Background Report Reference

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BOVAR-CONCORD Environmental

January 1995

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JOB NUMBER 4214964

SOURCE EMISSION TESTING

Prepared For:

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1.0 INTRODUCTION

BOVAR-CONCORD Environmental (B-CE) conducted a series of source emission tests at Louisiana Pacific's (LP) Orientated Strand Board (OSB) facility located in Dawson Creek, B.C. from September 28,1994 through to October 01, 1994. The tests were to meet LP's third quarter monitoring requirements.

All testing was conducted in accordance to the methods specified in LP operating permit PA-7596. When possible the surveys were conducted in accordance to the British Columbia Ministry of Environment, Lands and Parks (BC MELP) source testing guidelines (B.C. code). As per BC MELP, if a method could not be found in the B.C. code the relevant Environmental Protection Agency (EPA) method was used.

Mr. R.W. (Rolly) Grimm of the BC MELP (Kootenay Region) was on-site to witness testing procedures and sampling train recovery. Mr. Cameron Eggleston of the BC MELP (Ft. St. John office) was on-site to gather process information during the testing program.

As per Ms. Barb Beyer's (BC MELP, Prince George office) request, additional monitoring was conducted for the following parameters. The results have been included in this report and may be located in the appropriate sections.

PARAMETER	UNIT	SUMMARY TABLE
Formaldehyde	Konus Kessel Stack	Table 8.0
Sodium Hydroxide (NaOH)	Press Vent	Table 11.0
Characterize Condensable Organics	One Dryer Stack	Table 15.0

2.0 RESULTS

All field data sheets, QA/QC data sheets, chain of custody, lab results, and computer printouts may be located in the appendices. Calculations were performed by B-CE using a proprietary computer program.

Tables 1.0 - 15.0 contain summaries of relevant testing information.

3.0 METHODS

Parameter	Sampling Method	Analytical Method
Particulate	USEPA Method 202	USEPA 600 Method 5
Formaldehyde	USEPA Method 0011	USEPA 600 Method 0011
Hydrogen Cyanide (HCN)	USEPA Modified 6	USEPA 600 Method 9010 (as per Method 9010)
Methylene Diphenyl Diisocyanate (MDI)	USEPA Draft Method	USEPA Draft Method 94-TA27.01
Condensable Organics	USEPA Method 202	USEPA 600 Method 202
Condensable Organics Characterization	USEPA Method 202	USEPA Method 8270
Phenol	USEPA Method 0010	USEPA Method 0010

4.0 DISCUSSION

The HCN sampling was carried out using a Modified U.S. EPA Method 6 with 0.1 N NaOH as the trapping solution. This method was accepted as opposed to the isokinetic U.S. EPA Method 5 in a letter dated September 23, 1994 from R.A. Fairservice of the BC MELP to BOVAR-CONCORD Environmental. The U.S. analytical method 9010 was used by the lab as recommended in the Terms of Reference.

One of the HCN samples was lost due to a laboratory accident. This was the sample from Test one of the Surface Core Dryer. Some of the sample was saved and was run using a different method than U.S. 9010; however, due to the laboratory accident, the result obtained should be rejected. This occurrence is also documented cover letter in the Laboratory Appendix.

The press vent was tested for NaOH using proportional sampling. These samples were analyzed by back-titrating with dilute acid and converting to equivalents of NaOH. For future testing, the analyses for NaOH will be performed using ICP or flame absorption, and titration.

The MDI sampling was performed as per Mr. Frank Wilshire and Joseph Knoll's paper, *Field Test and Validation of a Source Test Method for Methylene Diphenyl Diisocyanate*, 1994. This is a method currently under review by the U.S. EPA and was accepted by the BC MELP for determination of MDI at Louisiana Pacific, Dawson Creek. The absorbing solution was the derivitizing agent 1-(2-pyridyl) piperazine in toluene. The first three impingers contained absorbing solution, the fourth was dry, the fifth contained silica gel, and the sixth contained activated charcoal. The sampling was performed isokinetically and the recovery was performed by rinsing with toluene followed by acetonitrile.

Mr. Bill Karoly of ICI brought a field spike of MDI to Louisiana Pacific and prepared two different spike samples, B1-MDI and B2-MDI, which were recovered by BOVAR-CONCORD personnel. These spikes were implemented as a quality control check on the efficiency of the sampling train recovery.

MDI spiking solution was also prepared by Zenon Environmental Laboratories. Field spikes were performed and recovered by BOVAR-CONCORD personnel as an additional quality control check for the recovery efficiency of the MDI sampling trains. Unfortunately, the spiking solution was prepared in too great a concentration and precipitated out of solution. Because of this, the results for these field spikes should be flagged as suspect.

Due to the concern of the MDI emissions at Louisiana Pacific, it was requested that all of the MDI samples be split and be analyzed by at least two different laboratories. One of the laboratories was Zenon Environmental and the other was Entropy. Table 16.0 shows the comparison of the results from the two laboratories. UV detection is more accurate than fluorescence for interpretation of the MDI results.

TABLE 1.0

SUMMARY SURFACE CORE DRYER

PARTICULATE/COND-ORGANIC/CYANIDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/29	94/09/29	
- Time	14:09-15:31	17:40-19:10	
Average Gas Temperature			
- °C	59.30	58.7	59.00
Average Gas Velocity			
- m/s	17.71	17.91	17.81
Stream Flow Rate			
- DSm^3/hr	62280	63087	62684
Water Content			
- mole %	20.25	20.27	20.26
Particulate & Condensable Organics			
- mg/DSm^3	47.20	50.70	48.95
- mg/s	816	889	852.5
- KG/hr	2.938	3.200	3.069
Hydrogen Cyanide			
- mg/DSm^3	see note 1.0	8.438E-6	
- mg/s		1.479E-4	
- KG/hr		5.326E-7	
Flue Gas Composition (% wet)			
- O_2	18.00	18.00	18.00
- CO_2	2.50	2.00	2.25
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	101.7	101.2	101.45

Note 1 Sample lost due to lab accident

TABLE 2.0

SUMMARY SURFACE CORE DRYER

FORMALDEHYDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/29	94/09/29	
- Time	14:08-15:36	17:40-19:00	
Average Gas Temperature			
- °C	55.3	54.8	55.05
Average Gas Velocity			
- m/s	17.64	17.68	17.66
Stream Flow Rate			
- DSm^3/hr	62531	63207	62869
Water Content			
- mole %	20.59	20.03	20.31
Formaldehyde			
- mg/DSm^3	0.7693	0.5054	0.6374
- mg/s	13.365	8.8750	11.120
-KG/hr	0.0481	0.0320	0.0400
Flue Gas Composition (% wet)			
- O_2	18.00	18.00	18.00
- CO_2	2.50	2.00	2.25
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	100.2	101.1	101.65

TABLE 3.0

SUMMARY CORE DRYER

PARTICULATE/COND-ORGANIC/CYANIDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/28	94/09/28	
- Time	09:33-11:04	13:46-15:00	
Average Gas Temperature			
- °C	60.2	57.1	58.65
Average Gas Velocity			
- m/s	18.62	18.26	18.44
Stream Flow Rate			
- DSm^3/hr	62649	64833	63741
Water Content			
- mole %	22.16	18.57	20.365
Particulate & Condensable Organics			
- mg/DSm^3	64.2	42.2	53.2
- mg/s	1117	760	938.5
- KG/hr	4.02	2.736	3.378
Hydrogen Cyanide			
- mg/DSm^3	4.983E-6	3.802E-6	4.392E-6
- mg/s	8.672E-5	6.847E-5	7910E-5
- KG/hr	3.122E-7	2.465E-7	2847E-7
Flue Gas Composition (% wet)			
- O_2	18.00	17.50	17.75
- CO_2	2.50	2.50	2.50
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	101.2	96.10	98.65

TABLE 4.0

SUMMARY CORE DRYER

FORMALDEHYDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/28	94/09/28	
- Time	09:30-10:54	13:45-14:58	
Average Gas Temperature			
- °C	55.80	52.30	54.05
Average Gas Velocity			
- m/s	17.74	17.55	17.64
Stream Flow Rate			
- DSm^3/hr	60762	63327	62044
Water Content			
- mole %	21.83	18.46	20.14
Formaldehyde			
- mg/DSm^3	0.7947	0.7215	0.7581
- mg/s	13.415	12.695	13.055
- KG/hr	0.0483	0.0457	0.0470
Flue Gas Composition (% wet)			
- O_2	18.00	17.50	17.75
- CO_2	2.50	2.50	2.50
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	102.8	97.00	99.9

TABLE 5.0

SUMMARY SURFACE DRYER

PARTICULATE/COND-ORGANIC/CYANIDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/28	94/09/29	
- Time	17:32-18:43	10:07-11:27	
Average Gas Temperature			
- °C	58.5	56.5	57.50
Average Gas Velocity			
- m/s	18.72	18.43	18.58
Stream Flow Rate			
- DSm^3/hr	64854	68727	66790
Water Content			
- mole %	20.20	16.14	18.17
Particulate & Condensable Organics			
- mg/DSm^3	32.00	27.7	29.85
- mg/s	577	529	553
- kg/hr	2.08	1.90	1.99
Hydrogen Cyanide			
- mg/DSm^3	6.283E-6	3.756E-6	5.020E-5
- mg/s	1.132E-4	7.170E-5	9.245E-5
- KG/hr	4.075E-7	2.581E-7	3.328E-7
Flue Gas Composition (% wet)			
- O_2	18.00	18.00	18.00
- CO_2	2.50	2.50	2.50
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	99.2	95.50	97.35

TABLE 6.0

SUMMARY SURFACE DRYER

FORMALDEHYDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/28	94/09/29	
- Time	17:33-18:41	10:05-11:27	
Average Gas Temperature			
- °C	54.60	51.00	52.80
Average Gas Velocity			
- m/s	18.88	19.17	19.02
Stream Flow Rate			
- DSm^3/hr	66737	73405	70071
Water Content			
- mole %	19.53	15.35	17.44
Formaldehyde			
- mg/DSm^3	0.7917	0.4595	0.6256
- mg/s	14.679	9.370	12.024
-KG/hr	0.0528	0.0337	0.0432
Flue Gas Composition (% wet)			
- O_2	18.00	18.00	18.00
- CO_2	2.50	2.50	2.50
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	99.40	95.70	97.55

TABLE 7.0

SUMMARY KONUS

PARTICULATE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/10/01	94/10/01	
- Time	11:20-12:38	14:00-15:17	
Average Gas Temperature			
- °C	204.8	195.4	200.1
Average Gas Velocity			
- m/s	8.33	7.64	7.985
Stream Flow Rate			
- DSm^3/hr	28103	26234	27168
Water Content			
- mole %	8.96	9.12	9.04
Particulate (12 % CO_2)			
- mg/DSm^3	216.3	158.9	187.6
- mg/s	950	627	788.5
- kg/hr	3.42	2.26	2.84
Flue Gas Composition (% wet)			
- O_2	15.50	15.50	15.50
- CO_2	6.75	6.50	6.62
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	105.2	103.3	104.2

TABLE 8.0

SUMMARY KONUS

FORMALDEHYDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/29	94/09/29	
- Time	09:07-10:35	12:43-14:09	
Average Gas Temperature			
- °C	198.9	194.1	196.5
Average Gas Velocity			
- m/s	7.10	6.74	6.92
Stream Flow Rate			
- DSm^3/hr	24709	24159	24434
Water Content			
- mole %	9.41	8.14	8.775
Formaldehyde			
- mg/DSm^3	0.0552	0.0018	0.0285
- mg/s	0.3790	0.0120	0.1955
-KG/hr	0.0014	0.00004	0.0007
Flue Gas Composition (% wet)			
- O_2	14.50	14.50	14.50
- CO_2	6.00	5.00	5.50
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	102.3	99.80	101.0

TABLE 9.0

SUMMARY PRESS VENT

FORMALDEHYDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/30	94/09/30	
- Time	16:52-17:09	22:08-23:20	
Average Gas Temperature			
- °C	34.00	35.80	34.90
Average Gas Velocity			
- m/s	11.77	11.77	11.76
Stream Flow Rate			
- DSm^3/hr	79033	79171	79102
Water Content			
- mole %	1.88	1.01	1.445
Formaldehyde			
- mg/DSm^3	0.3237	0.5948	0.4592
- mg/s	7.1080	13.082	10.095
-KG/hr	0.0256	0.0471	0.0363
Flue Gas Composition (% wet)			
- O_2	20.90	20.90	20.90
- CO_2	0.00	0.00	0.00
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	102.4	102.2	102.3

TABLE 10.0

SUMMARY PRESS VENT

METHYLENE DIPHENYL DIISOCYANATE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/10/01	94/10/01	
- Time	09:24-10:35	13:19-14:28	
Average Gas Temperature			
- °C	34.60	34.90	34.75
Average Gas Velocity			
- m/s	11.71	11.71	11.71
Stream Flow Rate			
- DSm^3/hr	78468	78951	78710
Water Content			
- mole %	1.92	1.21	1.565
MDI			
- mg/DSm^3	0.0499	0.0520	0.0510
- mg/s	1.0890	1.1400	1.1145
-KG/hr	0.0039	0.0041	0.0040
Flue Gas Composition (% wet)			
- O_2	20.90	20.90	20.90
- CO_2	0.00	0.00	0.00
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	102.9	101.8	102.4

TABLE 11.0

SUMMARY PRESS VENT

SODIUM HYDROXIDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/30	94/09/30	
- Time	13:51-15:03	16:43-17:50	
Average Gas Temperature			
- °C	40.30	39.00	39.65
Average Gas Velocity			
- m/s	11.71	11.77	20.38
Stream Flow Rate			
- DSm^3/hr	78468	79033	32463
Water Content			
- mole %	1.50	1.50	1.480
NaOH			
- mg/DSm^3	23.508	23.241	23.374
- mg/s	512.39	510.22	511.30
- KG/hr	1.8446	1.8368	1.8407
Flue Gas Composition (% wet)			
- O_2	20.90	20.90	20.90
- CO_2	0.00	0.00	0.00
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	NA	NA	NA

TABLE 12.0

SUMMARY BLENDER BAGHOUSE AREA

FORMALDEHYDE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/30	94/10/01	
- Time	19:51-21:29	09:07-10:22	
Average Gas Temperature			
- °C	28.20	27.80	28.00
Average Gas Velocity			
- m/s	20.27	20.49	20.38
Stream Flow Rate			
- DSm^3/hr	32160	32767	32464
Water Content			
- mole %	1.230	0.560	0.895
Formaldehyde			
- mg/DSm^3	0.0590	0.1166	0.0878
- mg/s	0.5280	1.0610	0.7945
-KG/hr	0.0019	0.0038	0.0028
Flue Gas Composition (% wet)			
- O_2	20.90	20.90	20.90
- CO_2	0.00	0.00	0.00
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	100.7	100.1	100.4

TABLE 13.0

SUMMARY BLENDER AREA BAGHOUSE

METHYLENE DIPHENYL DIISOCYANATE

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/09/30	94/09/30	
- Time	10:59-12:43	15:55-17:13	
Average Gas Temperature			
- °C	27.60	28.10	27.85
Average Gas Velocity			
- m/s	20.47	20.26	20.36
Stream Flow Rate			
- DSm^3/hr	32787	32842	32814
Water Content			
- mole %	0.660	0.00	0.330
MDI			
- mg/DSm^3	0.0003	0.0027	0.0015
- mg/s	0.0020	0.0250	0.0135
-KG/hr	7.2E10-6	0.9E10-6	4.0E10-6
Flue Gas Composition (% wet)			
- O_2	20.90	20.90	20.90
- CO_2	0.00	0.00	0.00
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	99.20	97.60	98.40

TABLE 14.0

SUMMARY BLENDER AREA BAGHOUSE

PHENOL

Parameter	Test One	Test Two	Average
Test Period			
- Date	94/10/01	94/10/02	
- Time	14:10-15:56	09:27-11:40	
Average Gas Temperature			
- °C	28.20	27.40	27.80
Average Gas Velocity			
- m/s	20.81	20.10	20.46
Stream Flow Rate			
- DSm^3/hr	32484	32598	32541
Water Content			
- mole %	1.24	1.78	1.510
Phenol			
- mg/DSm^3	3.0381	1.8844	2.4612
- mg/s	27.419	17.066	22.242
-KG/hr	0.0987	0.0614	0.0800
Flue Gas Composition (% wet)			
- O_2	20.90	20.90	20.90
- CO_2	0.00	0.00	0.00
- CO	0.00	0.00	0.00
Isokenetic Variation			
- %	98.60	96.20	97.40

TABLE 15.0

CONDENSIBLE ORGANICS CHARACTERIZATION FROM THE CORE DRYER

COMPOUND	UNITS	T1CP	T2CP
Phenol	ug/m3	256	367
Bis(2-chloroethyl)ether	ug/m3	<1.6	<1.6
2-Chlorophenol	ug/m3	<2.4	<2.4
1,3-Dichlorobenzene	ug/m3	<1.6	<1.6
1,4-Dichlorobenzene	ug/m3	<1.6	<1.6
1,2-Dichlorobenzene	ug/m3	<1.6	<1.6
2-Methylphenol	ug/m3	<1.6	<1.6
Bis(2-chloroisopropyl)ether	ug/m3	<1.6	<1.6
Hexachloroethane	ug/m3	<1.6	<1.6
N-Nitroso-N-propylamine	ug/m3	<1.6	<1.6
Nitrobenzene	ug/m3	<1.6	<1.6
Isophorone	ug/m3	<3.2	<3.2
2-Nitrophenol	ug/m3	<0.8	<0.8
2,4-Dimethylphenol	ug/m3	<1.6	<1.6
Bis(2-chloroethoxy)methane	ug/m3	<0.8	<0.8
2,4-Dichorophenol	ug/m3	<0.8	<0.8
1,2,4-Trichlorobenzene	ug/m3	<1.6	<1.6
Naphthalene	ug/m3	1	0.7
2,6-Dichlorophenol	ug/m3	<0.8	<0.8
Hexachlorobutadiene	ug/m3	<1.6	<1.6
4-Chloro-3-Methylphenol	ug/m3	<0.8	<0.8
Indole	ug/m3	1.2	1.4
1-Methylnapthalene	ug/m3	<0.8	<0.8
2-Methylnapthalene	ug/m3	<0.8	<0.8
2,4,5-Trichlorophenol	ug/m3	<0.8	<0.8
2,4,6-Trichlorophenol	ug/m3	<0.8	<0.8
2,3,4-Trichlorophenol	ug/m3	<0.8	<0.8
2-Chloronaphthalene	ug/m3	<0.8	<0.8
Biphenyl	ug/m3	<0.8	<0.8
1-Chloronapthalene	ug/m3	<0.8	<0.8
Dimethylphthalate	ug/m3	0.8	1.8
Acenaphthylene	ug/m3	<0.8	<0.8
2,6-Dinitrotoluene	ug/m3	<0.4	<0.4
Acenaphthene	ug/m3	<0.8	<0.8
2,4-Dinitrophenol	ug/m3	<4.0	<4.0
4-Nitrophenol	ug/m3	<0.8	<0.8
2,4-Dinitrotoluene	ug/m3	<0.4	<0.4
Diethylphthalate	ug/m3	1.6	2.5

COMPOUND	UNITS	T1CP	T2CP
Fluorene	ug/m3	<0.2	<0.2
N-Nitrosodiphenylamine	ug/m3	<1.6	<1.6
4-Bromophenyl-phenylether	ug/m3	<0.2	<0.2
Hexachlorobenzene	ug/m3	<1.6	<1.6
Pentachlorophenol	ug/m3	<0.8	<0.8
Phenanthrene	ug/m3	1.4	0.9
Anthracene	ug/m3	<0.2	<0.2
Di-n-butylphthalate	ug/m3	2.4	1.2
5-Nitroacenaphthene	ug/m3	<0.8	<0.8
Fluoranthene	ug/m3	<0.2	<0.2
Pyrene	ug/m3	<0.2	<0.2
Benzylbutyl-phthalate	ug/m3	0.6	<0.5
Benzo(a)anthracene	ug/m3	<0.2	<0.2
Chrysene	ug/m3	<0.2	<0.3
Bis(2-ethylhexyl)phthalate	ug/m3	3.8	2.8
Di-n-octylphthalate	ug/m3	0.9	<0.8
Benzo(b)fluoranthene	ug/m3	<0.3	<0.3
Benzo(k)fluoranthene	ug/m3	<0.3	<0.3
Benzo(a)pyrene	ug/m3	<0.4	<0.4
Indeno(1,2,3-cd)pyrene	ug/m3	<0.5	<0.5
Dibenzo(a,h)anthracene	ug/m3	<0.3	<0.3
Benzo(g,h,i)perylene	ug/m3	<0.3	<0.3
Surrogate Recovery			
d5-Phenol	%	120	141
d5-Nitrobenzene	%	130	135
2-Fluorobiphenyl	%	145	145
2,4,6-Tribromophenol	%	132	150
d14-p-Terphenyl	%	134	150
Additional Compounds Detected*			
Benzaldehyde	ug/m3	ND	30.2
2-H-Pyran-2-one	ug/m3	15.2	42.9
Benzenemethanol	ug/m3	36.0	ND
2-Hydroxybenzaldehyde	ug/m3	170	70.0
2-Methylphenol	ug/m3	33.6	ND
4-Methylphenol	ug/m3	47.2	26.2
2-Methoxyphenol	ug/m3	52.8	31.0
4-Ethylphenol	ug/m3	58.4	39.0
Styrene	ug/m3	ND	63.6
2,3-Dihydro-1H-inden-1-one	ug/m3	47.2	15.9
4-Hydroxy-3-methoxy-benzaldehyde	ug/m3	ND	34.2

* = concentrations based on d10-Anthracene

TABLE 16.0

MDI RESULTS

Sample ID	Zenon Fluorescence Conc. (ug)	Entropy Fluorescence Conc. (ug)	Zenon UV Conc. (ug)	Entropy UV Conc. (ug)
B1-MDI ICI Field Spike 1	23	NA	104	58
B2-MDI ICI Field Spike 2	13	NA	30	30.75
T6-BHMDI	<0.5	5.45	<0.5	3.94
T7-BHMDI	7.7	7.35	5	6.25
T1-PVMDI	56	75.5	57	62.5
T2-PVMDI	56	71.5	59	65.5
B11-MDI BOVAR Field Spike 1	7.6	NA	62	10.35
B12-MDI BOVAR Field Spike 2	13	NA	350	20.25
Toluene/Acetonitrile Blank	<0.5	0.965	<0.5	0.95
1,2-PP Blank	<0.5	0.096	<0.5	0.262
Lab Blank	<0.5	------	<0.5	------

APPENDIX A

SURFACE CORE DRYER

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 29 1994
RUN : T1SCP
LOC. : SURFACE CORE DRYER

RUN TIME : 14:09 TO 15:31

PARTICULATE/CONDENSABLE ORGANICS CONCENTRATION

47.2 mg/DSm3	0.0206 gr/DScf
31.2 mg/Am3	0.0136 gr/Acf

PARTICULATE/CONDENSABLE ORGANICS EMISSION RATE

0.816 g/s	6.48 lb/hr

SAMPLE GAS VOLUME	1.1994 DSm3	42.352 DScf
AVERAGE ISOKINETICITY	101.7 %	

FLUE GAS CHARACTERISTICS

MOISTURE	20.25 %	
TEMPERATURE	59.3 deg C	138.8 deg F
FLOW	62280 DSm3/hr	36657 DScfm
	94223 Am3/hr	55458 Acfm
VELOCITY	17.71 m/s	3487.0 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	26.96 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 29 1994
RUN : T1SCP
LOC. : SURFACE CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	95.2 kPa	28.10 in.Hg
STATIC PRESSURE	74.7 Pa	0.30 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.835	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	168.0 g
CONDENSATION IN IMPINGER 2	42.7 g
CONDENSATION IN IMPINGER 3	6.1 g
SILICA GEL WEIGHT GAIN	11.0 g
TOTAL MOISTURE GAIN	227.8 g

PARTICULATE/CONDENSABLE ORGANICS COLLECTION

FILTER PARTICULATE/CONDENSABLE ORGANICS
0.0317 g

WASHINGS PARTICULATE/CONDENSABLE ORGANICS
0.0017 g

IMPINGER PARTICULATE/CONDENSABLE ORGANICS
0.0232 g

TOTAL PARTICULATE/CONDENSABLE ORGANICS
0.0566 g

TOTAL SAMPLING TIME 60.0 min.

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 29 1994
RUN : T1SCP
LOC. : SURFACE CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H20	ORIF. PRES. in.H20	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	140	0.800	1.60	36.55	58	265	230	55	2.0	1.4	98.4
2	3.0	140	0.830	1.75	38.63	59	276	231	52	2.0	4.4	102.1
3	6.0	135	0.830	1.75	40.83	59	248	229	53	2.0	7.9	98.8
4	9.0	140	0.860	1.90	42.97	60	240	230	53	3.0	12.2	102.4
5	12.0	138	0.920	2.10	45.22	60	264	233	55	3.0	18.5	104.1
6	15.0	138	0.930	2.10	47.59	62	257	231	55	3.0	35.5	102.4
7	18.0	140	0.890	2.00	49.94	61	256	230	54	3.0	41.8	102.7
8	21.0	138	0.850	1.85	52.24	61	268	232	55	3.0	46.1	101.2
9	24.0	139	0.840	1.80	54.46	62	256	235	56	3.0	49.6	99.4
10	27.0	139	0.780	1.65	56.63	62	255	231	58	3.0	52.6	100.2
	30.0				58.74							
TRAVERSE NO. 2												
1	0.0	139	0.770	1.65	58.95	57	274	227	55	3.0	1.4	100.4
2	3.0	139	0.800	1.75	61.03	58	238	228	48	3.0	4.4	103.1
3	6.0	139	0.820	1.80	63.21	59	262	231	48	3.0	7.9	102.6
4	9.0	139	0.810	1.75	65.41	60	274	232	49	3.0	12.2	103.1
5	12.0	140	0.850	1.90	67.61	60	235	231	49	3.0	18.5	103.4
6	15.0	140	0.900	2.10	69.87	61	259	231	51	3.0	35.5	106.7
7	18.0	139	0.880	1.95	72.27	60	266	233	51	4.0	41.8	103.9
8	21.0	138	0.870	1.85	74.58	59	278	230	51	4.0	46.1	102.2
9	24.0	138	0.830	1.70	76.84	59	265	229	51	4.0	49.6	100.0
10	27.0	138	0.790	1.55	79.00	59	242	227	52	3.0	52.6	95.8
	30.0				81.02							
		139	0.842	1.83		60	259	231	53	3.0		101.7

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisiana Pacific
CITY PROV. Dawson Creek, B.C
PROJECT # 4214964
TEST T1-Sep
SAMPLE LOCATION Surface Core Dryer
DATE 94.9.29
START TIME 1409
FINISH TIME 1531
BAROMETRIC PRESS.(in Hg) 28.1
STACK PRESS.(in H_2O) 0.3
PITOT COEFFICIENT 0.835
NOZZLE DIAMETER(in) 0.235
GAS METER FACTOR 0.998
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH — x —
CO2(%) 2.5 O2(%) 18
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 168
IMPINGER NET 2 (g) 42.7
IMPINGER NET 3 (g) 6.1
IMPINGER NET 4 (g) 11
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g) 0.03166
NET PROBE WASH WT.(g) 0.0017
IMP.RESIDUE WT.(g) 0.0232
FILTER # 21

METER BOX ID Team 1
PROBE ID Team 2, 7'
NOZZLE ID Team 1, #2
OTHER

EQUIPMENT COMMENTS
can probe and pump direct

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

John Lunnarty
SIGNATURE

94.9.29
DATE

Filter 21

Moisture Analysis Data Sheet

Project #: 4214857 Client LOUISIANA PACIFIC Test: T1-SCP

Test Date: ~~T1-SCP~~ 94.9.29 Sample Location: SURFACE CORE DRYER

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	752.8	584.8		168
Impinger 2	631.1	588.4		427
Impinger 3	561.5	555.4		6.1
Impinger 4				
Impinger 5				
Silica gel impinger	766.3	755.3		11

Net Total Condensate 277.8 (g)

Signature

94.9.29
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION

PROJECT NO. 4214964 CLIENT LOUISIANA PACIFIC TEST(S) T1/T2-SEP
DATE(S) 94.9.29 SAMPLE LOCATION SURPLUS CORE DRYER
OPERATOR(S) JL/BR/GC
Sampling Method (eg. MOE 5) USEPA M202
Modifications to standard method USED HEATED METHOD 5 FILTER
Meter box TEAM #1 Probe TEAM #2,7'
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: S. STEEL
cleaned according to sampling protocol? ✓
undamaged ✓
Probe liner material: TEFLON
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250°F
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications none
pitot tube coefficient 0.835
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge — range — division —
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 50
Filter holder: borosilicate glass ✓ other
frit material: teflon borosilicate glass ✓
other
heated? ✓ temperature 250°F
cleaned according to sampling protocol? ✓
filter holder assembled correctly? ✓
Filter type : AE GLASS FIBRE
filters checked visually for irregularities? ✓
filters properly centered? ✓ labelled? NO
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges —
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? NO
meter temp. 50

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used — glassware proofed? —
Impinger train: number of impingers 4
cleaned according to sampling protocol? ✓
contents: 1st 100ml DI 2nd 100ml DI 3rd 100ml DI
4th SILICA 5th 6th
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ICE/WATER proper connections ✓
modifications: none
grease used on joints: no kind of grease —
Barometric pressure measured? ✓ source of data? ANEROID BAROM
Was preliminary velocity profile performed? ✓
Avg.delta P 0.95 Max. delta P 1.1 static 0.4
Avg. Temp. 140
Estimated moisture content % 20 how estimated? SAT. TEMP
Estimated O2 % 18 CO2 % 2.5 CO % SO2 %
how estimated? PYRITES
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter 0.235
K factor
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 10
number to be used 10
probe markings correct? ✓
Length of sampling time per point desired 3
number to be used 3
Leak test performed before start of sampling? ✓
rate <0.02 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
<0.02 cfm @ 15 in Hg.

Sampling train traversing technique:

Is nozzle sealed when probe in stack with pump off? ✓
Is care taken to avoid scraping nipple of stack wall? ✓
Is an effective seal made around probe at port opening? ✓
Is probe seal made without disturbing flow inside stack? ✓
Is probe moved to each point at the proper time? ✓
Is probe marking system adequate to locate each point? ✓
Was pitot tube kept parallel to stack wall at each point? ✓
If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? —

If filters are changed during a run was there any pariculate loss? —

Meterbox operation:

Is data recorded in a permanent manner? ✓
are data sheets complete? ✓
Average time to reach isokinetic rate at each point 105
Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <0.02 cfm @ 15 in Hg
Probe, filter holder, impingers sealed adequately after test? ✓
Gas analysis from stack? ✓ other? —
from fyrites? ✓ integrated bag? — orsat? —
continuous gas analysers? —
models: —

Approximate stack temperature 140 gas sample volume 2.44
First 8 velocity pressures measured —
Percent isokinetic calculated —
Data forms completed and data recorded properly ✓
General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area CLEAN ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass ____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ____
Storage containers: borosilicate glass ✓ other ____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ____
Petri dishes: plastic ____ other GLASS
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other —
Subdivisions of graduated cylinder < 2 ml? —
cleaned according to sampling protocol? —
Balance type TRIPLE BEAM calibrated (AUDIT)
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 1/4 PINK run 2 ____ run 3 ____
weighed? run 1 ____ run 2 ____ run 3 ____
Probe handling: Acetone rinses ✓ other ____
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks collected: reagent(s) MeCl2
acetone ✓ DI water ✓ other ____
Impinger rinses: DI ✓ other MeCl2
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves ____
Any particulate lost? Probe — Filter —
Description of particulate dark brown

JOHN LENNARTZ
Name

JOHN LENNARTZ
Signature

Sampling Train Data Sheet

ent LOUISIANA PACIFIC Project # 424964 Sample Loc. SURPLUS CORES DRYER Operators FL/GC Date 94/9/29

T2-SEP Traverse # 1 (WEST) Traverse Direction OUT Start Time 1409 Finish Time 1439

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		0.80	1.6		36.55	140	265	230	55		58	58	2
3		0.83	1.75	38.71	38.63	140	272	231	52		59	58	2
6		0.83	1.75	40.81	40.83	135	248	229	53		60	58	2
9		0.86	1.9	43.03	42.97	140	240	230	53		61	58	3
12		0.92	2.1	45.20	45.22	138	264	233	55		62	58	3
15		0.93	2.1	47.53	47.59	138	257	231	55		64	59	3
18		0.89	2.0	49.91	49.94	140	256	230	54		64	58	3
21		0.85	1.85	52.21	52.24	138	263	232	55		64	58	3
24		0.84	1.80	54.46	54.46	139	256	235	56		64	59	3
27		0.73	1.65	56.67	56.63	139	255	231	58		65	59	3
30					58.735								

test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

t test leak check: Rate (cfm) 0.003 at 15 inches Hg (Vacuum)

alue calculated by _____ checked by _____

O2 10
CO2 2.5

Static
+0.30

Sampling Trains Data Sheet

ent LOUISIANA PACIFIC Project # 4214964 Sample Loc. SURFACE COKE DRYER Operators JC/GC Date 94/9/29

T1-Sep Traverse # 2[SOUTH] Traverse Direction OUT Start Time 15:04 Finish Time 15:31

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		0.77	1.65		58.945	139	274	227	55		57	57	3
3		0.80	1.75		61.03	139	238	228	49		60	56	3
6		0.82	1.80	63.19	63.21	139	267	231	48		61	57	3
9		0.81	1.75	65.39	65.41	139	274	232	49		62	57	3
12		0.85	1.9	67.58	67.61	140	235	231	49		63	57	3
15		0.90	2.1	69.83	69.87	140	259	231	51		64	57	3
18		0.88	1.95	72.16	72.27	139	266	233	51		63	56	4
21		0.87	1.85	74.53	74.58	138	273	230	51		62	56	4
24		0.83	1.70	76.83	76.84	138	265	229	51		62	56	4
27		0.79	1.55	79.04	79.00	138	242	227	52		62	56	3
30					81.02								

test leak check: Rate (cfm) 0.005 at 12 inches Hg (Vacuum)

t test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

alue calculated by checked by

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SCP
LOC. : SURFACE CORE DRYER

RUN TIME : 17:40 TO 19:10

PARTICULATE/CONDENSABLE ORGANICS CONCENTRATION

	50.7 mg/DSm3	0.0222 gr/DScf
	33.6 mg/Am3	0.0147 gr/Acf
@ 12% CO2	304.4 mg/DSm3	0.1330 gr/DScf

PARTICULATE/CONDENSABLE ORGANICS EMISSION RATE

0.889 g/s	7.06 lb/hr

SAMPLE GAS VOLUME	1.2096 DSm3	42.711 DScf
AVERAGE ISOKINETICITY	101.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	20.27 %	
TEMPERATURE	58.7 deg C	137.7 deg F
FLOW	63087 DSm3/hr	37132 DScfm
	95285 Am3/hr	56083 Acfm
VELOCITY	17.91 m/s	3526.3 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.15 g/gmole D.B.
	MOL. WT.	26.89 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SCP
LOC. : SURFACE CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	95.2 kPa	28.10 in.Hg
STATIC PRESSURE	89.6 Pa	0.36 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.835	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	132.3 g
CONDENSATION IN IMPINGER 2	65.5 g
CONDENSATION IN IMPINGER 3	15.8 g
SILICA GEL WEIGHT GAIN	16.5 g
TOTAL MOISTURE GAIN	230.1 g

PARTICULATE/CONDENSABLE ORGANICS COLLECTION

FILTER PARTICULATE/CONDENSABLE ORGANICS
0.0327 g

WASHINGS PARTICULATE/CONDENSABLE ORGANICS
0.0032 g

IMPINGER PARTICULATE/CONDENSABLE ORGANICS
0.0255 g

TOTAL PARTICULATE/CONDENSABLE ORGANICS
0.0614 g

TOTAL SAMPLING TIME 60.0 min.

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SCP
LOC. : SURFACE CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	137	0.780	1.55	81.26	49	234	231	44	2.0	1.4	99.6
2	3.0	137	0.800	1.60	83.31	50	264	232	42	2.0	4.4	98.7
3	6.0	138	0.830	1.80	85.37	50	242	230	43	3.0	7.9	105.0
4	9.0	138	0.900	2.00	87.60	51	252	228	43	3.0	12.2	102.6
5	12.0	138	0.920	2.05	89.87	51	265	229	50	3.0	18.5	104.0
6	15.0	138	0.930	2.05	92.20	52	256	230	50	3.0	35.5	102.0
7	18.0	139	0.920	2.00	94.50	52	259	231	50	3.0	41.8	101.3
8	21.0	138	0.870	1.85	96.77	52	266	233	53	3.0	46.1	100.8
9	24.0	138	0.820	1.70	98.97	52	240	235	54	3.0	49.6	100.4
10	27.0	138	0.790	1.65	101.10	52	253	231	54	3.0	52.6	97.5
	30.0				103.13							
TRAVERSE NO. 2												
1	0.0	139	0.780	1.55	104.06	47	230	235	42	3.0	1.4	101.1
2	3.0	139	0.810	1.65	106.13	48	245	230	41	2.0	4.4	100.0
3	6.0	139	0.830	1.70	108.22	49	235	231	41	2.0	7.9	99.2
4	9.0	138	0.860	1.85	110.32	48	264	232	41	3.0	12.2	103.1
5	12.0	137	0.920	2.05	112.54	49	241	229	42	3.0	18.5	105.7
6	15.0	136	0.950	2.15	114.90	50	263	227	44	3.0	35.5	106.4
7	18.0	136	0.950	2.05	117.32	50	256	230	45	3.0	41.8	102.0
8	21.0	137	0.880	1.80	119.64	51	267	231	45	3.0	46.1	101.2
9	24.0	137	0.850	1.65	121.86	51	241	228	49	3.0	49.6	97.4
10	27.0	137	0.840	1.65	123.96	52	263	227	50	3.0	52.6	95.5
	30.0				126.01							
		138	0.861	1.82		50	252	231	46	2.8		101.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 4214964
TEST T2-Sep
SAMPLE LOCATION SURFACE CORE DRYER
DATE 94.9.29
START TIME 1740
FINISH TIME 1910
BAROMETRIC PRESS.(in Hg) 28.1
STACK PRESS.(in H_2O) -0.36
PITOT COEFFICIENT 0.835
NOZZLE DIAMETER(in) 0.235
GAS METER FACTOR 0.998
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH — x —
CO2(%) 2 O2(%) 18
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 132.3
IMPINGER NET 2 (g) 65.5
IMPINGER NET 3 (g) 15.8
IMPINGER NET 4 (g) 16.5
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g) 0.03265
NET PROBE WASH WT.(g) 0.0032
IMP.RESIDUE WT.(g) 0.0255
FILTER # 22

METER BOX ID TEAM #1
PROBE ID TEAM #2, 7'
NOZZLE ID TEAM #1, #2
OTHER
EQUIPMENT COMMENTS

SAMPLING COMMENTS
RAW PROBE AND PUMP DIRECT

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

SIGNATURE 94.9.29

Filter 22

LOST @ 0-10 ML ACETONE DURING PROBE WASH FROM T1-Sep

Moisture Analysis Data Sheet

Project #: 4214864 Client LOUISIANA PACIFIC Test: T2-Se

Test Date: 94.9.29 Sample Location: Surface core dry

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	705.4	573.1		132.3
Impinger 2	667.9	602.4		65.5
Impinger 3	581.8	566.		15.8
Impinger 4				
Impinger 5				
Silica gel impinger	795.3	778.8		16.5

Net Total Condensate 230.1 (g

Signature

94.9.29
Date

static +0.36

Sampling Trains Data Sheet

lent LOUISIANA PACIFIC Project # 421494 Sample Loc. SURFACE CORES DRYER Operators JL/GC Date 94, 9, 2

in # T2-Sep Traverse # 1 (South) Traverse Direction OUT Start Time 17:40 Finish Time 18:10

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
_	0		0.78	1.55		81.26	~~234~~ 137	234	231	44		49	49	2
_	3		0.80	1.60	83.35	83.31	137	264	232	42		50	49	2
3	6		0.83	1.8	85.43	85.37	138	242	230	43		51	49	3
1	9		0.90	2.0	87.53	87.60	138	252	228	43		52	49	3
5	12		0.92	2.05	89.85	89.87	138	265	229	50		53	49	3
2	15		0.93	2.05	92.14	92.20	138	256	230	50		54	49	3
7	18		0.92	2.0	94.49	94.50	139	259	231	50		54	49	3
3	21		0.87	1.85	96.77	96.77	138	246	233	53		55	49	3
1	24		0.82	1.70	98.98	98.97	138	240	235	54		55	49	3
0	27		0.79	1.65	101.12	101.10	138	253	231	54		55	49	3
_	30					103.125								-
_														-
_														-

e test leak check: Rate (cfm) 0.007 at 15 inches Hg (Vacuum)

ost test leak check: Rate (cfm) 0.012 at 15 inches Hg (Vacuum)

value calculated by _____ checked by _____

Sampling Trains Data Sheet

lent ~~NIAGARA~~ LOUISIANA PACIFIC Project # 4214964 Sample Loc. SUNRISE COKE Operators GL/GC Date 94, 9, 25

n # T2-SEP Traverse # 2 (South) Traverse Direction IN Start Time 1840 Finish Time 1910

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	0		0.73	1.55		104.06	139	230	235	42		47	47	3
2	3		0.81	1.65	106.15	106.13	139	245	230	41		49	47	2
3	6		0.83	1.7	108.26	108.22	139	235	231	41		50	47	2
1	9		0.86	1.85	110.38	110.32	138	244	232	41		50	46	3
5	12		0.92	2.05	112.52	112.54	137	241	229	42		52	46	3
	15		0.95	2.15	114.81	114.90	136	243	227	44		53	47	3
1	18		0.95	2.05	117.21	117.32	136	256	230	45		54	46	3
3	21		0.88	1.8	119.63	119.64	137	247	231	45		55	47	3
1	24		0.85	1.65	121.87	121.86	137	241	228	49		55	47	3
0	27		0.84	1.6	124.05	124.96	137	243	227	50		56	47	3
	30			1.65		126.01								

e test leak check: Rate (cfm) 0.012 at 15 inches Hg (Vacuum)

ıat test leak check: Rate (cfm) 0.008 at 15 inches Hg (Vacuum)

value calculated by _____ checked by _____

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : F1SCF
LOC. : SURFACE CORE DRYER

RUN TIME : 14:08 TO 15:36

FORMALDEHYDE CONCENTRATION	769.3 ug/DSm3	0.3362 gr/1000 DScf
	512.6 ug/Am3	0.2240 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	13.365 mg/s	742.47 gr/hr
SAMPLE GAS VOLUME	1.3001 DSm3	45.907 DScf
AVERAGE ISOKINETICITY	100.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	20.59 %	
TEMPERATURE	55.3 deg C	131.5 deg F
FLOW	62531 DSm3/hr	36804 DScfm
	93846 Am3/hr	55236 Acfm
VELOCITY	17.64 m/s	3473.0 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	26.92 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T1SCP
LOC. : SURFACE CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	95.2 kPa	28.10 in.Hg
STATIC PRESSURE	74.7 Pa	0.30 in.H20
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	175.6 g
CONDENSATION IN IMPINGER 2	50.1 g
CONDENSATION IN IMPINGER 3	7.4 g
SILICA GEL WEIGHT GAIN	19.1 g
TOTAL MOISTURE GAIN	252.2 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	1.0000 mg
TOTAL FORMALDEHYDE	1.0000 mg

TOTAL SAMPLING TIME 60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T1SCF
LOC. : SURFACE CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H20	ORIF. PRES. in.H20	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	134	0.840	2.00	298.34	56	225	227	47	1.0	1.4	101.1
2	3.0	133	0.840	2.00	300.64	57	225	246	39	1.0	4.4	100.4
3	6.0	131	0.850	2.05	302.93	57	228	258	40	1.0	7.9	100.0
4	9.0	132	0.910	2.20	305.23	58	229	258	40	1.0	12.2	100.1
5	12.0	132	0.910	2.20	307.61	59	230	256	47	1.0	18.5	99.9
6	15.0	131	0.940	2.25	309.99	60	235	258	46	1.0	35.5	100.5
7	18.0	131	0.960	2.30	312.43	60	237	256	47	1.0	41.8	100.3
8	21.0	131	0.920	2.20	314.89	60	239	259	48	1.0	46.1	101.9
9	24.0	130	0.890	2.50	317.34	60	243	254	47	1.0	49.6	99.8
10	27.0	129	0.860	2.09	319.70	61	245	256	47	1.0	52.6	99.5
	30.0				322.02							
TRAVERSE NO. 2												
1	0.0	131	0.880	2.10	322.41	57	234	255	45	1.0	1.4	100.6
2	3.0	131	0.890	2.15	324.76	57	236	256	44	1.0	4.4	100.3
3	6.0	132	0.920	2.20	327.12	58	237	256	44	1.0	7.9	100.4
4	9.0	132	0.980	2.35	329.52	58	238	253	43	1.0	12.2	99.3
5	12.0	132	0.980	2.35	331.97	59	234	257	43	1.0	18.5	99.9
6	15.0	133	0.980	2.35	334.44	58	241	257	44	1.0	35.5	100.1
7	18.0	132	0.950	2.30	336.91	58	241	254	44	1.0	41.8	100.4
8	21.0	131	0.900	2.15	339.35	58	246	256	45	1.0	46.1	100.1
9	24.0	131	0.900	2.15	341.72	58	248	256	45	1.0	49.6	99.3
10	27.0	130	0.880	2.10	344.07	58	247	256	45	1.0	52.6	99.8
	30.0				346.41							
		131	0.908	2.20		58	237	254	45	1.0		100.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT: LOUISIANA PACIFIC
CITY PROV.: DAWSON CREEK, BC
PROJECT #: 921 4964
TEST: T1-SCF
SAMPLE LOCATION: SURFACE CORE DRYER
DATE: 91.09.29
START TIME: 14:08
FINISH TIME: 15:36
BAROMETRIC PRESS.(in Hg): 28.1
STACK PRESS.(in H_2O): -.3
PITOT COEFFICIENT: .805
NOZZLE DIAMETER(in): .246
GAS METER FACTOR: 1.000
STACK HEIGHT(ft): 50
STACK DIAMETER(in): 54
LENGTH X WIDTH: X
CO2(%): 2.5 O2(%): 18
CO(ppm): OTHER:

IMPINGER NET 1 (g): 175.6
IMPINGER NET 2 (g): 50.1
IMPINGER NET 3 (g): 7.4
IMPINGER NET 4 (g): 19.1
IMPINGER NET 5 (g):
IMPINGER NET 6 (g):

NET FILTER WT.(g):
NET PROBE WASH WT.(g) } 1000 mg
IMP.RESIDUE WT.(g) }
FILTER #: —

METER BOX ID: TEAM VAN
PROBE ID: T1 SA
NOZZLE ID: T3 #3
OTHER:
EQUIPMENT COMMENTS:

SAMPLING COMMENTS:

PROCESS RATE:
CONTROL EQUIP. OPERATION:
PROCESS COMMENTS:

RG Walling
SIGNATURE

91.09.29
DATE

Moisture Analysis Data Sheet

Project #: 921 4964 Client LOUISIANA PACIFIC Test: T1-SCF

Test Date: 94.09.29 Sample Location: SURFACE CORE DRYER

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	768.7	~~[illegible]~~ PGH 593.1		175.6
Impinger 2	625.1	575.0		50.1
Impinger 3	488.3	480.9		7.4
Impinger 4				
Impinger 5				
Silica gel impinger	842.7	823.6		19.1

Net Total Condensate 252.2 (g

RG Moody
Signature

9.0.29.
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION.

PROJECT NO. 4214964 CLIENT LOUISIANA PACIFIC TEST(S) T1/T2 - SCF
DATE(S). 95.09.29 SAMPLE LOCATION SURFACE CORE PRAFR.
OPERATOR(S) RM/BR/GL
Sampling Method (eg. MOE 5) METHOD 0011
Modifications to standard method

Meter box TEAM VAN Probe T1 5FT
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: S. STEEL
cleaned according to sampling protocol? ✓
undamaged
Probe liner material: GLASS
cleaned according to sampling protocol?
heated? ✓ entire length? ✓ temperature 250
Pitot tube: Type S Other
properly attached to probe (no interference with nozzle?) ✓
modifications NONE
pitot tube coefficient .805
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge — range division
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 50°
Filter holder: borosilicate glass other
frit material: teflon borosilicate glass
other
heated? temperature
cleaned according to sampling protocol?
filter holder assembled correctly?
Filter type :
filters checked visually for irregularities?
filters properly centered? labelled?
Recent calibration of orifice meter dry gas meter
pitot tubes ✓ magnehelic gauges ✓
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? NO
meter temp. 60

NO FILTER

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used ___—___ glassware proofed? ___—___
Impinger train: number of impingers ___4___
cleaned according to sampling protocol? ___✓___
contents: 1st ___100 mL DNH___ 2nd ___100 mL DNH___ 3rd ___BLANK___
4th ___S.GEL___ 5th ______ 6th ______
impinger weights recorded? ___✓___
impingers properly assembled? ___✓___
cooling system: ___ICE/WATER___ proper connections ___✓___
modifications: ___NONE___
grease used on joints: ___NO___ kind of grease ___—___
Barometric pressure measured? ___✓___ source of data? ___ANEROID___
Was preliminary velocity profile performed? ___✓___
Avg.delta P ___.195___ Max. delta P ___1.1___ static ___.4___
Avg. Temp. ___190___
Estimated moisture content % ___30___ how estimated? ___~~[illegible]~~ SAT. TEMP___
Estimated O2 % ___18___ CO2 % ___2.5___ CO % ______ SO2 % ______
how estimated? ______
Has an "isokinetic sheet" been completed? ___✓___
Nozzle size properly selected? ___✓___ nozzle diameter ___.246___
K factor ___—___
nozzle properly attached to probe (correct orientation) ___✓___
Number of sampling points per traverse from Source Test Code ___10___
number to be used ___10___
probe markings correct? ___✓___
Length of sampling time per point desired ___3___
number to be used ___3___
Leak test performed before start of sampling? ___✓___
rate ___<.004___ cfm @ ___15___ in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
<.001 cfm @ 15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? ✓
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? —
- If filters are changed during a run was there any pariculate loss? —

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point .05
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <.002 cfm @ 15 in Hg

Probe, filter holder, impingers sealed adequately after test? ✓

Gas analysis from stack? ✓ other? ____
- from fyrites? ✓ integrated bag? ____ orsat? ____
- continuous gas analysers? —
- models: —

Approximate stack temperature 110 gas sample volume @ 90 cf

First 8 velocity pressures measured —

Percent isokinetic calculated —

Data forms completed and data recorded properly ✓

General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area CLEAN ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass _____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other _____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ✓
Petri dishes: plastic _____ other GLASS
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other _____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type TRIPLE BEAM calibrated ✓ AUDIT
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 _____ run 2 _____ run 3 _____
weighed? run 1 _____ run 2 _____ run 3 _____
Probe handling: Acetone rinses _____ other MeCl
Particulate recovery: probe nozzle _____ probe fitting _____
probe liner _____ front half of filter holder _____
Blanks collected: reagent(s) _____
acetone _____ DI water _____ other $MeCl_2$
Impinger rinses: DI _____ other _____
Samples labelled and stored properly? ✓
Liquid levels marked? _____
Filter handling: tweezers used? — surgical gloves _____
Any particulate lost? Probe — Filter _____
Description of particulate —

R G Maslen
Name

RG Malley
Signature

Sampling Trains Data Sheet

Page 1/2

LOUISIANA PACIFIC Project # 4214964 Sample Loc. SURFACE CORE DRYER Operators RM/G Date __/__/97.03.29

T1-SCF Traverse # 1 Traverse Direction IN Start Time 1408 Finish Time 1438

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.84	2.00+		298.34	134	225	227	47		56	56	1
3		.84	2.00.	300.63	300.64	133	225	278	39		57	56	1
6		.85	2.05	302.93	302.93	131	228	258	40		58	56	1
9		.91	2.2	305.23	305.23	132	229	258	40		59	56	1
12		.91	2.2	307.61	307.61	132	230	256	47		61	56	1
15		.94	2.25*	309.99	309.99	131	235	258	46		62	57	1
18		.96	2.31	312.41	312.43	131	237	256	47		62	57	1
21		.92	2.21	314.89	314.89	131	239	259	48		63	57	1
24		.89	2.15	317.29	317.34	130	243	254	47		63	57	1
27		.86	2.09	319.70	319.70	129	245	256	47		63	58	1
30				322.02	322.02								

test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

test leak check: Rate (cfm) 15 at .003 inches Hg (Vacuum)

ue calculated by _____ checked by _____

Sampling Trains Data Sheet

Page 2 of 2

LOUISIANA PACIFIC Project # 1414964 Sample Loc. SURFACE CORE Operators RM/G Date 9/29/93

T1-SCF Traverse # 2 Traverse Direction IN Start Time 15:00 Finish Time 15:30

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.88	2.11		322.41	131	234	255	45		57	56	1
3		.89	2.15	324.75	324.76	131	236	256	44		58	56	1
6		.92	2.21	327.12	327.12	132	237	256	44		59	56	1
9		.96	2.35	329.52	329.52	132	238	255	43		59	56	1
12		.98	2.35	331.99	331.97	132	234	257	43		60	57	1
15		.96	2.35	334.44	334.44	133	241	257	44		60	56	1
18		.95	2.3	336.91	336.91	132	241	254	44		60	55	1
21		.90	2.15	339.35	339.35	131	246	256	45		60	55	1
24		.90	2.15	341.72	341.72	131	248	256	45		60	55	1
27		.88	2.11	344.09	344.07	130	247	256	45		60	55	1
30				346.41	346.41								

test leak check: Rate (cfm) 15 at .003 inches Hg (Vacuum)

test leak check: Rate (cfm) 15 at .003 inches Hg (Vacuum)

O_2 18
CO_2 2.5

944 mb

ue calculated by _____ checked by _____

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SCF
LOC. : SURFACE CORE DRYER

RUN TIME : 17:40 TO 19:00

FORMALDEHYDE CONCENTRATION	505.4 ug/DSm3	0.2209 gr/1000 DScf
	339.6 ug/Am3	0.1484 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	8.875 mg/s	493.04 gr/hr
SAMPLE GAS VOLUME	1.3259 DSm3	46.819 DScf
AVERAGE ISOKINETICITY	101.1 %	

FLUE GAS CHARACTERISTICS

MOISTURE	20.03 %	
TEMPERATURE	54.8 deg C	130.6 deg F
FLOW	63207 DSm3/hr	37203 DScfm
	94049 Am3/hr	55356 Acfm
VELOCITY	17.68 m/s	3480.5 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.15 g/gmole D.B.
	MOL. WT.	26.92 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SCF
LOC. : SURFACE CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	95.2 kPa	28.10 in.Hg
STATIC PRESSURE	89.6 Pa	0.36 in.H2O
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	160.1 g
CONDENSATION IN IMPINGER 2	63.3 g
CONDENSATION IN IMPINGER 3	12.1 g
SILICA GEL WEIGHT GAIN	13.0 g
TOTAL MOISTURE GAIN	248.5 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.6700 mg
TOTAL FORMALDEHYDE	0.6700 mg

TOTAL SAMPLING TIME 60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SCF
LOC. : SURFACE CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H20	ORIF. PRES. in.H20	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	129	0.830	2.00	346.88	46	231	258	42	1.0	1.4	101.7
2	3.0	130	0.880	2.10	349.16	47	239	251	36	1.0	4.4	101.3
3	6.0	130	0.880	2.10	351.50	47	239	260	43	1.0	7.9	98.7
4	9.0	131	0.960	2.30	353.78	47	235	257	43	1.0	12.2	101.6
5	12.0	130	1.000	2.40	356.23	47	233	260	41	1.0	18.5	101.5
6	15.0	131	1.000	2.40	358.73	47	244	260	41	1.0	35.5	101.6
7	18.0	131	1.030	2.50	361.23	48	241	259	42	1.0	41.8	101.5
8	21.0	131	1.000	2.40	363.77	48	252	260	43	1.0	46.1	101.8
9	24.0	131	0.930	2.25	366.28	49	255	260	45	1.0	49.6	101.2
10	27.0	131	0.910	2.20	368.69	49	243	262	45	1.0	52.6	101.0
	30.0				371.07							
TRAVERSE NO. 2												
1	0.0	130	0.830	2.00	371.42	45	248	261	37	1.0	1.4	101.9
2	3.0	133	0.830	2.00	373.70	45	237	257	37	1.0	4.4	102.2
3	6.0	132	0.860	2.05	375.98	46	237	259	33	1.0	7.9	100.6
4	9.0	132	0.900	2.15	378.27	46	245	260	34	1.0	12.2	101.8
5	12.0	131	0.940	2.25	380.64	46	240	260	35	1.0	18.5	101.2
6	15.0	131	0.960	2.30	383.05	46	244	260	36	1.0	35.5	100.1
7	18.0	131	0.960	2.30	385.46	47	249	261	37	1.0	41.8	99.6
8	21.0	129	0.940	2.25	387.86	47	239	259	38	1.0	46.1	100.1
9	24.0	129	0.830	2.00	390.25	47	249	261	39	1.0	49.6	100.5
10	27.0	129	0.830	2.00	392.51	47	246	261	39	1.0	52.6	101.4
	30.0				394.79							
		131	0.914	2.20		47	242	259	39	1.0		101.1

FORMALDEHYDE

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT ~~[illegible]~~ LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 4214964
TEST T2-SCF
SAMPLE LOCATION SURFACE CORE DRYER
DATE 94.09.29
START TIME 17:40
FINISH TIME 19:00
BAROMETRIC PRESS.(in Hg) 28.1
STACK PRESS.(in H_2O) .36
PITOT COEFFICIENT .805
NOZZLE DIAMETER(in) .246
GAS METER FACTOR 1.0002
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH ____ X ____
CO2(%) 2 O2(%) 18
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 160.1
NET FILTER WT.(g) ____
IMPINGER NET 2 (g) 63.3
NET PROBE WASH WT.(g) } 670 µg
IMPINGER NET 3 (g) 12.1
IMP.RESIDUE WT.(g) }
IMPINGER NET 4 (g) 13.0
FILTER # ____
IMPINGER NET 5 (g) ____
IMPINGER NET 6 (g) ____

METER BOX ID TEAM VAN
PROBE ID T1 5Ft
NOZZLE ID T3 #3
OTHER ____
EQUIPMENT COMMENTS ____

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

R G Malley
SIGNATURE

94.09.29
DATE

Moisture Analysis Data Sheet

Project #: T21 4864 Client LOUISIANA PACIFIC Test: R2-SCF

Test Date: 94.09.29. Sample Location: SURFACE COAT DRYER

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	741.9	581.8		160.1
Impinger 2	630.2	566.9		63.3
Impinger 3	492.9	480.8		12.1
Impinger 4				
Impinger 5				
Silica gel impinger	855.1	842.7		13

Net Total Condensate 248.5 (g

R6 Miller
Signature

94.09.29
Date

Sampling Trains Da . Sheet

Page 1/2

:nt LOUISIANA PACIFIC Project # 4214964 Sample Loc. SURFACE CORE DRYER Operators RM Date 9/..

