.4E-05	106.7	1.87E-03	1.2E-03	0.1599
18.078	6.378	1.420	1.143	26.079	0.048	4.185	5.645	79.0	1.4E-05	106.8	1.89E-03	1.2E-03	0.1610
18.090	6.376	1.336	1.149	26.060	0.045	3.877	5.270	78.9	1.3E-05	106.6	1.90E-03	1.1E-03	0.1622
18.071	6.381	1.312	1.155	26.096	0.045	3.877	5.235	78.7	1.3E-05	106.6	1.91E-03	1.1E-03	0.1632
18.078	6.374	1.300	1.163	26.068	0.045	3.836	5.180	78.8	1.3E-05	106.6	1.93E-03	1.1E-03	0.1643
18.084	6.370	1.272	1.161	26.050	0.044	3.736	5.045	78.8	1.2E-05	106.6	1.94E-03	1.1E-03	0.1654
18.089	6.372	1.293	1.157	26.049	0.044	3.765	5.119	78.8	1.3E-05	106.6	1.95E-03	1.1E-03	0.1665
18.069	6.374	1.294	1.166	26.076	0.045	3.805	5.150	78.6	1.3E-05	106.3	1.96E-03	1.1E-03	0.1675
18.066	6.370	1.266	1.164	26.068	0.045	3.860	5.164	78.6	1.3E-05	106.3	1.98E-03	1.1E-03	0.1686
18.102	6.342	1.284	1.159	25.944	0.046	3.885	5.205	78.6	1.3E-05	106.2	1.99E-03	1.1E-03	0.1697
18.129	6.325	1.294	1.157	25.866	0.045	3.872	5.223	78.5	1.3E-05	105.8	2.00E-03	1.1E-03	0.1708
18.127	6.315	1.279	1.172	25.838	0.046	3.884	5.211	78.4	1.3E-05	105.7	2.01E-03	1.1E-03	0.1719
18.143	6.298	1.250	1.154	25.768	0.046	3.957	5.241	78.2	1.3E-05	105.4	2.03E-03	1.1E-03	0.1730
18.199	6.254	1.285	1.136	25.575	0.046	3.969	5.303	78.2	1.3E-05	105.1	2.04E-03	1.1E-03	0.1741
18.218	6.233	1.281	1.149	25.492	0.045	3.872	5.211	78.3	1.3E-05	105.1	2.05E-03	1.1E-03	0.1752
18.207	6.231	1.282	1.159	25.496	0.047	4.018	5.346	78.3	1.3E-05	105.1	2.07E-03	1.1E-03	0.1763

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94	lbm	Starting Mass	
26.84	lbm	Ending Mass	
28.10	lbm	Total Mass Displaced	

0.9830	Meter (Y)		
29.9000	inHg		
101.25	kPa		

TGOC analyzer calib	Span	84	250.6	227.8 ppmv
	Zero	0	0.38	-3.8 ppmv
Load cell calibration	Span	50	50	50.12 lbm
	Zero	0	0.08	0.07 lbm

19.77	Start Cal Tim
22.45	End Cal Tim
DBFT	Chamber
11.714057	30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
00:50	00:52	2.0	187.84	151.61	75.83	76.79	38.40	44.36	44.49	44.497	27.12	32.1%		0.7219	0.6907	98.9%	0.1701	0.0080	24.439
00:52	00:54	2.0	187.51	151.47	75.65	76.65	38.21	44.24	44.42	44.435	28.04	32.0%		0.7219	0.6911	98.9%	0.1683	0.0079	24.452
00:54	00:56	2.0	187.65	151.64	75.99	76.67	38.41	44.26	44.36	44.374	27.83	31.9%		0.7219	0.6905	98.8%	0.1710	0.0081	24.446
00:56	00:58	2.0	187.68	151.59	76.03	76.59	38.35	44.23	44.30	44.313	27.56	31.8%		0.7219	0.6904	98.8%	0.1710	0.0081	24.445
00:58	01:00	2.0	187.44	151.51	75.87	76.48	38.29	44.12	44.24	44.252	27.62	31.7%		0.7219	0.6907	98.9%	0.1698	0.0080	24.454
01:00	01:02	2.0	187.42	151.53	76.10	76.67	38.30	44.09	44.18	44.193	26.89	31.6%		0.7219	0.6903	98.8%	0.1711	0.0081	24
01:02	01:04	2.0	187.82	151.57	76.42	76.33	38.25	44.10	44.13	44.137	25.52	31.5%		0.7219	0.6898	98.8%	0.1726	0.0081	24.4...
01:04	01:06	2.0	187.71	151.43	76.05	76.44	38.20	43.98	44.07	44.080	25.68	31.4%		0.7219	0.6904	98.8%	0.1704	0.0080	24.444
01:06	01:08	2.0	187.53	151.45	76.00	76.37	38.21	43.88	44.01	44.022	26.29	31.3%		0.7219	0.6905	98.9%	0.1701	0.0080	24.451
01:08	01:10	2.0	187.75	151.49	76.30	76.30	38.28	43.84	43.95	43.966	25.72	31.1%		0.7219	0.6900	98.8%	0.1721	0.0081	24.442
01:10	01:12	2.0	187.69	151.39	76.13	76.27	38.09	43.74	43.90	43.909	25.87	31.0%		0.7219	0.6903	98.9%	0.1703	0.0080	24.445
01:12	01:14	2.0	187.52	151.28	75.90	76.20	38.40	43.71	43.84	43.850	26.46	30.9%		0.7219	0.6906	98.8%	0.1705	0.0080	24.451
01:14	01:16	2.0	187.62	151.23	76.24	76.12	37.99	43.71	43.78	43.791	26.96	30.8%		0.7219	0.6902	98.8%	0.1705	0.0080	24.447
01:16	01:18	2.0	187.73	151.10	76.17	76.13	38.01	43.64	43.72	43.731	27.20	30.7%		0.7219	0.6903	98.9%	0.1702	0.0080	24.443
01:18	01:20	2.0	187.65	150.97	76.08	76.21	38.21	43.60	43.66	43.673	26.37	30.6%		0.7219	0.6904	98.8%	0.1706	0.0080	24.446
01:20	01:22	2.0	187.67	150.81	76.10	76.31	38.36	43.58	43.60	43.615	26.25	30.5%		0.7219	0.6903	98.8%	0.1713	0.0081	24.445
01:22	01:24	2.0	187.57	150.68	76.17	76.08	38.50	43.50	43.54	43.556	26.99	30.4%		0.7219	0.6902	98.8%	0.1724	0.0081	24.449
01:24	01:26	2.0	187.41	150.61	75.97	76.05	38.33	43.44	43.48	43.495	27.46	30.3%		0.7219	0.6905	98.8%	0.1705	0.0080	24.455
01:26	01:28	2.0	187.52	150.64	75.87	76.07	38.29	43.37	43.42	43.436	26.89	30.2%		0.7219	0.6907	98.9%	0.1698	0.0080	24.451
01:28	01:30	2.0	187.35	150.53	75.68	76.05	38.16	43.27	43.36	43.375	27.56	30.1%		0.7219	0.6910	98.9%	0.1682	0.0079	24.458
01:30	01:32	2.0	187.41	150.45	75.65	75.63	38.07	43.21	43.30	43.311	29.39	30.0%		0.7219	0.6911	98.9%	0.1677	0.0079	24.456
01:32	01:34	2.0	187.47	150.42	75.61	75.72	38.12	43.12	43.24	43.248	28.44	29.8%		0.7219	0.6911	98.9%	0.1677	0.0079	24.453
01:34	01:36	2.0	187.47	150.38	75.75	75.65	38.46	43.02	43.17	43.186	27.92	29.7%		0.7219	0.6909	98.9%	0.1699	0.0080	24.453
01:36	01:38	2.0	187.37	150.26	75.94	75.58	38.49	42.96	43.11	43.124	28.37	29.6%		0.7219	0.6906	98.8%	0.1711	0.0081	24.457
01:38	01:40	2.0	187.53	150.28	76.26	75.74	38.52	42.90	43.05	43.060	28.91	29.5%		0.7219	0.6900	98.8%	0.1729	0.0082	24.451
01:40	01:42	2.0	187.66	150.36	76.60	75.68	38.46	42.88	42.99	42.999	27.95	29.4%		0.7219	0.6895	98.8%	0.1745	0.0082	24.446
01:42	01:44	2.0	187.53	150.38	76.72	75.26	38.51	42.87	42.92	42.937	27.96	29.3%		0.7219	0.6893	98.8%	0.1754	0.0083	24.451
01:44	01:46	2.0	187.73	150.39	77.09	75.15	38.70	42.88	42.86	42.874	28.79	29.2%		0.7219	0.6887	98.8%	0.1783	0.0084	2...
01:46	01:48	2.0	187.71	150.24	76.96	75.06	38.41	42.76	42.80	42.812	27.90	29.0%		0.7219	0.6890	98.8%	0.1763	0.0083	24.444
01:48	01:50	2.0	187.80	150.13	77.08	75.10	38.35	42.79	42.74	42.751	27.68	28.9%		0.7219	0.6888	98.8%	0.1767	0.0083	24.440
01:50	01:52	2.0	187.81	149.99	76.83	74.93	38.25	42.68	42.68	42.691	27.40	28.8%		0.7219	0.6892	98.8%	0.1748	0.0082	24.440
01:52	01:54	2.0	187.69	149.87	76.66	75.48	38.34	42.61	42.62	42.631	27.18	28.7%		0.7219	0.6895	98.8%	0.1743	0.0082	24.445
01:54	01:56	2.0	187.96	149.84	76.48	75.12	38.52	42.57	42.56	42.572	26.92	28.6%		0.7219	0.6897	98.8%	0.1741	0.0082	24.434
01:56	01:58	2.0	187.91	149.71	76.16	75.01	38.62	42.52	42.50	42.510	27.88	28.5%		0.7219	0.6902	98.8%	0.1728	0.0081	24.436
01:58	02:00	2.0	188.03	149.70	76.24	75.00	38.34	42.48	42.44	42.451	27.00	28.4%		0.7219	0.6901	98.8%	0.1720	0.0081	24.432
02:00	02:02	2.0	187.87	149.71	76.03	74.87	38.14	42.39	42.38	42.390	27.57	28.3%		0.7219	0.6905	98.9%	0.1700	0.0080	24.438
02:02	02:04	2.0	187.95	149.59	76.11	74.85	38.25	42.33	42.32	42.329	27.72	28.2%		0.7219	0.6903	98.8%	0.1709	0.0081	24.435
02:04	02:06	2.0	187.86	149.37	76.04	74.70	38.43	42.19	42.25	42.268	27.71	28.1%		0.7219	0.6904	98.8%	0.1713	0.0081	24.438
02:06	02:08	2.0	187.69	149.11	76.05	74.65	38.38	42.11	42.20	42.208	27.09	27.9%		0.7219	0.6904	98.8%	0.1712	0.0081	24.445
02:08	02:10	2.0	187.71	148.97	75.93	74.62	38.32	42.01	42.13	42.148	27.44	27.8%		0.7219	0.6906	98.9%	0.1703	0.0080	24.444
02:10	02:12	2.0	187.40	148.69	75.58	74.71	38.13	41.87	42.08	42.090	26.51	27.7%		0.7219	0.6912	98.9%	0.1676	0.0079	24.456
02:12	02:14	2.0	187.50	148.69	75.52	74.68	38.23	41.80	42.02	42.032	26.00	27.6%		0.7219	0.6912	98.9%	0.1677	0.0079	24.452
02:14	02:16	2.0	187.29	148.61	75.29	74.41	38.02	41.73	41.96	41.976	25.47	27.5%		0.7219	0.6917	98.9%	0.1656	0.0078	24.460
02:16	02:18	2.0	187.22	148.67	75.50	74.56	38.08	41.71	41.91	41.920	25.37	27.4%		0.7219	0.6913	98.9%	0.1669	0.0079	24.462
02:18	02:20	2.0	187.15	148.77	75.59	74.49	38.03	41.63	41.85	41.865	25.10	27.3%		0.7219	0.6912	98.9%	0.1672	0.0079	24.465
02:20	02:22	2.0	187.22	148.74	75.81	74.33	38.15	41.61	41.80	41.810	25.19	27.2%		0.7219	0.6908	98.9%	0.1688	0.0080	24.462
02:22	02:24	2.0	187.35	148.64	75.95	74.01	38.25	41.58	41.74	41.753	25.70	27.1%		0.7219	0.6906	98.9%	0.1701	0.0080	24.458

Cm ft³													
A F	B G	E	J	I	D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
VMc dscf	VWc scf	Wood H2 Volume VWW scf	Inlet Air Moisture BWSi %	Psycho BWSc %	VWi scf	VMi dscf	Ve wscf	Cgas(wet) ppmv	Mass TGOC Mgas lbm-C	Cgas(Dry) ppmv	Mass TGOC Mgas Accum lbm-C	Emission Factor EF lbm/Mdbft	Emission Factor EF Accum lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
18.236	6.203	1.279	1.148	25.382	0.046	3.998	5.310	78.2	1.3E-05	104.8	2.08E-03	1.1E-03	0.1774
18.267	6.185	1.322	1.135	25.294	0.045	3.906	5.278	78.0	1.3E-05	104.5	2.09E-03	1.1E-03	0.1785
18.235	6.211	1.312	1.154	25.406	0.047	4.029	5.390	78.1	1.3E-05	104.7	2.10E-03	1.1E-03	0.1796
18.243	6.203	1.299	1.154	25.373	0.047	4.018	5.355	78.0	1.3E-05	104.5	2.12E-03	1.1E-03	0.1807
18.261	6.193	1.303	1.146	25.324	0.046	3.959	5.307	77.9	1.3E-05	104.3	2.13E-03	1.1E-03	0.1818
18.259	6.196	1.268	1.155	25.338	0.045	3.849	5.177	78.1	1.3E-05	104.6	2.14E-03	1.1E-03	0.1829
18.243	6.197	1.203	1.166	25.355	0.045	3.775	5.019	77.7	1.2E-05	104.2	2.15E-03	1.0E-03	0.1839
18.268	6.176	1.211	1.150	25.267	0.043	3.691	4.938	77.9	1.2E-05	104.2	2.17E-03	1.0E-03	0.1850
18.269	6.182	1.240	1.148	25.282	0.044	3.767	5.060	77.8	1.2E-05	104.1	2.18E-03	1.0E-03	0.1860
18.257	6.185	1.213	1.162	25.304	0.045	3.793	5.048	77.7	1.2E-05	104.1	2.19E-03	1.0E-03	0.1870
18.276	6.169	1.220	1.150	25.235	0.045	3.826	5.084	77.7	1.2E-05	103.9	2.20E-03	1.1E-03	0.1881
18.298	6.153	1.248	1.151	25.166	0.045	3.881	5.177	77.6	1.3E-05	103.8	2.22E-03	1.1E-03	0.1892
18.302	6.145	1.271	1.151	25.135	0.047	4.035	5.357	77.6	1.3E-05	103.6	2.23E-03	1.1E-03	0.1903
18.322	6.122	1.283	1.149	25.044	0.047	4.083	5.411	77.6	1.3E-05	103.5	2.24E-03	1.1E-03	0.1914
18.345	6.101	1.243	1.152	24.958	0.047	4.009	5.300	77.7	1.3E-05	103.5	2.25E-03	1.1E-03	0.1925
18.371	6.075	1.238	1.157	24.850	0.047	3.981	5.261	77.8	1.3E-05	103.5	2.27E-03	1.1E-03	0.1936
18.394	6.056	1.272	1.164	24.768	0.048	4.060	5.375	77.5	1.3E-05	103.1	2.28E-03	1.1E-03	0.1947
18.408	6.047	1.295	1.151	24.727	0.047	4.069	5.415	77.5	1.3E-05	103.0	2.29E-03	1.1E-03	0.1958
18.402	6.049	1.268	1.146	24.740	0.047	4.079	5.388	77.6	1.3E-05	103.0	2.31E-03	1.1E-03	0.1969
18.422	6.035	1.300	1.135	24.676	0.048	4.182	5.532	77.5	1.3E-05	102.9	2.32E-03	1.1E-03	0.1981
18.435	6.021	1.386	1.131	24.620	0.051	4.430	5.869	77.1	1.4E-05	102.3	2.33E-03	1.2E-03	0.1993
18.439	6.014	1.341	1.131	24.595	0.049	4.291	5.681	77.2	1.4E-05	102.4	2.35E-03	1.2E-03	0.2004
18.445	6.008	1.317	1.146	24.571	0.050	4.285	5.647	77.1	1.4E-05	102.3	2.36E-03	1.2E-03	0.2016
18.466	5.991	1.338	1.155	24.497	0.050	4.270	5.663	77.1	1.4E-05	102.1	2.37E-03	1.2E-03	0.2027
18.460	5.991	1.363	1.168	24.503	0.051	4.293	5.711	77.2	1.4E-05	102.3	2.39E-03	1.2E-03	0.2039
18.443	6.003	1.318	1.179	24.554	0.050	4.188	5.551	77.2	1.3E-05	102.3	2.40E-03	1.1E-03	0.2051
18.444	6.007	1.318	1.185	24.566	0.050	4.202	5.578	76.8	1.3E-05	101.8	2.42E-03	1.1E-03	0.2062
18.438	6.005	1.358	1.206	24.567	0.054	4.451	5.862	76.7	1.4E-05	101.6	2.43E-03	1.2E-03	0.2074
18.462	5.982	1.316	1.192	24.473	0.052	4.313	5.684	76.6	1.4E-05	101.4	2.44E-03	1.2E-03	0.2086
18.477	5.963	1.305	1.195	24.398	0.052	4.320	5.678	76.6	1.4E-05	101.3	2.46E-03	1.2E-03	0.2097
18.500	5.940	1.292	1.182	24.306	0.051	4.280	5.619	76.5	1.3E-05	101.0	2.47E-03	1.1E-03	0.2109
18.523	5.922	1.282	1.178	24.227	0.050	4.196	5.538	77.0	1.3E-05	101.6	2.48E-03	1.1E-03	0.2120
18.521	5.914	1.269	1.176	24.202	0.050	4.239	5.557	76.7	1.3E-05	101.1	2.50E-03	1.1E-03	0.2131
18.543	5.893	1.315	1.167	24.116	0.051	4.306	5.676	76.5	1.4E-05	100.9	2.51E-03	1.2E-03	0.2143
18.542	5.890	1.273	1.162	24.109	0.049	4.149	5.465	76.5	1.3E-05	100.9	2.52E-03	1.1E-03	0.2154
18.544	5.894	1.300	1.148	24.119	0.051	4.351	5.705	76.4	1.4E-05	100.7	2.54E-03	1.2E-03	0.2166
18.561	5.873	1.307	1.154	24.037	0.052	4.470	5.826	76.4	1.4E-05	100.6	2.55E-03	1.2E-03	0.2177
18.598	5.840	1.307	1.156	23.898	0.053	4.534	5.888	76.3	1.4E-05	100.2	2.56E-03	1.2E-03	0.2189
18.642	5.802	1.277	1.156	23.737	0.051	4.384	5.713	76.2	1.4E-05	99.9	2.58E-03	1.2E-03	0.2201
18.664	5.780	1.294	1.149	23.646	0.053	4.575	5.910	76.2	1.4E-05	99.8	2.59E-03	1.2E-03	0.2213
18.716	5.740	1.250	1.130	23.470	0.048	4.232	5.534	76.3	1.3E-05	99.7	2.61E-03	1.1E-03	0.2224
18.713	5.739	1.226	1.131	23.471	0.048	4.215	5.482	76.3	1.3E-05	99.6	2.62E-03	1.1E-03	0.2235
18.730	5.729	1.201	1.116	23.423	0.045	4.019	5.263	76.0	1.2E-05	99.2	2.63E-03	1.1E-03	0.2246
18.722	5.741	1.196	1.126	23.467	0.045	3.963	5.202	76.1	1.2E-05	99.5	2.64E-03	1.1E-03	0.2256
18.708	5.758	1.183	1.128	23.534	0.046	4.023	5.255	76.1	1.2E-05	99.5	2.66E-03	1.1E-03	0.2267
18.711	5.751	1.188	1.139	23.511	0.047	4.109	5.349	75.9	1.3E-05	99.2	2.67E-03	1.1E-03	0.2278
18.725	5.733	1.212	1.148	23.439	0.048	4.171	5.431	75.6	1.3E-05	98.7	2.68E-03	1.1E-03	0.2289

