AP-42 Section Number: 9.10.1.2

Reference Number: 14

Title: Emission Measurement Test Report of C. E. Boilers, Union Boilers, and Pulp Dryers - Permit Compliance for SO2, Particulate, and PM-10 with Back-Half Emissions - Holly Sugar Corporation, Montana Division

The Emisson Measurement Group, Inc.

The Emisson Measurement Group, Inc.

November 1993

EMISSION MEASUREMENT TEST REPORT

of

C.E. Boilers, Union Boilers & Pulp Dryers Permit Compliance

for

SO_2, Particulate and PM10 with back-half Emission(s)

C.E. Boilers, Union Boilers, Pulp Dryers
Sidney, Montana Plant, Sidney, MT
Test Date: October 19-23, 1993

Prepared for:

Holly Sugar Corporation
Montana Division

East Holly Street
Sidney, MT 59270
Mr. Tom B. Jacobsen, Environmental Engineer
Phone: 307 532-7141, Ext.: N/A

Submitted to:

Montana State Department of Health and Environmental Sciences
Air Quality Bureau

Room A116
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Helena, MT 59620
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Prepared by:

THE EMISSION MEASUREMENT GROUP, INC.

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Report Date: November 16, 1993

CONTENTS OF EMISSION MEASUREMENT TEST REPORT

C.E. Boilers, Union Boilers & Pulp Dryers
for SO_2, Particulate and PM10 with back-half Emission(s)
Sidney, Montana Plant, Sidney, MT

CERTIFICATION, REVIEW, and ACCEPTANCE of REPORT

*** This Emission Measurement Compliance Test Report was compiled and prepared by the Project Leader for **The Emission Measurement People, Inc.**, using data collected by **The Emission Measurement People, Inc.** under contract to the Operating Company, as well as data supplied by the plant operator(s). ***

CERTIFICATION

*** As on site Project Leader for **The Emission Measurement People, Inc.**, I hereby certify that this report and these data are authentic and correct for the emission testing reported here. ***

Project Leader: Jeff R Floyd Date: 11-19-93

REVIEW

*** As Technical Operations Director for **The Emission Measurement People, Inc.**, I have reviewed the report for accuracy and completeness and find it acceptable and technically correct. ***

Technical Director: Todd Hedy Date: 11/19/93

ACCEPTANCE

*** As a final document, and from my level of involvement, I have reviewed this report and find it accurate, complete, and a fair presentation of the pertinent facts, process records, and emission levels for the subject facility. On behalf of the Operating Company I approve the report for release for purposes of evaluating the compliance status of the facility with applicable air pollution regulations. ***

Signed: _____ Date: _____

Name: _____ Title: _____

1.0 Introduction and Project Overview

The objective of this Emission Measurement Project was to conduct the specified number of valid test runs for certain parameter(s) of the flue gases coming from the plant's specific stack(s) (described in Table 1-1), such that the MT-AQB, listed in Table 1-1, can make a determination as to the compliance status of the facility with applicable air pollution regulations, emission limitations, permit conditions, and/or permit requirements, listed in Table 1-2, below. **The Emission Measurement Group, Inc.** of Englewood, Colorado have been retained by Holly Sugar Corporation (HSC) to conduct the required air pollution emission tests at the subject plant. This plant may have been tested previously, as given in Table 1-2, in Section 1.1.

Operating Co.:	Holly Sugar Corporation
Facility Name:	Sidney, Montana Plant
Reg. Agency:	MT-AQB
Test Location:	Sidney, MT
Test Date:	October 19-23, 1993

This Emission Measurement Test Report contains the description of the tests conducted, including quality control checks, original copies of all test data and records, and the final test results and production records during the tests. The major points of this report are organized as follows.

A compliance test protocol (plan) was prepared and sent to the MT-AQB with (or just following) the usual "30-day advance notification to test". The protocol contained critical plant specifications, flue drawing(s), detailed test method descriptions, and the project schedule. It was reviewed, amended (as needed), and approved by the Agency prior to the commencement of testing. There was a short pre-test conference with all key personnel on site just prior to the start of the tests, in order to review the approved test protocol and project plans, and assure concurrence of all parties for testing responsibilities and field schedules, etc. Certain information in the protocol and/or the Records Reference Document (RRD) (described in Section 3.1.1, below) is not repeated in this report, except as it may have changed from the time these documents were issued. Appendix 4.1 contains certain project correspondence and documentation of contents of all related submittals to the MT-AQB, including:

- Transmittal Letters and Project Activities Log,
- Protocol Submittal and Approval,
- Protocol Title Sheet and Contents, and
- Records Reference Document Title Sheet and Contents

Table 1-1
AGENCY, COMPANY, and PLANT INFORMATION

Air Pollution Control Agency **********	
Agency Name:	Montana State Department of Health and Environmental Sciences
Department:	Air Quality Bureau
Address/City:	Room A116 Cogswell Bldg., Helena, MT 59620
Department Manager:	Mr. Jeff Chaffe, Chief, Air Quality Bureau
Observer Contact:	Mr. Brian B. Hohn, Environmental Specialist
Phone, AC, No., Ext.:	406 444-3454
Fax:	406 444-1374
Operating Company, Corporate Offices **********	
Company:	Holly Sugar Corporation
Street/City:	East Holly Street, Sidney, MT 59270
Mailing/City:	P.O. Box 1168, Sidney, MT 59270
Contact/Title:	Mr. Tom B. Jacobsen, Environmental Engineer
Phone, AC, No., Ext.:	307 532-7141, Ext.: N/A
Fax:	307 532-4117(WY)/406-482-5892(MT)
Facility and Plant Process **********	
Facility Name:	Sidney, Montana Plant
Test Location:	Sidney, MT
Mailing/City:	P.O. Box 1168, Sidney, MT 59270
Contact/Title:	Mr. Gene Thompson, District/Factory Manager
Phone, AC, No., Ext.:	406 482-3303
Directions to Plant:	See Protocol, Appendix 4.1.3
Base Elevation (ft., MSL):	1924
Processes Tested:	**C.E. Boilers, Union Boilers & Pulp Dryers**
Stack/Duct ID:	**C.E. Boiler #1, C.E. Boiler #2**
Unit No(s).:	Unit 1 (West) and Unit 2 (East)
Equipment Type:	Combustion Engineering Boilers
Model/S.N.:	
Max. Rated Capacity (MRC):	92500 (Oper.) 95000(Plate)Units: lb/hr steam
Cap. During Tests, % MRC:	>90%
BTU Rate/hr.:	115 MMBTU/hr each boiler
Hours of Operation/Year:	4320 hrs (= 180 days/yr @ 24 hrs/day)

Process Variables:	------ (1) ------	------ (2) ------
Feed Type:	steam	steam
Coal Stoker Feed Rate:	17400 lbs/hr.	17400 lbs/hr.
Fuel Type:	Lignite Coal	Lignite Coal
F_d, (dscf/10^6BTU):	9900 (O_2)	9900 (O_2)
F_c, (orsat range):	1.016 - 1.130	1.016 - 1.130

Air Pollution Control Equipment **********		
Location:	---- Primary ----	---- Primary ----
Pollutant Removed:	Particulate	SO_2
Type(s)/Design:	Organ Pipe Dust Collector 6 OPOWHS No. 8-240	Venturi Anderson 2000 WAV-162 Separator Anderson 2000 VES-162

Table 1-1 - continued
AGENCY, COMPANY, and PLANT INFORMATION

Stack/Duct ID:	**Union Boiler #1, Union Boiler #2**	
Unit No(s).:	Unit 1 (East) and Unit 2 (West)	
Equipment Type:	Union Iron Works	
Model/S.N.:	S.N.: 23418	S.N.: 23001
Max. Rated Capacity (MRC):	100,000 lb/hr steam	60,000 lb/hr steam
Cap. During Tests, % MRC:	>90%	
BTU Rate/hr.:	130 MMBTU/hr	83 MMBTU/hr
Hours of Operation/Year:	4320 hrs (= 180 days/yr @ 24 hrs/day)	
Process Variables:	------ (1) ------	------ (2) ------
Feed Type:	steam	steam
Test Fuel Type	#6 Fuel Oil	#6 Fuel Oil
F_d, (dscf/10^6BTU):	9220 (O_2)	9220 (O_2)
F_c, (orsat range):	1.260-1.413	1.260-1.413

Air Pollution Control Equipment **********

Location:	---- Primary ----
Pollutant Removed:	Particulate
Type(s)/Design:	

Stack/Duct ID:	**Pulp Dryer #1, Pulp Dryer #2**	
Unit No(s).:	Unit 1 (South) and Unit 2 (North)	
Equipment Type:	Coen Co., Model 200 Series	
Model:	Style DAZ 30	Style DAZ 34
Serial Number:	S.N.: D3940	S.N.: D6909
Max. Rated Capacity (MRC):	48.78 Tons wet pulp input/hr	
Cap. During Tests, % MRC:	>90%	
BTU Rate/hr.:	95 MMBTU/hr	95 MMBTU/hr
Hours of Operation/Year:	4320 hrs (= 180 days/yr @ 24 hrs/day)	
Process Variables:	------ (1) ------	------ (2) ------
Feed Type:	wet beet pulp	wet beet pulp
Test Fuel Type	#6 Fuel Oil	#6 Fuel Oil
F_d, (dscf/10^6BTU):	9220 (O_2)	9220 (O_2)
F_c, (orsat range):	1.260-1.413	1.260-1.413
Alt. Fuel Type:	Nat. Gas	Nat. Gas

Air Pollution Control Equipment **********

Location:	---- Primary ----
Pollutant Removed:	Particulate
Type(s)/Design:	Dry Scrubber w/ Skimmer fans and cyclones
Model:	Mac Equipment

The Emission Measurement Group, Inc.

Table 1-2
REGULATIONS, EMISSION LIMITS, and PRIOR TESTS
C.E. Boilers, Union Boilers & Pulp Dryers

Permit No(s).: 1826-01

C.E. Boilers

Parameter:	Partic.	SO_2	
Emission Limit No. 1:	0.10	0.43	
Units/Basis:	lbs/10^6BTU		lbs/10^6BTU
Emission Limit No. 2:	0.046	106.8	
Units/Basis:	gr/dscf	TPY	
Emission Limit No. 3:	23.0	70%	
Units/Basis:	lbs/hr	Removal Efficiency (based on Total Sulfur in coal)	

Results of Prior Tests:

Unit No.:	1		2	
Parameter(s):	Partic. (w/Backhalf)	SO_2	Partic. (w/Backhalf)	SO_2
No. Runs Valid:	3	2	3	3
Results:				
gr/dscf:	0.0320	-	0.0385	-
lbs/10^6BTU:	0.090	0.124	0.097	0.0482
lbs/hr.:	6.82	-	9.95	-
TPY:	-	56.14	-	40.42
SO_2 %RE:	-	86.97	-	95.21
Pass:	All Yes		All Yes	

Table 1-2 - continued
REGULATIONS, EMISSION LIMITS, and PRIOR TESTS
Holly Sugar Corporation
C.E. Boilers, Union Boilers, and Pulp Dryers

Permit No.:	1826-01	
	Union Boiler #1	Union Boiler #2
Parameter:[1]	Partic.	Partic.
Emission Limit No. 1:	0.39	.42
Units/Basis:	lbs/10^6BTU	lbs/10^6BTU

	Pulp Dryers
Parameter:[1]	Partic.
Emission Limit No. 1:	88.6
Units/Basis:	lbs/hr per both dryer

[1] No SO_x or PM10 limit but required to test.

Table 1-3
EXECUTIVE SUMMARY of RESULTS
Holly Sugar Corporation
Sidney, Montana Plant

Unit:	C.E. Boiler East	C.E. Boiler West
Parameter:		
PM-10		
gr./dscf:	0.0311	0.0369
lb./hr.:	6.87	8.52
lbs/10^6BTU:	0.058	0.078
TPY:	14.83	18.40

Unit:	Union Boiler East	Union Boiler West
Parameter:		
PM-10		
gr./dscf:	0.0525	0.0426
lb./hr.:	7.52	5.00
lbs/10^6BTU:	0.112	0.092
TPY:	16.24	10.79
Particulate		
gr./dscf:	0.0636	0.0540
lb./hr.:	9.13	6.34
lbs/10^6BTU:	0.136	0.117
TPY:	19.72	13.69
Sulphur Dioxide		
ppmd:	409.75	403.30
lb./hr.:	69.14	54.98
lbs/10^6BTU:	1.017	1.017
TPY:	149.33	118.75

Table 1-3 (Continued)
EXECUTIVE SUMMARY of RESULTS
Holly Sugar Corporation
Sidney, Montana Plant

Unit:	Pulp Dryer North[1]	Pulp Dryer South[1]
Parameter:		
PM-10		
gr./dscf:[2]	0.0597	0.1157
lb./hr.:	18.34	38.02
lbs/10^6BTU:[2]	0.379	0.468
TPY:	39.61	82.11
Particulate		
gr./dscf:[2]	0.094	0.146
lb./hr.:	26.44	45.03
lbs/10^6BTU:[2]	0.548	0.585
TPY:	57.10	97.27
Sulphur Dioxide		
ppmd:[2]	47.82	79.09
lb./hr.:	15.66	28.08
lbs/10^6BTU:[2]	0.310	0.367
TPY:	33.83	60.64

[1] Totals from both stacks on each dryer.

[2] Weigthed average of both stacks on each dryer with repect to DSCFM.

2.0 Results Summary and Conclusions

Table 2-1, in Section 2.2, summarizes the plant production and air pollution emission results for this Emission Measurement Project. The results for this test program are of acceptable quality for purposes of the defined objective of this project (1.0 above, and in Section 1.0 of the protocol). All the procedures for advance Agency notification, test protocol, and quality assurance were applied in this project. All results are presented for each test run in detail in Table 3-6. At least two (2) valid test runs are required (minimum on each stack tested) by the regulations and these were conducted. More may have been conducted as needed to obtain representative results. Any test problems or test (or analytical) method variations for this project are discussed in Section 3.5, below.

All process data and production records for these tests were made by plant personnel and/or the plant process instrumentation system (computer). These data for each test run are presented in Table 3-3 in Section 3.7, and discussed in detail in Section 3.3, below. All emission data were collected by **The Emission Measurement Group, Inc.** personnel. Copies of all raw project data and records are contained in Appendices 4.3 and 4.4.

There were no major process or test-related upsets or malfunctions during these tests which would cause the results to be unrepresentative of the air pollution emissions of the plant as operated on the date tested. The data should be accepted by the MT-AQB for purposes of the stated test objective, and are valid for confirming the compliance status of the facility with all applicable air pollution emission requirements for which tests have been conducted at this time. This Emission Measurement Test Report has been reviewed and certified above (following the contents page) for accuracy and correctness by project personnel, both from **The Emission Measurement Group, Inc.**, and Holly Sugar Corporation.

2.1 Determination of Compliance

Results in terms of compliance status are given in Section 1.0, of this Emission Measurement Test Report. Any outstanding issues or problems with this compliance determination are specified here.

-- None --

The Emission Measurement Group, Inc.

Table 2-1
SUMMARY of PROCESS & EMISSION MEASUREMENT RESULTS
Sidney, Montana Plant

Stack/Duct ID:	C.E. Boiler - East[1]	C.E. Boiler - West
Plant Process and Production Results		
Steam Rate, lb./hr.:	84111	83300
PM-10 Emission Results		
gr./dscf:	0.0311	0.0369
gr./acf:	0.0204	0.0237
lbs./hr.:	6.87	8.52
lbs./10^6BTU:	0.058	0.078
Tons/Year:	14.83	18.40
Parametric (Non-Pollutant) Flue Gas Results		
Pressure, Velocity, Delta P, (in. w.g.):	0.4270	0.4854
Moisture, (%, w/w):	21.06	22.20
CO_2, Inst, (%, dry, v/v):	13.96	12.41
O_2, Inst., (%, dry, v/v):	6.11	7.84
Temp. of Stack, (^{0}F):	138.0	131.6
Velocity, (fps):	40.92	44.01
Vol. Flow, (DSCFM):	25559	27002
Vol. Flow, (ACFM):	39050	41993

[1] Average of all valid test runs, see Tables 3-6 and 3-7.

Table 2-1 (Continued)
SUMMARY of PROCESS & EMISSION MEASUREMENT RESULTS
Sidney, Montana Plant

Stack/Duct ID:	Union Boiler - East[1]	Union Boiler - West
Plant Process and Production Results		
Steam Rate, lb./hr.:	77383	52848
Particulate Emission Results		
gr./dscf:	0.0485	0.0464
gr./acf:	0.0279	0.0321
lbs./hr.:	6.97	5.44
lbs./10^6BTU:	0.104	0.101
Tons/Year:	15.05	11.76
PM-10 Emission Results		
gr./dscf:	0.0525	0.0426
gr./acf:	0.0301	0.0294
lbs./hr.:	7.52	5.00
lbs./10^6BTU:	0.112	0.092
Tons/Year:	16.24	10.79
Total Particulate Emission Results		
gr./dscf:	0.0636	0.0540
gr./acf:	0.0366	0.0374
lbs./hr.:	9.13	6.34
lbs./10^6BTU:	0.136	0.117
Tons/Year:	19.72	13.69
Sulfur Dioxide (SO_2) Emission Results		
ppm, (dry, v/v):	409.75	403.3
ppm, (wet, v/v):	380.63	368.72
lbs./hr.:	69.135	54.979
lbs./10^6BTU:	1.0168	1.0174
Tons/Year:	149.33	118.75
Parametric (Non-Pollutant) Flue Gas Results		
Pressure, Velocity, Delta P, (in. w.g.):	0.2990	0.1661
Moisture, (%, w/w):	7.13	8.58
CO_2, Inst, (%, dry, v/v):	10.22	10.30
O_2, Inst., (%, dry, v/v):	8.01	8.22
Temp. of Stack, (^{0}F):	326.6	194.4
Velocity, (fps):	38.62	26.26
Vol. Flow, (DSCFM):	16940	13692
Vol. Flow, (ACFM):	29121	19798

[1] Average of all valid test runs, see Tables 3-6 and 3-7.

Table 2-1 (Continued)
SUMMARY of PROCESS & EMISSION MEASUREMENT RESULTS
Sidney, Montana Plant

Stack/Duct ID:	Pulp Dryer-Northeast[1]	Pulp Dryer-Northwest
Plant Process and Production Results		
Feed Rate, TPH:	25	25
Particulate Emission Results		
gr./dscf:	0.0691	0.0668
gr./acf:	0.0303	0.0315
lbs./hr.:	9.12	10.06
lbs./10^6BTU:	0.430	0.361
lbs./Ton:	0.365	0.402
Tons/Year:	19.71	21.73
PM-10 Emission Results		
gr./dscf:	0.0651	0.0548
gr./acf:	0.0292	0.0258
lbs./hr.:	9.65	8.69
lbs./10^6BTU:	0.470	0.298
lbs./Ton:	0.386	0.348
Tons/Year:	20.84	18.77
Total Particulate Emission Results		
gr./dscf:	0.0920	0.0964
gr./acf:	0.0403	0.0456
lbs./hr.:	12.19	14.25
lbs./10^6BTU:	0.580	0.519
lbs./Ton:	0.49	0.57
Tons/Year:	26.32	30.78
Sulfur Dioxide (SO_2) Emission Results		
ppm, (dry, v/v):	48.32	47.37
ppm, (wet, v/v):	29.10	31.11
lbs./hr.:	7.378	8.283
lbs./10^6BTU:	0.3305	0.2919
lbs./Ton:	0.30	0.33
Tons/Year:	15.94	17.89
Parametric (Non-Pollutant) Flue Gas Results		
Pressure, Velocity, Delta P, (in. w.g.):	0.1482	0.1616
Moisture, (%, w/w):	39.97	34.08
CO_2, Inst, (%, dry, v/v):	4.41	4.23
O_2, Inst., (%, dry, v/v):	16.34	15.78
Temp. of Stack, ($^\circ$F):	209.5	225.4
Velocity, (fps):	27.15	28.26
Vol. Flow, (DSCFM):	15540	17326
Vol. Flow, (ACFM):	35263	36705

[1] Average of all valid test runs, see Tables 3-6 and 3-7.

Table 2-1 (Continued)
SUMMARY of PROCESS & EMISSION MEASUREMENT RESULTS
Sidney, Montana Plant

Stack/Duct ID:	Pulp Dryer-Southeast[1]	Pulp Dryer-Southwest
Plant Process and Production Results **********		
Feed Rate, TPH:	24.8	24.8
Particulate Emission Results **********		
gr./dscf:	0.1085	0.0921
gr./acf:	0.0488	0.0407
lbs./hr.:	16.82	14.33
lbs./10^6BTU:	0.431	0.372
lbs./Ton:	0.679	0.575
Tons/Year:	36.33	30.95
PM-10 Emission Results **********		
gr./dscf:	0.1218	0.1092
gr./acf:	0.0540	0.0491
lbs./hr.:	19.97	18.05
lbs./10^6BTU:	0.495	0.440
lbs./Ton:	0.808	0.722
Tons/Year:	43.13	38.98
Total Particulate Emission Results **********		
gr./dscf:	0.1544	0.1372
gr./acf:	0.0699	0.0603
lbs./hr.:	24.54	20.49
lbs./10^6BTU:	0.614	0.554
lbs./Ton:	0.99	0.83
Tons/Year:	53.01	44.26
Sulfur Dioxide (SO_2) Emission Results **********		
ppm, (dry, v/v):	78.49	79.74
ppm, (wet, v/v):	49.67	49.54
lbs./hr.:	14.371	13.705
lbs./10^6BTU:	0.3602	0.3741
lbs./Ton:	0.58	0.55
Tons/Year:	31.04	29.60
Parametric (Non-Pollutant) Flue Gas Results **********		
Pressure, Velocity, Delta P, (in. w.g.):	0.1943	0.1804
Moisture, (%, w/w):	37.04	37.80
CO_2, Inst, (%, dry, v/v):	5.57	5.55
O_2, Inst., (%, dry, v/v):	13.94	14.07
Temp. of Stack, (^{0}F):	216.8	239.6
Velocity, (fps):	30.74	30.14
Vol. Flow, (DSCFM):	18327	17175
Vol. Flow, (ACFM):	39930	39146

[1] Average of all valid test runs, see Tables 3-6 and 3-7.

3.0 Technical Discussion

3.1 Quality Assurance (QA) Documentation

General - These Emission Measurement Tests have incorporated the procedures of "The Red Book"--*The U.S. EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III - Stationary Source Specific Methods (# EPA 600/4-77-027b), August, 1977 (as updated).* Appendix 4.2 of this report contains the post-test equipment calibrations, chain-of-custody for data and sample(s) records and any other data involving quality assurance audit checks which may have been made or requested by the Agency observer(s) during (or after) the tests. Tables 3-1(a-d), in Section 3.7, summarize the pre- and post-test equipment calibration(s) and other quality assurance aspects of the tests. The results of all calibrations and audit checks were well within Agency requirements or guidelines. Complete pre-test calibrations of all test equipment and materials are contained in the Records Reference Document (RRD), discussed below.

3.1.1 Records Reference Document - There are several critical parts of an Emission Measurement Project for verification of data quality. Some of the regulatory specifications, equipment design/schematics and/or calibrations, etc. tend to remain constant for at least a six-month period. These include:

- Pre-test calibrations of test equipment,
- Pre-test tare weights of filter media(e),
- Certification records for calibration gases,
- Forms for recording emission and production data,
- Specifications, schematic(s), and description(s) of test equipment and data reduction software, and
- Agency compliance documentation requirements for the test protocol, emission test report, and quality assurance.

The Emission Measurement Group, Inc. update and compile the repetitive records into a self-contained Records Reference Document. See contents of Records Reference Document in Appendix 4.1.3. As equipment calibrations, etc. are updated in the current Records Reference Document, they are valid for both pre-test records for upcoming projects, and post-test records checks for past projects.

3.1.2 Manual Methods QA

Moisture and Volumetric Flowrate (M2, M4) - Specific QA Considerations are listed below:

1. Pitot tube coefficient (C_p) of 0.84 with geometric specifications for pitobe per M2; otherwise, the pitobe/nozzle recalibrated in a wind tunnel (or test redone, if required); Delta P values <0.05 in. w.g. measured with Dwyer "microtector" (hook gauge), accurate to 0.001 in. w.g.

2. Leak check of orsat analyzer; performance check with ambient air; calculation of F_o factor (each repetition). See F_o results in Table 3-7, in Section 3.7, below. Field check of console dry gas meter calibration factor (Y_o) with observer's QA critical flow orifice, if requested. Pitot system leak-check after each test run. Special pre-

test back side leak-check of pump, dry gas meter, T/Cs, orifice, valves, manometer, and orsat bag-fill system, per "Red Book" Section 3.4.2, paragraph 2.1.2 and Method 5, paragraph 5.6.

3. Current equipment calibration data in Records Reference Document. All data available anytime for review and/or copying by Agency or plant.

Annual calibration (or 200 hours) of "Standard Dry Gas Meter" directly against a spirometer. Six month calibration of console dry gas meter rate factor (Y_2) and orifice factor (Delta H_a) against the "Standard Dry Gas Meter", both with triplicate runs at five (5) flow (Delta H) rates (M5, 7.1.1 & 7.1.2). Post-test triplicate calibration check of console dry gas meter rate factor (Y_2) at a single flow near the sampling rate during the tests. Full 5-point re-calibration of the console done if post-test check not within the required 5.0% deviation and 3% range (M5, 5.3.2). All data reduced (by flowrate - tabular and graphically) by computer.

4. Use of Field Micro-Computer (FMC) for data reduction as described in Section 3.1.4, below. Equipment schematic(s) and example data sheets contained in Records Reference Document; 3-part sample labels used, as applicable.

Particulate (M5) - Specific QA Considerations are listed below.

1. Records of evaporation beakers and 3" (90 mm) glass fiber filter(s) tare weights in Records Reference Document.

2. Filter and acetone blank (field & lab) to check handling and analytical procedures. One set (selected at random) offered to the Agency Observer with tare weight-(s).

3. Probe(s) and nozzle(s) pre-wash (water and acetone) & dynamic blank (acetone only) on site, to assure clean equipment prior to start of tests. Nozzle(s) diameter specifications rechecked prior to, and after tests.

4. Use of agency analytical forms (including density of acetone). Sample analyses may have been observed at **The Emission Measurement Group, Inc.** laboratory by advance arrangement with Mr. John Floyd at 303 680-0406.

3.1.3 Instrumental Methods QA - QA procedures are as follows.

1. Analyses of Agency audit gases and/or operation of Agency co-located (and/or redundant) monitor(s), if requested.

2. Use of "Protocol One" certified gases for all calibrations. Certification records available on site, see Table 3-1(d), in Section 3.7.

3. Leak-check of entire system before and after each set of 3 runs of a test.

4. Use of digital DAS (3.1.4 below) to eliminate analog digitizing errors and allow immediate results on site.

5. Performance of 3-point calibration error, interference, bias, and response time tests prior to the project (submitted to Agency in Records Reference Document). These data were verified on site, if requested.

6. 2-point calibration drift checks between runs (example data sheet in Records Reference Document).

7. Calibration checks of instruments at same flow and pressure as sampling (precisely 1.0 Lpm and 10.0" w.g.) to assure consistent, accurate and repeatable system response.

3.1.4 Data Collection and Reduction QA - Among the issues which affect emission data quality for this project, close attention and efficiency in the data reduction and results calculation stages are areas in which virtually all errors should be consistently preventable. Using automated procedures to handle all project data (after they were once recorded and entered into the system manually) has proven to help accomplish a much higher degree of data quality and reporting accuracy. A documentation package for each software subroutine used in this project, as well as a listing of the manual calculations, is contained in the Records Reference Document. Also, due to the digital-based data system used, a chain-of-custody sheet is established for the data, as well as the samples, see Section 3.1.5, below. Specific QA procedure(s) for the two types of data handling for this project are listed below.

Manual Reference Methods QA - To check the software proficiency and repeatability, a "known" set of data accompanied the project run data sets through the entire process from manual data entry in the field through the generation of the report results table(s). The below procedure for automated handling for manual method emission data was followed to assure high precision and accuracy in the data reduction, calculation, and reporting activities.

1. Manually verify and enter all data constants for the project from Table 3-6 of protocol into Field Micro-Computer (FMC) and obtain printout of registers.

2. Manually enter "known" standard run data from data sheet into FMC and save same on magnetic media.

3. Manually record specific test data & variables on a test run data sheet and enter same into FMC as each test run is progressing.

4. At conclusion of each test run, complete leak check and field analytical work, and enter same into FMC. Obtain average(s)/total(s) for each data column on the test run sheet, and obtain optional printout, using Field Thermal Printer (FTP).

5. Save all data for completed test run on hard disk (up to 3 runs) in FMC prior to start of next test run.

6. Complete data recording and entry of test run data for each project test run as in 3 through 5, above.

7. Save field data for all runs (and "known" run) on magnetic media before departure from site (or after each 4 runs, to clear hard disk).

8. Manually record all post-test laboratory analytical activity and/or calibration(s) data on data sheet(s) and enter same into FMC, and save same on magnetic media.

9. Recall all complete data file(s) from magnetic media into FMC and execute "results" subroutines as required by project for each test run and save results on magnetic media. Interface with instrumental methods digital data on magnetic media (as applicable), to obtain gas emission results in proper final units.

10. Recall all results file(s) for each test run (and "known" run) from magnetic media into FMC (with large printer) and compile and print results file table(s) for project report.

11. Compare printed results of "known" run to expected "known" results as a system operational check of the software.

Instrumental Reference Methods QA - Quality assurance for the instrumental methods data reduction is essentially built into the procedures discussed in Section 3.5, below. The data acquisition system (DAS) assures proper digital recording of the analog signal without digitizing errors when manually converting analog strip chart tracings to proper units. The design and operation of this system is discussed in the Records Reference Document. In order to obtain results in proper units (wet ppm, lbs./hr. or lbs./10^6BTU, etc.), digital concentration gas data are interfaced with other reference method data on magnetic media, as given in paragraph 9, above.

3.1.5 Chain-of-Custody for Data and Sample(s) - A chain-of-custody record for the data and the sample(s) was made and followed throughout the sampling and analysis process. This record shows the when, where, and who, regarding the handling of the critical project samples and data. A copy of this record is contained in Appendix 4.2.2.

3.2 Project Activity Log and Personnel

Table 3-2 provides a listing of all key personnel involved in this project. The tests were observed by the plant and/or third party personnel, as listed. All parties agreed during the testing that, from a plant operation standpoint, as well as the field aspects of sample collection, these emission measurement data should be valid and acceptable for the stated purpose(s) and for evaluating compliance with applicable air pollution emission regulation(s) and/or permit requirement(s).

These tests were conducted by **The Emission Measurement Group, Inc.** personnel of Englewood, Colorado, whose qualifications and corporate experience are included in Section 5.0 of the Records Reference Document (see Section 3.1.1 and Appendix 4.1.3). A record of the project activities is contained in the Project Activity Log in Appendix 4.1.4.

3.3 Plant Operation and Production

During the emission tests, the plant process operation and production load were at normal operation and the plant was operated at different loads for the different processes tested, as specified in Table 3-6's.

These production data were reported to **The Emission Measurement Group, Inc.** Project Leader (listed in Table 3-2, in Section 3.7) at the conclusion of all test runs. Copies of the plant operator's recorded production data, taken at the required 20-30 minute intervals (or continuously by plant computerized instrumentation during the tests) are contained in Appendix 4.3, and/or at the plant (if not available for this report).

Specific extraordinary process operational issues (if any) during these tests are discussed here.

-- None --

3.4 Location of Test Port(s) and Sampling Point(s)

Table 3-4 and Figure 3-1, in Section 3.7, describe in detail the flue duct (stack) configuration, the sampling port(s) location(s), and the test point(s) used for this Emission Measurement Project. The test location(s) meet(s) the specifications of EPA Method 1 for straight duct length distance (diameters) before (upstream) and after (downstream) of test ports. No adverse conditions involving the sampling location(s) were present which could artificially affect the magnitude (or representativeness) of the final emission results or the overall quality of the data, except as are noted here.

-- None --

3.5 Sampling and Analytical Procedures and Modifications

Tables 3-5(a-c) (as applicable) summarize(s) the basic test methods and specifications applied during these tests. Any modifications or adjustments in the published EPA Reference Methods applied to these tests are described below.

3.5.1 Description of Sampling Equipment

Flowrate & Moisture (M2, M4) - The sampling equipment used for this project was a system of standard design for M5-type sampling and meets the construction guidelines set out by EPA. The unique features of the equipment are described in Section 3.1 of the Records Reference Document. The amount of moisture trapped on the silica gel was calculated based on Dalton's Law, as described fully in the RRD.

Molecular Weight (M3) - The gas sample for molecular weight, % CO_2 and % O_2 was taken using instruments, see Table 3-5(a).

Particulate (M5) - The equipment was the same as M2 and M4, above, with the addition of the heater elements for the probe and filter, a sample nozzle, probe wash recovery, and filter media.

Instrumental Methods (M3A, and M6C) - The pollutant parameters listed in Table 3-5(b) are all gaseous compounds and were tested using instrumental, real-time (monitor) methods. The portable continuous emission monitor system (PCEMS) used for these tests is described (including schematics) in detail in the Records Reference Document, Section 3.1. The sample was extracted through a stainless-steel probe (heated by the stack gas and considered part of the system's condenser unit when out of the stack) and passed though a glass-lined (or TFE) condenser to remove moisture. No contact was made between the condensed water liquid and the flowing gas, per M20 and M6C. The condenser was fitted with a 3-way valve at the inlet, as required by M6C and M20 for calibration and system bias and leak checks.

The dry sample was then conveyed through TFE line to the remote PCEMS control console. If multiple stacks were tested, one stack was being analyzed while another was being purged for a fresh sample. The gas to be analyzed was regulated for flow and pressure, before being directed to each analyzer in parallel at 1 liter per minute (each) and a precise pressure of 10.0 in. w.g. The analyzers full scale spans (outputs), analytical technique, and instrument serial numbers, as well as the values for low, middle, and high gas calibration points are given in Table 3-5(b).

The computer clock was set to local (plant) time. The analog output of each instrument was 0-1.0 V DC or 4-20 MA, full scale. This signal was converted to a digital signal in a Programmable Logic Controller (PLC) Analog-to-Digital board, before being recorded and processed in a 80386SX computer. Concentration results and clock time of the sample for each parameter were printed out on 8.5 x 11.0 paper at least once each minute during the tests. After each test run, while the post-test gas calibrations were being done, average concentration values for each gaseous pollutant parameter (on magnetic media) were combined with the parametric values for the run (% moisture, volumetric flow, etc.), and the run results (in ppm (wet), ISO standard conditions, lbs./10^6BTU, and/or lbs./hr., etc.) were calculated and printed before being stored on magnetic media and starting the next run. Software documentation for this procedure is contained in the Records Reference Document, Section 3.3.

3.5.2 Measurement of Pollutant Emissions

Particulate (M5, M201A, M202) - Point-by-point isokinetic values were calculated, recorded and adjusted in the field (as each point was being sampled), sufficiently detailed so as to be suitable for point-by-point Agency audit review. Final isokinetic sampling rates (reported in Table 3-7 in Section 3.7, below) were calculated after each test run following final moisture and orsat analyses. Test method speicifications are given in Table 3-5(a) in Section 3.7, below.

Instrumental Methods (M3A, and M6C) - Appendix A of 40 CFR Part 60 contains the instrumental reference methods for SO_2, O_2 and/or CO_2 (Methods 6C, 3A and/or 3A, respectively). Table 3-5(b), below, describes the equipment, instrument spans, and sampling times. Equipment description(s) and schematics are contained in the Method and in the Records Reference Document (Section 3.1).

The sample was extracted through a stainless-steel probe from at least 3 points (1 point, if no pollutant gradient) in the stack for at least 7 minutes per point (minimum 21 sampling minutes over 30 clock minutes per run), as given in Tables 3-5(a and b). Moisture was removed in a "non-contact" chiller/condenser before the sample was pumped through the analyzer(s) in parallel. Calibration of the system was done before and after each set of 3 runs at the zero, mid-scale (40-60%), and up-scale (80-100%) points, and between runs at the zero and mid-scale or up-scale points. Drift test results for each run are presented in Appendix 4.4.3, below. EPA Protocol One certified calibration gases were used, per the Method. Concentration values for the calibration gases are listed in Table 3-1(d), as well as expected stack concentrations. Certification of the calibration gases were contained in the Records Reference Document.

Data was recorded by an automated digital data acquisition system (DAS) at least every 30 seconds. When calculating pounds per hour, the ppm data for each parameter were combined with the flowrate results of Method 2. To obtain ppm (ISO), ppm (at 15% O_2), and/or lbs./10^6BTU, the digital O_2 signal was used and the calculations were made after each run. This was done by entering the necessary ancillary data sometime soon after each test, upon reducing the data for flowrate, moisture, etc., in a separate computer.

3.5.3 Measuring Non-Pollutant Flue Gas Parameters

Moisture (M4) - Moisture sampling specifications using EPA Method 4 are described in Table 3-5(a), below. All requirements of this Method were followed, including a constant sample rate of at least 0.53 cfm (ca. 1.0 Delta H) for at least 40 minutes to obtain at least 21.0 scf for the moisture tests, which were at the same points, with the same probe and for the same time as the pollutant tests. Should weather or process problems have prevented the full 40 minutes of sampling, the 21.0 scf may be obtained by using a higher flowrate, above the constant Delta H of at least 1.0. This was done together with Method 5, if applicable (but then at a variable sample rate).

A comparison of the results of moisture collected on the silica gel using Dalton's Law to gravimetric analyses was included in the Records Reference Document. As specified in EPA Method 4, paragraph 2.1.2, Dalton's Law was used to determine the moisture volume collected on the silica gel. This was discussed in the approved protocol.

Oxygen/Carbon Dioxide/Molecular Weight (M3A) - The gas sample for molecular weight was taken using the instrumentation as described above and in Table 3-5(b), the sample was the same as the gaseous pollutant parameters, described in Section 3.5.2, above.

Volumetric Flowrate, Velocity, and Temperature (M2) - These tests were conducted for the same time as the moisture and molecular weight tests, above (except at more points, as required by EPA Methods 1 and 2). Point locations are given in Table 3-4.

3.5.4 Laboratory Analyses

Particulate (M5, M201A, M202) - The analytical procedures for the acetone evaporations and filter weighings for the front-half particulate catches are as provided for in EPA QA Volume III and EPA Method 5, 201A and the back-half in Method 202. The lab data sheet is included in the

Records Reference Document. Specific details of the procedure used are described below. The analyses of the particulate catches are done by The Emission Measurement Group, Inc. at their laboratory in Englewood, Colorado, following the procedures of Method 5, paragraph 4.1.1, 4.2, and 4.3, Method 17, Method 201A and Method 202 which is listed in Appedix section 4.1.2.