TR-SCF Traverse # 1 Traverse Direction IN Start Time 17:40 Finish Time _____

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.83	2.0		346.88	129	231	258	42		46	95	
3		.86	2.1+	349.16	349.16	130	239	251	36		48	95	
6		.88	2.1+	351.50	351.50	130	239	266	43		48	95	1
9		.96	2.3+	353.84	353.78	131	235	257	43		49	95	1
12		1.0	2.4+	356.23	356.23	130	239	260	41		49	95	1
15		1.0	2.4	358.73	358.73	131	244	260	41		49	95	1
18		1.03	2.5-	361.23	361.23	131	241	259	42		51	95	1
21		1.10	2.4+	363.77	363.77	131	252	266	43		51	95	1
24		.93	2.2	366.27	366.28	131	255	260	45		52	95	1
27		.91	2.2	368.69	368.69	131	253	262	45		52	95	1
30				371.07	371.07								

test leak check: Rate (cfm) 15 at .006 inches Hg (Vacuum)

t test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

P_{stac} = .95"

9.3 mb

alue calculated by _____ checked by _____

Sampling Trains Da Sheet

Page 2/2

:nt LOUISIANA PAIFIL Project # 42:4964 Sample Loc. SURFACE CORE BRACE Operators KM/G Date 99.07.

T2-SCF Traverse # 2 Traverse Direction OUT Start Time 18:30 Finish Time 19:40

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.83	2.0		371.72	130	248	261	37		96	44	1
3		.83	2.0	373.70	373.70	133	237	257	37		96	44	1
6		.86	2.05+	375.98	375.98	132	237	259	33		97	44	1
9		.90	2.15+	378.30	378.27	132	245	260	34		98	43	1
12		.94	2.25+	380.64	380.64	131	246	260	35		99	43	1
15		.96	2.3+	383.06	383.05	131	244	260	36		99	43	1
18		.96	2.3+	385.50	385.46	131	249	261	37		50	43	1
21		.94	2.25+	387.91	387.86	129	239	250	38		50	43	1
24		.83	2.0	390.28	390.25	129	240	261	39		51	43	1
27		.83	2.0	392.53	392.51	129	246	261	39		51	43	1
30				394.79	394.79								

test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

t test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

alue calculated by _____ checked by _____

Plant L/P

Date 09/30/94

Location Mawson Creek

Operator BR

Stack #T1-SCCN

T1

SURFACE CORE DRYER STACK

Pre-Leak Check	✓
Post-Leak Check	✓

Field Blank I.D. Tenax	NA
Tenax/Charcoal	NA

Sampling Rate 1.05

ROT 1.05

Time		Sampling Duration (min.)	Probe Temp. (F)	Condensor Outlet (F)	Meter Temp. (F)	Barometric Pressure (in of Hg)	Dry Gas Meter		Gas Volume (litres)
Initial	Final						Initial	Final	
09:21	—	60	NA	40.8	39/38		471.944		NA
09:41	—		NA	41.0	40/40		473.950		NA
10:01	—		NA	41.8	41/41		475.960		NA
10:21	—		NA	41.41	41/42		477.990		NA
	—		NA						NA

Run Number	ONE
Sample I.D.	T1 SCCN

Comments

VACUUM 0.5

Moisture Analysis Data Sheet

Project #: L/P Client L&D Test: T/-SCC ONE

Test Date: 09/30/94 Sample Location: SURFACE CORE DRYER

HCA

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	117.45	103.55	~~13.90~~	13.90
Impinger 2	109.5	102.25	~~107.25~~	7.25
Impinger 3	112.25	108.65		~~36.0~~ 3.60
Impinger 4	98.05	101.15		2.90
Impinger 5				
Silica gel impinger	114.80	114.40		.40

Net Total Condensate ~~28.05~~ 23.05 (g.

Signature

09/29/94 Date

Plant L/P
Date 09/30/94
Location Dawson Creek
Operator BR

Stack #T2-SCCN

T2
SURFACE
CORE
DRYER

Pre-Leak Check	✓
Post-Leak Check	✓

Field Blank I.D. Tenax	
Tenax/Charcoal	

Sampling Rate 1.05 L/m

VOST METER

Time Initial	Time Final	Sampling Duration (min.)	Probe Temp. (F)	Condensor Outlet (F)	Meter Temp. (F)	Barometric Pressure (in of Hg)	Dry Gas Meter Initial	Dry Gas Meter Final	Gas Volume (litres)
10:32	—	60	NA	40	38/39	~~478.039~~	478.039	—	
10:52	—		NA	39.8	40/40		480.065	—	
11:12	—		NA	38.0	41/41		482.065	—	
11:32	—		NA	37.5	40/40		484.080	—	

Run Number TEST 2

Sample I.D. TEST 2

Comments
VACUUM - 0.5

Moisture Analysis Data Sheet

Project #: LP Client LdP Test: T2-SCCN ~~Floor~~

Test Date: 09/30/94 Sample Location: SURFACE CORE Orper

HCN

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	113.0	100.9		12.1
Impinger 2	114.45	107.45		7.0
Impinger 3	107.55	104.65		2.9
Impinger 4	99.05	100.35		-1.3
Impinger 5				
Silica gel impinger	114.90	114.45		0.45

Net Total Condensate 21.15 (g.

Signature

09/27/94
Date

CORE DRYER

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T1CP
LOC. : CORE DRYER

RUN TIME : 09:33 TO 11:04

PARTICULATE/CONDENSABLE ORGANICS CONCENTRATION

64.2 mg/DSm3	0.0280 gr/DScf
40.6 mg/Am3	0.0177 gr/Acf

PARTICULATE/CONDENSABLE ORGANICS EMISSION RATE

1.117 g/s	8.86 lb/hr

SAMPLE GAS VOLUME	1.2014 DSm3	42.424 DScf
AVERAGE ISOKINETICITY	101.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	22.16 %	
TEMPERATURE	60.2 deg C	140.4 deg F
FLOW	62649 DSm3/hr	36874 DScfm
	99036 Am3/hr	58291 Acfm
VELOCITY	18.62 m/s	3665.1 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	26.74 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T1CP
LOC. : CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	93.5 kPa	27.60 in.Hg
STATIC PRESSURE	159.4 Pa	0.64 in.H20
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.835	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	111.4 g
CONDENSATION IN IMPINGER 2	88.2 g
CONDENSATION IN IMPINGER 3	32.1 g
SILICA GEL WEIGHT GAIN	24.2 g
TOTAL MOISTURE GAIN	255.9 g

PARTICULATE/CONDENSABLE ORGANICS COLLECTION

FILTER PARTICULATE/CONDENSABLE ORGANICS
0.0294 g

WASHINGS PARTICULATE/CONDENSABLE ORGANICS
0.0050 g

IMPINGER PARTICULATE/CONDENSABLE ORGANICS
0.0427 g

TOTAL PARTICULATE/CONDENSABLE ORGANICS
0.0771 g

TOTAL SAMPLING TIME 60.0 min.

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T1CP
LOC. : CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	139	0.930	1.90	853.13	39	265	231	39	3.0	1.4	100.8
2	3.0	140	0.940	2.00	855.32	40	245	232	40	3.0	4.4	102.9
3	6.0	139	0.950	2.10	857.57	42	262	233	41	3.0	7.9	105.7
4	9.0	140	0.980	2.20	859.90	43	265	233	45	3.5	12.2	108.3
5	12.0	139	1.000	2.20	862.33	45	238	235	47	3.5	18.5	104.9
6	15.0	141	0.990	2.00	864.72	47	260	235	51	3.5	35.5	100.4
7	18.0	142	0.930	1.80	867.00	48	273	236	57	3.0	41.8	98.8
8	21.0	141	0.890	1.80	869.18	49	240	237	60	3.0	46.1	101.3
9	24.0	141	0.830	1.60	871.37	50	264	237	62	3.0	49.6	98.9
10	27.0	142	0.750	1.40	873.44	50	241	236	63	2.0	52.6	96.9
	30.0				875.37							
TRAVERSE NO. 2												
1	0.0	139	0.860	1.70	875.66	46	262	229	42	3.0	1.4	99.7
2	3.0	141	0.890	1.85	877.77	48	275	230	46	3.0	4.4	102.9
3	6.0	141	0.890	1.85	879.99	49	230	231	48	3.0	7.9	101.7
4	9.0	141	0.940	1.95	882.19	50	256	230	49	3.5	12.2	101.9
5	12.0	141	0.960	2.00	884.46	51	267	230	49	3.5	18.5	101.6
6	15.0	140	0.950	1.95	886.75	52	276	229	49	3.5	35.5	101.4
7	18.0	141	0.930	1.90	889.03	52	235	231	51	3.5	41.8	99.8
8	21.0	140	0.880	1.70	891.25	53	254	231	53	3.5	46.1	100.5
9	24.0	140	0.850	1.60	893.43	53	269	230	54	3.0	49.6	97.9
10	27.0	139	0.780	1.45	895.52	53	246	230	55	3.0	52.6	97.7
	30.0				897.52							
		140	0.905	1.85		48	256	232	50	3.2		101.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, B.C
PROJECT # 421996-4
TEST T1-CP
SAMPLE LOCATION CORE DRYER
DATE 94.9.28
START TIME 933
FINISH TIME 1104
BAROMETRIC PRESS.(in Hg) 935mb / 27.6
STACK PRESS.(in H_2O) +0.64
PITOT COEFFICIENT 0.835
NOZZLE DIAMETER(in) 0.235
GAS METER FACTOR 0.998
STACK HEIGHT(ft) 50'
STACK DIAMETER(in) 54
LENGTH X WIDTH — X —
CO2(%) 2.5 O2(%) 18
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 111.4
IMPINGER NET 2 (g) 88.2
IMPINGER NET 3 (g) 32.1
IMPINGER NET 4 (g) 24.2
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g) 0.02939
NET PROBE WASH WT.(g) 0.0050
IMP.RESIDUE WT.(g) 0.0427
FILTER # 17

METER BOX ID TEAM #1
PROBE ID TEAM #2
NOZZLE ID TEAM #1, #2
OTHER
EQUIPMENT COMMENTS RUN PROBE DIRECT & PUMP DIRECT

SAMPLING COMMENTS DIDN'T PURGE IMPINGERS AS H_2O PH @ 6-7

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

PTS 1.4, 4.4, 7.9, 12.2, 18.5, 35.5, 41.8, 46.1, 49.6, 52.6

SIGNATURE 94.9.28

Moisture check = 21.8%
pH of H_2O → 6-7

Filter I.D 17

Moisture Analysis Data Sheet

Project #: 4214864 Client LOUISIANA PACIFIC Test: TI-CP

Test Date: 94.09.28 Sample Location: CORE STACK

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	689.9	578.5g	482.1	111.4
Impinger 2	702.8	614.6g		88.2
Impinger 3	607.0	574.9g		32.1
Impinger 4		~~[illegible]~~ g		
Impinger 5				
Silica gel impinger	747.4	723.2		24.2

Net Total Condensate 255.9

Signature

94.8.28
Date

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION

PROJECT NO. 4214964 CLIENT LOUISIANA PACIFIC TEST(S) T1-CP/T2-CP
DATE(S) 94.9.28 SAMPLE LOCATION COKE DRYER
OPERATOR(S) JL/BL
Sampling Method (eg. MOE 5) EPA 202
Modifications to standard method USE OF HEATED M5 FILTER BECAUSE OF HIGH MOISTURES
Meter box TEAM #1 Probe TEAM #2, 7'
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: S. STEEL
cleaned according to sampling protocol? ✓
undamaged ✓
Probe liner material: TEFLON
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250°F
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications NONE
pitot tube coefficient 0.835
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge — range — division —
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 56
Filter holder: borosilicate glass ✓ other
frit material: teflon borosilicate glass ✓
other
heated? ✓ temperature 250°F
cleaned according to sampling protocol? ✓
filter holder assembled correctly? ✓
Filter type : GLASS FIBRES
filters checked visually for irregularities? ✓
filters properly centered? ✓ labelled? ✓
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges —
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? NO
meter temp. 60

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used — glassware proofed? —
Impinger train: number of impingers 4
cleaned according to sampling protocol? ✓
contents: 1st 100mL DI 2nd 100mL DI 3rd 100mL DI
4th SGEL 5th _____ 6th _____
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ICE/WATER proper connections ✓
modifications: NONE
grease used on joints: NO kind of grease —
Barometric pressure measured? ✓ source of data? ANEROID
Was preliminary velocity profile performed? ✓
Avg.delta P 0.95 Max. delta P 1.1 static 0.45
Avg. Temp. 140
Estimated moisture content % 20 how estimated? SATURATION
Estimated O2 % 18.5 CO2 % 2.5 CO % _____ SO2 % _____
how estimated? FYRITES
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter 0.235
K factor _____
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 10
number to be used 10
probe markings correct? ✓
Length of sampling time per point desired 3
number to be used 3
Leak test performed before start of sampling? ✓
rate < 0.002 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
<0.02 cfm @ 15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? ✓
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? —
- If filters are changed during a run was there any particulate loss? —

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point 105
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <0.02 cfm @ 15 in Hg

Probe, filter holder, impingers sealed adequately after test? ✓

Gas analysis from stack? ✓ other? —
- from fyrites? ✓ integrated bag? — orsat? —
- continuous gas analysers? —
- models: —

Approximate stack temperature 140 gas sample volume @ 40C

First 8 velocity pressures measured —

Percent isokinetic calculated —

Data forms completed and data recorded properly ✓

General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass ____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other ____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ✓
Petri dishes: plastic ____ other GLASS
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other ____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type TRIPLE BEAM calibrated AUDIT
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 1/4 PINK run 2 ____ run 3 ____
weighed? ✓ run 1 ____ run 2 ____ run 3 ____
Probe handling: Acetone rinses ✓ other ____
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks collected: reagent(s) ____
acetone ✓ DI water ✓ other $MeCl_2$
Impinger rinses: DI ✓ other $MeCl_2$
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves —
Any particulate lost? Probe NO Filter NO
Description of particulate dark brown colour

John Lennartz
Name

John Lennartz
Signature

pitots leak checked - ok

Sampling Trains Data Sheet

lent LOUISIANA PACIFIC Project # 4214984 Sample Loc. CORE DRYER Operators JL/RM Date 94/08/28

n # T1-CP Traverse # 1 [WEST] Traverse Direction OUT Start Time 933 Finish Time 10:03

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	~~XAD~~ Temp.	Meter Inlet	Meter Outlet	Vac
0		0.93	1.9		853.125	139	265	231	39		39	39	3
3		0.94	2.0	855.41	855.32	140	245	232	40		41	39	3
6		0.95	2.1	857.62	857.57	139	262	233	41		44	39	3
9		0.98	2.2	859.88	859.90	140	265	233	45		46	40	3.5
12		1.0	2.2	862.25	862.33	139	238	235	47		49	41	3.5
15		0.99	2.0	864.70	864.72	141	260	235	51		51	42	3.5
18		0.93	1.8	867.05	867.00	142	273	236	57		53	43	3.0
21		0.89	1.8	869.29	869.18	141	240	237	60		54	43	3.0
24		0.83	1.6	871.42	871.37	141	264	237	62		55	44	3.0
27		0.75	1.4	873.53	873.44	142	241	236	63		56	44	2.0
30				875.49	875.37								

e test leak check: Rate (cfm) 0.001 at 15 inches Hg (Vacuum)

at test leak check: Rate (cfm) 0.002 at 15 inches Hg (Vacuum)

value calculated by ISOTM checked by JL/NV

static +0.04 .0483

O_2 [illegible]
CO_2 = 2.5

Sampling Trains Data Sheet

ent LOUISIANA PACIFIC Project # 4214964 Sample Loc. CORE DRYER Operators JL/BR Date 94, 9, 28

T1-CP Traverse # 2 [SMT] Traverse Direction OUT Start Time 10:24 Finish Time 11:04

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	~~XAD~~ Temp.	Meter Inlet	Meter Outlet	Vac
0		0.86	1.7		875.66	139	262	229	42		46	45	3
3		0.89	1.85	877.86	877.77	141	275	230	46		50	45	3
6		0.89	1.85	880.01	879.99	141	230	231	48		52	46	3
9		0.94	1.95	882.23	882.19	141	256	230	49		54	46	3.5
12		0.96	2.0	884.49	884.46	141	267	230	49		55	46	3.5
15		0.95	1.95	886.70	886.75	140	276	229	49		56	47	3.5
18		0.93	1.90	889.06	889.03	141	235	231	51		57	47	3.5
21		0.83	1.70	891.32	891.25	140	254	231	53		58	47	3.5
24		0.85	1.6	893.47	893.43	140	269	230	54		58	48	3.0
27		0.78	1.45	895.62	895.52	139	246	230	55		58	48	3.0
30				897.61	897.52								

.085

t test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

ut test leak check: Rate (cfm) 0.008 at 15 inches Hg (Vacuum)

value calculated by _____ checked by _____

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T2CP
LOC. : CORE DRYER

RUN TIME : 13:46 TO 15:00

PARTICULATE/CONDENSABLE ORGANICS CONCENTRATION

	42.2 mg/DSm3	0.0184 gr/DScf
	28.2 mg/Am3	0.0123 gr/Acf

PARTICULATE/CONDENSABLE ORGANICS EMISSION RATE

	0.760 g/s	6.03 lb/hr

SAMPLE GAS VOLUME	1.1803 DSm3	41.676 DScf
AVERAGE ISOKINETICITY	96.1 %	

FLUE GAS CHARACTERISTICS

MOISTURE	18.57 %	
TEMPERATURE	57.1 deg C	134.8 deg F
FLOW	64833 DSm3/hr	38159 DScfm
	97131 Am3/hr	57170 Acfm
VELOCITY	18.26 m/s	3594.6 fpm

GAS ANALYSIS	O2	17.50 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.21 g/gmole D.B.
	MOL. WT.	27.13 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T2CP
LOC. : CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	93.5 kPa	27.60 in.Hg
STATIC PRESSURE	97.1 Pa	0.39 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.835	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	108.4 g
CONDENSATION IN IMPINGER 2	61.2 g
CONDENSATION IN IMPINGER 3	19.2 g
SILICA GEL WEIGHT GAIN	12.6 g
TOTAL MOISTURE GAIN	201.4 g

PARTICULATE/CONDENSABLE ORGANICS COLLECTION

FILTER PARTICULATE/CONDENSABLE ORGANICS
0.0166 g

WASHINGS PARTICULATE/CONDENSABLE ORGANICS
0.0036 g

IMPINGER PARTICULATE/CONDENSABLE ORGANICS
0.0296 g

TOTAL PARTICULATE/CONDENSABLE ORGANICS
0.0498 g

TOTAL SAMPLING TIME 60.0 min.

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T2CP
LOC. : CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	134	0.810	1.50	897.88	49	270	226	48	2.0	1.4	93.6
2	3.0	135	0.850	1.70	899.90	50	258	227	44	2.0	4.4	94.9
3	6.0	136	0.900	2.00	902.00	53	240	227	48	3.0	7.9	99.8
4	9.0	135	0.930	2.05	904.28	55	268	226	50	3.0	12.2	100.3
5	12.0	136	0.940	2.00	906.62	57	274	228	53	3.0	18.5	99.5
6	15.0	135	0.930	1.90	908.96	58	254	227	55	3.0	35.5	96.2
7	18.0	135	0.970	2.10	911.22	60	253	231	57	3.5	41.8	99.0
8	21.0	135	0.950	2.00	913.60	61	266	229	59	3.0	46.1	95.9
9	24.0	135	0.910	1.80	915.89	62	234	234	60	3.0	49.6	95.2
10	27.0	135	0.860	1.70	918.12	62	251	230	63	3.0	52.6	95.3
	30.0				920.29							
TRAVERSE NO. 2												
1	0.0	133	0.850	1.70	920.54	60	226	239	56	3.0	1.4	95.7
2	3.0	132	0.870	1.75	922.70	61	231	238	50	3.0	4.4	94.7
3	6.0	132	0.900	1.85	924.87	63	251	237	50	3.0	7.9	96.3
4	9.0	132	0.920	1.90	927.12	64	269	238	51	3.0	12.2	96.2
5	12.0	134	0.960	2.00	929.40	65	277	240	51	3.0	18.5	96.4
6	15.0	135	0.960	2.00	931.73	67	240	241	51	3.0	35.5	94.9
7	18.0	136	0.890	1.80	934.03	68	261	243	52	3.0	41.8	95.4
8	21.0	137	0.850	1.70	936.26	68	275	243	53	3.0	46.1	95.9
9	24.0	137	0.840	1.65	938.45	68	245	244	54	3.0	49.6	94.2
10	27.0	137	0.740	1.40	940.59	69	243	244	53	3.0	52.6	92.2
	30.0				942.56							
		135	0.891	1.83		61	254	235	53	2.9		96.1

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 4214964
TEST T2-CP
SAMPLE LOCATION CORE DRYER
DATE 94.9.28
START TIME 1346
FINISH TIME 1500
BAROMETRIC PRESS.(in Hg) 955mb/27.6
STACK PRESS.(in H_2O) 0.39
PITOT COEFFICIENT 0.835
NOZZLE DIAMETER(in) 0.235
GAS METER FACTOR 0.998
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH — X —
CO2(%) 2.5 O2(%) 17.5
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 108.4
NET FILTER WT.(g) 0.0166
IMPINGER NET 2 (g) 61.2
NET PROBE WASH WT.(g) 0.0036
IMPINGER NET 3 (g) 19.2
IMP.RESIDUE WT.(g) 0.0296
IMPINGER NET 4 (g) 12.6
FILTER # 14
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

METER BOX ID TEAM #1
PROBE ID TEAM #2, 7'
NOZZLE ID TEAM #1, #2
OTHER
EQUIPMENT COMMENTS
RUNNING PROBE/PUMP DIRECT

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

SIGNATURE 94.9.28
DATE

pk of H_2O = 6-7

Filter ID 14

Moisture check ⇒ 17.9%

Moisture Analysis Data Sheet

Project #: 4214857 Client LOUISIANA PACIFIC Test: T2-CP

Test Date: 94.9.28 Sample Location: CORE DRYER

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	705.7	597.3		108.4
Impinger 2	624.2	563.0		61.2
Impinger 3	629.1	609.9		19.2
Impinger 4				
Impinger 5				
Silica gel impinger	760.0	747.4		12.6

Net Total Condensate 201.4 (s

Signature

94.9.28
Date

035 static +0.39

O_2 17.5 %
CO_2 2.5 %

Sampling Trains Data Sheet

ent LOUISIANA PACIFIC Project # 442587 Sample Loc. CORE DRYER Operators JL/BR Date 94/9/28

T2-C8 Traverse # 1 (South) Traverse Direction OUT Start Time 1346 Finish Time 14:16

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		0.81	1.5		897.33	134	270	226	48		49	49	2
3		0.85	1.7	900.01	899.90	135	258	227	44		51	49	2
6		0.90	2.0	902.09	902.00	136	240	227	48		54	51	3
9		0.93	2.05	904.25	904.28	135	268	226	50		57	52	3
12		0.94	2.0	906.57	906.62	136	274	228	53		60	53	3
15		0.93	1.9	908.92	908.96	135	254	227	55		62	54	3
18		0.97	2.1	911.25	911.22	135	253	231	57		64	55	3.5
21		0.95	2.0	913.55	913.60	135	246	229	59		66	56	3
24		0.91	1.8	915.91	915.89	135	234	234	60		67	57	3
27		0.86	1.7	918.15	918.12	135	251	230	63		67	57	3
30				920.32	920.285								

test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

t test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

alue calculated by _____ checked by _____

Sampling Trains Data Sheet

.ent LOUISIANA PACIFIC Project # 4212587 Sample Loc. CORE DRYER Operators [illegible] Date 94/9/28

1 # T2-CP Traverse # 2(WEST) Traverse Direction OUT Start Time 1430 Finish Time 1500

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	~~XAD Temp.~~	Meter Inlet	Meter Outlet	Vac
0		0.85	1.7		920.535	133	226	239	56		60	59	3
3		0.87	1.75	922.72	922.70	132	231	238	50		63	59	3
6		0.90	1.85	924.91	924.87	132	251	237	50		65	60	3
9		0.92	1.90	927.12	927.12	132	269	238	51		68	60	3
12		0.96	2.0	929.39	929.40	134	277	240	51		69	60	3
15		0.96	2.0	931.72	931.73	135	240	241	51		71	62	3
18		0.89	1.8	934.05	934.03	136	261	243	52		72	63	3
21		0.85	1.7	936.27	936.26	137	275	243	53		72	63	3
24		0.84	1.65	938.45	938.45	137	245	244	54		73	63	3
27		0.74	1.4	940.62	940.59	137	243	244	53		73	64	3
30				942.63	942.555								

test leak check: Rate (cfm) 0.008 at 15 inches Hg (Vacuum)

it test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

alue calculated by _____ checked by _____

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : TICF
LOC. : CORE DRYER

RUN TIME : 9:30 TO 10:54

FORMALDEHYDE CONCENTRATION	794.7 ug/DSm3	0.3473 gr/1000 DScf
	511.7 ug/Am3	0.2236 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	13.415 mg/s	745.28 gr/hr
SAMPLE GAS VOLUME	1.2963 DSm3	45.774 DScf
AVERAGE ISOKINETICITY	102.8 %	

FLUE GAS CHARACTERISTICS

MOISTURE	21.83 %	
TEMPERATURE	55.8 deg C	132.4 deg F
FLOW	60762 DSm3/hr	35764 DScfm
	94370 Am3/hr	55544 Acfm
VELOCITY	17.74 m/s	3492.4 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	26.78 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC	DATE : 94.09.28
JOBSITE : DAWSON CREEK	RUN : TICF
REF.No. : 4214964	LOC. : CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	93.5 kPa	27.60 in.Hg
STATIC PRESSURE	159.4 Pa	0.64 in.H2O
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	132.1 g
CONDENSATION IN IMPINGER 2	90.8 g
CONDENSATION IN IMPINGER 3	24.5 g
SILICA GEL WEIGHT GAIN	23.4 g
TOTAL MOISTURE GAIN	270.8 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	1.0300 mg
TOTAL FORMALDEHYDE	1.0300 mg

TOTAL SAMPLING TIME 60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : TICF
LOC. : CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	131	0.780	1.80	97.28	34	252	254	32	1.0	1.4	105.9
2	3.0	130	0.850	2.05	99.50	34	256	252	31	1.0	4.4	105.1
3	6.0	130	0.900	2.15	101.80	34	255	253	32	1.0	7.9	104.3
4	9.0	133	0.990	2.40	104.15	35	256	255	33	1.0	12.2	105.0
5	12.0	132	0.980	2.55	106.63	36	252	255	35	1.0	18.5	102.8
6	15.0	134	0.950	2.30	109.05	37	256	255	40	1.0	35.5	102.6
7	18.0	134	0.900	2.15	111.43	38	250	254	42	1.0	41.8	102.9
8	21.0	133	0.880	2.10	113.76	39	251	255	47	1.0	46.1	102.4
9	24.0	133	0.860	2.05	116.06	40	250	255	56	1.0	49.6	102.9
10	27.0	133	0.840	2.00	118.35	41	250	255	57	1.0	52.6	102.2
	30.0				120.60							
TRAVERSE NO. 2												
1	0.0	133	0.760	1.80	121.21	41	250	251	37	1.0	1.4	101.1
2	3.0	133	0.800	1.90	123.33	42	250	255	42	1.0	4.4	101.7
3	6.0	134	0.850	2.05	125.52	42	248	257	43	1.0	7.9	102.3
4	9.0	134	0.890	2.15	127.79	43	249	256	43	1.0	12.2	102.5
5	12.0	133	0.980	2.35	130.12	44	248	255	42	1.0	18.5	101.7
6	15.0	133	0.980	2.35	132.55	44	248	255	42	1.0	35.5	102.4
7	18.0	133	1.000	2.40	135.00	45	248	256	41	1.0	41.8	102.5
8	21.0	131	0.960	2.30	137.48	45	247	256	42	1.0	46.1	103.1
9	24.0	132	0.930	2.25	139.93	45	247	255	42	1.0	49.6	100.5
10	27.0	128	0.890	2.15	142.28	46	247	256	42	1.0	52.6	101.9
	30.0				144.62							
		132	0.897	2.16		40	251	255	41	1.0		102.8

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC.
PROJECT # 421 4964
TEST T1-CF
SAMPLE LOCATION CORE DRYER
DATE 94.09.28
START TIME 930
FINISH TIME 10:54
BAROMETRIC PRESS.(in Hg) 935 mb / 27.6
STACK PRESS.(in H_2O) .64
PITOT COEFFICIENT .805
NOZZLE DIAMETER(in) .2960
GAS METER FACTOR 1.000
STACK HEIGHT(ft) ≈ 50'
STACK DIAMETER(in) 54
LENGTH X WIDTH — X —
CO2(%) 2.5 O2(%) 10
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 132.1
IMPINGER NET 2 (g) 90.8
IMPINGER NET 3 (g) 24.5
IMPINGER NET 4 (g) 23.4
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g)
NET PROBE WASH WT.(g) } 1030 mg.
IMP.RESIDUE WT.(g)
FILTER # —

METER BOX ID TEAM VANCOUVER
PROBE ID TEAM #1 5 ft
NOZZLE ID TEAM 3 #3
OTHER

EQUIPMENT COMMENTS

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

DTS 1.4, 4.4, 7.9, 18.5, 35.5, 41.8, 46.1, 49.6, 52.6
N
R 2

RGMally
SIGNATURE

94.09.28
DATE

Moisture Analysis Data Sheet

Project #: 4214964 Client LOUISIANA PACIFIC Test: T1-CF

Test Date: 94.09.27 Sample Location: DRYER #2 (CORE)

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	719.1	587.0		132.1
Impinger 2	686.1	595.3		90.8
Impinger 3	503.7	479.2		24.5
Impinger 4				
Impinger 5				
Silica gel impinger	829.1	805.7		23.4

Net Total Condensate 270.8

RG Mosley
Signature

94.09.28
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION.

PROJECT NO. 4214964 CLIENT LOUISIANA PACIFIC TEST(S) T1-CF, T2-CF
DATE(S). 99.09.28 SAMPLE LOCATION GRV DRYER
OPERATOR(S) RM / BR
Sampling Method (eg. MOE 5) FORMALDEHYDE METHOD 0011
Modifications to standard method ✓

Meter box TEAM VAN. Probe TEAM 1 5ft
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: S. STEEL
cleaned according to sampling protocol? ✓
undamaged
Probe liner material: GLASS
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications NONE
pitot tube coefficient .805
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge ✓ range ✓ division ✓
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 56
Filter holder: borosilicate glass other
frit material: teflon borosilicate glass
other
heated? temperature
cleaned according to sampling protocol?
filter holder assembled correctly?
Filter type :
filters checked visually for irregularities?
filters properly centered? labelled?

NO FILTER

Recent calibration of orifice meter dry gas meter
pitot tubes ✓ magnehelic gauges ✓
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? NO
meter temp. 60

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used ___—___ glassware proofed? ___—___
Impinger train: number of impingers ___4___
cleaned according to sampling protocol? ___✓___
contents: 1st 100 mL DNPH 2nd 100 mL DNPH 3rd BLANK
4th S.GEL 5th ___ 6th ___
impinger weights recorded? ___✓___
impingers properly assembled? ___✓___
cooling system: ICE/WATER proper connections ___✓___
modifications: NONE
grease used on joints: NO kind of grease ___—___
Barometric pressure measured? ___✓___ source of data? ANEROID
Was preliminary velocity profile performed? ___✓___
Avg.delta P .95 Max. delta P 1.1 static .65
Avg. Temp. 140
Estimated moisture content % 20 how estimated? SATURATION
Estimated O2 % 18.5 CO2 % 2.5 CO % ___ SO2 % ___
how estimated? FYRITES
Has an "isokinetic sheet" been completed? ___✓___
Nozzle size properly selected? ___✓___ nozzle diameter .276
K factor ___—___
nozzle properly attached to probe (correct orientation) ___✓___
Number of sampling points per traverse from Source Test Code 10
number to be used 10
probe markings correct? ___✓___
Length of sampling time per point desired 3
number to be used 3
Leak test performed before start of sampling? ___✓___
rate <.005 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
<.005 cfm @ .15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? ✓
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? —
- If filters are changed during a run was there any pariculate loss? —

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point .05
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <.002 cfm @ .15 in Hg

Probe, filter holder, impingers sealed adequately after test? ✓

Gas analysis from stack? ✓ other? —
- from fyrites? ✓ integrated bag? — orsat? —
- continuous gas analysers? —
- models: —

Approximate stack temperature 190 gas sample volume @ 90cf

First 8 velocity pressures measured —

Percent isokinetic calculated —

Data forms completed and data recorded properly ✓

General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass _____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other _____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ✓
Petri dishes: plastic _____ other GLASS
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other _____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type TRIPLE BEAM calibrated AUDIT
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 _____ run 2 _____ run 3 _____
weighed? run 1 _____ run 2 _____ run 3 _____
Probe handling: Acetone rinses — other $MeCl_2$
Particulate recovery: probe nozzle _____ probe fitting _____
probe liner _____ front half of filter holder _____
Blanks collected: reagent(s) _____
acetone — DI water — other $MeCl_2$
Impinger rinses: DI _____ other $MeCl_2$
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? — surgical gloves _____
Any particulate lost? Probe — Filter —
Description of particulate —

R G Mulvey
Name

R G Mulvey
Signature

Sampling Trains Data Sheet

LOUISIANA PACIFIC Project # 9214984 Sample Loc. DRYER #2 (CORE) Operators RM/BR Date 1/ 99.09.28

TI-CF Traverse # 1 (SOUTH) Traverse Direction IN Start Time 9:30 Finish Time 10:00

Time (min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
3		.78	1.8		97.28	131	252	259	32		39	33	1
3		.85	2.05	99.49	99.50	130	256	252	31		39	33	1
6		.90	2.15	101.80	101.8	130	255	253	32		35	33	1
9		.99	2.9	104.17	104.15	133	256	255	33		37	33	1
12		.98	2.35	106.64	106.63	132	252	255	35		38	34	1
15		.95	2.3	109.10	109.05	134	256	255	40		40	34	1
18		.90	2.15	111.49	111.43	134	250	254	42		42	34	1
21		.88	2.10	113.80	113.76	133	251	255	47		43	35	1
24		.86	2.05	116.10	116.06	132	250	255	56		44	36	1
27		.84	2.0	118.38	118.35	133	252	255	57		45	36	1
30				120.64	120.60								

Pre test leak check: Rate (cfm) 15 at .005 inches Hg (Vacuum)

Post test leak check: Rate (cfm) 15 at .002 inches Hg (Vacuum)

Time calculated by _____ checked by _____

Sampling Trains Data Sheet

LOUISIANA PACIFIC Project # 421 4864 Sample Loc. DRYER #2 (WET) Operators RM/BR Date 1/ 92.09.29

TI-CF Traverse # 2 (10 min) Traverse Direction IN Start Time 10:24 Finish Time 10:54

ime Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.76	1.0		121.205	133	250	251	37		43	39	1
3		.80	1.0	123.38	123.33	133	250	255	42		44	39	1
6		.85	2.05	125.51	125.52	134	249	257	43		45	39	1
9		.89	2.15	127.82	127.79	134	249	256	43		46	40	1
12		.98	2.35	130.15	130.12	133	248	255	42		47	40	1
15		.98	2.35	132.59	132.55	133	248	255	42		48	40	1
18		1.00	2.4	135.02	135.00	133	248	256	41		49	41	1
21		.96	2.3	137.50	137.48	131	247	256	42		49	41	1
24		.93	2.25	139.93	139.93	132	247	255	42		49	41	1
27		.89	2.15	142.34	142.28	128	247	256	42		50	41	1
30				144.64	144.615								

O_2 - 18
CO_2 - 2.5

:est leak check: Rate (cfm) 15 at .008 inches Hg (Vacuum)

test leak check: Rate (cfm) 15 at .002 inches Hg (Vacuum)

ue calculated by _____ checked by _____

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : T2CF
LOC. : CORE DRYER

RUN TIME : 13:45 TO 14:58

FORMALDEHYDE CONCENTRATION	721.5 ug/DSm3	0.3154 gr/1000 DScf
	489.4 ug/Am3	0.2139 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	12.695 mg/s	705.27 gr/hr
SAMPLE GAS VOLUME	1.2752 DSm3	45.028 DScf
AVERAGE ISOKINETICITY	97.0 %	

FLUE GAS CHARACTERISTICS

MOISTURE	18.46 %	
TEMPERATURE	52.3 deg C	126.2 deg F
FLOW	63327 DSm3/hr	37273 DScfm
	93376 Am3/hr	54959 Acfm
VELOCITY	17.55 m/s	3455.6 fpm

GAS ANALYSIS	O2	17.50 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.21 g/gmole D.B.
	MOL. WT.	27.14 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC	DATE : 94.09.28
JOBSITE : DAWSON CREEK	RUN : T2CF
REF.No. : 4214964	LOC. : CORE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	93.5 kPa	27.60 in.Hg
STATIC PRESSURE	97.1 Pa	0.39 in.H20
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	133.3 g
CONDENSATION IN IMPINGER 2	56.8 g
CONDENSATION IN IMPINGER 3	10.0 g
SILICA GEL WEIGHT GAIN	15.9 g
TOTAL MOISTURE GAIN	216.0 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.9200 mg
TOTAL FORMALDEHYDE	0.9200 mg

TOTAL SAMPLING TIME	60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : T2CF
LOC. : CORE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	127	0.760	1.80	144.99	43	251	253	37	1.0	1.4	97.6
2	3.0	127	0.810	1.90	147.13	44	251	253	37	1.0	4.4	96.6
3	6.0	126	0.840	2.00	149.32	46	261	253	38	1.0	7.9	96.7
4	9.0	126	0.890	2.15	151.56	47	264	256	44	1.0	12.2	98.7
5	12.0	126	0.940	2.25	153.92	48	251	256	45	1.0	18.5	98.3
6	15.0	127	1.000	2.40	156.34	49	247	256	43	1.0	35.5	98.4
7	18.0	126	1.000	2.40	158.84	50	249	256	44	1.0	41.8	96.6
8	21.0	127	0.980	2.35	161.30	51	248	255	46	1.0	46.1	97.9
9	24.0	126	0.960	2.30	163.77	51	248	256	46	1.0	49.6	97.6
10	27.0	126	0.920	2.20	166.21	52	247	256	46	1.0	52.6	97.5
	30.0				168.60							
TRAVERSE NO. 2												
1	0.0	123	0.760	1.80	169.03	53	252	256	44	1.0	1.4	97.3
2	3.0	123	0.800	1.90	171.21	53	248	256	42	1.0	4.4	96.1
3	6.0	123	0.870	2.10	173.42	54	255	257	38	1.0	7.9	95.7
4	9.0	123	0.870	2.10	175.72	55	257	255	36	1.0	12.2	95.6
5	12.0	126	0.930	2.25	178.02	56	252	256	36	1.0	18.5	97.0
6	15.0	127	0.980	2.35	180.43	57	248	254	36	1.0	35.5	96.8
7	18.0	128	0.980	2.35	182.90	57	248	256	37	1.0	41.8	96.8
8	21.0	128	0.940	2.25	185.37	58	247	255	38	1.0	46.1	96.6
9	24.0	129	0.900	2.15	187.79	58	248	255	38	1.0	49.6	96.8
10	27.0	130	0.880	2.10	190.16	58	248	255	39	1.0	52.6	95.4
	30.0				192.47							
		126	0.899	2.16		52	251	255	41	1.0		97.0

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 4214964
TEST T2 CF
SAMPLE LOCATION CORE DRYER
DATE 94.09.28.
START TIME 1345
FINISH TIME 19:58.
BAROMETRIC PRESS.(in Hg) 955mb/27.6
STACK PRESS.(in H_2O) .39
PITOT COEFFICIENT .805
NOZZLE DIAMETER(in) .246
GAS METER FACTOR 1.000
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH ____ X ____
CO2(%) 2.5 O2(%) 17.5
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 133.3
IMPINGER NET 2 (g) 56.8
IMPINGER NET 3 (g) 10.0
IMPINGER NET 4 (g) 15.9
IMPINGER NET 5 (g) ____
IMPINGER NET 6 (g) ____

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) } 920 mg
IMP.RESIDUE WT.(g) ____
FILTER # —

METER BOX ID TEAM VAN
PROBE ID T#1 5A
NOZZLE ID T3 #3
OTHER ____
EQUIPMENT COMMENTS ____

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

RGM
SIGNATURE

94.09.28
DATE

Moisture Analysis Data Sheet

Project #: [illegible] 1961 Client LOUISIANA PACIFIC Test: T2-CF

Test Date: 97.09.28 Sample Location: DRYER #2 (CORE)

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	710.2	576.9		133.3
Impinger 2	623.8	567.0		56.8
Impinger 3	490.8	480.8		10.0
Impinger 4				
Impinger 5				
Silica gel impinger	845.0	829.1		15.9

Net Total Condensate 216.0 (g

RG Hoffman
Signature

97.09.29
Date

Sampling Trains Data Sheet

Page 1/2

t LOUISIANA PACIFIC Project # 4219984 Sample Loc. DRYER #2 (CORE) Operators RM/B Date 1/ 1 Feb 94

T2-CF Traverse # 1 Traverse Direction IN Start Time 13:45 Finish Time 14:15

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.76	1.8		144.99	127	251	253	37		44	42	1
3		.81	1.0	147.17	147.13	127	251	253	37		45	43	1
6		.84	2.0	149.38	149.32	126	261	253	38		47	44	1
9		.89	2.15	151.62	151.56	126	269	256	44		49	45	1
12		.94	2.25	153.92	153.86	126	251	256	45		51	45	1
15		1.0	2.4	156.34	156.34	127	247	256	43		52	46	1
18		1.0	2.4	158.89	158.84	126	249	256	44		53	47	1
21		.98	2.35	161.34	161.30	127	248	255	46		54	47	1
24		.96	2.3	163.77	163.77	126	248	256	46		54	48	1
27		.92	2.2	166.22	166.21	126	247	256	46		55	48	1
30				168.61	168.60								

test leak check: Rate (cfm) .15 at .009 inches Hg (Vacuum)

test leak check: Rate (cfm) .15 at .003 inches Hg (Vacuum)

O_2 17.5

CO_2 2.5

lue calculated by _____ checked by _____

Sampling Trains Data Sheet

nt LOUISIANA PACIFIC Project # 9214864 Sample Loc. DRYER #2 (10.25) Operators RM/BK Date 99.08

T2-CR Traverse # 2 Traverse Direction IN Start Time 14:28 Finish Time 14:58

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.76	1.8		169.03	127	252	256	44		54	51	1
3		.80	1.9	171.21	171.21	123	248	256	42		55	51	1
6		.87	2.1	173.45	173.42	123	255	257	38		57	51	1
9		.97	2.1	175.75	175.72	123	257	255	36		58	52	1
12		.93	2.35	178.05	178.02	126	252	256	36		59	52	1
15		.98	2.35	180.43	180.43	127	248	258	36		60	53	1
18		.98	2.35	182.90	182.90	128	248	256	37		60	54	1
21		.96	2.25	185.37	185.37	128	247	255	38		61	55	1
24		.90	2.15	187.79	187.79	129	248	255	38		61	55	1
27		.88	2.1	190.16	190.16	130	248	255	39		61	55	1
30				192.50	192.47								

test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

: test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

alue calculated by _____ checked by _____

Plant LP

Date 09/29/94

Location DAWSON CREEK

Operator BR

Field Blank I.D.: Tenax N/A

Tenax/Charcoal N/A

HCN

Stack No. CORE DRYER

Probe No. N/A

VOST No. ✓

Rotameter No. N/A

Dry Gas Meter No. VOST METER

Pair No.[b]	Leak Check	Cartridge I.D. Tenax	Cartridge I.D. Tenax/Charcoal	Rotameter Reading (l/min)	Time Initial	Time Final	Sampling Duration (min)	Probe Temp. (°C) (VACUUM ✓)	Barometric Pressure (in of Hg)	Condenser Outlet Temp. (°C)	Meter Temp. (Outlet)	Dry Gas Meter Initial	Dry Gas Meter Final	Gas Sample Volume (liters)	Comments
NA	✓	NA	NA	1.05 1	10:54	NA	60	05		<60 1	49/50	445.	96		
				" 2	11:09					2	50/51	446.	96		
				" 3	11:19					3	51/52	447.	98		
				1.03 4	11:29					4	51/52	448.	02		
				1.03 5	11:39					5	52/53	450.	02		
				1.03 6	11:49					6	52/53	451.	01		
				1.03 7	11:59					7	52/52	452.125			

Condensate Samples: 12:09

Run No.	Sample I.D.	Comments
1	T1-CCN	

[a]Reading should be tabulated at the beginning of a run and every five minutes thereafter.
[b]Refers to sample collection on one pair of Tenax and Tenax/charcoal traps.

Moisture Analysis Data Sheet

Project #: 4284857 Client LOUISIANA PACIFIC Test: ~~M-5CH~~ M-CU

Test Date: 09/29/94 Sample Location: Surface (2) Core Dryer

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	125.55	109.9		15.65
Impinger 2	88.90	108.0		-19.1
Impinger 3	108.15	98.1		10.05
Impinger 4	94.05	93.7		0.35
Impinger 5	~~113.9~~ OK			
Silica gel impinger	113.90	113.4		0.5

Net Total Condensate 7.45 (g

Signature

09/29/94 Date

Plant L&P

Date 09/29/94

Location DAWSON CREEK

Operator BR

Field Blank I.D.: Tenax NA

Tenax/Charcoal NA

HCN

Stack No. CORE DRYER

Probe No. NA

VOST No. NA

Rotameter No. NA

Dry Gas Meter No. VOST METER

VACUUM

Pair No.[b]	Leak Check	Cartridge I.D. Tenax	Cartridge I.D. Tenax/Charcoal	Rotameter Reading (l/min)	Time Initial	Time Final	Sampling Duration (min)	Probe Temp. (°C)	Barometric Pressure (in of Hg)	Condenser Outlet Temp. (°C)	Meter Temp. (Outlet)	Dry Gas Meter Initial	Dry Gas Meter Final	Gas Sample Volume (liters)	Comments
NA	✓	NA	NA	1.03	12:13	NA	~~0.5~~	0.5		43.2	53 53	452.33			
				1.03	12:23		60			44.6	54 54	453.22			
				1.03	12:33					44.8	55 55	454.21			
				1.03	12:43					45.0	56 56	455.16			
				1.03	12:53					45.0	56 56	456			
				1.03	13:03					45.0	57 57	457.11			
					13:13		~~0.5~~	0.5		45.0	56 52	458.600			

Condensate Samples:

Run No.	Sample I.D.	Comments
2	T2-CCN	

NOTES: [a]Reading should be tabulated at the beginning of a run and every five minutes thereafter.
[b]Refers to sample collection on one pair of Tenax and Tenax/charcoal traps.

BR

T2-CU

Moisture Analysis Data Sheet

Project #: 421485 7 Client LOUISIANA PACIFIC Test: ~~T2-SCU~~

Test Date: 09/29/94 Sample Location: Surface ③ Core Dryer

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	95.2	100.0	~~95~~	-4.8
Impinger 2	115.2	109.6		5.6
Impinger 3	116.05	110.0		6.05
Impinger 4	104.4	104.4		Ø
Impinger 5				
Silica gel impinger	114.15	113.7		0.45

Net Total Condensate 7.3 (g

B Rebitz

Signature

09/29/93

Date

SURFACE DRYER

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T1SP
LOC. : SURFACE DRYER

RUN TIME : 17:32 TO 18:43

PARTICULATE/CONDENSABLE ORGANICS CONCENTRATION

	32.0 mg/DSm3	0.0140 gr/DScf
	20.9 mg/Am3	0.0091 gr/Acf

PARTICULATE/CONDENSABLE ORGANICS EMISSION RATE

	0.577 g/s	4.58 lb/hr

SAMPLE GAS VOLUME	1.2184 DSm3	43.021 DScf
AVERAGE ISOKINETICITY	99.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	20.20 %	
TEMPERATURE	58.5 deg C	137.3 deg F
FLOW	64854 DSm3/hr	38172 DScfm
	99558 Am3/hr	58598 Acfm
VELOCITY	18.72 m/s	3684.4 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	26.96 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T1SP
LOC. : SURFACE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	93.5 kPa	27.60 in.Hg
STATIC PRESSURE	104.6 Pa	0.42 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.835	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	148.2 g
CONDENSATION IN IMPINGER 2	59.8 g
CONDENSATION IN IMPINGER 3	10.6 g
SILICA GEL WEIGHT GAIN	12.2 g
TOTAL MOISTURE GAIN	230.8 g

PARTICULATE/CONDENSABLE ORGANICS COLLECTION

FILTER PARTICULATE/CONDENSABLE ORGANICS
0.0120 g

WASHINGS PARTICULATE/CONDENSABLE ORGANICS
0.0017 g

IMPINGER PARTICULATE/CONDENSABLE ORGANICS
0.0253 g

TOTAL PARTICULATE/CONDENSABLE ORGANICS
0.0390 g

TOTAL SAMPLING TIME 60.0 min.