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94	lbm	Starting Mass	
26.84	lbm	Ending Mass	
28.10	lbm	Total Mass Displaced	

0.9830	Meter (Y)		
29.9000	inHg		
101.25	kPa		

TGOC analyzer calib	Span	84	250.6	227.8 ppmv
	Zero	0	0.38	-3.8 ppmv
Load cell calibration	Span	50	50	50.12 lbm
	Zero	0	0.08	0.07 lbm

19.77	Start.Cal Tim
22.45	End Cal Tim
DBFT	Chamber
11.714057	30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
02:24	02:26	2.0	187.33	148.57	76.12	73.96	38.03	41.52	41.68	41.695	26.10	27.0%		0.7219	0.6904	98.9%	0.1700	0.0080	24.458
02:26	02:28	2.0	187.62	148.59	76.41	74.03	38.09	41.47	41.62	41.638	26.26	26.9%		0.7219	0.6899	98.8%	0.1718	0.0081	24.447
02:28	02:30	2.0	187.53	148.36	76.13	73.93	37.88	41.39	41.57	41.582	25.21	26.8%		0.7219	0.6904	98.9%	0.1694	0.0080	24.451
02:30	02:32	2.0	187.79	148.33	76.27	73.93	37.97	41.37	41.51	41.525	25.87	26.7%		0.7219	0.6902	98.8%	0.1705	0.0080	24.441
02:32	02:34	2.0	187.74	148.24	76.03	73.91	37.74	41.30	41.46	41.470	25.22	26.6%		0.7219	0.6906	98.9%	0.1682	0.0079	24.443
02:34	02:36	2.0	187.63	148.13	76.12	73.66	37.95	41.29	41.40	41.415	24.92	26.5%		0.7219	0.6904	98.9%	0.1696	0.0080	24
02:36	02:38	2.0	187.46	147.92	75.82	73.68	38.04	41.20	41.34	41.359	25.28	26.4%		0.7219	0.6908	98.9%	0.1684	0.0079	24.[illegible]
02:38	02:40	2.0	187.45	147.83	75.89	73.54	37.96	41.21	41.29	41.303	25.52	26.3%		0.7219	0.6907	98.9%	0.1684	0.0079	24.454
02:40	02:42	2.0	187.47	147.70	75.75	73.70	38.01	41.12	41.23	41.247	25.54	26.2%		0.7219	0.6909	98.9%	0.1679	0.0079	24.453
02:42	02:44	2.0	187.54	147.62	75.85	73.64	38.25	41.08	41.18	41.191	25.03	26.1%		0.7219	0.6907	98.9%	0.1695	0.0080	24.451
02:44	02:46	2.0	187.65	147.53	75.99	73.87	37.87	41.01	41.12	41.136	25.29	26.0%		0.7219	0.6906	98.9%	0.1686	0.0079	24.446
02:46	02:48	2.0	187.78	147.37	76.17	73.40	37.92	41.00	41.07	41.082	24.36	25.9%		0.7219	0.6903	98.9%	0.1698	0.0080	24.441
02:48	02:50	2.0	187.86	147.22	76.07	73.58	38.09	40.91	41.02	41.030	23.84	25.8%		0.7219	0.6904	98.9%	0.1700	0.0080	24.438
02:50	02:52	2.0	187.81	147.14	76.15	73.41	38.09	40.89	40.96	40.977	23.86	25.7%		0.7219	0.6903	98.8%	0.1704	0.0080	24.440
02:52	02:54	2.0	187.68	146.97	76.17	73.30	38.13	40.87	40.91	40.927	22.84	25.6%		0.7219	0.6903	98.8%	0.1707	0.0081	24.445
02:54	02:56	2.0	187.84	146.89	76.15	73.12	37.81	40.84	40.86	40.877	22.40	25.5%		0.7219	0.6904	98.9%	0.1692	0.0080	24.439
02:56	02:58	2.0	187.75	146.81	75.92	73.12	37.68	40.74	40.81	40.829	22.06	25.4%		0.7219	0.6907	98.9%	0.1674	0.0079	24.443
02:58	03:00	2.0	187.77	146.73	76.05	72.93	37.85	40.70	40.76	40.779	22.63	25.3%		0.7219	0.6905	98.9%	0.1688	0.0080	24.442
03:00	03:02	2.0	187.56	146.59	75.92	72.93	37.96	40.64	40.71	40.730	22.38	25.3%		0.7219	0.6907	98.9%	0.1686	0.0079	24.450
03:02	03:04	2.0	187.65	146.52	76.06	73.05	38.10	40.58	40.66	40.679	22.83	25.2%		0.7219	0.6904	98.9%	0.1700	0.0080	24.446
03:04	03:06	2.0	187.59	146.44	76.19	72.88	37.83	40.53	40.61	40.628	23.25	25.1%		0.7219	0.6903	98.9%	0.1695	0.0080	24.449
03:06	03:08	2.0	187.68	146.34	76.35	72.80	37.86	40.52	40.56	40.577	23.30	25.0%		0.7219	0.6900	98.8%	0.1705	0.0080	24.445
03:08	03:10	2.0	187.82	146.33	76.29	72.92	38.13	40.50	40.51	40.526	22.91	24.9%		0.7219	0.6901	98.8%	0.1713	0.0081	24.440
03:10	03:12	2.0	187.97	146.31	76.34	72.85	38.40	40.46	40.46	40.478	22.05	24.8%		0.7219	0.6899	98.8%	0.1728	0.0081	24.434
03:12	03:14	2.0	187.98	146.27	76.39	72.70	38.06	40.41	40.41	40.428	22.54	24.7%		0.7219	0.6899	98.8%	0.1716	0.0081	24.434
03:14	03:16	2.0	187.86	146.12	76.28	72.76	38.01	40.37	40.36	40.380	22.00	24.6%		0.7219	0.6901	98.8%	0.1708	0.0081	24.438
03:16	03:18	2.0	187.80	146.06	76.32	72.73	38.17	40.30	40.32	40.331	22.29	24.5%		0.7219	0.6900	98.8%	0.1717	0.0081	24.440
03:18	03:20	2.0	187.63	145.95	76.43	72.56	38.31	40.23	40.27	40.282	21.95	24.4%		0.7219	0.6898	98.8%	0.1729	0.0082	[illegible]
03:20	03:22	2.0	187.69	145.81	76.54	72.64	38.17	40.18	40.22	40.232	22.75	24.3%		0.7219	0.6897	98.8%	0.1729	0.0082	24.445
03:22	03:24	2.0	187.72	145.67	76.69	72.54	37.77	40.14	40.17	40.183	22.30	24.3%		0.7219	0.6895	98.8%	0.1719	0.0081	24.444
03:24	03:26	2.0	187.66	145.47	76.68	72.38	37.94	40.06	40.12	40.134	22.35	24.2%		0.7219	0.6895	98.8%	0.1726	0.0081	24.446
03:26	03:28	2.0	187.74	145.33	76.58	72.51	37.94	40.00	40.07	40.086	21.86	24.1%		0.7219	0.6897	98.8%	0.1720	0.0081	24.443
03:28	03:30	2.0	187.69	145.25	76.53	72.33	38.19	39.97	40.02	40.037	22.20	24.0%		0.7219	0.6897	98.8%	0.1729	0.0082	24.445
03:30	03:32	2.0	187.70	145.08	76.32	72.40	38.39	39.87	39.97	39.989	21.56	23.9%		0.7219	0.6900	98.8%	0.1726	0.0081	24.444
03:32	03:34	2.0	187.79	145.03	76.27	72.40	38.16	39.82	39.93	39.941	21.78	23.8%		0.7219	0.6901	98.8%	0.1714	0.0081	24.441
03:34	03:36	2.0	187.81	144.91	76.23	72.18	38.25	39.79	39.88	39.892	22.24	23.7%		0.7219	0.6901	98.8%	0.1716	0.0081	24.440
03:36	03:38	2.0	187.79	144.91	76.23	72.14	38.06	39.75	39.83	39.843	22.24	23.6%		0.7219	0.6902	98.8%	0.1707	0.0081	24.441
03:38	03:40	2.0	187.78	144.75	76.14	71.96	37.95	39.68	39.78	39.796	21.47	23.6%		0.7219	0.6903	98.9%	0.1697	0.0080	24.441
03:40	03:42	2.0	187.71	144.62	76.11	71.69	38.31	39.62	39.73	39.749	21.57	23.5%		0.7219	0.6903	98.8%	0.1712	0.0081	24.444
03:42	03:44	2.0	187.54	144.45	76.09	71.72	38.32	39.56	39.69	39.702	21.35	23.4%		0.7219	0.6904	98.8%	0.1711	0.0081	24.450
03:44	03:46	2.0	187.34	144.39	75.94	71.67	38.35	39.49	39.64	39.655	21.37	23.3%		0.7219	0.6906	98.8%	0.1705	0.0080	24.458
03:46	03:48	2.0	187.28	144.22	75.87	71.54	38.15	39.42	39.59	39.607	21.70	23.2%		0.7219	0.6907	98.9%	0.1692	0.0080	24.460
03:48	03:50	2.0	187.37	144.07	75.97	71.39	38.27	39.41	39.54	39.558	22.37	23.1%		0.7219	0.6905	98.9%	0.1703	0.0080	24.457
03:50	03:52	2.0	187.43	143.87	76.05	71.65	38.41	39.41	39.49	39.507	22.78	23.0%		0.7219	0.6904	98.8%	0.1713	0.0081	24.455
03:52	03:54	2.0	187.45	143.71	76.05	71.42	38.47	39.35	39.44	39.456	23.24	22.9%		0.7219	0.6904	98.8%	0.1716	0.0081	24.454
03:54	03:56	2.0	187.60	143.48	76.36	71.35	38.38	39.32	39.39	39.405	23.20	22.8%		0.7219	0.6899	98.8%	0.1728	0.0081	24.448
03:56	03:58	2.0	187.69	143.11	76.57	71.34	38.33	39.29	39.34	39.354	23.42	22.7%		0.7219	0.6896	98.8%	0.1737	0.0082	24.445

Cm ft³													
A	B	E	J	I	D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
F	G												
VMc	VWc	Wood H2 Volume VWW	Inlet Air Moisture BWSi	Psycho BWSc	VWi	VMi	Ve	Cgas(wet)	Mass TGOC Mgas	Cgas(Dry)	Mass TGOC Mgas Accum	Emission Factor EF	Emission Factor EF Accum
dscf	scf	scf	%	%	scf	dscf	wscf	ppmv	lbm-C	ppmv	lbm-C	lbm/Mdbft	lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
18.736	5.722	1.231	1.148	23.396	0.049	4.181	5.472	75.6	1.3E-05	98.6	2.69E-03	1.1E-03	0.2300
18.726	5.721	1.238	1.161	23.402	0.052	4.404	5.690	75.6	1.3E-05	98.7	2.71E-03	1.1E-03	0.2311
18.764	5.687	1.189	1.144	23.261	0.048	4.116	5.363	75.5	1.3E-05	98.4	2.72E-03	1.1E-03	0.2322
18.763	5.678	1.220	1.151	23.231	0.050	4.263	5.530	75.5	1.3E-05	98.4	2.73E-03	1.1E-03	0.2333
18.778	5.665	1.189	1.136	23.178	0.048	4.195	5.428	75.5	1.3E-05	98.3	2.75E-03	1.1E-03	0.2344
18.798	5.649	1.175	1.145	23.106	0.049	4.234	5.451	75.3	1.3E-05	97.9	2.76E-03	1.1E-03	0.2355
18.834	5.620	1.192	1.137	22.982	0.049	4.230	5.471	75.3	1.3E-05	97.8	2.77E-03	1.1E-03	0.2366
18.848	5.606	1.204	1.137	22.926	0.050	4.325	5.579	75.2	1.3E-05	97.5	2.78E-03	1.1E-03	0.2377
18.868	5.585	1.204	1.133	22.840	0.049	4.302	5.558	75.3	1.3E-05	97.6	2.80E-03	1.1E-03	0.2388
18.879	5.572	1.180	1.144	22.789	0.049	4.241	5.475	75.3	1.3E-05	97.5	2.81E-03	1.1E-03	0.2399
18.890	5.557	1.192	1.138	22.730	0.050	4.363	5.611	75.5	1.3E-05	97.7	2.82E-03	1.1E-03	0.2410
18.911	5.530	1.148	1.146	22.625	0.049	4.219	5.420	75.0	1.3E-05	97.0	2.84E-03	1.1E-03	0.2421
18.932	5.506	1.124	1.148	22.531	0.048	4.100	5.269	75.2	1.2E-05	97.1	2.85E-03	1.1E-03	0.2432
18.947	5.494	1.125	1.151	22.477	0.049	4.181	5.349	75.1	1.3E-05	96.8	2.86E-03	1.1E-03	0.2443
18.975	5.470	1.077	1.153	22.378	0.046	3.973	5.102	75.0	1.2E-05	96.6	2.87E-03	1.0E-03	0.2453
18.984	5.455	1.056	1.142	22.321	0.045	3.893	4.991	74.8	1.2E-05	96.3	2.88E-03	9.9E-04	0.2463
18.998	5.445	1.040	1.130	22.275	0.044	3.851	4.937	74.8	1.2E-05	96.2	2.90E-03	9.8E-04	0.2472
19.010	5.432	1.067	1.140	22.224	0.046	4.002	5.108	74.6	1.2E-05	95.9	2.91E-03	1.0E-03	0.2483
19.035	5.414	1.055	1.138	22.144	0.045	3.928	5.032	74.6	1.2E-05	95.8	2.92E-03	1.0E-03	0.2493
19.044	5.403	1.076	1.148	22.100	0.047	4.022	5.143	74.7	1.2E-05	95.9	2.93E-03	1.0E-03	0.2503
19.057	5.392	1.096	1.144	22.053	0.048	4.133	5.280	74.6	1.2E-05	95.6	2.94E-03	1.0E-03	0.2513
19.070	5.375	1.098	1.151	21.987	0.048	4.080	5.231	74.5	1.2E-05	95.5	2.96E-03	1.0E-03	0.2524
19.069	5.371	1.080	1.157	21.977	0.047	4.025	5.158	74.6	1.2E-05	95.6	2.97E-03	1.0E-03	0.2534
19.068	5.366	1.040	1.167	21.961	0.046	3.891	4.977	74.5	1.2E-05	95.5	2.98E-03	9.9E-04	0.2544
19.074	5.360	1.063	1.159	21.936	0.048	4.070	5.176	74.4	1.2E-05	95.3	2.99E-03	1.0E-03	0.2554
19.099	5.339	1.038	1.153	21.848	0.046	3.924	5.006	74.5	1.2E-05	95.3	3.00E-03	9.9E-04	0.2564
19.110	5.331	1.051	1.160	21.811	0.047	4.022	5.114	74.4	1.2E-05	95.2	3.02E-03	1.0E-03	0.2574
19.130	5.317	1.035	1.168	21.748	0.047	4.007	5.092	74.3	1.2E-05	94.9	3.03E-03	1.0E-03	0.2584
19.149	5.296	1.073	1.168	21.664	0.049	4.181	5.304	74.3	1.2E-05	94.9	3.04E-03	1.0E-03	0.2595
19.170	5.273	1.051	1.162	21.574	0.049	4.160	5.258	74.3	1.2E-05	94.7	3.05E-03	1.0E-03	0.2605
19.201	5.246	1.054	1.167	21.458	0.049	4.163	5.269	74.1	1.2E-05	94.3	3.06E-03	1.0E-03	0.2615
19.220	5.223	1.031	1.162	21.367	0.047	4.033	5.109	74.2	1.2E-05	94.4	3.08E-03	1.0E-03	0.2625
19.233	5.212	1.047	1.168	21.320	0.049	4.188	5.284	74.1	1.2E-05	94.1	3.09E-03	1.0E-03	0.2636
19.258	5.187	1.016	1.166	21.218	0.047	3.989	5.056	74.1	1.2E-05	94.1	3.10E-03	1.0E-03	0.2646
19.262	5.179	1.027	1.158	21.190	0.048	4.102	5.178	74.1	1.2E-05	94.1	3.11E-03	1.0E-03	0.2656
19.279	5.161	1.049	1.159	21.116	0.048	4.100	5.196	73.9	1.2E-05	93.7	3.12E-03	1.0E-03	0.2666
19.281	5.161	1.049	1.153	21.114	0.049	4.236	5.333	73.9	1.2E-05	93.7	3.14E-03	1.0E-03	0.2677
19.304	5.137	1.013	1.146	21.019	0.047	4.093	5.150	73.7	1.2E-05	93.3	3.15E-03	1.0E-03	0.2687
19.325	5.119	1.017	1.156	20.942	0.049	4.155	5.214	73.4	1.2E-05	92.9	3.16E-03	1.0E-03	0.2697
19.353	5.097	1.007	1.155	20.848	0.047	4.042	5.088	73.5	1.2E-05	92.8	3.17E-03	9.9E-04	0.2707
19.366	5.092	1.008	1.151	20.820	0.048	4.163	5.216	73.4	1.2E-05	92.7	3.18E-03	1.0E-03	0.2717
19.393	5.067	1.023	1.142	20.717	0.049	4.233	5.309	73.3	1.2E-05	92.5	3.20E-03	1.0E-03	0.2728
19.412	5.044	1.055	1.149	20.626	0.052	4.433	5.542	73.2	1.3E-05	92.2	3.21E-03	1.1E-03	0.2738
19.440	5.014	1.074	1.157	20.505	0.053	4.506	5.634	73.4	1.3E-05	92.4	3.22E-03	1.1E-03	0.2749
19.463	4.991	1.096	1.158	20.411	0.055	4.692	5.848	73.2	1.3E-05	92.0	3.23E-03	1.1E-03	0.2761
19.492	4.956	1.094	1.167	20.273	0.057	4.854	6.009	73.1	1.4E-05	91.7	3.25E-03	1.2E-03	0.2772
19.542	4.903	1.104	1.174	20.056	0.058	4.845	6.012	73.1	1.4E-05	91.5	3.26E-03	1.2E-03	0.2784

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94	lbm	Starting Mass	
26.84	lbm	Ending Mass	
28.10	lbm	Total Mass Displaced	

0.9830	Meter (Y)		
29.9000	inHg		
101.25	kPa		

TGOC analyzer calib	Span	84	250.6	227.8	ppmv
	Zero	0	0.38	-3.8	ppmv
Load cell calibration	Span	50	50	50.12	lbm
	Zero	0	0.08	0.07	lbm