A blank filter and a 200-400 ml. field blank acetone sample and a water sample are collected in the field along with the regular run samples. To obtain tare weights, all numbered filters (and cleaned, numbered beakers) are dried at 68°F in a desiccator for at least 24 hours and weighed at 6 hour intervals to 0.10 mg. to a constant weight, i.e., when two consecutive weighings agree within 0.5 mg. as required by the method. These tare weight data are included in the Records Reference Document, Section 4.5, for all filters and beakers to be used in the current 6-month period. Beakers are washed and re-tared before and after each use.

The density of the acetone and the wash volume (from the sample jar label) of each probe/filter bell (and blank) washes are recorded on the lab sheet. The weight of each acetone sample is then calculated (using volume and density) and recorded. The washes are then individually evaporated to dryness at less than the boiling point of acetone (56.2°C) in 250 ml. tared beakers using an infra-red heat lamp. The beakers are then cooled, desiccated, and weighed to a constant weight, as above.

The result of the field blank analysis is given in terms of milligram of blank residue per gram of acetone. By applying the milligram weight of blank residue per gram of acetone to the known grams of acetone in each sample (using the acetone volume and density above), a subtractive blank correction, in milligrams, for each acetone wash sample is determined.

Condensate - The density of the water and the wash volume (from the sample jar label) of each impinger set (and blank) washes are recorded on the lab sheet. The weight of each water sample is then calculated (using volume and density) and recorded. The washes are then individually evaporated to dryness at less than the boiling point of acetone (56.2°C) in 250 ml. tared beakers using an infra-red heat lamp. The beakers are then cooled, desiccated, and weighed to a constant weight, as above.

The result of the field blank analysis is given in terms of milligram of blank residue per gram of water. By applying the milligram weight of blank residue per gram of water to the known grams of water in each sample (using the water volume and density above), a subtractive blank correction, in milligrams, for each water wash sample is determined.

3.6 Detailed Test Results and Discussion

Detailed Test Results - All project data are presented tabularly in Tables. Table 3-3 contains all the plant performance, process operation, air pollution abatement system data, and production records for this project. Table 3-6 contains all the pertinent emission test results for each test run in this project. Performance data (by run) on the sampling and analytical equipment are contained in Table 3-7.

The minimum number of required valid runs were completed on each stack tested, as given in Table 3-5(a). More runs were likely conducted only to assure an acceptable set of representative data. All runs were reported in Tables 3-6 and 3-7, and non-valid runs are noted along with the reasons.

The results of these emission tests are summarized in Table 2-1, in Section 2.2, above. Results in terms of compliance status are given in Section 1.0, above. This project has met the objective as defined in Section 1.0, above.

Table 3-2
PROJECT PERSONNEL
Holly Sugar Corporation
Reference Methods (w/special)

POSITION	NAME/TITLE	COMPANY/Phone
Company **********		
Coordinator	Tom Jacobsen Environmental Engineer	IHC 307 532-7141
Observer(s)	Gene Thompson District/Factory Manager	HSC 406 482-3303
Regulatory Agency **********		
Administrator	Jeff Chaffe Chief, Air Quality Bureau	MT-AQB 406 444-3454
Observer(s)	Brian Hohn Environmental Specialist	MT-AQB 406 444-3454
Third Party **********		
	None	
Testing Contractor **********		
Project Leader	John R. Floyd President/CEO	**The Emission Measurement Group, Inc.** 303 680-0406
Technologist(s)	Michael J. Lynn Senior Emission Technician	

The Emission Measurement Group, Inc.

Table 3-3
PLANT OPERATION and PRODUCTION, by Run
Holly Sugar Corporation
Reference Methods (w/special)

Plant Name:	Sidney, Montana Plant			
Plant Location:	Sidney, MT			
Stack/Duct ID:	C.E. Boiler West			
Run Number:	1101	1102	1103	
Plant Production Data (Power/Boiler)	**********	**********	**********	
Steam Flow, (lbs./hr.):	83,882	82,920	83,680	
Fuel Flow, (lbs./hr.):	15,099	14,926	15,062	
Stack/Duct ID:	C.E. Boiler East			
Run Number:	2101	2102	2103	
Plant Production Data (Power/Boiler)	**********	**********	**********	
Steam Flow, (lbs./hr.):	85,047	83,927	83,360	
Fuel Flow, (lbs./hr.):	15,308	15,107	15,005	
Stack/Duct ID:	Union Boiler West			
Run Number:	3101	3102	3103	
Plant Production Data (Power/Boiler)	**********	**********	**********	
Steam Flow, (lbs./hr.):	52,176	53,591	52,778	
Fuel Flow, (gal./hr.):	395 (over 3 runs)			
Stack/Duct ID:	Union Boiler East			
Run Number:	4101	4102	4103	4104
Plant Production Data (Power/Boiler)	**********	**********	**********	**********
Steam Flow, (lbs./hr.):	77,474	78,632	77,424	76,000
Fuel Flow, (gal./hr.):	583 (over 4 runs)			
Stack/Duct ID:	Pulp Dryer South			
Run Number:	5101 & 6101		5102-5104 & 6102-6104	
Plant Production Data (Feed Process)	**********		**********	
Feed Rate (TPH):	24		25	
Fuel Flow, (gals./hr.):[1]	275		275	
Stack/Duct ID:	Pulp Dryer North			
Run Number:	7101-7103 & 8101-8103			
Plant Production Data (Feed Process)	**********			
Feed Rate (TPH):	25			
Fuel Flow, (gals./hr.):[1]	275			

[1] Read explanation of fuel measurement in Appendix 4.3.

Table 3-4(c)
TEST PORT(S) and SAMPLING POINT(S)
Stack/Duct ID: Union Boiler #2
Holly Sugar Corporation

Stack Configuration:		Round		
Applicable Figure No. in Report:		3-1(c)		
Stack Height, above Grade, (ft.):		50.0		
Height of Test Platform, (ft.):		48.25		
Flow Direction (@ Test Port(s)):		Vertical		
Flue Size(s), Inside Dia., (in.):		48.0		
	Outside Dia., (in.):[1]	48.5		
Straight Flue Distance to Test Port:		in.	ft.	Dia(s).
	B, Before:	216.0	18.0	4.50
	A, After:	26.0	2.17	0.54
Sample Ports:	Type:	8-hole		
	Description:	Flange		
	Size, Dia., (in.):	6		
	Nip., Length., (in.):	4		
	Quantity Used:	2		
	Orientation:	90		

Sample Train / ID:	Partic.	MW/H_2O	Flow	Instruments
No. of Sample Points				
Total:[2]	24	24	24	3
Per Port:	12	12	12	3
Required Probe Length, (in. E.L.):	60	60	60	60
Pitobe ID No.:	60-1	60-1	60-1	Cems

Point(s) / Location(s):[3]

Point No.:	%:	Distance to Point from (in.): Near Wall	Roller	Instruments (in.):
1	/ 2.10	1.01	5.01	12.02
2	/ 6.70	3.22	7.22	28.00
3	/ 11.80	5.66	9.66	43.98
4	/ 17.70	8.50	12.50	
5	/ 25.00	12.00	16.00	
6	/ 35.60	17.09	21.09	
7	/ 64.40	30.91	34.91	
8	/ 75.00	36.00	40.00	
9	/ 82.30	39.50	43.50	
10	/ 88.20	42.34	46.34	
11	/ 93.30	44.78	48.78	
12	/ 97.90	46.99	50.99	

[1] Including wall thickness and stack wall insulation.
[2] Half of total points to be on each diameter.
[3] Distance to point from inside near wall (for each diametric traverse).

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Table 3-4(d)
TEST PORT(S) and SAMPLING POINT(S)
Stack/Duct ID: Pulp Dryer #1 and Pulp Dryer #2
Holly Sugar Corporation

Stack Configuration: **Round**

Applicable Figure No. in Report:		3-1(d)		
Stack Height, above Grade, (ft.):		60.0		
Height of Test Platform, (ft.):		45		
Flow Direction (@ Test Port(s)):		Vertical		
Flue Size(s), Inside Dia., (in.):		63.0		
	Outside Dia., (in.):[1]	63.5		
Straight Flue Distance to Test Port:		in.	ft.	Dia(s).
	B, Before:	163.0	13.58	2.59
	A, After:	81.50	6.79	1.29
Sample Ports:	Type:	8-hole		
	Description:	Flange		
	Size, Dia., (in.):	6		
	Nip., Length., (in.):	4		
	Quantity Used:	2		
	Orientation:	90		

Sample Train / ID:	Partic.	MW/H_2O	Flow	Instruments
No. of Sample Points				
Total:[2]	24	24	24	3
Per Port:	12	12	12	3
Required Probe Length, (in. E.L.):	72	72	72	72
Pitobe ID No.:	96-1	96-1	96-1	Cems

Point(s) / Location(s):[3]

Point No.:	%:	Distance to Point from (in.): Near Wall	Roller	Instruments (in.):
1	2.10	1.32	5.32	14.52
2	6.70	4.22	8.22	35.50
3	11.80	7.43	11.43	56.48
4	17.70	11.15	15.15	
5	25.00	15.75	19.75	
6	35.60	22.43	26.43	
7	64.40	40.57	44.57	
8	75.00	47.25	51.25	
9	82.30	51.85	55.85	
10	88.20	55.57	59.57	
11	93.30	58.78	62.78	
12	97.90	61.68	65.68	

[1] Including wall thickness and stack wall insulation.
[2] Half of total points to be on each diameter.
[3] Distance to point from inside near wall (for each diametric traverse).

Table 3-5(a)
TEST METHOD SPECIFICATIONS
Sidney, Montana Plant
Reference Methods (w/special)

Method Type	Manual	Manual	Manual	Manual
Parameter:	Particulate PM10	MW/H_2O	Flow	SO_2
Method No.(s):[1]	M5, 201A, 202	M3/M4	M2	M6C
Number of Runs:[2]	3	3	3	3
Number of Sample Points:[3]	24	24	24	3
Sampling Time/Point, (min.):	2.5	2.5	2.5	7
Sampling Time/Run, (min.):	60	60	60	21
Sampling Flowrate, (dscfm):	>.53	>.53	-	-
Sample Volume, (dscf):	>30	>30	-	-
Clock Time/Run, (min.):	70-90	70-90	70-90	30-40
Clock Time/All Runs, (hrs.):	3-5	3-5	3-5	3-5

[1] C.E. Boilers need only PM10. Pulp dryers will be tested consecutively with a few simultaneous Method 5 on stack to same dryer.
[2] Per stack tested.
[3] See point location(s) in Table 3-4.

Table 3-5(b)
INSTRUMENTAL EQUIPMENT SPECIFICATIONS
Methods M1-M4, M6, M17, M201A, and M202

Parameter			CO_2	O_2	SO_2		
Channel No.:[1]			6	1	2		
Method No.:			3A	3A	6C		
Monitor Type:			Horiba	Horiba	Western Research		
Anal. Technique:			NDIR		NDUV		
Model No.:					721AT		
Serial No.:					1084		
In Service:					7/90		
Basis/Units:			%(d,v/v)	%(d,v/v)	ppm(d,v/v)		
Stack Conc.:			9	9	10-50		
Span value, 100 % of Full Scale:			14	21	100		
Computer FS Location:			-	23	27		
Calibration Points -							
Level	% of Span M6C	M20	Cyl.ID				
Zero	<0.25	<0.25	1-N/C[3]	I	I		
			1-S/O[3]			I	I
			Air[4]		I	I	I
Low N/A[5]		20-30	1-N/C		I	I	
			1-S/O	I	I		
Mid	50-60	45-55	2-N/C		I	I	
			2-S/O	I	I		
High	80-90	80-90	3-N/C		I	I	
			3-S/O	I	I		
			Air[6]		I		

[1] Channel of analog-to-digital data acquisition system.
[2] See certification data in Table 3-1(d), above.
[3] Use any N/C or S/O cylinder to zero opposite parameters.
[4] Purified air to check high O_2 and/or zero all other parameters.
[5] Only 3 levels required by Section 5.3 of M6C.

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Table 3-6 (Pulp - NE)
TEST RESULTS, by Run

Pulp Dryer - Northeast Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Northeast
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS

Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93	
Test Operator, (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.	
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.	
Run ID Number, (VDRR):	**8101**	**8102**	**8103**	**AVERAGE**
Time- Start, (24hr.):	10:24	16:32	20:02	
- End, (24hr.):	12:38	18:27	22:29	
Time of Test, (t, min.):	100.0	100.0	100.0	100.0
Max. Rtd. Cap.,(TPH,Feed):	48.8	48.8	48.8	48.8
Feed Load, (TPH):	25.0	25.0	25.0	25.0
Test Cond., Feed, (%MRC):	51.25	51.25	51.25	51.25

PARTICULATE RESULTS, (RM5)

gr./dscf:	0.0609	0.0596	0.0868	0.0691
gr./acf:	0.0273	0.0268	0.0367	0.0303
lbs./hr.:	9.03	7.62	10.72	9.12
lbs./10^6 BTU:	0.439	0.296	0.554	0.430
lbs./Ton of Feed:	0.361	0.305	0.429	0.365
Tons/Year:	19.50	16.46	23.16	19.71

The Emission Measurement Group, Inc.

Table 3-6 (Pulp - NE Continued)
TEST RESULTS, by Run

TEST CONDITIONS				
Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93	
Run ID Number, (VDRR):	**8101**	**8102**	**8103**	**AVERAGE**
PM-10 RESULTS, (including backhalf)				
gr./dscf:	0.0651	N/A	N/A	0.0651
gr./acf:	0.0292	N/A	N/A	0.0292
lbs./hr.:	9.65	N/A	N/A	9.65
lbs./10^6 BTU:	0.470	N/A	N/A	0.470
lbs./Ton of Feed:	0.386	N/A	N/A	0.386
Tons/Year:	20.84	N/A	N/A	20.84
PARTICULATE TOTAL RESULTS (including backhalf)				
gr./dscf:	0.0876	0.0680	0.1204	0.0920
gr./acf:	0.0393	0.0305	0.0510	0.0403
lbs./hr.:	12.99	8.69	14.88	12.19
lbs./10^6 BTU:	0.632	0.338	0.769	0.580
lbs./Ton of Feed:	0.52	0.35	0.60	0.49
Tons/Year:	28.07	18.77	32.13	26.32
SO2 RESULTS, (RM6C)				
ppm, (dry, v/v):	34.09	70.96	39.93	48.32
ppm, (wet, v/v):	20.96	43.38	22.95	29.10
lbs./hr.:	5.871	10.535	5.729	7.378
lbs./10^6 BTU:	0.2857	0.4094	0.2963	0.3305
lbs./Ton of Feed:	0.23	0.42	0.23	0.30
Tons/Year:	12.68	22.76	12.37	15.94
PARAMETRIC FLUE GAS RESULTS				
Pres.Vel.Del.P(in.w.g.):	0.1764	0.1318	0.1364	0.1482
Moisture, (%v/v):	38.50	38.86	42.53	39.97
CO2, Inst., (% dry,v/v):	4.08	4.88	4.26	4.41
O2, Inst., (%, dry,v/v):	17.09	15.36	16.59	16.34
Temperature,Stack, (°F):	212.8	208.4	207.2	209.5
Velocity,Flue Gas,(Furl/Ftnt):	29.67	25.57	26.21	27.15
Volume Flow, (DSCFM):	17297	14912	14411	15540
Volume Flow, (ACFM):	38539	33209	34041	35263

The Emission Measurement Group, Inc.

Table 3-6 (Pulp - NW)
TEST RESULTS, by Run

Pulp Dryer - Northwest Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Northwest
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS

Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93	
Test Operator, (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.	
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.	
Run ID Number, (VDRR):	**7101**	**7102**	**7103**	**AVERAGE**
Time- Start, (24hr.):	10:26	15:18	19:18	
- End, (24hr.):	12:40	17:20	21:57	
Time of Test, (t, min.):	100.0	100.0	100.0	100.0
Max. Rtd. Cap.,(TPH,Feed):	48.8	48.8	48.8	48.8
Feed Load, (TPH):	25.0	25.0	25.0	25.0
Test Cond., Feed, (%MRC):	51.25	51.25	51.25	51.25

PARTICULATE RESULTS, (RM5)

gr./dscf:	0.0524	0.0724	0.0755	0.0668
gr./acf:	0.0250	0.0337	0.0358	0.0315
lbs./hr.:	6.73	11.55	11.89	10.06
lbs./10^6 BTU:	0.276	0.368	0.439	0.361
lbs./Ton of Feed:	0.269	0.462	0.476	0.402
Tons/Year:	14.54	24.95	25.69	21.73

The Emission Measurement Group, Inc.

Table 3-6 (Pulp - NW Continued)
TEST RESULTS, by Run

TEST CONDITIONS				
Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93	
Run ID Number, (VDRR):	**7101**	**7102**	**7103**	**AVERAGE**
PM-10 RESULTS, (including backhalf)				
gr./dscf:	N/A	0.0567	0.0529	0.0548
gr./acf:	N/A	0.0264	0.0251	0.0258
lbs./hr.:	N/A	9.05	8.33	8.69
lbs./10^6 BTU:	N/A	0.289	0.307	0.298
lbs./Ton of Feed:	N/A	0.362	0.333	0.348
Tons/Year:	N/A	19.55	17.99	18.77
PARTICULATE TOTAL RESULTS (including backhalf)				
gr./dscf:	0.1039	0.0946	0.0908	0.0964
gr./acf:	0.0496	0.0441	0.0431	0.0456
lbs./hr.:	13.35	15.10	14.30	14.25
lbs./10^6 BTU:	0.548	0.481	0.527	0.519
lbs./Ton of Feed:	0.53	0.60	0.57	0.57
Tons/Year:	28.83	32.62	30.88	30.78
SO2 RESULTS, (RM6C)				
ppm, (dry, v/v):	39.10	70.56	32.44	47.37
ppm, (wet, v/v):	25.67	45.92	21.74	31.11
lbs./hr.:	5.833	13.083	5.933	8.283
lbs./10^6 BTU:	0.2396	0.4171	0.2189	0.2919
lbs./Ton of Feed:	0.23	0.52	0.24	0.33
Tons/Year:	12.60	28.26	12.82	17.89
PARAMETRIC FLUE GAS RESULTS				
Pres.Vel.Del.P(in.w.g.):	0.1188	0.1893	0.1767	0.1616
Moisture, (%v/v):	34.35	34.92	32.98	34.08
CO2, Inst., (% dry,v/v):	4.15	4.60	3.93	4.23
O2, Inst., (%, dry,v/v):	15.68	15.49	16.16	15.78
Temperature,Stack, (°F):	216.1	225.9	234.1	225.4
Velocity,Flue Gas,(fps):	24.20	30.78	29.80	28.26
Volume Flow, (DSCFM):	14984	18623	18370	17326
Volume Flow, (ACFM):	31428	39979	38709	36705

The Emission Measurement Group, Inc.

Table 3-6 (Pulp - SE)
TEST RESULTS, by Run

Pulp Dryer - Southeast Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Southeast
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS

Test Date, (mm/dd/yy):	10/21/93	10/22/93	10/22/93	10/22/93	
Test Operator, (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.	Lynn, M.	
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.	Floyd, J.	
Run ID Number, (VDRR):	**6101**	**6102**	**6103**	**6104**	**AVERAGE**
Time- Start, (24hr.):	20:56	9:34	15:27	19:24	
- End, (24hr.):	21:16	13:36	17:46	21:50	
Time of Test, (t, min.):	20.0	113.5	120.0	120.0	93.4
Max. Rtd. Cap.,(TPH,Feed):	48.8	48.8	48.8	48.8	48.8
Feed Load, (TPH):	24.0	25.0	25.0	25.0	24.8
Test Cond., Feed, (%MRC):	49.20	51.25	51.25	51.25	50.74

PARTICULATE RESULTS, (RM5)

gr./dscf:	0.1306	0.1281	0.0705	0.1047	0.1085
gr./acf:	0.0555	0.0582	0.0374	0.0440	0.0488
lbs./hr.:	15.99	24.34	12.61	14.33	16.82
lbs./10^6 BTU:	0.535	0.518	0.278	0.393	0.431
lbs./Ton of Feed:	0.666	0.974	0.504	0.573	0.679
Tons/Year:	34.54	52.58	27.24	30.96	36.33

The Emission Measurement Group, Inc.

Table 3-6 (Pulp - SE Continued)
TEST RESULTS, by Run

TEST CONDITIONS					
Test Date, (mm/dd/yy):	10/21/93	10/22/93	10/22/93	10/22/93	
Run ID Number, (VDRR):	**6101**	**6102**	**6103**	**6104**	**AVERAGE**
PM-10 RESULTS, (including backhalf)					
gr./dscf:	0.0943	0.1494	N/A	N/A	0.1218
gr./acf:	0.0401	0.0679	N/A	N/A	0.0540
lbs./hr.:	11.54	28.40	N/A	N/A	19.97
lbs./10^6 BTU:	0.386	0.605	N/A	N/A	0.495
lbs./Ton of Feed:	0.481	1.136	N/A	N/A	0.808
Tons/Year:	24.92	61.33	N/A	N/A	43.13
PARTICULATE TOTAL RESULTS (including backhalf)					
gr./dscf:	0.1582	0.2133	0.1089	0.1372	0.1544
gr./acf:	0.0673	0.0970	0.0577	0.0577	0.0699
lbs./hr.:	19.36	40.55	19.48	18.79	24.54
lbs./10^6 BTU:	0.647	0.863	0.429	0.515	0.614
lbs./Ton of Feed:	0.81	1.62	0.78	0.75	0.99
Tons/Year:	41.82	87.58	42.07	40.59	53.01
SO2 RESULTS, (RM6C)					
ppm, (dry, v/v):	71.31	72.19	88.02	82.43	78.49
ppm, (wet, v/v):	42.00	45.29	63.96	47.45	49.67
lbs./hr.:	10.138	15.940	18.292	13.115	14.371
lbs./10^6 BTU:	0.3389	0.3395	0.4030	0.3595	0.3602
lbs./Ton of Feed:	0.42	0.64	0.73	0.52	0.58
Tons/Year:	21.90	34.43	39.51	28.33	31.04
PARAMETRIC FLUE GAS RESULTS					
Pres.Vel.Del.P(in.w.g.):	0.1312	0.2825	0.1940	0.1694	0.1943
Moisture, (%v/v):	41.10	37.27	27.34	42.44	37.04
CO2, Inst., (% dry,v/v):	5.32	5.20	5.57	6.18	5.57
O2, Inst., (%, dry,v/v):	14.17	14.10	13.92	13.57	13.94
Temperature,Stack, (°F):	222.5	219.4	213.4	211.8	216.8
Velocity,Flue Gas,(fps):	25.86	37.54	30.32	29.26	30.74
Volume Flow, (DSCFM):	14279	22177	20872	15980	18327
Volume Flow, (ACFM):	33584	48757	39378	38003	39930

The Emission Measurement Group, Inc.

Table 3-6 (Pulp-SW)
TEST RESULTS, by Run

Pulp Dryer - Southwest Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Southwest
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS

Test Date, (mm/dd/yy):	10/21/93	10/22/93	10/22/93	10/22/93	
Test Operator, (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.	Lynn, M.	
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.	Floyd, J.	
Run ID Number, (VDRR):	**5101**	**5102**	**5103**	**5104**	**AVERAGE**
Time- Start, (24hr.):	21:08	9:43	15:24	19:27	
- End, (24hr.):	21:33	13:35	17:43	21:59	
Time of Test, (t, min.):	25.0	110.5	120.0	120.0	93.9
Max. Rtd. Cap.,(TPH,Feed):	48.8	48.8	48.8	48.8	48.8
Feed Load, (TPH):	24.0	25.0	25.0	25.0	24.8
Test Cond., Feed, (%MRC):	49.20	51.25	51.25	51.25	50.74

PARTICULATE RESULTS, (RM5)

gr./dscf:	0.0431	0.0666	0.1409	0.1179	0.0921
gr./acf:	0.0183	0.0283	0.0609	0.0552	0.0407
lbs./hr.:	4.66	9.96	22.30	20.40	14.33
lbs./10^6 BTU:	0.175	0.269	0.594	0.451	0.372
lbs./Ton of Feed:	0.194	0.398	0.892	0.816	0.575
Tons/Year:	10.06	21.51	48.17	44.07	30.95

The Emission Measurement Group, Inc.

Table 3-6 (Pulp-SW Continued)
TEST RESULTS, by Run

TEST CONDITIONS					
Test Date, (mm/dd/yy):	10/21/93	10/22/93	10/22/93	10/22/93	
Run ID Number, (VDRR):	**5101**	**5102**	**5103**	**5104**	**AVERAGE**
PM-10 RESULTS, (including backhalf)					
gr./dscf:	N/A	N/A	0.1154	0.1030	0.1092
gr./acf:	N/A	N/A	0.0499	0.0482	0.0491
lbs./hr.:	N/A	N/A	18.27	17.83	18.05
lbs./10^6 BTU:	N/A	N/A	0.486	0.394	0.440
lbs./Ton of Feed:	N/A	N/A	0.731	0.713	0.722
Tons/Year:	N/A	N/A	39.45	38.51	38.98
PARTICULATE TOTAL RESULTS (including backhalf)					
gr./dscf:	0.1276	0.0916	0.1709	0.1585	0.1372
gr./acf:	0.0540	0.0390	0.0739	0.0742	0.0603
lbs./hr.:	13.77	13.71	27.05	27.43	20.49
lbs./10^6 BTU:	0.518	0.370	0.720	0.606	0.554
lbs./Ton of Feed:	0.57	0.55	1.08	1.10	0.83
Tons/Year:	29.74	29.60	58.43	59.25	44.26
SO2 RESULTS, (RM6C)					
ppm, (dry, v/v):	72.50	86.83	84.48	75.17	79.74
ppm, (wet, v/v):	44.16	52.20	51.94	49.84	49.54
lbs./hr.:	9.089	15.089	15.532	15.110	13.705
lbs./10^6 BTU:	0.3419	0.4069	0.4137	0.3338	0.3741
lbs./Ton of Feed:	0.38	0.60	0.62	0.60	0.55
Tons/Year:	19.63	32.59	33.55	32.64	29.60
PARAMETRIC FLUE GAS RESULTS					
Pres.Vel.Del.P(in.w.g.):	0.1000	0.1928	0.2091	0.2197	0.1804
Moisture, (%v/v):	39.08	39.88	38.51	33.70	37.80
CO2, Inst., (% dry,v/v):	5.45	5.24	5.25	6.27	5.55
O2, Inst., (%, dry,v/v):	14.12	14.08	14.37	13.70	14.07
Temperature,Stack, (F):	248.7	235.9	238.4	235.4	239.6
Velocity,Flue Gas,(fps):	22.89	31.57	32.88	33.22	30.14
Volume Flow, (DSCFM):	12591	17453	18466	20189	17175
Volume Flow, (ACFM):	29735	40999	42701	43148	39146

The Emission Measurement Group, Inc.

Table 3-7 (Pulp - NE)
SAMPLING and ANALYTICAL DATA, by Run

Pulp Dryer - Northeast Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Northeast
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS			
Test Operator (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.
Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93
Run ID Number, (VDRR):	**8101**	**8102**	**8103**
Time- Start, (24hr.):	10:24	16:32	20:02
- End, (24hr.):	12:38	18:27	22:29
Time of Test, (t, min.):	100.0	100.0	100.0
PROCESS LOAD DATA			
Max. Rtd. Cap., (TPH, Feed):	48.8	48.8	48.8
Feed Load, (TPH):	25.0	25.0	25.0
Test Cond., Feed, (%MRC):	51.25	51.25	51.25
SAMPLE VOLUME DATA			
Reference Diluent (CO2) %:	12.0	12.0	12.0
Reference Diluent (O2) %:	15.0	15.0	15.0
Console ID #:	CC-2	CC-2	CC-2
Gas Meter ID Number:	6848398	6848398	6848398
Gas Mtr. Cal Factor, (Yo):	0.99650	0.99650	0.99650
Volume,Gas Samp.@ Std.Cond,(dscf):	46.551	38.077	37.750
Corrected for Excess Leak,(acf):	50.476	41.847	40.498
At Meter Conditions, (acf):	50.476	41.847	40.498
Temperature, @ Gas Meter, (F):	72.10	78.80	66.60
Delta H Pres.@ Meter, (in.w.g.):	1.09	0.80	0.86
Pressure Barometeric.,Abs.,(in.Hg.):	27.825	27.820	27.850
Leak Ck.Result,Post,Excessive,(acf):	0.000	0.000	0.000
Leak Rate Result, (cfm):	0.000	0.000	0.000
At Vacuum, (in. Hg.):	24.00	25.00	25.00
High During Run, (in. Hg.):	15.00	5.80	3.00

Table 3-7 (Pulp - NE Continued)
SAMPLING and ANALYTICAL DATA, by Run

TEST CONDITIONS			
Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93
Run ID Number, (VDRR):	**8101**	**8102**	**8103**
STACK MOISTURE DATA			
Press.H2O Vap.@ Saturation,(in.Hg.):	0.2411	0.2586	0.2374
Of Gas @ Silica Gel, (in. Hg.):	19.025	23.620	25.850
Temperature @ Silica Gel Imp., ('F):	39.30	41.10	38.90
Vacuum @ Silica Gel/Pump,(in.Hg.):	8.800	4.200	2.000
Volume H2O @ Silica Gel,(gm):	13.75	9.83	7.97
Condensed H2O @ Impingers,(ml.):	605.0	504.0	585.0
Total Vol. H2O Collected,(ml.):	618.75	513.83	592.97
FLUE GAS MOL. WT. & FLOWRATE DATA			
Area of Flue, (sq. ft.):	21.65	21.65	21.65
Pres., Duct, Static, (in. w.g.):	0.00	0.00	0.00
Pitobe ID #:	PM-60	PM-60	PM-60
Pitot ID #:	PM-60	PM-60	PM-60
Pitot Side ID #:	A	A	A
Pitot Coef., (Cp):	0.840	0.840	0.840
Density of Flue Gas, (lb/cf):	0.0647	0.0647	0.0635
Molecular Weight, wet:	24.984	24.980	24.533
PARTICULATE SAMPLING DATA			
Isokinetic Sampling Rate, Final,(%):	104.32	98.97	101.53
" Point-by-Point, (Avg., %):	104.40	96.90	94.30
" Point-by-Point, (High, %):	140.30	112.80	106.40
" Point-by-Point, (Low, %):	91.20	50.80	69.60
Filter A ID #:	7492	7490	7497
B ID #:	N/A	N/A	N/A
Nozzle ID #:	PM10-11	PM10-11	PM10-11
Nozzle Diameter, (in.):	0.32000	0.32000	0.32000
Orifice Factor, Del. Ha, (in. w.g.):	1.904	1.904	1.904
Sampling Rate Factor, (K3):	4.29	4.18	4.06

The Emission Measurement Group, Inc.

Table 3-7 (Pulp - NW)
SAMPLING and ANALYTICAL DATA, by Run

Pulp Dryer - Northwest Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Northwest
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS			
Test Operator (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.
Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93
Run ID Number, (VDRR):	**7101**	**7102**	**7103**
Time- Start, (24hr.):	10:26	15:18	19:18
- End, (24hr.):	12:40	17:20	21:57
Time of Test, (t, min.):	100.0	100.0	100.0
PROCESS LOAD DATA			
Max. Rtd. Cap., (TPH, Feed):	48.8	48.8	48.8
Feed Load, (TPH):	25.0	25.0	25.0
Test Cond., Feed, (%MRC):	51.25	51.25	51.25
SAMPLE VOLUME DATA			
Reference Diluent (CO2) %:	12.0	12.0	12.0
Reference Diluent (O2) %:	15.0	15.0	15.0
Console ID #:	JC-1	JC-1	JC-1
Gas Meter ID Number:	382459	382459	382459
Gas Mtr. Cal Factor, (Yo):	0.99650	0.99650	0.99650
Volume,Gas Samp.@ Std.Cond,(dscf):	34.178	47.555	46.146
Corrected for Excess Leak,(acf):	37.149	53.029	49.506
At Meter Conditions, (acf):	37.149	53.029	49.506
Temperature, @ Gas Meter, ('F):	72.20	86.20	66.00
Delta H Pres.@ Meter, (in.w.g.):	0.25	0.46	0.43
Pressure Barometeric.,Abs.,(in.Hg.):	27.825	27.820	27.850
Leak Ck.Result,Post,Excessive,(acf):	0.000	0.000	0.000
Leak Rate Result, (cfm):	0.000	0.000	0.000
At Vacuum, (in. Hg.):	23.50	23.50	23.50
High During Run, (in. Hg.):	17.00	5.20	4.00

Table 3-7 (Pulp - NW Continued)
SAMPLING and ANALYTICAL DATA, by Run

TEST CONDITIONS			
Test Date, (mm/dd/yy):	10/23/93	10/23/93	10/23/93
Run ID Number, (VDRR):	**7101**	**7102**	**7103**
STACK MOISTURE DATA			
Press.H2O Vap.@ Saturation,(in.Hg.):	0.3586	0.3252	0.2392
Of Gas @ Silica Gel, (in. Hg.):	18.425	25.320	25.350
Temperature @ Silica Gel Imp., (°F):	49.70	47.10	39.10
Vacuum @ Silica Gel/Pump,(in.Hg.):	9.400	2.500	2.500
Volume H2O @ Silica Gel,(gm):	15.65	14.65	10.01
Condensed H2O @ Impingers,(ml.):	364.0	527.0	472.0
Total Vol. H2O Collected,(ml.):	379.65	541.65	482.01
FLUE GAS MOL. WT. & FLOWRATE DATA			
Area of Flue, (sq. ft.):	21.65	21.65	21.65
Pres., Duct, Static, (in. w.g.):	0.20	0.20	0.20
Pitobe ID #:	60-1	60-2	60-2
Pitot ID #:	60-1	60-2-PM10	60-2-PM10
Pitot Side ID #:	A	A	A
Pitot Coef., (Cp):	0.840	0.840	0.840
Density of Flue Gas, (lb/cf):	0.0659	0.0658	0.0662
Molecular Weight, wet:	25.425	25.403	25.569
PARTICULATE SAMPLING DATA			
Isokinetic Sampling Rate, Final,(%):	88.41	98.97	97.37
" Point-by-Point, (Avg., %):	88.70	98.90	99.20
" Point-by-Point, (High, %):	118.00	111.60	114.60
" Point-by-Point, (Low, %):	81.50	94.10	88.50
Filter A ID #:	7493	7489	7496
B ID #:	N/A	N/A	N/A
Nozzle ID #:	10-2	PM10-11	PM10-11
Nozzle Diameter, (in.):	0.32000	0.32000	0.32000
Orifice Factor, Del. Ha, (in. w.g.):	0.940	0.940	0.940
Sampling Rate Factor, (K3):	2.16	2.29	2.21

The Emission Measurement Group, Inc.