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 28 1994
RUN : T1SP
LOC. : SURFACE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	132	0.900	1.90	943.03	65	225	230	56	2.0	1.4	98.9
2	3.0	135	0.920	1.95	945.31	67	249	228	48	3.0	4.4	99.0
3	6.0	136	0.940	2.00	947.62	67	264	230	48	3.0	7.9	100.5
4	9.0	136	0.970	2.10	949.99	68	248	227	50	3.0	12.2	100.8
5	12.0	136	0.990	2.10	952.41	70	231	233	52	3.0	18.5	99.9
6	15.0	136	0.970	2.05	954.84	70	254	232	52	3.0	35.5	98.8
7	18.0	136	0.960	2.05	957.22	71	266	233	54	3.0	41.8	97.1
8	21.0	136	0.910	1.90	959.55	71	256	236	54	3.0	46.1	98.8
9	24.0	137	0.840	1.70	961.86	71	240	237	56	3.0	49.6	99.3
10	27.0	138	0.790	1.50	964.09	71	251	236	57	3.0	52.6	93.7
	30.0				966.13							
TRAVERSE NO. 2												
1	0.0	138	0.950	2.00	966.36	65	246	232	51	3.0	1.4	97.2
2	3.0	139	0.950	2.05	968.65	66	213	235	46	3.0	4.4	100.0
3	6.0	140	0.930	1.95	971.01	66	248	236	46	3.0	7.9	100.3
4	9.0	138	0.980	2.15	973.35	66	261	230	46	3.5	12.2	97.2
5	12.0	139	1.100	2.30	975.68	66	276	228	47	4.0	18.5	105.2
6	15.0	139	1.000	2.20	978.35	67	242	232	47	4.0	35.5	102.3
7	18.0	139	0.950	2.05	980.83	67	215	227	49	3.5	41.8	99.0
8	21.0	139	0.880	1.85	983.17	67	247	223	49	3.0	46.1	101.5
9	24.0	139	0.840	1.70	985.48	66	260	223	50	3.0	49.6	97.7
10	27.0	138	0.780	1.50	987.65	65	277	231	50	3.0	52.6	95.3
	30.0				989.69							
		137	0.926	1.95		67	248	231	50	3.1		99.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 4214884
TEST T1-SP
SAMPLE LOCATION SURFACE DRYER
DATE 94.9.28
START TIME ~~935~~ 1732
FINISH TIME ~~1104~~ 1843
BAROMETRIC PRESS.(in Hg) 935mb/27.6
STACK PRESS.(in H_2O) +0.42
PITOT COEFFICIENT 0.835
NOZZLE DIAMETER(in) 0.235
GAS METER FACTOR 0.993
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH — x —
CO2(%) 2.5 O2(%) 18
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 148.2
NET FILTER WT.(g) 0.01203
IMPINGER NET 2 (g) 59.8
NET PROBE WASH WT.(g) 0.0017
IMPINGER NET 3 (g) 10.6
IMP.RESIDUE WT.(g) 0.0253
IMPINGER NET 4 (g) 12.2
FILTER # 10
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

METER BOX ID Team #1
PROBE ID Team #2, 7'
NOZZLE ID Team #1, #2
OTHER
EQUIPMENT COMMENTS
running probe & pump direct

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

SIGNATURE 94.9.28

Filter ID #10

pH of DI Impingers 2 6

Moisture Analysis Data Sheet

Project #: 4214867 Client LOUISIANA PACIFIC Test: T1-SP

Test Date: 94.9.28 Sample Location: Surface Dryer

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	750.4	602.2		148.2
Impinger 2	636.0	576.2		59.8
Impinger 3	616.7	606.1		10.6
Impinger 4				
Impinger 5				
Silica gel impinger	738.6	726.4		12.2

Net Total Condensate 230.8 (g

Signature

94.9.28
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION

PROJECT NO. 4214964 CLIENT LOUISIANA PACIFIC TEST(S) T1/T2-SP
DATE(S) 94.9.28/29 SAMPLE LOCATION SURFACE DRYER
OPERATOR(S) JL/BR/GC
Sampling Method (eg. MOE 5) USEPA M202
Modifications to standard method USED HEATED M5 FILTER

Meter box TEAM #1 Probe TEAM #2, 7'
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: S-STEEL
cleaned according to sampling protocol? ✓
undamaged ✓
Probe liner material: TEFLON
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250°F
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications none
pitot tube coefficient 0.835
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge — range — division —
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 50°F
Filter holder: borosilicate glass ✓ other
frit material: teflon borosilicate glass ✓
other
heated? ✓ temperature 250°F
cleaned according to sampling protocol? ✓
filter holder assembled correctly? ✓
Filter type : AE GLASS FIBRE
filters checked visually for irregularities? ✓
filters properly centered? ✓ labelled?
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges —
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? NO
meter temp. 50

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used — glassware proofed? —
Impinger train: number of impingers 4
cleaned according to sampling protocol? ✓
contents: 1st 100mL DI 2nd 100mL DI 3rd 100mL DI
4th SGEL 5th _____ 6th _____
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ICE/WATER proper connections ✓
modifications: none
grease used on joints: — kind of grease —
Barometric pressure measured? ✓ source of data? Portable Anemometer
Was preliminary velocity profile performed? ✓
Avg.delta P 0.55 Max. delta P 1.1 static 0.4
Avg. Temp. 140
Estimated moisture content % 20 how estimated? SAT. TEMP
Estimated O2 % 18 CO2 % 2 CO % _____ SO2 % _____
how estimated? FURITES
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter 0.235
K factor ✓
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 10
number to be used 10
probe markings correct? ✓
Length of sampling time per point desired 3
number to be used 3
Leak test performed before start of sampling? ✓
rate <0.02 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
<0.02 cfm @ 15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? ✓
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? _____
- If filters are changed during a run was there any pariculate loss? ✓

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point 105
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <0.02 cfm @ 15 in Hg

Probe, filter holder, impingers sealed adequately after test? ✓

Gas analysis from stack? ✓ other? _____
- from fyrites? ✓ integrated bag? _____ orsat? _____
- continuous gas analysers? _____
- models: _____

Approximate stack temperature 140 gas sample volume 2.44

First 8 velocity pressures measured —

Percent isokinetic calculated —

Data forms completed and data recorded properly ✓

General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area CLEAN ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass ____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other ____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ✓
Petri dishes: plastic ____ other GLASS
cleaned according to sampling protocol? —
Graduated cylinder: borosilicate glass — other —
Subdivisions of graduated cylinder < 2 ml? —
cleaned according to sampling protocol? —
Balance type TRIPLE BEAM calibrated (AUDIT)
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 1/4 PINK run 2 ____ run 3 ____
weighed? ✓ run 1 ____ run 2 ____ run 3 ____
Probe handling: Acetone rinses ✓ other ____
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks collected: reagent(s) ____
acetone ✓ DI water ✓ other MeCl2
Impinger rinses: DI ✓ other ____
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves ____
Any particulate lost? Probe NO Filter NO
Description of particulate dark brown

John Lennartz
Name

John Lennartz
Signature

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214964 Sample Loc. SURFACE DRYER Operators JL/BR Date 94/9/

Run # T2-SP Traverse # 2 (SOUTH) Traverse Direction OUT Start Time 1057 Finish Time 1127

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.94	2.0		13.11	129	251	244	51		62	63	3
2	3		0.95	2.05	15.45	15.46	132	248	243	48		63	63	3
3	6		0.97	2.1	17.81	17.81	132	263	244	52		64	63	3
4	9		0.99	2.2	20.18	20.16	131	241	245	51		67	63	3
5	12		1.0	2.2	22.56	22.63	130	263	245	51		69	64	3
6	15		1.0	2.15	25.04	25.09	132	250	245	52		70	64	3
7	18		0.96	2.0	27.50	27.50	133	243	244	52		70	63	3
8	21		0.9	1.8	29.86	29.85	133	262	243	52		70	64	3
9	24		0.84	1.6	32.14	32.12	131	270	242	52		69	63	3
10	27		0.75	1.5	34.33	34.25	130	243	242	52		69	62	3
	30					34.28								

Pre test leak check: Rate (cfm) 0.006 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

K value calculated by _____ checked by _____

CO_2 2.5 %

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4442964 Sample Loc. SURFACE DRYER Operators JL / BR Date 94 / 9 /

Run # T1-SP Traverse # 1 (South) Traverse Direction OUT Start Time 17:32 Finish Time 18:02

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.90	1.90		943.025	132	225	230	56		65	64	2
2	3		0.92	1.95	945.31	945.31	135	249	228	48		68	65	3
3	6		0.94	2.0	947.62	947.62	136	264	230	48		69	65	3
4	9		0.97	2.1	949.96	949.99	136	248	227	50		71	65	3
5	12		0.99	2.1	952.36	952.41	136	231	233	52		73	66	3
6	15		0.97	2.05	954.81	954.84	136	234	232	52		74	66	3
7	18		0.96	2.05	957.21	957.22	136	266	233	54		75	66	3
8	21		0.91	1.90	959.58	959.55	136	256	236	54		75	66	3
9	24		0.84	1.7	961.85	961.86	137	240	237	56		76	66	3
10	27		0.79	1.5	964.07	964.09	138	251	236	57		76	66	3
	30				966.20	966.13								

Pre test leak check: Rate (cfm) 0.008 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.003 at 15 inches Hg (Vacuum)

K value calculated by _____ checked by _____

Signature [signature]

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 29 1994
RUN : T2SP
LOC. : SURFACE DRYER

RUN TIME : 10:07 TO 11:27

PARTICULATE/CONDENSABLE ORGANICS CONCENTRATION

	27.7 mg/DSm3	0.0121 gr/DScf
	19.4 mg/Am3	0.0085 gr/Acf

PARTICULATE/CONDENSABLE ORGANICS EMISSION RATE

	0.529 g/s	4.20 lb/hr

SAMPLE GAS VOLUME	1.2428 DSm3	43.884 DScf
AVERAGE ISOKINETICITY	95.5 %	

FLUE GAS CHARACTERISTICS

MOISTURE	16.14 %	
TEMPERATURE	56.5 deg C	133.8 deg F
FLOW	68727 DSm3/hr	40451 DScfm
	98022 Am3/hr	57694 Acfm
VELOCITY	18.43 m/s	3627.6 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	27.42 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 29 1994
RUN : T2SP
LOC. : SURFACE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	95.2 kPa	28.10 in.Hg
STATIC PRESSURE	107.1 Pa	0.43 in.H20
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.835	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	91.4 g
CONDENSATION IN IMPINGER 2	55.3 g
CONDENSATION IN IMPINGER 3	19.1 g
SILICA GEL WEIGHT GAIN	13.2 g
TOTAL MOISTURE GAIN	179.0 g

PARTICULATE/CONDENSABLE ORGANICS COLLECTION

FILTER PARTICULATE/CONDENSABLE ORGANICS
0.0184 g

WASHINGS PARTICULATE/CONDENSABLE ORGANICS
0.0027 g

IMPINGER PARTICULATE/CONDENSABLE ORGANICS
0.0133 g

TOTAL PARTICULATE/CONDENSABLE ORGANICS
0.0344 g

TOTAL SAMPLING TIME 60.0 min.

PARTICULATE/CONDENSABLE ORGANICS EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : SEPTEMBER 29 1994
RUN : T2SP
LOC. : SURFACE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	134	0.980	2.15	989.92	55	230	234	43	3.0	1.4	97.9
2	3.0	137	0.990	2.15	992.30	55	238	232	39	3.0	4.4	97.1
3	6.0	139	0.980	2.10	994.67	56	253	232	43	3.0	7.9	95.9
4	9.0	139	1.000	2.15	997.00	59	268	233	44	3.0	12.2	99.0
5	12.0	137	1.100	2.15	999.44	61	252	235	46	3.0	18.5	93.5
6	15.0	135	1.000	2.20	1001.87	62	272	237	49	3.0	35.5	98.0
7	18.0	138	0.920	1.90	1004.31	64	244	238	54	3.0	41.8	95.8
8	21.0	135	0.890	1.80	1006.60	64	255	238	56	3.0	46.1	93.2
9	24.0	134	0.820	1.60	1008.80	64	228	241	57	2.5	49.6	91.2
10	27.0	134	0.760	1.45	1010.87	64	256	239	60	2.5	52.6	91.5
	30.0				1012.87							
TRAVERSE NO. 2												
1	0.0	129	0.940	2.00	13.11	63	251	244	51	3.0	1.4	96.7
2	3.0	132	0.950	2.05	15.46	63	268	243	48	3.0	4.4	96.4
3	6.0	132	0.970	2.10	17.81	65	263	244	52	3.0	7.9	95.1
4	9.0	131	0.990	2.20	20.16	65	241	245	51	3.0	12.2	98.8
5	12.0	130	1.000	2.20	22.63	67	263	245	51	3.0	18.5	97.5
6	15.0	132	1.000	2.15	25.09	67	250	245	52	3.0	35.5	95.6
7	18.0	133	0.960	2.00	27.50	67	243	244	52	3.0	41.8	95.3
8	21.0	133	0.900	1.80	29.85	67	262	243	52	3.0	46.1	94.9
9	24.0	131	0.840	1.60	32.12	66	270	242	52	3.0	49.6	92.2
10	27.0	130	0.750	1.50	34.25	66	243	243	52	3.0	52.6	92.9
	30.0				36.28							
		134	0.935	1.96		63	253	240	50	3.0		95.5

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, B.C
PROJECT # 4214867
TEST T2-SP
SAMPLE LOCATION SURFACE DRYER
DATE 94.9.29
START TIME 10:07
FINISH TIME 1127
BAROMETRIC PRESS.(in Hg) 28.1
STACK PRESS.(in H_2O) 0.43
PITOT COEFFICIENT 0.835
NOZZLE DIAMETER(in) 0.235
GAS METER FACTOR 0.998
STACK HEIGHT(ft) 50
STACK DIAMETER(in) 54
LENGTH X WIDTH — X —
CO2(%) 2.5 O2(%) 18
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 91.4
NET FILTER WT.(g) 0.01842
IMPINGER NET 2 (g) 55.3
NET PROBE WASH WT.(g) 0.0027
IMPINGER NET 3 (g) 19.1
IMP.RESIDUE WT.(g) 0.0133
IMPINGER NET 4 (g) 13.2
FILTER # 12
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

METER BOX ID TEAM #1
PROBE ID TEAM #2, 7'
NOZZLE ID TEAM #1, #2
OTHER

EQUIPMENT COMMENTS
RUNNING PROBE HEAT & PUMP DIRECT

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

John Fennatty 94.9.29
SIGNATURE

pH of H_2O = 6-7

Moisture Analysis Data Sheet

Project #: 4214864 Client L&P Test: T2-SP

Test Date: 9/29/94 Sample Location: Surface

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	456.8	~~565.4~~ 374		91.4
Impinger 2	639.3	~~584.0~~ 584		55.3
Impinger 3	581.6	~~562.5~~ 562		19.1
Impinger 4				
Impinger 5				
Silica gel impinger	751.8	~~738.6~~ 739		13.2

Filter #12

Net Total Condensate 179.0 (g)

John Lennartz
Signature

94.9.29
Date

Stack
O_2 18
CO_2 2.5

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214964 Sample Loc. SURFACE DRYER Operators JL/BR Date 94 / 9 /

Run # T2-SP Traverse # 1 [WEST] Traverse Direction OUT Start Time 10:07 Finish Time 1037

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.98	2.15		989.92	134	230	234	43		53	56	3
2	3		0.99	2.15	992.27	992.30	137	248	232	39		54	56	3
3	6		0.98	2.10	994.66	994.67	139	253	232	43		56	56	3
4	9		1.0	2.15	997.02	997.00	139	268	233	44		59	58	3
5	12		1.1	2.15	999.37	999.44	137	252	235	46		62	59	3
6	15		1.0	2.2	1001.97	1001.87	135	272	237	49		64	60	3
7	18		0.92	1.9	1004.28	1004.31	138	244	238	54		66	61	3
8	21		0.89	1.8	1006.42	1006.60	135	255	238	56		67	61	3
9	24		0.82	1.6	1008.87	1008.80	134	228	241	57		67	61	2.5
10	27		0.76	1.45	1010.98	1010.87	134	256	239	60		67	61	2.5
11	30				1012.97	1012.87								

Pre test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.006 at 15 inches Hg (Vacuum)

K value calculated by _____ checked by _____

Signature JL

static 0.

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214964 Sample Loc. SURFACE DRYER Operators FL/BR Date 94/9/

Run # T1-SP Traverse # 2 (WEST) Traverse Direction OUT Start Time 1813 Finish Time 1843

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.95	2.0		964.35	138	246	232	51		65	64	3
2	3		0.95	2.05	968.68	968.65	139	213	235	46		69	63	3
3	6		0.93	1.95	970.00	971.01	140	248	236	46		69	62	3
4	9		0.98	2.15	973.33	973.35	138	261	230	46		69	62	3.5
5	12		1.1	2.3	975.66	975.68	139	276	228	47		70	62	4.0
6	15		1.0	2.2	978.21	978.35	139	242	232	47		71	62	4.0
7	18		0.95	2.05	980.76	980.83	139	215	227	49		71	62	3.5
8	21		0.88	1.85	983.18	983.17	139	247	223	49		71	62	3
9	24		0.84	1.70	985.43	985.48	139	260	223	50		70	62	3
10	27		0.79	1.50	987.69	987.65	138	277	231	50		69	61	3
	30					989.69								

Pre test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

K value calculated by _____ checked by _____

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : T1SF
LOC. : SURFACE DRYER

RUN TIME : 17:33 TO 18:41

FORMALDEHYDE CONCENTRATION	791.7 ug/DSm3	0.3460 gr/1000 DScf
	526.2 ug/Am3	0.2300 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	14.679 mg/s	815.53 gr/hr
SAMPLE GAS VOLUME	1.3769 DSm3	48.621 DScf
AVERAGE ISOKINETICITY	99.4 %	

FLUE GAS CHARACTERISTICS

MOISTURE	19.53 %	
TEMPERATURE	54.6 deg C	130.4 deg F
FLOW	66737 DSm3/hr	39280 DScfm
	100408 Am3/hr	59098 Acfm
VELOCITY	18.88 m/s	3715.9 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	27.04 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : T1SF
LOC. : SURFACE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	93.5 kPa	27.60 in.Hg
STATIC PRESSURE	104.6 Pa	0.42 in.H2O
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	149.2 g
CONDENSATION IN IMPINGER 2	85.0 g
CONDENSATION IN IMPINGER 3	9.5 g
SILICA GEL WEIGHT GAIN	6.3 g
TOTAL MOISTURE GAIN	250.0 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	1.0900 mg
TOTAL FORMALDEHYDE	1.0900 mg

TOTAL SAMPLING TIME 60.0 min.

ORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.28
RUN : T1SF
LOC. : SURFACE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	128	0.830	2.05	192.98	55	225	257	42	1.0	1.4	98.9
2	3.0	127	0.890	2.20	195.27	55	225	256	39	1.0	4.4	99.6
3	6.0	127	0.950	2.35	197.66	56	233	255	47	1.0	7.9	99.6
4	9.0	128	0.980	2.40	200.13	56	235	255	46	1.0	12.2	100.1
5	12.0	128	1.100	2.70	202.65	57	245	255	42	1.0	18.5	97.8
6	15.0	129	1.130	2.80	205.26	57	240	256	41	1.0	35.5	99.1
7	18.0	129	1.150	2.85	207.94	58	236	254	41	1.0	41.8	98.5
8	21.0	130	1.100	2.70	210.63	59	237	254	42	1.0	46.1	99.5
9	24.0	130	1.050	2.60	213.29	58	245	255	42	1.0	49.6	98.4
10	27.0	131	1.050	2.60	215.86	59	246	255	43	1.0	52.6	98.0
	30.0				218.42							
TRAVERSE NO. 2												
1	0.0	132	0.830	2.05	219.01	56	277	255	44	1.0	1.4	99.9
2	3.0	132	0.880	2.15	221.32	57	281	254	39	1.0	4.4	99.1
3	6.0	133	0.950	2.35	223.68	57	282	255	39	1.0	7.9	99.4
4	9.0	131	1.050	2.60	226.14	57	275	255	39	1.0	12.2	99.9
5	12.0	132	1.100	2.70	228.74	57	268	255	39	1.0	18.5	100.0
6	15.0	132	1.100	2.70	231.40	57	248	255	39	1.0	35.5	100.0
7	18.0	133	1.130	2.80	234.06	57	246	254	40	1.0	41.8	99.8
8	21.0	132	1.150	2.85	236.75	57	240	256	41	1.0	46.1	100.1
9	24.0	132	1.130	2.80	239.47	57	238	255	41	1.0	49.6	100.1
10	27.0	131	1.070	2.65	242.17	56	240	255	42	1.0	52.6	100.3
	30.0				244.80							
		130	1.028	2.55		57	248	255	41	1.0		99.4

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT: LOUISIANA PACIFIC
CITY PROV.: DAWSON CREEK, BC
PROJECT #: 421 4964
TEST: TFSF
SAMPLE LOCATION: SURFACE DRYER
DATE: 94.09.28
START TIME: 1733
FINISH TIME: 1841
BAROMETRIC PRESS.(in Hg): 935mb / 27.6
STACK PRESS.(in H_2O): .92
PITOT COEFFICIENT: .805
NOZZLE DIAMETER(in): .246
GAS METER FACTOR: 1.000
STACK HEIGHT(ft): 50'
STACK DIAMETER(in): 54
LENGTH X WIDTH: X
CO2(%): 2.5
O2(%): 18
CO(ppm):
OTHER:

IMPINGER NET 1 (g): 149.2
IMPINGER NET 2 (g): 85.0
IMPINGER NET 3 (g): 9.5
IMPINGER NET 4 (g): 6.3
IMPINGER NET 5 (g):
IMPINGER NET 6 (g):

NET FILTER WT.(g):
NET PROBE WASH WT.(g): 1090 mg
IMP.RESIDUE WT.(g):
FILTER #: —

METER BOX ID: TEM JAN
PROBE ID: T&1 5A
NOZZLE ID: T3 #3
OTHER:
EQUIPMENT COMMENTS:

SAMPLING COMMENTS:

PROCESS RATE:
CONTROL EQUIP. OPERATION:
PROCESS COMMENTS:

RG Nalley
SIGNATURE

94.09.28
DATE

Moisture Analysis Data Sheet

Project #: 921~~[illegible]~~4964 Client LOUISIANA PACIFIC Test: T1-SF

Test Date: 94.09.28 Sample Location: DRYER #3 (SURFACE

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	741.5	592.3		149.2
Impinger 2	668.4	593.4		85.0
Impinger 3	490.7	481.2		9.5
Impinger 4				
Impinger 5				
Silica gel impinger	8~~[illegible]~~57.3	845.0		6.3

Net Total Condensate 250.0 (g

Signature

94.09.28.
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION.

PROJECT NO. 4214964 CLIENT DAWSON CREEK, BC TEST(S) T1/T2-SP
DATE(S). 91.09/28/29. SAMPLE LOCATION SURFACE DRYER
OPERATOR(S) RM/BR/GC
Sampling Method (eg. MOE 5) METHOD 001
Modifications to standard method —

Meter box TEAM VAN Probe T #1 5ft
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: SS STEEL
cleaned according to sampling protocol? ✓
undamaged —
Probe liner material: GLASS
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250F
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications NONE
pitot tube coefficient .805
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge — range — division —
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 50F

NO FILTER

Filter holder: borosilicate glass — other
frit material: teflon borosilicate glass
other
heated? temperature
cleaned according to sampling protocol?
filter holder assembled correctly?
Filter type :
filters checked visually for irregularities?
filters properly centered? labelled?

Recent calibration of orifice meter dry gas meter
pitot tubes ✓ magnehelic gauges ✓
thermometers and thermocouples? ✓ nozzles
Is gas meter calibration temperature compensated? No
meter temp. 50

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used ___ glassware proofed? ___
Impinger train: number of impingers ___
cleaned according to sampling protocol? ✓
contents: 1st 100mL DNPH 2nd 100 mL DNPH 3rd BLANK
4th SGEL 5th ___ 6th ___
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ICE/WATER proper connections ✓
modifications: NONE
grease used on joints: NO kind of grease —
Barometric pressure measured? ✓ source of data? ANEROID
Was preliminary velocity profile performed? ✓
Avg.delta P .95 Max. delta P 1.1 static 0.4
Avg. Temp. 140
Estimated moisture content % 20 how estimated? SAT. TEMP
Estimated O2 % 18 CO2 % 2 CO % ___ SO2 % ___
how estimated? PYRITES
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter .246
K factor ✓
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 10
number to be used 10
probe markings correct? ✓
Length of sampling time per point desired 3
number to be used 3
Leak test performed before start of sampling? ✓
rate <.008 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
.02 cfm @ 15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? ✓
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? —
- If filters are changed during a run was there any pariculate loss? —

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point .05
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <.002 cfm @ 15 in Hg

Probe, filter holder, impingers sealed adequately after test? ____

Gas analysis from stack? ✓ other? ____
- from fyrites? ✓ integrated bag? ____ orsat? ____
- continuous gas analysers? —
- models: —

Approximate stack temperature 144 gas sample volume @ 40cf

First 8 velocity pressures measured —

Percent isokinetic calculated —

Data forms completed and data recorded properly ✓

General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area CLEAN ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass ____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other ____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ✓
Petri dishes: plastic ____ other —
cleaned according to sampling protocol? —
Graduated cylinder: borosilicate glass ✓ other ____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type TRIPLE BEAM calibrated AUDIT
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 ____ run 2 ____ run 3 ____
weighed? run 1 ____ run 2 ____ run 3 ____
Probe handling: Acetone rinses ____ other ____
Particulate recovery: probe nozzle ____ probe fitting ____
probe liner ____ front half of filter holder ____
Blanks collected: reagent(s) ____
acetone ____ DI water — other $MeCl_2$
Impinger rinses: DI ____ other $MeCl_2$
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? — surgical gloves ____
Any particulate lost? Probe — Filter —
Description of particulate —

R.G. MASLEY
Name

Signature

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SF
LOC. : SURFACE DRYER

RUN TIME : 10:05 TO 11:27

FORMALDEHYDE CONCENTRATION	459.5 ug/DSm3	0.2008 gr/1000 DScf
	330.7 ug/Am3	0.1445 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	9.370 mg/s	520.56 gr/hr
SAMPLE GAS VOLUME	1.4584 DSm3	51.499 DScf
AVERAGE ISOKINETICITY	95.7 %	

FLUE GAS CHARACTERISTICS

MOISTURE	15.35 %	
TEMPERATURE	51.0 deg C	123.8 deg F
FLOW	73405 DSm3/hr	43205 DScfm
	101978 Am3/hr	60022 Acfm
VELOCITY	19.17 m/s	3774.0 fpm

GAS ANALYSIS	O2	18.00 %
	CO2	2.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.23 g/gmole D.B.
	MOL. WT.	27.51 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SF
LOC. : SURFACE DRYER

STACK HEIGHT	15.2 m	50.0 ft.
STACK DIAMETER	1.37 m	54.0 in.
STACK AREA	1.478 m2	15.90 sq.ft.
BAROMETRIC PRESSURE	95.2 kPa	28.10 in.Hg
STATIC PRESSURE	107.1 Pa	0.43 in.H20
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	85.6 g
CONDENSATION IN IMPINGER 2	71.4 g
CONDENSATION IN IMPINGER 3	22.1 g
SILICA GEL WEIGHT GAIN	18.8 g
TOTAL MOISTURE GAIN	197.9 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.6700 mg
TOTAL FORMALDEHYDE	0.6700 mg

TOTAL SAMPLING TIME 60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T2SF
LOC. : SURFACE DRYER

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	124	0.880	2.10	245.15	41	282	254	43	1.0	1.4	97.4
2	3.0	126	0.920	2.20	247.49	40	282	253	36	1.0	4.4	98.0
3	6.0	127	1.000	2.40	249.89	41	257	255	35	1.0	7.9	96.0
4	9.0	127	1.100	2.65	252.34	42	272	259	37	1.0	12.2	98.0
5	12.0	128	1.160	2.80	254.97	44	265	255	44	1.0	18.5	96.4
6	15.0	124	1.200	2.90	257.63	45	268	254	47	1.0	35.5	95.3
7	18.0	126	1.200	2.90	260.32	46	253	254	55	1.0	41.8	97.0
8	21.0	125	1.220	2.95	263.06	48	255	253	60	1.0	46.1	96.5
9	24.0	120	1.150	2.75	265.82	49	249	254	60	1.0	49.6	95.2
10	27.0	121	1.150	2.75	268.48	50	248	255	60	1.0	52.6	94.7
	30.0				271.13							
TRAVERSE NO. 2												
1	0.0	120	0.960	2.30	271.40	52	263	256	41	1.0	1.4	94.8
2	3.0	121	0.960	2.30	273.84	52	256	251	40	1.0	4.4	96.4
3	6.0	121	1.130	2.70	276.32	53	281	256	40	1.0	7.9	94.1
4	9.0	122	1.150	2.75	278.95	54	273	255	39	1.0	12.2	95.1
5	12.0	122	1.200	2.90	281.63	55	272	256	39	1.0	18.5	94.9
6	15.0	122	1.200	2.90	284.37	56	248	255	40	1.0	35.5	95.2
7	18.0	123	1.200	2.90	287.12	57	257	255	41	1.0	41.8	94.7
8	21.0	123	1.200	2.90	289.86	57	257	255	42	1.0	46.1	95.4
9	24.0	126	1.160	2.80	292.62	57	248	255	45	1.0	49.6	94.7
10	27.0	128	1.130	2.70	295.31	58	271	254	47	1.0	52.6	95.0
	30.0				297.97							
		124	1.111	2.68		50	263	255	45	1.0		95.7

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT: LOUISIANA PACIFIC
CITY PROV.: DAWSON, CREEK, BC
PROJECT #: 4214964
TEST: T2-SF
SAMPLE LOCATION: SURFACE DRYER
DATE: 97.09.29
START TIME: 10:05
FINISH TIME: 1:27
BAROMETRIC PRESS.(in Hg): 28.1
STACK PRESS.(in H_2O): .43
PITOT COEFFICIENT: .805
NOZZLE DIAMETER(in): .246
GAS METER FACTOR: 1.000
STACK HEIGHT(ft): 50
STACK DIAMETER(in): 54
LENGTH X WIDTH: X
CO2(%): 2.5
O2(%): 18
CO(ppm):
OTHER:

IMPINGER NET 1 (g): 85.6
IMPINGER NET 2 (g): 71.4
IMPINGER NET 3 (g): 22.1
IMPINGER NET 4 (g): 18.8
IMPINGER NET 5 (g):
IMPINGER NET 6 (g):

NET FILTER WT.(g):
NET PROBE WASH WT.(g) } 670 mg
IMP.RESIDUE WT.(g) }
FILTER #:

METER BOX ID: TEAM VAN
PROBE ID: T-1 5ft
NOZZLE ID: T3 #3
OTHER:
EQUIPMENT COMMENTS:

SAMPLING COMMENTS:

PROCESS RATE:
CONTROL EQUIP. OPERATION:
PROCESS COMMENTS:

RGM
SIGNATURE

97.09.29
DATE

Moisture Analysis Data Sheet

Project #: 421 4984 Client LOUISIANA PACIFIC Test: T2-SF

Test Date: 94.09.29. Sample Location: SURFACE DRYER

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	673.5	587.9		85.6
Impinger 2	646.0	574.6		71.4
Impinger 3	502.7	480.6		22.1
Impinger 4				
Impinger 5				
Silica gel impinger	823.6	804.8		18.8

Net Total Condensate 197.5 (g

Signature

94.09.29.
Date

Sampling Trains Dat.. Sheet

Page 1/2

ent LOUISIANA PACIFIC Project # 1214864 Sample Loc. SURFACE DRYER Operators RM/R Date 7/10/..

T2-5F Traverse # 1 Traverse Direction IN Start Time 13:05 Finish Time

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.88	2.1		245.15	124	282	254	43		41	40	1
3		.92	2.2	247.49	247.49	126	282	253	36		40	40	1
6		1.0	2.4	249.89	249.89	127	257	255	35		41	40	1
9		1.1	2.65	252.39	252.34	127	272	259	37		43	41	1
12		1.16	2.8	254.97	254.97	129	265	255	44		45	42	1
15		1.2	2.9	257.56	257.63	124	268	254	47		47	42	1
18		1.2	2.9	260.37	260.32	126	253	254	55		49	43	
21		1.22	2.95	263.06	263.06	125	285	253	60		51	44	1
24		1.15	2.75	265.82	265.82	120	249	254	60		52	45	1
27		1.15	2.75	268.50	268.49	121	248	255	60		53	46	1
30				271.16	271.13								

: test leak check: Rate (cfm) 15 at .007 inches Hg (Vacuum)

it test leak check: Rate (cfm) 15 at .003 inches Hg (Vacuum)

'alue calculated by _____ checked by _____

Sampling Trains Data Sheet

Page

ent LOUISIANA PACIFIC Project # 1214964 Sample Loc. SURFACE DRYER Operators RM/R Date 99-09

T2-SF Traverse # 1N Traverse Direction 1N Start Time 13:57 Finish Time 14:27

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.96	2.3+		271.395	120	267	256	41		53	51	1
3		.96	2.3+	273.84	273.89	121	256	251	40		53	51	1
6		1.13	2.7+	276.29	276.32	121	261	256	40		55	51	1
9		1.15	2.75	278.98	278.95	122	273	255	39		56	51	1
12		1.2	2.9	281.63	281.63	122	272	256	39		58	52	
15		1.2	2.9	284.37	284.37	122	248	255	40		59	52	1
18		1.2	2.9	287.12	287.12	123	257	255	41		60	53	1
21		1.2	2.9	289.86	289.86	123	257	255	42		60	53	1
24		1.16	2.8	292.60	292.62	126	248	255	45		61	53	
27		1.13	2.7	295.31	295.31	128	271	254	47		61	54	1
30				297.97	297.97								

test leak check: Rate (cfm) 15 at .003 inches Hg (Vacuum)

t test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

alue calculated by _____ checked by _____

Sampling Trains Dat. heet

Page 1

:nt LOUISIANA PACIFIC Project # 421 4964 Sample Loc. SURFACE DRYER Operators RM/BR/G Date 9/20

T1-SF Traverse # 1 Traverse Direction IN Start Time 20:33 Finish Time 24:03

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.83	2.05		192.98	128	225	257	42		55	55	1
3		.89	2.2	195.29	195.27	127	225	256	39		55	55	1
6		.95	2.35	197.67	197.66	127	233	255	47		56	55	1
9		.98	2.4	200.14	200.13	128	235	255	46		57	55	1
12		1.1	2.7	202.64	202.65	128	245	255	42		58	55	1
15		1.13	2.8	205.31	205.28	129	240	256	41		59	55	1
18		1.15	2.85	207.96	207.94	129	236	254	41		60	55	1
21		1.1	2.7	210.66	210.63	130	237	254	42		61	56	1
24		1.05	2.6	213.29	213.29	130	245	255	42		61	55	1
27		1.05	2.6	215.89	215.86	131	246	255	43		62	55	1
30				218.46	218.42								

test leak check: Rate (cfm) 15 at .003 inches Hg (Vacuum)

t test leak check: Rate (cfm) 15 at .001 inches Hg (Vacuum)

alue calculated by _____ checked by _____

O_2 18
CO_2 2.5

Pbar: 996 mb

Sampling Trains Data Sheet

:nt LOUISIANA PACIFIC Project # 921-9864 Sample Loc. SURFACE DRYER Operators RM/OR/G Date 94-07

T1-SF Traverse # 2 Traverse Direction IN Start Time 21:11 Finish Time ~~21:34~~ 18

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.88	2.05		219.005	132	277	255	94		57	55	1.0
3		.98	2.15	221.32	221.32	132	261	254	39		59	54	1
6		.95	2.35	223.70	223.68	133	282	255	39		60	54	1
9		1.05	2.6	226.16	226.14	131	275	255	39		60	54	1
12		1.1	2.7	228.74	228.74	132	268	255	39		60	53	1
15		1.1	2.7	231.40	231.40	132	248	255	39		60	53	1
18		1.13	2.8	234.06	234.06	133	246	254	40		61	53	1
21		1.15	2.85	236.76	236.75	132	240	256	41		60	53	1
24		1.13	2.8	239.47	239.47	132	238	255	41		61	53	1
27		1.07	2.65	242.17	242.17	131	240	255	42		60	52	1
31				244.80	244.80								

test leak check: Rate (cfm) .15 at .001 inches Hg (Vacuum)

t test leak check: Rate (cfm) .15 at .002 inches Hg (Vacuum)

alue calculated by _____ checked by _____

Moisture Analysis Data Sheet

Project #: LAP421485-7 Client LAP Test: T2-SCA

Test Date: 09/29/31 Sample Location: SUBPACE DRYER (3)

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	115.05	116.30		-1.25
Impinger 2	104.95	114.25		-9.3
Impinger 3	99.05	98.5		0.55
Impinger 4	109.15	108.95		0.20
Impinger 5				
Silica gel impinger	114.48	114.45		0.03

Net Total Condensate -9.77 (g

Signature

Date

Plant L/F
Date 09/22/94
Location DAWSON CREEK
Operator RR

Stack # TRSCN SURFACE ORACLE STACK

TEST TWO

Pre-Leak Check	✓
Post-Leak Check	✓

Field Blank I.D. Tenax	NA
Tenax/Charcoal	NA

Sampling Rate 1.05

ROT @ 1.05

Time Initial	Time Final	Sampling Duration (min.)	Probe Temp. (F)	Condensor Outlet (F)	Meter Temp. (F)	Barometric Pressure (in of Hg)	Dry Gas Meter Initial	Dry Gas Meter Final	Gas Volume (litres)
16:30	—	60	NA	41.8	52/53		465.13	NA	—
16:40	—		NA	42.0	52/53		466.171	NA	—
16:50	—		NA	42.5	52/52		467.70	NA	—
17:00	—		NA	42.5	50/50			NA	—
17:10	—		NA	42.0	50/50		469.21	NA	—
17:20				41.0	49/50		470.51		
17:30				42.0	49/49				

Run Number 2

Sample I.D.

Comments 471.335

Plant L/P
Date 09/21/97
Location DAWSON CREEK
Operator DR

Stack #T1-SCRUBBER DRYER STACK

TEST ONE

Pre-Leak Check	✓
Post-Leak Check	—

Field Blank I.D. Tenax	NA
Tenax/Charcoal	NA

Sampling Rate 1.05 LPM

Time Initial	Time Final	Sampling Duration (min.)	Probe Temp. (F)	Condensor Outlet (F)	Meter Temp. (F)	Barometric Pressure (in of Hg)	Dry Gas Meter Initial	Dry Gas Meter Final	Gas Volume (litres)
15:08	—	60	NA	38.5	52/52		458.21	—	~~na~~
15:18	—		NA	38.2	52/52		459.21	—	—
15:28	—		NA	38.5	52/52		460.20	—	—
15:38	—		NA	40.0	51		461.21	—	—
15:48	—		NA	40.5	51/52		462.21	—	-
15:58	—			40.5	51/51		463.21		
16:08				41.0			464.20		

Run Number ONE

Sample I.D.

Comments

Moisture Analysis Data Sheet

Project #: 4214857 Client L/P Test: T1-SC1

Test Date: 09/29/94 Sample Location: SURFACE OFFER (3)

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	95.00	102.45		-7.45
Impinger 2	116.30	110.35		5.95
Impinger 3	116.40	108.55		7.85
Impinger 4	102.30	102.30		Ø
Impinger 5				
Silica gel impinger	114.45	114.20		.25

Net Total Condensate 6.6 (g)

Signature

09/29/31
Date

KONUS

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T4KF
LOC. : KONUS STACK

RUN TIME : 9:07 TO 10:35

FORMALDEHYDE CONCENTRATION	417.4 ug/DSm3	0.1824 gr/1000 DScf
	221.2 ug/Am3	0.0967 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	2.865 mg/s	159.17 gr/hr
SAMPLE GAS VOLUME	0.8147 DSm3	28.769 DScf
AVERAGE ISOKINETICITY	102.3 %	

FLUE GAS CHARACTERISTICS

MOISTURE	9.41 %	
TEMPERATURE	198.9 deg C	390.0 deg F
FLOW	24709 DSm3/hr	14543 DScfm
	46621 Am3/hr	27440 Acfm
VELOCITY	7.10 m/s	1397.5 fpm

GAS ANALYSIS	O2	14.50 %
	CO2	6.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.65 g/gmole D.B.
	MOL. WT.	28.56 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC	DATE : 94.09.29
JOBSITE : DAWSON CREEK	RUN : T4KF
REF.No. : 4214964	LOC. : KONUS STACK

STACK HEIGHT	18.3 m	60.0 ft.
STACK DIAMETER	1.52 m	60.0 in.
STACK AREA	1.824 m2	19.64 sq.ft.
BAROMETRIC PRESSURE	95.4 kPa	28.17 in.Hg
STATIC PRESSURE	34.9 Pa	0.14 in.H2O
NOZZLE DIAMETER	7.90 mm	0.3110 in.
PITOT COEFFICIENT	0.809	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	39.8 g
CONDENSATION IN IMPINGER 2	12.9 g
CONDENSATION IN IMPINGER 3	1.0 g
SILICA GEL WEIGHT GAIN	9.6 g
TOTAL MOISTURE GAIN	63.3 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.3400 mg
TOTAL FORMALDEHYDE	0.3400 mg

TOTAL SAMPLING TIME 72.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T4KF
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	390	0.180	0.90	241.27	50	236	255	45	1.0	1.0	103.1
2	2.0	390	0.190	0.95	242.34	53	262	245	45	1.0	2.6	102.6
3	4.0	389	0.170	0.90	243.44	55	252	250	45	1.0	4.5	103.1
4	6.0	389	0.160	0.85	244.49	56	231	246	48	1.0	6.5	108.1
5	8.0	389	0.160	0.85	245.56	56	237	247	46	1.0	8.8	100.9
6	10.0	388	0.140	0.65	246.56	57	241	248	47	1.0	11.3	99.0
7	12.0	388	0.140	0.68	247.48	57	245	249	47	1.0	14.2	100.0
8	14.0	389	0.120	0.63	248.41	57	249	254	47	1.0	17.8	103.4
9	16.0	389	0.110	0.55	249.30	58	250	255	47	1.0	22.9	103.1
10	18.0	388	0.090	0.48	250.15	57	250	247	47	1.0	37.1	101.9
11	20.0	387	0.090	0.48	250.91	58	264	259	47	1.0	42.2	100.4
12	22.0	387	0.090	0.48	251.66	58	271	253	47	1.0	45.8	104.4
13	24.0	386	0.090	0.47	252.44	58	255	261	47	1.0	48.7	105.7
14	26.0	385	0.080	0.40	253.23	58	248	256	48	1.6	51.2	102.1
15	28.0	383	0.080	0.40	253.95	58	244	272	49	1.0	53.5	100.5
16	30.0	380	0.060	0.30	254.66	58	242	264	51	1.0	55.5	102.7
17	32.0	380	0.060	0.30	255.29	58	241	250	52	1.0	57.4	101.1
18	34.0	380	0.050	0.25	255.91	58	242	253	52	1.0	59.0	101.8
	36.0				256.48							
TRAVERSE NO. 2												
1	0.0	381	0.110	0.55	256.91	58	262	252	59	1.0	1.0	101.4
2	2.0	394	0.120	0.60	257.75	60	265	248	55	1.0	2.6	100.9
3	4.0	395	0.120	0.62	258.62	61	270	250	54	1.0	4.5	103.1
4	6.0	396	0.120	0.62	259.51	62	266	256	54	1.0	6.5	104.1
5	8.0	397	0.120	0.62	260.41	62	268	249	53	1.0	8.8	102.9
6	10.0	398	0.110	0.55	261.30	62	265	252	53	1.0	11.3	103.9
7	12.0	397	0.080	0.42	262.16	62	270	255	53	1.0	14.2	103.4
8	14.0	394	0.090	0.47	262.89	62	263	252	54	1.0	17.8	102.6
9	16.0	396	0.090	0.47	263.66	63	269	251	53	1.0	22.9	102.6
10	18.0	396	0.100	0.50	264.43	63	259	253	52	1.0	37.1	101.2
11	20.0	397	0.120	0.60	265.23	63	260	250	51	1.0	42.2	89.0
12	22.0	398	0.130	0.66	266.00	63	275	252	50	1.0	45.8	112.1
13	24.0	397	0.130	0.65	267.01	64	257	246	50	1.0	48.7	101.8
14	26.0	397	0.120	0.60	267.93	64	250	243	48	1.0	51.2	101.4
15	28.0	393	0.100	0.50	268.81	62	246	247	46	1.0	53.5	101.2

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T4KF
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
16	30.0	386	0.110	0.55	269.61	62	245	245	45	1.0	55.5	100.8
17	32.0	386	0.080	0.40	270.45	62	245	252	45	1.0	57.4	104.2
18	34.0	386	0.060	0.30	271.19	62	246	254	44	1.0	59.0	102.3
	36.0				271.82							
		390	0.108	0.56		59	254	252	49	1.0		102.3

Formaldehyde

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT L+P
CITY PROV. Dawson Creek
PROJECT # 4214864
TEST T4 KF
SAMPLE LOCATION Konus
DATE 9/29/94
START TIME 9:07 954M6
FINISH TIME 10:35
BAROMETRIC PRESS.(in Hg) 28.17
STACK PRESS.(in H_2O) +.14
PITOT COEFFICIENT .809
NOZZLE DIAMETER(in) .311
GAS METER FACTOR 0.996
STACK HEIGHT(ft) 60'
STACK DIAMETER(in) 60"
LENGTH X WIDTH ____ X ____
CO2(%) 6 O2(%) 14.5
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 39.8
IMPINGER NET 2 (g) 12.4
IMPINGER NET 3 (g) 1.0
IMPINGER NET 4 (g) 9.6
IMPINGER NET 5 (g) ____
IMPINGER NET 6 (g) ____

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) } 340 mg
IMP.RESIDUE WT.(g) }
FILTER # Bypassed

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#3
OTHER ____
EQUIPMENT COMMENTS Bypassed Filter

SAMPLING COMMENTS ____

PROCESS RATE 9.1 Mg/hr
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

3.0354
33.1634

SIGNATURE

9/29/94
DATE

Moisture Analysis Data Sheet

Project #: 421464 Client WDP Test: TI-KF

Test Date: 9/29/94 Sample Location: Konus

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	638.5	598.7		39.8
Impinger 2	606.3	593.4		12.9
Impinger 3	476.1	475.1		1.0
Impinger 4				
Impinger 5				
Silica gel impinger	762.9	Pre. ~~756~~ 753.3		Pre. ~~243~~ 9.6

Net Total Condensate: Pre. ~~751.0~~ 63.3 (g

Signature

09/29/94
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION.

PROJECT NO. 4214867 CLIENT LDP TEST(S) T4-5KF
DATE(S). 9/29/94 SAMPLE LOCATION Konus
OPERATOR(S) N LaVelle J Spina
Sampling Method (eg. MOE 5) Formaldehyde
Modifications to standard method X

Meter box T3 Probe D-5'
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: SS
cleaned according to sampling protocol? ✓
undamaged X
Probe liner material: Glass
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications X
pitot tube coefficient .809
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge ____ range ____ division ____
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓
Filter holder: borosilicate glass N/A other
frit material: teflon ____ borosilicate glass ____
other ____
heated? ____ temperature ____
cleaned according to sampling protocol? ____
filter holder assembled correctly? ____
Filter type : N/A
filters checked visually for irregularities? ____
filters properly centered? ____ labelled? ____
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges ____
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? X
meter temp. 65

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used N/A glassware proofed? ✓
Impinger train: number of impingers 4
cleaned according to sampling protocol? ✓
contents: 1st DNPH 2nd DNPH 3rd Blank
4th S.G. 5th 6th
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ✓ proper connections
modifications: X
grease used on joints: X kind of grease
Barometric pressure measured? ✓ source of data? Watch
Was preliminary velocity profile performed? ✓
Avg.delta P .12 Max. delta P .21 static +.12
Avg. Temp. 390
Estimated moisture content % 9 how estimated? Train
Estimated O2 % 16 CO2 % 4 CO % SO2 %
how estimated? Fyrites
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter .311
K factor 1.205
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 18
number to be used 18
probe markings correct? ✓
Length of sampling time per point desired 2
number to be used 2
Leak test performed before start of sampling? ✓
rate <.02 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
<.02 cfm @ 15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? ✓
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? N/A
- If filters are changed during a run was there any pariculate loss? N/A

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point 10s
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <.02 cfm @ 15 in Hg ✓

Probe, filter holder, impingers sealed adequately after test? ✓

Gas analysis from stack? ✓ other? ✓
- from fyrites? ✓ integrated bag? ✓ orsat? ✓
- continuous gas analysers? ✓
- models: ✓

Approximate stack temperature 380 gas sample volume ✓

First 8 velocity pressures measured ✓

Percent isokinetic calculated ✓

Data forms completed and data recorded properly ✓

General comment on sampling techniques None

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area Clean
Brushes: nylon bristle _____ other Teflon
cleaned according to sampling protocol? ✓
Wash bottles: glass _____ polyethylene _____ other Teflon
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other _____
cleaned according to sampling protocol? ✓
cap material Teflon leak free? ✓
Petri dishes: plastic _____ other Glass
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other _____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type Tabe calibrated ✓
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 ✓ run 2 ✓ run 3 _____
weighed? run 1 _____ run 2 _____ run 3 _____
Probe handling: Acetone rinses ✓ other MCl
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks collected: reagent(s) _____
acetone _____ DI water _____ other DNPH MCl
Impinger rinses: DI _____ other Methelyene Chloride MCl
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves _____
Any particulate lost? Probe ✗ Filter ✗
Description of particulate Dypass ✓

N LaValle
Name

Signature

Sampling Trains Data S. c

lient L&P Project #424864 Sample Loc. Korus Operators NL/JM Date 9/29/9

on # T4-KF Traverse # 1 Traverse Direction Out Start Time 9:07 Finish Time ____

:.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
_	0		.18	.9		241.27	390	236	255	45	N/A	50	50	1.0
2	2		.19	.95	242.356	242.37	390	242	245	45		56	56	1.0
3	4		.17	.9	243.456	243.44	389	252	250	45		59	50	1.0
4	6		.16	.85	244.495	244.49	389	231	246	45		61	50	1.0
_	8		.16	.85	245.514	245.56	389	237	247	46		61	51	1.0
6	10		.14	.65	246.584	246.56	388	241	248	47		62	52	1.0
7	12		.14	.68	247.518	247.48	388	245	249	47		62	52	1.0
8	14		.12	.63	248.438	248.41	389	249	254	47		62	52	1.0
_	16		.11	.55	249.297	249.3	389	250	258	47		63	52	1.0
2	18		.09	.48	250.149	250.15	388	250	247	47		62	52	1.0
_	20		.09	.48	250.918	250.91	387	244	259	47		62	53	1.0
2	22		.09	.48	251.678	251.66	387	271	253	47		62	53	1.0
3	24		.09	.47	252.428	252.44	386	255	241	47		62	53	1.0

CO_2 5.5 O_2 15

a test leak check: Rate (cfm) .007 at 15 inches Hg (Vacuum)

at test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by CPU checked by N. L

signature

Sampling Trains Data Sheet

lent LTP Project #4217864 Sample Loc. Konus Operators NLJM Date 9/29/95

n #4-KF Traverse # 1 Traverse Direction Out Start Time ____ Finish Time 9:43

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	26		.08	.4	253.208	253.23	385	248	256	48	NA	62	53	1.6
2	28		.08	.4	253.954	253.95	383	244	272	49		62	54	1.0
3	30		.06	.3	254.674	254.66	380	242	264	51		62	54	1.0
4	32		.06	.3	255.287	255.29	380	241	250	52		62	54	1.0
5	34		.05	.25	255.917	255.91	380	242	253	52		62	54	1.0
-	36				256.482	256.485								
-														
-														
-														
-														
-														
-														
-														

1 test leak check: Rate (cfm) .007 at 15 inches Hg (Vacuum) O_2 CO_2

st test leak check: Rate (cfm) .007 at 15 inches Hg (Vacuum) 16 6 Stabiect. 14

value calculated by CMU checked by N. L

ignature

Sampling Trains Data Sheet

lient L&P Project #421786-4 Sample Loc. Konus Operators BL/JM Date 9/29/9

un # T4-KF Traverse # 2 Traverse Direction Out Start Time 9:59 Finish Time ____

t.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	0		.11	.55		256.91	381	262	252	59	N/A	54	56	1.0
	2		.12	.4	257.759	257.75	394	268	248	55		63	56	1.0
	4		.12	.62	258.437	258.62	395	290	250	54		65	56	1.0
	6		.12	.62	259.507	259.51	396	266	256	54		67	56	1.0
	8		.12	.62	260.397	260.41	397	268	249	53		67	57	1.0
	10		.11	.55	261.297	261.3	398	265	252	53		67	57	1.0
	12		.08	.42	262.149	262.16	397	270	255	53		67	57	1.0
	14		.09	.47	262.884	262.89	394	263	252	54		66	58	1.0
	16		.09	.47	263.658	263.66	396	269	251	53		67	58	1.0
	18		.1	.5	264.428	264.43	396	259	253	52		67	58	1.0
	20		.12	.6	265.239	265.23	397	260	250	51		67	58	1.0
	22		.13	.66	266.117	266.0	398	275	252	50		68	58	1.0
	24		.13	.65	266.923	267.01	397	257	246	50		69	59	1.0

CO_2 O_2

e test leak check: Rate (cfm) .008 at 15 inches Hg (Vacuum)

at test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by CPU checked by N.C

signature

Sampling Trains Data Sheet

lient LLP Project # 4214864 Sample Loc. Konus Operators NL JJM Date 9/29/9

un # T4-KF Traverse # 2 Traverse Direction Out Start Time 9:54 Finish Time 10:35

t.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	26		.12	.4	267.933	267.93	397	250	243	48	N/A	69	59	1.0
2	28		.1	.5	268.817	268.81	393	246	247	46		64	59	1.0
3	30		.11	.55	269.619	269.61	386	245	245	45		68	59	1.0
4	32		.08	.4	270.459	270.45	385	245	252	45		69	59	1.0
5	34		.06	.3	271.174	271.19	382	248	254	44		68	59	1.0
	36				271.817	271.82								

e test leak check: Rate (cfm) .008 at 15 inches Hg (Vacuum)

et test leak check: Rate (cfm) .004 at 15 inches Hg (Vacuum)

value calculated by CDU checked by N. L

Signature

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T5KF
LOC. : KONUS STACK

RUN TIME : 12:43 TO 14:09

FORMALDEHYDE CONCENTRATION	14.2 ug/DSm3	0.0062 gr/1000 DScf
	7.7 ug/Am3	0.0034 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	0.095 mg/s	5.28 gr/hr
SAMPLE GAS VOLUME	0.7772 DSm3	27.443 DScf
AVERAGE ISOKINETICITY	99.8 %	

FLUE GAS CHARACTERISTICS

MOISTURE	8.14 %	
TEMPERATURE	194.1 deg C	381.3 deg F
FLOW	24159 DSm3/hr	14220 DScfm
	44241 Am3/hr	26039 Acfm
VELOCITY	6.74 m/s	1326.2 fpm

GAS ANALYSIS	O2	14.50 %
	CO2	5.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.49 g/gmole D.B.
	MOL. WT.	28.56 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T5KF
LOC. : KONUS STACK

STACK HEIGHT	33.5 m	110.0 ft.
STACK DIAMETER	1.52 m	60.0 in.
STACK AREA	1.824 m2	19.64 sq.ft.
BAROMETRIC PRESSURE	96.0 kPa	28.33 in.Hg
STATIC PRESSURE	34.9 Pa	0.14 in.H2O
NOZZLE DIAMETER	7.90 mm	0.3110 in.
PITOT COEFFICIENT	0.809	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	40.9 g
CONDENSATION IN IMPINGER 2	5.3 g
CONDENSATION IN IMPINGER 3	-0.5 g
SILICA GEL WEIGHT GAIN	5.8 g
TOTAL MOISTURE GAIN	51.5 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.0110 mg
TOTAL FORMALDEHYDE	0.0110 mg

TOTAL SAMPLING TIME 72.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T5KF
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	380	0.110	0.55	272.23	58	260	255	55	1.0	1.0	98.9
2	2.0	385	0.110	0.55	273.06	59	265	254	52	1.0	2.6	101.5
3	4.0	385	0.110	0.55	273.91	60	263	257	50	1.0	4.5	100.1
4	6.0	386	0.110	0.55	274.75	60	270	257	48	1.0	6.5	98.9
5	8.0	386	0.100	0.50	275.58	61	268	260	49	1.0	8.8	99.9
6	10.0	386	0.100	0.50	276.38	62	274	260	50	1.0	11.3	99.7
7	12.0	386	0.100	0.50	277.18	62	272	261	50	1.0	14.2	99.6
8	14.0	386	0.100	0.50	277.98	62	275	255	49	1.0	17.8	98.3
9	16.0	386	0.090	0.45	278.77	63	270	256	48	1.0	22.9	100.9
10	18.0	386	0.110	0.55	279.54	63	265	255	47	1.0	37.1	97.1
11	20.0	387	0.120	0.60	280.36	64	267	250	47	1.0	42.2	98.6
12	22.0	386	0.130	0.66	281.23	64	252	252	46	1.0	45.8	102.3
13	24.0	385	0.120	0.60	282.17	64	245	259	46	1.0	48.7	99.6
14	26.0	382	0.100	0.50	283.05	65	240	247	47	1.0	51.2	101.2
15	28.0	379	0.100	0.50	283.87	65	239	247	47	1.0	53.5	98.7
16	30.0	379	0.100	0.50	284.67	65	243	263	47	1.0	55.5	99.9
17	32.0	379	0.070	0.35	285.48	65	244	247	47	1.0	57.4	101.6
18	34.0	379	0.060	0.30	286.17	65	243	249	46	1.0	59.0	100.3
	36.0				286.80							
TRAVERSE NO. 2												
1	0.0	381	0.160	0.85	287.17	64	271	255	50	1.0	1.0	103.7
2	2.0	384	0.150	0.80	288.23	65	270	245	47	1.0	2.6	101.0
3	4.0	385	0.150	0.80	289.23	67	275	255	46	1.0	4.5	100.8
4	6.0	385	0.130	0.65	290.23	68	267	244	45	1.0	6.5	100.4
5	8.0	382	0.130	0.65	291.16	68	260	258	45	1.0	8.8	99.2
6	10.0	383	0.130	0.65	292.08	68	259	249	44	1.0	11.3	99.2
7	12.0	382	0.120	0.60	293.00	69	256	247	43	1.0	14.2	99.7
8	14.0	383	0.110	0.50	293.89	69	259	251	43	1.0	17.8	98.3
9	16.0	383	0.100	0.50	294.73	69	258	251	44	1.0	22.9	100.6
10	18.0	383	0.080	0.40	295.55	69	255	268	45	1.0	37.1	100.1
11	20.0	380	0.070	0.35	296.28	68	259	257	46	1.0	42.2	99.6
12	22.0	381	0.070	0.35	296.96	69	270	253	47	1.0	45.8	98.1
13	24.0	380	0.070	0.35	297.63	69	244	243	48	1.0	48.7	99.5
14	26.0	378	0.070	0.35	298.31	68	259	257	48	1.0	51.2	98.0
15	28.0	375	0.070	0.35	298.98	69	257	252	47	1.0	53.5	97.8