19.77	Start Cal Tim
22.45	End Cal Tim
DBFT	Chamber
11.714057	30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
12% H2O	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
03:58	04:00	2.0	187.83	142.88	76.66	71.26	38.61	39.23	39.28	39.301	23.82	22.7%		0.7219	0.6894	98.8%	0.1755	0.0083	24.440
04:00	**04:02**	**2.0**	**187.87**	**142.83**	**76.75**	**71.08**	**38.87**	**39.17**	**39.23**	**39.249**	**23.58**	**22.6%**		**0.7219**	**0.6892**	**98.8%**	0.1772	0.0084	24.438
04:02	04:04	2.0	187.86	142.76	76.68	71.08	38.89	39.12	39.18	39.197	23.44	22.5%		0.7219	0.6893	98.8%	0.1769	0.0083	24.438
04:04	04:06	2.0	187.94	142.69	76.56	70.99	39.06	39.08	39.13	39.146	23.22	22.4%		0.7219	0.6895	98.8%	0.1770	0.0083	24.435
04:06	04:08	2.0	187.96	142.61	76.42	71.07	38.85	39.04	39.08	39.096	22.64	22.3%		0.7219	0.6897	98.8%	0.1753	0.0083	24.435
04:08	04:10	2.0	187.87	142.54	76.21	71.12	38.60	39.01	39.03	39.049	21.72	22.2%		0.7219	0.6901	98.8%	0.1730	0.0082	24
04:10	04:12	2.0	187.70	142.47	76.15	70.87	38.58	38.97	38.98	39.001	21.44	22.1%		0.7219	0.6902	98.8%	0.1726	0.0081	24.4[illegible]
04:12	04:14	2.0	187.64	142.40	76.23	70.83	39.04	38.93	38.94	38.956	20.67	22.0%		0.7219	0.6900	98.8%	0.1751	0.0083	24.447
04:14	04:16	2.0	187.56	142.33	76.34	70.80	39.19	38.87	38.89	38.910	20.72	21.9%		0.7219	0.6898	98.8%	0.1764	0.0083	24.450
04:16	04:18	2.0	187.50	142.26	76.37	70.71	38.98	38.84	38.85	38.864	21.08	21.9%		0.7219	0.6898	98.8%	0.1756	0.0083	24.452
04:18	04:20	2.0	187.53	142.19	76.52	70.62	39.17	38.81	38.80	38.817	21.37	21.8%		0.7219	0.6895	98.8%	0.1773	0.0084	24.451
04:20	04:22	2.0	187.55	142.12	76.49	70.71	39.38	38.76	38.75	38.770	21.11	21.7%		0.7219	0.6895	98.8%	0.1781	0.0084	24.450
04:22	04:24	2.0	187.51	142.05	76.34	70.43	39.26	38.72	38.71	38.724	20.88	21.6%		0.7219	0.6898	98.8%	0.1767	0.0083	24.452
04:24	04:26	2.0	187.59	141.98	76.14	70.73	39.01	38.66	38.66	38.679	20.74	21.5%		0.7219	0.6901	98.8%	0.1745	0.0082	24.448
04:26	04:28	2.0	187.70	141.91	75.99	70.40	39.34	38.58	38.62	38.634	20.44	21.4%		0.7219	0.6903	98.8%	0.1751	0.0083	24.444
04:28	04:30	2.0	187.53	141.84	76.09	70.29	39.31	38.51	38.57	38.590	19.89	21.4%		0.7219	0.6901	98.8%	0.1756	0.0083	24.451
04:30	04:32	2.0	187.59	141.77	76.21	70.47	39.19	38.45	38.53	38.545	20.16	21.3%		0.7219	0.6900	98.8%	0.1757	0.0083	24.448
04:32	04:34	2.0	187.69	141.70	76.32	70.60	39.28	38.38	38.48	38.501	20.17	21.2%		0.7219	0.6898	98.8%	0.1767	0.0083	24.445
04:34	04:36	2.0	187.67	141.63	76.35	70.39	39.36	38.33	38.44	38.457	19.97	21.1%		0.7219	0.6897	98.8%	0.1772	0.0084	24.445
04:36	04:38	2.0	187.52	141.56	76.38	70.07	39.35	38.27	38.40	38.413	19.79	21.0%		0.7219	0.6897	98.8%	0.1773	0.0084	24.451
04:38	04:40	2.0	187.49	141.49	76.15	70.20	39.23	38.16	38.35	38.370	19.82	21.0%		0.7219	0.6901	98.8%	0.1755	0.0083	24.452
04:40	04:42	2.0	187.48	141.42	75.94	70.18	39.20	38.11	38.31	38.326	19.75	20.9%		0.7219	0.6904	98.8%	0.1742	0.0082	24.453
04:42	04:44	2.0	187.38	141.35	75.73	69.94	39.13	38.08	38.26	38.282	20.25	20.8%		0.7219	0.6907	98.8%	0.1728	0.0081	24.457
04:44	04:46	2.0	187.39	141.28	75.63	69.64	39.17	38.06	38.22	38.236	20.70	20.7%		0.7219	0.6909	98.8%	0.1724	0.0081	24.456
04:46	04:48	2.0	187.43	141.22	75.67	69.51	39.14	38.03	38.17	38.190	20.94	20.6%		0.7219	0.6908	98.8%	0.1725	0.0081	24.455
04:48	04:50	2.0	187.54	141.15	75.65	69.57	39.05	38.05	38.13	38.144	20.89	20.5%		0.7219	0.6909	98.8%	0.1720	0.0081	24.451
04:50	04:52	2.0	187.56	141.08	75.63	69.48	38.90	38.04	38.08	38.099	20.51	20.5%		0.7219	0.6909	98.8%	0.1712	0.0081	24.450
04:52	04:54	2.0	187.57	141.01	75.77	69.39	38.98	38.02	38.04	38.054	20.28	20.4%		0.7219	0.6907	98.8%	0.1723	0.0081	24.[illegible]
04:54	04:56	2.0	187.57	140.94	75.83	69.23	38.84	37.96	37.99	38.010	20.05	20.3%		0.7219	0.6907	98.8%	0.1720	0.0081	24.449
04:56	04:58	2.0	187.57	140.88	75.77	69.23	38.70	37.90	37.95	37.967	19.52	20.2%		0.7219	0.6908	98.8%	0.1711	0.0081	24.449
04:58	05:00	2.0	187.62	140.81	75.67	69.18	38.55	37.83	37.91	37.924	19.49	20.1%		0.7219	0.6910	98.9%	0.1699	0.0080	24.448
05:00	05:02	2.0	187.65	140.74	75.82	69.18	38.65	37.79	37.86	37.880	19.93	20.1%		0.7219	0.6907	98.8%	0.1712	0.0081	24.446
05:02	05:04	2.0	187.68	140.68	75.84	68.92	38.88	37.74	37.82	37.836	20.09	20.0%		0.7219	0.6906	98.8%	0.1722	0.0081	24.445
05:04	05:06	2.0	187.71	140.61	75.91	69.10	39.29	37.70	37.77	37.792	20.05	19.9%		0.7219	0.6904	98.8%	0.1745	0.0082	24.444
05:06	05:08	2.0	187.79	140.54	76.01	69.17	40.43	37.66	37.73	37.749	19.45	19.8%		0.7219	0.6900	98.8%	0.1801	0.0085	24.441
05:08	05:10	2.0	187.76	140.48	76.04	69.01	39.90	37.64	37.69	37.707	19.00	19.7%		0.7219	0.6901	98.8%	0.1779	0.0084	24.442
05:10	05:12	2.0	187.68	140.41	76.07	68.76	39.86	37.60	37.65	37.666	18.58	19.7%		0.7219	0.6901	98.8%	0.1779	0.0084	24.445
05:12	05:14	2.0	187.72	140.34	76.05	68.72	40.00	37.60	37.61	37.626	18.43	19.6%		0.7219	0.6901	98.8%	0.1784	0.0084	24.444
05:14	05:16	2.0	187.72	140.28	75.98	68.67	39.82	37.56	37.57	37.586	17.83	19.5%		0.7219	0.6902	98.8%	0.1772	0.0084	24.443
05:16	05:18	2.0	187.74	140.21	75.91	68.45	39.64	37.55	37.53	37.548	17.42	19.5%		0.7219	0.6904	98.8%	0.1760	0.0083	24.443
05:18	05:20	2.0	187.84	140.15	75.81	68.37	39.68	37.51	37.49	37.511	16.67	19.4%		0.7219	0.6905	98.8%	0.1756	0.0083	24.439
05:20	05:22	2.0	187.93	140.08	75.85	68.20	39.60	37.46	37.46	37.476	16.05	19.3%		0.7219	0.6905	98.8%	0.1755	0.0083	24.436
05:22	05:24	2.0	187.95	140.02	75.75	68.00	39.69	37.35	37.42	37.442	15.55	19.3%		0.7219	0.6906	98.8%	0.1754	0.0083	24.435
05:24	05:26	2.0	187.90	139.95	75.83	68.23	39.41	37.26	37.39	37.411	14.17	19.2%		0.7219	0.6905	98.8%	0.1746	0.0082	24.437
05:26	05:28	2.0	187.87	139.89	76.02	68.32	39.25	37.20	37.36	37.380	13.90	19.2%		0.7219	0.6903	98.8%	0.1749	0.0082	24.438
05:28	05:30	2.0	187.72	139.83	76.15	68.11	39.25	37.17	37.33	37.349	14.24	19.1%		0.7219	0.6901	98.8%	0.1756	0.0083	24.444
05:30	05:32	2.0	187.67	139.76	76.18	67.83	39.37	37.17	37.30	37.317	14.56	19.0%		0.7219	0.6900	98.8%	0.1763	0.0083	24.446

Cm ft³													
A F	B G	E	J	I	D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
VMc dscf	VWc scf	Wood H2 Volume VWW scf	Inlet Air Moisture BWSi %	Psycho BWSc %	VWi scf	VMi dscf	Ve wscf	Cgas(wet) ppmv	Mass TGOC Mgas lbm-C	Cgas(Dry) ppmv	Mass TGOC Mgas Accum lbm-C	Emission Factor EF lbm/Mdbft	Emission Factor EF Accum lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
19.572	4.867	1.123	1.186	19.915	0.057	4.789	5.971	73.0	1.4E-05	91.2	3.27E-03	1.2E-03	0.2796
19.578	4.860	**1.112**	**1.198**	**19.888**	0.058	4.776	5.945	**72.9**	1.4E-05	90.9	3.29E-03	1.2E-03	0.2807
19.588	4.850	1.105	1.196	19.846	0.058	4.764	5.930	72.9	1.3E-05	90.9	3.30E-03	1.1E-03	0.2819
19.597	4.839	1.095	1.196	19.803	0.057	4.731	5.884	72.8	1.3E-05	90.8	3.32E-03	1.1E-03	0.2830
19.606	4.828	1.067	1.184	19.761	0.055	4.618	5.737	72.9	1.3E-05	90.8	3.33E-03	1.1E-03	0.2841
19.618	4.820	1.024	1.169	19.722	0.052	4.437	5.507	72.9	1.3E-05	90.8	3.34E-03	1.1E-03	0.2852
19.632	4.812	1.011	1.165	19.686	0.052	4.396	5.457	72.7	1.2E-05	90.5	3.35E-03	1.1E-03	0.2863
19.644	4.803	0.975	1.183	19.647	0.051	4.252	5.275	72.6	1.2E-05	90.4	3.37E-03	1.0E-03	0.2873
19.655	4.794	0.977	1.191	19.609	0.052	4.276	5.303	72.6	1.2E-05	90.3	3.38E-03	1.0E-03	0.2883
19.667	4.785	0.994	1.186	19.570	0.052	4.364	5.412	72.5	1.2E-05	90.2	3.39E-03	1.0E-03	0.2893
19.676	4.775	1.007	1.198	19.528	0.054	4.436	5.497	72.4	1.2E-05	90.0	3.40E-03	1.1E-03	0.2904
19.685	4.765	0.996	1.203	19.487	0.054	4.394	5.441	72.5	1.2E-05	90.1	3.41E-03	1.1E-03	0.2915
19.696	4.755	0.985	1.194	19.448	0.053	4.362	5.402	72.3	1.2E-05	89.7	3.43E-03	1.0E-03	0.2925
19.704	4.744	0.978	1.178	19.406	0.052	4.344	5.378	72.6	1.2E-05	90.0	3.44E-03	1.0E-03	0.2935
19.711	4.733	0.964	1.182	19.363	0.051	4.280	5.289	72.2	1.2E-05	89.6	3.45E-03	1.0E-03	0.2945
19.725	4.726	0.938	1.185	19.328	0.050	4.187	5.177	72.1	1.2E-05	89.4	3.46E-03	9.9E-04	0.2955
19.733	4.715	0.951	1.186	19.287	0.051	4.258	5.263	72.3	1.2E-05	89.6	3.47E-03	1.0E-03	0.2966
19.740	4.704	0.951	1.193	19.245	0.052	4.266	5.268	72.5	1.2E-05	89.7	3.49E-03	1.0E-03	0.2976
19.750	4.695	0.942	1.197	19.206	0.051	4.229	5.216	72.2	1.2E-05	89.4	3.50E-03	1.0E-03	0.2986
19.764	4.688	0.933	1.198	19.171	0.051	4.208	5.190	71.9	1.2E-05	89.0	3.51E-03	9.9E-04	0.2996
19.774	4.679	0.935	1.185	19.133	0.051	4.224	5.209	72.1	1.2E-05	89.1	3.52E-03	1.0E-03	0.3006
19.784	4.669	0.931	1.176	19.095	0.050	4.214	5.192	72.0	1.2E-05	89.0	3.53E-03	1.0E-03	0.3016
19.795	4.661	0.955	1.166	19.060	0.051	4.334	5.341	71.8	1.2E-05	88.7	3.54E-03	1.0E-03	0.3026
19.804	4.652	0.976	1.163	19.021	0.052	4.439	5.469	71.5	1.2E-05	88.3	3.56E-03	1.0E-03	0.3036
19.813	4.642	0.987	1.164	18.981	0.053	4.506	5.551	71.4	1.2E-05	88.1	3.57E-03	1.1E-03	0.3047
19.820	4.631	0.985	1.160	18.940	0.053	4.504	5.543	71.4	1.2E-05	88.1	3.58E-03	1.1E-03	0.3057
19.828	4.621	0.967	1.155	18.901	0.052	4.433	5.452	71.4	1.2E-05	88.0	3.59E-03	1.0E-03	0.3068
19.838	4.612	0.956	1.163	18.863	0.052	4.395	5.403	71.3	1.2E-05	87.8	3.61E-03	1.0E-03	0.3078
19.847	4.603	0.945	1.161	18.825	0.051	4.357	5.354	71.1	1.2E-05	87.6	3.62E-03	1.0E-03	0.3088
19.856	4.593	0.920	1.155	18.787	0.050	4.254	5.225	71.1	1.2E-05	87.6	3.63E-03	9.9E-04	0.3098
19.864	4.584	0.919	1.146	18.749	0.049	4.257	5.227	71.1	1.2E-05	87.5	3.64E-03	9.9E-04	0.3108
19.872	4.574	0.940	1.155	18.711	0.051	4.365	5.358	71.1	1.2E-05	87.4	3.65E-03	1.0E-03	0.3118
19.881	4.564	0.947	1.162	18.672	0.052	4.411	5.412	70.8	1.2E-05	87.1	3.66E-03	1.0E-03	0.3128
19.889	4.555	0.945	1.178	18.635	0.053	4.421	5.422	71.0	1.2E-05	87.3	3.68E-03	1.0E-03	0.3138
19.896	4.545	0.917	1.215	18.596	0.053	4.303	5.272	71.1	1.2E-05	87.3	3.69E-03	1.0E-03	0.3148
19.906	4.536	0.896	1.201	18.560	0.051	4.210	5.154	70.9	1.1E-05	87.1	3.70E-03	9.7E-04	0.3158
19.916	4.529	0.876	1.201	18.526	0.050	4.134	5.062	70.7	1.1E-05	86.7	3.71E-03	9.5E-04	0.3168
19.924	4.519	0.869	1.204	18.488	0.050	4.109	5.028	70.6	1.1E-05	86.7	3.72E-03	9.5E-04	0.3177
19.933	4.510	0.841	1.196	18.452	0.048	3.987	4.877	70.6	1.1E-05	86.6	3.73E-03	9.2E-04	0.3186
19.942	4.501	0.821	1.188	18.415	0.047	3.909	4.781	70.4	1.0E-05	86.3	3.74E-03	9.0E-04	0.3195
19.948	4.491	0.786	1.185	18.376	0.045	3.752	4.586	70.3	1.0E-05	86.1	3.75E-03	8.6E-04	0.3204
19.955	4.481	0.757	1.185	18.338	0.043	3.621	4.422	70.1	9.7E-06	85.9	3.76E-03	8.3E-04	0.3212
19.963	4.472	0.733	1.183	18.301	0.042	3.514	4.287	69.9	9.3E-06	85.6	3.77E-03	8.0E-04	0.3220
19.973	4.464	0.668	1.178	18.267	0.038	3.215	3.921	70.2	8.6E-06	85.8	3.78E-03	7.3E-04	0.3227
19.982	4.456	0.655	1.180	18.233	0.038	3.156	3.843	70.3	8.4E-06	85.9	3.79E-03	7.2E-04	0.3234
19.994	4.449	0.672	1.186	18.202	0.039	3.246	3.954	70.1	8.6E-06	85.6	3.80E-03	7.4E-04	0.3242
20.004	4.442	0.687	1.191	18.169	0.040	3.323	4.046	69.8	8.8E-06	85.3	3.81E-03	7.5E-04	0.3249

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94 lbm Starting Mass
26.84 lbm Ending Mass
28.10 lbm Total Mass Displaced

0.9830 Meter (Y)
29.9000 inHg
101.25 kPa

TGOC analyzer calib Span 84 250.6 227.8 ppmv
Zero 0 0.38 -3.8 ppmv
Load cell calibration Span 50 50 50.12 lbm
Zero 0 0.08 0.07 lbm