Table 3-7 (Pulp - SE)
SAMPLING and ANALYTICAL DATA, by Run

Pulp Dryer - Southeast Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Southeast
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS				
Test Operator (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.	Lynn, M.
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.	Floyd, J.
Test Date, (mm/dd/yy):	10/21/93	10/22/93	10/22/93	10/22/93
Run ID Number, (VDRR):	**6101**	**6102**	**6103**	**6104**
Time- Start, (24hr.):	20:56	9:34	15:27	19:24
- End, (24hr.):	21:16	13:36	17:46	21:50
Time of Test, (t, min.):	20.0	113.5	120.0	120.0
PROCESS LOAD DATA				
Max. Rtd. Cap., (TPH, Feed):	48.8	48.8	48.8	48.8
Feed Load, (TPH):	24.0	25.0	25.0	25.0
Test Cond., Feed, (%MRC):	49.20	51.25	51.25	51.25
SAMPLE VOLUME DATA				
Reference Diluent (CO2) %:	12.0	12.0	12.0	12.0
Reference Diluent (O2) %:	15.0	15.0	15.0	15.0
Console ID #:	CC-2	CC-2	CC-2	CC-2
Gas Meter ID Number:	6848398	6848398	6848398	6848398
Gas Mtr. Cal Factor, (Yo):	0.99650	0.99650	0.99650	0.99650
Volume,Gas Samp.@ Std.Cond,(dscf):	8.719	51.819	27.042	46.895
Corrected for Excess Leak,(acf):	9.165	54.983	29.744	50.673
At Meter Conditions, (acf):	9.165	54.983	29.744	50.673
Temperature, @ Gas Meter, (°F):	57.60	62.70	79.70	69.80
Delta H Pres.@ Meter, (in.w.g.):	1.10	1.33	0.92	0.97
Pressure Barometeric.,Abs.,(in.Hg.):	27.920	27.915	27.835	27.810
Leak Ck.Result,Post,Excessive,(acf):	0.000	0.000	0.000	0.000
Leak Rate Result, (cfm):	0.000	0.000	0.000	0.000
At Vacuum, (in. Hg.):	14.00	14.00	14.00	23.50
High During Run, (in. Hg.):	5.00	17.80	2.80	5.80

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Table 3-7 (Pulp - SE)
SAMPLING and ANALYTICAL DATA, by Run

STACK MOISTURE DATA				
Press.H2O Vap.@ Saturation,(in.Hg.):	0.2656	0.2430	0.2729	0.2656
Of Gas @ Silica Gel, (in. Hg.):	24.020	21.215	26.135	24.110
Temperature @ Silica Gel Imp., (°F):	41.80	39.50	42.50	41.80
Vacuum @ Silica Gel/Pump,(in.Hg.):	3.900	6.700	1.700	3.700
Volume H2O @ Silica Gel,(gm):	2.18	13.52	6.66	11.98
Condensed H2O @ Impingers,(ml.):	127.0	640.0	209.3	722.0
Total Vol. H2O Collected,(ml.):	129.18	653.52	215.96	733.98
FLUE GAS MOL. WT. & FLOWRATE DATA				
Area of Flue, (sq. ft.):	21.65	21.65	21.65	21.65
Pres., Duct, Static, (in. w.g.):	0.00	0.00	0.00	0.00
Pitobe ID #:	PM10-60	PM10-60	60-1	60-1
Pitot ID #:	PM10-60	PM10-60	60-1	60-1
Pitot Side ID #:	A	A	A	A
Pitot Coef., (Cp):	0.840	0.840	0.840	0.840
Density of Flue Gas, (lb/cf):	0.0641	0.0652	0.0682	0.0638
Molecular Weight, wet:	24.739	25.162	26.332	24.651
PARTICULATE SAMPLING DATA				
Isokinetic Sampling Rate, Final,(%):	133.75	90.19	47.30	107.13
" Point-by-Point, (Avg., %):	80.40	100.00	103.30	94.20
" Point-by-Point, (High, %):	111.20	111.40	114.60	119.00
" Point-by-Point, (Low, %):	99.90	20.20	88.10	87.80
Filter A ID #:	7480	7481	7485	7488
B ID #:	N/A	7484	N/A	N/A
Nozzle ID #:	PM10-10	PM10-10	10.2	10.2
Nozzle Diameter, (in.):	0.30100	0.30100	0.30100	0.30100
Orifice Factor, Del. Ha, (in. w.g.):	1.904	1.904	1.904	1.904
Sampling Rate Factor, (K3):	5.02	3.28	3.30	3.09

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Table 3-7 (Pulp - SW)
SAMPLING and ANALYTICAL DATA, by Run

Pulp Dryer - Southwest Sidney, MT

CORPORATE DATA

Company Name:	Holly Sugar Corporation
Division Name:	Montana Division
Plant/Fac. Name:	Sidney, MT
Dept. Name:	Environmental
Contact Name:	Mr. Tom Jacobsen
Contact's Title:	Environmental Engineer
Process Ident./Type:	Sugar Beet Processing
Fuel Type:	#6 Fuel Oil
Fd(dscf gas/10^6 BTU):	9220
Stack/Duct Identifier:	Pulp Dryer - Southwest
Equiv.Flue Dia,(ft.):	5.250
Hrs of Oper./Year:	4320

TEST CONDITIONS

Test Operator (LN,FI):	Lynn, M.	Lynn, M.	Lynn, M.	Lynn, M.
Tech. Helper #1:	Floyd, J.	Floyd, J.	Floyd, J.	Floyd, J.
Test Date, (mm/dd/yy):	10/21/93	10/21/93	10/21/93	10/21/93
Run ID Number, (VDRR):	**5101**	**5102**	**5103**	**5104**
Time- Start, (24hr.):	21:08	9:43	15:24	19:27
- End, (24hr.):	21:33	13:35	17:43	21:59
Time of Test, (t, min.):	25.0	110.5	120.0	120.0

PROCESS LOAD DATA

Max. Rtd. Cap., (TPH, Feed):	48.8	48.8	48.8	48.8
Feed Load, (TPH):	24.0	25.0	25.0	25.0
Test Cond., Feed, (%MRC):	49.20	51.25	51.25	51.25

SAMPLE VOLUME DATA

Reference Diluent (CO2) %:	12.0	12.0	12.0	12.0
Reference Diluent (O2) %:	15.0	15.0	15.0	15.0
Console ID #:	JC-1	JC-1	JC-1	JC-1
Gas Meter ID Number:	352648	352648	352648	352648
Gas Mtr. Cal Factor, (Yo):	0.99650	0.99650	0.99650	0.99650
Volume,Gas Samp.@ Std.Cond,(dscf):	8.704	45.704	47.334	54.085
Corrected for Excess Leak,(acf):	9.021	48.808	53.503	58.278
At Meter Conditions, (acf):	9.021	48.808	53.503	58.278
Temperature, @ Gas Meter, ('F):	49.00	64.90	93.80	67.50
Delta H Pres.@ Meter, (in.w.g.):	0.18	0.35	0.36	0.39
Pressure Barometeric.,Abs.,(in.Hg.):	27.915	27.925	27.835	27.810
Leak Ck.Result,Post,Excessive,(acf):	0.000	0.000	0.000	0.000
Leak Rate Result, (cfm):	0.000	0.000	0.000	0.000
At Vacuum, (in. Hg.):	5.00	14.00	23.00	23.50
High During Run, (in. Hg.):	1.50	4.80	4.80	8.00

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Table 3-7 (Pulp - SW Continued)
SAMPLING and ANALYTICAL DATA, by Run

TEST CONDITIONS				
Test Date, (mm/dd/yy):	10/21/93	10/21/93	10/21/93	10/21/93
Run ID Number, (VDRR):	**5101**	**5102**	**5103**	**5104**
STACK MOISTURE DATA				
Press.H2O Vap.@ Saturation,(in.Hg.):	0.2143	0.2365	0.3015	0.2576
Of Gas @ Silica Gel, (in. Hg.):	26.585	25.525	25.835	23.810
Temperature @ Silica Gel Imp., (F):	36.30	38.80	45.10	41.00
Vacuum @ Silica Gel/Pump,(in.Hg.):	1.330	2.400	2.000	4.000
Volume H2O @ Silica Gel,(gm):	1.56	9.69	13.41	13.53
Condensed H2O @ Impingers,(ml.):	117.0	634.0	616.0	570.0
Total Vol. H2O Collected,(ml.):	118.56	643.69	629.41	583.53
FLUE GAS MOL. WT. & FLOWRATE DATA				
Area of Flue, (sq. ft.):	21.65	21.65	21.65	21.65
Pres., Duct, Static, (in. w.g.):	0.00	0.00	0.00	0.00
Pitobe ID #:	60-1	60-1	60-1	60-1
Pitot ID #:	60-1	60-1	60-1	60-1
Pitot Side ID #:	A	A	A	A
Pitot Coef., (Cp):	0.840	0.840	0.840	0.840
Density of Flue Gas, (lb/cf):	0.0647	0.0644	0.0648	0.0665
Molecular Weight, wet:	24.980	24.868	25.032	25.672
PARTICULATE SAMPLING DATA				
Isokinetic Sampling Rate, Final,(%):	139.59	103.82	93.58	97.80
" Point-by-Point, (Avg., %):	172.95	91.60	94.50	104.30
" Point-by-Point, (High, %):	240.00	181.80	127.20	118.60
" Point-by-Point, (Low, %):	105.90	42.50	34.10	94.70
Filter A ID #:	7479	7482	7486	7487
B ID #:	N/A	N/A	N/A	N/A
Nozzle ID #:	9.2	10.2	10.2	10.2
Nozzle Diameter, (in.):	0.28040	0.30100	0.30100	0.30100
Orifice Factor, Del. Ha, (in. w.g.):	0.940	0.940	0.940	0.940
Sampling Rate Factor, (K3):	1.75	1.52	1.50	1.62

Figure 3-1(a)
STACK CONFIGURATION and PORT LOCATION(S)
C.E. Boilers, Union Boilers & Pulp Dryers
Sidney, Montana Plant

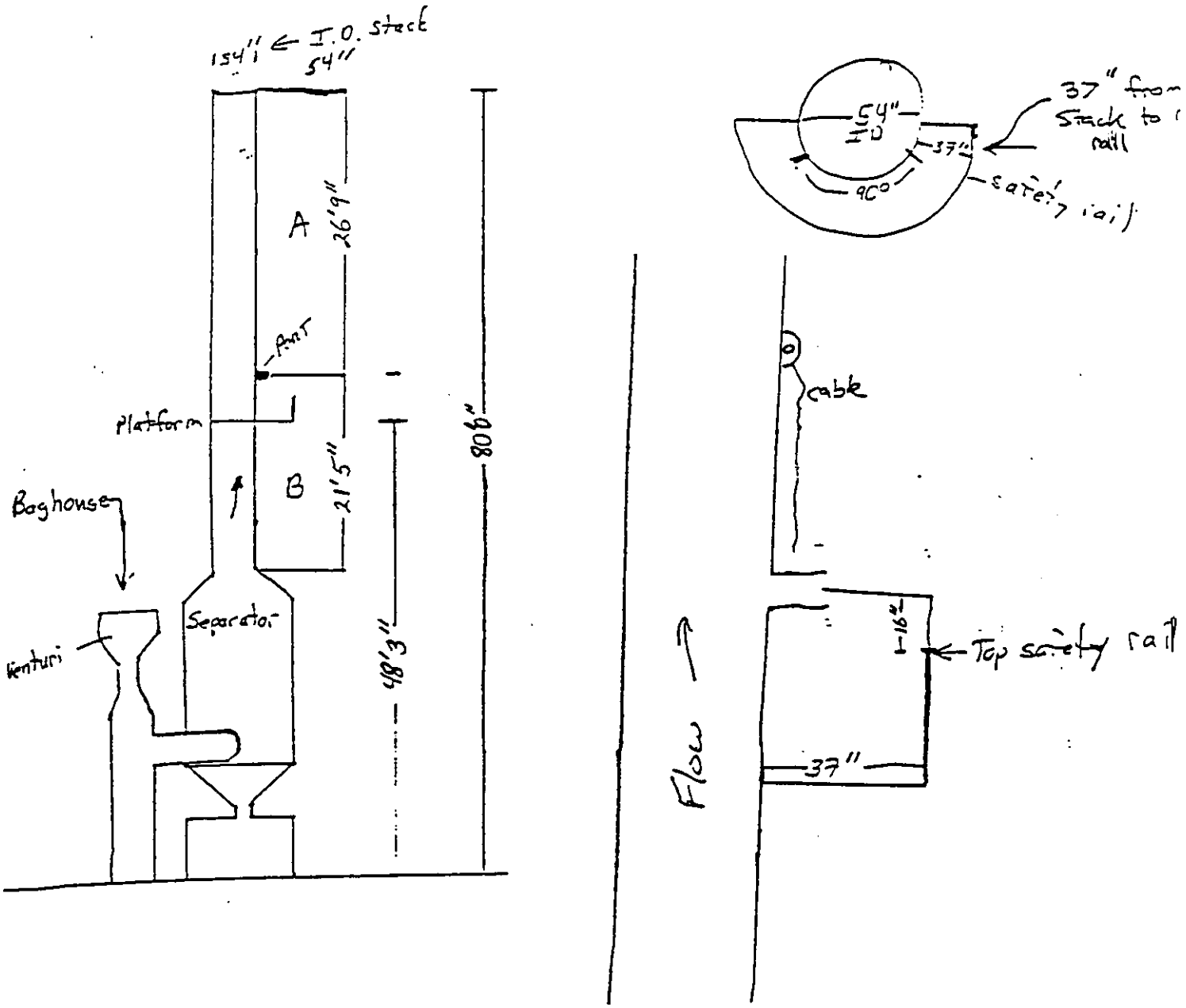

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Figure 3-1(b)
STACK CONFIGURATION and PORT LOCATION(S)
C.E. Boilers, Union Boilers & Pulp Dryers
Sidney, Montana Plant

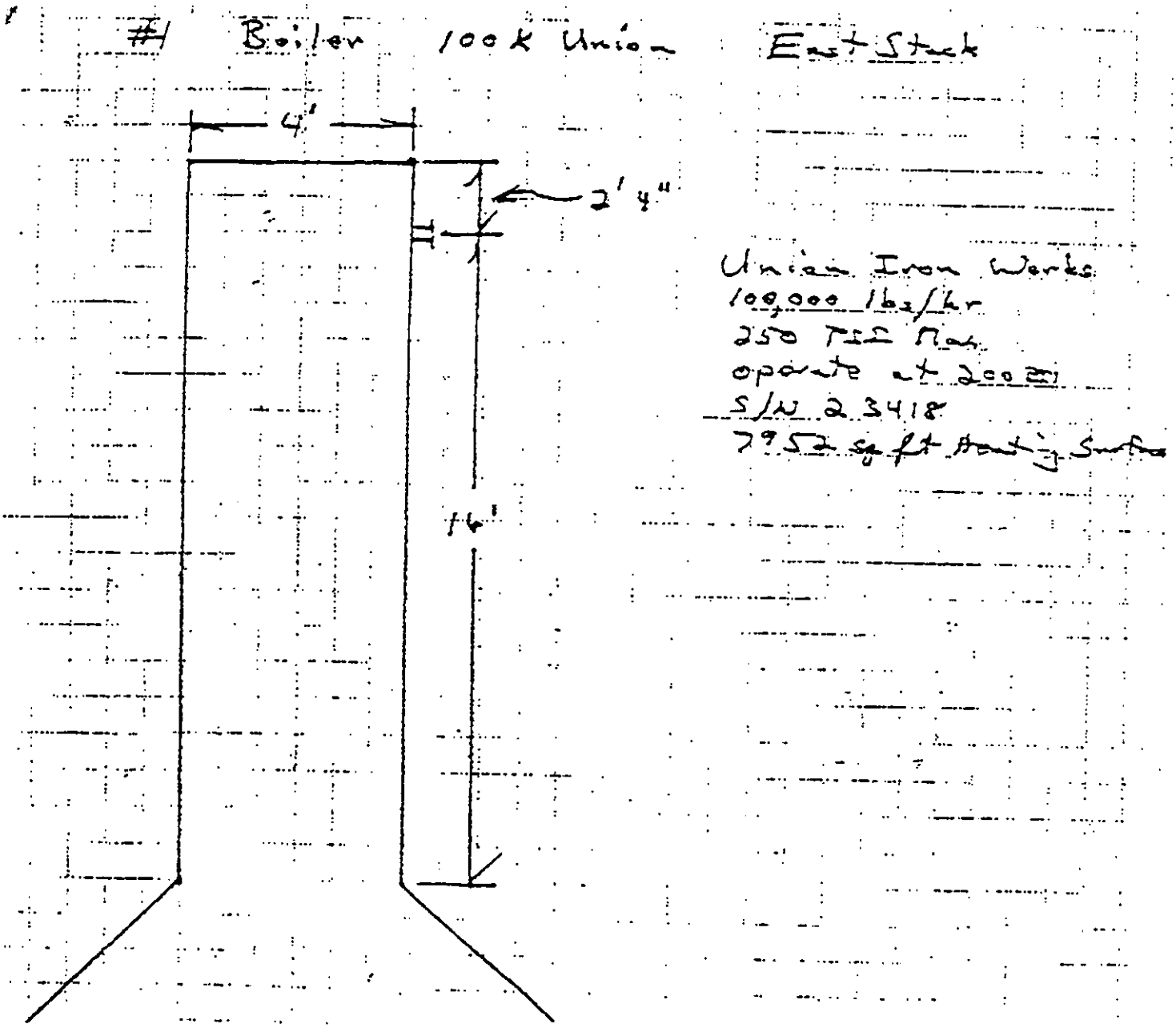

Figure 3-1(c)
STACK CONFIGURATION and PORT LOCATION(S)
C.E. Boilers, Union Boilers & Pulp Dryers
Sidney, Montana Plant

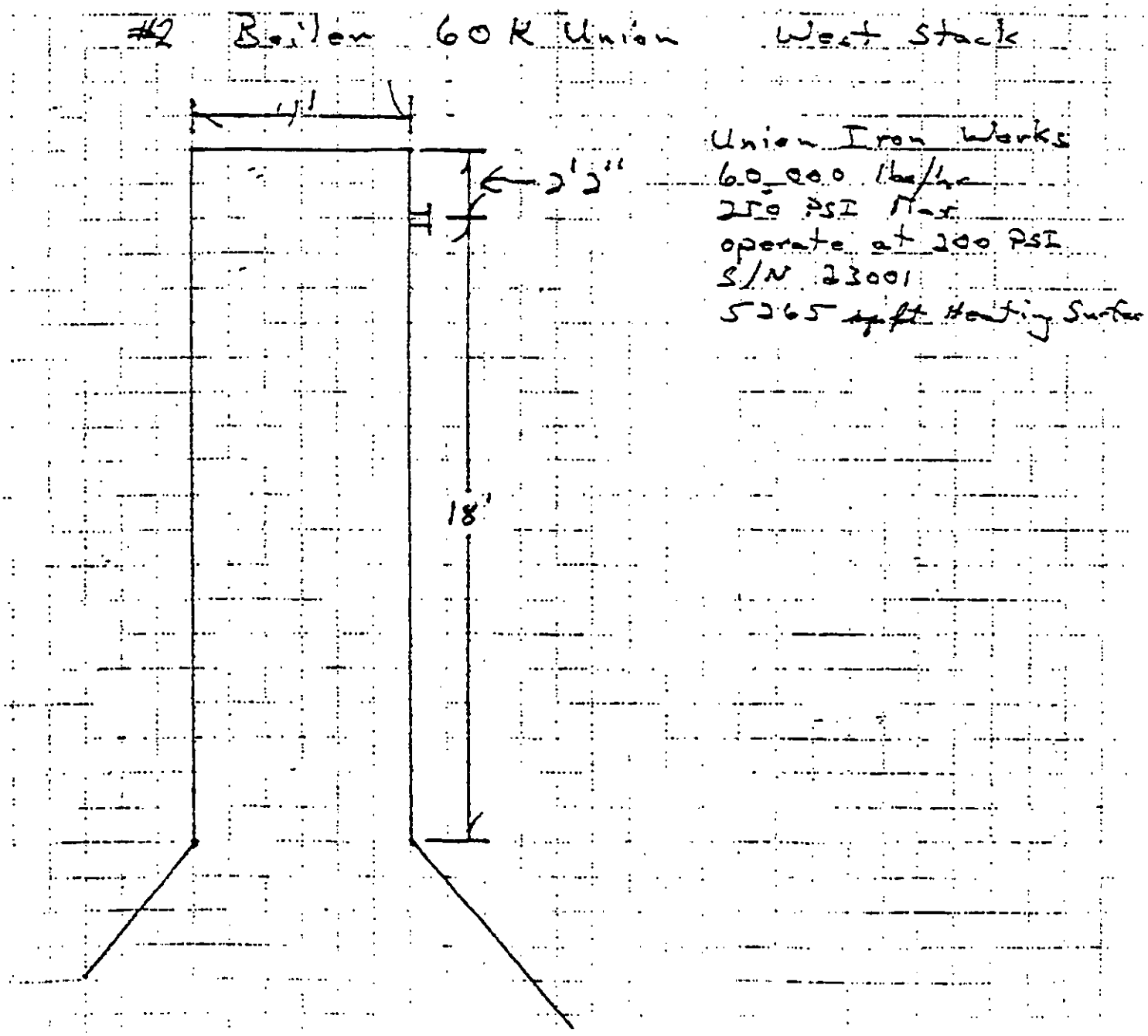

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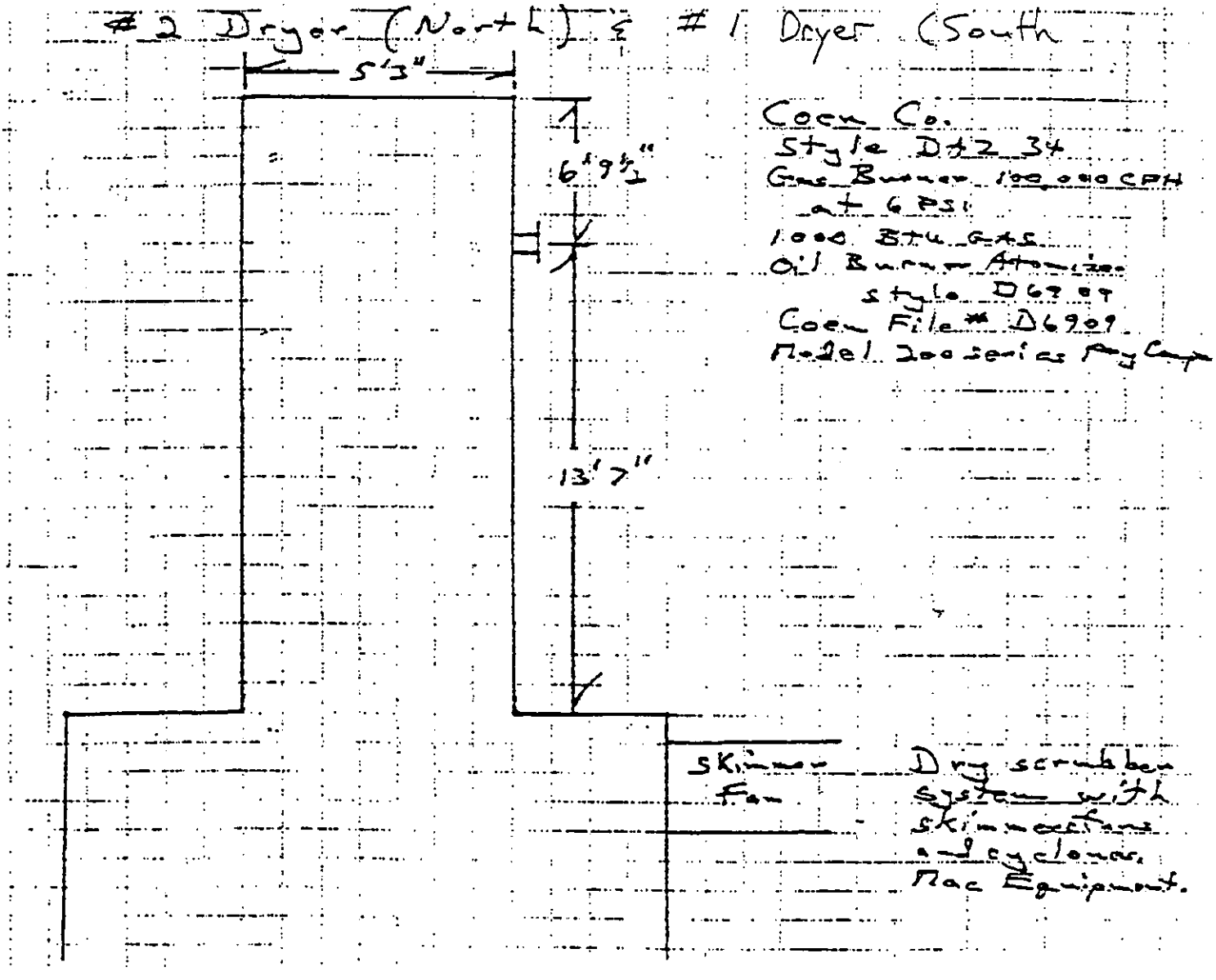
Figure 3-1(d)
STACK CONFIGURATION and PORT LOCATION(S)
C.E. Boilers, Union Boilers & Pulp Dryers
Sidney, Montana Plant



4.0 Appendices

4.1 Project Documentation

- 4.1.1 Project Correspondence
- 4.1.2 Compliance Test Protocol (Title Sheet and Contents)
- 4.1.3 Records Reference Document (Title Sheet and Contents)
- 4.1.4 Project Activities Log

4.2 Quality Assurance Documentation

- 4.2.1 Q.A. Audit Results (if applicable)
- 4.2.2 Chain-of-Custody for Data and Sample(s)
- 4.2.3 Post-test Calibrations (if applicable)

4.3 Plant Operation and Production Data (as available)

4.4 Field Sampling Data Records

- 4.4.1 Data Sheets for Reference Methods
- 4.4.2 Emission Data Printouts from CEM Tests
- 4.4.3 Drift Records for CEM Tests
- 4.4.4 Opacity Observations (as available)

4.5 Calculations and Computer Printouts

4.6 Laboratory Analytical Results

Appendix 4.3

Plant Operation and Production Data

(as Available)

HOLLY SUGAR CORPORATION
SIDNEY, MT FACTORY
OPERATING CONDITIONS 11/10/93

SUMMARY

PULP DRYERS

PULP DRYER No. 1 (South)	TONS WET PULP PER HOUR INPUT	*gallons per hour Fuel Oil Consumed
10-21-93 RUNS 5101 thru 6101	24	275*
10-22-93 RUNS 5102 thru 6104	25	275*
PULP DRYER No. 2 (North)		
10-23-93 RUNS 7101 thru 8103	25	275*

* Data was collected of fuel oil consumed during testing by monitoring elevation changes in the fuel oil storage tank, temperature of the tank, and fuel oil deliveries. All testing was performed with only one unit (2 union boilers + 2 pulp dryers) on fuel oil in an attempt to get accurate information. But calculated fuel oil consumption was highly variable though the process ran steady. Our best estimate of fuel oil consumed is based on recent data on Dryer No. 2 (North) over a number of days of operation with no other units on fuel oil. They had been averaging approx. 275 gph at ≈225 TPH slice rate. The same method of tank measurement was employed, but over periods of days rather than hours. Testing was performed at 220 to 224 TPH slice.

Pulp Dryer No. 1 (South)

DATE	TIME	BELT COUNTER	WET PULP TO DRYER	FUEL OIL LEVEL READING	FUEL CONSUMED	COMMENTS
10-21-93	1938	—	—	9'5 1/16" @ 46°C		
	1947	0211		—		
	2036	0391		—		
	2044	—	—	9'5 11/16" @ 47		
	2151	0668		—		
	2200	—	—	9'6" @ 44		
	(668-391) * .9945 * .0599 = 16.5			Tons Dry Pulp	(Slice Rate = 220 TPH)	
	% Moisture in dry pulp =			11.27%		
	% Moisture in wet pulp =			76.03%		
	$\frac{16.5 * (1.00 - .1127)}{(1.00 - .7603)}$ ÷ (75 min.)		2151 hrs − 2036 hrs	× 60 min ÷ 2 pulp dryers =		(24 TPH)

1. Approx. 50% split on wet pulp to two dryers.
2. WET PULP ( ) = 24 TPH

Pulp Dryer No. 1 (South)

DATE	TIME	BELT COUNTER	WET PULP TO DRYER	FUEL OIL LEVEL READING	FUEL CONSUMED	COMMENTS
10-22-93	0941	—	—	9'4 5/8" @ 44°		
	0954	3268		—		
	1009	3327		—		153 barrels (42 gal.) No. 6 Fuel Oil added to storage.
	1040	3444		—		
	1049	—	—	9'1 7/8" @ 45		
	1151	3707		—		
	1333	4091		—		
	1456	—	—	9'3 1/2" @ 49		
	1505	4432		—		
	1609	4671		—		
	1630	—	—	9'4" @ 50		
	1714	4918		—		
	1834	5219		—		
	1938	—	—	9'5 5/16" @ 47		
	1947	5491		—		
	2112	5812		—		
	2118	—	—	9'5 15/16" @ 46		
	2214	—	—	9'6 7/8" @ 46		
	2222	6068		—		

(6068 − 3268) * .9945 * .0599 = 166.8 Tons Dry Pulp (correction factor, % pulp on beet estimate scale) (Slice Rate = 223 TPH)

% Moisture in dry pulp = 10.74%
% Moisture in wet pulp = 76.03%

$\frac{166.8 * (1.00 - .1074)}{(1.00 - .7603)} \div (748\ \text{min}) \times 60\ \text{min.} \div 2$ pulp dryers = 25 TPH (2222 hrs − 0954 hrs)

1. Approx. 50% split on wet pulp to two dryers.
2. WET PULP °C) = 25 TPH

Pulp Dryer No. 2 (North)

Date	Time	Belt Counter	Wet Pulp to Dryer	Fuel Oil Level Reading	Fuel Consumed	Comments
10-23-93	0830	—	—	9'10 15/16" @ 48		
	0836	8218		—		fuel oil added to tank (Tech. Services will have quantity).
	1029	8637		—		
	1033	—	—	9'2 1/8" @ 49		
	1134	8881		—		
	1235	9112		—		
	1240	—	—	9'2 7/8" @ 52		
	1350	9396		—		
	1454	9640		—		
	1504	—	—	9'3 3/4" @ 47		
	1616	9954		—		
	1713	0173		—		COUNTER TURNED OVER, 46 + 173 = 219.
	1721	—	—	9'4 13/16" @ 48		
	1835	0475				
	1900	0566				
	1953	0764				
	2001	—	—	9'5 9/16" @ 48		
	2056	0999		—		
	2142	1168		—		
	2150	—	—	9'6 7/8" @ 47		(Slice Rate = 229 TPH)
	(1168 − 8637) * .9945 *		.0599 = 150.77	Tons Dry Pulp	% Moisture in dry pulp = 11.26 %	
			2142 hrs − 1029 hrs		% Moisture in wet pulp = 75.80 %	
	150.77 * (1.00 − .1126) / (1.00 − .7580)		÷ (673 min) × 60 min ÷ 2	pulp dryers =	25 TPH	

1. Approx. 50% split on wet pulp to two dryers.

2. Wet pulp °C) = 25 TPH 4.3.5

11/10/93

Union Boilers

Recent attempts at estimating fuel oil consumed during stack testing of the pulp dryers indicate that data collected on fuel oil consumption during testing of the Union Boilers may also be highly variable. The only means the factory has for estimating fuel oil consumption is by measuring of tank level changes by use of a float in the storage tank and chain. This provides good information over long periods of time, but does not appear to be accurate over a short period of time.

The factory switched to fuel oil on each unit (one at a time) for each stack test to better able to measure fuel oil consumption. Consequently we do not have a series of 24 hour days of operation for each fuel oil operated piece of equipment to estimate fuel oil consumption accurately.

10/23/93

HOLLY SUGAR

~~C.E. Boiler~~

The C.E. Boilers were tested at 90% of operating capacity (92,500 LBS/HR Steam). Name plate capacity = 95,000.

The No. 3 Union Boiler (East) was run at approximately 77% of rated capacity. This unit was tested at conditions above which it is normally operated.

The No. 4 Union Boiler (West) was run at approximately 88% of rated capacity. This unit was tested at conditions above which it is normally operated.

Pulp dryers were tested at approximately 90+% of what is currently expected to be fed to these units based on the beet slicing rate ~~[illegible]~~ currently being seen at the factory. It is assumed that approx. 50% of the wet pulp goes to each dries (based on factory personnel knowledge).

OPERATING CONDITION SUMMARY

C.E. BOILERS	LBS/HR STEAM	STEAM % OPERATING CAPACITY	LBS. COAL PER HOUR
No. 1 (WEST)			
RUN 1101	83,882	90.7	15,099
1102	82,920	89.6	14,926
1103	83,680	90.5	15,062
No. 2 (EAST)			
RUN 2101	85,047	91.9	15,308
2102	83,927	90.7	15,107
2103	83,360	90.1	15,005

UNION BOILERS	LBS/HR STEAM	STEAM % OPERATING CAPACITY	FUEL OIL (No. 6) CONSUMED
No. 4 UNION (WEST)			
RUN 3101	52,176	87.0	395 gallons/hour
3102	53,591	89.3	over 3 runs.
3103	52,778	88.0	
No. 3 UNION (EAST)			
RUN 4101	77,474	77.5	583 gal./hr.
4102	78,632	78.6	over 4 runs
4103	77,424	77.4	
4104	76,000	76.0	

4.4.1

Data Sheets for Reference Methods

5-0 m5

RUN # 5101 DATE 10-21-93	THE EMISSION MEASUREMENT GROUP INC.	CONSOLE ID JOY Meter ID
PLANT Pulp Dryers - South	FIELD DATA SHEET	PITOBE ID 60-1 PITOT ID 60-1
DUCT/FLUE Stack UNIT West	METHODS – M2,M3,M4,M5	NOZZLE ID 9-2
TEST LDR MJL MJL	Client Holly Sugar	FILTER ID (A) 7479 (B)
HELPER(S) JRF #2		ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	40	Rel Hum		Weather			
Delta P Level	✓	Zero:	✓				
Delta H Level	✓	Zero:	✓				
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg		
Nozzle Leak Rate	0	CFM	@ 23.5		in Hg.		
Backside Leak Rate	0	CFM	@	10	in H2O		

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0		%O2=
NO. of POINTS	20	Min/Pnt	5.0		%CO2=
Pbar	27.92/27.91	Ps	-0.20		ppm SO2=
Cp	0.84	dn(des)	~~.300~~ 0.317		ppm NOx=
Yo	0.9964	dn(act)	0.3204		ppm CO=
Delta Ha	0.94	K3	2712 / 1709		MW (s)=

JOY WEST

ASSUMED VALUES

DATA SOURCE	Head. Delta P	Delta H. Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

POINT -- BY -- POINT DATA

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC.	RATE
Port/Pt.	Sec	Clock	Elap.	Delta P	Index Reg.	Delta H Orifice		Stack	~~Probe~~	Filter	~~IMP~~ Prop 4	G.Mtr	Main	ISO
Ltr/No.	#	24 Hr.	Min	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	8	in. Hg	%
START	0	2108	0		432220	DES	ACT							
A	1	2108	5	0.1		0.175	0.2	246	37			43	1	
	2	2118	10		~~Tc: 09~~					250	250			240
	3	2123	15	0.1	428791	0.175	0.175	250	36	250	250	51	1.5	1054
	4	2128	20	0.1		0.175	0.175	250	36			53	1.5	
	5	2133	25	0.1	432241	0.175	0.175			250	250			
	8		30							250	250			
	7		35											
	8		40							250	250			
	9		45							250	250			
	10		50											
8.2 B	11		55							250	250			
11.4	12		60							250	250			
15.1	13		65											
19.8	14		70							250	250			
26.4	15		75							250	250			
44.6	16		80											
51.2	17		85							250	250			
56.9	18		90							250	250			
59.6	19		95											
62.3	20		100							250	250			
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES			0.25	0.1	9.021			248.7	36.3	X	X	49	1.33	

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) @	in H20	Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H20	
Pitot (-) @	in H20	1				1	208	100	108	Vapor Pressure	1
Nozzle Rate	0	2				2	107	100	7	Total ml H2O	
in. Hg. Vac.	23.5	3				3	7	0	7	Vw (std)	
Leak Cu. Ft.		Avg.				Volume Condensed H2O =			122	FINAL % H2O	
FINAL AVERAGES		V(m)=		Vm (std)=		FINAL Yo @ avg D. H.=				FINAL ISO %=	

TEST LEADER SIGNATURE: Michael Lay WITTNESS: Jay R Floyd

6.0 M5

RUN # 510 ~ DATE 10-22-93	THE EMISSION MEASUREMENT GROUP INC. Sydney, MT	CONSOLE ID JC-1 Meter ID
PLANT Pulp Dryer - South	FIELD DATA SHEET	PITOBE ID 60-1 PITOT ID 60-1
DUCT/FLUE West UNIT Sooo	METHODS -- M2,M3,M4,M5	NOZZLE ID 10-2
TEST LDR MJL	Client HOLLY SUGAR	FILTER ID (A) 7482 (B)
HELPER(S) JRF #2		ORSAT BAG ID INST. BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	40-70	Rel Hum	10-15	Weather	Clear
Delta P Level	✓	Zero	✓		
Delta H Level	✓	Zero	✓		
Pitot Lk. Chk. (+)	✓ @ 5.5 in wg	(-)	0 @ 6.0 in wg		
Nozzle Leak Rate	0	CFM	@ 23.5 in Hg		
Backside Leak Rate	0.0	CFM	@ 10 in H2O		

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	15.6
NO. of POINTS	20	Min/Pnt	6.0	%CO2=	4.1
Pbar	27.96/27.87	Ps	27.96/29.20	ppm SO2=	55
Cp	0.84	dn(dcs)	0.387	ppm NOx=	—
Yo	0.9965	dn(act)	.302	ppm CO=	—
Delta Ha	0.94	K3	1.517	MW (s)=	—

JOY WEST

ASSUMED VALUES

DATA SOURCE	Head, Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

SW SW

POINT -- BY -- POINT DATA

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC	RATE
Port/Pnt	Seq	Clock	Elap	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp	G.Mtr	Main	ISO
Ln/No.	#	24 Hr	Min	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	0943	0		2467.298	DES	ACT							
A	1	0949	6	0.1	2468.06	0.152	0.15	247			33	45	1	42.2
	2	0955	12	0.1	2471.36	0.152	0.25	252	250	250	35	49	1	81.8
	3	1001	18	0.1	2473.53	0.152	0.2	253			35	51	1.0	119.2
	4	1007	24	0.1	2475.62	0.152	0.18	250	250	250	34	51	1	114.5
	5	1013	30	0.12	2477.69	0.182	~~0.2~~ 0.18	255			34	53	1.2	103.5
	6	1019	36	0.25	2480.47	0.379	0.38	240	250	250	35	54	2	95.2
	7	1025	42	0.37	2484.01	0.561	0.55	215			34	56	4	97.2
	8	1031	48	0.50	2488.02	0.758	0.75	217	250	250	34	58	4	94.8
	9	1037	54	0.55	2492.326	0.834	0.8	212			34	58.5	4.5	96.6
	10	1045	60	0.50	2496.504	0.758	0.75	212	250	250	36	58.5	4.2	98.3
B	11	1245/1256	66	0.25	2499.56	0.379	0.4	241			48	66	3	102.3
	12	1257	72	0.17	2501.98	0.258	0.25	243	250	250	44	71	2	97.4
	13	1303	78	0.17	2504.33	0.258	0.25	244			46	74	2	94.1
	14	1309	84	0.06	2505.69	0.091	0.1	250	250	250	47	77	1	91.5
	15	1315	90	0.04	2506.51	0.061	0.06	250			44	79.5	1	67.3
	16	1321	96	0.15	2508.65	0.228	0.25	222	250	250	41	80.5	2	88.7
	17	1327	102	0.15	2511.02	0.228	0.25	237			41	82.5	2	99.0
	18	1333	108	0.35	2514.54	0.531	0.5	225	250	250	42	84	4	95.2
End	19	1335.5	114	0.45	2516.100	0.683	0.7	221			41	83.5	4.8	70
	20		120						250	250				—
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES			110.5	.1028	48.809		.748	275.9	X	X	38.8	64.9	2.6	91.6

FINAL LEAK CHECKS		ORSAT			COND. MOISTURE				DALTON'S LAW	
Pitot (+) 0 @ 6.0 in H20	Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	9.2
Pitot (-) 0 @ 5.0 in H20	1		Instrumental		1	250+156	100	306	Vapor Pressure	22.97/23.83
Nozzle Rate 0.0	2				2	250	100	150	Total ml H2O	142.7
in. Hg. Vac. 14	3				3	178	0	178	Vw (std)	
Leak Cu. Ft.	Avg.				Volume Condensed H2O = 634				FINAL % H2O	29.91
FINAL AVERAGES	V(m)=		Vm (std)= 45.685		FINAL Yo @ avg D. H.=				FINAL ISO %=	103.19

TEST LEADER SIGNATURE: Michael J Lyon WITTNESS: Jay R Floyd

1335.5 Lost Power

West 4.4.16

6.0

PM-10

RUN # 5103 DATE 10-22-93	THE EMISSION MEASUREMENT GROUP INC. Sydney, MT	CONSOLE ID SC-1 Meter ID
PLANT Pulp Dryer - South	FIELD DATA SHEET	PITOBE ID 60-2 PITOT ID 60-2 PM10
DUCT/FLUE West UNIT 5000	METHODS -- M2,M3,M4,M5	NOZZLE ID ~~10-2~~ PM10-10
TEST LDR MJL	Client HOLLY SUGAR	FILTER ID (A) 7476 (B)
HELPER(S) JAF #2		ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	40-70	Rel Hum	10-15	Weather	Clear
Delta P Level	✓	Zero	✓		
Delta H Level	✓	Zero	✓		
Pitot Lk Chk (+)	A @ 5.5	in wg	(-) 0 @ 6.0	in wg	
Nozzle Leak Rate	C	CFM	@ 23.5	in Hg	
Backside Leak Rate	0.0	CFM	@ 10	in H2O	