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.29
RUN : T5KF
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
16	30.0	365	0.070	0.35	299.65	69	255	228	47	1.0	55.5	97.1
17	32.0	365	0.050	0.25	300.32	69	253	235	47	1.0	57.4	97.7
18	34.0	365	0.050	0.25	300.89	69	251	256	47	1.0	59.0	104.7
	36.0				301.50							
		381	0.099	0.51		65	259	252	47	1.0		99.8

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisiana Pacific | CITY PROV. Dawson B.C.
PROJECT # 421 4864 | TEST T5-KF
SAMPLE LOCATION Kanus | DATE 9/29/94
START TIME 12:43 956M6 | FINISH TIME 14:09
BAROMETRIC PRESS.(in Hg) 28.33 | STACK PRESS.(in H_2O) +.14
PITOT COEFFICIENT .809 | NOZZLE DIAMETER(in) .311
GAS METER FACTOR 0.996 | STACK HEIGHT(ft) 60'
STACK DIAMETER(in) 60" | LENGTH X WIDTH ____ X ____
CO2(%) 5 O2(%) 14.5 | CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 40.9 | NET FILTER WT.(g) ____
IMPINGER NET 2 (g) 5.3 | NET PROBE WASH WT.(g) } 11µg
IMPINGER NET 3 (g) -.5 | IMP.RESIDUE WT.(g) }
IMPINGER NET 4 (g) 5.8 | FILTER # Bypassed
IMPINGER NET 5 (g) ____
IMPINGER NET 6 (g) ____

METER BOX ID T3 | PROBE ID T2-5'
NOZZLE ID T1-#3 | OTHER ____
EQUIPMENT COMMENTS ____

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

SIGNATURE | 9/29/94 DATE

Moisture Analysis Data Sheet

Project #: 4214964 Client LP Test: TS-KF

Test Date: 09/29/94 Sample Location: KONUS

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	661.1	620.2		40.9
Impinger 2	603.2	~~590.~~ 597.9		5.3
Impinger 3	479.4	479.9		-.5
Impinger 4				
Impinger 5				
Silica gel impinger	768.7	762.9		5.8

Net Total Condensate 51.5 (g)

Signature

09/29/94
Date

SOUTH [ ] 0 EAST

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214964 Sample Loc. KONUS SMELTER Operators JL/BR Date 94/10/

Run # T1-KP Traverse # 1 [SOUTH] Traverse Direction OUT Start Time 11:20 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.22	1.3		210.57	407	245	226	44		45	45	2
2	2		0.22	1.3	211.76	211.80	408	266	254	43		47	45	2
3	4		0.20	1.2	212.99	213.02	408	265	258	43		49	46	2
4	6		0.19	1.05	214.15	214.18	408	251	267	43		50	46	2
5	8		0.18	0.96	215.28	215.33	408	229	267	43		51	46	2
6	10		0.18	0.96	216.40	216.43	408	244	267	42		51	46	2
7	12		0.17	0.89	217.50	217.53	409	258	267	43		51	47	2
8	14		0.17	0.86	218.57	218.61	409	272	269	44		52	47	2
9	16		0.15	0.78	219.65	219.65	409	262	268	44		52	47	2
10	18		0.14	0.74	220.63	220.65	409	237	267	44		53	47	2
11	20		0.13	0.67	221.60	221.63	408	241	264	44		52	48	2
12	22		0.13	0.66	222.54	222.57	406	263	267	43		53	48	2
13	24		0.13	0.66	223.48	223.49	405	273	266	43		53	48	2

Pre test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by _____ checked by _____

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 421485 Sample Loc. KONJS STACK Operators JL/BR Date 94/10/

Run # T1-K8 Traverse # 1 (SOUTH) Traverse Direction OUT Start Time _____ Finish Time 11:52

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
14	26		0.11	0.57	224.40	224.40	403	247	267	44		54	48	2
15	28		0.11	0.56	225.24	225.27	402	225	267	44		54	49	2
16	30		0.09	0.48	226.11	226.13	394	245	267	44		54	49	2
17	32		0.08	0.42	226.89	226.92	393	259	260	44		54	49	2
18	34		0.07	0.38	227.64	227.70	387	274	267	44		54	50	2
	36				228.37	228.45								

Pre test leak check: Rate (cfm) 0.003 at ____ inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.00 at 15 inches Hg (Vacuum)

Q value calculated by _____ checked by _____

15.5 O_2
7 CO_2

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 421484 Sample Loc. KONOS STACK Operators JL/DR Date 94 / 10 /

Run # J1-KP Traverse # 2 (OAR) Traverse Direction OUT Start Time 12:02 Finish Time

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.14	0.74		228.605	385	228	267	41		52	50	2
2	2		0.17	0.86	229.55	229.59	397	248	269	40		53	50	2
3	4		0.16	0.82	230.63	230.63	399	262	269	41		54	50	2
4	6		0.15	0.73	231.64	231.65	399	272	270	41		55	51	2
5	8		0.16	0.82	232.63	232.66	399	264	263	41		56	51	2
6	10		0.15	0.78	233.67	233.70	400	252	261	41		57	51	2
7	12		0.14	0.74	234.68	234.72	402	267	262	42		57	51	2
8	14		0.14	0.72	235.67	235.71	402	270	263	42		57	51	2
9	16		0.13	0.65	236.66	236.70	401	248	263	41		56	50	2
10	18		0.14	0.72	237.61	237.61	400	225	260	41		56	51	2
11	20		0.14	0.72	238.56	238.58	400	234	261	41		56	51	2
12	22		0.14	0.72	239.53	239.53	400	255	261	41		56	51	2
13	24		0.15	0.77	240.48	240.47	397	264	263	41		56	51	2

Pre test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

(value calculated by _____ checked by _____

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214864 Sample Loc. KONUS STACK Operators FL/BIZ Date 94/10/

Run # T1-KP Traverse # 2 (EAST) Traverse Direction SWT Start Time _____ Finish Time 12:35

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
14	26		0.15	0.77	241.46	241.43	396	274	263	42		57	52	2
15	28		0.15	0.77	242.46	242.46	394	257	262	41		57	51	2
16	30		0.15	0.77	243.44	243.44	392	238	262	41		58	52	2
17	32		0.13	0.65	244.42	244.41	388	254	263	41		58	52	2
18	34		0.10	0.54	245.32	245.36	380	268	263	41		58	52	2
	36				246.16	246.22								

Pre test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

Pvalue calculated by _____ checked by _____

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIKP
LOC. : KONUS STACK

RUN TIME : 11:20 TO 12:38

PARTICULATE CONCENTRATION	121.7 mg/DSm3	0.0532 gr/DScf
	62.5 mg/Am3	0.0273 gr/Acf
@ 12% CO2	216.3 mg/DSm3	0.0946 gr/DScf
PARTICULATE EMISSION RATE	0.950 g/s	7.54 lb/hr
SAMPLE GAS VOLUME	0.9533 DSm3	33.662 DScf
AVERAGE ISOKINETICITY	105.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	8.96 %	
TEMPERATURE	204.8 deg C	400.6 deg F
FLOW	28103 DSm3/hr	16541 DScfm
	54735 Am3/hr	32216 Acfm
VELOCITY	8.33 m/s	1640.7 fpm

GAS ANALYSIS	O2	15.50 %
	CO2	6.75 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.81 g/gmole D.B.
	MOL. WT.	28.75 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIKP
LOC. : KONUS STACK

STACK HEIGHT	33.5 m	110.0 ft.
STACK DIAMETER	1.52 m	60.0 in.
STACK AREA	1.824 m2	19.64 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.49 in.Hg
STATIC PRESSURE	42.3 Pa	0.17 in.H2O
NOZZLE DIAMETER	7.90 mm	0.3110 in.
PITOT COEFFICIENT	0.809	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	49.3 g
CONDENSATION IN IMPINGER 2	12.3 g
CONDENSATION IN IMPINGER 3	1.2 g
SILICA GEL WEIGHT GAIN	7.4 g
TOTAL MOISTURE GAIN	70.2 g

PARTICULATE COLLECTION

FILTER PARTICULATE	0.0975 g
WASHINGS PARTICULATE	0.0185 g
IMPINGER PARTICULATE	0.0000 g
TOTAL PARTICULATE	0.1160 g

TOTAL SAMPLING TIME 72.0 min.

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIKP
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	407	0.220	1.30	210.57	45	245	226	44	2.0	1.0	108.2
2	2.0	408	0.220	1.30	211.80	46	266	254	43	2.0	2.6	107.1
3	4.0	408	0.200	1.20	213.02	48	265	258	43	2.0	4.5	106.5
4	6.0	408	0.190	1.05	214.18	48	251	267	43	2.0	6.5	108.2
5	8.0	408	0.180	0.96	215.33	49	229	267	43	2.0	8.8	106.2
6	10.0	408	0.180	0.96	216.43	49	244	267	42	2.0	11.3	106.2
7	12.0	409	0.170	0.89	217.53	49	258	267	43	2.0	14.2	107.2
8	14.0	409	0.170	0.86	218.61	50	272	269	44	2.0	17.8	103.1
9	16.0	409	0.150	0.78	219.65	50	262	268	44	2.0	22.9	105.5
10	18.0	409	0.140	0.74	220.65	50	237	267	44	2.0	37.1	106.9
11	20.0	408	0.130	0.67	221.63	50	241	264	44	2.0	42.2	106.4
12	22.0	406	0.130	0.66	222.57	51	263	267	43	2.0	45.8	103.9
13	24.0	405	0.130	0.66	223.49	51	273	266	43	2.0	48.7	102.7
14	26.0	403	0.110	0.57	224.40	51	247	267	44	2.0	51.2	106.5
15	28.0	402	0.110	0.56	225.27	52	225	267	44	2.0	53.5	105.1
16	30.0	394	0.090	0.48	226.13	52	245	267	44	2.0	55.5	106.2
17	32.0	392	0.080	0.42	226.92	52	259	260	44	2.0	57.4	111.1
18	34.0	387	0.070	0.38	227.70	52	274	267	44	2.0	59.0	113.7
	36.0				228.45							
TRAVERSE NO. 2												
1	0.0	395	0.140	0.74	228.61	51	228	267	41	2.0	1.0	105.9
2	2.0	397	0.170	0.86	229.59	52	248	269	40	2.0	2.6	102.0
3	4.0	399	0.160	0.82	230.63	52	262	269	41	2.0	4.5	103.1
4	6.0	399	0.150	0.78	231.65	53	272	270	41	2.0	6.5	105.2
5	8.0	399	0.160	0.82	232.66	54	264	263	41	2.0	8.8	104.8
6	10.0	400	0.150	0.78	233.70	54	252	261	41	2.0	11.3	106.1
7	12.0	402	0.140	0.74	234.72	54	267	262	42	2.0	14.2	106.7
8	14.0	402	0.140	0.72	235.71	54	270	263	42	2.0	17.8	106.7
9	16.0	401	0.130	0.65	236.70	53	248	263	41	2.0	22.9	101.9
10	18.0	400	0.140	0.72	237.61	54	225	260	41	2.0	37.1	104.6
11	20.0	400	0.140	0.72	238.58	54	234	261	41	2.0	42.2	102.4
12	22.0	400	0.140	0.72	239.53	54	255	261	41	2.0	45.8	101.3
13	24.0	397	0.150	0.77	240.47	54	264	263	41	2.0	48.7	105.0
14	26.0	396	0.150	0.77	241.48	55	274	263	42	2.0	51.2	101.6
15	28.0	394	0.150	0.77	242.46	54	257	262	41	2.0	53.5	101.6

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIKP
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
16	30.0	392	0.150	0.77	243.44	55	238	262	41	2.0	55.5	100.3
17	32.0	388	0.130	0.65	244.41	55	254	263	41	2.0	57.4	105.2
18	34.0	380	0.100	0.54	245.36	55	268	263	41	2.0	59.0	108.0
	36.0				246.22							
		401	0.144	0.77		51	254	263	42	2.0		105.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 4214964
TEST T1-KP
SAMPLE LOCATION KONUS STACK
DATE 94.10.1
START TIME 11:20
FINISH TIME 12:38
BAROMETRIC PRESS.(in Hg) 931mb 27.49
STACK PRESS.(in H_2O) 0.17
PITOT COEFFICIENT 0.809
NOZZLE DIAMETER(in) 0.311
GAS METER FACTOR 0.993
STACK HEIGHT(ft) 110
STACK DIAMETER(in) 60
LENGTH X WIDTH — x —
CO2(%) 6.75 O2(%) 15.5
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 49.3
IMPINGER NET 2 (g) 12.3
IMPINGER NET 3 (g) 1.2
IMPINGER NET 4 (g) 7.4
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g) 0.0975
NET PROBE WASH WT.(g) } 0.0185
IMP.RESIDUE WT.(g)
FILTER # 1

METER BOX ID TEAM #1
PROBE ID TEAM # 2, 7'
NOZZLE ID TEAM #1, #3
OTHER

EQUIPMENT COMMENTS
RUNNING PROBE & PUMP DIRECT

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

SIGNATURE

94.10.1
DATE

Filled

p.2

Moisture Analysis Data Sheet

Project #: 4214964 Client LOUISIANA PACIFIC Test: T1-KP

Test Date: 94.10.1 Sample Location: KONUS STACK

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	639.1	589.8		49.3
Impinger 2	623.3	611.0		12.3
Impinger 3	471.2	470.0		1.2
Impinger 4				
Impinger 5				
Silica gel impinger	817.7	810.3		7.4

Net Total Condensate 70.2 (g

John Lennartz
Signature

94.10.1
Date

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION

PROJECT NO. 4214964 CLIENT LOUISIANA PACIFIC TEST(S) T1/T2-KP
DATE(S) 94.10.1 SAMPLE LOCATION KONUS STACK
OPERATOR(S) JL/BR
Sampling Method (eg. MOE 5) MOE 5
Modifications to standard method none

Meter box Team #1 Probe Team # 2, 7'
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: S. STEEL
cleaned according to sampling protocol? ✓
undamaged ✓
Probe liner material: S. STEEL
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications none
pitot tube coefficient
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge — range — division —
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓ 45°F
Filter holder: borosilicate glass ✓ other
frit material: teflon ✓ borosilicate glass
other
heated? ✓ temperature 250°F ✓
cleaned according to sampling protocol?
filter holder assembled correctly? ✓
Filter type : AE GLASS FIBRE
filters checked visually for irregularities? ✓
filters properly centered? ✓ labelled? no
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges —
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? no
meter temp. 45°F

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used ___ glassware proofed? ___
Impinger train: number of impingers 4 ✓
cleaned according to sampling protocol? ✓
contents: 1st 100mL DI 2nd 100mL DI 3rd empty
4th SGEL 5th ___ 6th ___
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ICE/WATER proper connections ✓
modifications: none
grease used on joints: ✓ kind of grease Silicon
Barometric pressure measured? ✓ source of data? Portable
Was preliminary velocity profile performed? ✓
Avg.delta P ___ Max. delta P ___ static ___
Avg. Temp. ___
Estimated moisture content % 9 how estimated? Previous data
Estimated O2 % 16 CO2 % 3 CO % ___ SO2 % ___
how estimated? Previous
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter 0.311
K factor 1.265
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 18
number to be used 18
probe markings correct? ✓
Length of sampling time per point desired 2
number to be used 2
Leak test performed before start of sampling? ✓
rate <0.02 cfm @ 15 in Hg

QA/QC Checklist

METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓

<0.02 cfm @ 15 in Hg.

Sampling train traversing technique:

Is nozzle sealed when probe in stack with pump off? ✓

Is care taken to avoid scraping nipple of stack wall? ✓

Is an effective seal made around probe at port opening? ✓

Is probe seal made without disturbing flow inside stack? ✓

Is probe moved to each point at the proper time? ✓

Is probe marking system adequate to locate each point? ✓

Was pitot tube kept parallel to stack wall at each point? ✓

If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? ✓

If filters are changed during a run was there any pariculate loss? ✓

Meterbox operation:

Is data recorded in a permanent manner? ✓

are data sheets complete? ✓

Average time to reach isokinetic rate at each point 105

Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? <0.02 cfm @ 15 in Hg

Probe, filter holder, impingers sealed adequately after test? ___

Gas analysis from stack? ✓ other? ___

from fyrites? ✓ integrated bag? ✓ orsat? ___

continuous gas analysers? ___

models: ___

Approximate stack temperature 400 °F gas sample volume ___

First 8 velocity pressures measured —

Percent isokinetic calculated —

Data forms completed and data recorded properly ✓

General comment on sampling techniques ✓

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area CLEAN ROOM IN PLANT
Brushes: nylon bristle ✓ other TEFLON
cleaned according to sampling protocol? ✓
Wash bottles: glass ____ polyethylene ✓ other TEFLON
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other ____
cleaned according to sampling protocol? ✓
cap material TEFLON leak free? ✓
Petri dishes: plastic ____ other GLASS
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass — other —
Subdivisions of graduated cylinder < 2 ml? —
cleaned according to sampling protocol? —
Balance type TRUPRU BEAM calibrated (AUDIT)
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 1/3 Pink run 2 ____ run 3 ____
weighed? run 1 ____ run 2 ____ run 3 ____
Probe handling: Acetone rinses ✓ other ____
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks collected: reagent(s) ____
acetone ✓ DI water ____ other ____
Impinger rinses: DI — other —
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves ____
Any particulate lost? Probe no Filter no
Description of particulate fine & white

John Lennartz
Name

John Lennartz
Signature

Sampling Trains Data Sheet

Client L&P Project #421986 4 Sample Loc. Kanus Operators AL/JM Date 9/29

Run # TS-KF Traverse # 1 Traverse Direction Out Start Time 12:40 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		.11	.55		272.23	386	260	255	55	N/A	59	57	1.0
2	2		.11	.55	273.079	273.06	385	265	254	52		60	57	1.0
3	4		.11	.55	273.909	273.91	385	263	257	50		62	57	1.0
4	6		.11	.55	274.759	274.75	386	270	257	48		63	57	1.0
5	8		.1	.5	275.599	275.58	386	268	260	49		64	57	1.0
6	10		.1	.5	276.389	276.38	386	274	260	50		65	58	1.0
7	12		.1	.5	277.189	277.18	386	272	261	50		66	58	1.0
8	14		.1	.5	277.989	277.98	386	275	255	49		66	58	1.0
9	16		.09	.45	278.789	278.77	386	270	256	48		67	58	1.0
10	18		.11	.55	279.538	279.54	386	265	255	47		67	59	1.0
11	20		.12	.6	280.389	280.36	387	267	250	47		68	59	1.0
12	22		.13	.66	281.247	281.23	386	252	252	46		69	59	1.0
13	24		.12	.6	282.153	282.17	385	245	259	46		69	59	1.0

Pre test leak check: Rate (cfm) 0.03 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPU checked by N.G.

Sampling Trains Data Sheet

Client LTP Project # 421486 Sample Loc. Kolus Operators NL/JM Date 9/28

Run # TS-1KF Traverse # 1 Traverse Direction OT Start Time 12:43 Finish Time 13:19

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
14	26		.1	.5	283.057	283.05	382	240	247	47	NA	70	60	1.0
15	28		.1	.5	283.859	283.87	379	239	247	47		69	60	1.0
16	30		.1	.5	284.679	284.67	379	243	243	47		69	60	1.0
17	32		.07	.35	285.479	285.48	379	244	247	47		70	60	1.0
18	34		.06	.3	286.157	286.17	379	243	249	46		69	60	1.0
	36				286.797	286.8								

Pre test leak check: Rate (cfm) .003 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .003 at 15 inches Hg (Vacuum)

K value calculated by CBU checked by N.L.

Signature

Sampling Trains Data Sheet

Client L&D Project # 4214864 Sample Loc. Konus Operators NL/JM Date 9/29

Run # T5-KF Traverse # 2 Traverse Direction Out Start Time 13:34 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		.16	.85		287.173	381	271	255	56	N/A	65	63	1.0
2	2		.15	.8	288.197	288.23	384	270	245	47		68	62	1.0
3	4		.15	.8	289.221	289.23	385	275	255	46		70	63	1.0
4	6		.13	.65	290.221	290.23	385	267	244	45		72	63	1.0
5	8		.13	.65	291.153	291.16	382	266	258	45		72	63	1.0
6	10		.13	.65	292.083	292.08	383	254	249	44		72	63	1.0
7	12		.12	.6	293.003	293.0	382	256	247	43		73	64	1.0
8	14		.11	.5	293.887	293.89	383	259	251	43		73	64	1.0
9	16		.1	.5	294.739	294.73	383	258	251	44		73	64	1.0
10	18		.08	.4	295.539	295.55	383	255	268	45		73	64	1.0
11	20		.07	.35	296.274	296.28	380	259	257	46		72	64	1.0
12	22		.07	.35	296.957	296.96	381	270	253	47		72	65	1.0
13	24		.07	.35	297.637	297.63	380	264	243	48	✓	72	65	1.0

Pre test leak check: Rate (cfm) .004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPO checked by N.L

Sampling Trains Data Sheet

Client LDP Project # 4217964 Sample Loc. Bonus Operators AL/JM Date 9/29

Run # T5-KF Traverse # 2 Traverse Direction Out Start Time 13:34 Finish Time 14:09

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
14	26		.07	.35	298.307	298.31	378	259	252	48	NA	72	64	1.0
15	28		.07	.35	293.987	298.98	375	257	252	47		72	65	1.0
16	30		.07	.35	294.657	294.65	345	255	228	47		73	65	1.0
17	32		.05	.25	300.327	300.32	365	253	235	47		73	65	1.0
18	34		.05	.25	300.897	300.89	365	251	256	47		72	65	1.0
	36				301.462	301.5								

Pre test leak check: Rate (cfm) .004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .002 at 15 inches Hg (Vacuum)

K value calculated by CPU checked by N.L.

Signature

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2KP
LOC. : KOHUS STACK

RUN TIME : 14:00 TO 15:17

PARTICULATE CONCENTRATION	86.1 mg/DSm3	0.0376 gr/DScf
	45.0 mg/Am3	0.0197 gr/Acf
@ 12% CO2	158.9 mg/DSm3	0.0694 gr/DScf
PARTICULATE EMISSION RATE	0.627 g/s	4.98 lb/hr
SAMPLE GAS VOLUME	0.8739 DSm3	30.858 DScf
AVERAGE ISOKINETICITY	103.3 %	

FLUE GAS CHARACTERISTICS

MOISTURE	9.12 %	
TEMPERATURE	195.4 deg C	383.6 deg F
FLOW	26234 DSm3/hr	15441 DScfm
	50176 Am3/hr	29533 Acfm
VELOCITY	7.64 m/s	1504.1 fpm

GAS ANALYSIS	O2	15.50 %
	CO2	6.50 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	29.77 g/gmole D.B.
	MOL. WT.	28.70 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2KP
LOC. : KONUS STACK

STACK HEIGHT	33.5 m	110.0 ft.
STACK DIAMETER	1.52 m	60.0 in.
STACK AREA	1.824 m2	19.64 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.49 in.Hg
STATIC PRESSURE	42.3 Pa	0.17 in.H20
NOZZLE DIAMETER	7.90 mm	0.3110 in.
PITOT COEFFICIENT	0.809	
METER CORRECTION FACTOR	0.998	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	50.0 g
CONDENSATION IN IMPINGER 2	7.0 g
CONDENSATION IN IMPINGER 3	0.8 g
SILICA GEL WEIGHT GAIN	7.8 g
TOTAL MOISTURE GAIN	65.6 g

PARTICULATE COLLECTION

FILTER PARTICULATE	0.0001 g
WASHINGS PARTICULATE	0.0751 g
IMPINGER PARTICULATE	0.0000 g
TOTAL PARTICULATE	0.0752 g

TOTAL SAMPLING TIME 72.0 min.

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2KP
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	395	0.150	0.78	246.55	50	230	231	40	2.0	1.0	106.9
2	2.0	394	0.130	0.68	247.57	50	239	232	40	2.0	2.6	105.6
3	4.0	393	0.140	0.72	248.51	51	233	227	39	2.0	4.5	107.0
4	6.0	393	0.180	0.89	249.50	51	241	235	39	2.0	6.5	102.9
5	8.0	394	0.120	0.64	250.58	52	253	251	39	2.0	8.8	107.1
6	10.0	394	0.120	0.61	251.50	52	262	261	39	2.0	11.3	103.6
7	12.0	392	0.130	0.65	252.39	53	272	263	39	2.0	14.2	104.8
8	14.0	393	0.130	0.63	253.33	54	246	264	39	2.0	17.8	101.4
9	16.0	393	0.120	0.61	254.24	55	227	263	40	2.0	22.9	101.9
10	18.0	392	0.120	0.61	255.12	55	240	262	40	2.0	37.1	101.8
11	20.0	392	0.140	0.72	256.00	54	257	263	40	2.0	42.2	102.0
12	22.0	390	0.140	0.72	256.95	55	269	264	40	3.0	45.8	95.3
13	24.0	390	0.150	0.78	257.84	55	242	264	40	5.0	48.7	102.4
14	26.0	388	0.150	0.78	258.83	55	233	262	40	5.0	51.2	99.2
15	28.0	388	0.150	0.78	259.79	55	237	262	39	6.0	53.5	102.3
16	30.0	385	0.120	0.64	260.78	55	254	263	39	5.0	55.5	109.5
17	32.0	384	0.090	0.51	261.73	55	270	264	39	5.0	57.4	107.7
18	34.0	380	0.070	0.41	262.54	55	260	260	39	4.5	59.0	112.8
	36.0				263.29							
TRAVERSE NO. 2												
1	0.0	379	0.180	0.90	263.44	53	230	262	38	7.0	1.0	100.7
2	2.0	379	0.200	0.99	264.51	54	241	262	39	7.5	2.6	101.7
3	4.0	377	0.190	0.94	265.65	54	227	262	40	8.0	4.5	99.5
4	6.0	377	0.190	0.95	266.74	54	243	263	40	8.0	6.5	100.5
5	8.0	378	0.170	0.86	267.84	54	258	264	40	8.0	8.8	100.4
6	10.0	379	0.160	0.81	268.88	55	269	264	42	8.0	11.3	102.5
7	12.0	380	0.150	0.77	269.91	55	242	265	43	8.0	14.2	102.8
8	14.0	378	0.130	0.68	270.91	56	224	263	43	8.0	17.8	105.7
9	16.0	379	0.120	0.61	271.87	56	230	263	43	8.0	22.9	103.2
10	18.0	377	0.100	0.52	272.77	56	249	265	44	8.0	37.1	106.6
11	20.0	377	0.090	0.45	273.62	56	265	264	42	7.0	42.2	103.1
12	22.0	376	0.090	0.45	274.40	56	275	264	42	7.0	45.8	102.9
13	24.0	377	0.080	0.40	275.18	55	244	266	41	6.0	48.7	106.6
14	26.0	375	0.080	0.39	275.94	56	226	263	41	6.0	51.2	104.9
15	28.0	375	0.080	0.39	276.69	56	247	264	41	6.0	53.5	100.7

PARTICULATE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2KP
LOC. : KONUS STACK

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
16	30.0	374	0.070	0.34	277.41	57	261	263	42	6.0	55.5	105.9
17	32.0	372	0.070	0.34	278.12	57	270	265	42	6.0	57.4	101.3
18	34.0	372	0.050	0.26	278.80	56	244	261	40	6.0	59.0	107.7
	36.0				279.41							
		384	0.123	0.64		54	248	259	40	5.1		103.3

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, B.C
PROJECT # 4214864
TEST T2-KP
SAMPLE LOCATION KONUS STACK
DATE 94.10.1
START TIME 1400
FINISH TIME 15:17
BAROMETRIC PRESS.(in Hg) 931mb 27.49
STACK PRESS.(in H_2O) 0.17
PITOT COEFFICIENT 0.809
NOZZLE DIAMETER(in) 0.311
GAS METER FACTOR 0.998
STACK HEIGHT(ft) 110
STACK DIAMETER(in) 60
LENGTH X WIDTH — X —
CO2(%) 6.5 O2(%) 15.5
CO(ppm) — OTHER —

IMPINGER NET 1 (g) 50
IMPINGER NET 2 (g) 7
IMPINGER NET 3 (g) 0.3
IMPINGER NET 4 (g) 7.8
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g) 0.0001
NET PROBE WASH WT.(g) } 0.0751
IMP.RESIDUE WT.(g) }
FILTER # 18

METER BOX ID TEAM #1
PROBE ID TEAM #2, 7'
NOZZLE ID TEAM #1, #3
OTHER

EQUIPMENT COMMENTS
Running probe and pump direct

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

John Pennant — SIGNATURE
94.10.1 — DATE

Filter 18

Moisture Analysis Data Sheet

Project #: 474987 Client Louisiana Pacific Test: T2-KP

Test Date: 94.10.1 Sample Location: Kiln Stack

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	689.1	639.1		50.0
Impinger 2	630.3	623.3		7.0
Impinger 3	472	471.2		0.8
Impinger 4				
Impinger 5				
Silica gel impinger	693.5	690.7		7.8

Net Total Condensate 65.6 (g

Signature

94.10.1
Date

Sampling Trains Data Sheet

llent LOUISIANA PACIFIC Project # 4214864 Sample Loc. KONOS STACK Operators JL/BR Date 94 / 10 / _

un #T2-KP Traverse # 1 [EAST] Traverse Direction OUT Start Time 14:00 Finish Time 14:

t.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.15	0.78		246.55	395	230	231	40		50	49	2
2	2		0.13	0.68	247.53	247.57	394	239	232	40		50	50	2
3	4		0.14	0.72	248.48	248.51	393	233	227	39		51	50	2
4	6		0.13	0.69	249.46	249.50	393	241	235	39		52	50	2
5	8		0.12	0.64	250.57	250.58	394	253	251	39		53	51	2
6	10		0.12	0.61	251.46	251.50	394	262	261	39		53	51	2
7	12		0.13	0.65	252.38	252.39	392	272	263	39		55	51	2
8	14		0.13	0.63	253.30	253.33	393	246	264	39		56	51	2
9	16		0.12	0.61	254.24	254.24	393	227	263	40		57	52	2
10	18		0.12	0.61	255.12	255.12	392	240	262	40		57	52	2
11	20		0.14	0.72	256.00	256.00	392	257	263	40		56	51	2
12	22		0.14	0.72	256.95	256.96	390	269	264	40		57	52	3
13	24		0.15	0.78	257.90	257.84	390	242	264	40		57	52	3

re test leak check: Rate (cfm) 0.008 at 15 inches Hg (Vacuum)

ost test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

. value calculated by checked by

Sampling Trains Data Sheet

lient LOUISIANA PACIFIC Project # 4214864 Sample Loc. KONO STACK Operators DLBR Date 94 / 10 /

un # T2-KP Traverse # 1 [EAST] Traverse Direction OUT Start Time _____ Finish Time 14:36

t.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
14	26		0.15	0.78	258.82	258.83	388	233	262	40		57	52	5
15	28		0.15	0.78	259.81	259.79	388	237	262	39		57	52	6
16	30		0.12	0.64	260.77	260.78	385	254	263	39		57	52	5
17	32		0.09	0.51	261.67	261.73	384	270	264	39		57	52	5
18	34		0.07	0.41	262.50	262.54	380	260	260	39		57	52	4.5
	36				263.22	263.29								

're test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

ost test leak check: Rate (cfm) 0.006 at 15 inches Hg (Vacuum)

value calculated by _____ checked by _____

$3p^2$ 931 mb

6.0 CO_2) integrated
15.5 O_2 bag

Spot 7 14 @ 15:09

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214867 Sample Loc. KONDS STACK Operators JL/BR Date 94/10/

Run # T2-KP Traverse # 2[SOUTH] Traverse Direction OUT Start Time 14:41 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		0.13	0.9		263.44	379	230	262	38		54	52	7
2	2		0.20	0.99	264.53	264.51	379	241	262	39		55	52	7.5
3	4		0.19	0.94	265.66	265.65	377	227	262	40		56	52	8.0
4	6		0.19	0.95	266.77	266.74	377	243	263	40		56	52	8.0
5	8		0.17	0.86	267.86	267.84	378	258	264	40		56	52	8.0
6	10		0.16	0.81	268.90	268.88	379	269	264	42		57	52	8.0
7	12		0.15	0.77	269.90	269.91	380	242	265	43		57	52	8.0
8	14		0.13	0.68	270.90	270.91	378	224	263	43		58	53	8.0
9	16		0.12	0.61	271.83	271.87	379	230	263	43		58	53	8.0
10	18		0.10	0.52	272.76	272.77	377	249	265	44		58	53	8.0
11	20		0.09	0.45	273.58	273.62	377	265	264	42		58	53	7.0
12	22		0.09	0.45	274.39	274.40	376	275	264	42		59	53	7.0
13	24		0.08	0.40	275.17	275.13	377	244	266	41		58	52	6.0

Pre test leak check: Rate (cfm) 0.006 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0 at ____ inches Hg (Vacuum)

K value calculated by _____ checked by _____

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214867 Sample Loc. KONUS STACK Operators JL/BR Date 94/10/

Run # T2-KP Traverse # 2(SOUTH) Traverse Direction OUT Start Time _____ Finish Time 15:17

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
14	26		0.08	0.39	275.90	275.94	375	226	263	41		58	54	6
15	28		0.08	0.39	276.66	276.69	375	247	264	41		58	54	6
16	30		0.07	0.34	277.41	277.41	374	261	263	42		59	54	6
17	32		0.07	0.34	278.09	278.12	372	270	265	42		59	54	6
18	34		0.05	0.26	278.80	278.80	372	244	261	40		58	54	6
	36				279.38	279.405								

Pre test leak check: Rate (cfm) 0 at ____ inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.005 at 15 inches Hg (Vacuum)

K value calculated by _____ checked by _____

PRESS VENT

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T1PVF
LOC. : PRESS VENT

RUN TIME : 16:52 TO 17:09

FORMALDEHYDE CONCENTRATION	323.7 ug/DSm3	0.1415 gr/1000 DScf
	278.3 ug/Am3	0.1216 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	7.108 mg/s	394.89 gr/hr
SAMPLE GAS VOLUME	1.1431 DSm3	40.365 DScf
AVERAGE ISOKINETICITY	102.4 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.88 %	
TEMPERATURE	34.0 deg C	93.2 deg F
FLOW	79033 DSm3/hr	46517 DScfm
	91945 Am3/hr	54117 Acfm
VELOCITY	11.77 m/s	2316.5 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.74 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC	DATE : 94.09.30
JOBSITE : DAWSON CREEK	RUN : T1PVF
REF.No. : 4214964	LOC. : PRESS VENT

STACK HEIGHT	3.0 m	10.0 ft.
DUCT DIMENSIONS	1.47 m	58.0 in.
	BY 1.47 m	BY 58.0 in.
DUCT AREA	2.170 m2	23.36 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.50 in.Hg
STATIC PRESSURE	-127.0 Pa	-0.51 in.H20
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-3.0 g
CONDENSATION IN IMPINGER 2	7.4 g
CONDENSATION IN IMPINGER 3	1.8 g
SILICA GEL WEIGHT GAIN	10.2 g
TOTAL MOISTURE GAIN	16.4 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.3700 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.0000 mg
TOTAL FORMALDEHYDE	0.3700 mg

TOTAL SAMPLING TIME 60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T1PVF
LOC. : PRESS VENT

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H20	ORIF. PRES. in.H20	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	96	0.380	1.40	395.82	35	244	259	35	1.0	5.8	104.1
2	3.0	100	0.560	2.10	397.73	36	243	260	36	1.0	17.4	105.4
3	6.0	92	0.560	2.10	400.07	36	243	260	37	1.0	29.0	102.8
4	9.0	95	0.540	2.00	402.37	39	249	260	38	1.0	40.6	103.1
5	12.0	86	0.360	1.30	404.64	39	248	259	39	1.0	52.2	101.8
	15.0				406.49							
TRAVERSE NO. 2												
1	0.0	89	0.390	1.40	406.49	37	245	260	35	1.0	5.8	100.2
2	3.0	89	0.390	1.40	408.37	39	246	258	39	1.0	17.4	100.7
3	6.0	98	0.450	1.70	410.27	39	243	262	40	1.0	29.0	104.1
4	9.0	91	0.450	1.70	412.36	41	247	261	40	1.0	40.6	102.6
5	12.0	93	0.340	1.20	414.44	41	242	260	41	1.0	52.2	102.8
	15.0				416.25							
TRAVERSE NO. 3												
1	0.0	92	0.500	1.80	416.25	40	240	260	37	1.0	5.8	101.9
2	3.0	93	0.500	1.80	418.42	42	240	260	41	1.0	17.4	102.0
3	6.0	98	0.520	1.90	420.60	43	243	260	41	1.0	29.0	102.6
4	9.0	89	0.550	2.05	422.83	43	239	260	42	1.0	40.6	102.0
5	12.0	96	0.440	1.60	425.13	44	251	261	43	1.0	52.2	102.6
	15.0				427.19							
TRAVERSE NO. 4												
1	0.0	96	0.350	1.25	427.19	42	248	260	38	1.0	5.8	102.4
2	3.0	97	0.470	1.75	429.02	43	248	260	39	1.0	17.4	102.5
3	6.0	95	0.480	1.80	431.14	44	246	259	42	1.0	29.0	100.1
4	9.0	93	0.480	1.80	433.24	44	242	261	42	1.0	40.6	102.2
5	12.0	86	0.360	1.30	435.39	45	247	261	42	1.0	52.2	101.2
	15.0				437.25							
		93	0.451	1.67		40	245	260	39	1.0		102.4

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK BC
PROJECT # 421 4964
TEST T1-PVF
SAMPLE LOCATION PRESS VENT
DATE 97.09.30
START TIME 16:52
FINISH TIME 17:09
BAROMETRIC PRESS.(in Hg) 27.5
STACK PRESS.(in H_2O) -.51
PITOT COEFFICIENT .805
NOZZLE DIAMETER(in) .246
GAS METER FACTOR 1.000
STACK HEIGHT(ft) 10
STACK DIAMETER(in) —
LENGTH X WIDTH 58 X 58
CO2(%) ø O2(%) 20.9
CO(ppm) OTHER

IMPINGER NET 1 (g) -3
IMPINGER NET 2 (g) 7.4
IMPINGER NET 3 (g) 1.8
IMPINGER NET 4 (g) 10.2
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g)
NET PROBE WASH WT.(g) } 370 µg/g
IMP.RESIDUE WT.(g)
FILTER #

METER BOX ID TEAM VAN
PROBE ID T1 5ft
NOZZLE ID T3 #3
OTHER

EQUIPMENT COMMENTS

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

RG Malloy 97.09.30

Moisture Analysis Data Sheet

Project #: ~~LOUISIANA PACIFIC~~ 4214964 Client LOUISIANA PACIFIC Test: T1-NF

Test Date: 94.09.30 Sample Location: PRESS VENT

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	573.9	576.9		-3
Impinger 2	600.7	593.3		7.4
Impinger 3	481.4	479.6		1.8
Impinger 4				
Impinger 5				
Silica gel impinger	750.0	739.8		10.2

Net Total Condensate 16.4 (g)

Signature

94.09.30

Date

Sampling Trains Data Sheet

Page 1/2

lent LOUISIANA PACIFIC Project # ~~4214857~~ 4214964 Sample Loc. PRESS VENT Operators RM Date 1/17.09.8

n # T1-PVF Traverse # 1 Traverse Direction CCT Start Time 18:52 Finish Time

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.38	1.4		395.82	96	294	259	35		37	37	1
3		.56	2.1	397.73	397.73	100	243	260	36		38	39	1
6		.56	2.1	400.05	400.07	92	243	260	37		38	39	1
9		.54	2.0	402.39	402.37	95	249	260	38		42	35	1
12		.36	1.3	404.65	404.64	86	248	259	39		43	35	1
15				406.50	406.49								

e test leak check: Rate (cfm) .15 at .006 inches Hg (Vacuum)

at test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains Data Sheet

Page 1/2

lent [illegible] RACIEL Project # [illegible] Sample Loc. PRESS VENT Operators [illegible] Date [illegible]

n # T1-PVF Traverse # 2 Traverse Direction OUT Start Time 19:15 Finish Time _____

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		.39	1.4		406.40	89	245	260	35		38	35	1
2	3		.39	1.4	408.42	408.37	89	246	258	39		42	36	1
3	6		.45	1.1	410.30	410.27	88	243	262	40		42	36	1
4	9		.45	1.1	412.35	412.36	91	247	261	40		45	36	1
5	12		.34	1.2	414.44	414.44	93	242	260	41		45	36	1
6	15				416.25	416.25								

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains Data Sheet

Page 3

lent LOUISIANA PACIFIC Project # 421964 Sample Loc. PRESS VENT Operators AM Date

1 # T1-PUF Traverse # 3 Traverse Direction OUT Start Time 19:35 Finish Time

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
-	0		.50	1.8+		416.25	92	240	260	47		43	36	1
-	3		.50	1.8+	418.44	418.42	93	240	260	47		46	37	1
-	6		.52	1.9	420.61	420.60	98	243	260	47		47	38	1
-	9		.55	2.05	422.83	422.83	89	239	260	42		46	38	1
-	12		.44	1.6+	425.13	425.13	96	251	261	43		49	38	1
-	15				427.19	427.19								
-														
-														
-														
-														
-														
-														
-														

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains ..c.. Sheet

lent LOUISIANA PACIFIC Project # 4149964 Sample Loc. PRESS VENT Operators KM Date

n # T1-PVK Traverse # 4 Traverse Direction OUT Start Time 1954 Finish Time 1728 07 9/04/3

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
-	0		.35	1.25		427.19	96	248	260	38		96	38	1
-	3		.47	1.75	429.02	429.02	97	246	260	39		97	38	1
-	6		.48	1.6	431.14	431.14	95	246	259	42		98	39	1
-	9		.48	1.8	433.29	433.29	93	242	261	42		99	39	1
-	12		.36	1.3	435.39	435.39	86	247	261	42		80	39	1
-	15				437.25	437.25								
-														
-														
-														
-														
-														
-														
-														

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) 15 at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T2PVP
LOC. : PRESS VENT

RUN TIME : 22:08 TO 23:20

FORMALDEHYDE CONCENTRATION	594.8 ug/DSm3	0.2600 gr/1000 DScf
	512.8 ug/Am3	0.2241 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	13.082 mg/s	726.80 gr/hr
SAMPLE GAS VOLUME	1.1434 DSm3	40.376 DScf
AVERAGE ISOKINETICITY	102.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.01 %	
TEMPERATURE	35.8 deg C	96.4 deg F
FLOW	79171 DSm3/hr	46598 DScfm
	91824 Am3/hr	54046 Acfm
VELOCITY	11.75 m/s	2313.5 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.84 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T2PVF
LOC. : PRESS VENT

STACK HEIGHT	3.0 m	10.0 ft.
DUCT DIMENSIONS	1.47 m BY 1.47 m	58.0 in. BY 58.0 in.
DUCT AREA	2.170 m2	23.36 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.50 in.Hg
STATIC PRESSURE	-132.0 Pa	-0.53 in.H2O
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-4.6 g
CONDENSATION IN IMPINGER 2	2.0 g
CONDENSATION IN IMPINGER 3	-0.2 g
SILICA GEL WEIGHT GAIN	11.5 g
TOTAL MOISTURE GAIN	8.7 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.6800 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.0000 mg
TOTAL FORMALDEHYDE	0.6800 mg

TOTAL SAMPLING TIME 60.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T2PVF
LOC. : PRESS VENT

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	91	0.450	1.70	437.63	33	225	242	30	1.0	5.8	102.4
2	3.0	91	0.380	1.40	439.69	36	225	244	32	1.0	17.4	102.7
3	6.0	92	0.440	1.65	441.60	36	225	244	32	1.0	29.0	103.1
4	9.0	96	0.440	1.65	443.66	37	225	245	39	1.0	40.6	104.2
5	12.0	97	0.440	1.65	445.74	39	225	241	39	1.0	52.2	102.9
	15.0				447.80							
TRAVERSE NO. 2												
1	0.0	99	0.540	2.00	447.80	40	225	253	35	1.0	5.8	103.0
2	3.0	99	0.540	2.00	450.08	42	225	253	38	1.0	17.4	102.6
3	6.0	97	0.460	1.75	452.36	42	225	254	38	1.0	29.0	103.6
4	9.0	97	0.460	1.75	454.49	42	225	254	39	1.0	40.6	103.9
5	12.0	101	0.500	1.85	456.63	44	225	255	38	1.0	52.2	102.1
	15.0				458.82							
TRAVERSE NO. 3												
1	0.0	97	0.380	1.40	458.82	43	225	257	35	1.0	5.8	101.8
2	3.0	97	0.420	1.55	460.73	45	225	258	37	1.0	17.4	101.6
3	6.0	96	0.380	1.40	462.74	45	225	260	37	1.0	29.0	101.4
4	9.0	96	0.380	1.40	464.65	45	225	260	37	1.0	40.6	101.4
5	12.0	95	0.420	1.55	466.56	46	225	260	37	1.0	52.2	101.2
	15.0				468.57							
TRAVERSE NO. 4												
1	0.0	98	0.470	1.75	468.57	45	225	261	36	1.0	5.8	101.3
2	3.0	99	0.490	1.80	470.69	46	225	260	38	1.0	17.4	101.5
3	6.0	97	0.490	1.80	472.86	47	225	260	39	1.0	29.0	101.2
4	9.0	96	0.470	1.75	475.03	47	225	261	39	1.0	40.6	101.7
5	12.0	97	0.440	1.65	477.17	48	232	261	40	1.0	52.2	100.6
	15.0				479.22							
		96	0.448	1.67		42	225	254	37	1.0		102.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT: LOUISIANA PACIFIC
CITY PROV.: DAWSON CREEK, BC
PROJECT #: 4214964
TEST: T2 - PVF
SAMPLE LOCATION: PRESS VENT
DATE: 94.09.30
START TIME: 22:08
FINISH TIME: 23:20
BAROMETRIC PRESS.(in Hg): 27.5
STACK PRESS.(in H_2O): -.53
PITOT COEFFICIENT: .805
NOZZLE DIAMETER(in): .246
GAS METER FACTOR: 1.000
STACK HEIGHT(ft): 11
STACK DIAMETER(in): —
LENGTH X WIDTH: 58 X 58
CO2(%): Ø
O2(%): 20.9
CO(ppm):
OTHER:

IMPINGER NET 1 (g): -4.6
IMPINGER NET 2 (g): 1.95
IMPINGER NET 3 (g): -0.15
IMPINGER NET 4 (g): 11.5
IMPINGER NET 5 (g):
IMPINGER NET 6 (g):

NET FILTER WT.(g):
NET PROBE WASH WT.(g): 680 µg.
IMP.RESIDUE WT.(g):
FILTER #:

METER BOX ID: TEAM VAN
PROBE ID: T1 5ft
NOZZLE ID: T3 #3
OTHER:
EQUIPMENT COMMENTS:

SAMPLING COMMENTS:

PROCESS RATE:
CONTROL EQUIP. OPERATION:
PROCESS COMMENTS:

TGM 94.09.30

Moisture Analysis Data Sheet

Project #: 421 1964 Client WOODSIDE PACIFIC Test: T2-PVK

Test Date: 94.09.30 Sample Location: PRESI VENT

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	570.3	574.9		-4.6
Impinger 2	581.85	579.9		1.95
Impinger 3	482.35	482.5		-0.15
Impinger 4				
Impinger 5				
Silica gel impinger	761.50	750.0		11.5

Net Total Condensate 8.7 (g)

RG Hm
Signature

94.09.30
Date

Sampling Train ata Sheet

lent LOUISIANA PACIFIC Project # 421964 Sample Loc. PRESS VENT Operators RM/BR Date 97-09

1 # T2-PVF Traverse # 1 Traverse Direction OUT Start Time 2216 Finish Time

	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Va
	0		.45	1.7		437.625	91	225	242	30		34	32	1
	3		.38	1.4	439.70	439.69	91	225	244	32		38	33	1
	6		.44	1.65	441.60	441.60	92	225	244	32		38	33	
	9		.44	1.65	443.66	443.66	96	225	245	39		40	34	
	12		.44	1.65	445.72	445.74	97	225	247	39		44	34	
	15				447.80	447.80								

e test leak check: Rate (cfm) 15 at .006 inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains Da... Sheet

Page 2 of 4

lent LOUISIANA PACIFIC Project # 121964 Sample Loc. PRESS VENT Operators RM/BR Date 1/ 97.09.30

12-PVF Traverse # 2 Traverse Direction OUT Start Time 2225 Finish Time

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.57	2.0		447.80	99	225	253	35		44	35	1
3		.54	2.0	450.08	450.08	99	225	253	36		44	36	1
6		.46	1.75	452.36	452.36	97	227	254	38		47	36	1
9		.46	1.75	454.46	454.49	97	225	254	39		48	36	1
12		.50	1.85	456.59	456.63	101	225	255	38		50	37	1
15				458.82	458.82								

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

at test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains .ta Sheet

lent LOUISIANA PACIFIC Project # 4M4964 Sample Loc. PRESS VENT Operators RM / BK Date 99.07.30

T2-PUF Traverse # 3 Traverse Direction OUT Start Time 22:40 Finish Time

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.38	1.4		458.82	97	225	258	35		48	38	1
3		.42	1.55	460.73	460.73	97	225	258	37		50	39	1
6		.38	1.4	462.74	462.74	96	225	260	37		50	39	1
9		.38	1.4	464.65	464.65	96	225	260	37		50	39	1
12		.42	1.55	466.56	466.56	95	225	266	37		51	40	1
15				468.57	468.57								

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains Data Sheet

lent LOUISIANA PACIFIC Project # 1217964 Sample Loc. PREHS VENT Operators RM/BK Date 11.01.

1 # TL-PVF Traverse # 4 Traverse Direction OUT Start Time 2250 Finish Time

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.47	1.75		466.57	98	225	261	36		50	40	1
3		.49	1.8	470.69	470.69	99	225	260	38		51	41	1
6		.49	1.8	472.86	472.86	97	225	260	39		52	41	1
9		.47	1.75	475.03	475.03	96	225	261	39		52	42	1
12		.44	1.65	477.15	477.17	97	232	261	40		54	42	1
15				479.22	479.22								

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum) 936 dnb

st test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

MDI EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIPVMDI
LOC. : PRESS VENT

RUN TIME : 9:24 TO 10:35

MDI CONCENTRATION	49.9 ug/DSm3	0.0218 gr/1000 DScf
	42.8 ug/Am3	0.0187 gr/1000 Acf
MDI EMISSION RATE	1.089 mg/s	60.49 gr/hr
SAMPLE GAS VOLUME	1.1413 DSm3	40.301 DScf
AVERAGE ISOKINETICITY	102.9 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.92 %	
TEMPERATURE	34.6 deg C	94.3 deg F
FLOW	78468 DSm3/hr	46185 DScfm
	91508 Am3/hr	53860 Acfm
VELOCITY	11.71 m/s	2305.5 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.74 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

MDI EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIPVMDI
LOC. : PRESS VENT

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	94	0.420	1.55	479.67	34	239	225	29	1.0	5.8	104.3
2	3.0	94	0.460	1.75	481.68	35	238	225	30	1.0	17.4	105.4
3	6.0	93	0.480	1.80	483.81	38	235	225	29	1.0	29.0	103.5
4	9.0	97	0.450	1.70	485.96	38	241	225	29	1.0	40.6	103.7
5	12.0	95	0.430	1.60	488.04	39	254	225	30	1.0	52.2	103.1
	15.0				490.07							
TRAVERSE NO. 2												
1	0.0	92	0.440	1.65	490.08	39	263	225	31	1.0	5.8	103.2
2	3.0	92	0.460	1.70	492.14	40	250	225	30	1.0	17.4	102.8
3	6.0	93	0.460	1.70	494.24	40	260	225	30	1.0	29.0	102.8
4	9.0	93	0.480	1.75	496.34	41	258	225	31	1.0	40.6	103.3
5	12.0	96	0.440	1.65	498.50	41	261	225	31	1.0	52.2	103.2
	15.0				500.56							
TRAVERSE NO. 3												
1	0.0	91	0.450	1.65	500.56	41	260	225	32	1.0	5.8	102.5
2	3.0	95	0.460	1.75	502.64	42	259	225	32	1.0	17.4	102.6
3	6.0	95	0.460	1.75	504.74	42	259	225	32	1.0	29.0	103.1
4	9.0	96	0.420	1.55	506.85	43	259	225	33	1.0	40.6	102.2
5	12.0	96	0.420	1.55	508.85	44	262	225	34	1.0	52.2	102.0
	15.0				510.85							
TRAVERSE NO. 4												
1	0.0	93	0.420	1.55	510.85	43	261	225	34	1.0	5.8	100.8
2	3.0	95	0.440	1.65	512.83	44	259	225	33	1.0	17.4	102.6
3	6.0	94	0.440	1.65	514.89	44	259	225	33	1.0	29.0	102.0
4	9.0	96	0.440	1.65	516.94	44	259	225	34	1.0	40.6	103.1
5	12.0	96	0.440	1.65	519.01	44	257	225	34	1.0	52.2	102.6
	15.0				521.07							
		94	0.445	1.66		41	255	225	32	1.0		102.9

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT LOUISIANA PACIFIC
CITY PROV. DAWSON CREEK, BC
PROJECT # 421 4964
TEST T1 - PVMD1
SAMPLE LOCATION PRESS VENT
DATE ~~[illegible]~~ 24.10.01
START TIME 9:24
FINISH TIME 10:35
BAROMETRIC PRESS.(in Hg) 27.5
STACK PRESS.(in H_2O) -.53
PITOT COEFFICIENT .805
NOZZLE DIAMETER(in) .496
GAS METER FACTOR 1.000
STACK HEIGHT(ft) 10
STACK DIAMETER(in) —
LENGTH X WIDTH 58 X 58
CO2(%) ø
O2(%) 20.9
CO(ppm)
OTHER

IMPINGER NET 1 (g) -62.8
IMPINGER NET 2 (g) 17.2
IMPINGER NET 3 (g) 5
IMPINGER NET 4 (g) 0.8
IMPINGER NET 5 (g) 9
IMPINGER NET 6 (g) 52.5

NET FILTER WT.(g)
NET PROBE WASH WT.(g)
IMP.RESIDUE WT.(g) 57 µg
FILTER #

METER BOX ID TEAM VAN
PROBE ID T1 #5F1
NOZZLE ID T5 #3
OTHER
EQUIPMENT COMMENTS

SAMPLING COMMENTS

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

RG Malloy 24.10.01

Moisture Analysis Data Sheet

Project #: 7214964 Client LOUISIANA PACIFIC Test: TI-WVM01

Test Date: 7.10.01 Sample Location: PRESS VENT.