19.77 Start Cal Tim
22.45 End Cal Tim
DBFT 11.714057
Chamber 30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
05:32	05:34	2.0	187.57	139.70	76.26	67.75	39.40	37.15	37.27	37.284	14.83	19.0%		0.7219	0.6899	98.8%	0.1769	0.0083	24.449
05:34	05:36	2.0	187.66	139.63	76.20	67.72	39.17	37.13	37.23	37.250	15.22	18.9%		0.7219	0.6900	98.8%	0.1755	0.0083	24.446
05:36	05:38	2.0	187.72	139.57	75.82	67.62	38.80	37.12	37.20	37.217	15.12	18.9%		0.7219	0.6907	98.8%	0.1718	0.0081	24.444
05:38	05:40	2.0	187.70	139.51	75.76	67.52	38.75	37.09	37.17	37.184	15.00	18.8%		0.7219	0.6908	98.8%	0.1712	0.0081	24.444
05:40	05:42	2.0	187.80	139.44	75.79	67.39	38.53	37.02	37.13	37.151	15.12	18.7%		0.7219	0.6908	98.8%	0.1704	0.0080	24.441
05:42	05:44	2.0	187.83	139.38	75.66	67.41	38.53	36.96	37.10	37.117	15.19	18.7%		0.7219	0.6910	98.9%	0.1698	0.0080	24
05:44	05:46	2.0	187.81	139.32	75.53	67.45	38.49	36.92	37.06	37.083	15.79	18.6%		0.7219	0.6912	98.9%	0.1689	0.0080	24.4[illegible]
05:46	05:48	2.0	187.66	139.25	75.69	67.15	38.36	36.91	37.03	37.046	16.56	18.5%		0.7219	0.6910	98.9%	0.1692	0.0080	24.446
05:48	05:50	2.0	187.69	139.19	75.84	67.03	38.26	36.88	36.99	37.009	16.75	18.5%		0.7219	0.6907	98.9%	0.1695	0.0080	24.445
05:50	05:52	2.0	187.57	139.13	75.82	67.04	38.27	36.84	36.95	36.973	16.69	18.4%		0.7219	0.6908	98.9%	0.1695	0.0080	24.449
05:52	05:54	2.0	187.56	139.07	75.81	66.99	38.27	36.80	36.92	36.936	16.52	18.3%		0.7219	0.6908	98.9%	0.1694	0.0080	24.450
05:54	05:56	2.0	187.52	139.01	75.87	66.85	38.35	36.78	36.88	36.900	16.30	18.3%		0.7219	0.6907	98.9%	0.1701	0.0080	24.451
05:56	05:58	2.0	187.57	138.94	75.86	67.04	38.18	36.77	36.85	36.865	15.91	18.2%		0.7219	0.6907	98.9%	0.1693	0.0080	24.449
05:58	06:00	2.0	187.66	138.88	75.92	66.80	37.97	36.77	36.81	36.831	15.64	18.1%		0.7219	0.6907	98.9%	0.1687	0.0080	24.446
06:00	06:02	2.0	187.78	138.82	75.95	66.48	37.87	36.72	36.78	36.797	15.17	18.1%		0.7219	0.6907	98.9%	0.1684	0.0079	24.441
06:02	06:04	2.0	187.84	138.76	75.99	66.25	37.81	36.72	36.75	36.766	14.42	18.0%		0.7219	0.6906	98.9%	0.1683	0.0079	24.439
06:04	06:06	2.0	187.91	138.70	76.08	66.46	38.01	36.81	36.72	36.737	13.21	18.0%		0.7219	0.6904	98.9%	0.1697	0.0080	24.436
06:06	06:08	2.0	187.88	138.64	76.26	66.42	38.13	36.81	36.69	36.710	12.13	17.9%		0.7219	0.6901	98.8%	0.1712	0.0081	24.437
06:08	06:10	2.0	187.94	138.58	76.13	66.13	37.95	36.75	36.66	36.684	11.76	17.9%		0.7219	0.6904	98.9%	0.1697	0.0080	24.435
06:10	06:12	2.0	187.96	138.52	75.92	66.26	38.02	36.74	36.64	36.657	12.37	17.8%		0.7219	0.6907	98.9%	0.1689	0.0080	24.435
06:12	06:14	2.0	187.95	138.46	75.96	66.23	37.88	36.71	36.61	36.628	12.92	17.8%		0.7219	0.6906	98.9%	0.1685	0.0079	24.435
06:14	06:16	2.0	187.90	138.40	76.23	66.20	38.24	36.65	36.58	36.598	13.83	17.7%		0.7219	0.6901	98.8%	0.1715	0.0081	24.437
06:16	06:18	2.0	187.88	138.34	76.29	65.95	38.03	36.61	36.55	36.567	14.17	17.7%		0.7219	0.6901	98.8%	0.1709	0.0081	24.437
06:18	06:20	2.0	187.76	138.28	76.20	65.93	37.89	36.55	36.52	36.535	14.52	17.6%		0.7219	0.6903	98.9%	0.1698	0.0080	24.442
06:20	06:22	2.0	187.57	138.22	76.21	66.04	37.57	36.47	36.48	36.503	14.35	17.6%		0.7219	0.6903	98.9%	0.1684	0.0079	24.449
06:22	06:24	2.0	187.45	138.16	76.09	65.89	37.93	36.43	36.45	36.473	13.93	17.5%		0.7219	0.6904	98.9%	0.1694	0.0080	24.454
06:24	06:26	2.0	187.43	138.10	75.78	65.62	38.03	36.33	36.42	36.444	13.04	17.4%		0.7219	0.6909	98.9%	0.1682	0.0079	24.455
06:26	06:28	2.0	187.44	138.04	75.54	65.67	37.84	36.22	36.39	36.414	13.41	17.4%		0.7219	0.6913	98.9%	0.1661	0.0078	2
06:28	06:30	2.0	187.44	137.98	75.49	65.61	37.84	36.16	36.36	36.383	14.19	17.3%		0.7219	0.6914	98.9%	0.1659	0.0078	24.454
06:30	06:32	2.0	187.38	137.92	75.55	65.51	37.73	36.14	36.33	36.351	14.51	17.3%		0.7219	0.6913	98.9%	0.1656	0.0078	24.456
06:32	06:34	2.0	187.48	137.86	75.78	65.47	37.68	36.12	36.30	36.318	14.85	17.2%		0.7219	0.6910	98.9%	0.1666	0.0079	24.453
06:34	06:36	2.0	187.47	137.81	75.88	65.48	37.90	36.14	36.27	36.285	15.14	17.2%		0.7219	0.6908	98.9%	0.1682	0.0079	24.453
06:36	06:38	2.0	187.46	137.75	75.88	65.50	37.88	36.13	36.23	36.252	15.27	17.1%		0.7219	0.6908	98.9%	0.1681	0.0079	24.453
06:38	06:40	2.0	187.61	137.69	76.00	65.06	38.04	36.15	36.20	36.218	15.02	17.0%		0.7219	0.6906	98.9%	0.1694	0.0080	24.448
06:40	06:42	2.0	187.66	137.63	76.12	65.18	37.68	36.15	36.17	36.185	15.01	17.0%		0.7219	0.6904	98.9%	0.1684	0.0079	24.446
06:42	06:44	2.0	187.70	137.58	76.03	64.97	37.68	36.17	36.13	36.154	14.24	16.9%		0.7219	0.6906	98.9%	0.1679	0.0079	24.444
06:44	06:46	2.0	187.70	137.52	76.00	64.83	37.61	36.17	36.10	36.122	14.45	16.9%		0.7219	0.6906	98.9%	0.1675	0.0079	24.444
06:46	06:48	2.0	187.70	137.46	76.05	64.86	37.57	36.18	36.07	36.088	15.61	16.8%		0.7219	0.6906	98.9%	0.1676	0.0079	24.445
06:48	06:50	2.0	187.62	137.40	76.03	64.76	38.03	36.15	36.03	36.052	16.12	16.7%		0.7219	0.6905	98.9%	0.1695	0.0080	24.447
06:50	06:52	2.0	187.57	137.35	75.87	64.66	38.15	36.06	36.00	36.018	15.80	16.7%		0.7219	0.6907	98.9%	0.1692	0.0080	24.449
06:52	06:54	2.0	187.46	137.29	75.75	64.49	37.70	36.01	35.96	35.983	15.92	16.6%		0.7219	0.6910	98.9%	0.1666	0.0079	24.453
06:54	06:56	2.0	187.41	137.23	75.73	64.37	37.62	35.91	35.93	35.947	16.19	16.5%		0.7219	0.6911	98.9%	0.1661	0.0078	24.455
06:56	06:58	2.0	187.47	137.18	75.61	64.63	37.65	35.87	35.89	35.911	16.20	16.5%		0.7219	0.6912	98.9%	0.1656	0.0078	24.453
06:58	07:00	2.0	187.49	137.12	75.65	64.32	37.85	35.83	35.86	35.876	16.03	16.4%		0.7219	0.6911	98.9%	0.1667	0.0079	24.452
07:00	07:02	2.0	187.57	137.07	75.56	64.42	37.88	35.81	35.82	35.841	15.74	16.3%		0.7219	0.6913	98.9%	0.1664	0.0078	24.449
07:02	07:04	2.0	187.68	137.01	75.63	64.30	37.84	35.78	35.79	35.809	14.85	16.3%		0.7219	0.6912	98.9%	0.1665	0.0079	24.445
07:04	07:06	2.0	187.70	136.96	75.81	64.15	37.47	35.80	35.76	35.777	14.32	16.2%		0.7219	0.6910	98.9%	0.1659	0.0078	24.445

Cm ft³													
A F	B G	E	J	I	D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
VMc dscf	VWc scf	Wood H2 Volume VWW scf	Inlet Air Moisture BWSi %	Psycho BWSc %	VWi scf	VMi dscf	Ve wscf	Cgas(wet) ppmv	Mass TGOC Mgas lbm-C	Cgas(Dry) ppmv	Mass TGOC Mgas Accum lbm-C	Emission Factor EF lbm/Mdbft	Emission Factor EF Accum lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
20.015	4.434	0.699	1.194	18.137	0.041	3.401	4.145	69.7	9.0E-06	85.1	3.82E-03	7.7E-04	0.3257
20.021	4.425	0.718	1.185	18.099	0.042	3.495	4.257	69.7	9.2E-06	85.1	3.82E-03	7.9E-04	0.3265
20.028	4.415	0.713	1.160	18.063	0.041	3.472	4.225	69.6	9.2E-06	84.9	3.83E-03	7.8E-04	0.3273
20.037	4.407	0.707	1.155	18.029	0.040	3.460	4.211	69.5	9.1E-06	84.8	3.84E-03	7.8E-04	0.3281
20.043	4.397	0.713	1.150	17.992	0.041	3.492	4.246	69.4	9.2E-06	84.6	3.85E-03	7.8E-04	0.3288
20.051	4.389	0.716	1.145	17.957	0.041	3.512	4.268	69.4	9.2E-06	84.6	3.86E-03	7.9E-04	0.3296
20.060	4.381	0.745	1.139	17.923	0.042	3.649	4.430	69.4	9.6E-06	84.6	3.87E-03	8.2E-04	0.3304
20.072	4.374	0.781	1.141	17.894	0.044	3.843	4.669	69.1	1.0E-05	84.2	3.88E-03	8.6E-04	0.3313
20.079	4.366	0.790	1.144	17.859	0.045	3.889	4.719	69.0	1.0E-05	84.0	3.89E-03	8.7E-04	0.3322
20.090	4.359	0.787	1.143	17.829	0.045	3.888	4.719	69.0	1.0E-05	84.0	3.90E-03	8.7E-04	0.3330
20.099	4.351	0.779	1.143	17.796	0.045	3.857	4.680	69.0	1.0E-05	83.9	3.91E-03	8.6E-04	0.3339
20.108	4.343	0.769	1.148	17.764	0.044	3.821	4.636	68.8	9.9E-06	83.7	3.92E-03	8.5E-04	0.3347
20.115	4.335	0.750	1.142	17.729	0.043	3.740	4.537	69.0	9.8E-06	83.9	3.93E-03	8.3E-04	0.3356
20.121	4.325	0.737	1.138	17.694	0.042	3.688	4.473	68.8	9.6E-06	83.6	3.94E-03	8.2E-04	0.3364
20.126	4.316	0.715	1.136	17.657	0.041	3.584	4.342	68.5	9.3E-06	83.1	3.95E-03	7.9E-04	0.3372
20.132	4.307	0.680	1.136	17.622	0.039	3.420	4.142	68.2	8.8E-06	82.8	3.96E-03	7.5E-04	0.3379
20.139	4.298	0.623	1.146	17.587	0.036	3.141	3.799	68.5	8.1E-06	83.1	3.97E-03	6.9E-04	0.3386
20.147	4.290	0.572	1.156	17.556	0.034	2.900	3.509	68.4	7.5E-06	83.0	3.97E-03	6.4E-04	0.3393
20.154	4.281	0.554	1.146	17.521	0.033	2.816	3.403	68.1	7.2E-06	82.6	3.98E-03	6.2E-04	0.3399
20.161	4.273	0.583	1.140	17.489	0.034	2.963	3.580	68.3	7.6E-06	82.7	3.99E-03	6.5E-04	0.3405
20.170	4.266	0.609	1.137	17.457	0.036	3.099	3.743	68.2	8.0E-06	82.7	4.00E-03	6.8E-04	0.3412
20.178	4.258	0.652	1.158	17.426	0.039	3.326	4.017	68.2	8.5E-06	82.6	4.01E-03	7.3E-04	0.3419
20.187	4.251	0.668	1.154	17.395	0.040	3.407	4.110	68.0	8.7E-06	82.3	4.01E-03	7.4E-04	0.3427
20.197	4.245	0.684	1.146	17.367	0.040	3.492	4.210	67.9	8.9E-06	82.2	4.02E-03	7.6E-04	0.3435
20.209	4.240	0.677	1.137	17.341	0.040	3.461	4.173	68.1	8.9E-06	82.3	4.03E-03	7.6E-04	0.3442
20.220	4.234	0.657	1.144	17.314	0.039	3.375	4.070	67.9	8.6E-06	82.1	4.04E-03	7.4E-04	0.3449
20.228	4.226	0.615	1.135	17.283	0.036	3.169	3.821	67.6	8.1E-06	81.8	4.05E-03	6.9E-04	0.3456
20.236	4.219	0.633	1.120	17.251	0.037	3.262	3.932	67.7	8.3E-06	81.8	4.06E-03	7.1E-04	0.3463
20.243	4.211	0.669	1.119	17.221	0.039	3.454	4.160	67.7	8.8E-06	81.7	4.07E-03	7.5E-04	0.3471
20.252	4.204	0.684	1.117	17.191	0.040	3.546	4.274	67.6	9.0E-06	81.6	4.07E-03	7.7E-04	0.3479
20.257	4.195	0.700	1.124	17.157	0.041	3.631	4.371	67.5	9.2E-06	81.5	4.08E-03	7.9E-04	0.3486
20.265	4.188	0.714	1.135	17.127	0.043	3.712	4.468	67.5	9.4E-06	81.5	4.09E-03	8.0E-04	0.3494
20.273	4.181	0.720	1.134	17.097	0.043	3.759	4.528	67.5	9.5E-06	81.5	4.10E-03	8.1E-04	0.3503
20.277	4.171	0.708	1.143	17.062	0.043	3.706	4.459	67.1	9.3E-06	80.9	4.11E-03	8.0E-04	0.3511
20.283	4.163	0.708	1.137	17.030	0.043	3.709	4.461	67.2	9.3E-06	81.0	4.12E-03	8.0E-04	0.3519
20.289	4.155	0.671	1.134	16.999	0.040	3.527	4.239	67.0	8.9E-06	80.8	4.13E-03	7.6E-04	0.3526
20.296	4.148	0.681	1.130	16.968	0.041	3.584	4.306	66.9	9.0E-06	80.6	4.14E-03	7.7E-04	0.3534
20.304	4.141	0.736	1.131	16.939	0.044	3.873	4.650	66.9	9.7E-06	80.6	4.15E-03	8.3E-04	0.3542
20.313	4.134	0.760	1.144	16.912	0.046	4.013	4.818	66.8	1.0E-05	80.4	4.16E-03	8.6E-04	0.3551
20.321	4.128	0.745	1.142	16.883	0.045	3.936	4.722	66.7	9.8E-06	80.3	4.17E-03	8.4E-04	0.3559
20.331	4.122	0.751	1.124	16.857	0.045	3.973	4.767	66.6	9.9E-06	80.1	4.18E-03	8.4E-04	0.3567
20.340	4.116	0.763	1.121	16.830	0.046	4.054	4.865	66.4	1.0E-05	79.9	4.19E-03	8.6E-04	0.3576
20.345	4.108	0.764	1.117	16.799	0.046	4.063	4.874	66.7	1.0E-05	80.2	4.20E-03	8.7E-04	0.3585
20.352	4.100	0.756	1.125	16.769	0.046	4.035	4.840	66.4	1.0E-05	79.8	4.21E-03	8.6E-04	0.3593
20.357	4.092	0.742	1.122	16.737	0.045	3.972	4.764	66.5	9.9E-06	79.9	4.22E-03	8.4E-04	0.3602
20.362	4.084	0.700	1.123	16.705	0.043	3.754	4.498	66.4	9.3E-06	79.7	4.23E-03	7.9E-04	0.3610
20.368	4.076	0.675	1.119	16.676	0.041	3.629	4.346	66.2	9.0E-06	79.5	4.24E-03	7.7E-04	0.3617

Northwest Hardwood
Alder
19-Jan-99
mew/drb

54.94 lbm Starting Mass
26.84 lbm Ending Mass
28.10 lbm Total Mass Displaced

0.9830 Meter (Y)
29.9000 inHg
101.25 kPa

TGOC analyzer calib Span 84 250.6 227.8 ppmv
Zero 0 0.38 -3.8 ppmv
Load cell calibration Span 50 50 50.12 lbm
Zero 0 0.08 0.07 lbm

19.77 Start Cal Tim
22.45 End Cal Tim
DBFT 11.714057
Chamber 30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
07:06	07:08	2.0	187.71	136.90	76.08	64.13	37.66	35.72	35.73	35.748	13.17	16.2%		0.7219	0.6905	98.9%	0.1681	0.0079	24.444
07:08	07:10	2.0	187.79	136.85	75.98	64.13	37.35	35.64	35.70	35.721	12.29	16.1%		0.7219	0.6907	98.9%	0.1662	0.0078	24.441
07:10	07:12	2.0	187.71	136.79	75.77	63.99	37.29	35.58	35.67	35.695	11.77	16.1%		0.7219	0.6911	98.9%	0.1649	0.0078	24.444
07:12	07:14	2.0	188.03	136.74	75.59	63.94	37.38	35.51	35.65	35.669	11.98	16.0%	762.7	0.7669	0.7344	98.9%	0.1745	0.0082	24.432
07:14	07:16	2.0	188.66	136.68	75.53	63.71	36.80	35.44	35.62	35.643	11.78	16.0%		0.8824	0.8453	98.9%	0.1973	0.0093	24.408
07:16	07:18	2.0	189.40	136.63	75.36	63.47	36.32	35.41	35.60	35.616	12.08	15.9%		0.8824	0.8458	98.9%	0.1938	0.0091	[illegible]
07:18	07:20	2.0	190.01	136.57	75.31	63.08	36.53	35.42	35.57	35.590	12.17	15.9%		0.8824	0.8458	98.9%	0.1946	0.0092	24.357
07:20	07:22	2.0	190.73	136.52	75.53	62.72	36.44	35.43	35.54	35.560	13.22	15.8%		0.8824	0.8454	98.9%	0.1954	0.0092	24.330
07:22	07:24	2.0	191.28	136.47	75.76	62.48	36.66	35.45	35.51	35.530	13.98	15.8%		0.8824	0.8449	98.9%	0.1980	0.0093	24.310
07:24	07:26	2.0	191.52	136.41	75.87	62.40	36.60	35.43	35.48	35.497	14.87	15.7%		0.8824	0.8447	98.9%	0.1984	0.0094	24.301
07:26	07:28	2.0	191.57	136.36	75.73	62.02	36.66	35.41	35.44	35.463	15.39	15.7%		0.8824	0.8450	98.9%	0.1978	0.0093	24.299
07:28	07:30	2.0	191.59	136.31	75.69	61.72	36.52	35.37	35.41	35.428	16.12	15.6%		0.8824	0.8451	98.9%	0.1969	0.0093	24.298
07:30	07:32	2.0	191.58	136.25	75.61	61.74	36.66	35.34	35.37	35.393	15.61	15.5%		0.8824	0.8452	98.9%	0.1971	0.0093	24.299
07:32	07:34	2.0	191.64	136.20	75.63	61.37	36.57	35.32	35.34	35.361	14.55	15.5%		0.8824	0.8452	98.9%	0.1968	0.0093	24.297
07:34	07:36	2.0	191.56	136.15	75.50	61.32	36.41	35.26	35.31	35.329	14.47	15.4%		0.8824	0.8455	98.9%	0.1951	0.0092	24.299
07:36	07:38	2.0	191.61	136.09	75.46	61.25	36.44	35.20	35.28	35.298	14.01	15.4%		0.8824	0.8456	98.9%	0.1950	0.0092	24.298
07:38	07:40	2.0	191.86	136.04	75.60	61.11	36.59	35.17	35.25	35.269	13.38	15.3%		0.8824	0.8453	98.9%	0.1967	0.0093	24.288
07:40	07:42	2.0	192.02	135.99	75.55	61.03	36.63	35.14	35.22	35.241	12.62	15.3%		0.8824	0.8453	98.9%	0.1966	0.0093	24.282
07:42	07:44	2.0	192.18	135.94	75.57	60.69	36.81	35.15	35.19	35.213	12.73	15.2%		0.8824	0.8453	98.9%	0.1976	0.0093	24.276
07:44	07:46	2.0	192.41	135.89	75.59	60.63	36.68	35.15	35.16	35.186	12.43	15.2%		0.8824	0.8453	98.9%	0.1971	0.0093	24.268
07:46	07:48	2.0	192.58	135.83	75.63	60.51	36.84	35.15	35.14	35.158	12.89	15.1%		0.8824	0.8451	98.9%	0.1982	0.0093	24.261
07:48	07:50	2.0	192.50	135.78	75.77	60.30	37.06	35.12	35.11	35.130	12.58	15.05%		0.8824	0.8448	98.9%	0.2003	0.0094	24.264
07:50	**07:52**	**2.0**	**192.44**	**135.73**	**75.93**	**60.15**	**36.83**	**35.11**	**35.08**	**35.103**	**12.15**	**15.00%**		**0.8824**	**0.8446**	**98.9%**	**0.2001**	**0.0094**	**24.267**
07:52	07:54	2.0	192.41	135.68	76.02	60.06	36.47	35.07	35.06	35.077	11.83	14.95%		0.8824	0.8445	98.9%	0.1986	0.0094	24.268
07:54	07:56	2.0	192.35	135.63	76.08	59.86	36.52	35.07	35.03	35.052	11.41	14.9%		0.8824	0.8444	98.9%	0.1993	0.0094	24.270
07:56	07:58	2.0	192.27	135.58	75.99	58.80	36.56	35.06	35.01	35.028	10.84	14.9%		0.8824	0.8445	98.9%	0.1989	0.0094	24.273
07:58	08:00	2.0	192.24	135.53	75.73	57.41	36.93	35.05	34.98	35.004	10.79	14.8%		0.8824	0.8449	98.9%	0.1993	0.0094	[illegible]
08:00	08:02	2.0	192.74	135.48	75.50	55.74	37.34	34.97	34.96	34.980	11.29	14.8%		0.8824	0.8452	98.9%	0.2001	0.0094	[illegible]
08:02	08:04	2.0	193.28	135.43	75.30	54.09	37.45	34.90	34.93	34.953	11.86	14.7%		0.8824	0.8456	98.9%	0.1994	0.0094	24.235
08:04	08:06	2.0	193.76	135.38	75.14	52.58	37.59	34.84	34.90	34.926	12.34	14.7%		0.8824	0.8459	98.9%	0.1992	0.0094	24.218
08:06	08:08	2.0	194.20	135.33	75.04	51.16	37.98	34.80	34.88	34.899	12.49	14.6%		0.8824	0.8460	98.9%	0.2006	0.0095	24.201
08:08	08:10	2.0	194.70	135.28	74.85	50.00	38.16	34.74	34.85	34.871	12.51	14.6%		0.8824	0.8463	98.9%	0.2003	0.0094	24.183
08:10	08:12	2.0	194.83	135.23	74.61	48.93	38.16	34.75	34.82	34.844	12.24	14.5%		0.8824	0.8467	98.9%	0.1988	0.0094	24.178
08:12	08:14	2.0	194.87	135.18	74.67	47.91	38.56	34.76	34.80	34.817	12.21	14.5%		0.8824	0.8465	98.9%	0.2013	0.0095	24.176
08:14	08:16	2.0	194.84	135.13	74.56	46.68	38.75	34.72	34.77	34.790	12.26	14.4%		0.8824	0.8467	98.9%	0.2016	0.0095	24.178
08:16	08:18	2.0	194.99	135.08	74.32	45.63	38.85	34.66	34.74	34.764	11.84	14.4%		0.8824	0.8471	98.9%	0.2006	0.0095	24.172
08:18	08:22	4.0	195.26	135.04	74.26	44.81	38.65	34.67	34.72	34.740	11.01	14.3%		1.7649	1.6946	98.9%	0.3983	0.0188	24.162
08:22	08:24	2.0	195.60	134.99	74.30	43.39	38.74	34.70	34.69	34.716	10.79	14.3%		0.8824	0.8472	98.9%	0.1998	0.0094	24.150
08:24	08:26	2.0	195.88	134.94	74.22	42.64	38.85	34.67	34.67	34.694	10.14	14.3%		0.8824	0.8473	98.9%	0.1999	0.0094	24.139
08:26	08:28	2.0	196.17	134.89	74.24	41.96	38.91	34.67	34.65	34.672	10.16	14.2%		0.8824	0.8472	98.9%	0.2004	0.0094	24.129
08:28	08:30	2.0	196.34	134.84	74.36	41.46	39.11	34.65	34.63	34.650	9.84	14.2%		0.8824	0.8470	98.9%	0.2022	0.0095	24.122
08:30	08:32	2.0	196.35	134.80	74.41	40.62	39.13	34.60	34.61	34.628	9.94	14.1%		0.8824	0.8469	98.9%	0.2025	0.0096	24.122
08:32	08:34	2.0	196.39	134.75	74.43	40.03	39.12	34.56	34.58	34.607	9.67	14.1%		0.8824	0.8468	98.9%	0.2026	0.0096	24.121
08:34	08:36	2.0	196.51	134.70	74.40	39.61	39.28	34.52	34.56	34.585	9.94	14.1%		0.8824	0.8468	98.9%	0.2033	0.0096	24.116
08:36	08:38	2.0	196.52	134.65	74.32	39.15	39.34	34.50	34.54	34.564	9.85	14.0%		0.8824	0.8470	98.9%	0.2031	0.0096	24.116
08:38	08:40	2.0	196.56	134.61	74.23	38.56	39.59	34.48	34.52	34.541	10.34	14.0%		0.8824	0.8471	98.9%	0.2038	0.0096	24.114
08:40	08:42	2.0	196.56	134.56	74.27	38.09	39.50	34.45	34.49	34.517	10.91	13.9%		0.8824	0.8471	98.9%	0.2036	0.0096	24.114