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	15.6
NO. of POINTS	20	Min/Pnt	6.0	%CO2=	4.1
Pbar	27.81/27.81	Ps	+0.20	ppm SO2=	55
Cp	0.84	dn(des)	0.370	ppm NOx=	—
Yo	0.0965	dn(act)	.300 (.301	ppm CO=	—
Delta Ha	0.94	K3	1489	MW (s)=	—

JOY WEST

ASSUMED VALUES

DATA SOURCE	Head. Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP	G MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

SW

POINT -- BY -- POINT DATA

SW

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC	RATE
Port/Pnt	Seq	Clock	Elap	Delta P	Index Reg.	Delta H Orifice		Stack	Probe	Filter	Imp	G Mtr	Main	ISO
Ltr/No.	#	24 Hr.	Min	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	1524	0		2517.168	DES	ACT							
A	1	1530	6	0.20	2519.85	0.300	0.3	230			51	77	1	77.1
	2	1536	12	0.22	2522.71	0.330	0.35	231	250	250	45	80	1	101.6
	3	1542	18	0.15	2525.02	0.225	0.2	230			44	83	1	98.8
	4	1548	24	0.10	2526.86	0.150	0.15	234	250	250	46	84	0.8	96.4
	5	1554	30	0.06	2528.38	0.090	0.1	237			47	83	0.5	103.2
	6	1600	36	0.12	2530.45	0.180	0.2	238	250	250	49	82	1	99.7
	7	1606	42	0.28	2533.52	0.420	0.4	243			42	83	1.8	97.0
	8	1612	48	0.43	2537.39	0.644	0.65	242	250	250	44	87	2	97.8
	9	1618	54	0.50	2541.65	0.749	0.75	240			40	88	3	99.7
	10	1624	60	0.50	2546.844	0.749	0.75	215	250	250	41	89	3	96.2
B	11	1630	66	0.1	2547.80	0.150	0.15	235			53	82	1.5	103.0
	12	1655	72	0.15	2549.94	0.225	0.2	237	250	250	48	84	2	91.8
	13	1701	78	0.1	2551.69	0.150	0.15	242			47	86.5	1.5	91.8
	14	1707	84	0.03	2552.48	0.045	0.05	245	250	250	50	86.5	1	75.8
	15	1713	90	0.1	2554.90	0.150	0.15	248			52	88	1.5	127.2
	16	1719	96	0.1	25555	0.150	0.15	248	250	250	45	89	1.5	134.1
	17	1725	102	0.30	2558.93	0.449	0.45	250			43	88.5	3	102.7
	18	1731	108	0.30	2562.20	0.449	0.45	247	250	250	40	88.5	3	99.1
	19	1737	114	0.50	2566.41	0.749	0.75	230			40	87	4.8	98.0
	20	1743	120	0.50	2570.671	0.749	0.75	226	250	250	40	86.5	4.8	99.0
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		120		.2091	57.503		.355	238.1	X	X	45.1	1938	2.0	94.5

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) 0 @ 6.0 in H2O		Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	12.4
Pitot (-) 0 @ 5.0		1				1	190	100	90	Vapor Pressure	3009 / 13120
Leak Rate 0		2		Instrumental		2	2(2750)	100	207	Total ml H2O	629.4
in. Hg. Vac. 23		3				3	3(2727)	0	323	Vw (std)	47.336
Leak Cu. Ft.		Avg.				Volume Condensed H2O = 616				FINAL % H2O	38.53
FINAL AVERAGES		(m)=		Vm (std)=		FINAL Yo @ avg D. H.=				FINAL ISO %=	93.58

TEST LEADER SIGNATURE: Michael E Thy 4.4.17 IESS: Jay R Floyd

WEST · PM10

11 6.0 PM10-10 2/2

RUN # 5104 DATE 10-22-13	THE EMISSION MEASUREMENT GROUP INC. Sydney, MT	CONSOLE ID JC-1 Meter ID	
PLANT Pulp Dryer - South	FIELD DATA SHEET	PITOBE ID 60-2 PITOT ID 60-2-PM10	
DUCT/FLUE West UNIT Sooo	METHODS -- M2,M3,M4,M5	NOZZLE ID ~~#2~~ PM10-10	
TEST LDR MJL	Client HOLLY SUGAR	FILTER ID (A) 7487 (B)	
HELPER(S) JRF #2		ORSAT BAG ID INST. BAROM ID B	

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	40-70	Rel Hum	10-15	Weather	Clear		
Delta P Level	✓	Zero	✓				
Delta H Level	✓	Zero	✓				
Pitot Lk. Chk. (+)	✓ @ 5.5	in wg	(-) 0 @ 6.0	in wg			
Nozzle Leak Rate	✓	CFM	@ 23.5	in Hg.			
Backside Leak Rate	✓	CFM	@ 10	in H2O			

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	15.8
NO. of POINTS	20	Min/Pnt	6.0	%CO2=	4.1
Pbar	27.80/27.82	dPs	+0.20	ppm SO2=	55
Cp	0.84	dn(des)	0.359	ppm NOx=	—
Yo	0.9965	dn(act)	.301	ppm CO=	—
Delta Ha	0.94	K3	1622	MW (s)=	—

ASSUMED VALUES

DATA SOURCE	Head. Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP	G MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

SW JOY — POINT -- BY -- POINT DATA — WEST SW

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC	RATE
Port/Pnt	Seq	Clock	Elap	Delta P	Index Rdg	Delta H Orifice		Stack	Probe	Filter	Imp	G Mtr	Main	ISO
Ltr/No.	#	24 Hr	Min	in. H2O		in. H2O		1	2	3	4	6	in. Hg	%
START	0	1727	0		2592.501	DES	ACT							
A	1	1933	6	0.35	2575.57	0.406	0.4	247			53	69.5	1.5	108.3
	2	1939	12	0.25	2578.63	0.406	0.4	241	250	250	36	71	1.8	102.3
	3	1945	18	0.18	2581.39	0.292	0.3	241			36	71.5	1.8	108.6
	4	1951	24	0.12	2583.62	0.195	0.2	238	250	250	38	71	1.5	107.3
	5	1957	30	0.1	2585.57	0.162	0.155	236			40	71.5	1.2	102.5
	6	2003	36	0.15	2587.89	0.243	0.25	237	250	250	40	71.5	1.8	99.7
	7	2009	42	0.25	2590.91	0.406	0.4	238			38	70.5	2.8	100.8
	8	2015	48	0.36	2594.75	0.584	0.6	235	250	250	38	70.5	4	106.7
	9	2021	54	0.40	2598.46	0.649	0.65	236			40	70.5	4	97.9
	10	2027	60	0.47	2602.610	0.763	0.75	210	250	250	41	71.5	4.	98.9
B	11	2053/2059	66	0.24	2605.59	0.389	0.4	238			45	59	3	107.3
	12	2105	72	0.20	2608.68	0.324	0.325	239	250	250	40	60.5	3	113.8
	13	2111	78	0.18	2611.04	0.292	0.3	243			43	62	4	94.7
	14	2117	84	0.18	2614.0	0.292	0.3	288	250	250	44	63	4	118.6
	15	2123/2110	90	0.12	2616.26	0.195	0.2	243			44	65	8	110.4
	16	2135	96	0.05	2617.56	0.081	0.1	242	250	250	38	65	2.5	98.3
	17	2141	102	0.20	2620.11	0.324	0.325	242			39	66	6	96.3
	18	2147	108	0.48	2624.41	0.779	0.8	228	250	250	39	66	10.2	103.9
	19	2153	114	0.45	2628.68	073	0.725	221			44	67	10	105.7
	20	2159	120	0.1	2630.779	0.162	0.15	208	250	250	44	67	4.5	109.0
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		120		2197	58.278		0.396	225.4	X	X	41.0	62.5	4.0	104.3

FINAL LEAK CHECKS	ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) 0 @ 6.0 in H20	Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H20	13.5
Pitot (-) 0 @ 5.0 in H20	1		Instrumental		1	232	100	132	Vapor Pressure	.2576/.2577
Nozzle Rate 0	2				2	250+132	100	282	Total ml H20	587.5
in. Hg. Vac. 23.5	3				3	156	0	156	Vw (std)	
Leak Cu. Ft.	Avg.				Volume Condensed H2O = 570				FINAL % H2O	33.72
FINAL AVERAGES	V(m)=		Vm (std)= 54.1158		FINAL Yo @ avg D. H.=				FINAL ISO %=	97.71

TEST LEADER SIGNATURE: Michael Lyn 4.4.18 WITNESS: Jay R Floyd

Stop 2117 Kinked Line
Restart 2123

5. WEST - PM.10

5-0

PM-10

RUN # 6101 DATE 10-21-93

PLANT Pulp Dryers - South

DUCT/FLUE Stack UNIT East

TEST LDR MJL MJL

HELPER(S) JRF #2

THE EMISSION MEASUREMENT GROUP INC.

SE EEE SE

FIELD DATA SHEET

METHODS – M2,M3,M4,M5

Client Holly Sugar

CONSOLE ID CC-2 Meter ID

PITOBE ID ~~PM-5~~ PITOT ID ~~PM-10~~

NOZZLE ID PM10-10

FILTER ID (A) 7480 (B)

ORSAT BAG ID INST BARCM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp		Rel Hum		Weather		
Delta P Level	✓	Zero:	✓			
Delta H Level	✓	Zero:	✓			
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg	
Nozzle Leak Rate	0	CFM	@	23.5	in Hg.	
Backside Leak Rate	0	CFM	@	10	in H2O	

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	
NO of POINTS	20	Min/Pnt	2.5.0	%CO2=	
Pbar	27.92	Ps	+0.20	ppm SO2=	
Cp	0.84	dn(des)	1.000 C.284	ppm NOx=	
Yo	0.9890	dn(act)	1.021	ppm CO=	
Delta Ha	1.904	K3	1.19	MW (s)=	

CC2

ASSUMED VALUES

EAST

DATA SOURCE	Head, Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISC
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

POINT -- BY -- POINT DATA

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES Deg F					VAC.	RATE
Port/Pnt	Seq	Clock	Elap.	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp.	G.Mtr	Main	ISO
Ltr/No.	#	24 Hr	Min.	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	2056	0		579.832	DES	ACT							
A	1	2101	5	0.25	582.87	1.255	1.7	223	42	255		55	5	99.9
	2	2106	10	0.10	585.01	0.502	0.9	222	41	250	250	57.5	3.5	110.4
	3	2111	15	0.10	587.17	0.502	0.9	223	42	250	250	59	3.5	111.2
	4	2116	20	0.10	588.997	0.502	0.9	222	42			59	3.5	
	5		25							250	250			
	6		30							250	250			
	7		35											
	8		40							250	250			
	9		45							250	250			
	10		50											
8.2 B	11		55							250	250			
11.4	12		60							250	250			
15.1	13		65											
19.8	14		70							250	250			
26.4	15		75							250	250			
44.6	16		80											
51.2	17		85							250	250			
56.9	18		90							250	250			
59.6	19		95											
62.3	20		100							250	250			
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		20		0.1312	9.165		1.1	2225	41.8	X	X	57.6	3.9	80.4

FINAL LEAK CHECKS	
Prot (+) @ . in H20	
Pitot (-) @ in H20	
Nozzle Rate 0.0	
in. Hg. Vac. 1M	
Leak Cu. Ft.	
FINAL AVERAGES	V(m)=

ORSAT			
Run #	% CO2	% Total	% O2
1			
2			
3			
Avg.			
Vm (std)=			

COND. MOISTURE			
Imp.	Total	Tare	Net
1	232	100	132
2	93	100	-7
3	2	0	2
Volume Condensed H2O =			127
FINAL Yo @ avg D. H.=			

DALTON'S LAW	
Silica Gal Adsorbed H2O	
Vapor Pressure	
Total ml H2O	
Vw (std)	
FINAL % H2O	
FINAL ISO %=	

TEST LEADER SIGNATURE: Michael J. Lay 10/21/93 WITNESS: Jay R Floyd

6.0

PM10

RUN # 6102 DATE 10-22-93	THE EMISSION MEASUREMENT GROUP INC. Sydney, MT	CONSOLE ID CC-2 Meter ID
PLANT Pulp Dryer - South	FIELD DATA SHEET	PITOBE ID 60-2 PITOT ID 60-2-PM10
DUCT/FLUE East UNIT 6000	METHODS -- M2,M3,M4,M5	NOZZLE ID .7481 wet PM10-10
TEST LDR MJL	Client HOLLY SUGAR	FILTER ID (A) 7484 (B)
HELPER(S) JAF #2		ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	40-70	Rel Hum	10-15	Weather	Clear		
Delta P Level	✓	Zero	✓				
Delta H Level	✓	Zero	✓				
Pitot Lk. Chk. (+)	✓ @ 5.5	in wg	(-)	0 @ 6.0	in wg		
Nozzle Leak Rate	0	CFM @	23.5	in Hg.			
Backside Leak Rate	0.0	CFM @	10	in H2O			

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	15.8
NO. of POINTS	20	Min/Pnt	6.0	%CO2=	4.1
Pbar	27.96/2787	Ps	+0.20	ppm SO2=	55
Co	0.84	dn(des)	0.363	ppm NOx=	—
Yo	0.9890	dn(act)	.301	ppm CO=	—
Delta Ha	1.904	K3	3.281	MW (s)=	—

ASSUMED VALUES

SE SE

DATA SOURCE	Head. Delta P	Delta H. Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

POINT -- BY -- POINT DATA

CC-2 EAST

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC	RATE
Port/Pnt	Seq	Clock	Elap	Delta P	Index Rdg	Delta H Orifice		Stack	Probe	Filter	Imp.	G Mtr	Main	ISO
Ltr/No.	#	24 Hr	Min	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	0934	0		589.846	DES	ACT							
A	1	0940	6	0.1	590.23	0.328	0.33	224			42	46	1.5	20.2
	2	6946	12	0.27	592.13	0.755	1.3	219	250	250	36	47.5	4	65.7
	3	0952	18	0-1	594.14	0.328	0.8	220			35	50	3	104.8
	4	0958	24	0-1	596.18	0.328	0.8	221	250	250	36	51	3.2	106.3
	5	1004	30	0.1	598.18	0.328	0.77	221			37	52	3.2	104.0
	6	1010	36	0.49	601.14	1.608	2.1	221	250	250	37	53	5.2	69.6
	7	1016	42	0.62	605.37	2.034	2.5	221			39	54.5	14	88.3
	8	1022	48	0.78	609.38	2.559	2.2	217	250	250	42	56	15.8	74.1
	9	1028	54	0.84	612.80	2.756	1.6	215			44	55	17	60.8
	10	1034	60	0.80	615.807	2.625	1.35	212	250	250	45	55.5	17.8	54.6
B	11	1240	66	0.33	619.89	1.083	1.5	221			46	78	4.8	111.4
	12	1254	72	0.27	623.48	0.886	1.4	221	250	250	40	80	5	107.9
	13	1300	78	0.16	626.56	0.525	1.0	222			42	81.5	4.2	119.8
	14	1306	84	0.07	628.99	0.230	0.7	221	250	250	46	81.5	3.5	—
	15	1312	90	0-1	631.55	0.328	0.8	221			49	83	3.8	—
	16	1318	96	0.03	633.47	0.098	0.5	220	250	250	44	82	3	—
→	17	1324	102	(0.26)	636.81	1.345	1.7	219			45	82.5	5.5	—
	18	1330	108	0.41	640.77	1.345	1.7	217	250	250	42	83.5	6	95.7
	19	1336	114	0.60	644.828	1.969	2.4	217			44	84	8.5	81
	20		120						250	250				—
	21													
	22													
	23													
	24													
	25			.2825			1.334				39.5	BC		
TOTALS / AVERAGES			117.5	[illegible]	54.983	[illegible]	[illegible]259	219.4	X	X	[illegible]6	62.7	6.7	—

FINAL LEAK CHECKS		ORSAT			COND. MOISTURE				DALTON'S LAW	
Pitot (+) 0 @ 1.0 in H20	Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	14.6
Pitot (-) 0 @ 5.0 in H20	1		Instrumental		1	250+152	100	302	Vapor Pressure	7576/7677
Nozzle Rate 0.0	2				2	250+148	100	298	Total ml H2O	754.6
in. Hg. Vac. 14	3				3	122+108	100	130	Vw (std)	
Leak Cu. Ft.	Avg.				Volume Condensed H2O =			640	FINAL % H2O	40.90
FINAL AVERAGES	V(m)=		Vm (std)=	51.417	FINAL Yo @ avg D. H.=				FINAL ISO %=	

TEST LEADER SIGNATURE: Michael Lyon 4.4.20 WITNESS: Jay R Floyd

1335.5 Lost Power

88.68 EAST

6.0 M-5 M5

RUN # 6103 DATE 10-22-13 | THE EMISSION MEASUREMENT GROUP INC. Sydney, MT | CONSOLE ID CC-2 Meter ID

PLANT Pulp Dryer - South | FIELD DATA SHEET | PITOBE ID 60-1 PITOT ID 60-1

DUCT/FLUE East UNIT 6000 | METHODS -- M2,M3,M4,M5 | NOZZLE ID ~~A-2~~ 10-1

TEST LDR MJL | Client HOLLY SUGAR | FILTER ID (A) 7685 (B)

HELPER(S) JRF #2 | ORSAT BAG ID INST. BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	40-70	Rel Hum	10-15	Weather	Clear
Delta P Level	✓	Zero	✓		
Delta H Level	✓	Zero	✓		
Pitot Lk. Chk. (+)	✓ @ 5.5	in wg	(-) 0 @ 6.0	in wg	
Nozzle Leak Rate	✓	CFM	@ 23.5	in Hg.	
Backside Leak Rate	✓	CFM	@ 10	in H2O	

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	15.5
NO of POINTS	20	Min/Pnt	6.0	%CO2=	4.1
Pbar	27.86/27.8	Ps	40.20	ppm SO2=	55
Cp	0.84	dn(des)		ppm NOx=	—
Yo	0.9890	dn(act)	.3021	ppm CO=	—
Delta Ha	1.904	K3	3.090	MW (s)=	—

ASSUMED VALUES SE

DATA SOURCE	Head. Delta P	Delta H. Onfice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

POINT -- BY -- POINT DATA

CC-2 West. E-ITST

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC	RATE
Port/Pnt	Seq	Clock	Elap	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp	G Mtr	Main	ISO
Ltr/No.	#	24 Hr.	Min	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	1527	0		645.524	DES	ACT							
A 1	1	1533	6	0.39	649.77	1.205	1.6	225			54	75.5	2.8	114.2
2	2	1539	12	0.25	652.91	0.772	1.1	204	250	250	42	77.5	2	103.3
3	3	1545	18	0.14	655.41	0.433	0.75	212			43	77	1.8	110.6
4	4	1551	24	0.1	657.62	0.309	0.65	213	250	250	43	77	1.5	115.8
5	5	1557	30	0.1	659.54	0.309	0.55	215			43	77	1.8	100.7
6	6	1603	36	0.1	661.52	0.309	0.55	212	250	250	43	76	1.5	103.8
7	7	1609	42	0.1	663.58	0.309	0.55	212			43	76	1.5	108.0
8	8	1615	48	0.33	666.75	1.020	1.2	210	250	250	42	76.5	2	91.4
9	9	1621	54	0.59	670.84	1.823	1.9	209			41.5	76	2.9	88.1
10	10	1627	60	0.56	674.988	1.730	1.9	207	250	250	43	79	2.5	91.3
B 11	11	1646 1652	66	0.20	677.45	0.618	0.8	215			47	79	1.5	91.0
12	12	1658	72	0.29	680.69	0.896	1.1	217	250	250	39	81	2	99.3
13	13	1704	78	0.18	683.43	0.556	0.8	220			40	82.5	1.8	106.5
14	14	1710	84	0.07	685.27	0.216	0.45	220	250	250	41	82.5	1	114.6
15	15	1716	90	0.03	686.26	0.092	0.25	222			41	82.5	0.5	94.2
16	16	1722	96	0.08	688.10	0.247	0.5	217	250	250	41	82	0.5	107.0
17	17	1728	102	0.15	690.31	0.463	0.7	210			40	83.5	1	93.2
18	18	1734	108	0.28	693.50	0.765	1.1	208	250	250	40	83.5	2	98.4
19	19	1740	114	0.54	697.79	1.669	1.9	210			41	84	2.8	95.6
20	20	1746	120	0.03	699.268	0.093	0.3	210	250	250	42	83	0.5	111
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES			120	.144	52.744		.924	217.4	X	X	42.5	79.7	1.7	103.3

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Prior (+) 0 @ 6.0 in H20		Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H20	6.6
Post (-) ~~0 @ 5.5~~		1				1	250+48	100	198	Vapor Pressure	26.77/27.82
Nozzle Rate	NO	2		Instrumental		2	110	100	10	Total ml H20	215.6
in. Hg. Vac.		3				3	12	0	1.3	Vw (std)	
Leak Cu. Ft.	.2178	Avg.				Volume Condensed H2O =			209.3	FINAL % H2O	21.47
FINAL AVERAGES		V(m)=		Vm (std)=	26.542	FINAL Yo @ avg D. H.=				FINAL ISO %=	

(*) Broke Filter "L" after change

TEST LEADER SIGNATURE: Michael Ryan WITTNESS: Jay R Floyd

Filter Elbow Broken

S-West.

4.4.21

9F 6.0 10F

RUN # 6104 DATE 10-22-93	THE EMISSION MEASUREMENT GROUP INC.	CONSOLE ID CC-2 Meter ID
PLANT Pulp Dryer - South	Sydney, MT	PITOBE ID 60-1 PITOT ID CC-1
DUCT/FLUE East UNIT 6000	FIELD DATA SHEET	NOZZLE ID ~~4~~ 2 IC-1
TEST LDR MSL	METHODS -- M2,M3,M4,M5	FILTER ID (A) 7488 (B)
HELPER(S) JAF #2	Client HOLLY SUGAR	ORSAT BAG ID INST. BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp 40-70	Rel Hum 10-15	Weather Clear			
Delta P Level ✓	Zero: ✓				
Delta H Level ✓	Zero: ✓				
Pitot Lk. Chk. (+) ✓ @ 5.5 in wg	(-) 0 @ 6.0 in wg				
Nozzle Leak Rate 0 CFM	@ 23.5 in Hg				
Backside Leak Rate 0.0 CFM	@ 10 in H2O				

CONSTANTS and CALCULATIONS

STACK TYPE Round	Diameter 63.0	%O2= 15.6			
NO. of POINTS 20	Min/Pnt 6.0	%CO2= 4.1			
Pbar 27.80/27.92 + 0.20		ppm SO2= 55			
Cp 0.84	dn(des)	ppm NOx= —			
Yo 0.9890	dn(act) .301	ppm CO= —			
Delta Ha 1.904	K3 3.851	MW (s)= —			

5E ASSUMED VALUES 5E

DATA SOURCE	Head. Delta P	Delta H. Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

POINT -- BY -- POINT DATA

Location		Time		VELOCITY	ORY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC	RATE
Port/Pnt	Seq	Clock	Elap	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp	G Mtr	Main	ISO
Ln/No.	#	24 Hr	Min	in. H2O	Cu. Ft.	in H2O		1	2	3	4	6	in Hg	%
START	0	1924	0		699.678	DES	ACT							
A 1	1	1930	6	0.33	703.17	1.271	1.5	217			49	70.5	2	92.4
	2	1936	12	0.38	706.74	1.464	1.7	217	250	250	39	72	3	87.8
	3	1942	18	0.22	709.68	0.847	1.0	193			40	73	2.8	93.0
	4	1948	24	0.07	711.31	0.270	0.5	194	250	250	40	72	2	91.6
	5	1954	30	0.03	712.67	0.116	0.4	221			39	~~73~~	2	119.0
	6	2000	36	0.19	715.25	0.732	0.98	221	250	250	39	71	3	90.0
	7	2006	42	0.17	717.81	0.655	0.90	209			39	71	3	93.6
	8	2012	48	0.29	721.17	1.117	1.35	215	250	250	41	71.5	4	94.5
	9	2018	54	0.55	725.69	2.118	2.35	212			44	73	5.8	92.3
	10	2024	60	0.1	727.722	0.385	0.6	207	250	250	45	71.5	4	96.6
B 11		~~2050~~ 2056	66	0.35	731.22	1.548	1.6	219			46	67.5	4.8	90.6
	12	2102	72	0.26	734.40	1.001	1.25	216	250	250	41	69	4.5	98.0
	13	2108	78	0.14	736.85	0.539	0.78	217			44	69	4	99.6
	14	2114	84	0.1	738.77	0.385	0.64	218	250	250	47	68.5	4	92.3
	15	2120	90	0.1	740.71	0.385	0.64	216			48	68	4	93.4
	16	2126	96	0.1	742.68	0.385	0.64	221	250	250	51	68	4	95.2
	17	2132	102	0.1	744.65	0.385	0.64	210			37	67.5	4	94.5
	18	2138	108	0.1	746.56	0.385	0.64	200	250	250	35	67	4	91.1
	19	2144	114	0.1	748.52	0.385	0.64	205			35	67	4	93.8
	20	2150	120	0.1	750.351	0.385	0.64	207	250	250	36	67	4.2	87.8
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		120		.1694	50.673		.97	211.8	X	X	41.8	121.8	3.7	94.2

FINAL LEAK CHECKS	ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) 0 @ 6.0 in H20	Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	11.9
Pitot (-) 0 @ 5.0 in H20	1				1	250+80	100	330	Vapor Pressure	25.76/26.77
Nozzle Rate 0	2	Instrumental			2	265	100	165	Total ml H20	733.9
in. Hg. Vac. 23.5	3				3	207	0	227	Vw (std)	
Leak Cu. Ft.	Avg.				Volume Condensed H2O =			722	FINAL % H20	43.64
FINAL AVERAGES	V(m)=		Vm (std)= 46.457		FINAL Yo @ avg D. H.=				FINAL ISO %=	106.68

TEST LEADER SIGNATURE: Michael Thye WITTNESS: Jay R Floyd

5-0 M5

RUN # 7101 DATE 10-23-93 | THE EMISSION MEASUREMENT GROUP INC. | CONSOLE ID JC-1 Meter ID

PLANT Pulp Dryers, North | FIELD DATA SHEET | PITOBE ID 60-1 PITOT ID 60-1

DUCT/FLUE West St. UNIT 7000 | METHODS -- M2,M3,M4,M5 | NOZZLE ID 10-2

TEST LDR MJL | Client Holly Sugar | FILTER ID (A) 7405 (B)

HELPER(S) JRF #2 | ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	50-70	Rel Hum	10-15	Weather	clear		
Delta P Level	✓	Zero:	✓				
Delta H Level	✓	Zero:	✓				
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg		
Nozzle Leak Rate	✓	CFM	@	23.5	in Hg.		
Backside Leak Rate	0	CFM	@	10	in H2O		

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	
NO. of POINTS	20	Min/Pnt	5.0	%CO2=	
Pbar	27.83 / 27.7	Ps	+0.20	ppm SO2=	
Cp	0.84	dn(des)	0.353	ppm NOx=	
Yo	0.7965	dn(act)	.32	ppm CO=	
Delta Ha	0.94	K3	2.1E-7	MW (s)=	

ASSUMED VALUES

DATA SOURCE	Head. Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

NEW JOY — POINT -- BY -- POINT DATA — WEST NEW

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC.	RATE
Port/Pnt	Seq	Clock	Elap.	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp.	G.Mtr.	Main	ISO
Ltr/No.	#	24 Hr.	Min.	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	1026.5	0		2564.42	DES	ACT							
A	1	1031.5	5	0.08	2566.05	0.173	0.175	237	50			58	2	98.6
	2	1036.5	10	0.05	2567.14	0.108	0.1	238	45	250	250	62.5	1.2	81.5
	3	1041.5	15	0.03	2568.02	0.065	0.075	238	47	250	250	65	1	85.3
	4	1046.5	20	0.1	2569.76	0.216	0.2	240	45			67	2.5	92.2
	5	1051.5	25	0.1	2671.60	0.216	0.2	234	43	250	250	69.5	3.0	96.6
	6	1056.5	30	0.08	2673.21	0.173	0.175	223	41	250	250	67.5	2.5	73.7
	7	1101.5	35	0.15	2675.35	0.324	0.325	210	40			76	4.8	90.1
	8	1106.5	40	0.18	2677.90	0.388	0.4	216	39	250	250	71	6.8	98.2
	9	1111.5	45	0.20	2680.52	0.431	0.45	212	40	250	250	71.5	7.8	95.4
	10	1116.5	50	0.20	2683.192	0.431	0.45	209	41			72	8.5	98.0
B	11	1121.5	55	0.20	2685.62	0.431	0.45	209	52	250	250	63	11.5	91.0
	12	1200.5	60	0.17	2687.78	0.367	0.375	229	44	250	250	67	15.8	87.1
	13	1205.5	65	0.12	2689.75	0.259	0.25	229	47			70	17	99.0
	14	1210.5	70	0.05	2691.35	0.108	0.1	229	50	250	250	71	6.8	118.0
	15	1215.5	75	0.1	2693.01	0.24	0.2	232	53	250	250	77	11.5	85.8
	16	1220.5	80	0.07	2694.57	0.151	0.15	223	52			78	9	95.6
	17	1225.5	85	0.12	2696.35	0.259	0.25	220	55	250	250	83	17	82.3
	18	1230.5	90	0.18	2698.12	0.388	0.35	212	51	250	250	84	19.5	66.3
	19	1235.5	95	0.15	2699.86	0.324	0.2	210	52			86	19.5	62.1
	20	1240.5	100	0.18	2701.570	0.388	0.2	209	55	250	250	78	19.5	63.5
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		100	1138		37.149			224	216.1	49.7	X	X	722	9.4	89.7

8.2
11.4
15.1
19.8
26.4
44.6
51.2
56.9
59.6
62.8

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) @ in H20		Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	15.6
Pitot (-) @ in H20		1				1	250+37	100	187	Vapor Pressure	3497/3626
Nozzle Rate	0	2				2	250+40	100	190	Total ml H20	389.6
in. Hg. Vac.	23.5	3				3	2	0	2	Vw (std)	
Leak Cu. Ft.		Avg.				Volume Condensed H2O =			379	FINAL % H2O	34.96
FINAL AVERAGES		Vm(m)=		Vm (std)=	34.169	FINAL Yo @ avg D. H.=			364	FINAL ISO %=	

TEST LEADER SIGNATURE: Michael J. Lee WITNESS: Jay R. Floyd

N-West, JOY 4.4.23

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5.0

PM-10 K

RUN # 7102 DATE 10-23-93	THE EMISSION MEASUREMENT GROUP INC.	CONSOLE ID JC-1 Meter ID
PLANT Pulp Dryers North	FIELD DATA SHEET	PITOBE ID 60-2 PITOT ID 60-2-PM10
DUCT/FLUE West St. UNIT 7000	METHODS – M2,M3,M4,M5	NOZZLE ID PM10-11
TEST LDR MJL MJL	Client Holly Sugar	FILTER ID (A) 7118 (B)
HELPER(S) JRF #2		ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	50-70	Rel Hum	10-15	Weather	clear	
Delta P Level	✓	Zero:	✓			
Delta H Level	✓	Zero:	✓			
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg	
Nozzle Leak Rate	0	CFM	@	23.5	in Hg.	
Backside Leak Rate	0	CFM	@	10	in H2O	

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	
NO. of POINTS	20	Min/Pnt	3.5.0	%CO2=	
Pbar 27.88		Ps		ppm SO2=	
Cp	0.84	dn(des)		ppm NOx=	
Yo		dn(act)	1.32	ppm CO=	
Delta Ha		K3	2.288	MW (s)=	

ASSUMED VALUES

DATA SOURCE	Head, Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

NEW JOY POINT -- BY -- POINT DATA WEST NEW

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC.	RATE
Port/Pnt	Seq	Clock	Elap.	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp.	G.Mtr	Main	ISO
Ltr/No.	#	24 Hr.	Min.	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	1518	0		2708.269	DES	ACT							
A	1	1523	5	0.27	2711.41	0.619	0.6	231	53		53	80	0	101.6
	2	1528	10	0.22	2714.24	0.503	0.5	229	49	250	250	82	1.8	98.9
	3	1533	15	0.22	2717.12	0.503	0.5	229	52	250	250	84.5	2	100.2
	4	1538	20	0.1	2719.20	0.229	0.25	229	54			86	1	111.6
	5	1543	25	0.1	2721.18	0.229	0.225	227	50	250	250	86	1	97.1
	6	1548	30	0.1	2723.05	0.229	0.225	229	52	250	250	87.5	1	95.9
	7	1553	35	0.1	2724.93	0.229	0.225	227	52			89	1	96.0
	8	1558	40	0.17	2727.42	0.412	0.4	226	48	250	250	89.5	1.8	94.3
	9	1603	45	0.20	2730.17	0.458	0.45	219	48	250	250	91.5	2	98.4
	10	1608	50	0.22	2732.951	0.503	0.5	210	48			92.5	2.2	94.1
B	11	1613	55	0.45	2736.98	1.029	1.0	247	52	250	250	82	5.2	99.6
	12	1618	60	0.42	2740.98	0.961	0.95	246	42	250	250	84.5	5.2	102.1
	13	1645	65	0.35	2744.67	0.801	0.8	241	43			85.5	4.8	102.6
	14	1650	70	0.31	2748.12	0.709	0.7	236	44	250	250	86	4	101.4
	15	1655	75	0.20	2750.86	0.458	0.45	231	45	250	250	86	3	99.9
	16	1700	80	0.1	2752.80	0.229	0.225	221	43			85	2	99.8
	17	1705	85	0.1	2754.64	0.229	0.225	221	42	250	250	85.5	2	94.2
	18	1710	90	0.1	2756.48	0.229	0.225	215	41	250	250	86.5	2	93.6
	19	1715	95	0.15	2758.82	0.343	0.35	210	41			86.5	3	96.9
	20	1720	100	0.15	2761.238	0.343	0.35	200	41	250	250	88	3	99.1
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		100		1893	53.029		.458	225.9	47.1	X	X	86.2	2.5	99.9

8.2 11.4 15.1 19.8 26.4 44.6 51.2 56.9 59.6 62.3

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) @ in H20		Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	14.6
Pitot (-) @ in H20		1				1	213	100	113	Vapor Pressure	3240 / 3764
Nozzle Rate @		2				2	322	100	222	Total ml H2O	541.6
in. Hg. Vac. 23.5		3				3	192	0	192	Vw (std)	
Leak Cu. Ft.		Avg.				Volume Condensed H2O = 527				FINAL % H2O	34.94
FINAL AVERAGES	V(m)=			Vm (std)= 47.556		FINAL Yo @ avg O. H.=				FINAL ISO %=	98.89

TEST LEADER SIGNATURE: Michael Lyon WITTNESS: Jay R Floyd

N - West, Joy 4.4.24

5.0

5-0

RUN # 7103 DATE 10-23-93 | THE EMISSION MEASUREMENT GROUP INC. | CONSOLE ID JC-1 Meter ID

PLANT Pulp Dryers, North | FIELD DATA SHEET | PITOBE ID 60-2 PITOT ID 60-2-PM1C

DUCT/FLUE West St. UNIT 7000 | METHODS – M2,M3,M4,M5 | NOZZLE ID PN1 10-11

TEST LDR MJL MJL | Client Holly Sugar | FILTER ID (A) T404 (B)

HELPER(S) JRF #2 | ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp 50-70 Ref Hum 10-15 Weather clear

Delta P Level ✓ Zero: ✓

Delta H Level ✓ Zero: ✓

Pitot Lk. Chk. (+) 0 @ 5 in wg (-) 0 @ 6 in wg

Nozzle Leak Rate 0 CFM @ 23-5 in Hg.