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	685.9	748.7		-62.9
Impinger 2	659.8	642.6		17.2
Impinger 3	642.3	637.3		5
Impinger 4	458.1	457.3		0.8
Impinger 5 LAST CHARCOAL	659.8	653.8		4
Silica gel impinger	814.0	761.50		52.5

Net Total Condensate 16.7 (g)

Signature

7.10.01
Date

Sampling Trains . ... Sheet

ent LOUISIANA PACIFIC Project # 9214964 Sample Loc. PRESS VENT Operators RM Date __/__/99.10.01

TI-PVM01 Traverse # 1 Traverse Direction OUT Start Time 9:24 Finish Time 9:39

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.42	1.55		479.67	94	239	225	29		35	35	1
3		.46	1.75	481.68	481.68	99	238	225	30		37	33	1
6		.48	1.8	483.78	483.81	93	235	225	29		42	34	1
9		.45	1.7	485.96	485.96	97	247	225	29		42	34	1
12		.43	1.6	488.04	488.04	95	254	225	30		43	35	1
15				490.07	490.07								

: test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

/alue calculated by _____ checked by _____

ature

Sampling Trains Data Sheet

Page 2/4

ent LOUISIANA PACIFIC Project # 421964 Sample Loc. PRESS VENT Operators Rm Date 1/97/001

TI-PUMP1 Traverse # 2 Traverse Direction OUT Start Time 9:43 Finish Time

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.44	1.65		490.08	92	263	225	31		42	36	1
3		.46	1.7	492.19	492.19	92	250	225	30		43	36	1
6		.46	1.7	494.24	494.24	93	260	225	30		44	36	1
9		.48	1.75	496.34	496.34	93	258	225	31		45	37	1
12		.49	1.65	498.49	498.50	96	261	225	31		45	37	1
15				500.56	500.56								

3 test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

3t test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

/alue calculated by _____ checked by _____

ɔnature

Sampling Trains Data Sheet

Page 3 / 4

ent LOUISIANA PACIFIC Project # 21149864 Sample Loc. PRESS VENT Operators AM Date __/ 94,10,6

T1-PUMA Traverse # 3 Traverse Direction OUT Start Time 10:02 Finish Time 10:47

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.45	1.65		500.56	91	260	225	32		45	37	1
3		.56	1.75	502.69	502.64	95	259	225	32		46	38	1
6		.46	1.75	504.74	504.74	95	259	225	32		46	38	1
9		.42	1.55	506.84	506.85	96	255	225	33		47	38	1
12		.42	1.55	508.86	508.85	96	262	225	34		48	39	1
15				510.86	510.85								

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains . .a Sheet

Page 4/4

ent LOUISIANA PACIFIC Project # ~~[illegible]~~ 421964 Sample Loc. PRESS VENT Operators RM Date 9/10/01

TRUMP Traverse # 4 Traverse Direction OUT Start Time 10:20 Finish Time 10:35

	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		.42	1.55		510.85	95	261	225	34		47	39	1
2	3		.44	1.65	512.96	512.83	95	259	225	33		48	39	1
3	6		.44	1.65	514.80	514.80	94	259	225	33		48	39	1
4	9		.44	1.65	516.94	516.94	96	259	225	34		48	39	1
5	12		.44	1.65	519.00	519.01	96	257	225	34		48	39	1
	15				521.07	521.07								

: test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) 15 at .004 inches Hg (Vacuum)

/alue calculated by _____ checked by _____

ature

MDI EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2PVMDI
LOC. : PRESS VENT

RUN TIME : 13:19 TO 14:28

MDI CONCENTRATION	52.0 ug/DSm3	0.0227 gr/1000 DScf
	44.8 ug/Am3	0.0196 gr/1000 Acf
MDI EMISSION RATE	1.140 mg/s	63.34 gr/hr
SAMPLE GAS VOLUME	1.1352 DSm3	40.086 DScf
AVERAGE ISOKINETICITY	101.8 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.21 %	
TEMPERATURE	34.9 deg C	94.9 deg F
FLOW	78951 DSm3/hr	46469 DScfm
	91510 Am3/hr	53861 Acfm
VELOCITY	11.71 m/s	2305.6 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.82 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

MDI EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2PVMDI
LOC. : PRESS VENT

STACK HEIGHT	3.0 m	10.0 ft.
DUCT DIMENSIONS	1.47 m	58.0 in.
	BY 1.47 m	BY 58.0 in.
DUCT AREA	2.170 m2	23.36 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.50 in.Hg
STATIC PRESSURE	-132.0 Pa	-0.53 in.H2O
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-58.6 g
CONDENSATION IN IMPINGER 2	13.9 g
CONDENSATION IN IMPINGER 3	2.6 g
CONDENSATION IN IMPINGER 4	1.6 g
CONDENSATION IN IMPINGER 5	8.0 g
SILICA GEL WEIGHT GAIN	42.9 g
TOTAL MOISTURE GAIN	10.4 g

MDI COLLECTION

FILTER MDI	0.0000 mg
WASHINGS MDI	0.0000 mg
IMPINGER MDI	0.0000 mg
TOTAL MDI	0.0590 mg

TOTAL SAMPLING TIME 60.0 min.

MDI EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T2PVMDI
LOC. : PRESS VENT

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H20	ORIF. PRES. in.H20	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	97	0.420	1.55	522.51	38	249	225	35	1.0	5.8	103.1
2	3.0	96	0.420	1.55	524.52	38	261	225	34	1.0	17.4	101.5
3	6.0	95	0.450	1.70	526.50	40	246	225	33	1.0	29.0	102.5
4	9.0	93	0.440	1.65	528.58	41	242	225	34	1.0	40.6	102.3
5	12.0	97	0.430	1.60	530.64	43	246	225	35	1.0	52.2	101.5
	15.0				532.66							
TRAVERSE NO. 2												
1	0.0	92	0.390	1.45	532.66	41	246	235	34	1.0	5.8	101.6
2	3.0	96	0.400	1.45	534.59	41	246	235	34	1.0	17.4	100.7
3	6.0	95	0.440	1.65	536.52	42	251	235	35	1.0	29.0	101.9
4	9.0	94	0.440	1.65	538.57	42	250	235	37	1.0	40.6	102.2
5	12.0	94	0.440	1.65	540.63	43	251	235	38	1.0	52.2	101.6
	15.0				542.68							
TRAVERSE NO. 3												
1	0.0	94	0.460	1.75	542.68	43	248	235	38	1.0	5.8	102.3
2	3.0	94	0.460	1.75	544.79	43	250	235	39	1.0	17.4	101.7
3	6.0	97	0.490	1.80	546.89	43	249	235	39	1.0	29.0	102.1
4	9.0	94	0.520	1.90	549.06	43	249	235	42	1.0	40.6	100.7
5	12.0	96	0.460	1.75	551.27	43	250	235	42	1.0	52.2	101.9
	15.0				553.37							
TRAVERSE NO. 4												
1	0.0	95	0.460	1.70	553.37	42	250	235	41	1.0	5.8	102.1
2	3.0	96	0.460	1.70	555.47	43	248	235	41	1.0	17.4	101.4
3	6.0	96	0.460	1.70	557.56	43	239	235	43	1.0	29.0	101.9
4	9.0	94	0.460	1.70	559.66	43	244	235	40	1.0	40.6	101.7
5	12.0	93	0.430	1.60	561.76	42	249	235	40	1.0	52.2	100.7
	15.0				563.77							
		95	0.446	1.66		42	248	233	38	1.0		101.8

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT: LOISIANA PACIFIC
CITY PROV.: DAWSON CREEK, BC
PROJECT #: 921 4964
TEST: T2 - PVMD1
SAMPLE LOCATION: PRESS VENT
DATE: 94.10.01
START TIME: 15:19
FINISH TIME: 17:28
BAROMETRIC PRESS.(in Hg): 27.5
STACK PRESS.(in H_2O): -.53
PITOT COEFFICIENT: .805
NOZZLE DIAMETER(in): .246
GAS METER FACTOR: 1.000
STACK HEIGHT(ft): 11
STACK DIAMETER(in): /
LENGTH X WIDTH: 58 X 58
CO2(%): Ø
O2(%): 20.9
CO(ppm):
OTHER:

IMPINGER NET 1 (g): -58.6
IMPINGER NET 2 (g): 13.9
IMPINGER NET 3 (g): 2.6
IMPINGER NET 4 (g): 1.6
IMPINGER NET 5 (g): ~~42.5~~ 8.0
IMPINGER NET 6 (g): ~~Bro~~ 42.9

NET FILTER WT.(g):
NET PROBE WASH WT.(g): 59 µg
IMP.RESIDUE WT.(g):
FILTER #:

METER BOX ID: TEAM VAN
PROBE ID: T1 5FT
NOZZLE ID: T3 # 3
OTHER:
EQUIPMENT COMMENTS:

SAMPLING COMMENTS:

PROCESS RATE:
CONTROL EQUIP. OPERATION:
PROCESS COMMENTS:

RG Murphy
SIGNATURE

94.10.01
DATE

Moisture Analysis Data Sheet

Project #: 4214964 Client LOUISIANA PACIFIC Test: T2 P/MD1

Test Date: 04.10.01 Sample Location: PRESS VENT

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	682.8	741.4		-58.6
Impinger 2	649.8	635.9		13.9
Impinger 3	648.7	646.1		2.6
Impinger 4	458.6	457.0		1.6
SILICA GEL ~~Impinger 5~~ ~~CHARCOAL~~	700.7	657.8		42.9
CHARCOAL ~~Silica gel~~ ~~impinger~~	822.0	814.0		8

Net Total Condensate 10.4 (g)

Signature

04.10.01
Date

Sampling Trains Data Sheet

ent LOUISIANA PACIFIC Project # 1211964 Sample Loc. PRESS VENT Operators KM Date 1/ 97.10.01

T2-PVM01 Traverse # 1 Traverse Direction OUT Start Time 13:19 Finish Time 13:34

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.42	1.55		522.51	97	249	225	35		39	37	1
3		.92	1.55	524.52	524.52	96	261	225	34		39	37	1
6		.45	1.7	526.53	526.50	95	246	225	33		43	37	1
9		.44	1.65	528.58	528.58	93	242	225	34		45	37	1
12		.43	1.6	530.64	530.64	97	246	225	35		47	38	1
15				532.67	532.66								

e test leak check: Rate (cfm) 15 at .009 inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

939mb

Sampling Trains Data Sheet

Page 2 of 4

ient LOUISIANA PACIFIC Project # 421 4964 Sample Loc. PRESS VENT Operators MM Date 9-10-01

TR PUMP1 Traverse # 2 Traverse Direction OUT Start Time 13:37 Finish Time 13:52

Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
0		.39	1.45		532.66	92	246	235	34		44	38	1
3		.4	1.45	534.59	534.59	96	246	235	34		44	38	1
6		.44	1.65	536.55	536.52	95	251	235	35		45	38	1
9		.44	1.65	538.58	538.57	94	250	235	37		46	38	1
12		.44	1.65	540.63	540.63	94	251	235	38		46	39	1
15				542.69	542.68								

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains Data Sheet

Page 3/4

lent LOUISIANA PACIFIC Project # 421-1864 Sample Loc. PRESS VENT Operators RM Date 1-
91.10.01

T2-PVM01 Traverse # 3 Traverse Direction OUT Start Time 13:55 Finish Time 15:10

	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		.46	1.75		542.68	99	248	235	38		46	39	1
2	3		.46	1.75	544.78	544.79	94	250	235	39		47	39	1
3	6		.49	1.8	546.89	546.89	97	249	235	39		47	39	1
4	9		.52	1.9	549.06	549.06	94	249	235	42		47	39	1
5	12		.46	1.75	551.29	551.27	96	250	235	42		47	39	1
6	15				553.37	553.37								
7														
8														
9														
10														
11														
12														
13														

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

Sampling Trains D. . Sheet

Page 8 o 9

lent LOUISIANA PACIFIC Project # 421964 Sample Loc. PRESS VENT Operators RM Date 9/10/91

T2PUM01 Traverse # 4 Traverse Direction OUT Start Time 14:13 Finish Time 14:28

.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
:	0		.46	1.7+		553.37	95	250	235	41		44	39	1
:	3		.46	1.7	555.47	555.47	96	258	235	41		46	40	1
:	6		.46	1.7	557.57	557.56	96	239	235	43		48	40	1
-	9		.46	1.7	559.66	559.66	94	244	235	40		46	40	1
-	12		.43	1.6	561.76	561.76	95	249	235	40		45	39	1
-	15				563.79	563.77								
-														
..														
-														
-														
-														
-														
-														

e test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

st test leak check: Rate (cfm) 15 at .089 inches Hg (Vacuum)

value calculated by _____ checked by _____

gnature

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisiana Pacific
CITY PROV. Dawson Creek BC
PROJECT # 4214857
TEST 71 - NaOH
SAMPLE LOCATION Press Vent
DATE 94.9.30
START TIME 1351
FINISH TIME 1503
BAROMETRIC PRESS.(in Hg) 27.5
STACK PRESS.(in H_2O) -0.51
PITOT COEFFICIENT
NOZZLE DIAMETER(in)
GAS METER FACTOR 0.998
STACK HEIGHT(ft)
STACK DIAMETER(in) —
LENGTH X WIDTH 58 x 58
CO2(%) 0
O2(%) 20.9
CO(ppm)
OTHER

IMPINGER NET 1 (g) -1.7
IMPINGER NET 2 (g) 8.0
IMPINGER NET 3 (g) 1.6
IMPINGER NET 4 (g) 7.6
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

NET FILTER WT.(g) —
NET PROBE WASH WT.(g) —
IMP.RESIDUE WT.(g) —
FILTER # —

METER BOX ID Team #1
PROBE ID Team #2, 7'
NOZZLE ID
OTHER
EQUIPMENT COMMENTS

SAMPLING COMMENTS
proportional sampling

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

SIGNATURE 94.9.30

Moisture Analysis Data Sheet

Project #: 4214857 Client LOUISIANA PACIFIC Test: TI-NaOH

Test Date: 94.9.30 Sample Location: PRESS VENT

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	569.3	571.5		-1.7
Impinger 2	598.3	590.3		8.0
Impinger 3	471.0	469.4		1.6
Impinger 4				
Impinger 5				
Silica gel impinger	802.2	794.6		7.6

Net Total Condensate 15.5 (g)

Signature

94.9.30
Date

0000
1234

Sampling Trains Data Sheet

static -0.51

Client Louisiana Chemical Project # 4214857 Sample Loc. Press Vent Operators JL Date 94/9/20

Run # Ti-Na OH Traverse # 4 13 Traverse Direction OUT Start Time 13:57 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr.	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1-1	0		0.5	0.5		126.335	104	270	227	40		40	40	2
1-2	3		0.45	0.5	127.57	127.57	104	231	225	40		42	40	2
1-3	6		0.5	1.7	130.17	130.11	105	244	226	40		45	40	2
1-4	9		0.45	0.5	132.83	132.72	105	255	226	40		48	41	2
1-5	12		0.40	0.8	135.32	135.30	105	265	225	40		50	41	2
	15					137.815								
2-1	0		0.48	0.65		137.815	106	272	225	45		47	42	2
2-2	3		0.5	1.8	139.97	140.16	107	244	225	48		51	42	2
2-3	6		0.4	1.5	142.41	142.43	104	231	225	49		52	43	2
2-4	9		0.42	1.5	144.44	144.45	107	245	225	49		53	43	2
2-5	12		0.39	1.4	146.51	146.51	107	256	225	50		54	43	2
	15				148.49	148.48								

Pre test leak check: Rate (cfm) 0.000 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by _____ checked by _____

Signature _____

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214857 Sample Loc. PRESS VENT Operators [illegible] Date 94, 9, 30

Run # TI-NOH Traverse # 2 Traverse Direction OUT Start Time ____ Finish Time 1503

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
2-1	0		0.43	1.6		148.43	104	270	225	44		47	43	2
2-2	3		0.56	2.0	150.56	150.58	110	228	225	49		53	44	2
2-3	6		0.50	1.8	152.96	152.96	104	249	225	40		54	43	2
2-4	9		0.51	1.85	155.21	155.22	104	265	225	50		55	44	2
2-5	12		0.46	1.7	157.49	157.49	105	273	225	51		55	44	2
—	15				159.64	159.66								
—														
1-1	0		0.1	0.3		159.66	94	245	225	45		50	45	2
1-2	3		0.48	1.75	160.66	160.70	99	234	225	48		52	45	2
1-3	6		0.48	1.80	162.90	162.84	107	249	225	50		54	45	2
1-4	9		0.50	1.90	165.04	165.08	106	261	225	50		55	45	2
1-5	12		0.3	1.1	167.33	167.37	100	274	225	51		56	45	2
~~1-6~~	15				169.11	169.205								

Pre test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.003 at 15 inches Hg (Vacuum)

K value calculated by ____ checked by ____

Signature [illegible]

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisiana Pacific
CITY PROV. Dawson Creek, B.C
PROJECT # 4214857
TEST T2-NaOH
SAMPLE LOCATION Press Vent
DATE 94.9.30
START TIME 1643
FINISH TIME 1750
BAROMETRIC PRESS.(in Hg) 27.5
STACK PRESS.(in H_2O) -0.53
PITOT COEFFICIENT —
NOZZLE DIAMETER(in)
GAS METER FACTOR 0.998
STACK HEIGHT(ft)
STACK DIAMETER(in) —
LENGTH X WIDTH 58 x 58
CO2(%) 0 O2(%) 20.9
CO(ppm) — OTHER —

IMPINGER NET 1 (g) -1.6
NET FILTER WT.(g) —
IMPINGER NET 2 (g) 7.1
NET PROBE WASH WT.(g) —
IMPINGER NET 3 (g) 1.8
IMP.RESIDUE WT.(g) —
IMPINGER NET 4 (g) 8.1
FILTER # —
IMPINGER NET 5 (g)
IMPINGER NET 6 (g)

METER BOX ID Team #1
PROBE ID Team #2, 7'
NOZZLE ID
OTHER
EQUIPMENT COMMENTS

SAMPLING COMMENTS proportional sampling

PROCESS RATE
CONTROL EQUIP. OPERATION
PROCESS COMMENTS

SIGNATURE 94.9.30

Moisture Analysis Data Sheet

Project #: 4214857 Client LOUISIANA PACIFIC Test: T2-NaOH

Test Date: 94.9.30 Sample Location: PRESS VENT

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	553.5	555.1		-1.6
Impinger 2	606.5	599.3		7.1
Impinger 3	472.3	470.5		1.8
Impinger 4				
Impinger 5				
Silica gel impinger	810.3	802.2		8.1

Net Total Condensate 15.4 (g)

Signature

94.9.30
Date

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 421485T Sample Loc. PRESS VENT Operators JL Date 94/9/30

Run # T2-NaOH Traverse # 4/3 Traverse Direction OUT Start Time 16:43 Finish Time

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
4-1	0		0.5	0.5		169.53	103	234	180	42		46	45	2
4-2	3		0.5	1.8	170.76	170.79	100	246	183	43		47	45	2
4-3	6		0.5	1.8	173.04	173.04	100	257	189	44		50	46	2
4-4	9		0.47	1.7	175.29	175.35	100	267	188	46		53	46	2
4-5	12		0.43	1.55	177.53	177.53	99	249	199	48		55	46	2
	15				179.61	179.63								
3-1	0		0.4	1.45		179.63	110	261	193	46		52	46	2
3-2	3		0.42	1.50	181.64	181.64	104	255	194	49		55	46	2
3-3	6		0.37	1.3	183.70	183.72	97	221	194	50		55	47	2
3-4	9		0.4	1.45	185.65	185.64	104	246	193	51		55	47	2
3-5	12		0.35	1.25	187.65	187.68	101	258	194	51		56	49	2
	15					189.58								

Pre test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by _____ checked by _____

Signature _____

Static -0.53

Sampling Trains Data Sheet

Client LOUISIANA PACIFIC Project # 4214857 Sample Loc. PRESS VENT Operators JL Date 94/9/30

Run # T2-Nbor4 Traverse # 2/1 Traverse Direction OUT Start Time ____ Finish Time 17:50

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
2-1	0		0.53	1.9		189.58	104	277	191	48		52	47	2
2-2	3		0.54	1.95	191.89	191.88	103	235	193	51		55	47	2
2-3	6		0.48	1.3	194.21	194.23	99	258	193	51		56	47	2
2-4	9		0.5	1.3	196.43	196.50	100	267	187	52		57	47	2
2-5	12		0.51	1.35	198.75	198.77	100	276	184	52		57	48	2
	15				201.04	201.09								
1-1	0		0.09	0.3		201.09	94	[illegible]	184	45		52	48	2
1-2	3		0.46	1.7	202.83	202.06	[illegible]	254	183	48		54	48	2
1-3	6		0.43	1.65	204.21	204.13	115	260	185	49		55	48	2
1-4	9		0.45	1.65	206.21	206.31	108	269	180	51		56	48	2
1-5	12		0.31	1.05	208.44	208.48	107	277	174	50		56	48	2
	15				210.25	210.25								

Pre test leak check: Rate (cfm) 0.0 at ____ inches Hg (Vacuum)

Post test leak check: Rate (cfm) 0.004 at 15 inches Hg (Vacuum)

K value calculated by ____ checked by ____

Signature ____

BLENDER AREA BAGHOUSE

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T8BHF
LOC. : BAGHOUSE

RUN TIME : 19:51 TO 21:29

FORMALDEHYDE CONCENTRATION	59.0 ug/DSm3	0.0258 gr/1000 DScf
	50.1 ug/Am3	0.0219 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	0.528 mg/s	29.31 gr/hr
SAMPLE GAS VOLUME	1.8631 DSm3	65.788 DScf
AVERAGE ISOKINETICITY	100.7 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.23 %	
TEMPERATURE	28.2 deg C	82.7 deg F
FLOW	32160 DSm3/hr	18929 DScfm
	37870 Am3/hr	22290 Acfm
VELOCITY	20.27 m/s	3990.9 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.81 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T8BHF
LOC. : BAGHOUSE

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	82	1.300	3.60	519.20	55	243	250	38	5.0	1.1	99.1
1	2.0	82	1.300	3.70	521.30	58	252	257	36	5.0	1.1	98.5
2	4.0	84	1.300	3.70	523.40	59	229	258	34	5.0	3.4	100.9
2	6.0	84	1.300	3.70	525.55	60	236	255	35	5.0	3.4	100.3
3	8.0	84	1.300	3.70	527.69	60	237	258	36	5.0	6.2	100.2
3	10.0	84	1.350	3.80	529.83	61	233	258	36	5.0	6.2	100.5
4	12.0	84	1.400	4.20	532.02	61	231	262	36	5.0	10.3	103.3
4	14.0	84	1.400	4.10	534.31	62	231	261	36	5.0	10.3	103.0
5	16.0	84	1.400	4.00	536.60	62	230	262	36	5.0	21.7	99.9
5	18.0	84	1.400	4.00	538.82	62	234	260	35	5.0	21.7	102.6
6	20.0	84	1.400	4.00	541.10	62	240	260	35	5.0	25.8	96.7
6	22.0	82	1.400	4.00	543.25	63	242	257	36	5.0	25.8	99.5
7	24.0	82	1.300	3.70	545.47	63	235	262	36	5.0	28.6	99.9
7	26.0	82	1.300	3.70	547.62	63	233	264	35	5.0	28.6	99.0
8	28.0	82	1.200	3.40	549.75	64	235	263	35	5.0	30.9	101.4
8	30.0	82	1.200	3.30	551.85	64	236	262	35	4.5	30.9	98.0
	32.0				553.88							
TRAVERSE NO. 2												
1	0.0	82	1.400	4.10	555.24	56	229	268	36	5.0	1.1	100.0
1	2.0	83	1.400	4.10	557.44	59	225	264	34	5.0	1.1	103.2
2	4.0	84	1.400	4.00	559.72	60	234	264	32	5.0	3.4	100.8
2	6.0	84	1.400	4.00	561.95	60	237	263	32	5.0	3.4	101.1
3	8.0	83	1.400	4.00	564.19	61	233	265	32	5.0	6.2	101.4
3	10.0	83	1.400	4.00	566.44	60	233	267	32	5.0	6.2	101.0
4	12.0	83	1.400	4.00	568.68	62	231	265	32	5.0	10.3	101.7
4	14.0	83	1.400	4.00	570.94	62	231	263	33	5.0	10.3	99.8
5	16.0	82	1.400	4.00	573.16	62	233	261	33	5.0	21.7	101.0
5	18.0	82	1.400	4.00	575.41	62	233	262	33	5.0	21.7	100.6
6	20.0	82	1.400	4.00	577.65	63	243	263	33	5.0	25.8	100.4
6	22.0	82	1.300	3.60	579.89	63	240	260	33	5.0	25.8	98.0
7	24.0	81	1.200	3.40	582.00	63	244	258	34	5.0	28.6	102.4
7	26.0	81	1.200	3.40	584.12	62	233	264	34	5.0	28.6	100.1
8	28.0	81	0.800	2.50	586.19	62	240	253	33	4.5	30.9	105.9
8	30.0	80	0.800	2.50	587.98	62	240	251	33	4.5	30.9	104.5
	32.0				589.75							
		83	1.306	3.76		61	236	261	34	5.0		100.7

Formaldehyde

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisiana Pacific
CITY PROV. Dawson Creek BC
PROJECT # 4214864
TEST T8-BF
SAMPLE LOCATION Baghouse
DATE 9/30/94
START TIME 19:51 945 MB
FINISH TIME 21:29
BAROMETRIC PRESS.(in Hg) 27.91
STACK PRESS.(in H_2O) -20
PITOT COEFFICIENT .808
NOZZLE DIAMETER(in) .235
GAS METER FACTOR .996
STACK HEIGHT(ft) 20'
STACK DIAMETER(in) 32
LENGTH X WIDTH ____ X ____
CO2(%) 0.0 O2(%) 20.9
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) -.7
IMPINGER NET 2 (g) 8.6
IMPINGER NET 3 (g) 1.5
IMPINGER NET 4 (g) 7.9
IMPINGER NET 5 (g) ____
IMPINGER NET 6 (g) ____

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) } 110 mg
IMP.RESIDUE WT.(g) ____
FILTER # Bypass

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#2
OTHER ____
EQUIPMENT COMMENTS Glass Probe Filter Bypassed

SAMPLING COMMENTS ____

PROCESS RATE Full
CONTROL EQUIP. OPERATION Baghouse Cyclone
PROCESS COMMENTS ____

SIGNATURE

9/30/94
DATE

Moisture Analysis Data Sheet

Project #: 4214864 Client L+D Test: T8-BF

Test Date: 9/30/94 Sample Location: Baghouse

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	628.3	629.0		-0.7
Impinger 2	621.0	612.4		8.6
Impinger 3	476.6	475.1		1.5
Impinger 4				
Impinger 5				
Silica gel impinger	778.3	770.4		7.9

Net Total Condensate 17.3 (g)

Signature

09/30/94
Date

Sampling Trains Data Sheet

Client LJP Project #724486 Sample Loc. Baghouse Operators NL/JM Date 9/30

Run # T8-BF Traverse # 1 Traverse Direction O.T Start Time 9:51 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.3	3.4		519.2	82	243	250	38	NA	55	55	5.0
	2		1.3	3.7	521.38	521.3	82	252	257	36		61	55	5.0
2	4		1.3	3.7	523.48	523.4	84	229	258	34		63	55	5.0
	6		1.3	3.7	525.58	525.55	84	236	255	35		64	55	5.0
3	8		1.3	3.7	527.73	527.69	84	237	258	36		65	55	5.0
	10		1.35	3.8	529.87	529.83	84	233	258	36		66	55	5.0
4	12		1.4	4.2	532.06	532.02	84	231	262	36		67	55	5.0
	14		1.4	4.1	534.283	534.31	84	231	261	36		68	56	5.0
5	16		1.4	.40	536.537	536.6	84	230	262	34		68	56	5.0
	18		1.4	.4	538.863	538.82	84	234	260	35		68	56	5.0
6	20		1.4	.4	541.083	541.1	84	240	260	35		68	56	5.0
	22		1.4	.4	543.363	543.25	82	242	257	36		69	57	5.0
7	24		1.3	3.7	545.513	545.47	82	235	262	36		69	57	5.0

Pre test leak check: Rate (cfm) .012 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPU checked by N.L

Signature ____

Sampling Trains Data Sheet

Client LTP Project #4214864 Sample Loc. Baghouse Operators NL/JM Date 9.13.

Run # T8-BF Traverse # 1 Traverse Direction Out Start Time 19:51 Finish Time 20:23

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.3	3.7	547.65	547.62	82	233	264	35	N/A	69	57	5.0
	28		1.2	3.4	549.8	549.75	82	235	263	35		70	57	5.0
	30		1.2	3.3	551.845	551.85	82	236	262	35		70	57	4.0
	32				553.945	553.88								

Pre test leak check: Rate (cfm) .012 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .012 at 15 inches Hg (Vacuum)

K value calculated by CPO checked by N.L

Signature

Sampling Trains Data Sheet

Client LDP Project # 4214864 Sample Loc. Baghouse Operators NL/JM Date 9/30

Run # T8-BF Traverse # 2 Traverse Direction OF Start Time 20:51 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	4.1		555.24	82	229	268	34	NA	56	55	5.0
	2		1.4	4.1	557.503	557.44	83	225	264	34		62	55	5.0
2	4		1.4	4.0	559.703	559.72	84	234	264	32		64	55	5.0
	6		1.4	4.0	561.983	561.95	84	237	263	32		65	55	5.0
3	8		1.4	4.0	564.213	564.19	83	233	265	32		66	55	5.0
	10		1.4	4.0	566.453	566.44	83	237	267	32		65	55	5.0
4	12		1.4	4.0	568.703	568.68	83	231	265	32		67	56	5.0
	14		1.4	4.0	570.943	570.94	83	231	263	33		68	56	5.0
5	16		1.4	4.0	573.203	573.16	82	233	261	33		68	56	5.0
	18		1.4	4.0	575.423	575.41	82	237	262	33		68	56	5.0
6	20		1.4	4.0	577.673	577.65	82	243	263	33		69	57	5.0
	22		1.3	3.6	579.913	579.89	82	240	260	33		69	57	5.0
7	24		1.2	3.4	582.07	582.0	81	244	258	34		69	57	5.0

Pre test leak check: Rate (cfm) .003 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPO checked by N. L

Sampling Trains Data Sheet

Client L&P Project # 421486-4 Sample Loc. Baghouse Operators NL DM Date 9/30

Run # T8-BF Traverse # 2 Traverse Direction Out Start Time 20:51 Finish Time 21:29

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		.12	3.4	584.095	584.12	81	233	264	34	NA	67	57	5.0
8	28		0.80	2.5	586.215	586.19	81	240	253	33		66	57	4.5
	30		0.80	2.5	587.9	587.98	80	240	251	33		67	57	4.5
	32				589.69	589.75								

Pre test leak check: Rate (cfm) .003 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .004 at 15 inches Hg (Vacuum)

K value calculated by CPU checked by N.L

Signature

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T9BHF
LOC. : BAGHOUSE

RUN TIME : 9:07 TO 10:22

FORMALDEHYDE CONCENTRATION	116.6 ug/DSm3	0.0510 gr/1000 DScf
	99.8 ug/Am3	0.0436 gr/1000 Acf
FORMALDEHYDE EMISSION RATE	1.061 mg/s	58.96 gr/hr
SAMPLE GAS VOLUME	1.8875 DSm3	66.647 DScf
AVERAGE ISOKINETICITY	100.1 %	

FLUE GAS CHARACTERISTICS

MOISTURE	0.56 %	
TEMPERATURE	27.8 deg C	82.0 deg F
FLOW	32767 DSm3/hr	19286 DScfm
	38277 Am3/hr	22529 Acfm
VELOCITY	20.49 m/s	4033.8 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.89 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T9BHF
LOC. : BAGHOUSE

STACK HEIGHT	6.1 m	20.0 ft.
STACK DIAMETER	0.81 m	32.0 in.
STACK AREA	0.519 m2	5.59 sq.ft.
BAROMETRIC PRESSURE	94.5 kPa	27.91 in.Hg
STATIC PRESSURE	-4980.0 Pa	-20.00 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.808	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-11.4 g
CONDENSATION IN IMPINGER 2	10.4 g
CONDENSATION IN IMPINGER 3	3.7 g
SILICA GEL WEIGHT GAIN	5.3 g
TOTAL MOISTURE GAIN	8.0 g

FORMALDEHYDE COLLECTION

FILTER FORMALDEHYDE	0.0000 mg
WASHINGS FORMALDEHYDE	0.0000 mg
IMPINGER FORMALDEHYDE	0.2200 mg
TOTAL FORMALDEHYDE	0.2200 mg

TOTAL SAMPLING TIME 64.0 min.

FORMALDEHYDE EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : T9BHF
LOC. : BAGHOUSE

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	81	1.400	4.00	590.29	42	223	264	40	5.0	1.1	96.6
1	2.0	80	1.400	3.90	592.37	45	253	261	35	5.0	1.1	100.4
2	4.0	81	1.400	3.90	594.55	47	260	262	33	5.0	3.4	101.1
2	6.0	82	1.400	3.90	596.75	48	249	262	34	5.0	3.4	101.0
3	8.0	82	1.400	3.90	598.95	49	246	266	34	5.0	6.2	100.3
3	10.0	82	1.400	3.90	601.14	50	239	262	34	5.0	6.2	100.6
4	12.0	82	1.400	3.90	603.34	50	233	260	34	5.0	10.3	100.2
4	14.0	82	1.400	3.90	605.53	52	236	267	34	5.0	10.3	100.2
5	16.0	83	1.400	3.90	607.73	52	235	268	34	5.0	21.7	100.2
5	18.0	82	1.400	3.90	609.93	53	234	265	35	5.0	21.7	100.0
6	20.0	83	1.400	3.90	612.13	54	230	269	35	5.0	25.8	99.0
6	22.0	82	1.400	3.90	614.31	55	237	268	36	5.0	25.8	101.0
7	24.0	81	1.300	3.50	616.54	55	231	262	36	5.0	28.6	97.9
7	26.0	81	1.200	3.30	618.63	56	235	262	37	5.0	28.6	98.9
8	28.0	81	1.100	3.00	620.66	57	239	261	37	5.0	30.9	98.4
8	30.0	81	1.100	3.00	622.60	57	242	263	38	4.0	30.9	97.4
	32.0				624.52							
TRAVERSE NO. 2												
1	0.0	81	1.300	3.50	624.88	55	256	266	38	5.0	1.1	99.4
1	2.0	81	1.300	3.50	627.00	58	258	266	36	5.0	1.1	95.5
2	4.0	82	1.300	3.70	629.05	59	243	262	35	5.0	3.4	99.7
2	6.0	82	1.300	3.80	631.19	60	238	266	35	5.0	3.4	101.8
3	8.0	83	1.300	3.80	633.38	61	236	265	35	5.0	6.2	101.8
3	10.0	83	1.300	3.80	635.57	61	232	268	36	5.0	6.2	102.6
4	12.0	83	1.400	4.30	637.78	62	231	269	36	5.0	10.3	102.5
4	14.0	83	1.400	4.10	640.07	62	232	268	36	5.0	10.3	101.0
5	16.0	83	1.400	4.10	642.33	63	232	267	36	5.0	21.7	103.1
5	18.0	83	1.400	4.00	644.64	63	228	266	36	5.0	21.7	101.7
6	20.0	84	1.400	4.00	646.92	63	235	266	37	5.0	25.8	99.6
6	22.0	81	1.400	4.00	649.15	64	240	263	37	5.0	25.8	100.0
7	24.0	82	1.300	3.80	651.40	64	245	264	37	5.0	28.6	100.6
7	26.0	82	1.300	3.80	653.58	65	230	263	37	5.0	28.6	100.9
8	28.0	82	1.300	3.80	655.77	65	234	262	37	5.0	30.9	100.0
8	30.0	82	1.300	3.80	657.94	66	237	264	37	5.0	30.9	99.8
	32.0				660.11							
		82	1.339	3.80		56	238	265	36	5.0		100.1

Formaldehyde

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisiana Pacific
CITY PROV. Dawson Creek B.C.
PROJECT # 6217864
TEST T9-BF
SAMPLE LOCATION Baghouse
DATE 10/1/94
START TIME 9:07 946Mb
FINISH TIME 10:22
BAROMETRIC PRESS.(in Hg) 27.91
STACK PRESS.(in H_2O) -20
PITOT COEFFICIENT .808
NOZZLE DIAMETER(in) .235
GAS METER FACTOR .996
STACK HEIGHT(ft) 20'
STACK DIAMETER(in) 72
LENGTH X WIDTH ____ X ____
CO2(%) 0.0 O2(%) 20.9
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) -11.4
IMPINGER NET 2 (g) 12.4
IMPINGER NET 3 (g) 4.7
IMPINGER NET 4 (g) 5.3
IMPINGER NET 5 (g) ____
IMPINGER NET 6 (g) ____

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) } 220 mg
IMP.RESIDUE WT.(g) ____
FILTER # Bypassed

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#2
OTHER ____
EQUIPMENT COMMENTS Glass Liner Filter Bypassed

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

SIGNATURE

10/1/94
DATE

Moisture Analysis Data Sheet

Project #: 4214864 Client LOUISIANA PACIFIC Test: T9-BH

Test Date: ~~09/~~ 10/01/94 Sample Location: BAGHOUSE

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	585.8	597.2		-11.4
Impinger 2	~~[illegible]~~ 603.4	593.0		10.4
Impinger 3	483.3	479.6		3.7
Impinger 4				
Impinger 5				
Silica gel impinger	783.6	778.3		5.3

Net Total Condensate 8.0

Signature

10/01/30
Date

Sampling Trains Data Sheet

Client LHP Project # 4214864 Sample Loc. Baghouse Operators HK/JM Date 10/2/

Run # T9-BF Traverse # 1 Traverse Direction Out Start Time 9:07 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	.40		590.29	81	223	264	40	NA	42	41	5.0
	2		1.4	3.9	592.553	592.37	80	253	261	35		49	41	5.0
2	4		1.4	3.9	594.633	594.55	81	260	262	33		51	42	5.0
	6		1.4	3.9	596.813	596.75	82	249	262	34		53	42	5.0
3	8		1.4	3.9	599.013	598.95	82	246	266	34		55	43	5.0
	10		1.4	3.9	601.213	601.14	82	239	262	34		56	43	5.0
4	12		1.4	3.9	603.403	603.34	82	233	260	34		58	44	5.0
	14		1.4	3.9	605.603	605.53	82	236	267	34		59	44	5.0
5	16		1.4	3.9	607.793	607.73	83	235	268	34		59	45	5.0
	18		1.4	3.9	609.993	609.93	82	234	265	35		60	45	5.0
6	20		1.4	3.9	612.193	612.13	83	230	269	35		61	46	5.0
	22		1.4	3.9	614.393	614.31	82	237	268	36		62	47	5.0
7	24		1.3	3.5	616.573	616.54	81	231	262	36	✓	63	47	5.0

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CDV checked by N.L

Signature

Sampling Trains Data Sheet

Client L&P Project #421486Y Sample Loc. Baghouse Operators NL/JJ Date 10/21

Run #T4-BF Traverse # 1 Traverse Direction Out Start Time 9:07 Finish Time 9:39

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.2	3.3	618.72	618.63	81	235	262	37	NA	63	48	5.0
	28		1.1	3.0	620.725	620.66	81	239	261	37		64	49	5.0
	30		1.1	3.0	622.666	622.6	81	242	263	38		64	49	5.0
	32				624.606	624.52								

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

K value calculated by CPO checked by N.L

Signature

Sampling Trains Data Sheet

Client LAD Project #LNT186 4 Sample Loc. Baghouse Operators NL/DT Date 10/1/F

Run # T9-BF Traverse # 2 Traverse Direction O-X Start Time 9:50 Finish Time 10:26

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.3	3.5		624.88	81	256	266	38	N/A	59	50	5.0
	2		1.3	3.5	627.06	627.0	81	258	264	36		65	51	5.0
2	4		1.3	3.8	629.18	629.05	82	243	262	35		67	51	5.0
	6		1.3	3.8	631.23	631.19	83	238	266	35		68	52	5.0
3	8		1.3	3.8	633.37	633.38	83	234	265	35		69	52	5.0
	10		1.3	3.8	635.56	635.57	83	232	268	35		69	53	5.0
4	12		1.4	4.3	637.75	637.78	83	231	269	36		70	53	5.0
	14		1.4	4.1	640.043	640.07	83	232	268	36		70	54	5.0
5	16		1.4	4.1	642.333	642.33	83	232	267	36		71	55	5.0
	18		1.4	4.0	644.593	644.64	83	228	266	36		71	55	5.0
6	20		1.4	4.0	646.903	646.92	84	235	266	37		71	55	5.0
	22		1.4	4.0	649.183	649.15	81	240	263	37		72	56	5.0
7	24		1.3	3.8	651.413	651.4	82	245	264	37	✓	72	56	5.0

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ___ at ___ inches Hg (Vacuum)

K value calculated by CDU checked by N.L

Signature [signature]

Sampling Trains Data Sheet

Client L&P Project # 421486 Sample Loc. Baghouse Operators NL/JJ Date 10/1/

Run # T4-BF Traverse # 2 Traverse Direction O.T Start Time 9:50 Finish Time 10:20

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.3	3.8	653.58	653.58	82	230	263	37	NA	72	57	5.0
8	28		1.3	3.8	655.76	655.77	82	234	262	37		72	57	5.0
	30		1.3	3.8	657.95	657.94	82	237	264	37		73	58	5.0
	32				660.12	660.11								

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

O_2 20.9 CO_2 0.0

K value calculated by CPU checked by N.L

Signature

MDI EMISSION REPORT

CLIENT : LOUSIANA PACIFIC	DATE : 94.09.30
JOBSITE : DAWSON CREEK	RUN : T7BHMDI
REF.No. : 4214964	LOC. : BAGHOUSE

RUN TIME : 15:55 TO 17:13

MDI CONCENTRATION	2.7 ug/DSm3	0.0012 gr/1000 DScf
	2.4 ug/Am3	0.0010 gr/1000 Acf
MDI EMISSION RATE	0.025 mg/s	1.37 gr/hr
SAMPLE GAS VOLUME	1.8442 DSm3	65.120 DScf
AVERAGE ISOKINETICITY	97.6 %	

FLUE GAS CHARACTERISTICS

MOISTURE	-0.70 %	
TEMPERATURE	28.1 deg C	82.6 deg F
FLOW	32842 DSm3/hr	19330 DScfm
	37843 Am3/hr	22274 Acfm
VELOCITY	20.26 m/s	3988.1 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	29.02 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

MDI EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T7BHMDI
LOC. : BAGHOUSE

STACK HEIGHT	6.1 m	20.0 ft.
STACK DIAMETER	0.81 m	32.0 in.
STACK AREA	0.519 m2	5.59 sq.ft.
BAROMETRIC PRESSURE	94.7 kPa	27.97 in.Hg
STATIC PRESSURE	-4980.0 Pa	-20.00 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.808	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-147.8 g
CONDENSATION IN IMPINGER 2	35.5 g
CONDENSATION IN IMPINGER 3	19.6 g
CONDENSATION IN IMPINGER 4	7.5 g
CONDENSATION IN IMPINGER 5	68.2 g
SILICA GEL WEIGHT GAIN	7.4 g
TOTAL MOISTURE GAIN	-9.6 g

MDI COLLECTION

FILTER MDI	0.0000 mg
WASHINGS MDI	0.0000 mg
IMPINGER MDI	0.0000 mg
TOTAL MDI	0.0050 mg

TOTAL SAMPLING TIME 64.0 min.

MDI EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T7BHMDI
LOC. : BAGHOUSE

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	81	1.400	3.90	374.42	51	242	254	40	5.0	1.1	96.2
1	2.0	82	1.300	3.50	376.55	53	251	251	42	5.0	1.1	98.1
2	4.0	83	1.300	3.50	378.65	54	257	255	41	5.0	3.4	96.9
2	6.0	83	1.300	3.50	380.73	55	246	255	41	5.0	3.4	96.4
3	8.0	84	1.350	3.80	382.80	56	240	255	40	5.0	6.2	99.0
3	10.0	84	1.350	3.80	384.97	57	240	258	40	5.0	6.2	98.5
4	12.0	84	1.350	3.80	387.13	58	243	253	40	5.0	10.3	98.7
4	14.0	84	1.400	4.10	389.30	58	244	264	40	5.0	10.3	99.6
5	16.0	84	1.400	4.10	391.53	59	242	258	40	5.0	21.7	100.3
5	18.0	84	1.400	4.10	393.78	60	245	250	40	5.0	21.7	100.2
6	20.0	82	1.400	4.00	396.03	61	241	246	40	5.0	25.8	98.9
6	22.0	82	1.400	4.00	398.26	61	239	244	40	5.0	25.8	98.1
7	24.0	82	1.350	3.80	400.47	62	242	247	40	5.0	28.6	97.4
7	26.0	82	1.300	3.50	402.63	62	236	245	40	5.0	28.6	94.9
8	28.0	82	1.300	3.60	404.70	62	236	244	40	5.0	30.9	96.3
8	30.0	82	1.300	3.60	406.80	63	230	248	40	5.0	30.9	95.3
	32.0				408.88							
TRAVERSE NO. 2												
1	0.0	80	1.400	4.00	409.35	59	232	240	36	5.0	1.1	93.3
1	2.0	83	1.400	4.00	411.45	61	236	252	36	5.0	1.1	97.7
2	4.0	83	1.400	4.00	413.65	62	236	251	36	5.0	3.4	98.0
2	6.0	83	1.400	4.00	415.86	63	238	255	36	5.0	3.4	97.8
3	8.0	83	1.400	4.00	418.07	63	240	256	36	5.0	6.2	98.6
3	10.0	83	1.400	4.00	420.30	64	243	254	37	5.0	6.2	97.1
4	12.0	83	1.400	4.00	422.50	64	245	252	37	5.0	10.3	98.4
4	14.0	83	1.400	4.00	424.73	65	240	252	37	5.0	10.3	99.9
5	16.0	83	1.400	4.00	427.00	65	242	251	37	5.0	21.7	94.7
5	18.0	83	1.400	4.00	429.15	66	247	252	37	5.0	21.7	97.2
6	20.0	83	1.400	4.00	431.36	66	249	245	37	5.0	25.8	97.1
6	22.0	81	1.400	4.00	433.57	66	247	240	37	5.0	25.8	96.5
7	24.0	82	1.150	3.30	435.77	67	249	242	37	5.0	28.6	97.1
7	26.0	82	1.150	3.30	437.78	67	249	259	37	5.0	28.6	94.7
8	28.0	82	0.800	2.50	439.74	67	254	251	37	5.0	30.9	103.4
8	30.0	82	0.800	2.50	441.53	67	249	259	37	4.0	30.9	98.8
	32.0				443.24							
		83	1.317	3.76		61	243	251	38	5.0		97.6

1 of

MDI

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Lorsanna Pacific
CITY PROV. Dawson Creek B.C.
PROJECT # 4214864
TEST T2-BMD
SAMPLE LOCATION Baghouse
DATE 9/30/94
START TIME 15:55 947M6
FINISH TIME 17:13
BAROMETRIC PRESS.(in Hg) 27.99
STACK PRESS.(in H_2O) -20
PITOT COEFFICIENT .808
NOZZLE DIAMETER(in) .235
GAS METER FACTOR .996
STACK HEIGHT(ft) 20'
STACK DIAMETER(in) 32
LENGTH X WIDTH ____ X ____
CO2(%) 0.0 O2(%) 20.9
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 147.8
IMPINGER NET 2 (g) 35.5
IMPINGER NET 3 (g) 19.6
IMPINGER NET 4 (g) 7.5
IMPINGER NET 5 (g) 68.2
IMPINGER NET 6 (g) 7.4

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) } 5 µg
IMP.RESIDUE WT.(g) ____
FILTER # Bypassed

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#2
OTHER ____
EQUIPMENT COMMENTS Glass Probe / Bypassed Filter

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

SIGNATURE

9/30/94
DATE

Moisture Analysis Data Sheet

Project #: 421486-4 Client LJP Test: T7-BM

Test Date: 9/30/94 Sample Location: Baghouse

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	561.5	709.3		-147.8 ~~578.4~~
Impinger 2	689.1	653.6		35.5
Impinger 3	675.1	655.5		19.6
Impinger 4	464.8	457.3		7.5
Silica Gel ~~Impinger 5~~	761.0	692.8		68.2
Charcoal ~~Silica gel~~ impinger	626.9	619.5		7.4

Net Total Condensate -9.6 (g

Signature

09/30/94
Date

Sampling Trains Data Sheet

Client L&D Project # 424864 Sample Loc. Baghouse Operators NL/JM Date 9/30/

Run # T7-BMD Traverse # 1 Traverse Direction Out Start Time 15:55 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	3.9		374.42	81	242	254	40	N/A	53	48	5.0
	2		1.3	3.5	376.683	376.55	82	251	251	42		57	48	5.0
	4		1.3	3.5	378.73	378.65	83	257	255	41		59	49	5.0
	6		1.3	3.5	380.83	380.73	83	246	255	41		60	49	5.0
	8		1.35	3.8	382.91	382.8	84	240	255	40		62	50	5.0
	10		1.35	3.8	385.03	384.97	84	240	258	40		63	50	5.0
	12		1.35	3.8	387.2	387.13	84	243	253	40		64	51	5.0
	14		1.4	4.1	389.36	389.3	84	244	264	40		65	51	5.0
	16		1.4	4.1	391.563	391.53	84	242	258	40		66	52	5.0
	18		1.4	4.1	393.793	393.78	84	245	250	40		67	52	5.0
	20		1.4	4.0	396.043	396.03	82	241	246	40		68	53	5.0
	22		1.4	4.0	398.293	398.26	82	239	244	40		68	53	5.0
	24		1.35	3.8	400.523	400.47	82	242	247	40		69	54	5.0

Pre test leak check: Rate (cfm) 0.06 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

Bar 947M6

K value calculated by CPO checked by N.L

Signature ____

Sampling Trains Data Sheet

Client LDP Project # 421464 Sample Loc. Baghouse Operators NL/JM Date 9/150

Run # T2-BMD Traverse # 1 Traverse Direction OX Start Time 15:55 Finish Time 16:27

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.3	3.5	402.7	402.63	82	234	245	40	N/A	69	55	5.0
8	28		1.3	3.6	404.81	404.7	82	236	244	40		69	55	5.0
	30		1.3	3.6	406.88	406.8	82	230	248	40		70	55	5.0
	32					408.88								

Pre test leak check: Rate (cfm) .006 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .008 at 15 inches Hg (Vacuum)

K value calculated by CPU checked by N.L

Signature

Sampling Trains Data Sheet

Client L&P Project # 4214864 Sample Loc. Baghouse Operators NL JM Date 9/30/

Run # T7-BMD Traverse # 2 Traverse Direction O X Start Time 16:41 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	4.0		409.35	80	232	240	36	N/A	62	56	5.0
	2		1.4	4.0	411.663	411.45	83	236	252	36		65	56	5.0
2	4		1.4	4.0	413.713	413.65	83	236	351	36		67	56	5.0
	6		1.4	4.0	415.913	415.86	83	238	255	36		69	56	5.0
	8		1.4	4.0	418.123	418.07	83	240	256	36		70	56	5.0
	10		1.4	4.0	420.353	420.3	83	243	254	37		70	57	5.0
4	12		1.4	4.0	422.563	422.5	83	245	252	37		71	57	5.0
	14		1.4	4.0	424.763	424.73	83	240	252	37		72	58	5.0
5	16		1.4	4.0	426.943	427.0	83	242	251	37		72	58	5.0
	18		1.4	4.0	429.263	429.15	82	247	252	37		73	58	5.0
6	20		1.4	4.0	431.413	431.36	83	249	245	37		73	59	5.0
	22		1.4	4.0	433.623	433.57	81	247	240	37		73	59	5.0
7	24		1.15	3.3	435.833	435.77	82	249	242	37	✓	74	59	5.0

Pre test leak check: Rate (cfm) .01 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CDV checked by N.L.

Signature

Sampling Trains Data Sheet

Client L&P Project #4214864 Sample Loc. Baghouse Operators AL/JM Date 9/13

Run #T2-BMD Traverse # 2 Traverse Direction Out Start Time 16:41 / Finish Time 17:13

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.15	3.3	437.83	437.78	82	249	259	37	N/A	73	60	5.0
8	28		.80	2.5	439.84	439.74	82	254	251	37		74	60	5.0
	30		.8	2.5	441.45	441.53	82	249	259	37		73	60	5.0
	32				443.24	443.24								

Pre test leak check: Rate (cfm) .01 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .013 at 15 inches Hg (Vacuum)

K value calculated by CPU checked by N.L

MDI EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T6BHMDI
LOC. : BAGHOUSE

RUN TIME : 10:59 TO 12:43

MDI CONCENTRATION	0.3 ug/DSm3	0.0001 gr/1000 DScf
	0.2 ug/Am3	0.0001 gr/1000 Acf
MDI EMISSION RATE	0.002 mg/s	0.14 gr/hr
SAMPLE GAS VOLUME	1.8709 DSm3	66.063 DScf
AVERAGE ISOKINETICITY	99.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	0.66 %	
TEMPERATURE	27.6 deg C	81.7 deg F
FLOW	32787 DSm3/hr	19298 DScfm
	38232 Am3/hr	22502 Acfm
VELOCITY	20.47 m/s	4029.0 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.88 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

MDI EMISSION REPORT

CLIENT : LOUSIANA PACIFIC	DATE : 94.09.30
JOBSITE : DAWSON CREEK	RUN : T6BHMDI
REF.No. : 4214964	LOC. : BAGHOUSE

STACK HEIGHT	6.1 m	20.0 ft.
STACK DIAMETER	0.81 m	32.0 in.
STACK AREA	0.519 m2	5.59 sq.ft.
BAROMETRIC PRESSURE	94.7 kPa	27.97 in.Hg
STATIC PRESSURE	-4980.0 Pa	-20.00 in.H20
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.808	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-162.2 g
CONDENSATION IN IMPINGER 2	59.3 g
CONDENSATION IN IMPINGER 3	16.7 g
CONDENSATION IN IMPINGER 4	4.4 g
CONDENSATION IN IMPINGER 5	64.9 g
SILICA GEL WEIGHT GAIN	26.2 g
TOTAL MOISTURE GAIN	9.3 g

MDI COLLECTION

FILTER MDI	0.0000 mg
WASHINGS MDI	0.0000 mg
IMPINGER MDI	0.0000 mg
TOTAL MDI	0.0005 mg

TOTAL SAMPLING TIME 64.0 min.