Cm ft³													
A	B	E	J		D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
F	G			I									
VMc	VWc	Wood H2 Volume VWW	Inlet Air Moisture BWSi	Psycho BWSc	VWi	VMi	Ve	Cgas(wet)	Mass TGOC Mgas	Cgas(Dry)	Mass TGOC Mgas Accum	Emission Factor EF	Emission Factor EF Accum
dscf	scf	scf	%	%	scf	dscf	wscf	ppmv	lbm-C	ppmv	lbm-C	lbm/Mdbft	lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
20.375	4.069	0.621	1.135	16.647	0.039	3.356	4.018	66.2	8.3E-06	79.5	4.25E-03	7.1E-04	0.3624
20.380	4.061	0.580	1.122	16.616	0.036	3.131	3.742	66.2	7.7E-06	79.4	4.25E-03	6.6E-04	0.3631
20.389	4.055	0.555	1.112	16.590	0.034	3.026	3.627	66.1	7.5E-06	79.2	4.26E-03	6.4E-04	0.3637
20.388	4.044	0.565	1.108	16.552	0.035	3.104	3.728	66.0	7.7E-06	79.1	4.27E-03	6.6E-04	0.3644
20.380	4.028	0.556	1.089	16.504	0.034	3.068	3.685	65.8	7.6E-06	78.8	4.28E-03	6.5E-04	0.3650
20.369	4.011	0.570	1.069	16.453	0.034	3.147	3.773	65.6	7.7E-06	78.5	4.28E-03	6.6E-04	0.3657
20.361	3.996	0.574	1.073	16.406	0.035	3.186	3.822	65.2	7.8E-06	78.0	4.29E-03	6.6E-04	0.3664
20.351	3.979	0.623	1.078	16.356	0.038	3.458	4.140	64.8	8.4E-06	77.5	4.30E-03	7.1E-04	0.3671
20.345	3.965	0.659	1.093	16.311	0.040	3.650	4.358	64.6	8.8E-06	77.2	4.31E-03	7.5E-04	0.3678
20.346	3.955	0.701	1.095	16.276	0.043	3.878	4.624	64.5	9.3E-06	77.0	4.32E-03	7.9E-04	0.3686
20.351	3.948	0.726	1.092	16.247	0.044	4.020	4.791	64.1	9.6E-06	76.6	4.33E-03	8.2E-04	0.3694
20.357	3.941	0.760	1.086	16.219	0.046	4.213	5.019	63.8	1.0E-05	76.2	4.34E-03	8.5E-04	0.3703
20.364	3.935	0.736	1.088	16.192	0.045	4.096	4.879	63.8	9.7E-06	76.2	4.35E-03	8.3E-04	0.3711
20.370	3.927	0.686	1.086	16.163	0.042	3.821	4.546	63.5	9.0E-06	75.7	4.36E-03	7.7E-04	0.3719
20.378	3.922	0.682	1.076	16.139	0.041	3.810	4.536	63.4	9.0E-06	75.6	4.37E-03	7.7E-04	0.3726
20.383	3.914	0.661	1.076	16.111	0.040	3.712	4.423	63.4	8.7E-06	75.5	4.37E-03	7.5E-04	0.3734
20.384	3.905	0.631	1.085	16.076	0.039	3.553	4.229	63.2	8.3E-06	75.3	4.38E-03	7.1E-04	0.3741
20.386	3.896	0.595	1.085	16.045	0.037	3.362	3.999	63.1	7.9E-06	75.2	4.39E-03	6.7E-04	0.3748
20.389	3.887	0.600	1.091	16.013	0.038	3.404	4.050	62.8	7.9E-06	74.8	4.40E-03	6.8E-04	0.3754
20.390	3.878	0.586	1.088	15.980	0.037	3.331	3.960	62.7	7.7E-06	74.7	4.41E-03	6.6E-04	0.3761
20.392	3.869	0.608	1.094	15.948	0.038	3.446	4.089	62.6	8.0E-06	74.5	4.41E-03	6.8E-04	0.3768
20.400	3.864	0.593	1.105	15.924	0.038	3.373	4.001	62.4	7.8E-06	74.2	4.42E-03	6.6E-04	0.3775
20.408	**3.859**	**0.573**	**1.105**	**15.901**	**0.036**	**3.267**	**3.875**	**62.3**	**7.5E-06**	**74.0**	**4.43E-03**	**6.4E-04**	**0.3781**
20.415	3.853	0.558	1.097	15.876	0.035	3.186	3.778	62.2	7.3E-06	73.9	4.44E-03	6.2E-04	0.3787
20.423	3.847	0.538	1.101	15.852	0.034	3.079	3.649	62.0	7.0E-06	73.7	4.44E-03	6.0E-04	0.3793
20.431	3.842	0.511	1.098	15.829	0.033	2.936	3.479	60.9	6.6E-06	72.3	4.45E-03	5.6E-04	0.3799
20.438	3.836	0.509	1.100	15.804	0.033	2.958	3.518	59.5	6.5E-06	70.6	4.46E-03	5.6E-04	0.3804
20.432	3.824	0.533	1.104	15.763	0.035	3.106	3.693	57.8	6.7E-06	68.6	4.46E-03	5.7E-04	0.3810
20.425	3.810	0.559	1.100	15.721	0.036	3.265	3.878	56.1	6.8E-06	66.6	4.47E-03	5.8E-04	0.3816
20.420	3.797	0.582	1.098	15.681	0.038	3.403	4.039	54.6	6.9E-06	64.7	4.48E-03	5.9E-04	0.3822
20.416	3.786	0.589	1.106	15.642	0.039	3.459	4.105	53.1	6.8E-06	63.0	4.48E-03	5.8E-04	0.3828
20.410	3.773	0.590	1.104	15.601	0.039	3.452	4.085	51.9	6.6E-06	61.5	4.49E-03	5.6E-04	0.3833
20.413	3.765	0.577	1.095	15.573	0.037	3.379	3.996	50.8	6.3E-06	60.2	4.50E-03	5.4E-04	0.3839
20.418	3.759	0.576	1.109	15.546	0.038	3.376	3.988	49.8	6.2E-06	59.0	4.50E-03	5.3E-04	0.3844
20.425	3.753	0.578	1.110	15.523	0.038	3.408	4.030	48.6	6.1E-06	57.5	4.51E-03	5.2E-04	0.3849
20.427	3.745	0.558	1.104	15.494	0.037	3.306	3.911	47.5	5.8E-06	56.2	4.51E-03	4.9E-04	0.3854
20.426	3.736	0.519	1.096	15.461	0.034	3.090	3.656	46.6	5.3E-06	55.2	4.52E-03	4.5E-04	0.3859
20.424	3.725	0.509	1.100	15.426	0.034	3.033	3.586	45.2	5.1E-06	53.4	4.53E-03	4.3E-04	0.3863
20.424	3.716	0.478	1.100	15.393	0.032	2.861	3.382	44.4	4.7E-06	52.5	4.53E-03	4.0E-04	0.3867
20.423	3.706	0.479	1.103	15.360	0.032	2.870	3.387	43.7	4.6E-06	51.7	4.53E-03	3.9E-04	0.3871
20.424	3.698	0.464	1.113	15.331	0.031	2.779	3.274	43.2	4.4E-06	51.1	4.54E-03	3.8E-04	0.3875
20.430	3.692	0.469	1.115	15.307	0.032	2.814	3.316	42.4	4.4E-06	50.0	4.54E-03	3.7E-04	0.3878
20.435	3.686	0.456	1.116	15.282	0.031	2.747	3.238	41.8	4.2E-06	49.3	4.55E-03	3.6E-04	0.3882
20.437	3.679	0.469	1.119	15.255	0.032	2.824	3.325	41.4	4.3E-06	48.8	4.55E-03	3.7E-04	0.3886
20.443	3.673	0.464	1.118	15.231	0.032	2.805	3.302	40.9	4.2E-06	48.2	4.56E-03	3.6E-04	0.3889
20.447	3.667	0.488	1.122	15.206	0.033	2.949	3.470	40.3	4.4E-06	47.5	4.56E-03	3.7E-04	0.3893
20.453	3.661	0.515	1.121	15.183	0.035	3.116	3.666	39.8	4.6E-06	46.9	4.56E-03	3.9E-04	0.3897

Northwest Hardwood
Alder
19-Jan-99
mew/drb

					54.94	lbm	Starting Mass		0.9830	Meter (Y)	TGOC analyzer calib	Span		84	250.6	227.8	ppmv		19.77 Start Cal Tim
					26.84	lbm	Ending Mass		29.9000	inHg		Zero		0	0.38	-3.8	ppmv		22.45 End Cal Tim
					28.10	lbm	Total Mass Displaced		101.25	kPa	Load cell calibration	Span		50	50	50.12	lbm	DBFT	Chamber
												Zero		0	0.08	0.07	lbm	11.714057	30.01

1A	1B	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	(A+B) & (F+G)
Interval Start Time	Interval End Time	Interval Duration min	"Value" Tc F	"Value" Twb F	"Value" Tm F Ambient & Meter	"Value" VOC ppmv	"Value" RH %	"Value" M lbm	Drift Corrected Mass Wm lbm	Calculated Mass Wma lbm	Wood Water Change dWw gm	Wood Moisture %Bwc %	Meter Reading cuft dVm ft³	Inlet Meter Volume Wet Vm(wet) ft³	Inlet Meter Volume Dry Vm(std) dscf	Inlet Air Fraction dr mfg(inlet	Inlet Water Change gm	Inlet Water Volume Vw(std) dscf	Vc(x) wscf
Range to 12% H2O	Min		124.52	95.77	67.45	24.46	36.32	33.41	33.45	33.47	0.48	12.0%							24.11
	Max		196.59	156.96	77.09	87.94	53.13	54.90	54.90	54.91	38.26	51.1%							27.09
	Avg/Sum	938	185.95	144.19	74.66	67.20	40.34	42.90	42.97	42.98	20.84	29.4%			329.25		81.47	3.84	24.52
08:42	08:44	2.0	196.59	134.51	74.28	37.57	39.73	34.42	34.47	34.491	11.54	13.9%		0.8824	0.8470	98.9%	0.2049	0.0097	24.113
08:44	08:46	2.0	196.59	134.47	74.28	37.44	39.70	34.37	34.44	34.467	10.93	13.8%		0.8824	0.8470	98.9%	0.2047	0.0097	24.113
08:46	08:48	2.0	196.54	134.42	74.30	36.94	39.89	34.34	34.42	34.444	10.78	13.8%		0.8824	0.8469	98.9%	0.2058	0.0097	24.115
08:48	08:50	2.0	196.52	134.38	74.22	36.56	39.86	34.31	34.40	34.421	10.34	13.8%		0.8824	0.8471	98.9%	0.2051	0.0097	24.116
08:50	08:52	2.0	196.43	134.33	74.08	36.03	39.90	34.30	34.38	34.399	9.88	13.7%		0.8824	0.8473	98.9%	0.2045	0.0096	24.119
08:52	08:54	2.0	196.43	134.28	74.03	35.80	40.22	34.28	34.36	34.379	9.20	13.7%		0.8824	0.8473	98.9%	0.2058	0.0097	[illegible]
08:54	08:56	2.0	196.32	134.24	73.95	35.29	40.32	34.25	34.33	34.357	9.83	13.6%		0.8824	0.8475	98.9%	0.2057	0.0097	24.123
08:56	08:58	2.0	196.30	134.19	73.80	34.77	40.09	34.22	34.31	34.335	10.33	13.6%		0.8824	0.8478	98.9%	0.2036	0.0096	24.124
08:58	09:00	2.0	196.26	134.15	73.71	34.52	40.34	34.21	34.29	34.313	9.74	13.6%		0.8824	0.8479	98.9%	0.2043	0.0096	24.126
09:00	09:02	2.0	196.27	134.10	73.82	34.13	40.06	34.22	34.27	34.292	9.41	13.5%		0.8824	0.8478	98.9%	0.2036	0.0096	24.125
09:02	09:04	2.0	196.24	134.06	73.67	33.99	39.89	34.21	34.25	34.272	9.44	13.5%		0.8824	0.8481	98.9%	0.2017	0.0095	24.126
09:04	09:06	2.0	196.14	134.01	73.66	34.26	39.84	34.24	34.23	34.250	10.02	13.4%		0.8824	0.8481	98.9%	0.2015	0.0095	24.130
09:06	09:08	2.0	196.16	133.97	73.64	34.28	39.88	34.24	34.20	34.229	9.55	13.4%		0.8824	0.8482	98.9%	0.2015	0.0095	24.129
09:08	09:10	2.0	196.12	133.93	73.72	34.01	39.79	34.27	34.18	34.207	9.85	13.4%		0.8824	0.8480	98.9%	0.2015	0.0095	24.131
09:10	09:12	2.0	196.15	133.88	73.69	33.83	39.98	34.27	34.16	34.185	10.08	13.3%		0.8824	0.8480	98.9%	0.2023	0.0095	24.129
09:12	09:14	2.0	196.25	133.84	73.68	33.60	39.99	34.26	34.14	34.162	10.32	13.3%		0.8824	0.8481	98.9%	0.2023	0.0095	24.126
09:14	09:16	2.0	196.36	133.79	73.59	33.06	39.97	34.22	34.12	34.140	10.20	13.2%		0.8824	0.8482	98.9%	0.2017	0.0095	24.122
09:16	09:18	2.0	196.37	133.75	73.48	32.89	40.00	34.20	34.09	34.117	10.34	13.2%		0.8824	0.8484	98.9%	0.2011	0.0095	24.121
09:18	09:20	2.0	196.29	133.71	73.31	32.16	40.23	34.15	34.07	34.094	10.46	13.2%		0.8824	0.8487	98.9%	0.2011	0.0095	24.124
09:20	09:22	2.0	196.27	133.66	72.98	31.45	40.34	34.09	34.05	34.072	9.89	13.1%		0.8824	0.8493	98.9%	0.1996	0.0094	24.125
09:22	09:24	2.0	196.15	133.62	72.65	30.71	40.99	34.02	34.03	34.051	9.54	13.1%		0.8824	0.8498	98.9%	0.2007	0.0095	24.129
09:24	09:26	2.0	196.04	133.58	72.31	29.94	41.38	33.99	34.01	34.030	9.73	13.0%		0.8824	0.8504	98.9%	0.2004	0.0094	24.133
09:26	09:28	2.0	196.02	133.54	71.99	29.48	41.56	33.94	33.99	34.009	9.29	13.0%		0.8824	0.8509	98.9%	0.1992	0.0094	24.134
09:28	09:30	2.0	196.12	133.49	71.73	29.05	42.18	33.91	33.97	33.989	9.01	13.0%		0.8824	0.8513	98.9%	0.2006	0.0095	24.130
09:30	09:32	2.0	196.20	133.45	71.67	28.73	42.66	33.92	33.94	33.969	9.30	12.9%		0.8824	0.8513	98.9%	0.2024	0.0095	24.127
09:32	09:34	2.0	196.20	133.41	71.75	28.62	42.77	33.92	33.92	33.947	9.95	12.9%		0.8824	0.8511	98.9%	0.2035	0.0096	24.128
09:34	09:36	2.0	196.30	133.37	71.78	28.27	42.87	33.87	33.90	33.926	9.68	12.9%		0.8824	0.8510	98.9%	0.2042	0.0096	[illegible]
09:36	09:38	2.0	196.26	133.33	71.77	27.87	43.28	33.84	33.88	33.905	9.55	12.8%		0.8824	0.8510	98.9%	0.2060	0.0097	[illegible]
09:38	09:40	2.0	196.23	133.29	71.81	27.58	43.11	33.85	33.86	33.883	9.73	12.8%		0.8824	0.8509	98.9%	0.2055	0.0097	24.126
09:40	09:42	2.0	196.09	133.25	71.67	27.21	43.29	33.82	33.84	33.862	9.87	12.7%		0.8824	0.8511	98.9%	0.2054	0.0097	24.132
09:42	09:44	2.0	196.15	133.20	71.40	26.73	43.69	33.83	33.81	33.839	10.36	12.7%		0.8824	0.8516	98.9%	0.2055	0.0097	24.129
09:44	09:46	2.0	196.11	133.16	71.08	26.29	44.13	33.81	33.79	33.816	10.44	12.7%		0.8824	0.8521	98.9%	0.2055	0.0097	24.131
09:46	09:48	2.0	195.99	133.12	70.84	25.88	44.58	33.82	33.77	33.791	11.17	12.6%		0.8824	0.8525	98.9%	0.2060	0.0097	24.135
09:48	09:50	2.0	195.98	133.08	70.60	25.39	44.76	33.79	33.74	33.767	11.22	12.6%		0.8824	0.8529	98.9%	0.2052	0.0097	24.136
09:50	09:52	2.0	196.02	133.04	70.46	25.12	44.96	33.75	33.72	33.740	11.95	12.5%		0.8824	0.8531	98.9%	0.2052	0.0097	24.134
09:52	09:54	2.0	196.02	133.00	70.40	24.84	45.43	33.68	33.69	33.714	12.11	12.5%		0.8824	0.8532	98.9%	0.2069	0.0098	24.134
09:54	09:56	2.0	196.01	132.96	70.62	24.71	45.40	33.65	33.66	33.686	12.47	12.4%		0.8824	0.8527	98.9%	0.2083	0.0098	24.135
09:56	09:58	2.0	196.17	132.92	70.77	24.46	45.36	33.60	33.63	33.659	12.33	12.4%		0.8824	0.8524	98.9%	0.2091	0.0099	24.129
09:58	10:00	2.0	196.33	132.88	70.80	24.50	45.16	33.56	33.61	33.632	12.27	12.3%		0.8824	0.8524	98.9%	0.2084	0.0098	24.123
10:00	10:02	2.0	196.51	132.84	70.92	24.51	45.34	33.60	33.58	33.605	12.15	12.3%		0.8824	0.8522	98.9%	0.2100	0.0099	24.116
10:02	10:04	2.0	196.50	132.80	71.11	24.48	45.02	33.60	33.55	33.580	11.69	12.2%		0.8824	0.8519	98.9%	0.2098	0.0099	24.116
10:04	10:06	2.0	196.48	132.77	71.24	24.60	45.08	33.55	33.53	33.556	10.78	12.2%		0.8824	0.8516	98.8%	0.2110	0.0099	24.117
10:06	10:08	2.0	196.53	132.73	71.40	24.84	44.91	33.55	33.51	33.534	10.12	12.1%		0.8824	0.8513	98.8%	0.2113	0.0100	24.115
10:08	10:10	2.0	196.50	132.69	71.60	24.85	44.83	33.54	33.49	33.512	9.73	12.1%		0.8824	0.8510	98.8%	0.2122	0.0100	24.117
10:10	10:12	2.0	196.54	132.65	71.69	24.91	45.18	33.48	33.47	33.491	9.48	12.1%		0.8824	0.8507	98.8%	0.2145	0.0101	24.115
10:12	10:14	2.0	196.52	132.61	71.59	25.10	53.13	33.41	33.45	33.470	9.55	12.0%		0.8824	0.8491	98.6%	0.2515	0.0119	24.116