Backside Leak Rate 0 CFM @ 10 in H2O

CONSTANTS and CALCULATIONS

STACK TYPE Round | Diameter 63.0 | %O2=

NO of POINTS 20 | Min/Pnt 2.5.0 | %CO2=

Pbar 27.85/27.85 | Ps +0.20 | ppm SO2=

Cp 0.84 | dn(des) .720.358 | ppm NOx=

Yo 0.9965 | dn(act) 0.37 | ppm CO=

Delta Ha 0.94 | K3 2.210 | MW (s)=

JOY

ASSUMED VALUES

DATA SOURCE	Head. Delta	Delta H. Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

NEW

POINT -- BY -- POINT DATA

WEST NEW

Location Port/Pmt Lvl/No.	Seq #	Time Clock 24 Hr.	Time Elap. Min.	VELOCITY Delta P in. H2O	DRY GAS METER Index Rdg. Cu. Ft.	Delta H Orifice in. H2O DES	Delta H Orifice in. H2O ACT	SYSTEM TEMPERATURES (Deg. F) Stack 1	Probe 4	Filter 2	Imp. 3	G.Mtr 6	VAC. Main in. Hg	RATE ISO %
START	0	1917	0		2761.639									
A	1	1923	5	0.18	2764.16	0.398	0.4	242	50			61	1.5	102.3
	2	1928	10	0.25	2767.11	0.553	0.55	244	37	250	250	65	2.8	100.0
	3	1933	15	0.18	2769.69	0.398	0.4	243	39	250	250	68	2	103.3
	4	1938	20	0.15	2772.06	0.332	0.332	240	40			70	2	103.3
	5	1943	25	0.05	2773.281	0.111	0.1	238	40	250	250	69	1	—
	6	~~1948~~ 2005	30	0.1	2775.24	0.221	0.22	227	42	250	250	60	1.2	=
	7	2010	35	0.1	2777.26	0.221	0.22	230	37			64	1.5	97.6
	8	2015	40	0.20	2779.64	0.442	0.45	223	36	250	250	64.5	2.5	97.3
	9	2020	45	0.23	2782.46	0.508	0.5	210	34	250	250	66	3	97.9
	10	2025	50	0.23	2785.282	0.508	0.5	207	35			67	3	97.6
8.2 B	11	~~2030.5~~ 2054.5	55	0.47	2789.60	1.039	1.0	241	39	250	250	60	5	108.7
11.4	12	2103.5	60	0.45	2793.00	0.995	1.0	240	35	250	250	63	5	86.9
15.1	13	2108.5	65	0.30	2796.69	0.663	0.7	238	37			66	4	114.6
19.8	14	2113.5	70	0.30	2800.07	0.663	0.7	236	38	250	250	66	4	104.8
26.4	15	2118.5	75	0.10	2802.139	0.221	0.22	235	39	250	250	67	2	110.7
44.6	16	~~2123.5~~ 2137	80	0.27	2804.48	0.486	0.5	231	43			63	01	84.9
51.2	17	2142	85	0.1	2806.45	0.221	0.22	234	37	250	250	66	2	105.5
56.9	18	2147	90	0.05	2807.63	0.111	0.1	285	45	250	250	75	1.5	78.5
59.6	19	2152	95	0.1	2809.35	0.221	0.22	239	42			70	2	91.8
62.3	20	2157	100	0.1	2811.145	0.221	0.22	237	37	250	250	69	2	95.8
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES		100		.1767	49.506		.429	234.1	39.1	X	X	66.0	2.5	99.2

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) @ in H2O		Run #	% CO2	% Total	%O2	Imp.	Total	Tare	Net	Silica Gal Adsorbed H2O	10.0
Pitot (-) @ in H2O		1				1	209	100	109	Vapor Pressure	2383/2478
Nozzle Rate	.01	2		Systems Analyzer		2	351	100	251	Total ml H2O	482
in. Hg. Vac.	27	3				3	112	0	112	Vw (std)	
Leak Cu. Ft.		Avg.				Volume Condensed H2O = 471				FINAL % H2O	33.0
FINAL AVERAGES		V(m)=		Vm (std)= 46.149		FINAL Yo @ avg O. H.=				FINAL ISO %=	97.37

TEST LEADER SIGNATURE: Michael Lynn WITTNESS: Jay R Floyd

n-West- JOY 4.4.25

(5)

5.0 PM-10

RUN # 8101 DATE 10-23-93 | THE EMISSION MEASUREMENT GROUP INC. | CONSOLE ID CC-2 Meter ID

PLANT Pulp Dryers, North | FIELD DATA SHEET | PITOBE ID 60-2 PITOT ID 60-2-PM10

DUCT/FLUE East St. UNIT 8000 | METHODS – M2,M3,M4,M5 | NOZZLE ID PM10-11

TEST LDR MJL MJL | Client Holly Sugar | FILTER ID (A) 7779 (B)

HELPER(S) JRF #2 | ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp		Rel Hum		Weather			
Delta P Level	✓	Zero:	✓				
Delta H Level	✓	Zero:	✓				
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg		
Nozzle Leak Rate	0	CFM	@	23.5	in Hg.		
Backside Leak Rate	0	CFM	@	10	in H2O		

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	
NO. of POINTS	20	Min/Pnt	5.0	%CO2=	
Pbar	27.83 / 27.82	Ps	+0.20	ppm SO2=	
Cp	0.84	dn(des)		ppm NOx=	
Yo	0.9890	dn(act)	.32	ppm CO=	
Delta Ha	1.904	K3	4.255	MW (s)=	

NE

ASSUMED VALUES

NE

DATA SOURCE	Head. Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%
CC-2											

POINT -- BY -- POINT DATA

EAST

Location		Time		VELOCITY	DRY GAS METER		SYSTEM TEMPERATURES (Deg. F)					VAC.	RATE
Port/Pnt	Seq	Clock	Elap.	Delta P	Index Rdg.	Delta H Orifice	Stack	Probe	Filter	Imp.	G.Mtr.	Main	ISO
Ltr/No.	#	24 Hr.	Min.	in. H2O	Cu. Ft.	in. H2O	1	2	3	4	8	in. Hg	%
START	0	1024	0		791.952	DES ACT							
A	1	1029	5	0.48	795.65	2.057 2.3	217	49			65.5	14	91.2
	2	1034	10	0.41	799.38	1.757 2.0	218	39	250	250	70	12.8	98.1
	3	1039	15	0.24	802.32	1.028 1.3	218	41	250	250	71	8	100.7
	4	1044	20	0.18	804.93	0.771 1.0	218	40			69.5	7	103.5
	5	1049	25	0.02	806.33	0.086 0.33	216	40	250	250	68.5	3	?
	6	1054	30	0.1	808.28	0.429 0.68	214	39	250	250	68.5	5	103.5
	7	1059	35	0.09	810.17	0.386 0.61	213	37			68.5	4.2	105.7
	8	1104	40	0.16	812.53	0.686 0.93	210	37	250	250	69	7	98.7
	9	1109	45	0.17	814.55	0.728 0.95	212	37	250	250	69.5	7	82.0
	10	1114	50	0.16	817.393	0.686 0.93	210	37			70.5	7	118.5
B	11	1148	55	0.18	820.02	0.771 1.1	198	44	250	250	67.5	7.5	103.0
	12	1158	60	0.19	822.57	0.814 1.1	209	38	250	250	70	7.5	97.7
	13	1203	65	0.19	825.09	0.814 1.1	210	37			71	7.8	96.4
	14	1208	70	0.13	827.57	0.557 0.8	206	38	250	250	73	6.2	113.9
	15	1213	75	0.12	829.33	0.514 0.76	209	38	250	250	75	5.5	83.9
	16	1218	80	0.03	830.80	0.129 0.37	213	39			76	4	144.3
	17	1223	85	0.12	833.0	0.514 0.76	215	38	250	250	76.5	7	105.1
	18	1228	90	0.19	835.46	0.814 1.1	216	38	250	250	79.5	9	93.1
	19	1233	95	0.35	838.81	1.5 1.75	217	38			81	13.5	93.3
	20	1238	100	0.40	842.409	1.714 1.95	217	39	250	250	82	15	93.7
	21												
	22												
	23												
	24												
	25												
TOTALS / AVERAGES			100	.1754	50.476	1.091	212.9	39.3	X	X	72.1	8.8	104.4

8.2
11.4
15.1
19.8
26.4
44.6
51.2
56.9
59.6
62.8

FINAL LEAK CHECKS	
Pitot (+) @ in H20	
Pitot (-) @ in H20	
Nozzle Rate	
in. Hg. Vac.	4
Leak Cu. Ft.	

ORSAT			
Run #	% CO2	% Total	% O2
1			
2			
3			
Avg.			
FINAL AVERAGES	V(m)=	Vm (std)= 46.201	

COND. MOISTURE			
Imp.	Total	Tare	Net
1	250	100	150
2	250-132	100	282
3	173	0	173
Volume Condensed H2O =			605
FINAL Yo @ avg D. H.=			

DALTON'S LAW	
Silica Gal Adsorbed H2O	13.2
Vapor Pressure	2383 / 2475
Total ml H2O	618.2
Vw (std)	
FINAL % H2O	38.68
FINAL ISO % =	103.67

TEST LEADER SIGNATURE: Michael Lay WITNESS: Jay R Flynn

N-EAST-CC2 4.4.26

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5-0 M5

RUN # 810 2	DATE 10-23-93	THE EMISSION MEASUREMENT GROUP INC.	CONSOLE ID CC-2 Meter ID
PLANT Pulp Dryers, North			PITOBE ID CC-1 PITOT ID 60-1
DUCT/FLUE East St.	UNIT 8000	**FIELD DATA SHEET**	NOZZLE ID 10-2
TEST LDR	MJL	METHODS -- M2,M3,M4,M5	FILTER ID (A) 7496 (B)
HELPER(S) TRF	#2	Client Holly Sugar	ORSAT BAG ID INST BAROM ID B

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	65	Rel Hum	15	Weather	clear
Delta P Level	✓	Zero:	✓		
Delta H Level	✓	Zero:	✓		
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg
Nozzle Leak Rate	0	CFM	@	20.5	in Hg.
Backside Leak Rate	0	CFM	@	10	in H2O

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0	%O2=	
NO. of POINTS	20	Min/Pnt	5.0	%CO2=	
Pbar	~~27.87~~ 27.82	Ps	+0.20	ppm SO2=	
Cp	0.84	dn(des)	~~.320~~ 0.350	ppm NOx=	
Yo	0.9890	dn(act)	.0.32	ppm CO=	
Delta Ha	1.909	K3	4.175	MW (s)=	

ASSUMED VALUES

NE NE

DATA SOURCE	Head, Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

1632 / CC-2

POINT -- BY -- POINT DATA

EAST

	Location Port/Pnt Ltr/No.	Seq #	Time Clock 24 Hr.	Elap. Min.	VELOCITY Delta P in. H2O	DRY GAS METER Index Rdg. Cu. Ft.	Delta H Orifice in. H2O DES	Delta H Orifice in. H2O ACT	Stack 1	Probe 2	Filter 3	Imp. 4	G.Mtr. 6	VAC. Main in. Hg	RATE ISO %
	START	0	1232.5	0		743.490									
	A	1	1637.5	5	0.23	846.20	0.96	1.2	212	52			79.5	5.5	96.2
		2	1642.5	10	0.17	848.69	0.710	0.95	210	39	250	250	80.5	4.8	102.4
		3	1647.5	15	0.14	850.95	0.585	0.83	210	39	250	250	81	4.2	102.3
		4	1652.5	20	0.1	853.06	0.418	0.75	208	40			81	4	112.7
		5	1657.5	25	0.06	854.41	0.251	0.4	204	40	250	250	80.5	2.8	92.9
		6	1702.5	30	0.10	856.27	0.418	0.78	208	39	250	250	79.5	4	99.7
		7	1707.5	35	0.09	858.17	0.376	0.65	203	39			79.5	4	106.9
		8	1712.5	40	0.15	860.41	0.626	0.86	207	40	250	250	74.5	4.8	98.0
		9	1717.5	45	0.16	862.70	0.668	0.90	209	40	250	250	80	5	105.9
		10	1722.5	50	0.19	865.307	0.793	1.0	208	40			80	5.8	97.8
8.2	B	11	~~1737~~ 1742	55	0.19	867.77	0.793	1.0	219	52	250	250	77	4.2	97.1
11.4		12	1747	60	0.14	870.02	0.585	0.85	228	47	250	250	78	4	103.7
15.1		13	1752	65	0.07	871.49	0.292	0.4	219	44			78	2.5	95.1
19.8		14	1757	70	0.1	873.35	0.418	0.65	209	37	250	250	77.5	3.2	100.1
26.4		15	1802	75	0.03	→ 874.17	0.125	0.22	206	37	250	250	77.5	2	80.3
44.6		16	1808	80	0.08	875.02	0.334	0.5	208	39			77	2	86.8
51.2		17	1812	85	0.15	877.16	0.626	0.85	204	38	250	250	77	4	93.8
56.9		18	1817	90	0.19	879.82	0.793	1.0	203	38	250	250	77.5	5	103.5
59.6		19	1822	95	0.18	882.49	0.752	1.0	200	40			77.5	5.2	106.5
62.8		20	1827	100	0.25	885.337	1.044	1.3	200	41	250	250	77.5	6	96.4
		21													
		22													
		23													
		24													
		25													
(18)	TOTALS / AVERAGES			100	.1718	41.847		.801	208.4	41.1	X	X	78.9	4.2	96.9

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW
	Run #	% CO2	% Total	% O2	Imp.	Total	Tare	Net		
Pitot (+) @ in H2O	1				1	119	100	19	Silica Gel Adsorbed H2O	9.8
Pitot (-) @ in H2O	2				2	345	100	245	Vapor Pressure	25.2/26.77
Nozzle Rate	3				3	240	0	240	Total ml H2O	513.8
in. Hg. Vac. 2.5	Avg.								Vw (std)	
Leak Cu. Ft.					Volume Condensed H2O = 504				FINAL % H2O	39.01
FINAL AVERAGES	V(m)=	Vm (std)= 27.792			FINAL Yo @ avg D. H.=				FINAL ISO %=	98.35

TEST LEADER SIGNATURE: Michael [signature] WITNESS: Jay R Floyd

N - EAST

(5.0)

5.0 M5 7/2

RUN # 810 3 DATE 10-23-93 | THE EMISSION MEASUREMENT GROUP INC. | CONSOLE ID CC-2 Meter ID

PLANT Pulp Dryers, North | PITOBE ID 60-1 PITOT ID 66-1

DUCT/FLUE East St. UNIT 8000 | NOZZLE ID 10-2

TEST LDR MJL | FIELD DATA SHEET | FILTER ID (A) 7497 (B)

HELPER(S) JAF #2 | METHODS -- M2,M3,M4,M5 | ORSAT BAG ID MST BAROM ID B

Client Holly Sugar

PRE-TEST CHECKS and CONDITIONS

Ambient Temp	45	Rel Hum	10	Weather	clear		
Delta P Level	✓	Zero:	✓				
Delta H Level	✓	Zero:	✓				
Pitot Lk. Chk. (+)	0 @ 5	in wg	(-)	0 @ 6	in wg		
Nozzle Leak Rate	0	CFM	@ 24		in Hg.		
Backside Leak Rate	0	CFM	@	10	in H2O		

CONSTANTS and CALCULATIONS

STACK TYPE	Round	Diameter	63.0		%O2=
NO. of POINTS	20	Min/Pnt	2.5.0		%CO2=
Pbar	27.85/27.85	Ps			ppm SO2=
Cp	0.84	dn(des)	29 0.765		ppm NOx=
Yo		dn(act)	0.32		ppm CO=
Delta Ha		K3	4.364		MW (s)=

NE ASSUMED VALUES NE

DATA SOURCE	Head. Delta P	Delta H, Orifice	Moisture	Calc. Volume	STACK	PROBE	FILTER	IMP.	G.MTR	Vac.	ISO
Prev. Test or Estimate	in. H2O	in. H2O	%	DSCF	Deg. F	Deg. F	Deg. F	Deg. F	Deg. F	in. Hg	%

CC-2 POINT -- BY -- POINT DATA EAST

Location		Time		VELOCITY	DRY GAS METER			SYSTEM TEMPERATURES (Deg. F)					VAC.	RATE
Port/Pmt	Seq	Clock	Elap.	Delta P	Index Rdg.	Delta H Orifice		Stack	Probe	Filter	Imp.	G.Mtr.	Main	ISO
Ltr/No.	#	24 Hr.	Min.	in. H2O	Cu. Ft.	in. H2O		1	2	3	4	6	in. Hg	%
START	0	2002.5	0		875.905	DES	ACT							
A	1	2007.5	5	0.20	888.46	0.813	1.0	209	42			64.5	2	100.2
	2	2012.5	10	0.14	890.47	0.569	0.8	214	37	250	250	64.5	1.5	94.6
	3	2017.5	15	0.09	891.52	0.285	0.4	214	37	250	250	65.5	1	69.6
	4	2022.5	20	0.1	893.125	0.406	0.65	216	37			65.5	1	84.3
	5	2027	25	0.1	894.84	0.406	0.65	223	40	250	250	65	1	96.0
	6	2041	30	0.04	895.74	0.163	0.3	222	37	250	250	66.5	1	79.3
	7	2046	35	0.11	897.42	0.447	0.69	212	36			67	1.5	88.6
	8	2051	40	0.14	899.43	0.569	0.8	210	37	250	250	67	1.8	93.8
	9	2056	45	0.19	901.99	0.772	1.1	206	36	250	250	67.5	2	102.3
	10	2101	50	0.21	904.8	0.854	1.2	207	36			67.5	2	92.2
8.2 B	11	2105.5	55	0.12	906.5	0.488	0.73	210	UR	250	250	64.5	2	88.6
11.4	12	2109.5	60	0.14	908.53	0.569	0.8	212	35	250	250	64	2	93.1
16.1	13	2154.5	65	0.1	910.30	0.406	0.65	216	35			66	2	98.3
19.8	14	2159.5	70	0.1	912.03	0.406	0.65	218	34	250	250	65.5	2	96.4
26.4	15	2204.5	75	0.1	913.74	0.406	0.65	220	35	250	250	65	2	95.5
44.6	16	2209.5	80	0.15	915.89	0.610	0.85	227	36			66	2.2	98.4
51.2	17	2214.5	85	0.19	918.52	0.772	1.3	222	36	250	250	67.5	3	106.4
56.9	18	2219.5	90	0.22	921.19	0.894	1.4	220	39	250	250	67.5	3	100.2
59.6	19	2224.5	95	0.21	923.89	0.854	1.3	219	40			67.5	3	103.6
62.3	20	2229.5	100	0.20	926.404	0.813	1.2	217	41	250	250	66.5	3	98.9
	21													
	22													
	23													
	24													
	25													
TOTALS / AVERAGES			100	0.1764	48.498			0.862	207.2	39.9	X	X	66.0	2.0	90.3

FINAL LEAK CHECKS		ORSAT				COND. MOISTURE				DALTON'S LAW	
Pitot (+) @ in H20	Run #	% CO2	% Total	% O2		Imp.	Total	Tare	Net	Silica Gal Adsorbed H20	7.9
Pitot (-) @ in H20	1					1	340	100	240	Vapor Pressure	2242/2387
Nozzle Rate 0.02	2					2	341	100	241	Total ml H20	592.9
in. Hg. Vac. 25	3					3	104	0	104	Vw (std)	
Leak Cu. Ft.	Avg.					Volume Condensed H2O = 585				FINAL % H20	42.71
FINAL AVERAGES	V(m)=		Vm (std)= 37.507			FINAL Yo @ avg O. H.=				FINAL ISO %=	101.08

TEST LEADER SIGNATURE: Michael J. Lynn WITNESS: Jay R Floyd

N-East - CC2 4.4.28 (5)

4.4.2

Emission Data Printouts from CEM Tests

Holly Sugar, Sydney, MT

Stack ID = Name = South Pulp Dryer - West Date(s) = 10/22/93

	Run No. ID:	5101 (10-21-93)	5102 (1922)	5103	5104	Avg.
	Time, Start:	2056	0943	1524	1927	
	End:	2116	1335	1743	2159	
	Results, O_2 (%, dry)	14.120	14.076	14.370	13.70	
	CO_2 (%, dry)	5.446	5.239	5.248	6.269	
	SO_2 (ppm, dry)	72.502	86.829	84.478	75.166	
	CO (ppm, dry)	—				
	% H_2O (%)	38.24	39.91	38.53	37.72	
	$V_{m,std}$ (dscf)	49.019	45.688	47.336	54.088	
	Isokinetic (%)	96.0	103.19	93.58	97.71	
Zero	Drift, Post Test	—		—	—	
	O_2 cal zero					
	drift, %					
	CO_2 cal zero					
	drift, %					
	SO_2 cal zero					
	drift, %					
Upscal	Drift, Post Test	—		—	—	
	O_2 cal, span					
	drift, %					
	CO_2 cal, span					
	drift, %					
	SO_2 cal, span					
	drift, %					
Spans	O_2					
	CO_2					
	SO_2					
		M5	M5	PM-10	PM-10	

600 cal

4.4.95

STACK NO. 1
POINT NO. 3 5101 Series 5000 Tests

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXI50 PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
20:48	14.061	69.823	5.5671	0.0000	0.0000	0.0000	5.5702	0.0000	0.0000
20:49	14.130	62.551	5.5962	0.0000	0.0000	0.0000	5.6014	0.0000	0.0000
20:50	14.156	52.584	5.4648	0.0000	0.0000	0.0000	5.5507	0.0000	0.0000
20:50	13.916	62.210	5.5678	0.0000	0.0000	0.0000	5.0565	0.0000	0.0000
20:51	13.984	65.020	5.5317	0.0000	0.0000	0.0000	5.5797	0.0000	0.0000
20:51	14.035	70.454	5.4158	0.0000	0.0000	0.0000	5.5578	0.0000	0.0000
20:52	14.015	69.585	5.5033	0.0000	0.0000	0.0000	5.5531	0.0000	0.0000
20:52	14.067	68.174	5.5816	0.0000	0.0000	0.0000	5.5075	0.0000	0.0000
20:53	13.996	65.461	5.4535	0.0000	0.0000	0.0000	5.5651	0.0000	0.0000
20:53	13.964	65.327	5.5278	0.0000	0.0000	0.0000	5.5757	0.0000	0.0000
5 MIN AVERAGE	14.041	64.603	5.5235	0.0000	0.0000	0.0000	5.5535	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXI50 PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
20:55	14.036	70.815	5.3806	0.0000	0.0000	0.0000	5.5345	0.0000	0.0000
20:55	14.116	71.631	5.4297	0.0000	0.0000	0.0000	5.6653	0.0000	0.0000
20:56	14.172	71.529	5.3953	0.0000	0.0000	0.0000	5.6174	0.0000	0.0000
20:56	14.172	71.222	5.3855	0.0000	0.0000	0.0000	5.6174	0.0000	0.0000
20:57	14.169	70.812	5.5131	0.0000	0.0000	0.0000	5.6200	0.0000	0.0000
20:57	14.110	70.586	5.5426	0.0000	0.0000	0.0000	5.6706	0.0000	0.0000
20:58	14.075	70.249	5.4542	0.0000	0.0000	0.0000	5.6672	0.0000	0.0000
20:58	13.980	69.939	5.6113	0.0000	0.0000	0.0000	5.5744	0.0000	0.0000
20:59	14.070	68.784	5.4542	0.0000	0.0000	0.0000	5.5052	0.0000	0.0000
20:59	14.135	68.713	5.4542	0.0000	0.0000	0.0000	5.6453	0.0000	0.0000
5 MIN AVERAGE	14.105	70.423	5.4621	0.0000	0.0000	0.0000	5.6751	0.0000	0.0000

4.4.96

W

STACK NO. 1
POINT NO. 7 5101

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:13	14.147	69.760	5.4542	0.0000	0.0000	0.0000	5.6567	0.0000	0.0000
21:13	14.098	87.126	5.4669	0.0000	0.0000	0.0000	5.6512	0.0000	0.0000
21:14	14.162	85.235	5.4935	0.0000	0.0000	0.0000	5.6254	0.0000	0.0000
21:14	14.161	68.122	5.3315	0.0000	0.0000	0.0000	5.6094	0.0000	0.0000
21:15	14.101	68.989	5.5131	0.0000	0.0000	0.0000	5.6786	0.0000	0.0000
21:15	14.118	69.276	5.5575	0.0000	0.0000	0.0000	5.6626	0.0000	0.0000
21:16	14.045	70.315	5.5622	0.0000	0.0000	0.0000	5.6265	0.0000	0.0000
21:16	14.021	71.590	5.5917	0.0000	0.0000	0.0000	5.5476	0.0000	0.0000
21:17	14.116	70.116	5.4787	0.0000	0.0000	0.0000	5.6626	0.0000	0.0000
21:17	14.110	72.270	5.3413	0.0000	0.0000	0.0000	5.6706	0.0000	0.0000
5 MIN AVERAGE	14.110	69.138	5.4792	0.0000	0.0000	0.0000	5.6703	0.0000	0.0000

STACK NO. 1
POINT NO. 8

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:18	14.236	75.318	5.3511	0.0000	0.0000	0.0000	5.7815	0.0000	0.0000
21:19	14.166	76.240	5.5062	0.0000	0.0000	0.0000	5.6227	0.0000	0.0000
21:20	14.135	76.496	5.3364	0.0000	0.0000	0.0000	5.6463	0.0000	0.0000
21:20	14.135	76.854	5.3315	0.0000	0.0000	0.0000	5.6483	0.0000	0.0000
21:21	14.136	76.803	5.3020	0.0000	0.0000	0.0000	5.6466	0.0000	0.0000
21:21	14.135	77.571	5.3560	0.0000	0.0000	0.0000	5.6483	0.0000	0.0000
21:22	14.118	76.286	5.4051	0.0000	0.0000	0.0000	5.6653	0.0000	0.0000
21:22	14.199	78.236	5.5229	0.0000	0.0000	0.0000	5.7934	0.0000	0.0000
21:23	14.064	78.748	5.4591	0.0000	0.0000	0.0000	5.9105	0.0000	0.0000
21:23	14.061	78.977	5.4444	0.0000	0.0000	0.0000	5.9132	0.0000	0.0000
5 MIN AVERAGE	14.136	77.453	5.4017	0.0000	0.0000	0.0000	5.8461	0.0000	0.0000

14.098 70.787 5.467

4.4.97

STACK NO. 1
POINT NO. 3 5101

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:51	14.249	67.346	5.6062	0.0000	0.0000	0.0000	5.7508	0.0000	0.0000
21:51	14.161	66.767	5.4136	0.0000	0.0000	0.0000	5.8054	0.0000	0.0000
21:52	14.159	72.246	5.2673	0.0000	0.0000	0.0000	5.8230	0.0000	0.0000
21:52	14.193	73.116	5.5160	0.0000	0.0000	0.0000	5.7967	0.0000	0.0000
21:53	14.230	74.151	5.4787	0.0000	0.0000	0.0000	5.7868	0.0000	0.0000
21:53	14.199	74.906	5.5160	0.0000	0.0000	0.0000	5.7834	0.0000	0.0000
21:54	14.122	76.166	5.2678	0.0000	0.0000	0.0000	5.8500	0.0000	0.0000
21:54	14.256	77.859	5.4355	0.0000	0.0000	0.0000	5.7815	0.0000	0.0000
21:55	14.221	77.980	5.4355	0.0000	0.0000	0.0000	5.7746	0.0000	0.0000
21:55	14.218	78.553	5.4787	0.0000	0.0000	0.0000	5.7774	0.0000	0.0000
5 MIN AVERAGE	14.201	72.678	5.4355	0.0000	0.0000	0.0000	5.7921	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:57	14.159	79.926	5.3413	0.0000	0.0000	0.0000	5.8280	0.0000	0.0000
21:57	14.107	80.541	5.4591	0.0000	0.0000	0.0000	5.8733	0.0000	0.0000
21:58	14.186	80.646	5.5131	0.0000	0.0000	0.0000	5.7961	0.0000	0.0000
21:58	14.141	80.694	5.3068	0.0000	0.0000	0.0000	5.8440	0.0000	0.0000
21:59	14.172	80.436	5.3757	0.0000	0.0000	0.0000	5.8174	0.0000	0.0000
21:59	14.164	80.499	5.5671	0.0000	0.0000	0.0000	5.8067	0.0000	0.0000
22:00	14.147	81.155	5.2726	0.0000	0.0000	0.0000	5.8387	0.0000	0.0000
22:00	14.221	81.206	5.3413	0.0000	0.0000	0.0000	5.7746	0.0000	0.0000
22:01	14.221	81.411	5.4149	0.0000	0.0000	0.0000	5.7746	0.0000	0.0000
22:01	14.172	81.155	5.4591	0.0000	0.0000	0.0000	5.8174	0.0000	0.0000
5 MIN AVERAGE	14.172	80.786	5.4051	0.0000	0.0000	0.0000	5.8171	0.0000	0.0000

4.4.98

08:36	14.647	50.351	5.2077	0.0000	0.0000	399.66	5.4060	0.0000	0.0000

STACK NO. 1
POINT NO. 1 5102

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
08:38	14.604	66.153	5.2224	0.0000	0.0000	404.11	5.4432	0.0000	0.0000
08:39	14.678	70.300	5.0456	0.0000	0.0000	411.86	5.3734	0.0000	0.0000
08:40	14.657	70.372	5.0603	0.0000	0.0000	416.10	5.3635	0.0000	0.0000
08:40	14.558	75.216	5.2470	0.0000	0.0000	413.11	5.4830	0.0000	0.0000
08:41	14.820	76.752	5.0014	0.0000	0.0000	423.23	5.4295	0.0000	0.0000
08:41	14.703	77.627	4.8666	0.0000	0.0000	424.35	5.3562	0.0000	0.0000
08:42	14.611	78.651	5.0538	0.0000	0.0000	427.10	5.4378	0.0000	0.0000
08:42	14.669	78.517	5.0259	0.0000	0.0000	429.35	5.3674	0.0000	0.0000
08:43	14.681	80.131	4.9564	0.0000	0.0000	436.10	5.3756	0.0000	0.0000
08:43	14.617	81.789	4.9564	0.0000	0.0000	430.55	5.4325	0.0000	0.0000
5 MIN AVERAGE	14.644	75.389	5.0662	0.0000	0.0000	426.56	5.4032	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
08:45	14.260	85.046	5.4266	0.0000	0.0000	534.31	5.7407	0.0000	0.0000
08:45	14.368	85.712	5.2566	0.0000	0.0000	538.19	5.6477	0.0000	0.0000
08:46	14.174	86.582	5.4435	0.0000	0.0000	545.31	5.8151	0.0000	0.0000
08:46	14.186	87.157	5.2912	0.0000	0.0000	540.34	5.7365	0.0000	0.0000
08:47	14.313	87.146	5.5365	0.0000	0.0000	536.15	5.6555	0.0000	0.0000
08:47	14.171	87.453	5.3747	0.0000	0.0000	535.44	5.8177	0.0000	0.0000
08:48	14.144	87.871	5.4337	0.0000	0.0000	540.06	5.8416	0.0000	0.0000
08:48	14.068	87.365	5.3800	0.0000	0.0000	540.61	5.5634	0.0000	0.0000
08:49	14.115	88.425	5.5416	0.0000	0.0000	548.33	5.8682	0.0000	0.0000
08:49	14.057	87.785	5.5565	0.0000	0.0000	555.76	5.8213	0.0000	0.0000
5 MIN AVERAGE	14.188	87.185	5.4224	0.0000	0.0000	542.44	5.80347	0.0000	0.0000

STACK NO. 1
POINT NO. 5 5107

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:03	13.670	63.305	5.6022	0.0000	0.0000	561.05	6.0781	0.0000	0.0000
10:03	13.720	60.592	5.6955	0.0000	0.0000	606.28	6.2062	0.0000	0.0000
10:04	13.686	78.595	5.9741	0.0000	0.0000	622.28	6.2374	0.0000	0.0000
10:04	13.713	71.734	5.8857	0.0000	0.0000	600.17	6.2135	0.0000	0.0000
10:05	13.781	60.797	5.7256	0.0000	0.0000	557.17	6.1551	0.0000	0.0000
10:05	13.715	66.690	5.7432	0.0000	0.0000	566.67	6.2135	0.0000	0.0000
10:06	13.765	58.371	5.7776	0.0000	0.0000	582.17	6.1710	0.0000	0.0000
10:06	13.800	53.444	5.6201	0.0000	0.0000	530.05	6.1351	0.0000	0.0000
10:07	13.846	54.724	5.6376	0.0000	0.0000	586.17	6.0553	0.0000	0.0000
10:07	13.725	56.166	5.7554	0.0000	0.0000	565.55	6.2002	0.0000	0.0000
5 MIN AVERAGE	13.762	65.656	5.8237	0.0000	0.0000	584.36	6.1716	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:09	13.643	57.736	5.6216	0.0000	0.0000	577.83	6.1020	0.0000	0.0000
10:09	13.733	57.161	5.7265	0.0000	0.0000	571.43	6.1445	0.0000	0.0000
10:10	13.681	57.642	5.8357	0.0000	0.0000	575.30	6.0515	0.0000	0.0000
10:10	13.656	57.551	5.7530	0.0000	0.0000	572.60	6.1073	0.0000	0.0000
10:11	13.670	58.306	5.8785	0.0000	0.0000	575.60	6.0781	0.0000	0.0000
10:11	13.661	58.620	5.9255	0.0000	0.0000	567.30	6.0660	0.0000	0.0000
10:12	13.757	59.076	5.7187	0.0000	0.0000	575.42	6.1763	0.0000	0.0000
10:12	13.886	59.076	5.7629	0.0000	0.0000	560.55	6.0648	0.0000	0.0000
10:13	13.732	55.076	5.5811	0.0000	0.0000	560.05	6.1976	0.0000	0.0000
10:13	13.775	59.178	5.7256	0.0000	0.0000	565.67	6.1604	0.0000	0.0000
5 MIN AVERAGE	13.625	58.374	5.7636	0.0000	0.0000	570.22	6.1166	0.0000	0.0000

STACK NO. 1
POINT NO. 8 5102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
10:27	14.328	61.305	5.3108	0.0000	0.0000	455.06	5.6822	0.0000	0.0000
10:27	13.868	78.566	5.6843	0.0000	0.0000	541.06	5.9330	0.0000	0.0000
10:28	14.266	70.300	5.3695	0.0000	0.0000	478.35	5.7354	0.0000	0.0000
10:28	14.318	77.161	5.2323	0.0000	0.0000	460.59	5.6362	0.0000	0.0000
10:29	14.326	64.178	5.1438	0.0000	0.0000	456.46	5.6822	0.0000	0.0000
10:29	14.382	68.326	5.1537	0.0000	0.0000	454.37	5.6265	0.0000	0.0000
10:30	14.184	67.365	5.1753	0.0000	0.0000	455.72	5.6671	0.0000	0.0000
10:30	14.263	65.347	5.0636	0.0000	0.0000	454.54	5.7360	0.0000	0.0000
10:31	14.237	58.813	5.1195	0.0000	0.0000	451.53	5.7056	0.0000	0.0000
10:31	14.277	58.218	5.0456	0.0000	0.0000	452.09	5.7775	0.0000	0.0000
5 MIN AVERAGE	14.258	65.636	5.2542	0.0000	0.0000	478.82	5.7441	0.0000	0.0000

STACK NO. 1
POINT NO. 10

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
10:33	14.310	51.037	5.0636	0.0000	0.0000	451.84	5.6355	0.0000	0.0000
10:33	14.277	58.627	5.1436	0.0000	0.0000	454.22	5.7775	0.0000	0.0000
10:34	14.362	58.320	5.1330	0.0000	0.0000	448.22	5.6530	0.0000	0.0000
10:34	14.362	58.576	5.1684	0.0000	0.0000	451.65	5.6530	0.0000	0.0000
10:35	14.274	58.366	5.1144	0.0000	0.0000	449.72	5.7605	0.0000	0.0000
10:35	14.334	51.447	5.0253	0.0000	0.0000	452.97	5.6788	0.0000	0.0000
10:36	14.348	51.703	5.0357	0.0000	0.0000	456.46	5.6663	0.0000	0.0000
10:36	14.307	51.703	4.9786	0.0000	0.0000	467.53	5.6743	0.0000	0.0000
10:37	14.273	51.242	4.9786	0.0000	0.0000	466.96	5.7301	0.0000	0.0000
10:37	14.366	58.709	5.2617	0.0000	0.0000	470.65	5.6318	0.0000	0.0000
5 MIN AVERAGE	14.314	51.037	5.0586	0.0000	0.0000	457.12	5.6839	0.0000	0.0000

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STACK NO. 1
POINT NO. 1 15102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
11:40	14.604	80.654	4.9227	0.0000	0.0000	470.34	5.4432	0.0000	0.0000
11:40	14.531	79.926	5.1340	0.0000	0.0000	463.56	5.5069	0.0000	0.0000
11:41	14.554	80.660	5.0556	0.0000	0.0000	460.46	5.5043	0.0000	0.0000
11:41	14.650	79.624	5.0270	0.0000	0.0000	454.22	5.4033	0.0000	0.0000
11:42	14.585	78.824	5.1557	0.0000	0.0000	456.58	5.4618	0.0000	0.0000
11:42	14.254	84.002	5.2077	0.0000	0.0000	470.46	5.7460	0.0000	0.0000
11:43	14.476	83.677	5.1054	0.0000	0.0000	456.57	5.5521	0.0000	0.0000
11:43	14.331	78.454	5.1045	0.0000	0.0000	465.34	5.6796	0.0000	0.0000
11:44	14.462	77.724	5.0645	0.0000	0.0000	456.56	5.5494	0.0000	0.0000
11:44	14.462	80.552	5.0603	0.0000	0.0000	456.08	5.5494	0.0000	0.0000
5 MIN AVERAGE	14.453	79.180	5.0856	0.0000	0.0000	461.56	5.5356	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
11:46	14.429	82.996	5.0505	0.0000	0.0000	460.84	5.5946	0.0000	0.0000
11:46	14.471	84.176	5.1631	0.0000	0.0000	457.84	5.6105	0.0000	0.0000
11:47	14.385	84.935	5.1389	0.0000	0.0000	460.58	5.6504	0.0000	0.0000
11:47	14.454	83.986	4.9866	0.0000	0.0000	462.58	5.6733	0.0000	0.0000
11:48	14.386	86.650	4.9718	0.0000	0.0000	462.56	5.6236	0.0000	0.0000
11:48	14.432	87.606	5.0751	0.0000	0.0000	458.56	5.5573	0.0000	0.0000
11:49	14.455	86.221	5.0210	0.0000	0.0000	465.46	5.6895	0.0000	0.0000
11:49	14.265	83.784	5.0845	0.0000	0.0000	471.48	5.7380	0.0000	0.0000
11:50	14.276	83.477	5.1733	0.0000	0.0000	466.84	5.7274	0.0000	0.0000
11:50	14.406	87.705	5.1054	0.0000	0.0000	457.34	5.6132	0.0000	0.0000
5 MIN AVERAGE	14.387	86.582	5.0795	0.0000	0.0000	462.23	5.6312	0.0000	0.0000

STACK NO. 1
POINT NO. 5

SO2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
12:04	14.160	86.116	5.1242	0.0000	0.0000	457.47	5.8086	0.0000	0.0000
12:04	14.137	87.656	5.2470	0.0000	0.0000	457.60	5.8469	0.0000	0.0000
12:05	14.270	87.555	4.9515	0.0000	0.0000	459.60	5.7527	0.0000	0.0000
12:05	14.184	87.402	5.2126	0.0000	0.0000	454.22	5.8071	0.0000	0.0000
12:06	14.305	87.350	4.9864	0.0000	0.0000	448.72	5.7035	0.0000	0.0000
12:06	14.300	87.157	5.0074	0.0000	0.0000	459.65	5.7062	0.0000	0.0000
12:07	14.147	87.248	5.2077	0.0000	0.0000	456.60	5.8350	0.0000	0.0000
12:07	14.238	86.962	5.0357	0.0000	0.0000	447.22	5.7618	0.0000	0.0000
12:08	14.206	87.760	5.1586	0.0000	0.0000	442.22	5.7656	0.0000	0.0000
12:08	14.158	87.985	5.2077	0.0000	0.0000	444.08	5.8283	0.0000	0.0000
5 MIN AVERAGE	14.212	87.525	5.1165	0.0000	0.0000	449.15	5.7821	0.0000	0.0000

STACK NO. 1
POINT NO. 6

SO2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
12:10	14.164	89.194	5.0896	0.0000	0.0000	476.56	5.8071	0.0000	0.0000
12:10	14.174	89.706	5.0161	0.0000	0.0000	486.33	5.8151	0.0000	0.0000
12:11	14.070	89.659	5.2274	0.0000	0.0000	481.08	5.8054	0.0000	0.0000
12:11	14.065	89.911	5.2765	0.0000	0.0000	485.08	5.8321	0.0000	0.0000
12:12	14.015	89.859	5.1376	0.0000	0.0000	454.56	5.8502	0.0000	0.0000
12:12	14.128	90.423	5.2028	0.0000	0.0000	485.06	5.8543	0.0000	0.0000
12:13	14.039	90.679	5.2372	0.0000	0.0000	512.32	5.9318	0.0000	0.0000
12:13	14.125	90.167	5.0701	0.0000	0.0000	505.82	5.8578	0.0000	0.0000
12:14	14.162	90.474	5.0896	0.0000	0.0000	497.83	5.8257	0.0000	0.0000
12:14	14.171	90.852	5.1045	0.0000	0.0000	494.70	5.8177	0.0000	0.0000
5 MIN AVERAGE	14.115	90.110	5.1522	0.0000	0.0000	493.14	5.8681	0.0000	0.0000