MDI EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.09.30
RUN : T6BHMDI
LOC. : BAGHOUSE

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	EXIT TEMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1												
1	0.0	81	1.400	4.00	304.05	56	236	225	38	5.0	1.1	98.1
1	2.0	82	1.400	4.00	306.22	59	257	246	36	5.0	1.1	100.8
2	4.0	83	1.400	4.00	308.46	61	245	236	35	5.0	3.4	101.4
2	6.0	83	1.400	3.90	310.72	61	230	240	34	5.0	3.4	100.0
3	8.0	83	1.400	3.90	312.95	62	230	249	35	5.0	6.2	99.8
3	10.0	83	1.400	3.90	315.18	63	239	255	36	5.0	6.2	100.2
4	12.0	83	1.300	3.50	317.42	55	241	250	38	5.0	10.3	100.3
4	14.0	80	1.300	3.50	319.55	55	245	253	37	5.0	10.3	99.9
5	16.0	81	1.300	3.50	321.68	56	241	258	36	5.0	21.7	99.3
5	18.0	82	1.300	3.50	323.80	60	242	257	35	5.0	21.7	100.2
6	20.0	82	1.350	3.70	325.95	59	248	258	36	5.0	25.8	98.5
6	22.0	82	1.350	3.70	328.10	60	252	254	37	5.0	25.8	99.2
7	24.0	82	1.300	3.40	330.27	61	254	254	35	5.0	28.6	98.4
7	26.0	82	1.300	3.50	332.39	62	253	253	41	5.0	28.6	97.0
8	28.0	82	1.300	3.60	334.48	62	257	259	41	5.0	30.9	98.8
8	30.0	82	1.200	3.40	336.61	63	251	252	42	5.0	30.9	100.6
	32.0				338.70							
TRAVERSE NO. 2												
1	0.0	73	1.400	3.90	339.09	60	260	259	40	5.0	1.1	98.4
1	2.0	82	1.400	3.90	341.30	63	249	265	40	5.0	1.1	98.2
2	4.0	82	1.400	3.90	343.50	65	242	256	40	5.0	3.4	100.1
2	6.0	82	1.400	3.90	345.75	65	247	251	42	5.0	3.4	99.6
3	8.0	82	1.400	3.90	347.99	66	255	257	45	5.0	6.2	100.4
3	10.0	83	1.400	3.90	350.25	66	252	251	48	5.0	6.2	100.8
4	12.0	83	1.400	3.90	352.52	67	250	259	51	5.0	10.3	100.3
4	14.0	83	1.400	3.90	354.78	67	257	253	50	5.0	10.3	100.6
5	16.0	82	1.400	3.90	357.05	68	252	261	51	5.0	21.7	100.0
5	18.0	82	1.400	3.90	359.31	68	248	260	50	5.0	21.7	100.0
6	20.0	82	1.400	3.90	361.57	68	235	254	48	5.0	25.8	99.9
6	22.0	81	1.400	3.90	363.83	69	251	250	47	5.0	25.8	100.2
7	24.0	81	1.200	3.00	366.10	69	250	258	45	5.0	28.6	95.1
7	26.0	81	1.200	3.10	368.10	68	251	255	47	4.0	28.6	93.3
8	28.0	81	1.200	3.10	370.06	69	251	259	45	4.0	30.9	94.7
8	30.0	81	1.100	3.00	372.05	69	252	254	44	4.0	30.9	98.8
	32.0				374.04							
		82	1.339	3.69		63	248	253	41	4.9		99.2

MDI EMISSION REPORT

CLIENT : LOUISIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : TIPVMDI
LOC. : PRESS VENT

STACK HEIGHT	3.0 m	10.0 ft.
DUCT DIMENSIONS	1.47 m	58.0 in.
	BY 1.47 m	BY 58.0 in.
DUCT AREA	2.170 m2	23.36 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.50 in.Hg
STATIC PRESSURE	-132.0 Pa	-0.53 in.H2O
NOZZLE DIAMETER	6.25 mm	0.2460 in.
PITOT COEFFICIENT	0.805	
METER CORRECTION FACTOR	1.000	

CONDENSATE COLLECTION

CONDENSATION IN IMPINGER 1	-62.8 g
CONDENSATION IN IMPINGER 2	17.2 g
CONDENSATION IN IMPINGER 3	5.0 g
CONDENSATION IN IMPINGER 4	0.8 g
CONDENSATION IN IMPINGER 5	4.0 g
SILICA GEL WEIGHT GAIN	52.5 g
TOTAL MOISTURE GAIN	16.7 g

MDI COLLECTION

FILTER MDI	0.0000 mg
WASHINGS MDI	0.0000 mg
IMPINGER MDI	0.0000 mg
TOTAL MDI	0.0570 mg

TOTAL SAMPLING TIME 60.0 min.

1 ves

MDI

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT Louisanna Pacific
CITY PROV. Dawson Creek
PROJECT # 421486-7
TEST T6-BMD
SAMPLE LOCATION Baghouse
DATE 9/30/94
START TIME 10:59 947Mb
FINISH TIME 12:43
BAROMETRIC PRESS.(in Hg) 29.97
STACK PRESS.(in H_2O) -20
PITOT COEFFICIENT .808
NOZZLE DIAMETER(in) .235
GAS METER FACTOR .996
STACK HEIGHT(ft) 80'
STACK DIAMETER(in) 32
LENGTH X WIDTH ____ X ____
CO2(%) 0.0 O2(%) 20.9
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) -162.2
IMPINGER NET 2 (g) 59.3
IMPINGER NET 3 (g) 16.7
IMPINGER NET 4 (g) 4.4
IMPINGER NET 5 (g) 64.9
IMPINGER NET 6 (g) 26.7

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) } < 0.5mg
IMP.RESIDUE WT.(g) }
FILTER # Bypass

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#2
OTHER ____
EQUIPMENT COMMENTS Glass Probe Bypassed Filter

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

SIGNATURE

9/30/94
DATE

Moisture Analysis Data Sheet

Project #: 4214864 Client L&P Test: T6-BM

Test Date: 9/30/94 Sample Location: Baghouse

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	556.5	718.7		-162.2
Impinger 2	692.6	633.3		59.3
Impinger 3	645.9	629.2		16.7
Impinger ~~4~~				
Impinger ~~4~~ 4	461.2	456.8		4.4
Silica gel 5 impinger	757.7	692.8		64.9
Charcoal 6	619.5	593.3		26.2

Net Total Condensate 9.3 (g

Signature

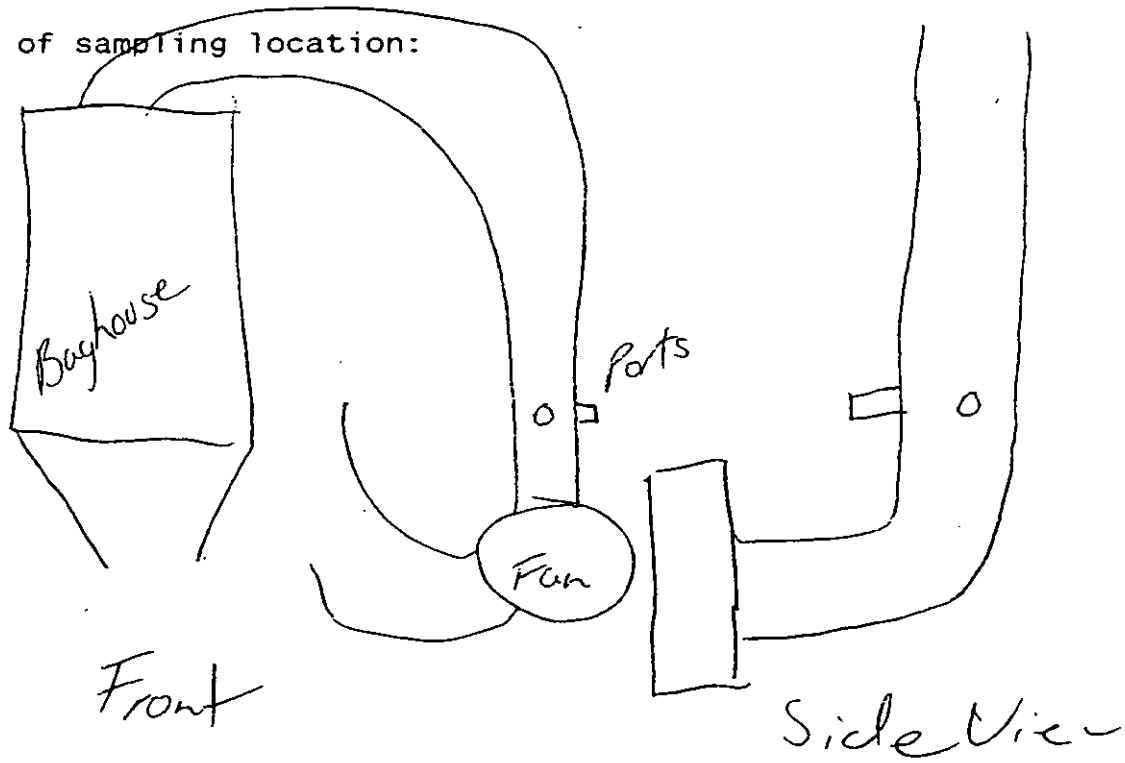
9/30/94
Date

QA/QC CHECKLIST
GENERAL SAMPLING SITE

Project # 421486-7 Client L+P Test(s) 7C-7
Test Date 9/30/94 Sample Location Baghouse

Stack duct cross section dimensions _____
~~equivalent~~ diameter 22"
Material of construction Steel
Internal appearance corroded? X
caked particulate X
thickness _____
Insulation? X thickness _____ lining? X thickness _____
Nipple? ✓ ID 4" length 6.25 flush with inside wall ✓
Straight run before ports? ✓ diameters 8
Straight run after ports? ✓ diameters 2
Photos taken? X of what _____

Drawing of sampling location:



Minimum information on drawing: stack/duct dimensions, location and description of major disturbances and all minor disturbances (dampers, emission control devices, etc.) and cross sectional view showing dimensions and port locations.

Signature _____ Date _____

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION

PROJECT NO. 421485T CLIENT LDP TEST(S) T6-7BMD
DATE(S). 9/30/94 SAMPLE LOCATION Baghouse
OPERATOR(S) N LaVelle J McDonough
Sampling Method (eg. MOE 5) MDE train
Modifications to standard method Grip

Meter box TB Probe TJ-5'
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: SS
cleaned according to sampling protocol? ✓
undamaged ✓
Probe liner material: Glass
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications X
pitot tube coefficient .808
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge ✓ range 0-5 division .01
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type K
temperature sensor checked against ambient temp.? ✓
Filter holder: borosilicate glass ✓ other
frit material: teflon ✓ borosilicate glass
other
heated? ✓ temperature
cleaned according to sampling protocol?
filter holder assembled correctly?
Filter type :
filters checked visually for irregularities?
filters properly centered? ✓ labelled?
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges ✓
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? X
meter temp. 65

PASSED

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used N/A glassware proofed? ✓
Impinger train: number of impingers 6
cleaned according to sampling protocol? ✓
contents: 1st 300 2nd 200 3rd 200
4th Blank 5th S.G. 6th Charcoal
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ✓ proper connections
modifications: X
grease used on joints: X kind of grease
Barometric pressure measured? ✓ source of data? Watch
Was preliminary velocity profile performed? ✓
Avg.delta P ____ Max. delta P ____ static ____
Avg. Temp. ____
Estimated moisture content % 1 how estimated? Data
Estimated O2 % 20.9 CO2 % 0.0 CO % ____ SO2 % ____
how estimated? Fyrites
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter .235
K factor ____
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 8
number to be used 8
probe markings correct? ✓
Length of sampling time per point desired 4
number to be used 4
Leak test performed before start of sampling? ✓
rate >.02 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
.02 cfm @ 15 in Hg.

Sampling train traversing technique:

Is nozzle sealed when probe in stack with pump off? ✓
Is care taken to avoid scraping nipple of stack wall? ✓
Is an effective seal made around probe at port opening? ✓
Is probe seal made without disturbing flow inside stack? ✓
Is probe moved to each point at the proper time? ✓
Is probe marking system adequate to locate each point? ✓
Was pitot tube kept parallel to stack wall at each point? ✓
If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? N/A

If filters are changed during a run was there any pariculate loss? N/A

Meterbox operation:

Is data recorded in a permanent manner? ✓
are data sheets complete? ✓
Average time to reach isokinetic rate at each point 10s
Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? ≥.02 cfm @ 15 in Hg
Probe, filter holder, impingers sealed adequately after test? ✓
Gas analysis from stack? ✓ other? ____
from fyrites? ✓ integrated bag? ____ orsat? ____
continuous gas analysers? ____
models: ____
Approximate stack temperature 100 gas sample volume 30
First 8 velocity pressures measured ✓
Percent isokinetic calculated ✓
Data forms completed and data recorded properly ✓
General comment on sampling techniques None

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area Lab - Clean
Brushes: nylon bristle _____ other Teflon
cleaned according to sampling protocol? ✓
Wash bottles: glass _____ polyethylene _____ other Teflon
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other _____
cleaned according to sampling protocol? ✓ New
cap material Teflon leak free? ✓
Petri dishes: plastic _____ other Glass
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other _____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type T-Bem ✓ calibrated _____
Probe allowed to cool sufficiently? _____
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 B run 2 R run 3 _____
weighed? run 1 _____ run 2 _____ run 3 _____
Probe handling: Acetone rinses X other Toluene
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks collected: reagent(s) _____
acetone _____ DI water _____ other _____
Impinger rinses: DI _____ other _____
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves ✓
Any particulate lost? Probe X Filter X
Description of particulate _____

N LaValle
Name

Signature

Sampling Trains Data Sheet

Client L&P Project #421464 Sample Loc. Baghouse Operators NL/JM Date 9/30/

Run # TC-BEP Traverse # 1 Traverse Direction Out Start Time 0159 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	4.0		~~303.88~~ 307.05	81	236	225	38	N/A	61	51	5.0
	2		1.4	4.0	306.313	306.22	82	257	246	36		67	51	5.0
2	4		1.4	4.0	308.483	308.46	83	245	236	35		70	52	5.0
	6		1.4	3.9	310.723	310.72	83	230	240	34		70	52	5.0
3	8		1.4	3.9	312.983	312.95	83	230	249	35		71	53	5.0
	10		1.4	3.9	315.243	315.18	83	239	255	36		71	54	5.0
4	12		1.3	3.5 #	317.443	317.42	83	241	250	38		55	54	5.0
	14		1.3	3.5	319.6	319.55	80	245	253	37		56	54	5.0
5	16		1.3	3.5	321.73	321.68	81	241	258	36		58	54	5.0
	18		1.3	3.5	323.86	323.8	82	242	257	35		61	54	5.0
6	20		1.35	3.7	325.98	325.95	82	248	258	36		63	54	5.0
	22		1.35	3.7	328.18	328.1	82	252	254	37		65	54	5.0
7	24		1.3	3.4	330.33	330.27	82	254	254	35		67	55	5.0

Pre test leak check: Rate (cfm) .01 at 15 inches Hg (Vacuum) # 6 tapped to Check Imp.

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPU checked by N.L

Signature

Sampling Trains Data Sheet

Client LTP Project # 4284864 Sample Loc. Baghouse Operators NL DM Date 9/13/

Run # T6-BHD Traverse # 1 Traverse Direction out Start Time 10:59 Finish Time 12:02

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.3	3.5	332.45	332.39	82	253	253	41	N/A	68	55	5.0
	28		1.3	3.6	334.57	334.46	82	257	254	41		69	55	5.0
	30		1.2	3.4	336.66	336.61	82	251	252	42		70	56	5.0
					338.705	338.7								

Pre test leak check: Rate (cfm) .01 at 18 inches Hg (Vacuum) 20.9 O_2 0.0 CO_2

Post test leak check: Rate (cfm) .008 at 15 inches Hg (Vacuum)

K value calculated by CDU checked by N.L

Signature

Sampling Trains Data Sheet

Client L&P Project #421486 Sample Loc. Baghouse Operators NLUM Date 9/15/

Run # TO-BMD Traverse # 2 Traverse Direction Out Start Time 12:11 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	3.9		339.09	73	260	254	40	N/A	69	56	5.0
	2		1.4	3.9	341.353	341.3	82	249	265	46		70	56	5.0
2	4		1.4	3.9	343.563	343.5	82	247	256	46		72	57	5.0
	6		1.4	3.9	345.763	345.75	82	247	251	42		73	57	5.0
3	8		1.4	3.9	348.013	347.99	82	255	257	45		73	58	5.0
	10		1.4	3.9	350.253	350.25	83	252	251	48		74	58	5.0
4	12		1.4	3.9	352.513	352.52	83	280	254	51		74	59	5.0
	14		1.4	3.9	354.783	354.78	83	257	253	50		75	59	5.0
5	16		1.4	3.9	357.043	357.05	82	252	261	51		75	60	5.0
	18		1.4	3.9	359.313	359.31	82	248	260	50		75	60	5.0
6	20		1.4	3.9	361.573	361.57	82	235	254	48		75	61	5.0
	22		1.4	3.9	363.833	363.83	81	251	250	47		76	61	5.0
	24		1.2	3.0	366.093	366.1	81	250	258	45		76	61	5.0

Pre test leak check: Rate (cfm) .006 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPU checked by N.L.

Signature

Sampling Trains Data Sheet

Client L&D Project # 421486 Sample Loc. Baghouse Operators NL/JT/ Date 9/30

Run # T6-BMD Traverse # 2 Traverse Direction out Start Time 12:11 Finish Time 12:43

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	26		1.2	3.1	368.195	368.1	81	251	255	47	NM	75	61	4.0
	28		1.2	3.1	370.195	370.06	81	251	254	45		75	62	4.0
	30		1.1	3.0	372.155	372.05	81	252	254	44		75	62	4.0
	32				374.056	374.04								
	5													

Pre test leak check: Rate (cfm) .008 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .006 at 15 inches Hg (Vacuum)

K value calculated by CPU checked by N. L

Signature

PHENOL EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : B10BPH
LOC. : BAGHOUSE

RUN TIME : 14:10 TO 15:56

PHENOL CONCENTRATION	3038.1 ug/DSm3	1.3278 gr/1000 DScf
	2539.0 ug/Am3	1.1097 gr/1000 Acf
PHENOL EMISSION RATE	27.419 mg/s	1523.28 gr/hr
SAMPLE GAS VOLUME	2.7652 DSm3	97.643 DScf
AVERAGE ISOKINETICITY	98.6 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.24 %	
TEMPERATURE	28.2 deg C	82.8 deg F
FLOW	32484 DSm3/hr	19120 DScfm
	38870 Am3/hr	22878 Acfm
VELOCITY	20.81 m/s	4096.3 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.81 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PHENOL EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : B10BPH
LOC. : BAGHOUSE

STACK HEIGHT	6.1 m	20.0 ft.
STACK DIAMETER	0.81 m	32.0 in.
STACK AREA	0.519 m2	5.59 sq.ft.
BAROMETRIC PRESSURE	93.1 kPa	27.50 in.Hg
STATIC PRESSURE	-4980.0 Pa	-20.00 in.H20
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.808	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

RESIN TRAP CONDENSATE	0.0 g
CONDENSATION IN IMPINGER 1	13.0 g
CONDENSATION IN IMPINGER 2	15.1 g
CONDENSATION IN IMPINGER 3	-11.5 g
CONDENSATION IN IMPINGER 4	1.2 g
SILICA GEL WEIGHT GAIN	8.2 g
TOTAL MOISTURE GAIN	26.0 g

PHENOL COLLECTION

FILTER PHENOL	8.4000 mg
WASHINGS PHENOL	0.0000 mg
RESIN PHENOL	0.0000 mg
IMPINGER PHENOL	0.0000 mg
TOTAL PHENOL	8.4000 mg

TOTAL SAMPLING TIME 96.0 min.

PHENOL EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 94.10.01
RUN : B10BPH
LOC. : BAGHOUSE

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H20	ORIF. PRES. in.H20	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	RES. TMP. F	EXIT TMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1													
1	0.0	81	1.300	3.50	662.83	48	231	258	39	39	10.0	1.1	95.3
1	3.0	82	1.300	3.60	665.84	56	241	267	40	32	10.0	1.1	98.6
2	6.0	83	1.300	3.60	669.00	57	241	267	40	31	11.0	3.4	99.5
2	9.0	83	1.300	3.70	672.19	62	246	266	40	32	11.0	3.4	99.1
3	12.0	83	1.400	4.10	675.40	57	256	267	40	32	11.0	6.2	95.0
3	15.0	83	1.400	4.00	678.56	57	253	266	40	32	12.0	6.2	98.3
4	18.0	83	1.400	4.00	681.83	58	259	267	40	33	12.0	10.3	98.5
4	21.0	84	1.400	4.00	685.11	58	258	266	41	33	12.0	10.3	99.1
5	24.0	84	1.400	4.00	688.41	58	258	265	41	33	12.0	21.7	98.5
5	27.0	84	1.400	4.00	691.69	59	256	262	40	33	12.0	21.7	98.7
6	30.0	84	1.400	4.00	694.98	58	255	262	41	33	12.0	25.8	99.7
6	33.0	83	1.400	4.00	698.30	59	257	262	43	34	12.0	25.8	98.0
7	36.0	84	1.400	4.00	701.57	59	259	264	44	34	12.0	28.6	98.7
7	39.0	81	1.400	4.00	704.86	59	261	265	44	34	12.0	28.6	98.7
8	42.0	80	1.400	4.00	708.16	59	264	266	42	34	12.0	30.9	98.6
8	45.0	80	1.400	4.00	711.46	59	266	264	42	35	12.0	30.9	98.6
	48.0				714.76								
TRAVERSE NO. 2													
1	0.0	81	1.400	4.00	715.26	58	252	263	43	37	12.0	1.1	97.4
1	3.0	83	1.400	4.00	718.51	60	255	260	42	33	12.0	1.1	98.1
2	6.0	83	1.400	4.00	721.79	60	257	265	44	33	12.0	3.4	98.1
2	9.0	84	1.400	4.00	725.07	59	256	260	45	34	12.0	3.4	98.3
3	12.0	84	1.400	4.00	728.35	59	252	262	45	35	12.0	6.2	98.7
3	15.0	84	1.400	4.00	731.64	59	249	269	45	36	12.0	6.2	99.3
4	18.0	84	1.400	4.00	734.95	59	248	266	46	37	12.0	10.3	98.1
4	21.0	84	1.400	4.00	738.22	59	249	261	44	37	12.0	10.3	98.7
5	24.0	84	1.400	4.00	741.51	59	248	260	42	37	12.0	21.7	99.2
5	27.0	84	1.400	4.00	744.82	59	247	261	41	37	12.0	21.7	98.6
6	30.0	83	1.400	4.00	748.11	59	247	261	42	37	12.0	25.8	99.1
6	33.0	82	1.400	4.00	751.42	59	249	258	42	38	12.0	25.8	98.4
7	36.0	82	1.400	4.00	754.71	60	250	263	41	38	12.0	28.6	98.3
7	39.0	82	1.200	3.50	758.00	60	252	261	42	39	11.0	28.6	102.2
8	42.0	82	1.000	3.00	761.17	60	253	264	41	39	11.0	30.9	101.5
8	45.0	82	1.000	3.00	764.05	60	255	256	42	39	11.0	30.9	101.5
	48.0				766.93								
		83	1.354	3.88		58	253	263	42	35	11.7		98.6

METHOD 5, METALS, (MM 5) DATA SHEET

CLIENT Boise Cascade Pacific
CITY PROV. Duncan Creek B.C.
PROJECT # 4214864
TEST T10-BPH
SAMPLE LOCATION Baghouse
DATE 10/1/94
START TIME 14:10
FINISH TIME 15:56
BAROMETRIC PRESS.(in Hg) 27.5
STACK PRESS.(in H_2O) -20
PITOT COEFFICIENT .808
NOZZLE DIAMETER(in) .235
GAS METER FACTOR .996
STACK HEIGHT(ft) 20'
STACK DIAMETER(in) 32
LENGTH X WIDTH ____ X ____
CO2(%) 0.0 O2(%) 20.9
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 13.0
IMPINGER NET 2 (g) 15.1
IMPINGER NET 3 (g) -11.5
IMPINGER NET 4 (g) 1.2
IMPINGER NET 5 (g) 3.2
IMPINGER NET 6 (g) ____

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) 8400 µg
IMP.RESIDUE WT.(g) ____
FILTER # ____

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#2
OTHER ____
EQUIPMENT COMMENTS Glassware Train #1 + #3 Filter Holder.

SAMPLING COMMENTS ____

PROCESS RATE ____
CONTROL EQUIP. OPERATION ____
PROCESS COMMENTS ____

1.1, 3.4, 6.2, 10.3, 21.7, 25.8, 28.6, 30.9

SIGNATURE ____ DATE 10/1/94

#1 Glassware

Moisture Analysis Data Sheet

Project #: 424867 Client LOUISIANA-PACIFIC Test: T10-BMF

Test Date: 10/01/94 Sample Location: BAGHOUSE

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	566.6	553.6		13.0
Impinger 2	600.9	585.8		15.1
Impinger 3	587.2	~~590~~ 598.7		-11.5
Impinger 4	472.5	471.3		1.2
Impinger 5				
Silica gel impinger	791.4	783.6		8.2
KAD/CONDENSER & ELBOW	673.1	673.1		

Net Total Condensate 26 (g

Signature

10/1/94
Date

QA/QC CHECKLIST
METHOD 5/TFACE METALS AND MODIFIED METHOD 5 SAMPLING

1.0 PRETEST TRAIN ASSEMBLY/FINAL PREPARATION

PROJECT NO. 4214864 CLIENT L+P TEST(S) T10-11BPH
DATE(S) 10/1/94 SAMPLE LOCATION Baghouse
OPERATOR(S) N LaVille T M
Sampling Method (eg. MOE 5) EPA 0010
Modifications to standard method For Phenols

Meter box T3 Probe T2-51
Equipment identity matches pretest calibration list? ✓
Probe nozzle material: SS
cleaned according to sampling protocol? ✓
undamaged ✓
Probe liner material: Glass
cleaned according to sampling protocol? ✓
heated? ✓ entire length? ✓ temperature 250
Pitot tube: Type S ✓ Other
properly attached to probe (no interference with nozzle?) ✓
modifications X
pitot tube coefficient .808
Pitot tube connected to: inclined manometer ✓
or magnehelic gauge ✓ range division
pitot lines checked for leaks? ✓ plugging? ✓
Meter box leveled? ✓ pitot pressure gauge zeroed? ✓
orifice pressure gauge zeroed? ✓
Gas temperature sensor: thermocouple? ✓ type
temperature sensor checked against ambient temp.? ✓
Filter holder: borosilicate glass ✓ other
frit material: teflon ✓ borosilicate glass
other
heated? ✓ temperature 250
cleaned according to sampling protocol? ✓
filter holder assembled correctly? ✓
Filter type : Glass
filters checked visually for irregularities? ✓
filters properly centered? ✓ labelled? ✓
Recent calibration of orifice meter dry gas meter ✓
pitot tubes ✓ magnehelic gauges
thermometers and thermocouples? ✓ nozzles ✓
Is gas meter calibration temperature compensated? X
meter temp. 65

QA/QC CHECKLIST
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

XAD resin trap used ✓ glassware proofed? ✓
Impinger train: number of impingers 5
cleaned according to sampling protocol? ✓
contents: 1st D.I 2nd DI 3rd DI
4th Blank 5th S.G 6th
impinger weights recorded? ✓
impingers properly assembled? ✓
cooling system: ✓ proper connections ✓
modifications: X
grease used on joints: X kind of grease
Barometric pressure measured? ✓ source of data? Watch
Was preliminary velocity profile performed? ✓
Avg.delta P ____ Max. delta P ____ static ____
Avg. Temp. ____
Estimated moisture content % 1 how estimated? Data
Estimated O2 % 20.9 CO2 % 0.0 CO % ____ SO2 % ____
how estimated? Fyrite
Has an "isokinetic sheet" been completed? ✓
Nozzle size properly selected? ✓ nozzle diameter .235
K factor .956
nozzle properly attached to probe (correct orientation) ✓
Number of sampling points per traverse from Source Test Code 8
number to be used 8
probe markings correct? ✓
Length of sampling time per point desired 6
number to be used 6
Leak test performed before start of sampling? ✓
rate .009 cfm @ 15 in Hg

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

2.0 SAMPLING

All openings of sampling train sealed (pretest & posttest)? ✓

Leak performed before start of sampling? ✓
≥.02 cfm @ 15 in Hg.

Sampling train traversing technique:
- Is nozzle sealed when probe in stack with pump off? ✓
- Is care taken to avoid scraping nipple of stack wall? ✓
- Is an effective seal made around probe at port opening? ✓
- Is probe seal made without disturbing flow inside stack? ✓
- Is probe moved to each point at the proper time? ✓
- Is probe marking system adequate to locate each point? ✓
- Was pitot tube kept parallel to stack wall at each point? X
- If probe is disconnected from filter holder with probe in the stack on a negative pressure source how is particulate matter in the probe prevented from being sucked back into the stack? N/A
- If filters are changed during a run was there any pariculate loss? N/A

Meterbox operation:
- Is data recorded in a permanent manner? ✓
- are data sheets complete? ✓
- Average time to reach isokinetic rate at each point 10s
- Are velocity pressures read and recorded accurately? ✓

Leak test performed at completion of test? ≥.02 cfm @ 15 in Hg

Probe, filter holder, impingers sealed adequately after test? ✓

Gas analysis from stack? ✓ other? ____
- from fyrites? ✓ integrated bag? ____ orsat? ____
- continuous gas analysers? X
- models: X

Approximate stack temperature 84 gas sample volume 105

First 8 velocity pressures measured ✓

Percent isokinetic calculated X

Data forms completed and data recorded properly ✓

General comment on sampling techniques None

QA/QC Checklist
METHOD 5/TRACE METALS AND MODIFIED METHOD 5 SAMPLING

3.0 SAMPLE RECOVERY

General environment - clean up area Lab - Clean
Brushes: nylon bristle _____ other Teflon
cleaned according to sampling protocol? ✓
Wash bottles: glass _____ polyethylene _____ other Teflon
cleaned according to sampling protocol? ✓
Storage containers: borosilicate glass ✓ other _____
cleaned according to sampling protocol? ✓
cap material Teflon leak free? ✓
Petri dishes: plastic ✓ other _____
cleaned according to sampling protocol? ✓
Graduated cylinder: borosilicate glass ✓ other _____
Subdivisions of graduated cylinder < 2 ml? ✓
cleaned according to sampling protocol? ✓
Balance type T-Beam calibrated ✓
Probe allowed to cool sufficiently? ✓
Probe and sample train openins sealed? ✓
Silica gel colour: run 1 B run 2 B run 3 _____
weighed? run 1 _____ run 2 _____ run 3 _____
Probe handling: Acetone rinses X other ✓
Particulate recovery: probe nozzle ✓ probe fitting ✓
probe liner ✓ front half of filter holder ✓
Blanks-collected: reagent(s) _____
acetone _____ DI water ✓ other ✓
Impinger rinses: DI ✓ other ✓
Samples labelled and stored properly? ✓
Liquid levels marked? ✓
Filter handling: tweezers used? ✓ surgical gloves ✓
Any particulate lost? Probe X Filter X
Description of particulate None

N LaValle
Name

Signature

Sampling Trains Data Sheet

Client LDP Project # 421885 Sample Loc. Baghouse Operators MJ/JM Date 10/1/9

Run # T10-BP11 Traverse # 1 Traverse Direction OX Start Time 14:10 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.3	3.5		662.83	81	231	258	39	39	48	47	10.0
	3		1.3	3.6	666.101	665.84	82	241	267	32	40	63	48	10.0
2	6		1.3	3.6	669.441	669.0	83	241	267	31	40	64	49	11.0
	9		1.3	3.8	672.271	672.19	83	246	266	32	40	63	50	11.0
3	12		1.4	4.1	674.461	675.4	83	256	267	32	40	63	51	11.0
	15		1.4	4.0	678.794	678.56	83	253	266	32	40	63	51	12.0
4	18		1.4	4.0	681.954	681.83	83	259	267	33	40	63	52	12.0
	21		1.4	4.0	685.224	685.11	84	258	266	33	41	63	53	12.0
5	24		1.4	4.0	688.504	688.41	84	258	265	33	41	63	53	12.0
	27		1.4	4.0	691.804	691.69	84	256	262	33	40	62	54	12.0
6	30		1.4	4.0	695.084	694.98	84	255	262	33	41	62	54	12.0
	33		1.4	4.0	698.374	698.3	83	257	262	34	43	62	55	12.0
7	36		1.4	4.0	701.694	701.57	84	259	264	34	44	62	55	12.0

Pre test leak check: Rate (cfm) .009 at 15 inches Hg (Vacuum) Initial - 660.785

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum) Final 667.83

Vol value calculated by CPU checked by N.L.

Signature ____

Sampling Trains Data Sheet

Client L&D Project # 421485-4 Sample Loc. Daghouse Operators NL/JM Date 10/1

Run # T1D-BPH Traverse # 1 Traverse Direction Out Start Time _____ Finish Time 14:58

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	32.539		1.4	4.0	704.964	704.86	81	261	265	34	44	62	55	12.0
8	36.542		1.4	4.0	708.254	708.16	80	264	266	34	42	62	55	12.0
	37.545		1.4	4.0	711.554	711.46	80	266	264	35	42	62	55	12.0
	40.548				714.854	714.76								
	4													

Pre test leak check: Rate (cfm) .009 at 15 inches Hg (Vacuum) Initial → 714.76

Post test leak check: Rate (cfm) .009 at 15 inches Hg (Vacuum) Final → 715.04

K value calculated by CPU checked by XL

Signature _____

Sampling Trains Data Sheet

Client LDP, Project #124867 Sample Loc. Baghouse Operators NL/JM Date 10/1/9

Run #10-BPH Traverse # 2 Traverse Direction Out Start Time 15:08 Finish Time 15:56

t.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	4.0		715.26	81	252	263	37	43	61	54	12.0
	3		1.4	4.0	718.654	718.51	83	255	260	33	42	64	55	12.0
2	6		1.4	4.0	721.904	721.79	83	257	265	33	44	64	55	12.0
	9		1.4	4.0	725.184	725.07	84	254	260	34	45	63	55	12.0
3	12		1.4	4.0	728.464	728.35	84	252	267	35	45	62	55	12.0
	15		1.4	4.0	731.744	731.64	84	249	269	36	45	62	55	12.0
4	18		1.4	4.0	735.034	734.95	84	248	266	37	46	62	55	12.0
	21		1.4	4.0	738.344	738.22	84	249	261	37	44	62	55	12.0
5	24		1.4	4.0	741.614	741.51	84	248	260	37	42	62	56	12.0
	27		1.4	4.0	744.904	744.82	84	247	261	37	41	62	56	12.0
6	30		1.4	4.0	748.214	748.11	83	247	261	37	42	62	56	12.0
	33		1.4	4.0	751.504	751.42	82	249	258	38	42	62	56	12.0
7	36		1.4	4.0	754.814	754.71	82	250	263	38	41	63	56	12.0

re test leak check: Rate (cfm) .009 at 15 inches Hg (Vacuum)

ost test leak check: Rate (cfm) ___ at ___ inches Hg (Vacuum)

Initial 715.05
Final 715.20

value calculated by CPU checked by NL

Sampling Trains Data Sheet

Client L&P Project # 4714864 Sample Loc. Baghouse Operators NL/JM Date 10/1/

Run # T10-BPH Traverse # 2 Traverse Direction OK Start Time 15:08 Finish Time 15:56

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	39		1.2	3.5	758.104	758.0	82	252	261	39	42	63	56	11.0
8	42		1.0	3.0	761.142	761.17	82	253	264	39	41	63	56	11.0
	45		1.0	3.0	764.038	764.05	82	255	256	39	42	63	56	11.0
	48				766.918	766.93								

Pre test leak check: Rate (cfm) .004 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .004 at 15 inches Hg (Vacuum)

Initial 766.93
Final

K value calculated by CPU checked by N.L

PHENOL EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 10.02.94
RUN : T11BPH
LOC. : BAGHOUSE

RUN TIME : 9:27 TO 11:40

PHENOL CONCENTRATION	1884.4 ug/DSm3	0.8236 gr/1000 DScf
	1636.4 ug/Am3	0.7152 gr/1000 Acf
PHENOL EMISSION RATE	17.066 mg/s	948.11 gr/hr
SAMPLE GAS VOLUME	2.7068 DSm3	95.580 DScf
AVERAGE ISOKINETICITY	96.2 %	

FLUE GAS CHARACTERISTICS

MOISTURE	1.78 %	
TEMPERATURE	27.4 deg C	81.3 deg F
FLOW	32598 DSm3/hr	19187 DScfm
	37538 Am3/hr	22094 Acfm
VELOCITY	20.10 m/s	3955.9 fpm

GAS ANALYSIS	O2	20.90 %
	CO2	0.00 %
	CO	0.00 %
	SO2	0.00 %
	MOL. WT.	28.95 g/gmole D.B.
	MOL. WT.	28.75 g/gmole W.B.

*STANDARD CONDITIONS : METRIC 20 deg C, 101.3 kPa
: IMPERIAL 68 deg F, 29.92 in.Hg

PHENOL EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 10.02.94
RUN : T11BPH
LOC. : BAGHOUSE

STACK HEIGHT	6.1 m	20.0 ft.
STACK DIAMETER	0.81 m	32.0 in.
STACK AREA	0.519 m2	5.59 sq.ft.
BAROMETRIC PRESSURE	96.8 kPa	28.59 in.Hg
STATIC PRESSURE	-4980.0 Pa	-20.00 in.H2O
NOZZLE DIAMETER	5.97 mm	0.2350 in.
PITOT COEFFICIENT	0.808	
METER CORRECTION FACTOR	0.996	

CONDENSATE COLLECTION

RESIN TRAP CONDENSATE	0.0 g
CONDENSATION IN IMPINGER 1	13.6 g
CONDENSATION IN IMPINGER 2	3.4 g
CONDENSATION IN IMPINGER 3	0.4 g
CONDENSATION IN IMPINGER 4	1.2 g
SILICA GEL WEIGHT GAIN	18.0 g
TOTAL MOISTURE GAIN	36.6 g

PHENOL COLLECTION

FILTER PHENOL	5.1000 mg
WASHINGS PHENOL	0.0000 mg
RESIN PHENOL	0.0000 mg
IMPINGER PHENOL	0.0000 mg
TOTAL PHENOL	5.1000 mg
TOTAL SAMPLING TIME	96.0 min.

PHENOL EMISSION REPORT

CLIENT : LOUSIANA PACIFIC
JOBSITE : DAWSON CREEK
REF.No. : 4214964

DATE : 10.02.94
RUN : T11BPH
LOC. : BAGHOUSE

PT. NO.	TIME min.	STACK TEMP. F	VEL. PRES. in.H2O	ORIF. PRES. in.H2O	METER VOL. cu.ft.	MTR. TMP. F	PROB. TEMP. F	OVEN TEMP. F	RES. TMP. F	EXIT TMP. F	PUMP VAC. in.Hg	WALL DIST. in.	% ISO.
TRAVERSE NO. 1													
1	0.0	82	1.400	3.40	767.55	40	245	262	41	39	12.0	1.1	109.1
1	3.0	80	1.400	3.40	770.99	40	245	267	41	36	12.0	1.1	96.2
2	6.0	80	1.400	3.30	774.03	42	255	262	37	35	12.0	3.4	93.6
2	9.0	81	1.400	3.20	777.00	45	255	263	37	40	12.0	3.4	92.5
3	12.0	81	1.400	3.20	779.95	46	252	259	37	40	12.0	6.2	93.0
3	15.0	81	1.400	3.20	782.92	45	251	261	37	41	12.0	6.2	93.8
4	18.0	81	1.400	3.20	785.91	48	249	264	37	41	12.0	10.3	93.2
4	21.0	82	1.400	3.20	788.90	48	248	259	37	42	12.0	10.3	92.9
5	24.0	82	1.400	3.20	791.88	49	246	263	37	42	12.0	21.7	92.8
5	27.0	82	1.400	3.20	794.86	50	246	265	37	43	12.0	21.7	93.9
6	30.0	82	1.400	3.20	797.88	50	247	263	37	43	12.0	25.8	93.6
6	33.0	80	1.400	3.20	800.89	51	249	260	37	44	12.0	25.8	93.2
7	36.0	80	1.300	3.20	803.90	51	250	260	37	44	12.0	28.6	96.4
7	39.0	80	1.300	3.20	806.90	52	250	262	37	45	12.0	28.6	96.2
8	42.0	80	0.800	2.60	809.90	52	251	268	37	45	10.0	30.9	114.3
8	45.0	80	0.800	2.60	812.70	52	253	265	37	45	10.0	30.9	111.4
	48.0				815.43								
TRAVERSE NO. 2													
1	0.0	81	1.400	3.20	815.87	49	247	259	37	37	12.0	1.1	93.0
1	3.0	81	1.300	3.20	818.86	50	252	265	37	38	12.0	1.1	96.6
2	6.0	81	1.300	3.20	821.86	50	252	262	37	42	12.0	3.4	96.6
2	9.0	81	1.300	3.20	824.86	51	248	259	37	44	12.0	3.4	97.1
3	12.0	82	1.400	3.20	827.88	51	245	256	37	45	12.0	6.2	92.5
3	15.0	82	1.400	3.20	830.86	51	244	263	37	45	12.0	6.2	93.0
4	18.0	82	1.400	3.20	833.86	51	244	258	38	46	12.0	10.3	93.3
4	21.0	83	1.400	3.20	836.87	52	242	253	37	46	12.0	10.3	93.3
5	24.0	83	1.400	3.30	839.88	52	242	259	38	46	12.0	21.7	93.6
5	27.0	83	1.400	3.30	842.90	53	242	263	38	46	12.0	21.7	93.1
6	30.0	83	1.400	3.30	845.91	53	242	261	38	46	12.0	25.8	93.1
6	33.0	82	1.400	3.30	848.92	53	246	264	38	46	12.0	25.8	93.7
7	36.0	82	1.200	3.30	851.95	54	248	256	38	46	12.0	28.6	100.6
7	39.0	82	1.200	3.30	854.97	54	248	256	38	45	12.0	28.6	101.0
8	42.0	80	1.200	3.30	858.00	54	249	250	38	45	12.0	30.9	100.8
8	45.0	80	1.200	3.30	861.03	54	249	258	38	45	12.0	30.9	101.8
	48.0				864.09								
		81	1.317	3.20		49	248	261	38	43	11.9		96.2

METHOD 5, METALS, MM 5 DATA SHEET

CLIENT N+P
CITY PROV. Dawson Creek B.C
PROJECT # 7214864
TEST T11-BPH
SAMPLE LOCATION Baghouse
DATE 10/2/94
START TIME 9:27 968M6
FINISH TIME 11:40
BAROMETRIC PRESS.(in Hg) 28.59
STACK PRESS.(in H_2O) -28
PITOT COEFFICIENT .808
NOZZLE DIAMETER(in) .235
GAS METER FACTOR .996
STACK HEIGHT(ft) 20'
STACK DIAMETER(in) 32"
LENGTH X WIDTH ____ X ____
CO2(%) 0.0 O2(%) 20.9
CO(ppm) ____ OTHER ____

IMPINGER NET 1 (g) 13.6
IMPINGER NET 2 (g) 3.9
IMPINGER NET 3 (g) 0.4
IMPINGER NET 4 (g) 1.2
IMPINGER NET 5 (g) .8
IMPINGER NET 6 (g) ____

NET FILTER WT.(g) ____
NET PROBE WASH WT.(g) 5100 mg
IMP.RESIDUE WT.(g) ____
FILTER # ____

METER BOX ID T3
PROBE ID T2-5'
NOZZLE ID T1-#2
OTHER ____
EQUIPMENT COMMENTS ____

SAMPLING COMMENTS Organics Glassware Train #3

PROCESS RATE ____
CONTROL EQUIP. OPERATION Baghouse Cyclone
PROCESS COMMENTS ____

SIGNATURE

10/2/94
DATE

Moisture Analysis Data Sheet

Project #: 4214964 Client LOUISIANA-PACIFIC Test: T/4-BH

Test Date: 10/02/94 Sample Location: BAGHOUSE

	A Final	B Initial	C Tare	Net Condensate (g)
Impinger 1	565.7	552.1		13.6
Impinger 2	619.2	615.8		3.4
Impinger 3	589.3	588.3		0.4
Impinger 4	477.2	476.0		1.2
Impinger 5				
Silica gel impinger	716.1	698.1		18

Condenser/KAD/ELBOW 696.8 696.8

Net Total Condensate _____ (g

Signature _____ Date _____

Sampling Trains Data Sheet

Client L&P Project # 421487 Sample Loc. Baghouse Operators NL/JTM Date 10/2/

Run # T11-BPH Traverse # 1 Traverse Direction Out Start Time 9:27 Finish Time ____

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	3.4		767.55	88	245	262	34	41	40	39	12.0
	3		1.4	3.4	770.944	~~770.79~~ 770.79	80	245	257	36	41	40	40	12
2	6		1.4	3.3	774.384	774.03	80	255	262	35	37	44	40	12.0
	9		1.4	3.2	777.424	777.0	81	255	263	40	37	48	41	12.0
3	12	90.3	1.4	3.2	780.333	779.95	81	252	259	40	37	50	41	12.0
	15		1.4	3.2	783.282	782.92	81	251	261	41	37	51	42	12.0
4	18		1.4	3.2	786.253	785.91	81	249	264	41	37	52	43	12.0
	21		1.4	3.2	789.243	788.9	82	248	259	42	37	53	43	12.0
5	24	90.6	1.4	3.2	792.233	791.88	82	246	263	42	37	53	44	12.0
	27		1.4	3.2	795.213	794.86	82	246	265	43	37	54	45	12.0
6	30		1.4	3.2	798.193	797.88	82	247	263	43	37	54	45	12.0
	33		1.4	3.2	801.213	800.84	80	249	260	44	37	55	46	12.0
7	36	91.4	1.3	3.2	804.273	803.9	80	250	260	44	37	55	46	12.0

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum) I 767.4 Initial 767.55 Final

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

K value calculated by CPU checked by NL

Sampling Trains Data Sheet

Client LHP Project # 424869 Sample Loc. Baghouse Operators NL/JM Date 10/2/

Run # T11-BPH Traverse # 1 Traverse Direction Out Start Time 9:27 Finish Time 10:15

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	39		1.3	3.2	807.112	806.9	80	250(*)	262	45	37	54	47	120
	42		.86	2.6	810.112	809.9	80	251	268	45	37	54	47	100
	45		.8	2.6	812.419	812.7	80	253	265	45	37	54	47	100
	48				815.219	815.43								

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum) Int 815.43

Post test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum) Final

K value calculated by CPV checked by N.L.

Signature

Sampling Trains Data Sheet

Client L&P Project # 424864 Sample Loc. Baghouse Operators HL/JM Date 10/2/9

Run # T11-BPH Traverse # 2 Traverse Direction Out Start Time 10:52 Finish Time 11:40

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0		1.4	3.2		815.87	81	247	259	37	37	50	48	12.0
	3		1.3	3.2	819.203	818.86	81	252	265	38	37	52	48	12.0
2	6		1.3	3.2	822.072	821.86	81	252	262	42	37	52	48	12.0
	9		1.3	3.2	825.072	824.86	81	248	254	44	37	53	48	12.0
3	12		1.4	3.2	828.072	827.88	82	245	256	45	37	53	48	12.0
	15		1.4	3.2	831.213	830.86	82	244	263	45	37	54	48	12.0
4	18		1.4	3.2	834.193	833.86	82	244	258	46	38	54	48	12.0
	21		1.4	3.3	837.193	836.87	83	242	253	46	37	55	48	12.0
5	24		1.4	3.3	840.203	839.88	83	242	254	46	38	55	48	12.0
	27		1.4	3.3	843.213	842.9	83	242	263	46	38	56	49	12.0
6	30		1.4	3.3	846.233	845.91	83	242	261	46	38	56	49	12.0
	33		1.4	3.3	849.243	848.92	82	240	264	46	38	56	49	12.0
7	36		1.2	3.3	852.253	851.95	82	248	256	46	38	57	50	12.0

815.68 Initial
815.87 Final

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) ___ at ___ inches Hg (Vacuum)

Q value calculated by CPU checked by HL

Sampling Trains Data Sheet

Client LDP Project #4214964 Sample Loc. Baghouse Operators NL/JM Date 10/2/

Run # T11-BPH Traverse # 2 Traverse Direction Out Start Time 10:52 Finish Time 11:40

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
	34		1.2	3.3	855.036	854.97	82	248	256	45	38	57	50	12.0
	42		1.2	3.3	858.056	858.0	80	249	250	45	38	57	50	12.0
	45		1.2	3.3	861.086	861.03	80	249	258	45	38	57	50	12.0
	48				864.116	864.09								

Pre test leak check: Rate (cfm) .005 at 15 inches Hg (Vacuum)

Post test leak check: Rate (cfm) .007 at 15.5 inches Hg (Vacuum)

Initial 864.09
Final 864.36
1.6 cuft

(value calculated by CPU checked by N.L

Sampling Trains Data Sheet

Client LHD Project # 971486 Sample Loc. Baghouse Operators AL/JM Date 10/12/1

Run # Blank PH Traverse # PT Traverse Direction PT Start Time 12:16 Finish Time 12:32

Pt.	Time (Min)	Clock 24 Hr	Vel. Press	Orifice Press	Gas Meter Reading Desired	Gas Meter Reading Actual	Stack Temp.	Probe Temp.	Box Temp.	Imp. Temp.	XAD Temp.	Meter Inlet	Meter Outlet	Vac
1	0			1.0		864.36				42	37	49	50	6.0
	3			1.0		866.03				42	37	50	49	6.0
	6					867.746								

Pre test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

Post test leak check: Rate (cfm) ____ at ____ inches Hg (Vacuum)

(value calculated by _____ checked by _____

APPENDIX B

LABORATORY

Zenon
Environmental
Laboratories

8577 Commerce Court
Burnaby B C
Canada V5A 4N5

Tel 604 444 4808
Fax 604 444 4511

ZENON

Barb Beyer
Environmental Protection Division
Ministry of Environment
3rd Floor 1011 4th Avenue
Prince George, B.C.
V2L 3H9

7 December 1994

Dear Ms. Beyer,

Regional
Laboratories:
British Columbia
Ontario
Quebec

I am writing in response to your December 1, 1994 enquiry about Quality Assurance associated with Bovar Project 421-4587.

The quality assurance portion of the proposal has been met. I will refer to the proposal numbering in responding.

8.a. Zenon Environmental Laboratories Inc (BC) is registered with the BC MOE Environmental Data Quality Assurance Program. Testing for this program is now conducted through CAEAL. A copy of our CAEAL certificate and registered tests is attached.

8.b.i. An outline of our laboratory procedures used to assess precision, accuracy and blanks is shown in the attached excerpt from the 1994 Zenon BC Quality System Manual (p. 20-21).

8.b.ii. Frequency of these assessments are generally described in the Zenon BC Quality System Manual (p. 20 section 5.5.2).

Most of samples submitted for this project could not be run in duplicate because the analysis required the whole sample. Splitting the sample would either degrade precision or degrade the achievable detection limit. Duplicate sampling in the field would be necessary to provide a large enough sample for duplicate analysis.

Standard reference materials are not available for the tests required in this project.

8.b.iii. Criteria for acceptance of precision, accuracy and

blank samples are described in Zenon BC Quality System Manual (p. 20-21).

8.c. Laboratory data for QC of the actual sample sets has already been reported with the final report as requested.

If I can be of any further assistance to you, please contact me.

Thank you.

Yours truly,

Dorothy A. Jeffery

Dorothy A. Jeffery, Ph.D.
Quality Assurance Scientist

ACLAE

CAEAL

Certificate of Laboratory Accreditation

ZENON ENVIRONMENTAL LABORATORIES (B.C.)

has been evaluated by the

CANADIAN ASSOCIATION
for
ENVIRONMENTAL ANALYTICAL LABORATORIES

for specific tests registered with the Association
and has been found to comply with the criteria and standards
established by the Association

Registration No. *2691* Issued on *October 29, 1993*

President

posted Nov. 1993

ACLAE

CAEAL

October 26, 1993

Membership # 2691
Dr. Dorothy Jeffery
Zenon Environmental Laboratories (B.C.)
Zenon Environmental Inc.
8577 Commerce Court
Burnaby, British Columbia
V5A 4N5

Dear Dr. Jeffery,

Thank you for the recent payment of annual registration fees for your laboratory.

Enclosed is a Seal (1994) to be affixed to your Certificate of Laboratory Proficiency.

Sincerely,

W.J. Traversy

W.J. Traversy
Program Manager, CAEAL

Encls.

532 Canadian Association for Environmental Analytical Laboratories (Inc.) 562-2300
Suite [redacted], 1 Nicholas Street, Ottawa, Ontario, K1N 7B7 Phone: (613) [redacted] Fax [redacted]
Association canadienne des laboratoires d'analyse environnementale (inc.) 562-2303

REGISTRATION STATUS REPORT

REGISTRATION NO: 2691
LABORATORY: ZENON ENVIRONMENTAL LABORATORIES (B.C.)
ADDRESS: 8577 COMMERCE COURT
BURNABY, B.C.
V5A 4N5

PARENT INSTITUTION: ZENON ENVIRONMENTAL LABORATORIES INC.
CONTACT: DR. DOROTHY JEFFERY
TELEPHONE NO: (604) 444-4808
FAX NO: (604) 444-4511

REGISTERED TESTS - LABORATORY ACCREDITATION:

	PARAMETER	METHOD
MATRIX:	WATER (INORGANIC)	
	ALKALINITY (PH 4.5)	TITRIMETRIC - AUTOMATED
	BOD (5 DAY)	D.O. METER
	CHLORIDE	COLOR - AUTOMATED
	CONDUCTIVITY	CONDUCTIVITY METER
	CALCIUM - DISSOLVED	ICP
	CADMIUM - DISSOLVED	ICP
	COBALT - DISSOLVED	ICP
	CHROMIUM - DISSOLVED	ICP
	COPPER - DISSOLVED	ICP
	IRON - DISSOLVED	ICP
	MAGNESIUM - DISSOLVED	ICP
	MANGANESE - DISSOLVED	ICP
	NICKEL - DISSOLVED	ICP
	LEAD - DISSOLVED	ICP
	VANADIUM - DISSOLVED	ICP
	ZINC - DISSOLVED	ICP
	FLUORIDE	SELECTIVE ION ELECTRODE
	POTASSIUM	FLAME PHOTOMETRIC
	SODIUM	FLAME PHOTOMETRIC
	NITRATE	COLOR - AUTOMATED
	NITRATE + NITRITE	COLOR - AUTOMATED
	SILICA - REACTIVE	COLOR - AUTOMATED
	SULPHATE	COLOR - AUTOMATED
	NITROGEN KJELDAHL - TOTAL	AUTO COLOR - DIGESTION
	PHOSPHOROUS - TOTAL	COLOR - DIGESTION
	TOTAL SUSPENDED SOLIDS	GRAVIMETRIC
MATRIX:	WATER (MICROBIOLOGY)	
	FECAL COLIFORM	MEMBRANE FILTRATION
	TOTAL COLIFORM	MEMBRANE FILTRATION
MATRIX:	WATER (ORGANIC)	
	BENZO (A) PYRENE	GC/MS - EXTRACTION
	BENZO (B) FLUORANTHENE	GC/MS - EXTRACTION
	BENZO (G,H,I) PERYLENE	GC/MS - EXTRACTION
	BENZO (K) FLUORANTHENE	GC/MS - EXTRACTION
	ENDOSULFAN I	GC/ECD - EXTRACTION
	ENDOSULFAN II	GC/ECD - EXTRACTION
	ENDRIN	GC/ECD - EXTRACTION
	FLUORANTHENE	GC/MS - EXTRACTION
	INDENO (1,2,3 - CD) PYRENE	GC/MS - EXTRACTION
	LINDANE	GC/ECD - EXTRACTION
	MIREX	GC/ECD - EXTRACTION
	O,P' - DDT	GC/ECD - EXTRACTION
	P,P' - DDT	GC/ECD - EXTRACTION
	P,P' METHOXYCHLOR	GC/ECD - EXTRACTION
	PYRENE	GC/MS - EXTRACTION
	TOTAL PCB	GC/ECD - EXTRACTION
MATRIX:	OIL	
	TOTAL PCB	GC/ECD - EXTRACTION
MATRIX:	AIR FILTER	
	CADMIUM	ICP - DIGESTION
	CHLORIDE	IC - EXTRACTION
	COPPER	ICP - DIGESTION
	FLUORIDE	SIE-EXTRACTION
	NITRATE	IC - EXTRACTION
	LEAD	ICP - DIGESTION
	SULPHATE	IC - EXTRACTION
	ZINC	ICP - DIGESTION

REGISTRATION DATE:

January 7, 1994

ACLAE
CAEAL

5.5.2 Quality Control Programmes

a. Quality Control Analyses. Blanks (instrument and method), duplicates, (spikes), calibration checks, digest or extraction checks, reference materials and performance evaluation samples are run for all parameters where applicable. The frequencies are blanks 1 in 15 samples, duplicates 1 in 14 samples, spikes as required by client, calibration checks 2 in 40, digest checks 1 or 2 in a batch of 35 samples, reference materials 1 per batch to 1 per 6 months depending on availability, performance evaluation samples 1 in 6 months to 1 per month depending of the parameter. Results of these QC checks are compared to historically established limits, and failures to be within the limits are subject to specified corrective action. Table II summarizes QC checks.