Cm ft³													
A F	B G	E	J	I	D	C	H	TGOC Concentration , Mass Emissions and Emissions Factor					
VMc dscf	VWc scf	Wood H2 Volume VWW scf	Inlet Air Moisture BWSi %	Psycho BWSc %	VWi scf	VMi dscf	Ve wscf	Cgas(wet) ppmv	Mass TGOC Mgas lbm-C	Cgas(Dry) ppmv	Mass TGOC Mgas Accum lbm-C	Emission Factor EF lbm/Mdbft	Emission Factor EF Accum lbm/Mdbft
17.31	1.25		1.06	4.61				25.99		30.36			
25.84	7.12		1.38	29.15				88.80		118.40			0.40
19.32	5.20	458.98	1.16	21.22	19.52	1665.96	2147.44	68.61		88.33			
20.458	3.655	0.544	1.128	15.159	0.038	3.297	3.879	39.3	4.7E-06	46.3	4.57E-03	4.1E-04	0.3901
20.463	3.650	0.515	1.127	15.136	0.036	3.129	3.678	39.2	4.5E-06	46.1	4.57E-03	3.8E-04	0.3905
20.470	3.645	0.508	1.133	15.115	0.035	3.094	3.638	38.6	4.4E-06	45.5	4.58E-03	3.7E-04	0.3908
20.476	3.640	0.488	1.129	15.093	0.034	2.970	3.489	38.3	4.2E-06	45.1	4.58E-03	3.6E-04	0.3912
20.484	3.636	0.466	1.125	15.073	0.032	2.849	3.347	37.7	3.9E-06	44.4	4.59E-03	3.4E-04	0.3915
20.489	3.630	0.434	1.132	15.051	0.030	2.655	3.115	37.5	3.6E-06	44.1	4.59E-03	3.1E-04	0.3918
20.497	3.626	0.464	1.132	15.032	0.033	2.844	3.339	37.0	3.8E-06	43.5	4.59E-03	3.3E-04	0.3922
20.503	3.621	0.487	1.120	15.010	0.034	2.987	3.506	36.4	4.0E-06	42.9	4.60E-03	3.4E-04	0.3925
20.509	3.616	0.459	1.123	14.989	0.032	2.828	3.320	36.2	3.7E-06	42.6	4.60E-03	3.2E-04	0.3928
20.514	3.611	0.444	1.120	14.967	0.031	2.735	3.209	35.8	3.6E-06	42.1	4.61E-03	3.1E-04	0.3931
20.520	3.606	0.445	1.109	14.946	0.031	2.742	3.214	35.7	3.6E-06	41.9	4.61E-03	3.0E-04	0.3934
20.528	3.602	0.473	1.108	14.927	0.033	2.921	3.427	35.9	3.8E-06	42.2	4.61E-03	3.3E-04	0.3938
20.533	3.596	0.450	1.108	14.905	0.031	2.785	3.265	36.0	3.7E-06	42.3	4.62E-03	3.1E-04	0.3941
20.539	3.592	0.465	1.108	14.885	0.032	2.883	3.381	35.7	3.8E-06	41.9	4.62E-03	3.2E-04	0.3944
20.543	3.586	0.475	1.112	14.862	0.033	2.959	3.471	35.5	3.8E-06	41.7	4.62E-03	3.3E-04	0.3947
20.546	3.580	0.487	1.112	14.837	0.034	3.036	3.561	35.3	3.9E-06	41.4	4.63E-03	3.3E-04	0.3951
20.549	3.573	0.481	1.109	14.812	0.034	3.000	3.515	34.7	3.8E-06	40.8	4.63E-03	3.2E-04	0.3954
20.553	3.568	0.488	1.105	14.791	0.034	3.039	3.557	34.6	3.8E-06	40.6	4.64E-03	3.3E-04	0.3957
20.560	3.564	0.493	1.105	14.773	0.034	3.082	3.609	33.8	3.8E-06	39.7	4.64E-03	3.2E-04	0.3960
20.566	3.559	0.466	1.096	14.752	0.032	2.913	3.408	33.1	3.5E-06	38.8	4.64E-03	3.0E-04	0.3963
20.574	3.555	0.450	1.101	14.735	0.031	2.816	3.294	32.3	3.3E-06	37.9	4.65E-03	2.8E-04	0.3966
20.582	3.552	0.459	1.099	14.718	0.032	2.883	3.373	31.6	3.3E-06	37.0	4.65E-03	2.8E-04	0.3969
20.587	3.547	0.438	1.092	14.698	0.031	2.763	3.235	31.1	3.1E-06	36.4	4.65E-03	2.7E-04	0.3972
20.589	3.541	0.425	1.099	14.674	0.030	2.687	3.144	30.6	3.0E-06	35.9	4.66E-03	2.6E-04	0.3974
20.593	3.535	0.438	1.109	14.651	0.031	2.773	3.242	30.3	3.1E-06	35.5	4.66E-03	2.6E-04	0.3977
20.597	3.530	0.469	1.115	14.631	0.034	2.976	3.482	30.2	3.3E-06	35.4	4.66E-03	2.8E-04	0.3980
20.600	3.524	0.456	1.119	14.608	0.033	2.895	3.383	29.9	3.1E-06	35.0	4.67E-03	2.7E-04	0.3982
20.606	3.520	0.451	1.129	14.589	0.033	2.865	3.347	29.4	3.1E-06	34.5	4.67E-03	2.6E-04	0.3985
20.611	3.515	0.459	1.126	14.570	0.033	2.914	3.401	29.2	3.1E-06	34.1	4.67E-03	2.6E-04	0.3988
20.619	3.512	0.465	1.125	14.554	0.034	2.972	3.473	28.8	3.1E-06	33.7	4.67E-03	2.7E-04	0.3990
20.623	3.507	0.489	1.125	14.532	0.035	3.117	3.640	28.3	3.2E-06	33.1	4.68E-03	2.7E-04	0.3993
20.628	3.502	0.493	1.124	14.514	0.036	3.141	3.665	27.8	3.2E-06	32.6	4.68E-03	2.7E-04	0.3996
20.636	3.499	0.527	1.127	14.498	0.038	3.371	3.936	27.4	3.4E-06	32.1	4.68E-03	2.9E-04	0.3999
20.641	3.495	0.529	1.122	14.479	0.038	3.392	3.960	26.9	3.3E-06	31.5	4.69E-03	2.8E-04	0.4002
20.645	3.490	0.564	1.122	14.459	0.041	3.615	4.220	26.7	3.5E-06	31.2	4.69E-03	3.0E-04	0.4005
20.649	3.485	0.571	1.131	14.439	0.042	3.668	4.280	26.4	3.5E-06	30.8	4.69E-03	3.0E-04	0.4008
20.654	3.480	0.588	1.139	14.421	0.044	3.796	4.433	26.2	3.6E-06	30.7	4.70E-03	3.1E-04	0.4011
20.655	3.474	0.581	1.143	14.396	0.044	3.762	4.393	26.0	3.6E-06	30.4	4.70E-03	3.0E-04	0.4014
20.656	3.467	0.579	1.140	14.372	0.043	3.755	4.384	26.0	3.6E-06	30.4	4.71E-03	3.0E-04	0.4017
20.656	3.460	0.573	1.149	14.348	0.043	3.714	4.329	26.0	3.5E-06	30.4	4.71E-03	3.0E-04	0.4020
20.661	3.456	0.551	1.148	14.329	0.042	3.581	4.173	26.0	3.4E-06	30.4	4.71E-03	2.9E-04	0.4023
20.666	3.451	0.508	1.155	14.311	0.039	3.315	3.864	26.1	3.1E-06	30.5	4.72E-03	2.7E-04	0.4025
20.669	3.446	0.477	1.157	14.291	0.036	3.113	3.625	26.4	3.0E-06	30.8	4.72E-03	2.5E-04	0.4028
20.674	3.442	0.459	1.162	14.274	0.035	3.004	3.500	26.4	2.9E-06	30.8	4.72E-03	2.5E-04	0.4030
20.678	3.437	0.447	1.175	14.254	0.035	2.932	3.413	26.5	2.8E-06	30.9	4.72E-03	2.4E-04	0.4033
20.682	3.433	0.451	1.377	14.236	0.042	3.005	3.499	26.7	2.9E-06	31.1	4.73E-03	2.5E-04	0.4035

Northwest Hardwoods
January 19 & 20, 1999

NOMENCLATURE

$VM_{c(x)}$: DRY GAS VOLUME OF KILN @ TIME (x) (dscf)

$VW_{c(x)}$: WATER VAPOR VOLUME OF KILN @ TIME (x) (scf)

$VM_{i(x)}$: DRY GAS VOLUME INLET @ TIME (x) (dscf)

$VW_{i(x)}$: WATER VAPOR VOLUME INLET @ TIME (x) (scf)

$VWW_{(x)}$: WATER VAPOR VOLUME FROM WOOD @ Time(x) (scf)

$VM_{c(x+1)}$: DRY GAS VOLUME of KILN @ TIME (x+1)

$VW_{c(x+1)}$: WATER VAPOR VOLUME of KILN @ TIME (x+1)

$Ve_{(x)}$: VOLUME of DRY & WATER VAPOR EXHAUSTING

MEASURED PARAMETERS

T_c : TEMPERATURE ; KILN (°F) DRY BULB

T_{wb} : " ; KILN (°F) WET BULB

T_m : " ; AMBIENT AIR (°F)

VOC : PPMV-C WET

RH% : Relative Humidity INLET AIR

m : MASS OF WOOD SAMPLE

CALIBRATIONS

m & VOC ARE DRIFT CORRECTED.

OTHER

SAMPLE TESTED 11.71 DBFT ALDER
P_b = 29.90 in Hg

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EQUATION NO. 1

$$IWW_{(x)} VM_{c(x)} + VW_{c(x)} + VM_{i(x)} + VW_{(i)x} = VM_{c(x+1)} + VW_{c(x+1)} + Ve(x)$$

EQUATION NO. 2

$$BWS_{c(x+1)} = \frac{100\left(VW_{c(x)} + VWW_{(x)} + VW_{i(x)}\right)}{VM_{c(x)} + VW_{c(x)} + VWW_{(x)} + VM_{i(x)} + VW_{i(x)}}$$

$$= \frac{100\ VW_{c(x+1)}}{VM_{c(x+1)} + VW_{c(x+1)}}$$

KNOWNS

$$VM_{c(x)} = VOL_c \left(\frac{T_{STD}\ P_c}{T_c\ P_{STD}}\right)\left(1 - \frac{BWS_{c(x)}}{100}\right)$$

$$VW_{c(x)} = VOL_c \left(\frac{T_{STD}\ P_c}{T_c\ P_{STD}}\right) \frac{BWS_{c(x)}}{100}$$

$$^{*}VOL_c = 30.987 - \frac{DBFT}{12}$$

KILN MOISTURE $BWS_{c(x)} = \dfrac{100\ VW_{c(x)}}{VW_{c(x)} + VM_{c(x)}}$; FROM PSYCHOMETRY

INLET AIR MOISTURE $BWS_{i(x)} = \dfrac{100\ VW_{i(x)}}{VW_{i(x)} + VM_{i(x)}}$; FROM RH% & INLET TEMPERATURE

* AS THE VOLUME OF INLET AIR INCREASES THE INITIAL VOLUME OF KILN BECOMES LESS IMPORTANT.

$VM_{C(X)} \rightarrow A \ (F)$

$VW_{C(X)} \rightarrow B \ (G)$

$VWW_{(X)} \rightarrow E$

$BWS_i \rightarrow J$

$BWS_{C(X+1)} \rightarrow I$

$VW_{i(X)} \rightarrow D$

$VM_{i(X)} \rightarrow C$

$V_{E(X)} \rightarrow H$

EQUATION NO. 1

$$A+B+C+D = F+G+H$$

EQUATION NO. 2

$$I = \frac{100(B+E+D)}{(A+B+E+D+C)}$$

SOLVING

$$H \ ; \quad H = \left(\frac{A+B+C+D}{F+G}\right) = \left(\frac{A+B+\frac{100D}{J}}{F+G}\right)$$

$$J = \frac{100D}{C+D}$$

$$C+D = \frac{100D}{J} \qquad C = \frac{100D}{J} - D$$

$$C = D\left(\frac{100-J}{J}\right)$$

$$D = \frac{JC}{100-J}$$

$$I = \frac{100\,(B+E+D)}{A+B+E+D+D\left(\frac{100-J}{J}\right)}$$

SOLVE FOR "D"

(1) $$IA + IB + IE + ID + ID\left(\frac{100-J}{J}\right) = 100B + 100E + 100D$$

(2)A $$IA + IB + IE - 100B - 100E = 100D - ID - ID\left(\frac{100-J}{J}\right)$$

(2)B $$= D\left(100 - I - I\left(\frac{100-J}{J}\right)\right)$$

(2)C $$= D\left(\frac{100J - IJ - I100 + IJ}{J}\right)$$

(2)D $$I(A+B+E) - 100(B+E) = D\left[100\left(\frac{J-I}{J}\right)\right]$$

(3) $$D = \left[I(A+B+E) - 100(B+E)\right]\left[\frac{J}{100(J-I)}\right]$$

EQUATION NO I

$$A+B+C+D+E = F+G+H$$

$$C+D = \frac{100D}{J}$$

$$D = \left[I(A+B+E) - 100(B+E)\right]\left[\frac{J}{100(J-I)}\right]$$

$$C+D = \left(\frac{100}{J}\right)\left(I(A+B+E) - 100(B+E)\right)\left(\frac{J}{100(J-I)}\right)$$

$$C+D = \left[\frac{I(A+B+E) - 100(B+E)}{(J-I)}\right]$$

$$H = (A+B) - (F+G) + E + \left(\frac{I(A+B+E) - 100(B+E)}{(J-I)}\right)$$

$$Vc_{(x)} = Vc_{(x)} - Vc_{(x+1)} + VWW_{(x)} + \left[\frac{BWS_{c(x+1)}\left(Vc_{(x)} + VWW_{(x)}\right) - 100\left(VW_{c(x)} + VWW_{c(x)}\right)}{\left(BWSi_{(x)} - BWS_{c(x+1)}\right)}\right]$$

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$$\frac{BWS_i \cdot V_{c(x)} + BWS_{c(x+1)} V_{WW(x)} - 100(VW_{c(x)} + VWW_{(x)}) - (BWS_i - BWS_c)(V_{c(x+1)})}{(BWS_i - BWS_{c(x+1)})} = V_{e(x)}$$

EXAMPLE CALC.