STACK NO. 1
POINT NO. 7

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
12:16	14.015	31.139	5.1084	0.0000	0.0000	526.57	5.9532	0.0000	0.0000
12:16	14.125	30.663	4.9817	0.0000	0.0000	533.06	5.8578	0.0000	0.0000
12:17	13.880	31.139	5.0751	0.0000	0.0000	530.57	5.9745	0.0000	0.0000
12:17	14.085	31.447	5.0063	0.0000	0.0000	522.19	5.9521	0.0000	0.0000
12:18	14.174	31.385	5.3648	0.0000	0.0000	505.20	5.8151	0.0000	0.0000
12:18	14.051	30.750	5.2566	0.0000	0.0000	507.45	5.9213	0.0000	0.0000
12:19	14.125	31.139	5.2175	0.0000	0.0000	511.20	5.8678	0.0000	0.0000
12:19	14.045	32.010	5.4295	0.0000	0.0000	504.32	5.9266	0.0000	0.0000
12:20	13.878	32.727	5.3646	0.0000	0.0000	506.95	5.8851	0.0000	0.0000
12:20	14.045	32.418	5.2961	0.0000	0.0000	506.32	5.9266	0.0000	0.0000
5 MIN AVERAGE	14.063	31.503	5.2176	0.0000	0.0000	515.66	5.9110	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
12:22	14.024	33.085	5.2617	0.0000	0.0000	503.45	5.9452	0.0000	0.0000
12:22	13.978	32.660	5.3600	0.0000	0.0000	502.20	5.9851	0.0000	0.0000
12:23	13.972	32.163	5.4042	0.0000	0.0000	497.33	5.9304	0.0000	0.0000
12:23	14.116	32.317	5.3305	0.0000	0.0000	496.70	5.8529	0.0000	0.0000
12:24	14.015	32.163	5.4051	0.0000	0.0000	500.20	5.9532	0.0000	0.0000
12:24	14.091	31.754	5.2224	0.0000	0.0000	502.08	5.8868	0.0000	0.0000
12:25	13.983	31.242	5.3305	0.0000	0.0000	492.95	5.9716	0.0000	0.0000
12:25	14.027	31.068	5.1487	0.0000	0.0000	495.95	5.9426	0.0000	0.0000
12:26	14.038	32.727	5.3600	0.0000	0.0000	494.45	5.8815	0.0000	0.0000
12:26	14.011	33.290	5.2274	0.0000	0.0000	497.45	5.9559	0.0000	0.0000
5 MIN AVERAGE	14.033	32.271	5.3055	0.0000	0.0000	498.68	5.9375	0.0000	0.0000

STACK NO. 1
POINT NO. 1

S102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
13:23	13.882	77.929	4.9129	0.0000	0.0000	524.69	6.0874	0.0000	0.0000
13:23	13.600	82.057	5.1045	0.0000	0.0000	508.45	6.1387	0.0000	0.0000
13:24	13.682	81.269	4.9864	0.0000	0.0000	521.44	6.0585	0.0000	0.0000
13:24	13.764	73.116	5.2077	0.0000	0.0000	532.81	6.1524	0.0000	0.0000
13:25	13.800	80.643	5.1578	0.0000	0.0000	508.18	6.1391	0.0000	0.0000
13:25	13.725	83.810	5.2175	0.0000	0.0000	567.30	6.2002	0.0000	0.0000
13:26	13.653	84.278	5.0161	0.0000	0.0000	570.18	6.1095	0.0000	0.0000
13:26	13.741	85.354	5.1830	0.0000	0.0000	566.80	6.1696	0.0000	0.0000
13:27	13.750	86.706	5.1566	0.0000	0.0000	572.43	6.1617	0.0000	0.0000
13:27	13.803	87.709	5.1733	0.0000	0.0000	571.38	6.1512	0.0000	0.0000
5 MIN AVERAGE	13.802	78.262	5.1178	0.0000	0.0000	549.38	6.1379	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
13:29	13.744	90.864	5.2478	0.0000	0.0000	577.43	6.1870	0.0000	0.0000
13:29	13.835	90.715	5.0270	0.0000	0.0000	575.83	6.1046	0.0000	0.0000
13:30	13.815	90.750	5.3404	0.0000	0.0000	575.05	6.2365	0.0000	0.0000
13:30	13.858	90.535	5.1733	0.0000	0.0000	586.05	6.2813	0.0000	0.0000
13:31	13.827	91.365	5.2667	0.0000	0.0000	586.52	6.2352	0.0000	0.0000
13:31	13.856	91.344	5.1782	0.0000	0.0000	581.05	6.2266	0.0000	0.0000
13:32	13.856	91.385	5.2716	0.0000	0.0000	582.67	6.2613	0.0000	0.0000
13:32	13.757	91.242	5.0255	0.0000	0.0000	564.05	6.1763	0.0000	0.0000
13:33	13.736	90.761	5.0000	0.0000	0.0000	560.17	6.1325	0.0000	0.0000
13:33	13.790	90.265	5.0347	0.0000	0.0000	574.68	6.1471	0.0000	0.0000
5 MIN AVERAGE	13.772	90.627	5.1695	0.0000	0.0000	581.20	6.2148	0.0000	0.0000

5103 W

STACK NO. 1
POINT NO. 1

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:31	13.299	84.842	6.3062	0.0000	0.0000	782.81	6.5721	0.0000	0.0000
15:31	13.317	84.160	6.0799	0.0000	0.0000	747.62	6.5562	0.0000	0.0000
15:32	1[illegible].393	62.696	3.5204	0.0000	0.0000	453.72	4.2425	0.0000	0.0000
15:32	1[illegible].246	62.976	[illegible].4560	0.0000	0.0000	186.56	1.4293	0.0000	0.0000
15:33	20.448	[illegible]7.464	0.4574	0.0000	0.0000	71.725	0.3907	0.0000	0.0000
15:33	20.601	37.326	0.1620	0.0000	0.0000	30.385	0.0652	0.0000	0.0000
15:34	20.[illegible]65	31.335	0.[illegible]377	0.0000	0.0000	15.669	0.0254	0.0000	0.0000
15:34	20.[illegible]16	27.597	0.1[illegible]62	0.0000	0.0000	13.595	-0.075	0.0000	0.0000
15:35	20.4[illegible]6	25.[illegible]52	0.5[illegible]62	0.0000	0.0000	41.735	0.3562	0.0000	0.0000
15:35	18.31[illegible]	28.3[illegible]4	2.267[illegible]	0.0000	0.0000	115.08	2.2069	0.0000	0.0000
5 MIN AVERAGE	18.363	52.256	2.1511	0.0000	0.0000	246.59	2.1683	0.0000	0.0000

STACK NO. 1
POINT NO. 2

5103

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:37	14.534	49.363	5.4011	0.0000	0.0000	341.36	5.5043	0.0000	0.0000
15:37	14.036	56.322	5.6470	0.0000	0.0000	402.11	5.9346	0.0000	0.0000
15:38	13.816	61.493	5.6520	0.0000	0.0000	423.72	6.0362	0.0000	-0.0000
15:38	13.630	66.403	5.8961	0.0000	0.0000	470.46	6.1126	0.0000	0.0000
15:39	13.503	71.427	6.0701	0.0000	0.0000	505.55	6.3092	0.0000	0.0000
15:39	13.416	75.062	6.0061	0.0000	0.0000	528.82	6.4712	0.0000	0.0000
15:40	13.366	78.544	6.1034	0.0000	0.0000	546.06	6.4951	0.0000	0.0000
15:40	13.243	81.667	6.2422	0.0000	0.0000	582.42	6.6200	0.0000	0.0000
15:41	13.219	84.842	6.3698	0.0000	0.0000	606.56	6.5412	0.0000	0.0000
15:41	13.247	86.685	6.0504	0.0000	0.0000	612.04	6.6173	0.0000	0.0000
5 MIN AVERAGE	13.643	71.201	5.9456	0.0000	0.0000	502.76	6.2744	0.0000	0.0000

STACK NO. 1
POINT NO. 5

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:55	12.856	81.703	6.8375	0.0000	0.0000	646.35	6.3547	0.0000	0.0000
15:55	12.945	77.053	6.5515	0.0000	0.0000	652.28	6.4778	0.0000	0.0000
15:56	12.857	78.355	6.7145	0.0000	0.0000	634.71	7.0526	0.0000	0.0000
15:56	12.857	92.824	6.7784	0.0000	0.0000	652.57	7.0526	0.0000	0.0000
15:57	12.730	101.68	6.7586	0.0000	0.0000	654.44	7.0636	0.0000	0.0000
15:57	12.760	105.96	6.8005	0.0000	0.0000	608.69	7.0217	0.0000	0.0000
15:58	12.672	106.53	6.7863	0.0000	0.0000	615.06	7.1140	0.0000	0.0000
15:58	12.776	110.23	6.8715	0.0000	0.0000	616.58	7.0257	0.0000	0.0000
15:59	12.773	111.10	6.8000	0.0000	0.0000	604.69	7.0264	0.0000	0.0000
15:59	12.870	112.54	6.8356	0.0000	0.0000	585.87	6.9519	0.0000	0.0000
5 MIN AVERAGE	12.774	99.014	6.7686	0.0000	0.0000	371.31	7.0255	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
16:00	12.916	113.22	6.7866	0.0000	0.0000	633.07	6.9788	0.0000	0.0000
16:01	12.923	115.20	6.8865	0.0000	0.0000	612.19	7.0078	0.0000	0.0000
16:01	12.795	115.66	6.8788	0.0000	0.0000	607.44	6.9228	0.0000	0.0000
16:02	12.893	115.76	6.7886	0.0000	0.0000	585.56	6.9537	0.0000	0.0000
16:02	12.973	116.74	6.7581	0.0000	0.0000	585.69	6.9122	0.0000	0.0000
16:03	12.906	117.56	6.8030	0.0000	0.0000	626.83	6.9467	0.0000	0.0000
16:03	12.866	117.50	6.8079	0.0000	0.0000	624.31	6.9673	0.0000	0.0000
16:04	12.841	117.25	6.7886	0.0000	0.0000	638.83	6.9883	0.0000	0.0000
16:04	12.855	117.56	6.7581	0.0000	0.0000	654.80	6.9800	0.0000	0.0000
16:05	12.850	118.63	6.7883	0.0000	0.0000	665.04	7.0370	0.0000	0.0000
5 MIN AVERAGE	12.865	116.56	6.8025	0.0000	0.0000	627.01	6.9475	0.0000	0.0000

STACK NO. 1
POINT NO. 11 5103

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
16:31	16.286	66.354	3.4335	0.0000	0.0000	214.30	3.9875	0.0000	0.0000
16:31	16.153	67.335	3.3006	0.0000	0.0000	217.17	4.1043	0.0000	0.0000
16:32	16.306	66.616	3.2564	0.0000	0.0000	211.05	3.9715	0.0000	0.0000
16:32	16.214	66.405	3.3652	0.0000	0.0000	213.05	4.0512	0.0000	0.0000
16:33	16.196	64.821	3.2268	0.0000	0.0000	216.38	4.0672	0.0000	0.0000
16:33	16.005	64.565	3.6450	0.0000	0.0000	245.78	4.2316	0.0000	0.0000
16:34	15.846	65.180	3.9401	0.0000	0.0000	263.66	4.3700	0.0000	0.0000
16:34	15.747	66.102	3.9647	0.0000	0.0000	272.30	4.4550	0.0000	0.0000
16:35	15.663	67.023	4.0562	0.0000	0.0000	281.27	4.5106	0.0000	0.0000
16:35	15.643	66.354	4.1320	0.0000	0.0000	280.53	4.5453	0.0000	0.0000
5 MIN AVERAGE	16.006	66.516	3.6346	0.0000	0.0000	241.60	4.2295	0.0000	0.0000

STACK NO. 1
POINT NO. 12

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
16:37	15.265	73.218	4.3878	0.0000	0.0000	353.63	4.6720	0.0000	0.0000
16:37	15.246	75.164	4.2539	0.0000	0.0000	359.25	4.6660	0.0000	0.0000
16:38	15.336	75.676	4.2549	0.0000	0.0000	353.13	4.6105	0.0000	0.0000
16:38	15.639	64.770	3.7827	0.0000	0.0000	329.63	4.3753	0.0000	0.0000
16:39	15.646	61.304	4.0328	0.0000	0.0000	345.63	4.5426	0.0000	0.0000
16:39	15.056	66.056	4.4566	0.0000	0.0000	405.48	5.0161	0.0000	0.0000
16:40	14.666	64.053	4.5634	0.0000	0.0000	431.60	5.2174	0.0000	0.0000
16:40	14.512	66.563	4.5856	0.0000	0.0000	442.37	5.1775	0.0000	0.0000
16:41	14.715	69.563	4.7223	0.0000	0.0000	460.64	5.3475	0.0000	0.0000
16:41	14.687	69.634	4.7665	0.0000	0.0000	463.58	5.3714	0.0000	0.0000
5 MIN AVERAGE	15.161	66.644	4.3692	0.0000	0.0000	385.17	4.8621	0.0000	0.0000

CALIBRATION MODE

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
16:56	20.872	12.339	0.0393	0.0000	0.0000	7.1225	0.0241	0.0000	0.0000
16:56	20.686	10.136	0.1574	0.0000	0.0000	-0.743	0.0025	0.0000	0.0000
16:57	2.4945	1.8432	10.737	0.0000	0.0000	33.595	15.514	0.0000	0.0000
16:57	0.2457	1.4648	11.564	0.0000	0.0000	101.03	17.655	0.0000	0.0000
16:58	0.1966	1.2800	11.707	0.0000	0.0000	95.716	17.307	0.0000	0.0000
16:58	0.0736	1.1776	11.613	0.0000	0.0000	103.21	18.002	0.0000	0.0000
16:59	0.1761	1.3624	12.076	0.0000	0.0000	102.09	17.917	0.0000	0.0000
16:59	0.0852	1.0752	11.731	0.0000	0.0000	101.96	17.368	0.0000	0.0000
17:00	0.1689	1.0752	11.805	0.0000	0.0000	98.581	17.525	0.0000	0.0000
17:00	0.1105	1.0240	11.786	0.0000	0.0000	98.716	17.376	0.0000	0.0000
17:01	0.1443	1.1776	11.899	0.0000	0.0000	104.71	17.546	0.0000	0.0000
17:01	0.0430	1.1264	11.722	0.0000	0.0000	98.366	18.034	0.0000	0.0000
17:02	0.1413	1.0752	11.830	0.0000	0.0000	103.09	17.948	0.0000	0.0000
17:02	0.2466	37.582	3.3188	0.0000	0.0000	73.650	17.856	0.0000	0.0000
17:03	6.8891	97.468	0.0590	0.0000	0.0000	-0.989	12.028	0.0000	0.0000
17:03	7.1867	97.943	0.1229	0.0000	0.0000	2.3741	11.855	0.0000	0.0000
17:04	7.1949	98.001	0.0656	0.0000	0.0000	0.3936	11.850	0.0000	0.0000
17:04	7.1980	97.949	0.1229	0.0000	0.0000	1.8743	11.847	0.0000	0.0000
17:05	7.2225	97.898	0.0983	0.0000	0.0000	2.1242	11.826	0.0000	0.0000
17:05	7.1765	98.052	0.0656	0.0000	0.0000	0.3748	11.866	0.0000	0.0000
17:06	7.2010	98.154	-0.065	0.0000	0.0000	-0.749	11.845	0.0000	0.0000
17:06	7.2287	98.103	0.0983	0.0000	0.0000	-1.249	11.821	0.0000	0.0000
17:07	7.0382	98.001	0.0590	0.0000	0.0000	1.6244	11.985	0.0000	0.0000
17:07	7.0321	97.847	-0.019	0.0000	0.0000	0.2499	11.991	0.0000	0.0000
17:08	7.1273	97.744	-0.014	0.0000	0.0000	-2.748	11.908	0.0000	0.0000
17:08	7.2748	67.688	0.6709	0.0000	0.0000	155.69	11.781	0.0000	0.0000
17:09	13.729	66.670	5.6667	0.0000	0.0000	686.01	6.2052	0.0000	0.0000
17:09	13.677	88.430	5.6667	0.0000	0.0000	667.78	6.2454	0.0000	0.0000
17:10	13.812	73.935	5.6421	0.0000	0.0000	687.01	6.1265	0.0000	0.0000
17:10	13.750	84.278	5.4945	0.0000	0.0000	700.60	6.1445	0.0000	0.0000
17:11	13.772	91.851	5.6667	0.0000	0.0000	700.51	6.1631	0.0000	0.0000
17:11	13.800	98.260	5.5290	0.0000	0.0000	684.01	6.1381	0.0000	0.0000
17:12	13.769	99.454	5.6715	0.0000	0.0000	699.26	6.1657	0.0000	0.0000
17:12	13.744	100.81	5.5191	0.0000	0.0000	705.88	6.1870	0.0000	0.0000
17:13	13.698	101.27	5.5929	0.0000	0.0000	707.26	6.2266	0.0000	0.0000
17:13	13.750	101.32	5.5093	0.0000	0.0000	695.84	6.1477	0.0000	0.0000
17:14	13.720	101.78	5.5005	0.0000	0.0000	707.28	6.2062	0.0000	0.0000
17:14	13.760	102.14	5.7454	0.0000	0.0000	714.88	6.1737	0.0000	0.0000
17:15	13.682	102.30	5.6520	0.0000	0.0000	702.38	6.2521	0.0000	0.0000
17:15	13.855	101.84	5.4856	0.0000	0.0000	687.78	6.0513	0.0000	0.0000
17:16	13.830	102.76	5.6224	0.0000	0.0000	708.63	6.1726	0.0000	0.0000
17:16	13.763	103.17	5.6274	0.0000	0.0000	721.36	6.1657	0.0000	0.0000
17:17	13.744	103.68	5.6815	0.0000	0.0000	714.86	6.1870	0.0000	0.0000

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STACK NO. 1
POINT NO. 3

K103

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
17:30	14.356	86.564	5.1256	0.0000	0.0000	535.67	5.6563	0.0000	0.0000
17:30	14.476	87.744	5.1746	0.0000	0.0000	563.42	5.5527	0.0000	0.0000
17:31	14.494	86.613	4.5436	0.0000	0.0000	566.43	5.5986	0.0000	0.0000
17:31	14.644	84.328	4.8354	0.0000	0.0000	552.61	5.4065	0.0000	0.0000
17:32	14.575	80.557	5.0026	0.0000	0.0000	553.66	5.5521	0.0000	0.0000
17:32	14.617	81.805	4.5436	0.0000	0.0000	543.94	5.4075	0.0000	0.0000
17:33	14.764	80.520	4.8256	0.0000	0.0000	521.65	5.3058	0.0000	0.0000
17:33	14.835	83.040	4.8305	0.0000	0.0000	493.80	5.2435	0.0000	0.0000
17:34	14.785	86.374	4.7321	0.0000	0.0000	466.70	5.2765	0.0000	0.0000
17:34	14.781	87.605	4.7026	0.0000	0.0000	486.65	5.3077	0.0000	0.0000
5 MIN AVERAGE	14.647	82.660	4.9116	0.0000	0.0000	540.50	5.4113	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
17:36	14.382	85.456	4.7419	0.0000	0.0000	448.47	5.1164	0.0000	0.0000
17:36	14.366	84.381	4.8140	0.0000	0.0000	446.47	5.2174	0.0000	0.0000
17:37	14.305	84.432	4.8053	0.0000	0.0000	446.22	5.1826	0.0000	0.0000
17:37	14.348	83.869	4.5736	0.0000	0.0000	431.60	5.1457	0.0000	0.0000
17:38	14.364	83.305	4.5648	0.0000	0.0000	430.72	5.1324	0.0000	0.0000
17:38	14.327	82.947	4.8053	0.0000	0.0000	442.22	5.1642	0.0000	0.0000
17:39	14.305	82.356	4.8256	0.0000	0.0000	439.35	5.1628	0.0000	0.0000
17:39	14.378	82.486	4.5648	0.0000	0.0000	427.48	5.2068	0.0000	0.0000
17:40	14.309	81.516	4.5008	0.0000	0.0000	416.85	5.1802	0.0000	0.0000
17:40	14.342	81.417	4.7469	0.0000	0.0000	420.73	5.1510	0.0000	0.0000
5 MIN AVERAGE	14.323	83.230	4.6750	0.0000	0.0000	435.51	5.1680	0.0000	0.0000

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STACK NO. 1
POINT NO. 3 5104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:23	13.240	66.576	5.2615	0.0000	0.0000	764.93	6.6226	0.0000	0.0000
18:23	13.293	66.272	5.0701	0.0000	0.0000	756.93	6.5721	0.0000	0.0000
18:24	13.403	67.658	5.3471	0.0000	0.0000	741.74	6.4818	0.0000	0.0000
18:24	13.523	66.341	5.3536	0.0000	0.0000	716.13	6.3725	0.0000	0.0000
18:25	13.566	66.018	5.3615	0.0000	0.0000	701.63	6.3410	0.0000	0.0000
18:25	13.664	65.712	5.3536	0.0000	0.0000	719.85	6.2556	0.0000	0.0000
18:26	13.663	65.614	5.3467	0.0000	0.0000	705.13	6.2401	0.0000	0.0000
18:26	13.670	65.307	5.7454	0.0000	0.0000	696.56	6.2567	0.0000	0.0000
18:27	13.612	65.200	5.6054	0.0000	0.0000	696.61	6.1285	0.0000	0.0000
18:27	13.677	65.056	5.5660	0.0000	0.0000	684.35	6.2454	0.0000	0.0000
5 MIN AVERAGE	13.554	66.460	5.3353	0.0000	0.0000	716.30	6.3511	0.0000	0.0000

STACK NO. 1
POINT NO. 4 6104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:29	13.636	63.664	5.5733	0.0000	0.0000	661.77	6.1073	0.0000	0.0000
18:29	13.813	63.664	5.5536	0.0000	0.0000	673.77	6.0409	0.0000	0.0000
18:30	14.008	63.871	5.8586	0.0000	0.0000	649.28	5.8585	0.0000	0.0000
18:30	14.319	56.373	5.4454	0.0000	0.0000	615.70	5.6302	0.0000	0.0000
18:31	14.465	47.413	5.1551	0.0000	0.0000	560.56	5.5468	0.0000	0.0000
18:31	14.126	72.655	5.6667	0.0000	0.0000	635.66	5.8549	0.0000	0.0000
18:32	14.050	76.033	5.8618	0.0000	0.0000	618.66	5.9353	0.0000	0.0000
18:32	13.936	80.131	5.8323	0.0000	0.0000	615.23	5.9691	0.0000	0.0000
18:33	14.101	63.510	5.7405	0.0000	0.0000	618.04	5.8788	0.0000	0.0000
18:33	14.223	61.001	5.8372	0.0000	0.0000	560.67	5.7725	0.0000	0.0000
5 MIN AVERAGE	14.104	74.642	5.8324	0.0000	0.0000	610.24	5.8783	0.0000	0.0000

STACK NO. 1
POINT NO. 5 5104 E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:35	14.223	83.561	5.4257	0.0000	0.0000	575.30	5.7726	0.0000	0.0000
15:35	14.331	83.152	5.4036	0.0000	0.0000	563.60	5.6786	0.0000	0.0000
15:36	14.227	82.866	5.2732	0.0000	0.0000	543.44	5.7665	0.0000	0.0000
15:36	14.288	83.613	5.3765	0.0000	0.0000	561.61	5.7166	0.0000	0.0000
15:37	14.355	83.406	5.4109	0.0000	0.0000	560.66	5.6616	0.0000	0.0000
15:37	14.423	83.305	5.3371	0.0000	0.0000	548.93	5.5969	0.0000	0.0000
15:38	14.266	83.048	5.2984	0.0000	0.0000	554.06	5.7354	0.0000	0.0000
15:38	14.220	83.203	5.2732	0.0000	0.0000	565.05	5.7752	0.0000	0.0000
15:39	14.260	83.561	5.2191	0.0000	0.0000	563.60	5.7407	0.0000	0.0000
15:39	14.371	83.254	5.3663	0.0000	0.0000	548.43	5.6451	0.0000	0.0000
15:40	14.217	83.305	5.3273	0.0000	0.0000	553.16	5.7775	0.0000	0.0000
15:40	14.186	83.510	5.2630	0.0000	0.0000	564.45	5.7936	0.0000	0.0000
15:41	14.343	83.715	5.3614	0.0000	0.0000	559.33	5.6630	0.0000	0.0000
15:41	14.313	83.456	5.2978	0.0000	0.0000	550.43	5.6355	0.0000	0.0000
7 MIN AVERAGE	14.286	83.357	5.3585	0.0000	0.0000	556.31	5.7166	0.0000	0.0000

STACK NO. 1
POINT NO. 6 5104 W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:43	14.377	83.357	5.3614	0.0000	0.0000	551.68	5.6397	0.0000	0.0000
15:43	14.457	82.742	5.3519	0.0000	0.0000	538.19	5.5787	0.0000	0.0000
15:44	14.257	82.783	5.2535	0.0000	0.0000	545.06	5.7439	0.0000	0.0000
15:44	14.276	82.881	5.2685	0.0000	0.0000	550.81	5.7274	0.0000	0.0000
15:45	14.374	82.077	5.3076	0.0000	0.0000	541.19	5.6424	0.0000	0.0000
15:45	14.446	82.025	5.3275	0.0000	0.0000	527.34	5.5786	0.0000	0.0000
15:46	14.281	81.672	5.2289	0.0000	0.0000	513.57	5.7141	0.0000	0.0000
15:46	14.405	81.462	5.3421	0.0000	0.0000	522.32	5.6156	0.0000	0.0000
15:47	14.356	81.360	5.2161	0.0000	0.0000	527.44	5.6563	0.0000	0.0000
15:47	14.423	81.155	5.1838	0.0000	0.0000	525.82	5.5355	0.0000	0.0000
15:48	14.472	80.285	5.1638	0.0000	0.0000	522.68	5.5574	0.0000	0.0000
15:48	14.254	77.222	5.2564	0.0000	0.0000	511.75	5.7460	0.0000	0.0000
15:49	14.125	57.756	5.2338	0.0000	0.0000	634.03	5.8576	0.0000	0.0000
15:49	14.382	49.512	5.0715	0.0000	0.0000	551.43	5.6265	0.0000	0.0000
7 MIN AVERAGE	14.351	77.165	5.2560	0.0000	0.0000	546.93	5.6627	0.0000	0.0000

STACK NO. 1
POINT NO. 7 5104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:51	14.560	62.327	4.3535	0.0000	0.0000	477.55	5.4644	0.0000	0.0000
15:51	14.565	64.756	4.3646	0.0000	0.0000	480.21	5.4565	0.0000	0.0000
15:52	14.555	64.715	5.0566	0.0000	0.0000	481.65	5.4657	0.0000	0.0000
15:52	14.435	64.156	4.3662	0.0000	0.0000	486.21	5.5535	0.0000	0.0000
15:53	14.485	64.207	4.3655	0.0000	0.0000	490.26	5.5601	0.0000	0.0000
15:53	14.234	64.817	5.1256	0.0000	0.0000	518.69	5.7115	0.0000	0.0000
15:54	14.205	65.760	5.2437	0.0000	0.0000	530.85	5.7685	0.0000	0.0000
15:54	14.174	66.153	5.2535	0.0000	0.0000	535.94	5.8151	0.0000	0.0000
15:55	14.061	67.177	5.1797	0.0000	0.0000	555.56	5.8104	0.0000	0.0000
15:55	13.925	67.356	5.4306	0.0000	0.0000	572.66	5.8302	0.0000	0.0000
15:56	13.845	66.615	5.5336	0.0000	0.0000	572.85	5.8966	0.0000	0.0000
15:56	17.282	16.396	2.7202	0.0000	0.0000	184.16	3.1454	0.0000	0.0000
15:57	20.779	5.5610	0.2902	0.0000	0.0000	8.7470	0.1636	0.0000	0.0000
15:57	20.716	4.4033	0.0344	0.0000	0.0000	1.5555	0.1383	0.0000	0.0000
7 MIN AVERAGE	15.421	53.506	4.2569	0.0000	0.0000	422.55	4.7369	0.0000	0.0000

STACK NO. 1
POINT NO. 8

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR

STACK NO. 1
POINT NO. 1 5104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:09	13.474	56.472	6.7655	0.0000	0.0000	669.63	6.4267	0.0000	0.0000
20:09	13.566	67.854	6.6850	0.0000	0.0000	686.74	6.3419	0.0000	0.0000
20:10	13.664	73.167	6.7440	0.0000	0.0000	685.26	6.2560	0.0000	0.0000
20:10	13.551	75.472	6.5864	0.0000	0.0000	686.01	6.3156	0.0000	0.0000
20:11	13.586	76.240	6.6617	0.0000	0.0000	684.01	6.3224	0.0000	0.0000
20:11	13.617	77.161	6.6277	0.0000	0.0000	684.26	6.3035	0.0000	0.0000
20:12	13.609	76.356	6.7568	0.0000	0.0000	675.39	6.3036	0.0000	0.0000
20:12	13.637	77.366	6.6751	0.0000	0.0000	675.52	6.2795	0.0000	0.0000
20:13	13.664	78.544	6.7607	0.0000	0.0000	684.78	6.2560	0.0000	0.0000
20:13	13.612	78.775	6.6863	0.0000	0.0000	705.81	6.3012	0.0000	0.0000
20:14	13.652	80.387	6.8424	0.0000	0.0000	711.50	6.2667	0.0000	0.0000
20:14	13.575	80.648	6.7735	0.0000	0.0000	697.76	6.3031	0.0000	0.0000
20:15	13.600	81.411	6.8666	0.0000	0.0000	693.14	6.3116	0.0000	0.0000
20:15	13.646	82.435	6.7735	0.0000	0.0000	720.38	6.2720	0.0000	0.0000
7 MIN AVERAGE	13.600	78.152	6.7851	0.0000	0.0000	691.93	6.3120	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:17	13.557	82.686	6.8014	0.0000	0.0000	665.27	6.3480	0.0000	0.0000
20:17	13.652	82.250	6.7469	0.0000	0.0000	681.77	6.2587	0.0000	0.0000
20:18	13.677	81.823	6.7536	0.0000	0.0000	654.52	6.2454	0.0000	0.0000
20:18	13.631	81.867	6.8554	0.0000	0.0000	656.15	6.2853	0.0000	0.0000
20:19	13.757	81.676	6.8772	0.0000	0.0000	664.75	6.1763	0.0000	0.0000
20:19	13.985	81.513	6.4880	0.0000	0.0000	666.89	5.9857	0.0000	0.0000
20:20	13.953	81.001	6.5817	0.0000	0.0000	677.64	6.0010	0.0000	0.0000
20:20	13.843	80.336	7.1031	0.0000	0.0000	659.40	6.1020	0.0000	0.0000
20:21	14.326	58.319	6.5455	0.0000	0.0000	534.31	5.8622	0.0000	0.0000
20:21	14.076	51.885	6.5226	0.0000	0.0000	622.83	5.9087	0.0000	0.0000
20:22	13.753	82.589	6.8718	0.0000	0.0000	658.82	6.1750	0.0000	0.0000
20:22	13.796	75.082	6.8473	0.0000	0.0000	656.27	6.1416	0.0000	0.0000
20:23	13.761	80.336	6.7764	0.0000	0.0000	653.90	6.1557	0.0000	0.0000
20:23	13.833	82.691	6.7833	0.0000	0.0000	648.78	6.1085	0.0000	0.0000
7 MIN AVERAGE	13.829	75.947	6.7145	0.0000	0.0000	648.15	6.1135	0.0000	0.0000

STACK NO. 1
POINT NO. 5

5104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:41	14.174	66.865	5.7583	0.0000	0.0000	588.30	5.8151	0.0000	0.0000
20:41	14.374	52.635	5.5191	0.0000	0.0000	551.61	5.6424	0.0000	0.0000
20:42	14.534	42.702	5.3125	0.0000	0.0000	468.09	5.5043	0.0000	0.0000
20:42	14.737	38.630	5.0125	0.0000	0.0000	420.10	5.3285	0.0000	0.0000
20:43	14.765	40.193	5.1207	0.0000	0.0000	406.46	5.2658	0.0000	0.0000
20:43	14.712	41.863	4.9562	0.0000	0.0000	406.61	5.3562	0.0000	0.0000
20:44	14.721	43.415	4.8141	0.0000	0.0000	386.11	5.3422	0.0000	0.0000
20:44	14.504	44.858	4.7784	0.0000	0.0000	365.74	5.2765	0.0000	0.0000
20:45	14.662	44.504	5.3862	0.0000	0.0000	416.10	5.2230	0.0000	0.0000
20:45	14.676	46.357	5.6077	0.0000	0.0000	431.85	5.3794	0.0000	0.0000
20:46	14.700	44.545	5.6054	0.0000	0.0000	436.85	5.3606	0.0000	0.0000
20:46	14.555	44.065	5.2570	0.0000	0.0000	453.46	5.4657	0.0000	0.0000
20:47	14.551	45.725	5.5226	0.0000	0.0000	461.85	5.5756	0.0000	0.0000
20:47	14.265	47.255	5.8259	0.0000	0.0000	452.45	5.7380	0.0000	0.0000
7 MIN AVERAGE	14.566	48.049	5.5427	0.0000	0.0000	453.13	5.4572	0.0000	0.0000
STACK NO. 1									
POINT NO. 6									
TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:48	13.836	50.075	6.2364	0.0000	0.0000	499.56	6.1073	0.0000	0.0000
20:48	13.848	48.948	6.3210	0.0000	0.0000	498.20	6.0983	0.0000	0.0000
20:50	13.824	50.752	6.4041	0.0000	0.0000	505.32	6.1779	0.0000	0.0000
20:50	13.827	52.840	6.4292	0.0000	0.0000	532.07	6.2678	0.0000	0.0000
20:51	13.597	54.325	6.5226	0.0000	0.0000	536.56	6.3145	0.0000	0.0000
20:51	13.546	55.755	6.6964	0.0000	0.0000	502.67	6.0670	0.0000	0.0000
20:52	13.569	57.551	6.6915	0.0000	0.0000	552.88	6.3364	0.0000	0.0000
20:52	13.551	59.087	6.7469	0.0000	0.0000	561.16	6.3470	0.0000	0.0000
20:53	13.422	60.674	6.7036	0.0000	0.0000	556.53	6.4635	0.0000	0.0000
20:53	13.416	62.364	6.7735	0.0000	0.0000	560.56	6.4712	0.0000	0.0000
20:54	13.369	63.649	6.8521	0.0000	0.0000	573.16	6.5116	0.0000	0.0000
20:54	13.240	65.180	6.8870	0.0000	0.0000	577.42	6.6226	0.0000	0.0000
20:55	13.333	66.150	6.9063	0.0000	0.0000	572.55	6.5425	0.0000	0.0000
20:55	13.207	66.818	6.9850	0.0000	0.0000	581.30	6.6516	0.0000	0.0000
7 MIN AVERAGE	13.513	56.173	6.6460	0.0000	0.0000	546.60	6.3668	0.0000	0.0000

STACK NO. 1
POINT NO. 1

5104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:27	12.875	83.766	7.6540	0.0000	0.0000	786.73	6.5367	0.0000	0.0000
21:27	12.783	85.866	7.8511	0.0000	0.0000	786.73	7.0731	0.0000	0.0000
21:28	12.626	86.952	7.8786	0.0000	0.0000	775.46	6.9372	0.0000	0.0000
21:28	13.016	87.862	7.5333	0.0000	0.0000	780.24	6.6785	0.0000	0.0000
21:29	12.675	88.831	7.8583	0.0000	0.0000	786.11	6.5367	0.0000	0.0000
21:29	12.872	89.855	7.7376	0.0000	0.0000	763.74	6.5414	0.0000	0.0000
21:30	12.850	90.525	7.6431	0.0000	0.0000	758.33	6.5254	0.0000	0.0000
21:30	12.833	90.781	7.6737	0.0000	0.0000	780.86	6.6823	0.0000	0.0000
21:31	12.884	91.548	7.6836	0.0000	0.0000	764.53	6.5308	0.0000	0.0000
21:31	12.824	92.588	7.6046	0.0000	0.0000	761.36	6.6582	0.0000	0.0000
21:32	12.861	92.215	7.5802	0.0000	0.0000	750.24	6.6643	0.0000	0.0000
21:32	12.842	92.112	7.7160	0.0000	0.0000	758.55	6.6603	0.0000	0.0000
21:33	12.816	92.860	7.6540	0.0000	0.0000	775.23	6.6652	0.0000	0.0000
21:33	12.835	93.085	7.7081	0.0000	0.0000	786.43	6.6733	0.0000	0.0000
7 MIN AVERAGE	12.809	85.852	7.6765	0.0000	0.0000	767.23	6.6266	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:35	12.838	94.314	7.6442	0.0000	0.0000	788.38	6.6706	0.0000	0.0000
21:35	12.898	95.082	7.6668	0.0000	0.0000	781.11	6.6175	0.0000	0.0000
21:36	13.050	95.338	7.4817	0.0000	0.0000	786.48	6.7526	0.0000	0.0000
21:36	12.873	96.260	7.6147	0.0000	0.0000	768.74	6.6537	0.0000	0.0000
21:37	12.782	96.674	7.6065	0.0000	0.0000	771.73	7.0104	0.0000	0.0000
21:37	12.812	96.523	7.7276	0.0000	0.0000	771.48	6.6066	0.0000	0.0000
21:38	12.827	98.720	7.6442	0.0000	0.0000	783.86	6.6636	0.0000	0.0000
21:38	13.050	97.150	7.5510	0.0000	0.0000	771.73	6.7973	0.0000	0.0000
21:39	12.856	101.27	7.6834	0.0000	0.0000	783.73	6.6678	0.0000	0.0000
21:39	12.870	100.88	7.6057	0.0000	0.0000	780.61	6.6537	0.0000	0.0000
21:40	12.827	100.55	7.6360	0.0000	0.0000	781.98	6.6536	0.0000	0.0000
21:40	12.842	100.64	7.6606	0.0000	0.0000	781.23	6.6603	0.0000	0.0000
21:41	12.867	100.84	7.7081	0.0000	0.0000	785.46	6.6261	0.0000	0.0000
21:41	12.888	104.29	7.6507	0.0000	0.0000	790.98	6.6404	0.0000	0.0000
7 MIN AVERAGE	12.840	99.252	7.6383	0.0000	0.0000	775.46	6.6828	0.0000	0.0000

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Holly Sugar, Sydney, MT

Stack ID - Name: South Pulp Dryer - East Date(s): 10/22/93 (10-21-93)