Method blanks should be < long term historical blank. If blanks are > the historical blank and less than 2 standard deviations above the long term blank, samples in the batch are to be blank subtracted. If method blanks are > 2 standard deviations above the long term blank, the batch of samples are to be repeated. If it is not possible to repeat the samples, due, for example, to insufficient sample, or instability of the sample, the analyte results can be blank corrected, but must be flagged in the report "High blank, subtraction made, accuracy of results may be compromised".

Where the long term blank has not been established, the guidelines for blank correction are as follows. If method blanks are <MDL, no action is required. If method blanks are > the MDL and less than 10 times the MDL, samples in the batch are to be blank subtracted using the average batch blank. If method blanks are > 10 x the MDL, the batch of samples are to be repeated. If it is not possible to repeat the samples, due, for example, to insufficient sample, or instability of the sample, the analyte results can be blank corrected, but must be flagged in the report "High blank, subtraction made, accuracy of results may be compromised".

Drinking water and undigested samples are not blank corrected. The blank is monitored and must be less than the MDL.

Parameters analyzed with Traacs or Technicon Autoanalysers are blank adjusted through incorporation of the blank into the calibration curve. Blanks are monitored throughout the run.

Spikes are performed as required by the project. Where possible the spiking level is 50 to 150% of the sample analyte concentration, and spiking volume is <5% by volume of the sample. When the sample and spiked sample must be run at the same time, the spike is chosen to be in the range 50 to 150% of expected sample analyte concentration. Acceptable spike recoveries are generally between 80 and 120%. Recoveries by

parameter type are as specified in Standard Methods (18th Edition, p.1-4). If spike recoveries are outside the acceptable recovery, the spike is repeated with this and a further sample. If either of these spikes are now acceptable the batch is passed; if both are outside the limits, the batch is repeated. For samples with many parameters, where <5% of the parameters fail the spiking test the samples are passed. If >5% of the parameters fail, the batch should be repeated or the results should be reported with a warning that parameter(s) 'x' had spike recoveries outside the limits.

Duplicates must be within ± 25% of each other, otherwise the batch/samples must be repeated. The comments regarding spike recoveries and multiple parameter samples apply similarly to duplicates. The limit may be lower for some parameters and matrices.

Calibration checks are run at 10-20% and 70-80% of normal working range for the analytical measurement. Check values should be within 10% of design value for the higher concentration, and within 15% of the design value for the lower concentration. If checks are outside the limits, prepare new solutions and re-run the checks, re-run the calibration curve, or if neither of these solves the problem repeat the whole analytical run. The comments regarding spike recoveries and multiple parameter samples apply similarly to calibration checks.

Digest checks are run, for example, for total metals, total phosphorus and total Kjeldahl nitrogen (TKN). Digested results should be within 25% of the design value, else the batch should be repeated.

Reference Materials (see section 12.2)

Positive controls and pH checks of all media are run with each batch, and records kept. Media are removed from autoclave, cooled and stored protected from light within 2 hours of autoclaving. Most broth has a storage time of 2 weeks at room temperature in dark. Storage time for M Endo broth is 48 hrs. Storage time for plates used for total and Faecal coliform is 2 weeks at 4°C.

Sodium thiosulphate is added to samples known to be chlorinated to destroy the chlorine.

(12) Organochlorine pesticides. Blanks and spikes are run with each batch (typically 10 samples). A duplicate is run every second batch, if sufficient sample remains and if taking an aliquot will not jeopardize the sample. The acceptance range for surrogate (dibromobiphenyl) and spikes is 50- 130%.
Any positive results are confirmed on a second type of column, and any positive greater than the regulatory limit is further confirmed by GC/MS.

(13) Acid Extractable Herbicides, 2,4-D, 2,4,5-TP. Blanks and spikes are run with each batch (typically 10 samples). A duplicate is run every second batch, if sufficient sample remains and if taking an aliquot will not jeopardize the sample. The acceptance ranges for surrogates and spikes are spikes 50-130%
surrogate (dibromophenol) 50-130%, surrogate (tribromophenol) 65-130%.

Any positive results are confirmed on a second column of differing polarity (eg. DB5 vs. DB17).

(14) Trihalomethanes. Blanks, spikes and duplicates are run with every batch (typically 10-15 samples). The acceptable range for recovery of spikes is 70 130%.

(15) Neutral Pesticide Scan. This scan includes organochlorine pesticides described above, and solvent soluble herbicides, organophosphate pesticides, fungicides, and carbamates. QC requirements are the same as described for organochlorine pesticides, except the surrogate used is Ronnel.

b. Evaluating Accuracy. The ability of the laboratory to perform accurate analyses is evaluated by analyzing quality control samples.

(1) Check standards (samples of concentration known to the analyst) are used primarily to check precision but also to check bias. Since these samples have not been certified as to concentration by an independent agency, their true concentration cannot be guaranteed. Table II shows the frequency of use of
check standards.

(2) Blind samples are samples of concentration unknown to the analyst, and submitted in a form to appear like routine samples. These samples are submitted monthly by the BC Ministry of Environment, as part of our service contract, and occasionally by Zenon's QA/QC Officer. These samples are used primarily to assess overall accuracy. In order to be useful, the concentration of blind samples must be chosen to reflect the working range of the analysis, for example quantitative accuracy cannot be assessed until concentrations exceed five times the minimum detectable concentration (MDL).

(3) PE samples (samples of concentration unknown to the laboratory, but known to the supplier of the sample) are one of the best ways to assess overall accuracy of the laboratory. These samples are often part of a QC study involving many laboratories. Table III shows the studies and parameters in which Zenon participates. The frequency of PE samples for many parameters is greater 1/month.

TABLE III

Zenon Environmental Laboratories (B.C.) dj910803 updated 940126
updated 920820 updated 940708

Zenon Participates in Analysis of the following parameters in QC studies:

Parameters	Study EPA WP	EPA WS	FP/GLAP	LRTAP	CAEAL/EDQA	MISC
Acid Extractable Herbicides						x
acidity				x		
Aldrin	x					
Alkalinity	x	x	x	x		
Aluminum	x		x	x		
Ammonia	x		x	x		
Antimony	x	x				
Arsenic	x	x				
Barium		x	x			
Benzene						
Beryllium	x					
Bismuth						
BOD	x				x	
Boron						
Bromodichloromethane		x				
Bromoform	x	x				
BTEX					x	
Cadmium	x	x	x		x	
Calcium	x	x	x	x	x	
Carbaryl						
cation/anion balance			x			
Chloride	x		x	x	x	
Chlorodibromomethane		x				
Chloroform		x				
Chlorophenols						x
Chromium	x				x	
Cobalt	x				x	
COD	x					
Coliforms fecal & total		x			x	x
Copper	x	x	x		x	
Copper-8-Quinolinolate						x
Cyanide	x	x				
DDD	x					
DDE	x					
DDT	x				x	
Diazinon						
Dibromochloromethane	x					
Dicamba						x
Dieldrin	x					
Dinoseb		x				
Dioxins & Furans						x
DOC			x			
Endosulfan I & II					x	
Endrin		x			x	
Ethylbenzene						
Filters- metals-Cd Cu Pb Zn					x	
Filters-ions- Cl F NO3 SO4					x	
Fluoride	x	x	x			
Glyphosate		x				
Heptachlor	x		x			
Heptachlor epoxide	x		x			
Hexachlorobenzene		x				
Hardness total	x		x			
Hydride, As, Sb, Se, Bi			x			
Iron	x		x		x	
Lead	x	x	x		x	
Lindane		x			x	
Magnesium	x		x	x	x	
Manganese	x		x		x	
Mercury	x		x			
Metals in marine sediment & tissue						x
Methoxychlor		x			x	
Methyl Parathion						
Mirex					x	
Molybdenum	x					
Nickel	x	x			x	
Nitrates	x	x			x	

TABLE III

Zenon Environmental Laboratories (B.C.) dj910803 updated 940126 updated 920820 updated 940708

Zenon Participates in Analysis of the following parameters in QC studies:

Parameters / Study	EPA WP	EPA WS	FP/GLAP	LRTAP	CAEAL/EDQA	MISC
nitrate + nitrite			x	x	x	
Nitrite		x			x	
NP pesticides						
Oil & Grease	x					
Organochlorine pesticides	x	x			x	
Organophosphorus pesticides						
Ortho Phosphate	x					
PAH's					x	x
Parathion						
PCB's	x				x	
PCDD/F (Dioxins)						x
Pentachlorophenol		x				
Pesticides						
pH	x	x	x	x	x	
Phenol						
Phenolics total	x					
Phosphorus total	x		x		x	
Picloram		x				x
Potassium	x		x	x		
Selenium						
Silicon			x	x	x	
Silica reactive			x			
Silver	x	x				
Sodium	x	x	x	x	x	
solids: TDS	x					
solids: TSS	x				x	
Conductivity	x		x	x	x	
Strontium	x		x			
Sulphate	x	x	x	x	x	
Sulphur						
Titanium	x					
Thallium		x				
THM's					x	
Tin						
Titanium						
Trichlorophenols						
TKN	x		x		x	
TOC	x					
Toluene						
Toxaphene		x				
Turbidity		x	x			
Vanadium	x		x		x	
Xylenes						
Zinc	x		x		x	
Zirconium						
2,4,D		x				
2,4,5-T						x
2,4,5-TP (Silvex)		x				x

Legend

EPA WP: US Environmental Protection Agency Water Pollution
ZBURL: internal Zenon Q samples prepared by Burlington lab and distributed to all 3 Zenon labs.
EPA WS: US Environmental Protection Agency Water System
FP/GLAP: Federal Provincial/Great Lakes Action Plan Quality Assurance
LRTAP: Long Range Transportable Air Pollutants
EDQA: Environment Data Quality Assurance, BC Ministry of Environment; testing under CAEAL
CAEAL: Canadian Association of Environmental Analytical Laboratories.
Misc: mostly organic studies occurring at irregular intervals from various sources:
- Canadian Association of Pesticide Control Officers (CAPCO)
- National Water Research Institute (NWRI)
- Government of Alberta
- Canadian Environmental Protection Act (CEPA)
- Environment Canada
- Clinical Microbiology Proficiency Testing
- National Research Council of Canada (NOAA)

Zenon 8577 Commerce Court Tel 604 444 4808
Environmental Burnaby B C Fax 604 444 4511
Laboratories Canada V5A 4N5

November 10, 1994

Mr. John McDonaugh
Bovar-Concord Environmental
8563 Commerce Court
Burnaby, B.C.
V5A 4N5

RE: Project No. 421-4587

Regional Laboratories:
British Columbia
'ario
Quebec

Dear John:

Please find attached results, chain of custodies and invoice for samples received October 4, 1994 as part of your Project No. 421-4587.

Methods used by Zenon to generate the attached data are based upon US EPA protocols found in the "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition or the "Quality Assurance Handbook for Air Pollution Measurement Systems Volume II: Stationary Sources Specific Methods", Interim Edition EPA/600/R-94/038C, April 1994. The following table summarizes parameters analysed and the method used:

PARAMETER	METHOD
Formaldehyde	USEPA Method 0011
MM5 Particulates	USEPA 600 Method 5
Condensable Organics	USEPA 600 Method 202
Condensable Organics Characterization	USEPA Method 8270
Hydrogen Cyanide	USEPA 600 Method 6
Phenol	USEPA Method 0010
MDI	USEPA Draft Method 94-TA27.01
Sodium Hydroxide	Modified APHA Method 2320 B

Please note that data has not been corrected for method blanks or surrogate recovery. The Condensable Organics Characterization is based upon a analysis by GC/MS for the base/neutral/acidic extractables of EPA 625 list. The scans were characterized using the forward search technique that compares unidentified peaks to those in a library. Acceptance is based upon the library match achieving a greater than 90% confidence interval on the identification.

Unfortunately sample HCN sample T1-SCCN was broken in the laboratory during the analysis. Sufficient sample was recovered to perform the automated cyanide analysis and the thiocyanate by ion chromatography. The reported result is corrected for the thiocyanate concentration. No charge has been levied for the analysis of this sample. Based on the concentration of HCN in this sample compared to other samples the result should be considered suspect.

The methylene diphenyl diisocyanate analysis was repeated several times prior to issuing a final report. Samples were concentrated to 5 mL, 1 mL was exchanged with 1 mL of acetonitrile followed by HPLC analysis. During the first run a fluorescence detector was used. Low recoveries of MDI from the spiked 1-(2-pyridyl) piperazine derivatizing solution prompted reanalysis of the remaining toluene extracts. The extracts were solvent exchanged and reanalysed by HPLC using UV for detection. Results for the spiked solutions by UV were much higher than with the fluorescence detector. The original extracts from the fluorescence run were reanalysed using the UV detector which only confirmed the original results. The Zenon prepared field spiking solution was analysed and was 2800 ppm vs the designed value of 1000 ppm. Based on this concentration the recovery of the spiked MDI was 111% and 125%. The concentration of the spiking solution provided by Bovar-Concord was 50 ppm. During the second analysis of the toluene concentrates four spikes of 100 ug were carried through the procedure. with an average recovery of 84%.

At this point we are unsure as to what caused the difference between the two HPLC runs for the MDI. The spiked solutions contained approximately 60% less

derivatizing agent which may impact the rate at which the derivatized MDI is exchanged into the acetonitrile from the toluene.

I trust that the enclosed is in accordance with your requirements. However, if you require any additional information or have any questions, please do not hesitate to call.

Sincerely yours,

Shawn D. Heier, BSc
Sales Manager - Western Canada

Encl.
SDH:sdh

FORMALDEHYDE DATA / BOVAR-CONCORD PROJECT 421-4587

Formaldehyde

Zenon ID	Client ID	Vol. Cont. 1 mL	Vol. Cont. 2 mL	Total Vol. mL	Concentration Formaldehyde (ug)
94023959	BLANK 1F	78	NA	78	1.8
94023960	BLANK 2F	45	NA	45	1.3
94023961	T1-PVF	240	NA	240	370
94023962	T2-PVF	225	NA	225	680
94023963	T1-CF	500	NA	500	1030
94023964	T2-CF	420	NA	420	920
94023965	T1-SCF	475	NA	475	1000
94023966	T2-SCF	460	NA	460	670
94023967	T1-SF	500	NA	500	1090
94023968	T2-SF	425	NA	425	670
94023969	T4-KF	285	NA	285	340
94023970	T5-KF	315	NA	315	11
94023971	T8-BHF	300	NA	300	110
94023972	T9-BHF	250	NA	250	220
94023973	BOVAR DNPH BLK	160	NA	160	1.1
94023974	NR MCCALL DNPH BLK	200	NA	200	4.2
94023975	LAB BLANK	50	NA	50	3.1

MM5 PARTICULATES - BOVAR PROJECT 421-4587

Total Particulate Probe Wash

Zenon ID	Client ID	Vol. Cont. 1 mL	Vol. Cont. 2 mL	Total Vol. mL	Initial Mass Beaker (g)	Final Mass Beaker (g)	Total Particulate (g)
94023987	T1-CP	80	NA	80	98.3859	98.3909	0.0050
94023988	T2-CP	110	NA	110	106.9520	106.9556	0.0036
94023989	T1-SP	90	NA	90	106.7442	106.7459	0.0017
94023990	T2-SP	90	NA	90	114.7718	114.7745	0.0027
94023991	T1-SCP	75	NA	75	98.0191	98.0208	0.0017
94023992	T2-SCP	65	NA	65	99.0304	99.0336	0.0032
94023993	T1-KP	100	NA	100	103.8042	103.8227	0.0185
94023994	T2-KP	215	NA	215	95.2943	95.3694	0.0751
94023995	FIELD BLK	160	NA	160	96.5159	96.5160	0.0001
94023996	LAB BLK	200	NA	200	95.6499	95.6500	0.0001

MM5 PARTICULATES - BOVAR PROJECT 421-4587

Total Particulate Filter

Zenon ID	Client ID	Total Particulate (g)	Observations
94023987	T1-CP	0.02939	Piece of filter missing.
94023988	T2-CP	0.0166	Piece of filter missing.
94023989	T1-SP	0.01203	Piece of filter missing.
94023990	T2-SP	0.01842	Piece of filter missing.
94023991	T1-SCP	0.03166	Piece of filter missing.
94023992	T2-SCP	0.02365	Piece of filter missing.
94023993	T1-KP	0.0975	
94023994	T2-KP	< 0.0001	Piece of filter missing & hole in filter. < 4 mg/L Solids in Impinger.
94023995	FIELD BLK	< 0.0001	
94023996	LAB BLK	< 0.0001	

CONDENSABLE ORGANICS / BOVAR-CONCORD PROJECT 421-4587

Condensable Organics - Organic Fraction

Zenon ID	Client ID	pH	Vol. Cont. 1 mL	Vol. Cont. 2 mL	Vol. Cont. 3 mL	Total Vol. mL	Initial Mass Beaker (g)	Final Mass Beaker (g)	Condensable Organics (g)
23938	T1-CP	—	450	195	—	645	131.1088	131.1187	0.0198
23939	T2-CP	—	670	65	—	735	128.8683	128.8769	0.0172
23940	T1-SP	—	690	75	—	765	129.9054	129.9169	0.0115
23941	T2-SP	—	545	60	—	605	131.5603	131.5653	0.0050
23942	T1-SCP	—	660	45	—	705	133.2129	133.2191	0.0062
23943	T2-SCP	—	635	50	—	685	129.9958	130.0044	0.0086
23944	FIELD BLK	—	525	195	—	720	129.9948	129.9949	0.0001
23945	LAB BLK	—	—	NA	—	500	130.3461	130.3462	0.0002

Condensable Organics - Inorganic Fraction

Zenon ID	Client ID	Initial Mass Beaker (g)	Final Mass Beaker (g)	Inorganic Fraction (g)
23938	T1-CP	105.6592	105.6821	0.0229
23939	T2-CP	127.6415	127.6539	0.0124
23940	T1-SP	123.8649	123.8787	0.0138
23941	T2-SP	120.8994	120.9077	0.0083
23942	T1-SCP	122.5319	122.5489	0.0170
23943	T2-SCP	101.3429	101.3598	0.0169
23944	FIELD BLK	122.6868	122.6869	0.0001
23945	LAB BLK	104.7264	104.7268	0.0004

NOTES: 1. ORGANIC FRACTIONS FOR T1-CP, T2-CP & LAB BLK WERE SPLIT IN HALF PRIOR TO FINALVOLUME REDUCTION. FINAL WEIGHTS WERE MULTIPLIED BY 2 FOR ORGANIC FRACTION MASS.

BOVAR-CONCORD PROJECT 421-4587

CONDENSABLE ORGANICS CHARACTERIZATION

		CLIENT ID:	T1-CP	T2-CP	METHOD BLK
		ZENON ID:	94023938	94023939	94023945
COMPOUND	MDL	UNITS			
Phenol	1.0	ug	320	462	<
Bis(2-chloroethyl)ether	2.0	"	<	<	<
2-Chlorophenol	3.0	"	<	<	<
1,3-Dichlorobenzene	2.0	"	<	<	<
1,4-Dichlorobenzene	2.0	"	<	<	<
1,2-Dichlorobenzene	2.0	"	<	<	<
2-Methylphenol	2.0	"	<	<	<
Bis(2-chloroisopropyl)ether	2.0	"	<	<	<
Hexachloroethane	2.0	"	<	<	<
N-Nitroso-N-propylamine	2.0	"	<	<	<
Nitrobenzene	2.0	"	<	<	<
Isophorone	4.0	"	<	<	<
2-Nitrophenol	1.0	"	<	<	<
2,4-Dimethylphenol	2.0	"	<	<	<
Bis(2-chloroethoxy)methane	1.0	"	<	<	<
2,4-Dichorophenol	1.0	"	<	<	<
1,2,4-Trichlorobenzene	2.0	"	<	<	<
Naphthalene	0.3	"	1.2	0.9	<
2,6-Dichlorophenol	1.0	"	<	<	<
Hexachlorobutadiene	2.0	"	<	<	<
4-Chloro-3-Methylphenol	1.0	"	<	<	<
Indole	1.0	"	1.5	1.7	<
1-Methylnapthalene	1.0	"	<	<	<
2-Methylnapthalene	1.0	"	<	<	<
2,4,5-Trichlorophenol	1.0	"	<	<	<
2,4,6-Trichlorophenol	1.0	"	<	<	<
2,3,4-Trichlorophenol	1.0	"	<	<	<
2-Chloronaphthalene	1.0	"	<	<	<
Biphenyl	1.0	"	<	<	<
1-Chloronapthalene	1.0	"	<	<	<
Dimethylphthalate	1.0	"	1.3	2.3	<
Acenaphthylene	1.0	"	<	<	<
2,6-Dinitrotoluene	0.5	"	<	<	<
Acenaphthene	1.0	"	<	<	<
2,4-Dinitrophenol	5.0	"	<	<	<
4-Nitrophenol	1.0	"	<	<	<
2,4-Dinitrotoluene	0.5	"	<	<	<
Diethylphthalate	1.0	"	2	3.1	<
Fluorene	0.3	"	<	<	<
N-Nitrosodiphenylamine	2.0	"	<	<	<
4-Bromophenyl-phenylether	0.3	"	<	<	<

BOVAR-CONCORD PROJECT 421-4587

CONDENSABLE ORGANICS CHARACTERIZATION

		CLIENT ID:	T1-CP	T2-CP	METHOD BLK
		ZENON ID:	94023938	94023939	94023945
COMPOUND	MDL	UNITS			
Hexachlorobenzene	2.0	"	<	<	<
Pentachlorophenol	1.0	"	<	<	<
Phenanthrene	0.3	"	1.8	1.1	<
Anthracene	0.2	"	<	<	<
Di-n-butylphthalate	1.0	"	3	1.5	1.1
5-Nitroacenaphthene	1.0	"	<	<	<
Fluoranthene	0.2	"	<	<	<
Pyrene	0.3	"	<	<	<
Benzylbutylphthalate	0.6	"	0.7	<	<
Benzo(a)anthracene	0.2	"	<	<	<
Chrysene	0.3	"	<	<	<
Bis(2-ethylhexyl)phthalate	1.0	"	4.7	3.5	<
Di-n-octylphthalate	1.0	"	1.1	<	<
Benzo(b)fluoranthene	0.4	"	<	<	<
Benzo(k)fluoranthene	0.4	"	<	<	<
Benzo(a)pyrene	0.5	"	<	<	<
Indeno(1,2,3-cd)pyrene	0.6	"	<	<	<
Dibenzo(a,h)anthracene	0.4	"	<	<	<
Benzo(g,h,i)perylene	0.4	"	<	<	<
Surrogate Recovery					
d5-Phenol		%	120	141	104
d5-Nitrobenzene		%	130	135	115
2-Fluorobiphenyl		%	145	145	109
2,4,6-Tribromophenol		%	132	150	100
d14-p-Terphenyl		%	134	150	102
Additional Compounds Detected*					
Benzaldehyde	5.0	ug	ND	38	<
2H-Pyran-2-one	5.0	"	19	54	<
Benzenemethanol	5.0	"	45	ND	<
2-Hydroxybenzaldehyde	5.0	"	213	83	<
2-Methylphenol	5.0		42	ND	<
4-Methylphenol	5.0	"	59	33	<
2-Methoxyphenol	5.0	"	66	39	<
4-Ethylphenol	5.0	"	73	49	<
Styrene	5.0	"	ND	80	<
2,3-Dihydro-1H-inden-1-one	5.0	"	59	20	<
4-Hydroxy-3-methoxy-benzaldehyde	5.0	"	ND	43	<

Notes: "*" = Concentrationns based on d10-Anthracene

HCN DATA / BOVAR-CONCORD PROJECT 421-4587

HYDROGEN CYANIDE

Zenon ID	Client ID	Volume (mL)	Concentration HCN (ug)
94023950	T1-CCN	139	0.00058
94023951	T2-CCN	156	0.00045
94023952	T1-SCN	122	0.00074
94023953	T2-SCN	117	0.00045
94023954	T1-SCCN	137	0.00344
94023955	T2-SCCN	150	0.00094
94023956	FIELD BLANK	248	<0.00001
94023957	REAGENT BLANK	159	<0.00001
94023958	METHOD BLANK	250	<0.00001

NOTES: 1. SAMPLE 94023954 BOTTLE WAS BROKEN IN LABORATORY.
RESULTS ARE BASED ON THE DIFFERENCE OF THE AUTOMATED DISTILLATION TECHNIQUE AND THIOCYANATE BY ION CHROMATOGRAPHY.
VOLUME IS ESTIMATED BASED ON THE AVERAGE OF THE OTHER 5 SAMPLES.

PHENOL DATA / BOVAR-CONCORD PROJECT 421-4587

Phenol

Zenon ID	Client ID	Concentration Phenol (ug)	d5-Phenol Surrogate Recovery (%)
94026898	Solvent Blank	0.3	73
94026899	Blank Train 06	1.5	52
94026900	Train 01	8400	Diluted Out
94026901	Train 03	5100	Diluted Out

MDI DATA / BOVAR-CONCORD PROJECT 421-4587

METHYLENE DIPHENYL DIISOCYANATE

Zenon ID	Client ID	Vol. Cont. 1 mL	Concentration MDI (ug) Fluorescence	Concentration MDI (ug) UV
94023976	B1-MDI	182	23	104
94023977	B2-MDI	202	13	30
94023978	T6-BHMDI	760	< 0.5	< 0.5
94023979	T7-BHMDI	790	7.7	5
94023980	T1-PVMDI	940	56	57
94023981	T2-PVMDI	890	56	59
94023982	B11-MDI	210	7.6	62*
94023983	B12-MDI	230	13	350**
94023984	TOLUENE/ACETONITRILE BLK	60	< 0.5	< 0.5
94023985	1,2-PP BLANK	230	< 0.5	< 0.5
94023986	LAB BLANK	300	< 0.5	< 0.5

NOTES: * = Theoretical Result is 56 ug
** = Theoretical Result is 280 ug

1. **The UV results should be reported to the client.**
2. Actual concentration of the Zenon spiking solution was 2800 ppm vs 1000 ppm
3. Average recovery of 100 ug spikes carried through procedure was 84% by UV detection.
4. Repeat results are based upon solvent exchange (Toluene into Acetonitrile) of remaining extract and analysis by HPLC with UV detection. Original extracts were reanalysed by UV confirming original results for all samples. Unsure of exact reason for difference between the two extracts. Suspect that the original solvent exchange technique was different from the first solvent exchange procedure. Time allowed for the exchange could be factor and all future solvent exchanges will be based on the repeat technique.

NaOH DATA / BOVAR-CONCORD PROJECT 421-4587

SODIUM HYDROXIDE

Zenon ID	Client ID	Volume (mL)	Concentration NaOH (mg/L)
94023946	T1-NAOH	328	75
94023947	T2-NAOH	308	75
94023948	FIELD BLANK	356	< 0.5
94023949	LAB BLANK	330	< 0.5

NOTES: 1. RESULTS ARE BASED UPON TITRATION WITH DILUTE SULPHURIC TO 4.5 pH END POINT. AMOUNT OF ACID USED WAS CONVERTED TO AN EQUIVALENT AMOUNT OF NaOH.

CHAIN OF CUSTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: BOVAR-CONCORD ENVIRONMENTAL
Project Manager: BRAD RISMEYLO
Address: 8563 COMMERCE CRT
BURNABY B.C.
Phone #: 604 444 3370 Fax #:
Sampled by: ROMAN G. MASLEY

Storage:

ANALYSIS REQUESTED

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	MDI	Received									Level of contamination (low, high, unknown)
	MDI STANDARD IN TOLUENE	1 SMALL BOTTLE		94/09/30	1:40	✓	✓									
	B1-MDI	1		"	1:40	✓	✓									
	B2-MDI	1		"	1:15	✓	✓									
	T6-BHMDI	1		"	6:00	✓	✓									
	T7-BHMDI	1		941001		✓	✓									
	T1-PVMDI	1		"		✓	✓									
	T2-PVMDI	1		~~941002~~		✓	✓									
	[redacted]			941002												
	B11-MDI	1		"		✓	✓									
	B12-MDI	1		"		✓	✓									

TAT (Turnaround Time) 10 Business Days / Statutory

RUSH TAT MUST HAVE PRIOR APPROVAL

*some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 5 421 4587
Site:
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

"

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By: Zenon
Affiliation:
Date/Time: 94/09/04 11:00

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

CHAIN OF CUSTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

ANALYSIS REQUESTED

CLIENT INFORMATION

Company Name: BOVAR-CONCORD ENVIRONMENTAL
Project Manager: BRAD RISHEATH
Address: 8563 COMMERCE CRT
BURNABY B.C.
Phone #: 604 441 3310 Fax #:
Sampled by: ROMAN G. MASLEY

Storage:

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	FORMALDEHYDE										Level of contamination (low, high, unknown)
	BLANK 1F	1		94.09.29		✓										
	BLANK 2F	1		94.09.30		✓										
	T1-PVF	1		94.09.30		✓										
	T2-PVF	1		94.09.30		✓										
	T1-CF	1		94.09.29		✓										
	T2-CF	1		94.09.28		✓										
	T1-SCF	1		94.09.29		✓										
	T2-SCF	1		94.09.29		✓										
	T1-SF	1		94.09.28		✓										
	T2-SF	1		94.09.29		✓										

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

**some exceptions apply please contact Lab*

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 421 4587
Site:
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By:
Affiliation:
Date/Time: 941004 11:00

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

CHAIN OF CUSTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

ANALYSIS REQUESTED

CLIENT INFORMATION

Company Name: BOVAR CONCORD ENVIRONMENTAL
Project Manager: BRAD RICHMOND
Address: 8563 COMMERCE CRT
BURNABY B.C.
Phone #: 604 444 3370 Fax #:
Storage:
Sampled by: ROMAN G. MASICH

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	FORMALDEHYDE										Level of contamination (low, high, unknown)
	T4-KF	1		94.09.29		✓										
	T5-KF	1		94.09.29		✓										
	T8-BHF	1		94.09.30		✓										
	T9-BHF	1		94.10.01		✓										

TAT (Turnaround Time)

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- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 4214587
Site:
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By:
Affiliation:
Date/Time: 94/10/04

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

CHAIN OF USTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: BONAR-CONCORD ENVIRONMENTAL
Project Manager: BRAD RESHETYLO
Address: 8563 COMMERCE CRT
BURNABY B.C
Phone #: 604 444 3370 Fax #:
Sampled by: JOHN LENNARTZ
Storage:

ANALYSIS REQUESTED

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	(PARTICULATE) GRAVIMETRIC	Received	Volatiles/Vol. Org.'s	Org. Chlorofluorocarbons							Level of contamination (low, high, unknown)
	T1-CP 1 [#17]	PETRI		94.9.28		✓	✓	✓								
	T1-CP 2 [ACETONE]	500mL		—"—		✓	✓	✓								
	T1-CP 3 [H_2O]	2-500mL		—"—		✓	✓	✓	✓							
	T2-CP 1 [#14]	PETRI		94.9.28		✓	✓	✓								
	T2-CP 2 [ACETONE]	500mL		—"—		✓	✓	✓								
	T2-CP 3 [H_2O]	1L		—"—		✓	✓	✓	✓							
	T2-CP 4 [$MeCl_2$]	500mL		—"—		✓	✓	✓								

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #:
Site: LOUISIANA PACIFIC - DAWSON CREEK
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By:
Affiliation:
Date/Time: 941004 11:00

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

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CHAIN OF CUSTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: BOVAR CONCORD ENVIRONMENTAL
Project Manager: BRAD RESHETYLO
Address: 8363 COMMERCE CRT
BURNABY BC
Phone #: 444 3370 Fax #:
Sampled by: JOHN LENNARTZ

Storage:

ANALYSIS REQUESTED

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	PARTICULATE (GRAVIMETRIC)	Condensable Org's	Received								Level of contamination (low, high, unknown)
	T1-SP 1 [#10]	PETRI		94.9.28		✓		✓								
	T1-SP 2 [ACETONE]	500 mL		-"-		✓		✓								
	T1-SP 3 [H_2O]	1 L		-"-		~~✓~~	✓	✓								
	T1-SP 4 [$MeCl_2$]	500 mL		-"-		~~✓~~	✓	✓								
	T2-SP 1 [#12]	PETRI		94.9.29		✓		✓								
	T2-SP 2 [ACETONE]	500 mL		-"-		✓		✓								
	T2-SP 3 [H_2O]	1 L		-"-		~~✓~~	✓	✓								
	T2-SP 4 [$MeCl_2$]	500 mL		-"-		~~✓~~	✓	✓								
	T1-SEP 1 [#21]	PETRI		94.9.29		✓		✓								
	T2-SEP 2 [ACETONE]	500 mL		-"-		✓		✓								

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #:
Site: LOUISIANA PACIFIC - DAWSON CREEK
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By:
Affiliation: Zenon
Date/Time: 94/10/04 11:00

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

CHAIN OF CUSTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: BONAR-CONCORD ENVIRONMENTAL
Project Manager: BRAD RESHETYLO
Address: 8563 COMMERCE CRT
BURNABY BC
Phone #: 444 3370 Fax #:
Sampled by: JOHN LENNARTZ

Storage:

ANALYSIS REQUESTED

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	PHENOLICS (GRAVIMETRIC)	Conductivity/pH/Cl	Received								Level of contamination (low, high, unknown)
	T1-SCP 3 [H2O]	1 L		94.9.29		✓✓✓✓	✓	✓								
	T1-SCP 4 [MeCl2]	500 mL		94.9.29		✓✓✓✓	✓	✓								
	T2-SCP 1 [#22]	PETRI		— " —		✓		✓								
	T2-SCP 2 [ACETONE]	500 mL		— " —		✓		✓								
	T2-SCP 3 [H2O]	1 L		— " —		✓✓	✓	✓								
	T2-SCP 4 [MeCl2]	500 mL		— " —		✓✓✓✓	✓	✓								
	T1-KP 1 [#11]	PETRI		94.10.1		✓		✓								
	T1-KP 2 [ACETONE]	1 L		— " —		✓		✓								
	T2-KP 1 [#18]	PETRI		94.10.1		✓		✓								
	T2-KP 2 [ACETONE]	1 L		— " —		✓		✓								

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #:
Site: LOUISIANA PACIFIC - DAWSON CREEK
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By:
Affiliation: Zenon
Date/Time: 94/10/04 11:00

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

CHAIN OF CUSTODY

Zenon Environmental Laboratories
5555 North Service Road
Burlington, Ontario L7L 5H7

Tel: (905) 332-8788
Fax: (905) 332-9169

CLIENT INFORMATION

Company Name: BONAR-CONCORD ENVIRONMENTAL
Project Manager: BRAD RESHETYLO
Address: 8563 COMMERCE CRT
BURNABY BC
Phone #: 444 3370 Fax #:
Sampled by: JOHN LENNARTZ/BRAD RESHETYLO

Storage:

ANALYSIS REQUESTED

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	PARTICULATE (GRAVIMETRIC)	NaOH	HCN	Received							Level of contamination (low, high, unknown)
	T2-KP 3 [H2O]	1L		94.10.1		✓			✓							
	T1-NaOH [H2O]	500mL		94.9.30			✓		✓							
	T2-NaOH [H2O]	500mL		— " —			✓		✓							
	T1-CCN	1L		94.9.29				✓	✓							
	T2-CCN	1L		— " —				✓	✓							
	T1-SCN	1L		94.9.29				✓	✓							
	T2-SCN	1L		94.9.29				✓	✓							
	T1-SECN	1L		94.9.30				✓	✓							
	T2-SECN	1L		— " —				✓	✓							

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

some exceptions apply please contact Lab

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #:
Site: LOUISIANA PACIFIC - DAWSON CREEK
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time:

Client Signature:
Affiliation:
Date/Time:

Received By: Zenon
Affiliation:
Date/Time: 941004 11:00

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

CHAIN OF CUSTODY

Zenon Environmental Laboratories
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CLIENT INFORMATION

Company Name: BINAR CONCORD ENVIRONMENTAL
Project Manager: BRAD RISHETYLO
Address: 8563 COMMERCE CRT.
BURNABY B.C.
Phone #: 604. 444 3370 Fax #:
Sampled by: ROMAN G. MASLEY

Storage:

ANALYSIS REQUESTED

Zenon Use Only	Field Sample ID	# Bottles	Matrix	Date	Time	PARTICULATE	PHENOL	MDI	[redacted]	Received	Condensable					Level of contamination (low, high, unknown)
	METHANOL/ Methylene chloride BLANK		94.10.01				✓			✓						
	1,2 PP BLANK		94.10.02					✓		✓						
	METHYLENE CHLORIDE BLANK		94.10.02			[redacted]	[redacted]		[redacted]	✓	✓					
	ACETONE BLANK		94.10.02			✓					[redacted]					
	H_2O BLANK		94.10.02			✓	[redacted] ✓				[redacted]					
	TOLUENE/ACETONITRILE BLANK		94.10.02					✓		✓	[redacted]					
	GLASSWARE (T1) 01	BLKRET		94.10.1			✓			✓						
	GLASSWARE (T2) 03	— " —		94.10.2			✓			✓						
	GLASS 06	— " —		94.10.2			✓			✓						
	FILTER FIELD BLK	PETRI		94.10.2		✓				✓						

TAT (Turnaround Time)

RUSH TAT MUST HAVE PRIOR APPROVAL

**some exceptions apply please contact Lab*

- STD 10 Business Days ☐
- RUSH 5 Business Days ☐
- RUSH 48hr ☐
- RUSH 24hr ☐
- Other Business Days ____

PROJECT INFORMATION

Project #: 421 4587
Site:
PO#:
Zenon Quote #:
Zenon Project #:
Zenon Contact:

SPECIAL DETECTION LIMITS

MISA ☐

SPECIAL REQUIREMENTS / REGULATIONS

REMARKS

Rec'd By:
Storage Loc.:
Date/Time

Client Signature:
Affiliation:
Date/Time:

Received By: Roman
Affiliation:
Date/Time: 941004

WHITE - CLIENT / YELLOW - LAB / PINK - FILE

SEE OVER FOR COMPLETION & SAMPLING INSTRUCTIONS

APPENDIX C

PROCESS DATA

LOUISIANA-PACIFIC CANADA LTD. PLANT PROCESS RECORDS CONCERNING THIRD QUARTER 1994 STACK SAMPLING REQUIREMENTS FOR PA 7596

submitted to
Steve Hunsberger, A.Sc.T.
Environment Protection Officer
Norther Interior Region

by
R. Cameron Eggleston, Technician
Northern Interior Region
December 7, 1994

INTRODUCTION

In accordance to monitoring requirements of PA 7596, stack sampling was conducted in the third quarter of 1994. During the period of Sept. 29,29,30th and Oct. 1st, thirty-two (32) stack samples were conducted by Bovar-Concord, Environmental Section. While samples were taking place, plant process data was observed and recorded by the writer. These records concern dryer loading rate, dryer fuel feed rate, Konus fuel feed rate, and Press Vent resin application rates for both MDI and Phenol glues.

This report presents information under two headings: *Plant Operation Data* and *Discussion of Data*.

PLANT OPERATION DATA

Summary tables of plant process data for the dryer stack, konus stack, and press vent are presented below. Information about Plant location (where data was obtained from in the plant) can be found in the Second Quarter report. Relevant spreadsheet calculations about the summary table found below, as well as related plant production charts and tables obtained from Louisiana-Pacific over the sample period, can be found in the appendix.

DRYER STACK TESTS:

The Core Dryer Stack, Surface/Core Dryer, and the Surface Dryer were sampled on September 28th, 29th and 30th. Plant operation data relevant to stack samples conducted are inlet/outlet temperatures of dryers, though put rates, and dryer fuel rates.

Figure 1, on the following page, gives a summary of data obtained. Detailed records and relevant calculations can be found in the appendix.

DRYER LOADING RATE

Test No.	Stack Test location	Tested parm.	Test tn/hour	Ave. Inlet temp.	Surf. Fuel t/hr.	Core Fuel t/hr.	Surf./Cor Fuel t/hr.
28TH							
2	core dryer	Formald.	10.87	1163 1155	1.85	1.69 1.66	n/a
3	core dryer	Particulate	10.87	1163 1155	1.85	1.69	n/a
5	core dryer	Formald.	10.87	1163 1155	1.85	1.69	n/a
6	Surf. dryer	Particulate	11.20	1163 1171	1.85	1.69	n/a
7	Surf. dryer	Formald.	11.20	1163 1171	1.85	1.69	n/a
29TH							
8	Surf. dryer	Particulate	11.27	984 889	n/a	2.28	1.66
9	Surf. dryer	Formald.	11.27	984 889	n/a	2.28	1.66
11a	Core Dryer	Cyanide	11.27	984 no data	n/a	2.28	1.66
11b	Core Dryer	Cyanide	11.51	984 no data	n/a	2.28	1.66
12	Surface/Corer	Particulate	10.75	984 1063	n/a	2.28	1.66
13	Surface/Corer	Formald.	10.41	984 1063	n/a	2.28	1.66
14	Surface Dryer	Cyanide	10.41	984 no data	n/a	2.28	1.66
14a	Surface Dryer	Cyanide	10.82	984 no data	n/a	2.28	1.66
15	Surface/Core	Particulate	10.82	984 1063	n/a	2.28	1.66
16	Surface/Core	Formald.	10.82	984 1063	n/a	2.28	1.66
30TH							
17	Surface/Core	Cyanide	9.90	1149 ✓	n/a	n/a	1.63
18	Surface/Core	Cyanide	9.90	1149 ✓	n/a	n/a	1.63

Figure 1: Summary Data Concerning Dryer Stack Samples (3rd Quarter)

2.2046 lb / tonne

KONUS STACK TEST:

The Konus Stack was tested for formaldehyde on September 29th, and particulate matter on October 1. Sample times are listed in the appendix under *Table of Stack Sample Events*

The following table gives a summary of data obtained. Detailed records and relevant calculations can be found in the appendix.

Konus Fuel Feed Rate

Date	time	K1+K2 tonnes/ hour
29th	8:05	
29th	8:50	3.13
29th	10:36	2.63
29th	11:46	2.10
	ave=	2.62

HCHO

2.89 ton

Konus Fuel Feed Rate

Date	time	K1+K2 tonnes/ hour
1st	9:46	
1st	10:04	2.25
1st	11:00	2.38
1st	11:52	1.85
1st	12:52	2.04
	ave=	2.13

~~HCHO~~ TSP

2.35 ton

PRESS VENTS TESTS:

The Press Vent (#15 on PA 7596 Site Plan) was tested for Formaldehyde and MDI and NaOH. Testing occurred on September 30th and October 1st. Sample times are listed in the appendix under *Table of Stack Sample Events*

The following table gives a summary of data obtained. Detailed records and relevant calculations can be found in the appendix.

PRESS VENT SAMPLES

PRESS VENT PARAMETER	TEST NO.	DATE	PRESS CYCLE P/MIN	PROD. LBS/TEST	MDI (LB.)	PHENOL (LB.)	MDI %	PHEN. %
NaOH	20	30th	3.13	67101	523	2151	0.78%	3.20%
NaOH	21	30th	3.17	53122	414	1702	0.78%	3.20%
Formaldeyde	23	30th	4.28	71761	559	2300	0.78%	3.20%
Formaldeyde	25	30th	2.90	54054	421	1732	0.78%	3.20%
MDI	26	1	3.00	65019	482	2062	0.74%	3.17%
MDI	29	1	2.96	69945	518	2218	0.74%	3.17%

w/HCO 1240 1021 1360

DISCUSSION OF DATA

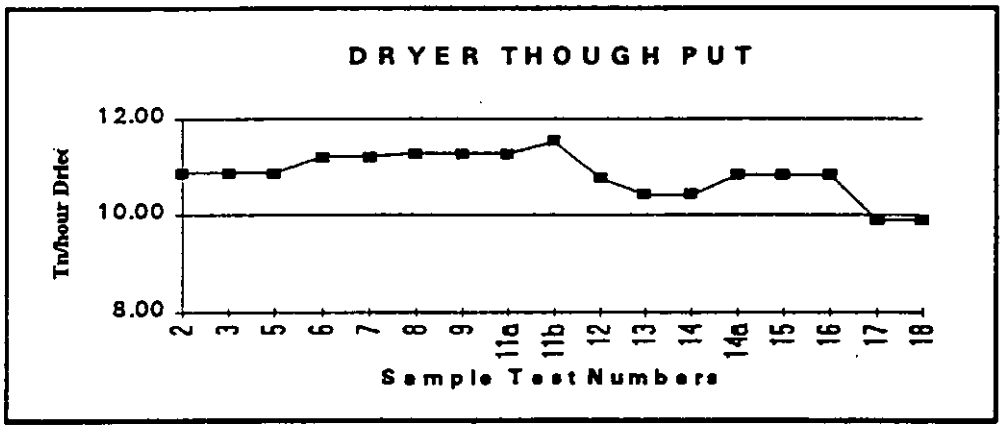
Dryer Inlet Temperature, Dryer though put rates, Fuel feed rates, and MDI/Phenol resin application rates are discussed below. No problems have been noted in calculation procedures or record sources.

DRYER INLET TEMPERATURES:

Inlet/outlet temperatures of dryers were found to be similar to historical data and reasonably consistent with the calculated average. September 29th inlet temperatures were slighlty lower for several hours in the morning due to a change in wood moisture level.

DRYER THOUGH PUT RATES:

Wafer processed through the driers was observed to be normal and without problem. Through put did not vary substantially. See graph below:



DRYER FUEL FEED RATES:

Fuel feed rates (see graph below of average feed rates) appeared stable. Data was consistent was historical data:

DAY	TN/HR	DRYER
28th	1.69	Core
28th	1.85	Surf.
29th	1.54	Surf.
29th	2.28	Surf/Cor
29th	1.66	Surf/Cor
30th	1.63	Surf/Cor

7
0

MDI/PHENOL RESIN APPLICATION RATES:

Normal plant operation was observed during sample periods applicable to resin application. Calculations indicate that glue volume ratios remained consistent. Also, it was noted that board production remained high for the 29th (234 press loads); the 30th (223 press loads); and the 1st (215 press loads).

APPENDIX

Table of Stack Sample Events
Tables of Dryer Temperatures and Live-bottom Dryer Feed Rates
Table of Daily Production Weights
Table of Dryer Throughput rates for all Dryer Stack Samples
Table of Dryer and Konus Fuel Feed Rates
Table of MDI/PHENOL Resin Glue Rates
Day Press Charts (7AM-7PM) for Sept. 28,29,30, & Oct. 1st, 1994
L.P. Production Reports + PC1 Data for Sept. 28,29,30,& Oct 1
L.P. Fuel Calibration Report for Konus and Dryers

	THIRD QUARTER STACK SAMPLE TIMES									
Sept. 28th										
7:00										
7:30										
8:00										
8:30										
9:00				Core Dryer	test 2		Core Dryer	test 3		
9:30	Konus (void)	test 1		9:30	Formaldehyde		9:33	Particulate		
10:00	10:05	Particulate			Formaldehyde			Particulate		
10:30		Particulate		10:54	Formaldehyde			Particulate		
11:00		Particulate					11:04	Particulate		
11:30		Particulate								
12:00	12:15	Particulate								
12:30										
13:00				Core Dryer	test 5					
13:30				13:45	Formaldehyde					
14:00					Formaldehyde					
14:30	Konus (void)	test 4		14:58	Formaldehyde					
15:00	15:10	Particulate								
15:30		Particulate								
16:00		Particulate								
16:30	16:51	Particulate								
17:00	Surface Dryer	test 6		Surface Dryer	test 7					
17:30	17:32	Particulate		17:33	Formaldehyde					
18:00		Particulate			Formaldehyde					
18:30	18:43	Particulate		18:31	Formaldehyde					

Sept. 29th											
7:00											
7:30											
8:00											
8:30							Konus	test 10			
9:00							9:07	Formaldehyde			
9:30	Surface Dryer	test 8		Surface Dryer	test9			Formaldehyde			
10:00	10:07	Part. Cond.		10:05	Formaldehyde			Formaldehyde		Core Dryer	test 11a
10:30		Part. Cond.			Formaldehyde		10:35	Formaldehyde		10:59	C yanide
11:00	11:27	Part. Cond.		11:27	Formaldehyde						C yanide
11:30											C yanide
12:00							Konus	test 11		12:09	C yanide
12:30							12:43	Formaldehyde		12:13	C yanide
13:00								Formaldehyde		13:13	C yanide
13:30	Surface Core Dryer			Surface Core Dryer				Formaldehyde			test 11b
14:00	14:09	Part. Cond.		14:08	Formaldehyde		14:09	Formaldehyde			
14:30	test 12	Part. Cond.		test 13	Formaldehyde		Surface Dryer				
15:00		Part. Cond.			Formaldehyde		15:08	C yanide			
15:30	15:31	Part. Cond.		15:30	Formaldehyde		test 14	C yanide			
16:00							16:08	C yanide			
16:30							16:30	C yanide			
17:00	Surface Core Dryer			Surface Core Dryer			test 14a	C yanide			
17:30	17:40	Part. Cond.		17:40	Formaldehyde		17:30	C yanide			
18:00	test 15	Part. Cond.		test 16	Formaldehyde						
18:30		Part. Cond.			Formaldehyde						
19:00	19:10	Part. Cond.		19:10	Formaldehyde						
19:30											
20:00											
20:30											

Sept. 30th									
7:00									
7:30									
8:00									
8:30	Surface Core Dryer								
9:00	9:21	C yanide							
9:30	test 17	C yanide							
10:00	10:21	C yanide		Bag House					
10:30	10:32	C yanide		10:59	MDI				
11:00	test 18	C yanide		test 19	MDI				
11:30	11:32	C yanide		12:49	MDI				
12:00									
12:30									
13:00	Press Vent	test 20							
13:30	13:51	NaOH							
14:00		NaOH							
14:30		NaOH							
15:00	15:03	NaOH		Bag House	test22		Press Vent	test23	
15:30				15:55	MDI		15:52	Formaldehyde	
16:00	Press Vent	test 21			MDI			Formaldehyde	
16:30	16:43	NaOH			MDI			Formaldehyde	
17:00		NaOH		17:13	MDI		17:09	Formaldehyde	
17:30	17:50	NaOH							
18:00									
18:30							Press Vent	test 25	
19:00	Bag House	test 24					19:08	Formaldehyde	
19:30	19:51	Formaldehyde						Formaldehyde	
20:00		Formaldehyde					20:05	Formaldehyde	
20:30		Formaldehyde							
21:00	21:29	Formaldehyde							
21:30									

Oct. 01st										
7:00										
7:30										
8:00										
8:30	Press Vent	test 26		Bag House	test 27					
9:00	9:29	MDI		9:07	Formaldehyde					
9:30		MDI			Formaldehyde					
10:00		MDI			Formaldehyde					
10:30	10:35	MDI		10:22	Formaldehyde					
11:00	Konus	test 27a								
11:30	11:20	Particulate								
12:00		Particulate								
12:30	12:28	Particulate		Press Vent	test 29					
13:00				13:19	MDI					
13:30	Konus	test 28			MDI		Bag House	test 30		
14:00	14:00	Particulate			MDI		14:10	Phenol		
14:30		Particulate		14:30	MDI			Phenol		
15:00	15:17	Particulate						Phenol		
15:30							15:56	Phenol		
16:00										
16:30										
17:00										
17:30										
18:00										
18:30										

	DRYER TEMPERATURES									
Date	Time	Inlet (F.)			Outlet (F.)			Live Bottom Feed Rate %(ave)		
		S	C	S/C	S	C	S/C	S	C	S/C
28th	8:30	no test	1163	no test	no test	237	no test	85	79	82
28th	9:02	no test	1170	no test	no test	236	no test	80	80	80
28th	10:07	no test	1203	no test	no test	236	no test	80	80	80
28th	11:06	no test	1217	no test	no test	237	no test	80	80	80
28th	12:04	no test	1077	no test	no test	241	no test	70	69	69
28th	13:21	no test	1119	no test	no test	235	no test	69	69	69
28th	14:03	no test	1104	no test	no test	233	no test	79	69	1
28th	16:00	no test	1186	no test	no test	233	no test	83	83	1
28th	16:53	1169	no test	no test	249	no test	no test	85	85	85
28th	17:46	1124	no test	no test	248	no test	no test	85	85	80
29th	18:35	1220	no test	no test	243	no test	no test	85	85	80
ave		1171	1155		247	236				

face HCHO core HCHO

Date	Time	Inlet (F.)			Outlet (F.)			Live Bottom Feed Rate %(ave)		
		S	C	S/C	S	C	S/C	S	C	S/C
29th	8:02	no test	no test	~~1158~~	no test	no test	246	69	69	71
29th	8:52	1200	no test	no test	247	no test	no test	69	69	71
29th	10:46	739	no test	no test	248	no test	no test	69	68	71
29th	11:47	728	no test	no test	246	no test	no test	69	69	71
29th	13:35	no test	no test	1050	no test	no test	250	75	77	71
29th	14:58	no test	no test	1137	no test	no test	250	79	85	71
29th	15:58	no test	no test	1127	no test	no test	248	79	85	71
29th	16:54	no test	no test	1127	no test	no test	246	79	85	71
29th	17:46	no test	no test	no test	no test	no test	no test	74	79	71
29th	18:53	no test	no test	875	no test	no test	250	74	79	71
ave		889	no data	~~1079~~	247		248			
	no cy. data			1063						
Date	Time	Inlet (F.)			Outlet (F.)			Live Bottom Feed Rate %(ave)		
		S	C	S/C	S	C	S/C	S	C	S/C
30th	8:35	no test	no test	1200	no test	no test	251	29	84	71
30th	9:39	no test	no test	1038	no test	no test	250	82	84	72
30th	11:30	no test	no test	1160	no test	no test	247	81	84	72
30th	12:02	no test	no test	1198	no test	no test	246	75	78	72
30th	1:00	no test	no test	no test	no test	no test	no test			
ave				1149			249			

	DRYER RATERS (%)				
	3rd QUARTER				
Day	Time	S	C	S/C	
28th	8:30	85	80	81	
28th	8:39	85	80	80	
28th	9:02	79	80	80	
28th	9:10	79	80	80	
28th	10:07	79	80	80	
28th	11:06	79	80	80	
28th	12:04	69	69	69	
28th	13:21	69	69	69	
28th	14:03	79	69	down	
28th	14:52	74	74	down	
28th	16:00	83	83	80	
28th	16:53	85	85	80	
28th	17:46	85	85	80	
28th	18:35	85	85	80	
Day	Time	S	C	S/C	
29th	8:02	69	69	71	
29th	8:52	69	69	71	
29th	10:46	69	69	71	
29th	11:47	69	69	71	
29th	13:35	74	77	71	
29th	14:58	79	85	71	
29th	15:58	79	85	71	
29th	16:34	79	85	71	
29th	17:46	74	79	71	
29th	18:53	74	80	71	
Day	Time	S	C	S/C	
30th	8:35	29	84	71	
30th	9:39	82	84	72	
30th	11:30	81	84	72	
30th	12:02	81	84	72	
30th	1:00	74	79	72	