(I) $V_{c(x)} = 30.01 \left(\frac{527.67}{29.92}\right)\left(\frac{29.90}{174.41+459.67}\right) = 24.956$

$BWS_{c(x)} = 20.448 = \frac{100\, VW_{c(x)}}{VM_{c(x)} + VW_{c(x)}} = \frac{100\, VW_{c(x)}}{24.956}$

(II) $VW_{c(x)} = \frac{(20.448)(24.956)}{100} = 5.103$

(III) $VM_{c(x)} = 24.956 - 5.103 = 19.853$

(IV) MASS LOSS FOR INTERUAL = 11.23 gm - WATER

$VWW_{(x)} = (11.23)\left(\frac{0.04707}{0.99823}\right) = 0.5295$

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$$BWS_{c(x+1)} = \left[\frac{A - \frac{(Pa - A)(T_{db} - T_{wb})}{2800 - (1.3\ T_{wb})}}{Pa} \right] 100$$

$Pa = 29.90$ in Hg

$T_{db} = 174.42$ °F

$T_{wb} = 143.78$ °F

$$A = 6.08674e^{-6} T_{wb}^3 - 1.00431e^{-3} T_{wb}^2 + 7.56026e^{-2} T_{wb} - 1.69343$$

$A = 6.08674e^{-6}(143.78)^3 = 18.091734$

$- 1.00431e^{-3}(143.78)^2 = -20.761788$

$+ 7.56026e^{-2}(14378) = 10.870142$

$- 1.69343 = -1.69343$

6.50666

$$BWS_{c(x+1)} = \frac{6.50666 - \frac{(29.90 - 6.50666)(174.42 - 143.78)}{(2800 - (1.3 \times 143.78))}}{29.90}$$

$$= 100 \left[\frac{6.50666 - \left(\frac{716.772}{2613.086} \right)}{29.90} \right] = 20.844$$

INLET AIR MOISTURE

$$BWS_{i(x)} = \frac{RH\% \; EXP\left(18.6866 - 0.00243724\,Ta - \frac{4509.47}{Ta} - \frac{149541}{Ta^2}\right)}{Pa}$$

$RH\% = 48.1$

$Ta = 71.35\ ^\circ F$

$Pa = 29.90$ in Hg

$$(Ta) = 71.35\ ^\circ F = \left(\frac{71.35 - 32.2}{1.8}\right) + 273.15 = 294.9\ K$$

$$(Pa) = 29.90 \text{ in Hg} = 101.325\left(\frac{29.90}{29.92126}\right)$$

$$(Pa) = 101.253$$

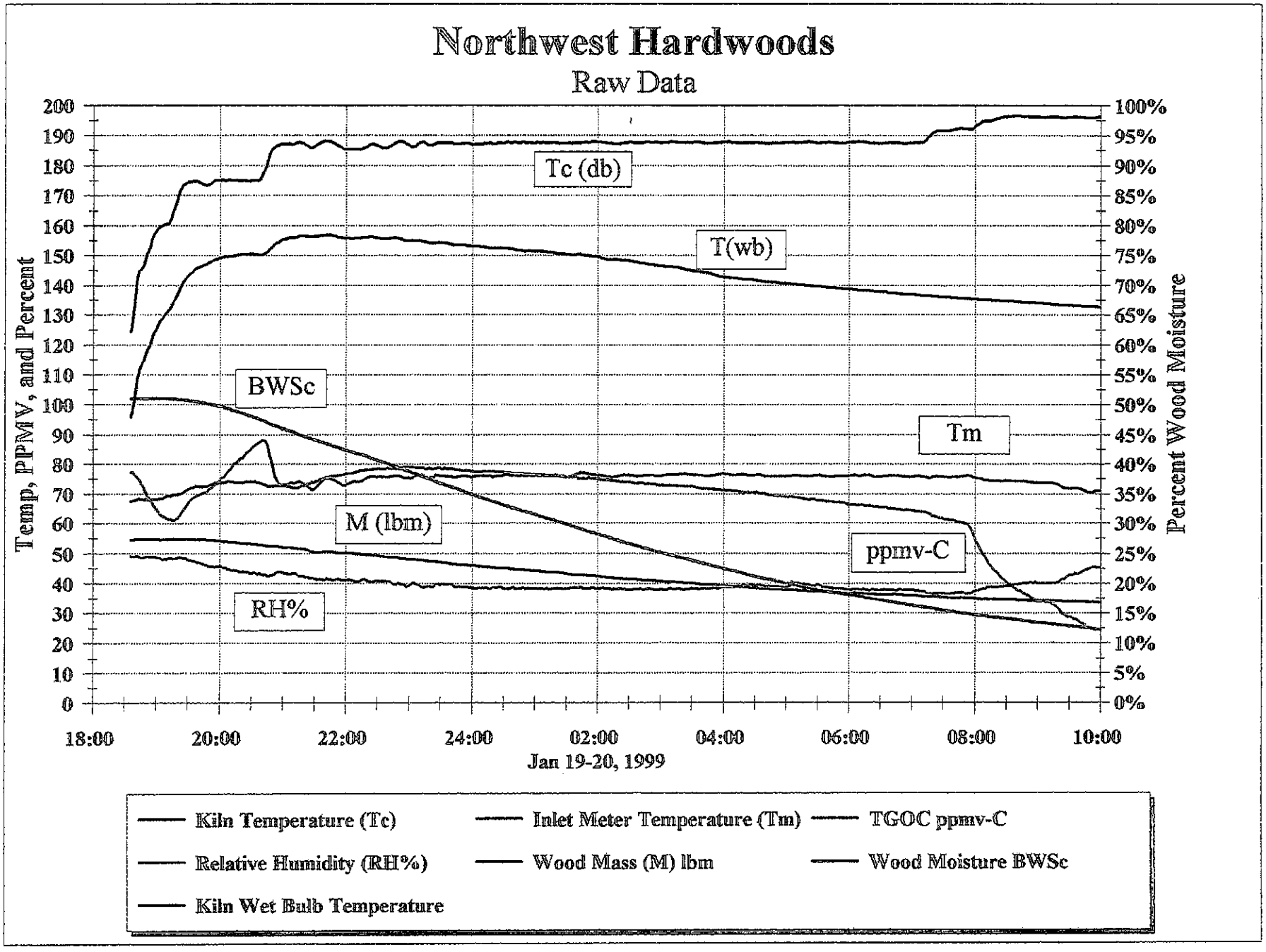
$$BWS_{i(x)} = \left(\frac{48.1}{101.253}\right) EXP\left(18.6866 - 0.00243724(294.9) - \frac{4509.47}{294.9} - \frac{149541}{(294.9)^2}\right)$$

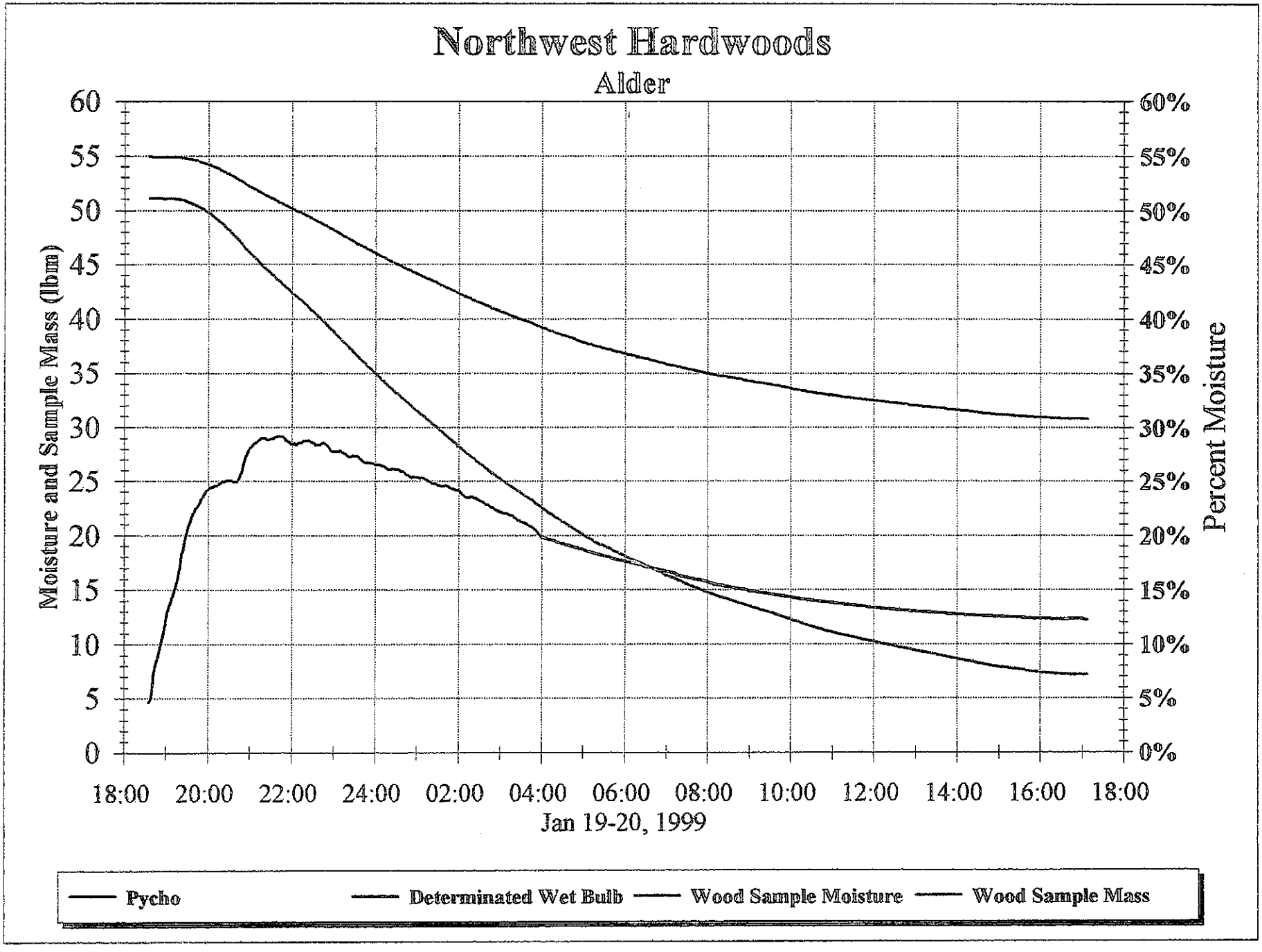
$$BWS_{i(x)} = \frac{48.1}{101.253}\ EXP(0.9568015) = 1.237\ \%$$

(V)

Northwest Hardwoods

Raw Data




Northwest Hardwoods
Alder
Moisture and Sample Mass (lbm)
Percent Moisture
60
55
50
45
40
35
30
25
20
15
10
5
0
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
18:00
20:00
22:00
24:00
02:00
04:00
06:00
08:00
10:00
12:00
14:00
16:00
18:00
Jan 19-20, 1999
Pycho
Determinated Wet Bulb
Wood Sample Moisture
Wood Sample Mass

CALIBRATION INFORMATION

Thermocouple Calibration

Date:	24-Mar-98	Deviation	@60 F	7.8	Allowable Diff.		Pb=	29.88	In Hg	JDF		
Next Calibration:	20-Sep-98	Limit	@212 F	10.1	Allowable Diff.		Ta=	70.0	oF	980324tc		
			@325 F	11.8	Allowable Diff.							

		Ambient			Boiling, Water			Boiling, Oil			Average
	Probe/ID	Standard, F	Measured, F	Difference F	Standard, F	Measured, F	Difference F	Standard, F	Measured, F	Difference F	Difference F
Probe	3-1	33.2	33.0	0.2	211.4	211.4	0.0	357.8	358.4	-0.6	-0.13
Probe	3-2	33.2	33.4	-0.2	212.6	213.6	-1.0	352.8	356.8	-4.0	-1.73
Probe	3-3	34.8	34.8	0.0	210.6	212.6	-2.0	336.4	333.8	2.6	0.20
Probe	wc3-4	33.4	34.6	-1.2	212.2	214.2	-2.0	319.0	316.8	2.2	-0.33
Probe	3-5	33.2	33.4	-0.2	212.8	212.6	0.2	353.8	365.0	-11.2	-3.73
Probe	3-6	34.2	36.0	-1.8	211.6	213.8	-2.2	329.0	334.0	-5.0	-3.00
Probe	3-7	33.2	33.0	0.2	212.8	214	-1.2	358.6	356.8	1.8	0.27
Probe	3-8	33.2	33.6	-0.4	212.8	211.8	1.0	358.2	361.4	-3.2	-0.87
Probe	4-1	35.0	34.6	0.4	211.8	215	-3.2	346.6	346.8	-0.2	-1.00
Probe	4-2	34.6	33.0	1.6	211.2	208.2	3.0	332.4	328.4	4.0	2.87
Probe	4-3	35.4	36.2	-0.8	210 8	211.8	-1.0	332.8	336.0	-3.2	-1.67
Probe	4-4	34.4	33.2	1.2	210.6	211.6	-1.0	340.8	340.8	0.0	0.07
Probe	4-5	34.2	34.6	-0.4	210	212.2	-2.2	338.2	340.0	-1.8	-1.47
Probe	4-6	34.4	33.8	0.6	210.2	210.2	0.0	334.0	332.6	1.4	0.67
Probe	4-7	35.0	35.0	0.0	210.6	212.2	-1.6	336.4	340.4	-4.0	-1.87
Probe	5-2	33.0	33.8	-0.8	212.4	210	2.4	316.4	309.2	7.2	2.93
Probe	5-3	33.6	33.6	0.0	214.6	210.6	4.0	316.0	310.0	6.0	3.33
Probe	5-4	33.0	32.0	1.0	212.4	210.6	1.8	315.8	311.0	4.8	2.53
Probe	5-5	32.2	33.0	-0.8	211.4	210.4	1.0	314.4	314.0	0.4	0.20
Probe	5-6	33.0	32.6	0.4	213	210.8	2.2	315.4	313.8	1.6	1.40
Probe	5-7	32.4	32.4	0.0	214.4	211.2	3.2	319.6	317.4	2.2	1.60
Probe	5-8	33.0	32.8	0.2	212.4	211	1.4	324.4	321.8	2.6	1.40
Probe	5-9	33.0	32.6	0.4	212	211.2	0.8	317.4	320.0	-2.6	-0.47
Probe	7-1	33.6	32.6	1.0	210.8	210.8	0.0	313.0	315.8	-2.8	-0.60
Probe	7-2	33.6	33.0	0.6	211.8	211	0.8	318.6	318.6	0.0	0.47
Probe	7-3	33.2	33.6	-0.4	213.6	211	2.6	318.4	316.0	2.4	1.53
Probe	7-4	33.6	33.6	0.0	212.8	211.2	1.6	315.0	313.0	2.0	1.20
Probe	7-5	32.8	32.6	0.2	213.6	211.2	2.4	320.4	312.0	8.4	3.67
Probe	7-6	32.8	33.0	-0.2	213.4	211.6	1.8	312.4	311.8	0.6	0.73
Probe	10-1	33.6	33.6	0.0	211.8	211.8	0.0	317.2	315.6	1.6	0.53
Probe	10-2	33.8	33.2	0.6	213.8	211	2.8	315.4	316.2	-0.8	0.87
Probe	10-3	33.2	34.4	-1.2	212.2	212.4	-0.2	315.6	318.4	-2.8	-1.40
Pitot	11-S	34.2	33.6	0.6	212.4	214.2	-1.8	314.8	314.2	0.6	-0.20
Pitot	10-S	33.8	33.4	0.4	212.4	213.8	-1.4	325.2	319.0	6.2	1.73
	F3	36.0	34.6	1.4	210.4	211.8	-1.4	280.8	278.6	2.2	0.73
	F23	34.2	35.8	-1.6	210	212.6	-2.6	274.0	272.0	2.0	-0.73
	F51	34.0	34.2	-0.2	211.4	211.8	-0.4	319.0	320.0	-1.0	-0.53
	F84	35.4	33.8	1.6	211.2	213.6	-2.4	308.2	311.8	-3.6	-1.47
	F85	35.2	33.8	1.4	211.2	213	-1.8	306.8	304.2	2.6	0.73
	F100	34.0	34.0	0.0	212.2	211.8	0.4	318.8	316.6	2.2	0.87
	A1	33.2	32.6	0.6	210.8	211.6	-0.8	370.8	368.8	2.0	0.60
	A2	33.4	34.0	-0.6	212	211	1.0	370.4	367.4	3.0	1.13
	A3	33.2	33.8	-0.6	213	212	1.0	368.0	368.8	-0.8	-0.13
	A4	33.4	33.2	0.2	212.8	212	0.8	366.2	363.4	2.8	1.27
	A5	33.4	33.0	0.4	211.8	212.6	-0.8	364.8	362.8	2.0	0.53
	A6	33.2	33.8	-0.6	212.4	209.8	2.6	364.2	357.0	7.2	3.07
	B3	35.8	35.2	0.6	210.6	203.8	6.8	294.8	295.4	-0.6	2.27
	B7	36.2	35.0	1.2	211.2	201.6	9.6	287.4	290.6	-3.2	2.53
	B8	36.2	34.6	1.6	211.4	210.6	0.8	322.8	325.6	-2.8	-0.13
	B10	35.8	35.2	0.6	211.4	213.4	-2.0	312.8	314.8	-2.0	-1.13
	B11	36.2	35.4	0.8	211.2	208.4	2.8	328.0	328.6	-0.6	1.00
	B13	36.0	33.8	2.2	212	211.4	0.6	316.2	316.4	-0.2	0.87
	B14	35.6	34.3	1.3	211.4	213	-1.6	301.8	304.2	-2.4	-0.80
AVERAGE		34.0	33.8	0.2	211.9	211.4	0.5	326.9	326.5	0.5	0.4
				0.04%			0.07%			0.06%	
Hivol Dial Gauges											
9118		35.4	35	0.4							
D-2					211.6	211	0.6	320.6	326.0	-5.4	
D-5					211.4	210	1.4	322.0	330.0	-8.0	
D-7		35.2	35	0.2	211.4	206	5.4				
D-9					211.2	210	1.2	321.8	328.0	-6.2	
D-10		33.4	36	-2.6	210.6	212	-1.4				
D-14		36.2	32	4.2							