					Avg.
Run No. ID:	6201	6202	6203	6204	
Time, Start:	2056	0934	1527	1924	
End:	2116	1336	1746	2150	
Results, O_2 (%, dry)	14.172	14.100	13.916	13.568	
CO_2 (%, dry)	5.324	5.20	5.570	6.175	
SO_2 (ppm, dry)	71.310	72.19	88.02	82.43	
CO (ppm, dry)	—				
% H_2O (v/v)	41.42	34.5	3.247 (½ run only - corr.)	42.64	
$V_{m,std}$ (dscf)	8.653	51.417	26.842	46.542	
Isokinetic (%)	—	103.7	93.30	106.68	
Zero Drift, Post Test	10/21	10/22	—	—	
O_2 cal zero: .0986	.0985	.1077 → .1240	.0883	.1566	
drift %					
CO_2 cal zero: .0096	.044	.0099 → .0541	.0885	.1777	
drift %					
SO_2 cal zero: -.670	-1.22	-.204 → .1024	1.0752	-.921	
drift %					
Upscal Drift, Post Test	←	—	—	—	
O_2 cal, span: 10.539	10.616	7.11 → 7.1058	7.1304	7.1212	
drift %					
CO_2 cal span: 14.413	14.389	11.933 → 11.824	11.746	11.885	
drift %					
SO_2 cal span: 49.461	48.439	101.12 → 98.615	97.386	96.720	
drift %	—				
Spans: O_2	25	25	25	25	
CO_2	40	40	40	40	
SO_2	110	110	110	110	
	PM-10	PM-10	M5	M5	

STACK NO. 1
POINT NO. 1

401 Series 6000 Tests

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
20:37	14.129	61.647	5.3413	0.0000	0.0000	0.0000	5.8546	0.0000	0.0000
20:37	14.208	63.797	5.2576	0.0000	0.0000	0.0000	5.7654	0.0000	0.0000
20:38	14.052	65.988	5.3865	0.0000	0.0000	0.0000	5.9212	0.0000	0.0000
20:38	14.159	67.023	5.3266	0.0000	0.0000	0.0000	5.8100	0.0000	0.0000
20:39	14.129	67.781	5.2578	0.0000	0.0000	0.0000	5.8546	0.0000	0.0000
20:39	14.150	66.316	5.3767	0.0000	0.0000	0.0000	5.8360	0.0000	0.0000
20:40	14.036	65.756	5.4002	0.0000	0.0000	0.0000	5.9345	0.0000	0.0000
20:40	14.110	71.324	5.2971	0.0000	0.0000	0.0000	5.8708	0.0000	0.0000
20:41	14.144	72.092	5.4002	0.0000	0.0000	0.0000	5.8413	0.0000	0.0000
20:41	14.125	72.346	5.4637	0.0000	0.0000	0.0000	5.8575	0.0000	0.0000
5 MIN AVERAGE	14.124	68.073	5.3467	0.0000	0.0000	0.0000	5.8564	0.0000	0.0000

E1

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
20:43	14.098	70.812	5.2775	0.0000	0.0000	0.0000	5.8812	0.0000	0.0000
20:43	14.172	70.403	5.4355	0.0000	0.0000	0.0000	5.8174	0.0000	0.0000
20:44	14.147	68.835	5.2971	0.0000	0.0000	0.0000	5.8367	0.0000	0.0000
20:44	14.175	68.502	5.3167	0.0000	0.0000	0.0000	5.8147	0.0000	0.0000
20:45	14.113	68.430	5.3865	0.0000	0.0000	0.0000	5.8679	0.0000	0.0000
20:45	14.116	68.327	5.3413	0.0000	0.0000	0.0000	5.8653	0.0000	0.0000
20:46	14.076	68.968	5.5278	0.0000	0.0000	0.0000	5.8989	0.0000	0.0000
20:46	14.104	66.713	5.4835	0.0000	0.0000	0.0000	5.8753	0.0000	0.0000
20:47	14.082	66.968	5.3167	0.0000	0.0000	0.0000	5.8956	0.0000	0.0000
20:47	14.119	68.810	5.5822	0.0000	0.0000	0.0000	5.8626	0.0000	0.0000
5 MIN AVERAGE	14.121	69.460	5.3958	0.0000	0.0000	0.0000	5.8810	0.0000	0.0000

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STACK NO. 1
POINT NO. 5 6\01

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:01	14.027	66.816	5.3757	0.0000	0.0000	0.0000	5.9425	0.0000	0.0000
21:01	14.230	68.583	5.0309	0.0000	0.0000	0.0000	5.7668	0.0000	0.0000
21:02	14.239	65.590	5.1105	0.0000	0.0000	0.0000	5.7586	0.0000	0.0000
21:02	14.018	62.722	5.4145	0.0000	0.0000	0.0000	5.9504	0.0000	0.0000
21:03	13.981	66.356	5.3216	0.0000	0.0000	0.0000	5.9624	0.0000	0.0000
21:03	13.975	68.201	5.2776	0.0000	0.0000	0.0000	5.9677	0.0000	0.0000
21:04	14.147	66.071	5.2136	0.0000	0.0000	0.0000	5.8587	0.0000	0.0000
21:04	14.056	66.122	5.3707	0.0000	0.0000	0.0000	5.9156	0.0000	0.0000
21:05	14.166	66.516	5.1155	0.0000	0.0000	0.0000	5.8227	0.0000	0.0000
21:05	14.153	66.662	5.2571	0.0000	0.0000	0.0000	5.8353	0.0000	0.0000
5 MIN AVERAGE	14.055	67.504	5.2586	0.0000	0.0000	0.0000	5.9753	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:07	14.089	67.535	5.3413	0.0000	0.0000	0.0000	5.8892	0.0000	0.0000
21:07	14.230	67.126	5.1842	0.0000	0.0000	0.0000	5.7668	0.0000	0.0000
21:08	14.281	67.484	5.1351	0.0000	0.0000	0.0000	5.7402	0.0000	0.0000
21:08	14.249	67.345	5.0858	0.0000	0.0000	0.0000	5.7508	0.0000	0.0000
21:09	14.085	68.406	5.3605	0.0000	0.0000	0.0000	5.8839	0.0000	0.0000
21:09	14.153	69.225	5.1548	0.0000	0.0000	0.0000	5.7987	0.0000	0.0000
21:10	14.162	68.552	5.3462	0.0000	0.0000	0.0000	5.8234	0.0000	0.0000
21:10	14.132	68.363	5.2766	0.0000	0.0000	0.0000	5.8520	0.0000	0.0000
21:11	14.064	69.450	5.3553	0.0000	0.0000	0.0000	5.9105	0.0000	0.0000
21:11	14.018	65.692	5.4637	0.0000	0.0000	0.0000	5.9504	0.0000	0.0000
5 MIN AVERAGE	14.148	68.134	5.2755	0.0000	0.0000	0.0000	5.8368	0.0000	0.0000

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STACK NO. 1
POINT NO. 1 6\0(

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:39	14.216	67.791	5.2480	0.0000	0.0000	0.0000	5.7774	0.0000	0.0000
21:39	14.193	71.222	5.2333	0.0000	0.0000	0.0000	5.7987	0.0000	0.0000
21:40	14.256	72.863	5.3904	0.0000	0.0000	0.0000	5.7423	0.0000	0.0000
21:40	14.264	73.884	5.4002	0.0000	0.0000	0.0000	5.7375	0.0000	0.0000
21:41	14.156	73.659	5.2576	0.0000	0.0000	0.0000	5.8466	0.0000	0.0000
21:41	14.233	74.038	5.4145	0.0000	0.0000	0.0000	5.7641	0.0000	0.0000
21:42	14.261	74.140	5.4453	0.0000	0.0000	0.0000	5.7402	0.0000	0.0000
21:42	14.319	74.140	5.4247	0.0000	0.0000	0.0000	5.6836	0.0000	0.0000
21:43	14.227	74.191	5.2624	0.0000	0.0000	0.0000	5.7695	0.0000	0.0000
21:43	14.196	74.140	5.2382	0.0000	0.0000	0.0000	5.7967	0.0000	0.0000
5 MIN AVERAGE	14.231	73.034	5.3335	0.0000	0.0000	0.0000	5.7683	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:45	14.230	76.647	5.2235	0.0000	0.0000	0.0000	5.7886	0.0000	0.0000
21:45	14.304	76.496	5.4100	0.0000	0.0000	0.0000	5.7029	0.0000	0.0000
21:46	14.310	76.393	5.4198	0.0000	0.0000	0.0000	5.6976	0.0000	0.0000
21:46	14.266	76.035	5.3504	0.0000	0.0000	0.0000	5.7165	0.0000	0.0000
21:47	14.238	75.523	5.2235	0.0000	0.0000	0.0000	5.7515	0.0000	0.0000
21:47	14.287	75.216	5.1536	0.0000	0.0000	0.0000	5.7343	0.0000	0.0000
21:48	14.273	75.523	5.3315	0.0000	0.0000	0.0000	5.7295	0.0000	0.0000
21:48	14.286	75.523	5.1846	0.0000	0.0000	0.0000	5.7165	0.0000	0.0000
21:48	14.424	75.420	5.4542	0.0000	0.0000	0.0000	5.5931	0.0000	0.0000
21:49	14.338	73.577	5.5816	0.0000	0.0000	0.0000	5.6736	0.0000	0.0000
5 MIN AVERAGE	14.295	75.625	5.3353	0.0000	0.0000	0.0000	5.7104	0.0000	0.0000

STACK NO. 1
POINT NO. 3 6102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXI3O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
09:51	13.800	81.703	5.6450	0.0000	0.0000	595.52	6.1365	0.0000	0.0000
09:51	13.729	83.166	5.7208	0.0000	0.0000	619.16	6.2002	0.0000	0.0000
09:52	13.661	83.504	5.6285	0.0000	0.0000	616.91	6.2567	0.0000	0.0000
09:52	13.704	84.360	5.8640	0.0000	0.0000	623.61	6.2215	0.0000	0.0000
09:53	13.606	85.206	5.7530	0.0000	0.0000	616.16	6.3086	0.0000	0.0000
09:53	14.042	64.361	5.1575	0.0000	0.0000	541.19	5.8295	0.0000	0.0000
09:54	15.001	73.748	4.5150	0.0000	0.0000	491.63	5.1005	0.0000	0.0000
09:54	13.544	72.604	5.5516	0.0000	0.0000	638.26	6.0743	0.0000	0.0000
09:55	13.704	69.276	5.7676	0.0000	0.0000	682.01	6.2215	0.0000	0.0000
09:55	13.581	69.378	5.6351	0.0000	0.0000	675.77	6.3278	0.0000	0.0000
5 MIN AVERAGE	13.878	82.338	5.6663	0.0000	0.0000	610.21	6.0717	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXI3O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
09:57	13.760	74.345	5.5125	0.0000	0.0000	642.03	6.1737	0.0000	0.0000
09:57	13.723	75.420	5.5710	0.0000	0.0000	626.26	6.2056	0.0000	0.0000
09:58	13.664	76.356	5.6464	0.0000	0.0000	617.54	6.2560	0.0000	0.0000
09:58	13.785	76.585	5.8513	0.0000	0.0000	602.29	6.1657	0.0000	0.0000
09:59	13.695	78.566	5.8204	0.0000	0.0000	601.54	6.0566	0.0000	0.0000
09:59	13.664	80.797	5.6744	0.0000	0.0000	594.67	6.0834	0.0000	0.0000
10:00	13.786	81.320	5.8513	0.0000	0.0000	590.80	6.1664	0.0000	0.0000
10:00	13.576	81.510	5.6204	0.0000	0.0000	583.17	6.0405	0.0000	0.0000
10:01	13.600	81.320	5.6733	0.0000	0.0000	593.17	6.1391	0.0000	0.0000
10:01	13.635	82.077	5.6587	0.0000	0.0000	587.32	6.1055	0.0000	0.0000
5 MIN AVERAGE	13.736	79.312	5.6667	0.0000	0.0000	604.34	6.1402	0.0000	0.0000

STACK NO. 1
POINT NO. 7

602

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:15	13.862	66.001	5.4775	0.0000	0.0000	565.55	5.5564	0.0000	0.0000
10:16	13.692	66.275	5.6057	0.0000	0.0000	561.92	6.0555	0.0000	0.0000
10:16	13.895	90.678	5.2617	0.0000	0.0000	560.43	6.0566	0.0000	0.0000
10:16	14.006	81.672	5.2572	0.0000	0.0000	549.61	5.3585	0.0000	0.0000
10:17	13.956	85.148	5.2572	0.0000	0.0000	544.56	6.0037	0.0000	0.0000
10:17	14.040	87.137	5.3600	0.0000	0.0000	540.61	5.5240	0.0000	0.0000
10:18	14.131	87.146	5.3944	0.0000	0.0000	537.06	5.8523	0.0000	0.0000
10:18	14.118	87.402	5.4140	0.0000	0.0000	532.81	5.8623	0.0000	0.0000
10:19	14.076	86.941	5.1733	0.0000	0.0000	521.54	5.9001	0.0000	0.0000
10:19	14.186	85.366	5.3450	0.0000	0.0000	517.45	5.7565	0.0000	0.0000
5 MIN AVERAGE	14.028	87.663	5.3507	0.0000	0.0000	545.24	5.8412	0.0000	0.0000

STACK NO. 1
POINT NO. 8

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:21	14.211	82.998	4.9670	0.0000	0.0000	492.20	5.7832	0.0000	0.0000
10:21	14.328	82.998	5.3695	0.0000	0.0000	491.45	5.8822	0.0000	0.0000
10:22	14.325	84.227	5.1684	0.0000	0.0000	488.35	5.8845	0.0000	0.0000
10:22	14.328	85.715	5.1635	0.0000	0.0000	477.05	5.8822	0.0000	0.0000
10:23	14.380	84.074	5.1467	0.0000	0.0000	468.09	5.8371	0.0000	0.0000
10:23	14.462	84.735	5.0852	0.0000	0.0000	462.09	5.5494	0.0000	0.0000
10:24	14.485	83.520	5.0707	0.0000	0.0000	453.36	5.5466	0.0000	0.0000
10:24	14.500	84.586	5.0701	0.0000	0.0000	455.22	5.5335	0.0000	0.0000
10:25	14.426	84.586	5.2026	0.0000	0.0000	455.34	5.5972	0.0000	0.0000
10:25	14.417	84.176	5.3404	0.0000	0.0000	448.09	5.6052	0.0000	0.0000
5 MIN AVERAGE	14.368	84.002	5.1566	0.0000	0.0000	469.35	5.6302	0.0000	0.0000

STACK NO. 1
POINT NO. 11 6102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:35	14.318	91.785	5.2518	0.0000	0.0000	447.22	5.6582	0.0000	0.0000
10:35	14.246	91.344	4.9564	0.0000	0.0000	435.67	5.7513	0.0000	0.0000
10:40	14.368	90.377	5.0014	0.0000	0.0000	443.10	5.6477	0.0000	0.0000
10:40	14.266	85.405	4.7606	0.0000	0.0000	448.34	5.7354	0.0000	0.0000
10:41	14.306	86.382	4.8326	0.0000	0.0000	445.34	5.6282	0.0000	0.0000
10:41	14.360	82.640	4.7459	0.0000	0.0000	455.71	5.6371	0.0000	0.0000
10:42	14.251	81.616	4.7361	0.0000	0.0000	473.77	5.7141	0.0000	0.0000
10:42	14.279	84.534	4.7301	0.0000	0.0000	461.96	5.7247	0.0000	0.0000
10:43	14.366	85.382	4.8424	0.0000	0.0000	467.46	5.6376	0.0000	0.0000
10:43	14.313	85.783	4.8375	0.0000	0.0000	466.58	5.6955	0.0000	0.0000
5 MIN AVERAGE	14.308	86.526	4.8695	0.0000	0.0000	461.84	5.6756	0.0000	0.0000

STACK NO. 1
POINT NO. 12

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:45	14.242	88.070	4.7704	0.0000	0.0000	469.06	5.7588	0.0000	0.0000
10:45	14.382	85.814	5.2077	0.0000	0.0000	457.33	5.6265	0.0000	0.0000
10:46	14.435	85.556	5.2765	0.0000	0.0000	455.20	5.5868	0.0000	0.0000
10:46	14.266	85.405	5.0858	0.0000	0.0000	430.33	5.7354	0.0000	0.0000
10:47	14.346	86.173	5.1144	0.0000	0.0000	468.78	5.6883	0.0000	0.0000
10:47	14.417	86.531	5.1530	0.0000	0.0000	467.21	5.6185	0.0000	0.0000
10:48	14.340	86.341	5.0357	0.0000	0.0000	465.33	5.6718	0.0000	0.0000
10:48	14.411	87.705	5.1855	0.0000	0.0000	466.58	5.6185	0.0000	0.0000
10:49	14.358	87.402	5.1530	0.0000	0.0000	464.71	5.6236	0.0000	0.0000
10:49	14.245	87.606	5.1378	0.0000	0.0000	450.58	5.7540	0.0000	0.0000
5 MIN AVERAGE	14.349	86.521	5.1242	0.0000	0.0000	469.40	5.6842	0.0000	0.0000

F

STACK NO. 1
POINT NO. 3 6102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
11:52	14.248	87.504	5.1930	0.0000	0.0000	475.46	5.7513	0.0000	0.0000
11:52	14.265	88.067	5.1835	0.0000	0.0000	470.21	5.7194	0.0000	0.0000
11:53	14.336	87.662	4.9864	0.0000	0.0000	473.33	5.8236	0.0000	0.0000
11:53	14.351	88.323	5.0306	0.0000	0.0000	477.08	5.8796	0.0000	0.0000
11:54	14.471	88.221	5.0645	0.0000	0.0000	470.55	5.8705	0.0000	0.0000
11:54	14.352	87.656	5.0600	0.0000	0.0000	457.47	5.8265	0.0000	0.0000
11:55	14.328	87.137	5.0505	0.0000	0.0000	433.65	5.8822	0.0000	0.0000
11:55	14.382	88.836	5.0701	0.0000	0.0000	424.10	5.8530	0.0000	0.0000
11:56	14.377	88.350	5.0112	0.0000	0.0000	418.36	5.8387	0.0000	0.0000
11:56	14.263	87.054	5.1733	0.0000	0.0000	419.86	5.7380	0.0000	0.0000
5 MIN AVERAGE	14.333	87.566	5.0854	0.0000	0.0000	452.10	5.8274	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
11:58	14.325	88.838	5.1684	0.0000	0.0000	421.23	5.8648	0.0000	0.0000
11:58	14.345	88.562	5.0751	0.0000	0.0000	421.23	5.8838	0.0000	0.0000
11:59	14.405	88.562	4.9866	0.0000	0.0000	424.46	5.8158	0.0000	0.0000
11:59	14.322	88.838	4.9821	0.0000	0.0000	432.35	5.8878	0.0000	0.0000
12:00	14.214	87.350	5.1835	0.0000	0.0000	430.87	5.7885	0.0000	0.0000
12:00	14.350	87.705	5.0814	0.0000	0.0000	434.10	5.8878	0.0000	0.0000
12:01	14.308	88.477	4.9915	0.0000	0.0000	433.60	5.8982	0.0000	0.0000
12:01	14.276	88.323	5.2028	0.0000	0.0000	430.72	5.7274	0.0000	0.0000
12:02	14.305	88.631	5.0305	0.0000	0.0000	436.57	5.8582	0.0000	0.0000
12:02	14.348	88.579	4.9915	0.0000	0.0000	432.85	5.8837	0.0000	0.0000
5 MIN AVERAGE	14.321	87.551	5.0674	0.0000	0.0000	429.65	5.8386	0.0000	0.0000

STACK NO. 1
POINT NO. 3 5102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
13:35	13.738	50.535	5.1373	0.0000	0.0000	563.05	6.1923	0.0000	0.0000
13:35	13.761	50.474	4.9719	0.0000	0.0000	563.53	6.1651	0.0000	0.0000
13:36	13.769	50.423	5.0554	0.0000	0.0000	566.55	6.1657	0.0000	0.0000
13:36	13.753	50.673	4.9617	0.0000	0.0000	564.68	6.1790	0.0000	0.0000
13:37	13.665	50.935	5.2519	0.0000	0.0000	567.30	6.2348	0.0000	0.0000
13:37	13.674	50.663	5.2765	0.0000	0.0000	570.18	6.2461	0.0000	0.0000
13:38	13.656	50.320	5.2427	0.0000	0.0000	570.30	6.2613	0.0000	0.0000
13:38	13.655	50.675	5.0936	0.0000	0.0000	560.67	6.2640	0.0000	0.0000
13:39	13.663	51.037	5.0554	0.0000	0.0000	567.05	6.2401	0.0000	0.0000
13:39	13.677	51.754	5.2175	0.0000	0.0000	577.17	6.2454	0.0000	0.0000
5 MIN AVERAGE	13.706	50.612	5.1350	0.0000	0.0000	570.63	6.2166	0.0000	0.0000

STACK NO. 1
POINT NO. 4 6102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
13:41	13.563	51.600	5.0456	0.0000	0.0000	570.05	6.3437	0.0000	0.0000
13:41	13.652	51.447	5.1330	0.0000	0.0000	565.05	6.2321	0.0000	0.0000
13:42	13.655	51.754	5.0603	0.0000	0.0000	566.43	6.2640	0.0000	0.0000
13:42	13.609	52.419	5.1094	0.0000	0.0000	569.60	6.3036	0.0000	0.0000
13:43	13.723	52.266	4.9670	0.0000	0.0000	565.18	6.2056	0.0000	0.0000
13:43	13.646	52.623	5.0253	0.0000	0.0000	567.30	6.2720	0.0000	0.0000
13:44	13.747	52.623	5.1045	0.0000	0.0000	562.43	6.1643	0.0000	0.0000
13:44	13.661	52.573	5.1631	0.0000	0.0000	565.05	6.2567	0.0000	0.0000
13:45	13.612	52.112	5.0936	0.0000	0.0000	564.53	6.3012	0.0000	0.0000
13:45	13.680	52.163	5.2126	0.0000	0.0000	558.51	6.2427	0.0000	0.0000
5 MIN AVERAGE	13.659	52.199	5.1001	0.0000	0.0000	566.45	6.2606	0.0000	0.0000

(4.076 86.829 —
5.229

STACK NO. 1
POINT NO. 5

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
13:47	13.603	51.656	5.1183	0.0000	0.0000	560.06	6.3062	0.0000	0.0000
13:47	13.643	51.703	5.0112	0.0000	0.0000	562.30	6.2746	0.0000	0.0000
13:48	13.631	51.856	5.0161	0.0000	0.0000	571.30	6.2853	0.0000	0.0000
13:48	13.600	52.675	4.9864	0.0000	0.0000	571.60	6.3176	0.0000	0.0000
13:49	13.594	52.727	5.1242	0.0000	0.0000	577.05	6.3171	0.0000	0.0000
13:49	13.541	53.253	5.0063	0.0000	0.0000	563.60	6.3623	0.0000	0.0000
13:50	13.643	53.751	5.1467	0.0000	0.0000	564.93	6.2746	0.0000	0.0000
13:50	13.755	54.765	5.0956	0.0000	0.0000	556.81	6.1943	0.0000	0.0000
13:51	13.569	54.466	4.9129	0.0000	0.0000	555.61	6.3364	0.0000	0.0000
13:51	13.652	54.872	5.0600	0.0000	0.0000	562.16	6.2667	0.0000	0.0000
5 MIN AVERAGE	13.621	53.166	5.0515	0.0000	0.0000	564.80	6.2935	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB	STEAM LB/HR

E: 14.100 72.19 5.20

N 14.076 86.829 5.239

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STACK NO. 1
POINT NO. 3

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:43	13.315	45.061	5.6372	0.0000	0.0000	627.16	6.1233	0.0000	0.0000
15:43	13.237	47.822	5.8823	0.0000	0.0000	660.84	6.8253	0.0000	0.0000
15:44	13.157	54.120	6.1635	0.0000	0.0000	706.38	6.8536	0.0000	0.0000
15:44	12.967	58.765	6.1744	0.0000	0.0000	741.12	6.8539	0.0000	0.0000
15:45	12.886	62.625	6.2665	0.0000	0.0000	754.12	6.8351	0.0000	0.0000
15:45	12.864	66.460	6.1163	0.0000	0.0000	751.74	6.8306	0.0000	0.0000
15:46	12.875	70.505	6.2127	0.0000	0.0000	770.36	6.8367	0.0000	0.0000
15:46	12.864	74.345	6.8554	0.0000	0.0000	785.46	6.8306	0.0000	0.0000
15:47	12.805	77.212	6.5984	0.0000	0.0000	793.23	6.8035	0.0000	0.0000
15:47	12.647	79.566	6.5276	0.0000	0.0000	785.36	6.5626	0.0000	0.0000
5 MIN AVERAGE	13.061	65.511	6.2216	0.0000	0.0000	740.62	6.7777	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:49	12.887	66.736	6.5374	0.0000	0.0000	835.46	7.1006	0.0000	0.0000
15:49	12.906	67.555	6.5472	0.0000	0.0000	817.09	6.9722	0.0000	0.0000
15:50	12.850	67.606	6.6063	0.0000	0.0000	834.71	6.9254	0.0000	0.0000
15:50	12.826	68.323	6.7046	0.0000	0.0000	848.27	6.9766	0.0000	0.0000
15:51	12.858	69.706	6.8548	0.0000	0.0000	846.53	6.9606	0.0000	0.0000
15:51	12.804	69.962	6.4144	0.0000	0.0000	843.33	6.9556	0.0000	0.0000
15:52	12.743	70.064	6.4665	0.0000	0.0000	862.70	7.0530	0.0000	0.0000
15:52	12.752	69.811	6.7440	0.0000	0.0000	881.45	7.0450	0.0000	0.0000
15:53	12.724	71.344	6.8548	0.0000	0.0000	863.57	7.0669	0.0000	0.0000
15:53	12.683	71.805	6.6800	0.0000	0.0000	881.45	6.9494	0.0000	0.0000
5 MIN AVERAGE	12.805	69.301	6.6062	0.0000	0.0000	853.88	6.9993	0.0000	0.0000

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STACK NO. 1
POINT NO. 7 6107

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
16:07	12.676	120.83	6.5817	0.0000	0.0000	857.30	6.5361	0.0000	0.0000
16:07	12.807	122.21	6.6079	0.0000	0.0000	862.67	6.3572	0.0000	0.0000
16:08	12.810	124.01	6.7489	0.0000	0.0000	857.05	6.3845	0.0000	0.0000
16:08	12.863	125.39	6.8309	0.0000	0.0000	877.18	6.9464	0.0000	0.0000
16:09	12.758	127.28	6.8407	0.0000	0.0000	852.85	7.0397	0.0000	0.0000
16:09	12.824	98.076	6.5817	0.0000	0.0000	812.06	6.8962	0.0000	0.0000
16:10	12.865	75.673	6.3649	0.0000	0.0000	826.58	6.6401	0.0000	0.0000
16:10	12.982	76.700	6.4243	0.0000	0.0000	852.28	6.8578	0.0000	0.0000
16:11	13.066	67.606	6.3259	0.0000	0.0000	1004.5	6.7714	0.0000	0.0000
16:11	13.333	96.772	5.9717	0.0000	0.0000	875.23	6.5425	0.0000	0.0000
5 MIN AVERAGE	12.942	105.33	6.5036	0.0000	0.0000	868.75	6.6808	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
16:13	13.621	104.70	5.9028	0.0000	0.0000	827.18	6.2932	0.0000	0.0000
16:13	13.584	105.56	5.8045	0.0000	0.0000	822.31	6.3251	0.0000	0.0000
16:14	13.827	106.49	5.9290	0.0000	0.0000	838.57	6.1152	0.0000	0.0000
16:14	13.879	106.24	5.8028	0.0000	0.0000	855.08	6.0701	0.0000	0.0000
16:15	14.031	106.14	5.8814	0.0000	0.0000	851.33	5.8868	0.0000	0.0000
16:15	14.211	106.24	5.2830	0.0000	0.0000	831.96	5.7832	0.0000	0.0000
16:16	14.282	105.47	5.2834	0.0000	0.0000	806.60	5.7221	0.0000	0.0000
16:16	14.254	104.25	5.2525	0.0000	0.0000	812.60	5.7480	0.0000	0.0000
16:17	14.276	104.13	5.3224	0.0000	0.0000	802.35	5.7274	0.0000	0.0000
16:17	14.435	102.96	5.0469	0.0000	0.0000	745.67	5.5853	0.0000	0.0000
5 MIN AVERAGE	14.046	105.67	5.4429	0.0000	0.0000	844.55	5.9258	0.0000	0.0000

STACK NO. 1
POINT NO. 5 · 5103

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
16:19	14.460	88.635	5.0613	0.0000	0.0000	685.26	5.5660	0.0000	0.0000
16:19	14.743	86.506	4.9535	0.0000	0.0000	653.66	5.3256	0.0000	0.0000
16:20	14.650	86.004	4.8852	0.0000	0.0000	563.67	5.2307	0.0000	0.0000
16:20	14.916	82.776	4.8852	0.0000	0.0000	563.05	5.1722	0.0000	0.0000
16:21	14.835	81.191	4.7570	0.0000	0.0000	556.43	5.1536	0.0000	0.0000
16:21	15.127	85.184	4.8366	0.0000	0.0000	522.87	4.8816	0.0000	0.0000
16:22	15.185	87.040	4.8852	0.0000	0.0000	504.52	4.6411	0.0000	0.0000
16:22	15.145	86.326	4.8861	0.0000	0.0000	501.58	4.6756	0.0000	0.0000
16:23	15.164	85.712	4.8206	0.0000	0.0000	507.45	4.6837	0.0000	0.0000
16:23	15.185	84.637	4.8852	0.0000	0.0000	494.70	4.6411	0.0000	0.0000
5 MIN AVERAGE	14.972	81.065	4.7252	0.0000	0.0000	555.22	5.1257	0.0000	0.0000

STACK NO. 1
POINT NO. 10 5103

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
16:25	15.485	80.233	4.4271	0.0000	0.0000	410.98	4.6726	0.0000	0.0000
16:25	15.827	77.053	4.2548	0.0000	0.0000	362.25	4.5566	0.0000	0.0000
16:26	13.753	83.450	6.1433	0.0000	0.0000	635.46	6.1780	0.0000	0.0000
16:26	13.944	79.670	5.4743	0.0000	0.0000	633.53	6.0143	0.0000	0.0000
16:27	15.763	74.356	4.0336	0.0000	0.0000	335.01	4.4417	0.0000	0.0000
16:27	16.045	75.363	4.0326	0.0000	0.0000	280.40	4.1873	0.0000	0.0000
16:28	16.131	76.066	3.9500	0.0000	0.0000	263.66	4.1229	0.0000	0.0000
16:28	16.104	74.453	4.0030	0.0000	0.0000	245.73	4.1466	0.0000	0.0000
16:29	16.262	72.348	3.8008	0.0000	0.0000	236.29	3.9926	0.0000	0.0000
16:29	16.283	71.017	3.7630	0.0000	0.0000	230.67	4.0067	0.0000	0.0000
5 MIN AVERAGE	15.541	77.013	4.4350	0.0000	0.0000	383.80	4.6335	0.0000	0.0000

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STACK NO. 1
POINT NO. 1 6603

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
17:16	13.815	103.63	5.6323	0.0000	0.0000	719.13	6.1259	0.0000	0.0000
17:16	13.636	104.04	5.5978	0.0000	0.0000	723.75	6.2268	0.0000	0.0000
17:19	13.713	104.24	5.6175	0.0000	0.0000	712.00	6.2135	0.0000	0.0000
17:19	13.720	104.81	5.5280	0.0000	0.0000	721.88	6.2082	0.0000	0.0000
17:20	13.778	105.27	5.6362	0.0000	0.0000	733.50	6.1577	0.0000	0.0000
17:20	13.760	105.57	5.6175	0.0000	0.0000	726.37	6.1737	0.0000	0.0000
17:21	13.707	106.09	5.5536	0.0000	0.0000	722.25	6.2166	0.0000	0.0000
17:21	13.744	105.60	5.7159	0.0000	0.0000	735.50	6.1870	0.0000	0.0000
17:22	13.677	106.60	5.6716	0.0000	0.0000	726.37	6.2454	0.0000	0.0000
17:22	13.616	106.85	5.7206	0.0000	0.0000	716.63	6.1232	0.0000	0.0000
5 MIN AVERAGE	13.743	105.37	5.6352	0.0000	0.0000	724.14	6.1860	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB "F	STEAM LB/HR
17:24	14.814	73.865	5.7158	0.0000	0.0000	569.43	5.4352	0.0000	0.0000
17:24	13.984	95.389	5.7159	0.0000	0.0000	734.82	6.0468	0.0000	0.0000
17:25	13.806	101.27	5.5142	0.0000	0.0000	728.12	6.1338	0.0000	0.0000
17:25	13.824	100.17	5.5565	0.0000	0.0000	723.50	6.1178	0.0000	0.0000
17:26	14.018	100.37	5.5368	0.0000	0.0000	696.38	5.9503	0.0000	0.0000
17:26	14.158	102.09	5.2240	0.0000	0.0000	660.15	5.8283	0.0000	0.0000
17:27	14.340	100.57	5.2665	0.0000	0.0000	641.90	5.6550	0.0000	0.0000
17:27	14.273	100.76	5.3421	0.0000	0.0000	652.27	5.7301	0.0000	0.0000
17:28	14.214	99.638	5.2043	0.0000	0.0000	640.28	5.7505	0.0000	0.0000
17:28	14.160	99.727	5.2535	0.0000	0.0000	654.16	5.8016	0.0000	0.0000
5 MIN AVERAGE	14.134	97.668	5.3735	0.0000	0.0000	666.28	5.8466	0.0000	0.0000

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STACK NO. 1
POINT NO. 5 6603

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
17:42	14.836	76.517	4.4861	0.0000	0.0000	394.66	5.1563	0.0000	0.0000
17:42	15.065	76.953	4.7026	0.0000	0.0000	402.96	5.0447	0.0000	0.0000
17:43	14.893	79.377	4.7714	0.0000	0.0000	454.03	5.1935	0.0000	0.0000
17:43	15.367	76.547	5.4109	0.0000	0.0000	705.76	5.9771	0.0000	0.0000
17:44	14.525	82.625	4.9326	0.0000	0.0000	544.06	5.6845	0.0000	0.0000
17:44	14.813	87.945	4.8150	0.0000	0.0000	425.73	5.2625	0.0000	0.0000
17:45	14.847	72.911	4.8150	0.0000	0.0000	406.23	5.2533	0.0000	0.0000
17:45	14.870	75.874	4.7124	0.0000	0.0000	402.75	5.1244	0.0000	0.0000
17:46	14.942	76.383	4.5403	0.0000	0.0000	397.11	5.1510	0.0000	0.0000
17:46	15.016	76.625	4.5206	0.0000	0.0000	393.74	5.0872	0.0000	0.0000
5 MIN AVERAGE	14.760	74.627	4.7075	0.0000	0.0000	452.73	5.2515	0.0000	0.0000

STACK NO. 1
POINT NO. 6

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
17:48	15.071	76.700	4.6436	0.0000	0.0000	354.24	5.0354	0.0000	0.0000
17:48	14.916	77.161	4.6731	0.0000	0.0000	400.73	5.1722	0.0000	0.0000
17:49	14.945	77.560	4.7662	0.0000	0.0000	412.86	5.1483	0.0000	0.0000
17:49	14.767	76.535	4.7075	0.0000	0.0000	428.57	5.3024	0.0000	0.0000
17:50	14.804	78.168	4.8285	0.0000	0.0000	434.72	5.2705	0.0000	0.0000
17:50	14.748	78.414	4.8551	0.0000	0.0000	434.47	5.3210	0.0000	0.0000
17:51	14.620	80.745	5.0026	0.0000	0.0000	455.57	5.4259	0.0000	0.0000
17:51	14.535	81.921	5.0666	0.0000	0.0000	466.64	5.4857	0.0000	0.0000
17:52	14.586	82.281	5.0469	0.0000	0.0000	463.71	5.4750	0.0000	0.0000
17:52	14.611	82.537	5.0715	0.0000	0.0000	471.21	5.4075	0.0000	0.0000
5 MIN AVERAGE	14.760	79.609	4.8762	0.0000	0.0000	438.67	5.3062	0.0000	0.0000

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Avg East 13.96 88.02 5.570

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STACK NO. 1
POINT NO. 1 S104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:11	14.166	56.711	5.2630	0.0000	0.0000	660.15	5.8204	0.0000	0.0000
18:11	12.653	53.357	6.3357	0.0000	0.0000	804.19	6.8573	0.0000	0.0000
18:12	12.608	70.454	6.6358	0.0000	0.0000	846.05	7.1636	0.0000	0.0000
18:12	12.632	73.107	6.5364	0.0000	0.0000	835.55	7.1466	0.0000	0.0000
18:13	12.629	62.077	6.3847	0.0000	0.0000	820.68	7.1512	0.0000	0.0000
18:13	12.664	63.561	6.5666	0.0000	0.0000	822.43	7.1034	0.0000	0.0000
18:14	12.660	61.374	6.4390	0.0000	0.0000	815.56	7.1247	0.0000	0.0000
18:14	12.650	73.525	6.5521	0.0000	0.0000	865.54	7.0981	0.0000	0.0000
18:15	12.760	75.721	6.4734	0.0000	0.0000	868.07	7.0211	0.0000	0.0000
18:15	12.577	68.387	6.5767	0.0000	0.0000	892.07	7.1964	0.0000	0.0000
5 MIN AVERAGE	12.828	72.765	6.3674	0.0000	0.0000	868.47	6.8791	0.0000	0.0000

STACK NO. 1
POINT NO. 2 S104

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:17	12.684	61.574	6.5718	0.0000	0.0000	865.33	7.0555	0.0000	0.0000
18:17	12.712	62.783	6.5276	0.0000	0.0000	853.71	7.0765	0.0000	0.0000
18:18	12.703	63.320	6.4341	0.0000	0.0000	848.71	7.0875	0.0000	0.0000
18:18	12.638	64.750	6.4341	0.0000	0.0000	856.08	7.1433	0.0000	0.0000
18:19	12.614	65.354	6.4764	0.0000	0.0000	851.71	7.1645	0.0000	0.0000
18:19	12.634	65.317	6.4682	0.0000	0.0000	836.84	7.0955	0.0000	0.0000
18:20	12.761	66.582	6.5571	0.0000	0.0000	837.46	7.0370	0.0000	0.0000
18:20	12.730	67.350	6.5515	0.0000	0.0000	834.86	7.0636	0.0000	0.0000
18:21	12.804	68.374	6.5472	0.0000	0.0000	820.64	6.9936	0.0000	0.0000
18:21	13.010	68.426	6.3603	0.0000	0.0000	799.60	6.8218	0.0000	0.0000
5 MIN AVERAGE	12.738	65.548	6.4990	0.0000	0.0000	840.32	7.0568	0.0000	0.0000