32 ft² per board

BOARD PRODUCTION + ESTIMATED THOUGH PUT OF DRYERS								
		Production values over 12 hour period						
DATE	BOARD SIZE	PRESS LOADS	BOARD PER PRESS	UNIT WEIGHT lb/unit	TOTAL WEIGHT (lbs.)	TOTAL PRODUCTION Tonnes/hour	ESTIMATE OF TOTAL DRYER THOUGH PUT (tonnes/hour)	
Sept. 28	15/32	95	72	44	300,960	11.40	9.69	
Sept. 28	23/32	75	72	69.3	374,220	14.18	12.05	
					675,180	25.58	21.74	30.02
Sept.29	15/32nd	193	72	46.3	643,385	24.37	20.72	
Sept. 29	7/16th	22	72	42.2	66,845	2.53	2.15	
					710,230	26.90	22.87	
Sept.30	7/16th	201	72	41.2	596,246	22.59	19.20	
Sept.30	19/32th	22	72	47	74,765	2.83	2.41	
					671,011	25.42	21.60	
Oct.1	7/16th	234	72	42.1	709,301	26.87	22.84	
					709,301	26.87	22.84	
		average production (tn/hour) over 4 days =				26.19		

all wrong

[STS_7596.XLW]PRODUCTION RATE DATA

	DRYER LOADING RATE										
Test Number	Stack Test location	Tested parm.	Time for test (hours)	Press count on chart	Total board weight	Dryer flake (-15%)	Dryer ave. % rate for Surface Dry.	Core Dryer Dryer ave. % rate for	Surface/Core Dryer ave. % rate for	Test lbs/test	Test tn/hour
28TH							6	C	S/C		
2	core dryer	Formald.	1.40	25	78,771	66,955	80	80	80	33,478	10.87
3	core dryer	Particulate	1.52	28	85,335	72,535	80	80	80	36,267	10.87
5	core dryer	Formald.	1.22	14	68,456	58,187	75	69	69	29,094	10.87
6	Surf. dryer	Particulate	1.18	11	66,580	56,593	85	85	80	29,164	11.20
7	Surf. dryer	Formald.	0.97	11	54,390	46,231	85	85	80	23,816	11.20
29TH											
8	Surf. dryer	Particulate	1.33	24	78,914	67,077	69	69	71	33,059	11.27
9	Surf. dryer	Formald.	1.37	24	80,887	68,754	69	69	71	33,886	11.27
11a	Core Dryer	Cyanide	1.17	20	69,050	58,693	69	69	71	28,927	11.27
11b	Core Dryer	Cyanide	1.00	18	59,186	50,308	75	72	71	25,330	11.51
12	Surface/Corer	Particiuate	1.37	25	80,887	68,754	~~85~~ 79	~~80~~ 85	71	32,328	10.75
13	Surface/Corer	Formald.	1.37	25	80,887	68,754	~~80~~ 79	85	71	31,292	10.41
14	Surface Dryer	Cyanide	1.00	17	59,186	50,308	~~80~~ 79	85	71	22,897	10.41
14a	Surface Dryer	Cyanide	1.00	16	59,186	50,308	74	79	71	23,812	10.82
15	Surface/Core	Particulate	1.50	26	88,779	75,462	74	79	71	35,719	10.82
16	Surface/Core	Formald.	1.50	26	88,779	75,462	74	79	71	35,719	10.82
30TH											
17	Surface/Core	Cyanide	1.00	19	55,918	47,530	81	84	71	21,772	9.90
18	Surface/Core	Cyanide	1.00	19	55,918	47,530	81	84	71	21,772	9.90

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00

SECOND QUARTER DATA -- DRYER AND KONUS FEED RATES							
			Surface = 8.02 lb/rev				
Core Dryer Feed Rate			Core = 7.38 lb/rev.				
Sept. 28th			S/C = 7.58 lb/rev.				
Date	time	auger rev.	difference	feed in tonnes	min. per reading	tonnes/ hour	rev/min
28th	9:00	837					1.91
28th	10:07	1475	638	2.14	61 67	2.11	10
28th	11:10	2076	601	2.02	63	1.92	10
28th	12:11	2581	505	1.69	61	1.67	8
28th	13:23	3061	480	1.61	73	1.32	7
28th	14:02	3384	323	1.08	41	1.59	8
28th	14:55	3791	407	1.37	53	1.55	8
28th						1.66	
					t/hr. ave =	1.69	
Surface Feed Rate- Sept. 28th							
Date	time	auger rev.	difference	feed in tonnes	min. per reading	tonnes/ hour	rev/min
28th	16:54	4784					
28th	17:45	5196	412	1.50	51	1.77	8
28th	18:10	5423	227	0.83	25	1.99	9
28th	18:35	5631	208	0.76	25	1.82	8
28th	18:54	5791	160	0.58	19	1.84	8
					t/hr. ave =	1.85	

Surface Dryer Feed Rate							
Date	time	auger rev.	difference	feed in tonnes	min. per reading	tonnes/ hour	rev/min
29th	7:59	500					
29th	8:51	890	390	1.42	52	1.64	8
29th	10:34	1631	741	2.70	~~43~~ 10	3.77	17
29th	11:46	2097	466	1.70	72	1.42	6
					t/hr. ave =	2.28	
						1.54	
Surface/Core Dryer Feed Rate -- Sept. 29th							
Date	time	auger rev.	difference	feed in tonnes	min. per reading	tonnes/ hour	rev/min
29th	13:34	3281					
29th	14:57	3932	651	2.24	82	1.64	8
29th	15:57	4412	480	1.65	60	1.65	8
29th	16:54	4879	467	1.61	57	1.69	8
29th	17:45	5284	405	1.40	51	1.64	8
29th	18:52	5824	540	1.86	67	1.67	8
					t/hr. ave =	1.66	
Surface/Core Dryer Feed Rate -- Sept. 30th							
Date	time	auger rev.	difference	feed in tonnes	min. per reading	tonnes/ hour	rev/min
30th	8:38	883					
30th	9:40	1141	258	0.89	62	0.86	4
30th	11:30	2342	1201	4.14	110	2.26	11
30th	12:02	2612	270	0.93	32	1.74	8
30th	13:02	3092	480	1.65	60	1.65	8
					t/hr. ave =	1.63	

1.57

THIRD QUARTER MDI/PHENEL RESIN RECORDS							
SEPT. 30TH							
Time	MDI	lb./hr	Phenol	lb./hr	Delt t	Total	Line
					mins.	time	% rate
11:29	7324		31314				
12:10	7625	440	32605	1889	41	41	98.6
12:26	7740	431	33091	1823	16	57	98.6
1:00	7979	422	34131	1835	34	91	98.4
2:14	8510	431	36360	1807	74	165	98.2
3:02	8856	433	37860	1875	48	213	98.1
4:10	9364	448	39707	1630	68	281	70.1
16" board run till 3:55							
/32" after 3:55				MDI		PHEN.	
	total lbs recorded			2040		8393	
	total time (minits)			281		281	
		ave lbs/min		7.26		29.87	
	ave lbs/hour			436		1792	
		RATIO		20%		80%	

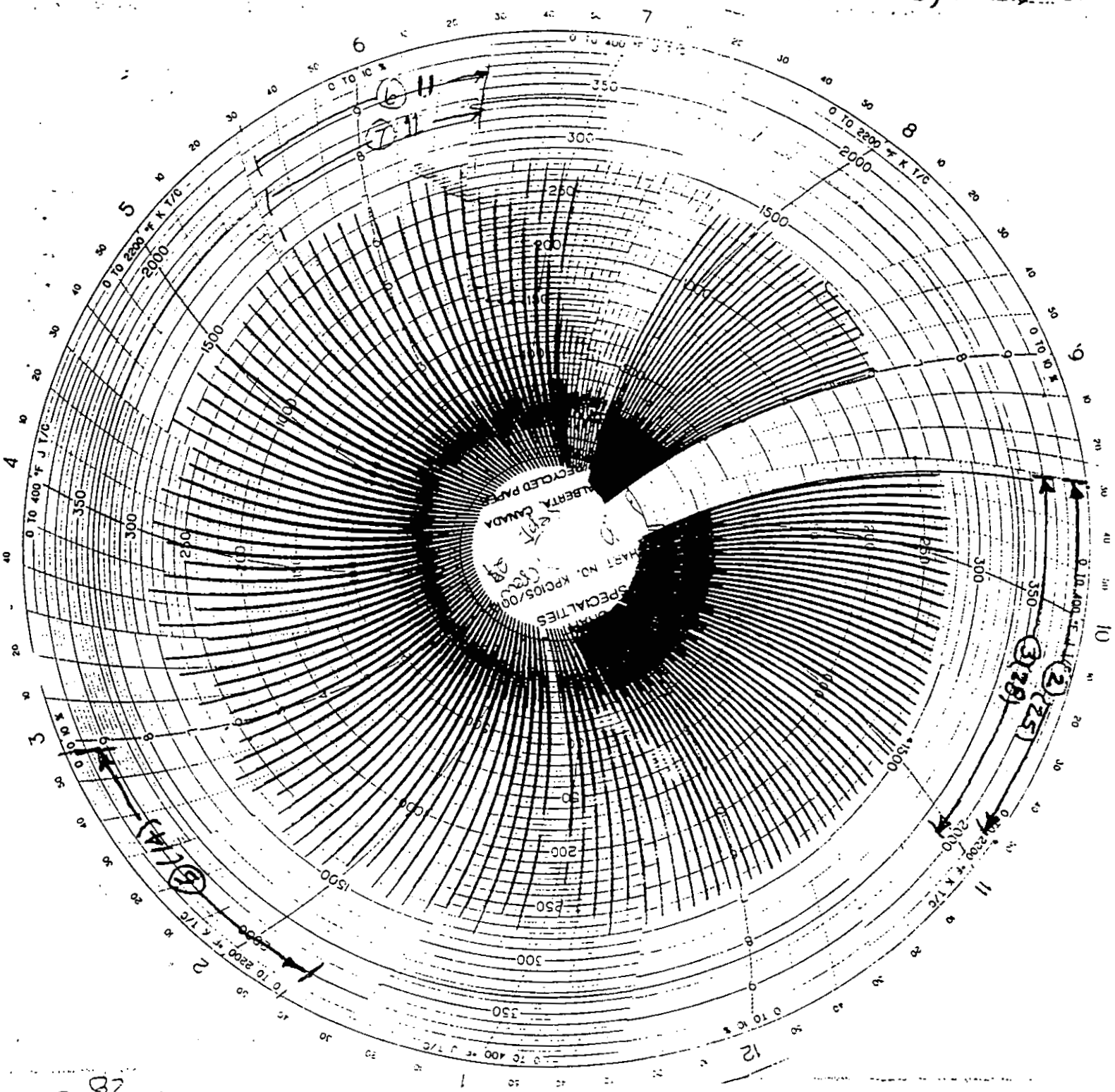
MAX. 100

	OCT. 1ST						
Time	MDI	lb./hr	Phenol	lb./hr	Delt t	Total	Line
					mins.	time	% rate
8:53	1078		4556				
9:16	1226	386	5277	1881	23	23	98.6
10:03	1567	435	6753	1884	47	70	98.6
10:56	1964	449	8456	1928	53	123	98.5
11:50	2353	432	10037	1757	54	177	98.6
12:52	2810	442	11936	1838	62	239	98.4
2:16	3426	440	14602	1904	84	323	98.8
3:14	3849	438	16427	1888	58	381	98.5
4:36	4458	446	19020	1897	82	463	98.5
: 7/16" board run							
				MDI		PHEN.	
	total lbs recorded			3380		14464	
	total time (minits)			463		463	
		ave lbs/min		7.30		31.24	
	ave lbs/hour			438		1874	
		RATIO		19%		81%	

PRESS VENT SAMPLES

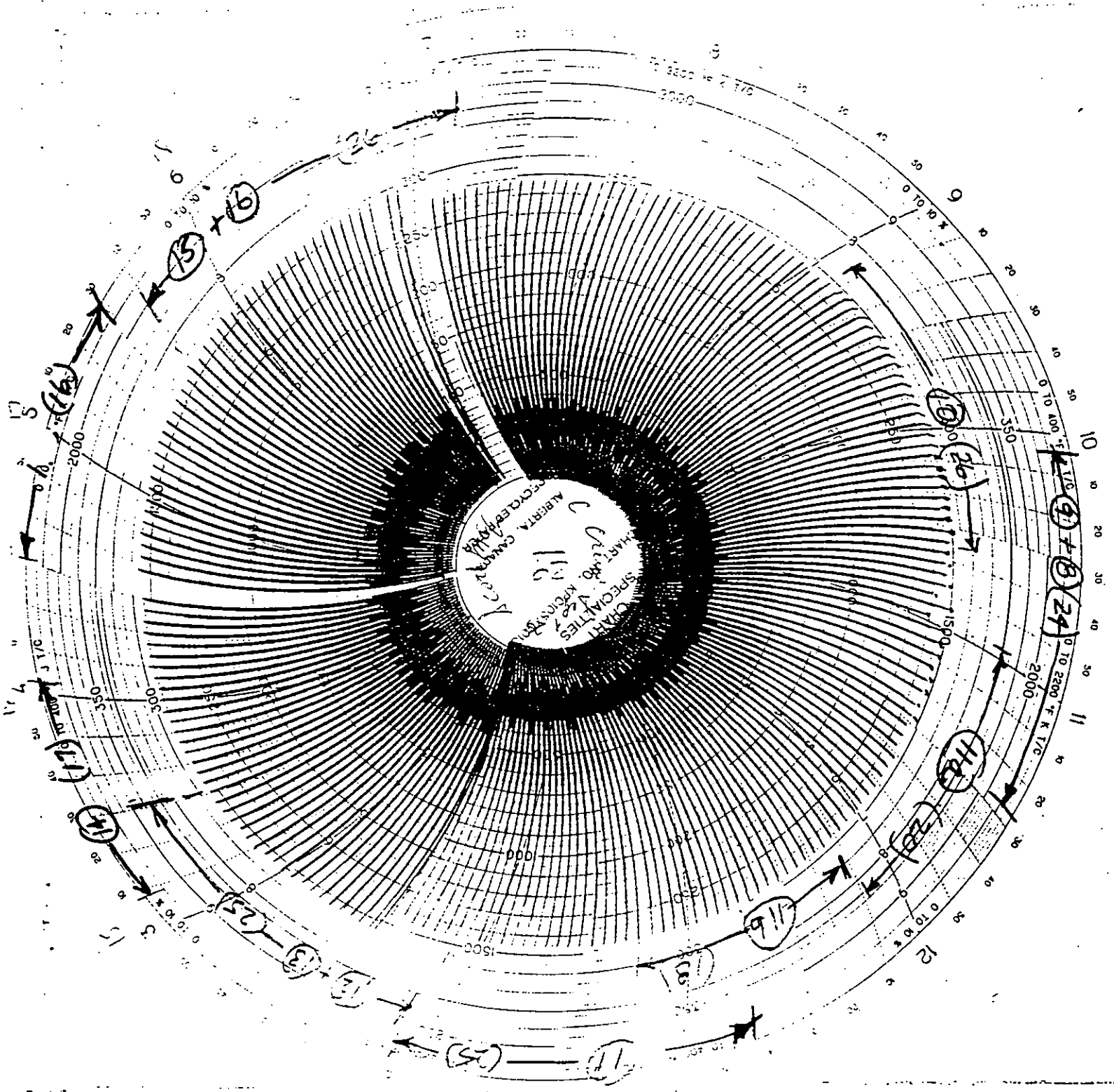
PRESS VENT PARAMETER	TEST NO.	DATE	PRESS CYCLE PER MIN.	LBS. OF PRODUCT PER TEST	MDI (LB.)	PHENOL (LB.)	MDI %	PHEN. %	TIME OF TEST (min)
NaOH	20	30th	3.13	67101	523	2151	0.78%	3.20%	72
NaOH	21	30th	3.17	53122	414	1702	0.78%	3.20%	57
Formaldeyde	23	30th	4.28	71761	559	2300	0.78%	3.20%	77
Formaldeyde	25	30th	2.90	54054	421	1732	0.78%	3.20%	58
MDI	26	1	3.00	65019	482	2062	0.74%	3.17%	66
MDI	29	1	2.96	69945	518	2218	0.74%	3.17%	71

PRESS DAY CHART SEPT 28, 1994

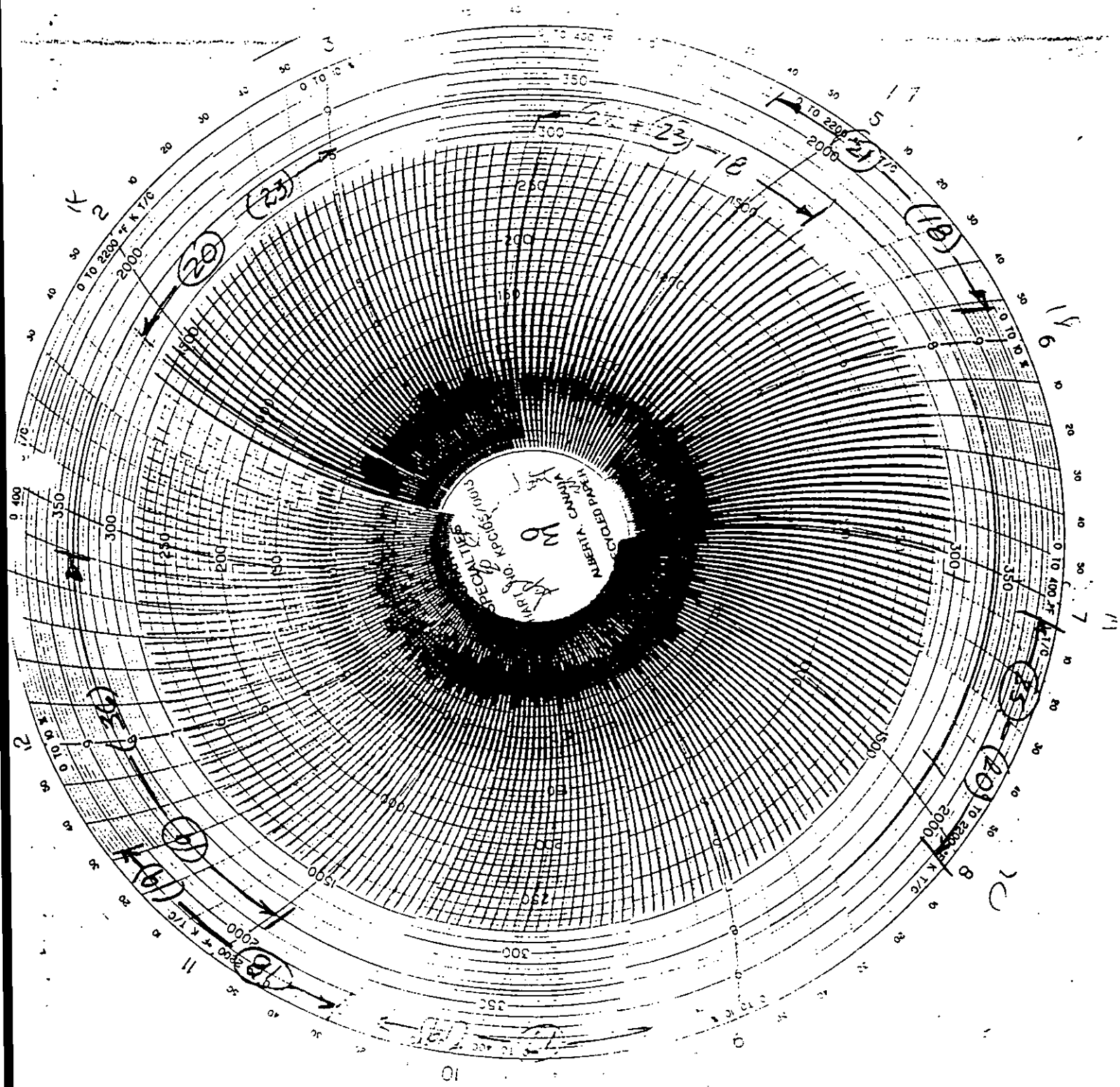


PRESS DAY CHART

SEPT 29, 1994

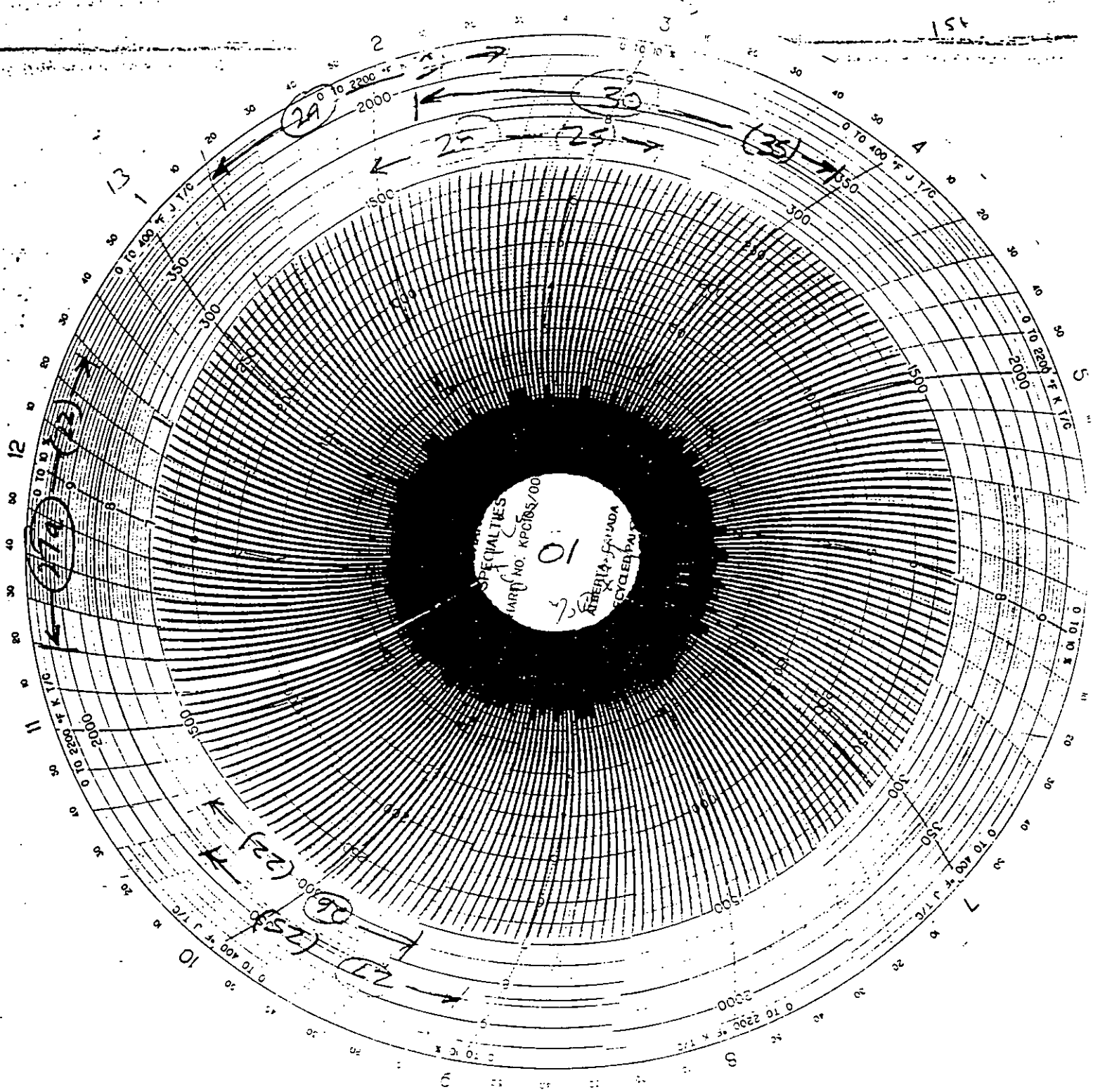


PK[illegible] C[illegible] SEPT 30, 1994



TEST 24 + 25 DATA

ARE ON NIGHT CHART



PRESS DAY CHART FOR
SE OCT 1, 1994

[illegible] [illegible]

TE: SEPT 27/94 (3) DAY OF WEEK (31) DAY OF MONTH (269) DAY OF YEAR

FT	TYPE	# PRESS LOADS	# PANELS	SURFACE FOOTAGE	3/8 FOOTAGE	RUN HRS.	DOWN TIME	% RUN TIME
.M	19/32 SE	99	7128	228,096	361,144	720	38	94.72
)	19/32 H	57	4104	131,328	207,932			
M								
					569,076			
'M	15/32	45	3240	103,680	129,600	720	37	94.86
	19/32 H	14	1008	32,256	51,071			
	23/32 H	91	6552	209,664	401,863			
AM					582,534			
TAL ILY					1,151,610	DLY	75	94.79
				WTD	3,391,518	WTD	248	94.26
				MTD	33,957,206	MTD	3846	91.33
				YTD	268,749,114			

"A" GRADE BOARD FTG.	DAILY %	MTD %
"A" 581,544	99.83	99.74
"B"	—	99.58
"C"	—	99.52
"D" 567,767	99.77	99.80
1,149,311	99.80	99.66
33,840,410	DLY % AVG	MTD % AVG

PLANATION FOR DOWN TIME:
" min. Dropped HB End of F.L.
min Elect. Shut Down to Program
min. Low Dry Bins
2min. Low Former.
min. #6 Return Gradeline Bell
" Surf. Blender Plug
" Sawline Down
" High Light BCF

CREW %	% RT	LOG COUNT DAILY	MTD
"A"	90.06	13749	172,955
"B"	93.43	—	188,853
"C"	91.16	—	192,479
"D"	90.55	10725	160,404

MTD 3/8'S FOOTAGE

15/32	1,564,077	5/8 SE	
1/4		5/8 HVY	
3/8	4,172,544	23/32 SE	26,496
7/16	20,518,134	23/32 HVY	4,561,804
1/2		3/4 SE	
5/16		3/4 HVY	
19/32 SE	952,107	1 HVY	
19/32 HVY	933,870	1 1/8 HVY	
3/8 IND			

T&G UNITS RAN

DAYS	
AFTS.	
NIGHTS	48
DAILY	48
WTD	48
MTD	2675
YTD	13252

PC2 PRODUCTION REPORT
LOUISIANA PACIFIC PANEL PRODUCTS LTD
DAWSON CREEK BC
MONTH 9 DAY 28 YEAR 94

SEPT 27/94

DAY SHIFT

WET BIN LIVE BOTTOM RUN MINUTES	SURF/CORE	344
	CORE	632
	SURFACE	639
WAFERIZER RUN MINUTES	SIDE 1	282
	SIDE 2	182
CENTRIFUGE DUMP CYCLES		6
FLAKES TO FIRE DUMP MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	0
DRYER BURNER ON MINUTES	SURF/CORE	351
	CORE	635
	SURFACE	642
DRYER STARTS	SURF/CORE	2
	CORE	1
	SURFACE	1
DRYER BURNER ON GAS MINUTES	SURF/CORE	3
	CORE	2
	SURFACE	2
DRY FUEL METERING SCREWS TOTAL REVOLUTIONS	SURF/CORE	2981
	CORE	6321
	SURFACE	5290
BARK TO CLARKE BIN MINUTES		160
LOG COUNTS	DEBARKER #1	5950
	DEBARKER #2	4775
TROUGH OVERIDES	WAFERIZER #1	29
	WAFERIZER #2	40
TROUGH LOADS	WAFERIZER #1	289
	WAFERIZER #2	208
KONUS METERING SCREW REVOLUTIONS	#1	1498
	#2	1603
BAGHOUSE FINES TO FIRE DUMP MINUTES		53
ROTARY FINES TO FIRE DUMP MINUTES		17
# OF FINES TO FIRE DUMP TRIPS		2
JACKLADDER RUN MINUTES	#1	181
	#2	184
	#3	108
	#4	177
SUSTAINING GAS ON MINUTES	SURF/CORE	14
	CORE	6
	SURFACE	5

PC1 PRODUCTION REPORT
LOUISIANA PACIFIC CANADA LTD
DAWSON CREEK BC
MONTH 9 DAY 26 YEAR 94

DAY SHIFT

NUMBER OF PRESS LOADS	156
FORMING LINE STOPS	12
FORMING LINE FAULTS	1
FORMING LINE DOWNTIME MINUTES	38
SURFACE BLENDER STARTS	2
CORE BLENDER STARTS	3
SURFACE BLENDER INFEED STARTS	38
CORE BLENDER INFEED STARTS	11
T&G AUTO RUN MINUTES	0

DAILY PRODUCTION REPORT

DATE: Sept 29/91 (4) DAY OF WEEK (29) DAY OF MONTH (270) DAY OF YEAR

SHIFT	TYPE	# PRESS LOADS	# PANELS	SURFACE FOOTAGE	3/8 FOOTAGE	RUN HRS.	DOWN TIME	% RUN TIME
7 AM	15/32	95 (19)	6840	218,880	273,600			
D	23/32 SE	9	648	20,736	39,745	720	14	98.06
7 PM	23/32 H	66 (69.3)	4752	152,064	291,461			
		170			(604,806)			
7 PM	23/32	97	6984	223,488	428,359			
A	15/32	58	4176	133,632	167,040	720	14	98.06
7 AM					(595,399)			
TOTAL DAILY					1,200,205	DLY	28	98.06
				WTD	4,591,723	WTD	276	95.21
				MTD	35,157,411	MTD	3874	91.54
				YTD	269,949,319			

"A" GRADE BOARD FTG.	DAILY %	MTD %
"A" 595,220	99.97	99.76
"B"	—	99.58
"C"	—	99.52
"D" 601,238	99.41	99.77
1,196,458	99.69	99.66
35,036,868	DLY % AVG	MTD % AVG

EXPLANATION FOR DOWN TIME:

(D) 1 min. Line Backed Up
1 min. Blender Flush
8 " Power Blip Lost S1C Blender Infeed
2 " Coil Starvation
2 " Sawline Down

(A) 6 min Sawline Down
7 min Blender Plug (Surface)
1 " Board Change

CREW	% RT	LOG COUNT DAILY	MTD
"A"	90.56	12975	185,930
"B"	93.43	—	188,853
"C"	91.16	—	192,479
"D"	91.02	11,912	172,316

MTD 3/8'S FOOTAGE

15/32	2,004,718	3/8 SE	
1/4		3/8 HVY	
3/8	4,172,544	[illegible]	66,241
7/16	2,[illegible]8,134	[illegible]	5,281,624
1/[illegible]	[illegible]	[illegible]	
5/[illegible]	[illegible]	[illegible]	
19/32	[illegible]52,107	[illegible]	
19/[illegible]	[illegible]33,870	[illegible]	
3/8 [illegible]			

T&G UNITS RAN

DAYS	52
AFTS.	
NIGHTS	61
DAILY	113
WTD	161
MTD	2788
YTD	13,365

PC2 PRODUCTION REPORT
LOUISIANA PACIFIC PANEL PRODUCTS LTD
DAWSON CREEK BC
MONTH 9 DAY 29 YEAR 94

SEPT 28/94

DAY SHIFT

WET BIN LIVE BOTTOM RUN MINUTES	SURF/CORE	546
	CORE	675
	SURFACE	717
WAFERIZER RUN MINUTES	SIDE 1	286
	SIDE 2	229
CENTRIFUGE DUMP CYCLES		7
FLAKES TO FIRE DUMP MINUTES	SURF/CORE	9
	CORE	10
	SURFACE	10
DRYER BURNER ON MINUTES	SURF/CORE	552
	CORE	677
	SURFACE	715
DRYER STARTS	SURF/CORE	3
	CORE	2
	SURFACE	1
DRYER BURNER ON GAS MINUTES	SURF/CORE	15
	CORE	4
	SURFACE	2
DRY FUEL METERING SCREWS TOTAL REVOLUTIONS	SURF/CORE	4696
	CORE	6182
	SURFACE	5823
BARK TO CLARKE BIN MINUTES		209
LOG COUNTS	DEBARKER #1	5923
	DEBARKER #2	5989
TROUGH OVERIDES	WAFERIZER #1	21
	WAFERIZER #2	76
TROUGH LOADS	WAFERIZER #1	303
	WAFERIZER #2	293
KONUS METERING SCREW REVOLUTIONS	#1	2048
	#2	1691
BAGHOUSE FINES TO FIRE DUMP MINUTES		26
ROTARY FINES TO FIRE DUMP MINUTES		26
# OF FINES TO FIRE DUMP TRIPS		2
JACKLADDER RUN MINUTES	#1	276
	#2	100
	#3	191
	#4	174
SUSTAINING GAS ON MINUTES	SURF/CORE	44
	CORE	16
	SURFACE	8

PC1 PRODUCTION REPORT
LOUISIANA PACIFIC CANADA LTD
DAWSON CREEK BC
MONTH 9 DAY 29 YEAR 94

DAY SHIFT

NUMBER OF PRESS LOADS	170
FORMING LINE STOPS	13
FORMING LINE FAULTS	1
FORMING LINE DOWNTIME MINUTES	14
SURFACE BLENDER STARTS	2
CORE BLENDER STARTS	3
SURFACE BLENDER INFEED STARTS	32
CORE BLENDER INFEED STARTS	16
T&G AUTO RUN MINUTES	417

LY) IOL EP

DATE: Sept 29/94 (5) DAY OF WEEK (29) DAY OF MONTH (271) DAY OF YEAR

SHIFT	TYPE	# PRESS LOADS	# PANELS	SURFACE FOOTAGE	3/8 FOOTAGE	RUN HRS.	DOWN TIME	% RUN TIME
7 AM	13/32	193	13,896	444,672	555,840			
C	7/16	22	1,584	50,688	59,138			
7 PM					614,978	720	12	98.33
7 PM	7/16	233	16,776	536,832	626,322	720	2	99.72
B								
7 AM								
TOTAL DAILY					1,241,300	DLY	14	99.03
				WTD	5,833,023	WTD	290	95.97
				MTD	36,398,711	MTD	3888	91.77
				YTD	271,190,619			

"A" GRADE BOARD FTG.	DAILY %	MTD %
"A"	—	99.76
"B" 625,007	99.79	99.60
"C" 611,657	99.46	99.51
"D"	—	99.77
1,236,664	99.63	99.66
36,273,532	DLY % AVG	MTD % AVG

CREW	% RT	LOG COUNT DAILY	MTD
"A"	90.56	—	185,930
"B"	93.80	12,303	201,156
"C"	91.60	13,709	206,188
"D"	91.02	—	172,316

EXPLANATION FOR DOWN TIME:

(C) 2 min. Low Lights
1 min. Missed Clamp
4 " Unloader Didn't Make Position
2 " Dropped Screen Press #3
3 " #5 Return

(B) 1 min. Sawline Down
1 min. Blender Flush.

MTD 3/8'S FOOTAGE			
15/32	2,560,558	3/8 SE	
1/4		3/8 EVY	
3/8	4,172,544	[illegible]	66,241
7/[illegible]	21[illegible]03,594	[illegible]	5,281,624
1/[illegible]	[illegible]	[illegible]	
5/[illegible]	[illegible]	[illegible]	
19/[illegible]	[illegible]82,107	[illegible]	
19/[illegible]	[illegible]33,870	[illegible]	
3/8 [illegible]			

T&G UNITS RAN	
DAYS	54
AFTS.	
NIGHTS	59
DAILY	113
WTD	174
MTD	7901
YTD	13478

[illegible]
LOUISIANA PAC PTY LIMIT[illegible]
DAWSON CREEK [illegible]
MONTH [illegible] DAY [illegible] YEAR [illegible]

SEPT 29/94

DAY SHIFT

WET BIN LIVE BOTTOM RUN MINUTES	SURF/CORE	[illegible]
	CORE	[illegible]
	SURFACE	719
WAFERIZER RUN MINUTES	SIDE 1	764
	SIDE 2	744
CENTRIFUGE DUMP CYCLES		[illegible]
FLAKES TO FIRE DUMP MINUTES	SURF/CORE	[illegible]
	CORE	0
	SURFACE	0
DRYER BURNER ON MINUTES	SURF/CORE	719
	CORE	719
	SURFACE	719
DRYER STARTS	SURF/CORE	[illegible]
	CORE	[illegible]
	SURFACE	[illegible]
DRYER BURNER ON GAS MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	0
DRY FUEL METERING SCREWS TOTAL REVOLUTIONS	SURF/CORE	5364
	CORE	6418
	SURFACE	5388
BARK TO CLARKE BIN MINUTES		430
LOG COUNTS	DEBARKER #1	7377
	DEBARKER #2	6332
TROUGH OVERIDES	WAFERIZER #1	16
	WAFERIZER #2	37
TROUGH LOADS	WAFERIZER #1	349
	WAFERIZER #2	295
KONUS METERING SCREW REVOLUTIONS	#1	2419
	#2	1917
BAGHOUSE FINES TO FIRE DUMP MINUTES		144
ROTARY FINES TO FIRE DUMP MINUTES		112
# OF FINES TO FIRE DUMP TRIPS		20
JACKLADDER RUN MINUTES	#1	458
	#2	142
	#3	189
	#4	193
SUSTAINING GAS ON MINUTES	SURF/CORE	0
	CORE	1
	SURFACE	11

PC1 PRODUCTION REPORT
LOUISIANA PACIFIC CANADA LTD
DAWSON CREEK BC
MONTH 9 DAY 30 YEAR 94

	DAY SHIFT
NUMBER OF PRESS LOADS	215
FORMING LINE STOPS	9
FORMING LINE FAULTS	2
FORMING LINE DOWNTIME MINUTES	12
SURFACE BLENDER STARTS	1
CORE BLENDER STARTS	5
SURFACE BLENDER INFEED STARTS	95
CORE BLENDER INFEED STARTS	40
T&G AUTO RUN MINUTES	367

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DAILY PRO CTION REPORT

DATE: Sept 30/94 (6) DAY OF WEEK (34) DAY OF MONTH (272) DAY OF YEAR

SHIFT	TYPE	# PRESS LOADS	# PANELS	SURFACE FOOTAGE	3/8 FOOTAGE	RUN HRS.	DOWN TIME	% RUN TIME
7 AM	7/16	201 (in.2)	14,472	463104	540,303			
C	19/32	22 (61.4)	1,584	50,688	80,254			
7 PM						720 min	2 min	99.72
					620,557			
7 PM	7/16	234	16,848	539,136	629,010			
B								
7 AM						720 min	1 min	99.86
TOTAL DAILY					1,249,567	DLY	3	99.79
				WTD	7,682,590	WTD	293	96.61
				MTD	37,648,278	MTD	3891	92.05
				YTD	272,449,186			

"A" GRADE BOARD	FTG.	DAILY %	MTD %
"A"		—	99.76
"B"	628,947	99.99	99.62
"C"	618,447	99.66	99.52
"D"		—	99.77
	1,247,394	99.83	99.66
	37,520,926	DLY % AVG	MTD % A

SCREW "A"	% RT	LOG COUNT DAILY	MTD
"A"	90.56	—	188
"B"	94.14	13,753	21
"C"	92.06	12,828	21
"D"	91.02	—	17

EXPLANATION FOR DOWN TIME:

C) 2min Dropped Screen #5

B) 1min Blender Plugd

MTD 3/8'S FOOTAGE			
15/32	2,560,320	[redacted]	
1/4		[redacted]	
[redacted]	4,172,544	[redacted]	66,241
[redacted]	[redacted] 1,3187	[redacted]	5,281,624
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	
19/[redacted]	[redacted] 2,107	[redacted]	
19/[redacted]	[redacted] 124	[redacted]	
3/[redacted]		[redacted]	

T&G UNITS RAN	
DAYS	54
AFTS.	
NIGHTS	58
DAILY	112
MTD	386
WTD	3018
YTD	13591

PCC PRODUCTION REPORT
LOUISIANA PACIFIC PANEL PRODUCTS LTD
DAWSON CREEK B.C.
MONTH 09 DAY 1 YEAR 94

SEPT 30/94

DAY SHIFT

WET BIN LIVE BOTTOM RUN MINUTES	SURF/CORE	720
	CORE	720
	SURFACE	690
WAFERIZER RUN MINUTES	SIDE 1	346
	SIDE 2	332
CENTRIFUGE DUMP CYCLES		7
FLAKES TO FIRE DUMP MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	5
DRYER BURNER ON MINUTES	SURF/CORE	720
	CORE	720
	SURFACE	699
DRYER STARTS	SURF/CORE	0
	CORE	0
	SURFACE	1
DRYER BURNER ON GAS MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	6
DRY FUEL METERING SCREWS TOTAL REVOLUTIONS	SURF/CORE	6421
	CORE	7138
	SURFACE	5873
BARK TO CLARKE BIN MINUTES		206
LOG COUNTS	DEBARKER #1	7436
	DEBARKER #2	6317
TROUGH OVERIDES	WAFERIZER #1	23
	WAFERIZER #2	26
TROUGH LOADS	WAFERIZER #1	334
	WAFERIZER #2	287
KONUS METERING SCREW REVOLUTIONS	#1	1517
	#2	2070
BAGHOUSE FINES TO FIRE DUMP MINUTES		52
ROTARY FINES TO FIRE DUMP MINUTES		51
# OF FINES TO FIRE DUMP TRIPS		4
JACKLADDER RUN MINUTES	#1	216
	#2	217
	#3	303
	#4	318
SUSTAINING GAS ON MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	10

PC1 PRODUCTION REPORT
LOUISIANA PACIFIC CANADA LTD
DAWSON CREEK BC
MONTH 10 DAY 1 YEAR 94

DAY SHIFT

NUMBER OF PRESS LOADS	223
FORMING LINE STOPS	3
FORMING LINE FAULTS	1
FORMING LINE DOWNTIME MINUTES	2
SURFACE BLENDER STARTS	0
CORE BLENDER STARTS	6
SURFACE BLENDER INFEED STARTS	51
CORE BLENDER INFEED STARTS	48
T&G AUTO RUN MINUTES	411

LOUISIANA PACIFIC CANADA LTD. DAWSON CREEK FIBERBOARD PLANT

DAILY PRODUCTION REPORT

DATE: Oct 1/94 (7) DAY OF WEEK (35) DAY OF MONTH (273) DAY OF YEAR

SHIFT	TYPE	# PRESS LOADS	# PANELS	SURFACE FOOTAGE	3/8 FOOTAGE	RUN HRS.	DOWN TIME	% RUN TIME
7 AM	7/16	234	16848	539,136	629,010	720	3	99.58
C		(12.1)						
7 PM								
7 PM	7/16	232	16,704	534,528	623,634	720	8	98.89
B								
7 AM								
TOTAL DAILY					1,252,644	DLY	11	99.26
				WTD	8,335,234	WTD	304	96.98
				MTD	38,900,922	MTD	3902	92.21
				YTD	273,692,830			

"A" GRADE BOARD	FTG.	DAILY %	MTD %
"A"			99.76
"B"	623,135	99.92	99.64
"C"	627,375	99.74	99.54
"D"			99.77
	1,250,510	99.83	99.67
	38,771,436	DLY % AVG	MTD % AVG

EXPLANATION FOR DOWN TIME:
(C) 2 min Sawline Down
1 min Line Breakdown
(B) 4 min Dropped Screw #6
2 min Missed Alignment #9 Loader
2 " Missed Clamp.

FLOW	% RT	LOG COUNT DAILY	LOG COUNT MTD
"A"	90.56	—	189,930
"B"	94.39	14173	229,082
"C"	92.46	14988	231,099
"D"	91.02	—	172,316

MTD 3/8'S FOOTAGE

15/32	2,569,330	[redacted]	
1/4		[redacted]	
[redacted]	4,172,544	[redacted]	66,241
[redacted]	[redacted]	[redacted]	5,281,624
[redacted]			
[redacted]			
[redacted]	32,107		
[redacted]	4,124		
[redacted]			

T&G UNITS RAN

DAYS	22
AFTS.	
NIGHTS	
DAILY	22
WTD	408
MTD	3035
YTD	13612

PCC PRODUCTION REPORT
LOUISIANA PACIFIC PANEL PRODUCTS LTD
DAWSON CREEK BC
MONTH 10 DAY 1 YEAR

OCT 1 | 94

DAY SHIFT

WET BIN LIVE BOTTOM RUN MINUTES	SURF/CORE	720
	CORE	720
	SURFACE	720
WAFERIZER RUN MINUTES	SIDE 1	327
	SIDE 2	251
CENTRIFUGE DUMP CYCLES		7
FLAKES TO FIRE DUMP MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	0
DRYER BURNER ON MINUTES	SURF/CORE	720
	CORE	720
	SURFACE	720
DRYER STARTS	SURF/CORE	0
	CORE	0
	SURFACE	0
DRYER BURNER ON GAS MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	0
DRY FUEL METERING SCREWS TOTAL REVOLUTIONS	SURF/CORE	6682
	CORE	7152
	SURFACE	6116
BARK TO CLARKE BIN MINUTES		218
LOG COUNTS	DEBARKER #1	7488
	DEBARKER #2	7500
TROUGH OVERIDES	WAFERIZER #1	20
	WAFERIZER #2	48
TROUGH LOADS	WAFERIZER #1	328
	WAFERIZER #2	311
KONUS METERING SCREW REVOLUTIONS	#1	1933
	#2	2259
BAGHOUSE FINES TO FIRE DUMP MINUTES		45
ROTARY FINES TO FIRE DUMP MINUTES		42
# OF FINES TO FIRE DUMP TRIPS		2
JACKLADDER RUN MINUTES	#1	221
	#2	217
	#3	304
	#4	303
SUSTAINING GAS ON MINUTES	SURF/CORE	0
	CORE	0
	SURFACE	0

PC1 PRODUCTION REPORT
LOUISIANA PACIFIC CANADA LTD
DAWSON CREEK BC
MONTH 10 DAY 2 YEAR 94

DAY SHIFT

NUMBER OF PRESS LOADS	234
FORMING LINE STOPS	3
FORMING LINE FAULTS	1
FORMING LINE DOWNTIME MINUTES	3
SURFACE BLENDER STARTS	0
CORE BLENDER STARTS	0
SURFACE BLENDER INFEED STARTS	25
CORE BLENDER INFEED STARTS	19
T&G AUTO RUN MINUTES	280

OCT 1

FUEL CALIBRATION REPORT

DATE of CALIBRATION: 08-25-94 BY: Charles Wm Sikes

CALIBRATION TO BE USED FOR MONTHS: July, August, September

SOURCE: Komus #1

SAMPLE TAKEN AT: Stoker Screw

COUNTS RECORDED AT: Metering Bin O/F Screw

FUEL BIN LEVEL: 50%

SAMPLE NUMBER	(A) COUNTS per SAMPLE	(B) GROSS WEIGHT	(C) CONTAINER WEIGHT	(D) NET WEIGHT (B - C)	(E) WEIGHT per COUNT (D % A)	(F) MOISTURE PERCENTAGE
1	1	20.6	—	20.6	20.6	
2	1	20.3	—	20.3	20.3	
3	1	17.3	—	17.3	17.3	

"A" TTL: 3 "D" TTL: 58.2 MOISTURE AVE: 42.1%

CALIBRATION = 19.4 (TTL "A" % TTL "D")

FUEL CALIBRATION REPORT

DATE of CALIBRATION: 08-25-94 BY: Charles Wm Sikes

CALIBRATION TO BE USED FOR MONTHS:

SOURCE: Komus #2

SAMPLE TAKEN AT: Stoker Screw

COUNTS RECORDED AT: Metering Bin O/F Screw

FUEL BIN LEVEL: 50%

SAMPLE NUMBER	(A) COUNTS per SAMPLE	(B) GROSS WEIGHT	(C) CONTAINER WEIGHT	(D) NET WEIGHT (B - C)	(E) WEIGHT per COUNT (D % A)	(F) MOISTURE PERCENTAGE
1	1	12.0		12.0		
2	1	17.5		17.5		
3	1	11.4		11.4		

'A" TTL: 3 "D" TTL: 40.9 MOISTURE AVE: 41.9

CALIBRATION = 13.6 (TTL "A" % TTL "D")

FILE: [23] \FORMS\ENV\FUEL-CAL.WK1

FUEL CALIBRATION REPORT

DATE of CALIBRATION: 08-26-94 BY: Charlie Ives, Mike Hoyer, Ron

CALIBRATION TO BE USED FOR MONTHS: July, August, September

SOURCE: Surface Core (Dry Fuel)

SAMPLE TAKEN AT: Shakers

COUNTS RECORDED AT: Shakers

FUEL BIN LEVEL: 90%

SAMPLE NUMBER	(A) COUNTS per SAMPLE	(B) GROSS WEIGHT	(C) CONTAINER WEIGHT	(D) NET WEIGHT (B - C)	(E) WEIGHT per COUNT (D '/. A)	(F) MOISTURE PERCENTAGE
1	1 3/4	13.1	—	13.1	7.49	
2	1	8.1	—	8.1	8.10	1.65
3	1 1/4	8.9	—	8.9	7.12	

"A" TTL: 4 "D" TTL: 30.1 MOISTURE AVE: 1.65

CALIBRATION = 7.58 (TTL "A" '/. TTL "D")

FUEL CALIBRATION REPORT

DATE of CALIBRATION: 08-31-94 BY: Charlie Ives, Scott Grant

CALIBRATION TO BE USED FOR MONTHS: July, August, September

SOURCE: Core (Dry Fuel)

SAMPLE TAKEN AT: Shakers

COUNTS RECORDED AT: Shakers

FUEL BIN LEVEL: 92%

SAMPLE NUMBER	(A) COUNTS per SAMPLE	(B) GROSS WEIGHT	(C) CONTAINER WEIGHT	(D) NET WEIGHT (B - C)	(E) WEIGHT per COUNT (D '/. A)	(F) MOISTURE PERCENTAGE
1.	1	7.3	—	7.3	7.3	
2.	1	7.3	—	7.3	7.3	1.5
3.	1 1/16	8.0	—	8.0	7.53	

"A" TTL: 3 1/16 "D" TTL: 22.6 MOISTURE AVE: 1.5

CALIBRATION = 7.38 (TTL "A" '/. TTL "D")

FILE: 123; \FORMS\ENV\FUEL-CAL.WK1

DAY	dryer	pollut.	tdf/hr	inlet	hours	press loads	total lbs final product	tons FP/hr	total lbs dryer throughput per hour	rate surf	rate core	rate s/c	lbs/hr surf	ton/hr surf	tonne/hr surf	lbs/hr core	ton/hr core	tonne/hr core	lbs/hr s/c	ton/hr s/c	tonne/hr s/c	TFP surf	TFP core	TFP s/c
28	core	cy	1.83	1155	1	18	59186	29.6	65241	75	72	71	22445	11.22	10.18	21547	10.77	9.77	21248	10.62	9.64	10.18	9.77	9.64
28	core	cy	1.83	1155	1.17	20	69050	29.5	65055	69	69	71	21477	10.74	9.74	21477	10.74	9.74	22100	11.05	10.02	9.74	9.74	10.02
								29.6					21961	10.98		21512	10.76		21674	10.84		9.96	9.76	9.83
29	surf	cy	1.7	889	1	16	59186	29.6	65241	74	79	71	21553	10.78	9.78	23009	11.50	10.44	20679	10.34	9.38	9.78	10.44	9.38
29	surf	cy	1.7	889	1	17	59186	29.6	65241	79	85	71	21932	10.97	9.95	23598	11.80	10.70	19711	9.86	8.94	9.95	10.70	8.94
								29.6					21742	10.87		23303	11.65		20195	10.10		9.86	10.57	9.16
30	s/c	cy	1.8	1149	1	19	55918	28.0	61638	81	84	71	21156	10.58	9.60	21939	10.97	9.95	18544	9.27	8.41	9.60	9.95	8.41
30	s/c	cy	1.8	1149	1	19	55918	28.0	61638	81	84	71	21156	10.58	9.60	21939	10.97	9.95	18544	9.27	8.41	9.60	9.95	8.41
								28.0					21156	10.58		21939	10.97		18544	9.27		9.60	9.95	8.41
28	core	hcho	1.83	1171	1.4	25	78771	28.1	62021	80	80	80	20674	10.34	9.38	20674	10.34	9.38	20674	10.34	9.38	9.38	9.38	9.38
28	core	hcho	1.83	1171	1.22	14	68456	28.1	61852	75	69	69	21779	10.89	9.88	20036	10.02	9.09	20036	10.02	9.09	9.88	9.09	9.09
								28.1					21226	10.61		20355	10.18		20355	10.18		9.63	9.23	9.23
28	surf	hcho	2.04	1171	0.97	11	54390	28.0	61808	85	85	80	21015	10.51	9.53	21015	10.51	9.53	19779	9.89	8.97	9.53	9.53	8.97
29	surf	hcho	1.7	889	1.37	24	80887	29.5	65082	69	69	71	21486	10.74	9.75	21486	10.74	9.75	22109	11.05	10.03	9.75	9.75	10.03
			1.9	1030				28.8					21251	10.63		21251	10.63		20944	10.47		9.64	9.64	9.50
		1.87																						
29	s/c	hcho	1.83	1063	1.37	25	80887	29.5	65082	79	85	71	21878	10.94	9.92	23540	11.77	10.68	19663	9.83	8.92	9.92	10.68	8.92
29	s/c	hcho	1.83	1063	1.5	26	88779	29.6	65241	74	79	71	21553	10.78	9.78	23009	11.50	10.44	20679	10.34	9.38	9.78	10.44	9.38
								29.6					21716	10.86		23275	11.64		20171	10.09		9.85	10.56	9.15
28	core	tsp	1.83	1155	1.52	28	85335	28.1	61885	80	80	80	20628	10.31	9.36	20628	10.31	9.36	20628	10.31	9.36	9.36	9.36	9.36
28	surf	tsp	2.04	1171	1.33	24	78914	29.7	65404	69	69	71	21593	10.80	9.79	21593	10.80	9.79	22218	11.11	10.08	9.79	9.79	10.08
29	surf	tsp	1.7	889	1.18	11	66580	28.2	62196	85	85	80	21147	10.57	9.59	21147	10.57	9.59	19903	9.95	9.03	9.59	9.59	9.03
			1.9	1030				28.9					21370	10.68		21370	10.68		21061	10.53		9.69	9.69	9.55
		1.51																						
29	s/c	tsp	1.83	1063	1.37	25	80887	29.5	65082	79	85	71	21878	10.94	9.92	23540	11.77	10.68	19663	9.83	8.92	9.92	10.68	8.92
29	s/c	tsp	1.83	1063	1.5	26	88779	29.6	65241	74	79	71	21553	10.78	9.78	23009	11.50	10.44	20679	10.34	9.38	9.78	10.44	9.38
								29.6					21716	10.86		23275	11.64		20171	10.09		9.85	10.56	9.15

dryer	fuel	fuel tonne/hr	2205 1.102	2000 temp
	28 core	1.66	1.83	1155
	28 surf	1.85	2.04	1171
	29 surf	1.54	1.70	889
	29 s/c	1.66	1.83	1063
	30 s/c	1.63	1.80	1149

Process data Sept '94

dryer	fuel	fuel tonne/hr	temp
28	core	1.66	1155
28	surf	1.85	1171
29	surf	1.54	889
29	s/c	1.66	1063
30	s/c	1.63	1149