Standard Used Fluke 5895570

Thermocouple Indicator Calibration

Date: 01-26-99	Deviation	@32 F	7.4	Pb=	30.05 in Hg			cdb			
Next Calibration: 7-99	Limit	@212 F	10.1	Ta=	55.0 oF			TCINDm99.WB1			
		@400 F	12.9								
Thermocouple Indicator	Channel	Measured, F	Standard, F	Deviation % absolute	Measured, F	Standard, F	Deviation % absolute	Measured, F	Standard, F	Deviation % absolute	Average Deviation, %
Dial multi-indicator	1	82	84.2	-0.4	487	486.2	0.1	1074	1074.8	-0.1	-0.12
	2	93	94.4	-0.3	520	523.2	-0.3	1074	1076.6	-0.2	-0.25
	3	99	102.0	-0.5	512	516.0	-0.4	1076	1075.4	0.0	-0.30
	4	103	105.2	-0.4	522	526.6	-0.5	1076	1073.2	0.2	-0.22
	5	103	101.4	0.3	504	502.8	0.1	1075	1072.2	0.2	0.20
	6	95	98.2	-0.6	538	543.0	-0.5	1077	1075.6	0.1	-0.33
	7	113	117.2	-0.7	515	514.8	0.0	1147	1146.8	0.0	-0.23
	8	114	112.0	0.3	511	509.4	0.2	1074	1078.2	-0.3	0.08
	9	114	116.0	-0.3	515	514.6	0.0	1076	1079.8	-0.2	-0.18
	10	110	113.4	-0.6	503	506.8	-0.4	1076	1077.0	-0.1	-0.35
Omega trendicator	1	111	110.2	0.1	533	533.2	-0.0	1123	1123.2	-0.0	0.04
	2	117	115.8	0.2	509	507.6	0.1	1123	1123.0	0.0	0.12
	3	117	115.6	0.2	463	462.0	0.1	1018	1016.8	0.1	0.14
	4	119	117.6	0.2	451	449.4	0.2	1018	1017.0	0.1	0.16
	5	119	117.8	0.2	581	579.8	0.1	1078	1077.2	0.1	0.13
Fluke 6393007		108.8	107.4	0.2	520.4	518.6	0.2	1201	1198.8	0.1	0.19
Fluke 7029062		123.8	122.6	0.2	491.6	490.8	0.1	1200.6	1200.8	-0.0	0.09
Meter Box 4	1	75	78.8	-0.7	569	569.4	-0.0	923	924.6	-0.1	-0.29
	2	118	120.8	-0.5	580	580.2	-0.0	931	930.4	0.0	-0.15
	3	118	118.4	-0.1	489	491.6	-0.3	980	981.8	-0.1	-0.16
	4	122	122.8	-0.1	549	551.2	-0.2	971	972.8	-0.1	-0.16
	5	121	122.2	-0.2	502	502.8	-0.1	999	999.6	-0.0	-0.11
Meter Box 5	1	107	110.2	-0.6	482	485.2	-0.3	1137	1138.4	-0.1	-0.33
	2	107	111.8	-0.8	612	614.2	-0.2	1344	1351.6	-0.4	-0.49
	3	167	168.2	-0.2	490	490.0	0.0	1372	1374.4	-0.1	-0.11
	4	93	93.0	0.0	410	410.6	-0.1	1190	1191.0	-0.1	-0.04
	5	98	99.6	-0.3	441	441.8	-0.1	1164	1165.8	-0.1	-0.16
Meter Box 6	1	99	102.4	-0.6	509	511.0	-0.2	1203	1203.2	-0.0	-0.27
	2	115	116.0	-0.2	509	510.4	-0.1	1203	1203.6	-0.0	-0.12
	3	115	115.6	-0.1	484	485.6	-0.2	1203	1204.2	-0.1	-0.12
	4	101	101.6	-0.1	420	422.0	-0.2	1203	1204.8	-0.1	-0.15
	5	101	100.8	0.0	535	533.2	0.2	1204	1203.2	0.0	0.09
Meter Box 7	1	104	104.8	-0.1	497	496.8	0.0	1257	1256.0	0.1	-0.02
	2	118	118.2	-0.0	523	523.2	-0.0	1217	1216.6	0.0	-0.01
	3	126	126.2	-0.0	488	488.4	-0.0	1237	1237.4	-0.0	-0.03
	4	85	86.2	-0.2	517	516.2	0.1	1191	1195.6	-0.3	-0.14
	5	85	85.4	-0.1	517	518.4	-0.1	1225	1207.2	1.1	0.28
Meter Box 8	1	101	101.2	-0.0	407	407.2	-0.0	1202	1203.6	-0.1	-0.05
	2	105	107.8	-0.5	507	507.8	-0.1	1202	1201.0	0.1	-0.17
	3	106	106.4	-0.1	507	507.6	-0.1	1201	1203.4	-0.1	-0.09
	4	103	103.0	0.0	494	494.2	-0.0	1202	1202.4	-0.0	-0.02
	5	103	104.0	-0.2	497	498.2	-0.1	1201	1201.8	-0.0	-0.12
Meter Box 9	1	98	99.8	-0.3	484	486.4	-0.3	1146	1145.2	0.0	-0.18
	2	102	103.6	-0.3	471	469.6	0.2	1177	1172.0	0.3	0.06
	3	94	92.8	0.2	461	462.0	-0.1	1197	1197.8	-0.0	0.02
	4	109	111.6	-0.5	496	498.2	-0.2	1180	1179.8	0.0	-0.22
	5	104	102.2	0.3	409	410.2	-0.1	1174	1175.2	-0.1	0.04
temp. control box 1	1	138	138.8	-0.1	491	488.4	0.3	1146	1146.8	-0.0	0.03
	2	137	136.6	0.1	545	547.6	-0.3	1152	1152.0	0.0	-0.06
	3	138	138.2	-0.0	426	426.6	-0.1	959	957.2	0.1	0.01
	4	99	99.2	-0.0	456	457.8	-0.2	951	948.4	0.2	-0.02
	5	99	99.2	-0.0	505	503.6	0.1	932	933.2	-0.1	0.01
	6	98	97.8	0.0	535	536.4	-0.1	932	932.4	-0.0	-0.04
temp. control box 2	1	97	97.8	-0.1	490	491.0	-0.1	910	910.4	-0.0	-0.09
	2	98	100.0	-0.4	532	533.0	-0.1	910	911.4	-0.1	-0.19
	3	97	96.6	0.1	476	476.2	-0.0	957	956.4	0.0	0.03
	4	146	145.0	0.2	498	498.2	-0.0	958	960.2	-0.2	-0.00
	5	147	145.4	0.3	540	539.0	0.1	992	990.8	0.1	0.15
	6	126	125.6	0.1	489	490.0	-0.1	993	993.2	-0.0	-0.02
Van II Heater Controls	1	157	156.0	0.2	524	525.8	-0.2	1089	1090.8	-0.1	-0.05
	2	213	213.4	-0.1	528	529.8	-0.2	966	967.8	-0.1	-0.12
	3	105	105.7	-0.1	445	445.2	-0.0	724	720.8	0.3	0.04
	4	125	125.3	-0.1	471	472.6	-0.2	727	725.9	0.1	-0.04
											0.00
											0.00
											0.00
											0.00
AVERAGE		112.09	112.81	-0.13	499.73	500.47	-0.08	1093.98	1094.10	-0.01	-0.07

Standard used, fluke 5895570 calibrated 4-1-98 by Grant Edgie Co.

TEST METHOD

Test Method for Determination of Dry Kiln VOC Emissions

April 5, 1996

Prepared by:

H. DETTINGER
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and

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9-July-96

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1.0 INTRODUCTION

Lumber dry kilns have been identified by the EPA and other environmental agencies as a source of Volatile Organic Compounds (VOCs). The green lumber contains VOCs, which are emitted during the drying process. In order to measure the emissions from dry kilns, it is recommended to apply a test method incorporating EPA Method 25A. However, it is not practical to use the standard EPA Method 25A for dry kilns, because of the following conditions:

a.) Lumber drying can take over 100 hours to process one load.

b.) Most dry kilns have multiple vents and often have significant leakage around the loading doors.

c.) The venting process is periodic. The vents open to release moisture and VOCs in an irregular pattern.

The multiple vent configuration of most dry kilns and the periodic venting makes it difficult to measure the exhaust flow rate. The leakage from doors and other gaps is not measurable and therefore will produce inaccurate results. In addition, tests would need to be repeated for every species of wood the plant dries.

This method applies EPA Method 25A in a controlled environment, where a sample of the lumber is dried in a laboratory dryer and the VOC emissions are measured. The measured quantity of emissions can then be applied to determine accurate emission factors for the actual process by mathematical methods.

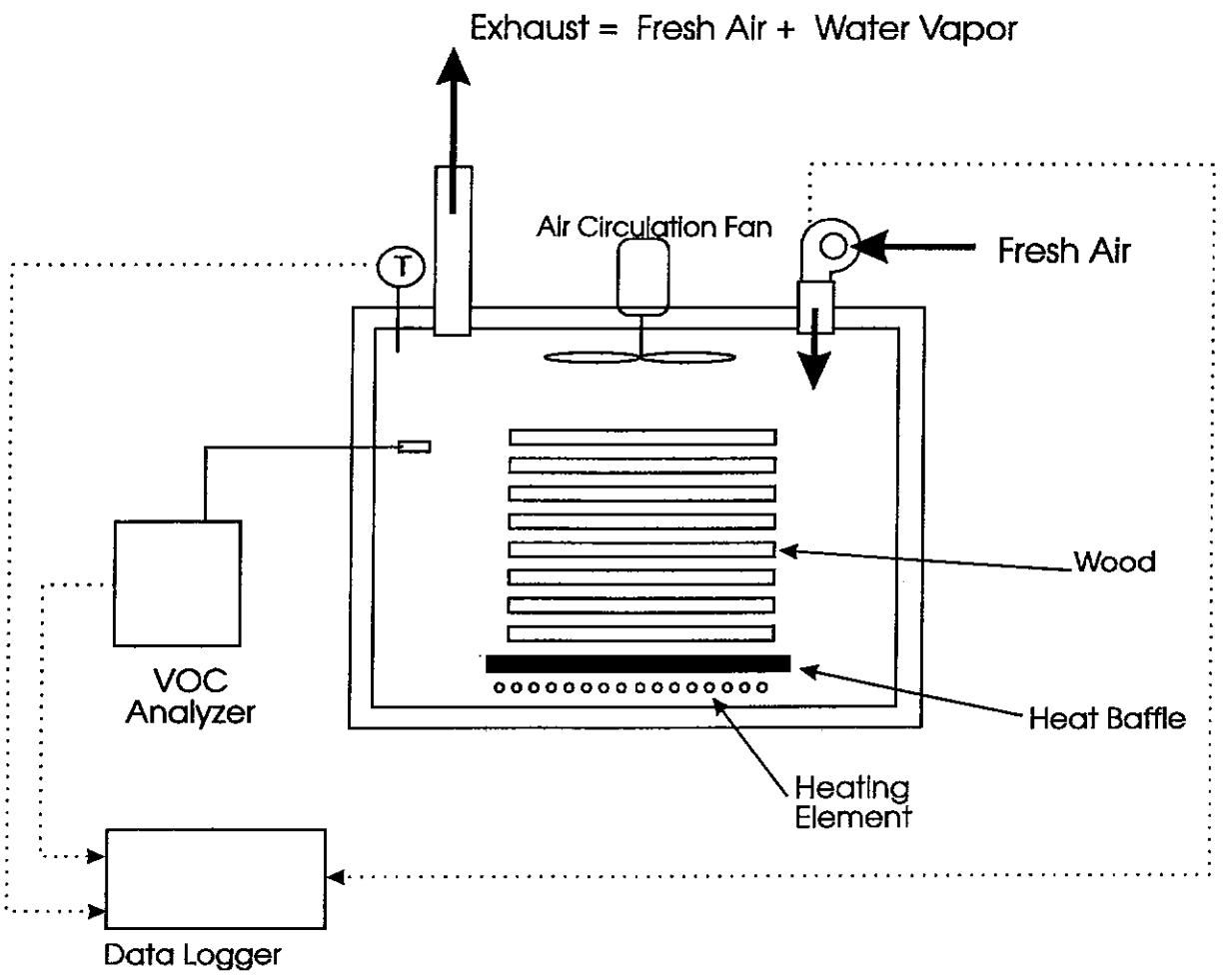
1.1 PRINCIPAL

The method for VOC measurements is based on simulated drying conditions in a laboratory size lumber dry kiln that operates in a controlled environment and can dry approximately 10 to 15 board foot of lumber.

The method is considered to be a worst case analysis, where the highest temperature for a typical drying cycle is applied to the sample at all times. The humidity is not controlled. The maximum temperature is to be that used at the actual kiln site. This is normally about 200°F. This method allows any sample drying time, but normal times of approximately 36 to 48 hours will result in a stable (dry) test load weight. Testing times can be extended if the test load weight is not stable. VOC concentrations from the test kiln are not expected to reach zero near the end of the drying cycle.

The VOC analyzer indicates concentration on a wet basis. To correct the concentration to a dry basis it is not necessary to continuously measure the moisture content of the sample stream even though the moisture varies over the drying cycle. An average moisture content for VOC analyzer correction is calculated at any time based on the dry air volume delivered to the kiln and the amount of moisture evaporated from the sample load. As long as the air flow rate to the kiln is greater than that extracted by the analyzer, moisture and air escaping from the oven through cracks are not a problem.

1.2 SYSTEM SCHEMATIC



Sample Dry Kiln

1.3 APPLICABILITY AND SENSITIVITY OF RESULTS

From the laboratory test results emission factors can be calculated for a typical drying schedule. Separate emission factors can be calculated for each wood species to any percentage dryness.

1.4 TEST KILN APPARATUS

Test Kiln: Industrial drying oven, convection type, with sealed doors and openings, of a size sufficient to hold the test load with adequate air circulation space around the test load. The kiln shall be equipped with the following instrumentation:

Load Cell and Platform: The entire test load shall be sensed by the load cell on a continuous basis. The load cell suspension system shall be designed to minimize binding. The platform should allow the use of non-organic sticker boards to separate the test load boards in a manner similar to actual drying conditions.

Temperature Sensor: A continuous record of the kiln temperature shall be maintained.

VOC Sample Probe: A stainless steel or glass probe to gather sample for the analyzer. The probe outlet should be kept to a minimum length and insulated to prevent condensation before the heated sample line connection.

Air Inlet: To be placed in a location where the air becomes mixed quickly with oven internal air.

Air Outlet: A pressure relief line to allow excess exhaust air to vent. This line should be heated or kept sloped down to prevent accumulation of condensed water vapor that could block the exhaust stream.

Other Test System Equipment Necessary:

Total Hydrocarbon Analyzer System: Heated total hydrocarbon analyzer and sample line, constructed, operated, and calibrated according to EPA Method 25A.

Inlet Air System: A system of providing a constant, measured, hydrocarbon free air to the system. The air should either be dried or have its temperature and humidity measure so that moisture in the stream can be quantified.

Data Logging System: A system to provide a continuous record of the recorded parameters throughout the testing period. Data is to be recorded at intervals no longer than two minutes apart.

2.0 SAMPLE COLLECTION PROCEDURE

Depending on the species and on the location of the board within the log, the VOC content will vary. It is recommended that the collected samples represent a cross section of the log from which the board were cut.

Resin rich soft woods often have localized pitch concentration. These so-called pitch pockets can release significantly more VOC than the average board. Sample boards with pitch pockets should not be selected for the test batch of lumber.

Each species of lumber must be tested separately in order to determine species specific VOC release. Therefore all sample boards for a specific test must be of the same species.

The selected boards must be cut into sample boards between 18" and 24" long (all samples boards should be of approximately the same length).

The board thickness and the width of the boards must represent the average dry kiln load.

The samples must be collected immediately after the log is sawed into boards (within 8 hours).

At least 6 separate boards must be used to compile the sample load.

The composite sample load must be at least 10 board foot based on U.S. Lumber Scale.

Each board must be marked with the date of collection, a batch number and a board number (example - Mar 20/96 - 1/3). This means that the piece came from the first of the six selected boards and is the third piece of the same board. It is best to use pencil for marking. Marking pens may add VOCs to the board.

After the sample board are collected, prepare a data sheet with the following information:

a.) Company Name
Address
Telephone Number

Contact Person

b.) Date of sample preparation.
Responsible person collecting the sample.
Signature of the responsible person.

c.) Species of the lumber.

d.) Total number of pieces shipped and the total board feet in the sample batch.

e.) Dry kiln identification in which this lumber is normally dried.
Identify more than one kiln, if appropriate.

f.) Identify each sample piece as shown in the following example:

Sample #	Nominal Size	Length
1/3	8/4" by 6"	18" (plus or minus 1/8")

g.) Provide the normal drying schedule for this lumber and the maximum drying temperature.

h.) Provide the final moisture content for this lumber.

Immediately after collecting the samples the entire package of sample boards must be shrink-wrapped or enclosed in a plastic bag and sealed with tape to avoid moisture and VOC loss.

2.1 SAMPLE SHIPPING PROCEDURE

The samples should be packaged in a box to avoid damage of the vapor seal during shipping. To ensure arrival at the laboratory within 48 hours of the date the samples were cut and wrapped, select a carrier that can deliver within the specified time.

2.2 PREPARATION AND SET-UP BEFORE TESTING

The testing laboratory must be prepared to perform the test within 96 hours after the samples were collected. Samples should be refrigerated in the shipping materials until the testing is started.

The VOC analyzer must be calibrated following EPA Method 25A. The load cell must be calibrated with known weights. The oven should be preheated for several hours at a temperature slightly above the anticipated test maximum to avoid condensation.

After the preparation, place the lumber in the sample dry kiln and start the VOC sampling device. After the drying cycle has been started, the sample kiln door must be latched and may not be opened during the entire drying process.

The lumber in the sample dry kiln must be dried to the maximum temperature at which the lumber is normally dried at the plant site. Test kiln temperature may be increased at intervals, however, to avoid very high humidity in the chamber.

The heating system and internal air circulation system for the dry kiln must be operating continuously during the drying process.

2.3 DATA COLLECTION

During the drying cycle the following information shall be collected and recorded.

a.) VOC concentration, in ppmvC, inside the sample dry kiln once every two minutes.

b.) The temperature in the sample dry kiln.

c.) The in-flow of fresh air into the sample dry kiln in scfh. The flow rate shall not be less than 10 scfh and not more than 100 scfh for every 10 board foot of lumber in the sample kiln. The meter temperature and the relative humidity of the in-flow air should be recorded.

d.) The weight of the lumber once every two minutes.

e.) The total drying time in hours and minutes shall be recorded.

2.4 TERMINATING THE DRYING CYCLE

The lumber will be dried until the weight of the wood has become stable to less than +/- 0.25 lb over a 12 hour period. Some variation in weight can be expected due to inlet air humidity changes.

Final calibrations checks should be conducted on the VOC analyzer as outlined in EPA Method 25A. A post check on the weighing system must also be performed.

3.0 DATA EVALUATION THEORY

The air in-flow rate and the total air flow data for the entire cycle will be the summarized meter reading in cubic feet. The air in-flow corrected to a dry standard (dscf) will be the same as the out-flow dscf. This will be the volume used in the pounds of VOC calculation.

The water vapor volume will be calculated from the total water loss of the sample plus the water introduced in the in-flow air. From the total water vapor volume and the total dry air volume a percentage moisture can be calculated for any time during the test cycle.

With the results of VOC concentration in ppmvC (wet basis), the percentage moisture, and the volumetric flow in dscf, the total VOC release in lbC can be calculated for any lumber moisture content.

From the result in lb of VOC for the test sample, an emission factor in lb of VOC per 1000 board feet of lumber can be calculated.

3.1 EQUATIONS TO DETERMINE EXHAUST FLOW

The actual exhaust flow from the sample dry kiln is the sum of the air flow plus the water vapor flow from the evaporated water in the wood. However, this is not used in the emission factor calculation.

a.) Air in-flow in dscf

Vsd = Y Vm T(std) Pb mfg(2) / P(std-1) Tm(abs)

Vm = meter reading volume in actual cft
Y = gas meter correction factor
T(std) = standard temperature, 527.67°R
Tm(abs) = meter temperature in degree Rankin.
Pb = pressure in inch Hg at test site.
P(std-1) = standard pressure, 29.92129 inHg
mfg(2) = mole fraction of dry meter air

b.) Mole fraction of dry meter air

mfg(2) = 1 - Bws(2)/100

$Bws(2) = RH\ Vp / Pb(2)$

Bws(2) = precent moisture of in-flow air
RH = relative humidity of in-flow air
Vp = vapor presure of moisture content of in-flow air
Pb(2) = barametric pressure in kPa

c.) Vapor pressure of moisture content of in-flow air

$Vp = \exp(A + B\ Tm + C/Tm + D/Tm^2)$

A = 18.6866
B = -0.00243724
C = -4509.47
D = -149541.0
*in this equation Tm is in °C + 273.15

3.2 EQUATION TO DETERMINE EXHAUST MOISTURE

a.) Mole fraction of dry gas

$mfg(1) = 1 - Bws(1)/100$

Bws = precent moisture of exhaust

b.) Precent moisture

$Bws(1) = 100\ Vw(std) / Vw(std) + Vm(std)$

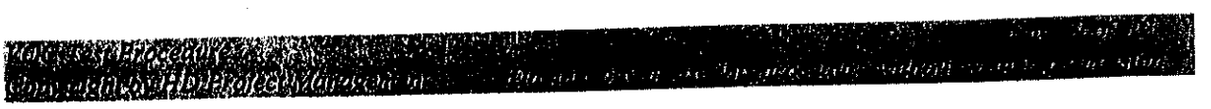
Vw(std) = volume of water vapor, scf
Vm(std) = volume of dry gas, scf

c.) Volume of water vapor

$Vw(std) = 0.04707\ W / 0.99823 + Vw(std)_{in} + Vw(std)_{inital}$

W = weight loss of wood, grams
$Vw(std)_{in}$ = volume of water vapor in the in-flow gas, scf
$Vw(std)_{initial}$ = volume of water vapor in over at start of test

3.3 VOC CONCENTRATION



a.) VOC concentration corrected

VOC(cor) = VOC(dry) corrected for drift per EPA Method 25A

b.) VOC dry calculation

VOC(dry) = VOC(wet) / mfg(1)

VOC(wet) = average from analyzer in ppm
mfg(1) = mole fraction of dry air in oven

3.4 TOTAL SAMPLE VOC IN POUNDS

Mgas = VOC(cor) MW Pstd(2) Vsd / 1000000 R T(std)

VOC(cor) = ppm dry, corrected for drift
MW = molecular weight of carbon, 12.01 lbm / lbmol
Pstd(2) = 2116.22 lbf / ft^2
Vsd = volume of sample (section 3.1)
R = 1545.33 ft lbf / lbmol °R
T(std) = absolute standard temp., 527.67 °R

3.5 VOC EMISSION FACTOR

It is recommended to express the VOC emission factor is in Lbs. of VOC per 1000 board foot of lumber based on U.S. lumber scale. For other lumber scales the numbers must be corrected.

a.) Emission factor in Lbs./1000 BF (U.S.)

EF = Mgas / (BF_{sample}) * 1000 (in Lb / 1000 BF U.S.)

BF = Total board foot of lumber dried in the sample kiln in U.S. lumber scale.