STACK NO. 1
POINT NO. 3 6/04

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:25	13.824	86.685	6.4831	0.0000	0.0000	629.26	6.1178	0.0000	0.0000
20:25	13.847	87.402	6.7056	0.0000	0.0000	636.65	6.0176	0.0000	0.0000
20:26	13.870	86.178	6.6987	0.0000	0.0000	643.03	6.0761	0.0000	0.0000
20:26	13.892	86.323	6.7184	0.0000	0.0000	630.41	6.0595	0.0000	0.0000
20:27	13.923	86.325	6.5177	0.0000	0.0000	618.79	6.0276	0.0000	0.0000
20:27	13.950	86.374	6.5423	0.0000	0.0000	616.91	6.0090	0.0000	0.0000
20:28	13.955	86.272	6.4784	0.0000	0.0000	612.66	6.0513	0.0000	0.0000
20:28	13.976	87.614	6.5857	0.0000	0.0000	554.23	5.9857	0.0000	0.0000
20:29	14.088	87.565	6.3406	0.0000	0.0000	575.55	5.8654	0.0000	0.0000
20:29	14.107	86.787	6.3505	0.0000	0.0000	568.30	5.8705	0.0000	0.0000
20:30	14.165	86.013	6.3652	0.0000	0.0000	559.06	5.8230	0.0000	0.0000
20:30	14.230	85.302	6.4035	0.0000	0.0000	538.31	5.7873	0.0000	0.0000
20:31	14.248	84.227	6.3554	0.0000	0.0000	533.56	5.7513	0.0000	0.0000
20:31	14.184	84.074	6.2177	0.0000	0.0000	523.57	5.6071	0.0000	0.0000
7 MIN AVERAGE	14.079	86.955	6.4773	0.0000	0.0000	591.74	5.9454	0.0000	0.0000
STACK NO. 1 POINT NO. 4									
TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:33	14.386	82.384	6.1831	0.0000	0.0000	495.83	5.6238	0.0000	0.0000
20:33	14.343	82.178	6.2864	0.0000	0.0000	488.78	5.6690	0.0000	0.0000
20:34	14.309	81.816	6.1685	0.0000	0.0000	488.83	5.6382	0.0000	0.0000
20:34	14.435	81.411	6.1783	0.0000	0.0000	477.46	5.6693	0.0000	0.0000
20:35	14.331	80.643	6.2275	0.0000	0.0000	481.71	5.6796	0.0000	0.0000
20:35	14.282	80.541	6.2127	0.0000	0.0000	486.21	5.7221	0.0000	0.0000
20:36	14.260	80.131	6.1144	0.0000	0.0000	476.06	5.7407	0.0000	0.0000
20:36	14.420	78.619	6.0160	0.0000	0.0000	459.21	5.6026	0.0000	0.0000
20:37	14.405	78.697	5.9514	0.0000	0.0000	456.71	5.6158	0.0000	0.0000
20:37	14.405	78.441	6.2029	0.0000	0.0000	466.21	5.6158	0.0000	0.0000
20:38	14.291	78.338	6.1144	0.0000	0.0000	467.71	5.7141	0.0000	0.0000
20:38	14.442	78.338	6.1881	0.0000	0.0000	465.09	5.5840	0.0000	0.0000
20:39	14.382	78.134	6.2177	0.0000	0.0000	473.09	5.6530	0.0000	0.0000
20:39	14.353	77.878	6.0455	0.0000	0.0000	471.46	5.6610	0.0000	0.0000
7 MIN AVERAGE	14.380	79.882	6.1548	0.0000	0.0000	476.24	5.6543	0.0000	0.0000

STACK NO. 1
POINT NO. 7 6104

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
20:57	13.320	69.552	6.8079	0.0000	0.0000	810.04	6.5535	0.0000	0.0000
20:57	13.165	70.607	6.8801	0.0000	0.0000	827.66	6.6704	0.0000	0.0000
20:58	13.130	71.785	7.0086	0.0000	0.0000	842.28	6.7162	0.0000	0.0000
20:58	13.257	72.553	6.9654	0.0000	0.0000	848.40	6.6253	0.0000	0.0000
20:59	13.167	73.423	7.0293	0.0000	0.0000	865.88	6.6817	0.0000	0.0000
20:59	12.962	74.360	7.1424	0.0000	0.0000	858.76	6.6458	0.0000	0.0000
21:00	13.016	76.700	7.1375	0.0000	0.0000	708.38	6.6165	0.0000	0.0000
21:00	12.955	76.134	7.1720	0.0000	0.0000	711.25	6.6351	0.0000	0.0000
21:01	12.933	77.627	6.1439	0.0000	0.0000	622.53	6.6863	0.0000	0.0000
21:01	12.881	75.574	4.0463	0.0000	0.0000	533.25	6.6643	0.0000	0.0000
21:02	13.565	70.612	5.9619	0.0000	0.0000	580.05	6.5357	0.0000	0.0000
21:02	15.004	60.416	3.4335	0.0000	0.0000	206.30	6.0878	0.0000	0.0000
21:03	8.5856	54.171	1.8836	0.0000	0.0000	81.465	3.7370	0.0000	0.0000
21:03	7.4514	46.334	1.4504	0.0000	0.0000	55.230	11.645	0.0000	0.0000
7 MIN AVERAGE	12.695	69.851	6.6563	0.0000	0.0000	515.38	7.1461	0.0000	0.0000
21:05	13.274	65.794	6.7637	0.0000	0.0000	740.74	6.5534	0.0000	0.0000
21:05	13.111	72.758	6.8063	0.0000	0.0000	727.25	6.7342	0.0000	0.0000
21:06	13.178	75.164	6.8670	0.0000	0.0000	723.25	6.6837	0.0000	0.0000
21:06	13.065	77.264	6.9365	0.0000	0.0000	736.62	6.7740	0.0000	0.0000
21:07	13.105	80.643	6.7833	0.0000	0.0000	736.37	6.7395	0.0000	0.0000
21:07	13.176	81.365	6.7154	0.0000	0.0000	741.72	6.6764	0.0000	0.0000
21:08	13.022	81.206	6.6356	0.0000	0.0000	752.67	6.6712	0.0000	0.0000
21:08	13.010	80.757	6.6112	0.0000	0.0000	764.36	6.6276	0.0000	0.0000
21:09	13.047	78.134	6.5806	0.0000	0.0000	753.62	6.7300	0.0000	0.0000
21:09	13.063	78.444	6.7735	0.0000	0.0000	747.37	6.7501	0.0000	0.0000
21:10	13.053	76.342	6.8713	0.0000	0.0000	727.50	6.7501	0.0000	0.0000
21:10	13.047	77.673	6.8522	0.0000	0.0000	717.88	6.7500	0.0000	0.0000
21:11	12.995	79.004	6.8260	0.0000	0.0000	706.51	6.8351	0.0000	0.0000
21:11	13.105	78.312	6.7539	0.0000	0.0000	702.25	6.7395	0.0000	0.0000
7 MIN AVERAGE	13.094	77.293	6.8500	0.0000	0.0000	734.84	6.7494	0.0000	0.0000

4.4.134

STACK NO. 1
POINT NO. 3 6C04

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:43	12.985	105.42	7.5556	0.0000	0.0000	788.23	6.8431	0.0000	0.0000
21:43	12.975	105.88	7.5360	0.0000	0.0000	806.60	6.8537	0.0000	0.0000
21:44	13.013	106.65	7.5409	0.0000	0.0000	797.48	6.8152	0.0000	0.0000
21:44	13.016	106.80	7.5753	0.0000	0.0000	769.85	6.8165	0.0000	0.0000
21:45	13.016	105.12	7.8634	0.0000	0.0000	775.75	6.4712	0.0000	0.0000
21:45	13.173	107.36	7.5015	0.0000	0.0000	813.57	6.5757	0.0000	0.0000
21:46	13.035	105.52	7.6865	0.0000	0.0000	829.71	6.6066	0.0000	0.0000
21:46	13.050	105.16	7.5405	0.0000	0.0000	858.45	6.7673	0.0000	0.0000
21:47	12.866	107.11	7.7225	0.0000	0.0000	866.89	6.5467	0.0000	0.0000
21:47	12.912	109.72	7.5753	0.0000	0.0000	904.66	6.5068	0.0000	0.0000
21:48	12.895	111.10	7.6345	0.0000	0.0000	911.31	6.5175	0.0000	0.0000
21:48	12.864	111.32	7.6786	0.0000	0.0000	915.19	6.5617	0.0000	0.0000
21:49	12.861	113.25	7.6345	0.0000	0.0000	934.83	6.5645	0.0000	0.0000
21:49	12.855	114.23	7.5835	0.0000	0.0000	926.31	6.5683	0.0000	0.0000
7 MIN AVERAGE	13.014	107.45	7.5465	0.0000	0.0000	853.25	6.5180	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
21:51	13.323	53.403	7.1768	0.0000	0.0000	852.08	6.5503	0.0000	0.0000
21:51	13.419	66.050	7.1375	0.0000	0.0000	867.45	6.4685	0.0000	0.0000
21:52	13.383	62.486	7.0047	0.0000	0.0000	855.33	6.3437	0.0000	0.0000
21:52	13.457	65.168	6.9695	0.0000	0.0000	838.59	6.2795	0.0000	0.0000
21:53	13.455	67.028	6.9793	0.0000	0.0000	821.84	6.2640	0.0000	0.0000
21:53	13.452	66.567	6.8178	0.0000	0.0000	752.23	6.0540	0.0000	0.0000
21:54	13.316	65.164	6.7351	0.0000	0.0000	776.36	6.0362	0.0000	0.0000
21:54	13.330	64.314	6.8621	0.0000	0.0000	783.71	6.1126	0.0000	0.0000
21:55	13.288	64.724	6.8604	0.0000	0.0000	813.59	6.1564	0.0000	0.0000
21:55	13.303	65.543	6.9258	0.0000	0.0000	833.71	6.1365	0.0000	0.0000
21:56	13.304	64.980	6.7657	0.0000	0.0000	815.22	6.0468	0.0000	0.0000
21:56	13.368	66.106	6.7245	0.0000	0.0000	808.47	5.9530	0.0000	0.0000
21:57	13.322	66.154	6.7538	0.0000	0.0000	798.10	6.0329	0.0000	0.0000
21:57	13.365	67.586	6.7058	0.0000	0.0000	788.58	5.9857	0.0000	0.0000
7 MIN AVERAGE	13.352	63.651	6.8954	0.0000	0.0000	816.32	6.1805	0.0000	0.0000

Run 604
Ag East 13.568 82.43 6.175

Holly Sugar, Sydney, MT

Stack ID - Name = North Pulp Dryer – West Date(s) = 10-23-93

Run No. ID =	2L01	2L02	2L03	S04	Avg.
Time, Start =	1026	1518	1918		
End =	1241	1720	2157		
Results, O_2 (%, dry)	15.681	15.491	16.161		~~15.783~~
CO_2 (%, dry)	4.147	4.599	3.929		
SO_2 (ppm, dry)	39.048	70.558	32.439		
CO (ppm, dry)					
% H_2O (%)	33.96	34.94			
$V_{m,std}$ (dscf)	24.164	47.355	See 1 cm sheet		
Isokinetic (%)	92.1	98.89			
Zero Drift, Post Test	09:26	1838	2154		
O_2 cal zero, drift %	.0921 .0814	0.176	.102		
CO_2 cal zero, drift %	-.058 -0.018	-.018	.0018		
SO_2 cal zero, drift %	-1.421 -.402	1.02	0.683		
Upscal Drift, Post Test	1438	1831	2143		
O_2 cal, span, drift %	7.116 7.064	7.079	7.019		
CO_2 cal, span, drift %	11.89 11.84	11.888	12.01		
SO_2 cal span, drift %	99.826 97.439	98.382	98.001		
Spans O_2	25	25	25		
CO_2	40	40	40		
SO_2	120	120	120		

7000 Series - Tests. 10-23 W

STACK NO. 1
POINT NO. 1 7101

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX1SO PPM.D	CO PPM.D	CO2 %.D	I-AMB	STEAM LB/HR
09:44	15.007	44.061	4.7557	0.0000	0.0000	255.41	5.0552	0.0000	0.0000
09:44	14.970	39.886	4.7814	0.0000	0.0000	257.25	5.1271	0.0000	0.0000
09:45	14.841	38.823	4.7370	0.0000	0.0000	255.25	5.2366	0.0000	0.0000
09:45	14.855	41.676	4.8083	0.0000	0.0000	256.91	5.1403	0.0000	0.0000
09:46	14.821	44.268	4.8366	0.0000	0.0000	257.41	5.1595	0.0000	0.0000
09:46	14.819	44.138	4.7882	0.0000	0.0000	256.66	5.2577	0.0000	0.0000
09:47	14.875	45.618	4.7124	0.0000	0.0000	256.41	5.1171	0.0000	0.0000
09:47	15.048	48.756	4.8417	0.0000	0.0000	261.66	4.9[illegible]	0.0000	0.0000
09:48	15.038	48.681	4.8449	0.0000	0.0000	182.44	4.[illegible]	0.0000	0.0000
09:48	15.111	49.529	4.8255	0.0000	0.0000	256.25	[illegible]	0.0000	0.0000
09:49	14.967	45.431	4.7815	0.0000	0.0000	256.16	5.1287	0.0000	0.0000
09:49	14.792	38.298	4.8534	0.0000	0.0000	260.76	5.2811	0.0000	0.0000
09:50	14.785	40.886	4.8165	0.0000	0.0000	262.0[illegible]	5.2765	0.0000	0.0000
09:50	14.881	42.066	4.8502	0.0000	0.0000	265.[illegible]	5.2041	0.0000	0.0000
7 MIN AVERAGE	15.035	43.105	4.8503	0.0000	0.0000	258.04	5.0183	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX1SO PPM.D	CO PPM.D	CO2 %.D	I-AMB	STEAM LB/HR
09:52	14.858	46.676	4.8825	0.0000	0.0000	257.65	5.1[illegible]	0.0000	0.0000
09:52	14.815	43.726	4.8583	0.0000	0.0000	258.15	5.1[illegible]	0.0000	0.0000
09:53	14.746	44.833	4.8106	0.0000	0.0000	255.65	5.[illegible]10	0.0000	0.0000
09:53	14.756	44.756	4.8103	0.0000	0.0000	258.15	5.[illegible]04	0.0000	0.0000
09:54	14.776	45.516	4.7875	0.0000	0.0000	276.53	5.[illegible]44	0.0000	0.0000
09:54	14.816	46.388	4.8581	0.0000	0.0000	258.15	5.[illegible]22	0.0000	0.0000
09:55	14.778	47.106	4.7815	0.0000	0.0000	269.03	5.[illegible]87	0.0000	0.0000
09:55	14.743	46.138	4.8256	0.0000	0.0000	268.28	5.[illegible]04	0.0000	0.0000
09:56	14.788	46.638	4.7818	0.0000	0.0000	253.66	5.[illegible]58	0.0000	0.0000
09:56	14.785	46.563	4.8600	0.0000	0.0000	270.78	5.2838	0.0000	0.0000
09:57	14.818	50.488	4.8600	0.0000	0.0000	271.40	5.2588	0.0000	0.0000
09:57	14.755	51.262	4.8583	0.0000	0.0000	274.53	5.3138	0.0000	0.0000
09:58	14.718	51.970	4.7811	0.0000	0.0000	278.78	5.3418	0.0000	0.0000
09:58	14.881	52.431	4.8583	0.0000	0.0000	276.03	5.2732	0.0000	0.0000
7 MIN AVERAGE	14.788	47.883	4.7887	0.0000	0.0000	268.41	5.2715	0.0000	0.0000

STACK NO. 1
POINT NO. 1 7101

TIME HR.	O2 % D	SO2 #1 PPM D	SO2 #2 PPM D	NOX PPM D	NOX(STD) PPM D	CO PPM D	CO2 % D	T-AMB °F	STEAM LB/HR
10:14	15.740	46.183	4.8788	0.0000	0.0000	714.80	4.8810	0.0000	0.0000
10:14	15.860	45.774	4.8188	0.0000	0.0000	720.80	4.8588	0.0000	0.0000
10:15	14.807	44.861	4.7173	0.0000	0.0000	721.75	4.7858	0.0000	0.0000
10:15	14.888	51.818	4.8987	0.0000	0.0000	720.88	4.7888	0.0000	0.0000
10:15	14.884	51.884	4.8747	0.0000	0.0000	720.84	4.7874	0.0000	0.0000
10:15	14.888	50.888	4.8188	0.0000	0.0000	720.04	4.7111	0.0000	0.0000
10:17	14.888	47.818	4.8888	0.0000	0.0000	721.84	4.7848	0.0000	0.0000
10:18	15.041	47.784	4.8487	0.0000	0.0000	720.85	4.8748	0.0000	0.0000
10:18	15.044	48.888	4.8781	0.0000	0.0000	719.48	4.8868	0.0000	0.0000
10:18	14.888	47.784	4.8477	0.0000	0.0000	719.87	4.7847	0.0000	0.0000
10:18	11.181	41.138	4.7187	0.0000	0.0000	778.87	4.4187	0.0000	0.0000
10:18	14.888	48.418	4.8877	0.0000	0.0000	777.17	4.7477	0.0000	0.0000
10:18	14.878	41.488	4.8148	0.0000	0.0000	781.87	4.7717	0.0000	0.0000
V MIN									
AVERAGE	15.888	14.887	4.7818	0.0000	0.0000	720.87	4.8888	0.0000	0.0000

64.877 4.7367

STACK NO. 1
POINT NO. 2

TIME HR.	O2 % D	SO2 #1 PPM D	SO2 #2 PPM D	NOX PPM D	NOX(STD) PPM D	CO PPM D	CO2 % D	T-AMB °F	STEAM LB/HR
10:47	11.8884	87.1178	4.1788	0.0000	0.0000	711.81	4.8787	0.0000	0.0000
10:47	11.8871	87.1877	4.1881	0.0000	0.0000	707.88	4.8787	0.0000	0.0000
10:48	11.1181	87.1877	4.1888	0.0000	0.0000	701.88	4.8811	0.0000	0.0000
10:48	11.7481	87.2818	4.1888	0.0000	0.0000	714.81	4.8881	0.0000	0.0000
10:48	11.1118	81.1887	4.1844	0.0000	0.0000	708.84	4.8841	0.0000	0.0000
10:48	11.8888	81.1868	4.1888	0.0000	0.0000	708.88	4.8848	0.0000	0.0000
10:81	11.1778	81.1847	4.8178	0.0000	0.0000	711.88	4.8818	0.0000	0.0000
10:81	11.1771	87.1181	4.1848	0.0000	0.0000	711.88	4.8888	0.0000	0.0000
10:81	11.8778	87.1871	4.1884	0.0000	0.0000	711.11	4.8788	0.0000	0.0000
10:15	15.814	87.8781	4.8714	0.0000	0.0000	707.44	4.8784	0.0000	0.0000
10:17	15.718	87.415	4.8787	0.0000	0.0000	717.88	4.8118	0.0000	0.0000
10:17	15.778	87.8781	4.8847	0.0000	0.0000	718.81	4.8848	0.0000	0.0000
10:18	15.841	87.1881	4.8884	0.0000	0.0000	1888.88	4.7841	0.0000	0.0000
10:18	15.817	87.8885	4.8174	0.0000	0.0000	787.88	4.7748	0.0000	0.0000
V MIN									
AVERAGE	15.787	87.871	4.8714	0.0000	0.0000	781.74	4.8888	0.0000	0.0000

82.371 4.8214

STACK NO. 1
POINT NO. 8

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "H	GRAM LB/HR
12:07	14.813	28.601	4.4074	0.0000	0.0000	205.42	5.2625	0.0000	0.0000
12:07	14.828	28.618	4.5588	0.0000	0.0000	214.17	5.2618	0.0000	0.0000
12:08	14.788	28.283	4.7555	0.0000	0.0000	223.82	5.3333	0.0000	0.0000
12:08	17.004	18.711	2.8155	0.0000	0.0000	107.71	4.3535	0.0000	0.0000
12:09	20.788	8.1581	0.8482	0.0000	0.0000	11.245	0.5878	0.0000	0.0000
12:09	20.191	5.8882	0.2541	0.0000	0.0000	1.8888	0.3515	0.0000	0.0000
12:10	20.187	5.8805	0.1574	0.0000	0.0000	-0.488	0.3182	0.0000	0.0000
12:10	20.618	5.8824	-0.029	0.0000	0.0000	0.0000	0.3087	0.0000	0.0000

14.85 28.6 4.70

W

STACK NO. 1
POINT NO. 1 ~~[illegible]~~ 7(01

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
12:14	18.547	6.2466	0.8012	0.0000	0.0000	40.881	1.1680	0.0000	0.0000
12:14	18.601	6.3480	0.7478	0.0000	0.0000	44.894	1.2068	0.0000	0.0000
12:15	18.638	6.8060	0.8608	0.0000	0.0000	45.368	1.1770	0.0000	0.0000
12:15	18.486	6.8810	0.8444	0.0000	0.0000	43.810	1.2221	0.0000	0.0000
12:16	18.381	6.9834	1.0477	0.0000	0.0000	44.734	1.3046	0.0000	0.0000
12:16	18.396	7.1833	1.0133	0.0000	0.0000	45.494	1.3088	0.0000	0.0000
12:17	18.448	7.2787	0.8836	0.0000	0.0000	45.368	1.2687	0.0000	0.0000
12:17	18.342	7.4243	0.8836	0.0000	0.0000	45.108	1.3478	0.0000	0.0000
12:18	18.408	7.6218	0.8864	0.0000	0.0000	50.732	1.2688	0.0000	0.0000
12:18	18.360	7.6218	1.0626	0.0000	0.0000	45.808	1.3377	0.0000	0.0000
12:19	18.437	7.7316	0.8214	0.0000	0.0000	50.867	1.2848	0.0000	0.0000
12:19	18.408	7.8338	0.8061	0.0000	0.0000	52.492	1.2886	0.0000	0.0000
12:20	18.336	8.1411	1.0133	0.0000	0.0000	50.103	1.3284	0.0000	0.0000
12:20	18.481	8.1823	0.8284	0.0000	0.0000	52.882	1.2434	0.0000	0.0000
7 MIN AVERAGE	18.434	7.2461	0.8212	0.0000	0.0000	47.378	1.2671	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
12:22	20.223	5.1202	0.2803	0.0000	0.0000	12.120	0.6532	0.0000	0.0000
12:22	20.383	3.4306	0.0236	0.0000	0.0000	3.2488	0.7465	0.0000	0.0000
12:23	1.8180	3.4917	0.1131	0.0000	0.0000	-1.[illegible]	15.871	0.0000	0.0000
12:23	0.4808	3.8913	0.0639	0.0000	0.0000	-0.874	17.373	0.0000	0.0000
12:24	0.8820	4.0448	-0.888	0.0000	0.0000	2.8888	17.422	0.0000	0.0000
12:24	0.3410	4.1473	0.0823	0.0000	0.0000	-2.824	17.778	0.0000	0.0000
12:25	0.2872	4.6067	-0.048	0.0000	0.0000	0.2488	17.840	0.0000	0.0000
12:25	0.2211	4.8130	-0.008	0.0000	0.0000	1.1248	17.880	0.0000	0.0000
12:26	0.1167	4.6684	0.0188	0.0000	0.0000	2.8888	17.878	0.0000	0.0000
12:26	0.4331	2.7648	0.00[illegible]	0.0000	0.0000	-0.888	17.887	0.0000	0.0000
12:27	18.887	2.8873	0.[illegible]803	0.0000	0.0000	8.8888	1.0884	0.0000	0.0000
12:27	18.808	4.3000	0.6708	0.0000	0.0000	27.116	0.8468	0.0000	0.0000
12:28	20.382	1.7[illegible]08	0.2262	0.0000	0.0000	2.8740	0.4036	0.0000	0.0000
12:28	20.454	1.8888	0.0296	0.0000	0.0000	8.8888	0.3864	0.0000	0.0000
7 MIN AVERAGE	9.8335	3.8875	0.1153	0.0000	0.0000	4.7761	10.347	0.0000	0.0000

STACK NO. 1
POINT NO. 3 7101

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX1SO PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
12:55	15.027	13.725	0.0042	0.0000	0.0000	125.29	1.2163	0.0000	0.0000
12:56	15.052	14.135	0.0042	0.0000	0.0000	723.15	1.1864	0.0000	0.0000
12:57	15.058	15.150	0.7825	0.0000	0.0000	129.53	1.1967	0.0000	0.0000
12:57	15.114	15.252	0.7257	0.0000	0.0000	128.15	1.1855	0.0000	0.0000
12:58	15.051	14.235	0.5595	0.0000	0.0000	126.19	1.1825	0.0000	0.0000
12:58	15.021	13.355	0.5401	0.0000	0.0000	118.53	1.2153	0.0000	0.0000
12:58	15.073	13.317	0.7779	0.0000	0.0000	121.55	1.1734	0.0000	0.0000
12:59	15.035	13.113	0.7532	0.0000	0.0000	127.33	1.2053	0.0000	0.0000
13:00	15.013	14.197	0.0011	0.0000	0.0000	124.05	1.2212	0.0000	0.0000
13:00	15.035	14.235	0.0050	0.0000	0.0000	124.26	1.1825	0.0000	0.0000
13:01	15.025	13.521	0.0053	0.0000	0.0000	125.25	1.0000	0.0000	0.0000
13:01	15.035	12.355	0.0056	0.0000	0.0000	123.15	1.2276	0.0000	0.0000
13:02	15.001	13.377	0.0547	0.0000	0.0000	121.05	1.2222	0.0000	0.0000
13:02	15.070	13.313	1.0257	0.0000	0.0000	127.70	1.2187	0.0000	0.0000
Y MIN AVERAGE	15.011 16.011	14.121 14.421	0.0017	0.0000	0.0000	125.27	1.2257	0.0000	0.0000

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX1SO PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR

7101 14.098 4.147

STACK NO. 1
POINT NO. 3 7102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:14	7.1242	41.217	0.5312	0.0000	0.0000	15.984	11.811	0.0000	0.0000
15:14	8.8136	37.531	0.2468	0.0000	0.0000	7.3725	12.178	0.0000	0.0000
15:15	8.7824	34.817	0.3088	0.0000	0.0000	3.8237	12.188	0.0000	0.0000
15:15	13.020	22.838	0.2262	0.0000	0.0000	13.745	1.3558	0.0000	0.0000
15:16	15.562	42.293	3.3302	0.0000	0.0000	123.81	3.7580	0.0000	0.0000
15:16	16.071	46.774	4.5560	0.0000	0.0000	215.42	5.0384	0.0000	0.0000
15:17	16.062	55.400	4.4418	0.0000	0.0000	211.82	5.0474	0.0000	0.0000
15:17	14.886	51.565	4.5583	0.0000	0.0000	213.57	5.1058	0.0000	0.0000
15:18	16.013	53.388	4.4312	0.0000	0.0000	213.82	5.0888	0.0000	0.0000
15:18	16.062	53.800	4.5255	0.0000	0.0000	205.83	5.0474	0.0000	0.0000
15:19	16.022	53.388	4.4271	0.0000	0.0000	205.90	5.0818	0.0000	0.0000
15:19	16.044	52.773	4.4452	0.0000	0.0000	203.90	5.0833	0.0000	0.0000
15:20	16.055	52.773	4.4517	0.0000	0.0000	208.80	5.0527	0.0000	0.0000
15:20	16.001	53.480	4.4517	0.0000	0.0000	210.42	5.1005	0.0000	0.0000

7 MIN

AVERAGE	13.708	51.520	~~3.2105~~	0.0000	0.0000	161.88	8.2173	0.0000	0.0000
	16.0	53.5	4.45						

STACK NO. 1
POINT NO. 4

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:22	16.044	55.060	4.5008	0.0000	0.0000	210.55	5.0533	0.0000	0.0000
15:22	16.015	55.682	4.5560	0.0000	0.0000	207.80	5.0072	0.0000	0.0000
15:23	16.026	55.262	4.5107	0.0000	0.0000	207.30	5.0782	0.0000	0.0000
15:23	16.097	55.511	4.8832	0.0000	0.0000	207.30	5.0251	0.0000	0.0000
15:24	14.762	55.555	4.5107	0.0000	0.0000	204.75	5.0757	0.0000	0.0000
15:24	16.448	55.582	4.8337	0.0000	0.0000	203.57	4.7752	0.0000	0.0000
15:25	16.440	55.818	4.4452	0.0000	0.0000	206.55	4.7205	0.0000	0.0000
15:25	16.434	55.818	4.4753	0.0000	0.0000	203.82	4.7253	0.0000	0.0000
15:26	16.415	55.767	4.5452	0.0000	0.0000	205.55	4.7778	0.0000	0.0000
15:26	16.455	55.450	4.5545	0.0000	0.0000	207.30	4.7073	0.0000	0.0000
15:27	16.405	55.848	4.5180	0.0000	0.0000	206.83	4.7482	0.0000	0.0000
15:27	16.514	55.548	4.5588	0.0000	0.0000	203.50	4.5555	0.0000	0.0000
15:28	16.434	55.848	4.4555	0.0000	0.0000	206.85	4.7255	0.0000	0.0000
15:28	16.403	55.358	4.4551	0.0000	0.0000	203.30	4.7525	0.0000	0.0000

7 MIN

AVERAGE	16.277	55.405	4.5298	0.0000	0.0000	205.85	4.8820	0.0000	0.0000

88.4 / 46789 /

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STACK NO. 1
POINT NO. 7 7102

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TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
15:45	15.288	87.228	4.8288	0.0000	0.0000	212.66	4.8428	0.0000	0.0000
15:46	15.284	87.484	4.7178	0.0000	0.0000	216.82	4.8888	0.0000	0.0000
15:47	15.328	87.484	4.7618	0.0000	0.0000	218.42	4.8218	0.0000	0.0000
15:47	15.288	87.588	4.8881	0.0000	0.0000	214.17	4.8884	0.0000	0.0000
15:48	15.328	87.282	4.7888	0.0000	0.0000	208.88	4.8188	0.0000	0.0000
15:48	15.284	87.282	4.8881	0.0000	0.0000	208.84	4.8888	0.0000	0.0000
15:48	15.218	87.884	4.7784	0.0000	0.0000	218.88	4.8172	0.0000	0.0000
15:48	15.298	87.842	4.8482	0.0000	0.0000	207.82	4.8481	0.0000	0.0000
15:58	15.282	88.888	4.8884	0.0000	0.0000	207.82	4.8747	0.0000	0.0000
15:58	15.298	87.842	4.8188	0.0000	0.0000	207.82	4.8888	0.0000	0.0000
15:51	15.288	87.888	4.7784	0.0000	0.0000	218.42	4.8278	0.0000	0.0000
15:51	15.787	87.484	4.7714	0.0000	0.0000	216.42	4.8888	0.0000	0.0000
15:52	15.288	87.888	4.8888	0.0000	0.0000	218.88	4.8278	0.0000	0.0000
15:52	15.288	88.688	4.8888	0.0000	0.0000	228.64	4.8728	0.0000	0.0000
Y MIN AVERAGE	15.287	87.784	4.7888	0.0000	0.0000	212.88	4.8788	0.0000	0.0000

87.71 / 4.7883 /

STACK NO. 1
POINT NO. 8

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
15:54	15.154	88.888	4.8482	0.0000	0.0000	228.17	4.8877	0.0000	0.0000
15:54	15.888	88.281	4.8188	0.0000	0.0000	228.28	5.8181	0.0000	0.0000
15:55	15.841	88.282	4.8884	0.0000	0.0000	241.87	5.8738	0.0000	0.0000
15:55	15.814	88.388	4.8882	0.0000	0.0000	237.78	5.8888	0.0000	0.0000
15:55	15.847	88.188	4.8188	0.0000	0.0000	238.64	5.8888	0.0000	0.0000
15:55	15.111	88.818	4.8888	0.0000	0.0000	242.81	5.8818	0.0000	0.0000
15:57	15.814	88.884	4.8884	0.0000	0.0000	248.64	5.8888	0.0000	0.0000
15:57	15.844	88.787	5.8128	0.0000	0.0000	254.18	5.8884	0.0000	0.0000
15:58	15.838	88.787	4.8884	0.0000	0.0000	251.84	5.8888	0.0000	0.0000
15:58	15.868	78.147	5.8718	0.0000	0.0000	258.88	5.8838	0.0000	0.0000
15:58	14.881	78.184	5.8878	0.0000	0.0000	268.41	5.1858	0.0000	0.0000
15:58	14.888	78.888	4.8888	0.0000	0.0000	267.81	5.1882	0.0000	0.0000
15:88	15.847	71.118	5.8888	0.0000	0.0000	258.81	5.8888	0.0000	0.0000
15:88	14.888	71.278	5.8882	0.0000	0.0000	258.88	5.1858	0.0000	0.0000
Y MIN AVERAGE	15.834	88.188	4.8884	0.0000	0.0000	247.87	5.8718	0.0000	0.0000

88.49 / 4.9787 /

STACK NO. 1
POINT NO. 13 7107

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:01	14.852	84.873	5.0751	0.0000	0.0000	241.26	5.1430	0.0000	0.0000
15:01	14.898	72.758	5.0000	0.0000	0.0000	208.51	5.1885	0.0000	0.0000
15:06	14.875	75.617	4.9535	0.0000	0.0000	220.84	5.2084	0.0000	0.0000
15:06	15.013	73.718	5.0515	0.0000	0.0000	228.54	5.0888	0.0000	0.0000
15:06	15.028	80.000	4.9000	0.0000	0.0000	215.75	5.0765	0.0000	0.0000
15:06	15.170	80.513	4.9087	0.0000	0.0000	208.14	4.9614	0.0000	0.0000
15:07	15.183	80.582	4.8100	0.0000	0.0000	200.48	4.9084	0.0000	0.0000
15:07	15.211	80.582	4.8918	0.0000	0.0000	208.77	4.9022	0.0000	0.0000
15:08	15.271	80.181	4.7819	0.0000	0.0000	200.80	4.8887	0.0000	0.0000
15:09	15.408	78.812	4.7714	0.0000	0.0000	202.81	4.7488	0.0000	0.0000
15:09	15.416	77.888	4.8107	0.0000	0.0000	218.15	4.7418	0.0000	0.0000
15:09	15.587	78.188	4.8845	0.0000	0.0000	225.01	4.8881	0.0000	0.0000
15:10	15.738	77.887	4.8918	0.0000	0.0000	214.17	4.9520	0.0000	0.0000
15:10	15.775	78.872	4.8858	0.0000	0.0000	198.58	4.9311	0.0000	0.0000
Y MIN									
AVERAGE	15.255	78.827	4.7707	0.0000	0.0000	221.14	4.8888	0.0000	0.0000

78.83 / 4.707 /

STACK NO. 1
POINT NO. 14

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
15:42	15.120	88.888	5.0882	0.0000	0.0000	171.18	4.1288	0.0000	0.0000
15:42	15.205	88.888	5.0156	0.0000	0.0000	160.19	4.0582	0.0000	0.0000
15:43	15.288	88.180	5.0844	0.0000	0.0000	151.18	5.0081	0.0000	0.0000
15:43	15.388	83.288	5.0157	0.0000	0.0000	148.07	5.0716	0.0000	0.0000
15:44	15.388	81.884	5.0101	0.0000	0.0000	138.78	5.0211	0.0000	0.0000
15:44	15.414	81.081	5.0518	0.0000	0.0000	134.88	5.0786	0.0000	0.0000
15:45	15.488	80.111	5.0847	0.0000	0.0000	128.33	5.0881	0.0000	0.0000
15:45	15.554	88.188	5.7138	0.0000	0.0000	124.78	5.7484	0.0000	0.0000
15:45	15.481	88.888	5.0881	0.0000	0.0000	127.88	5.0121	0.0000	0.0000
15:48	15.524	88.877	5.0881	0.0000	0.0000	121.45	5.7828	0.0000	0.0000
15:47	15.577	87.888	5.7828	0.0000	0.0000	128.88	5.7878	0.0000	0.0000
15:47	15.588	88.888	5.8188	0.0000	0.0000	118.44	5.7218	0.0000	0.0000
15:48	15.828	88.178	5.7181	0.0000	0.0000	112.71	5.8878	0.0000	0.0000
15:48	15.888	88.888	5.7188	0.0000	0.0000	188.88	5.7218	0.0000	0.0000
Y MIN									
AVERAGE	15.488	88.781	5.8881	0.0000	0.0000	132.78	5.8878	0.0000	0.0000

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80.75 / 7.8031 /

STACK NO. 1
POINT NO. 5 7(0 z

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TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
10:00	14.721	48.151	4.0502	0.0000	0.0000	256.02	5.0422	0.0000	0.0000
10:05	14.529	49.051	4.7507	0.0000	0.0000	255.75	5.4219	0.0000	0.0000
10:10	14.740	48.717	4.0545	0.0000	0.0000	257.75	5.0253	0.0000	0.0000
10:15	14.760	50.021	4.0007	0.0000	0.0000	255.57	5.0016	0.0000	0.0000
10:20	14.715	50.515	4.0747	0.0000	0.0000	256.77	5.0775	0.0000	0.0000
10:25	14.772	51.255	4.0250	0.0000	0.0000	257.77	5.0502	0.0000	0.0000
10:31	14.5550	51.500	4.7754	0.0000	0.0000	257.27	5.0054	0.0000	0.0000
10:37	14.715	51.515	4.0000	0.0000	0.0000	257.52	5.0775	0.0000	0.0000
10:42	14.570	52.151	4.0152	0.0000	0.0000	255.77	5.1000	0.0000	0.0000
10:42	14.555	52.750	5.0150	0.0000	0.0000	255.27	5.1515	0.0000	0.0000
10:52	14.535	53.045	4.5100	0.0000	0.0000	257.25	5.1150	0.0000	0.0000
10:48	14.575	53.352	4.0025	0.0000	0.0000	257.25	5.1552	0.0000	0.0000
10:41	14.515	53.557	4.0014	0.0000	0.0000	257.57	5.1525	0.0000	0.0000
10:44	14.555	54.171	4.0141	0.0000	0.0000	256.75	5.1257	0.0000	0.0000
7 MIN AVERAGE	14.515	51.551	4.5570	0.0000	0.0000	256.75	5.1055	0.0000	0.0000

61.681 4.887

STACK NO. 1
POINT NO. 10

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
10:45	14.447	55.555	5.0515	0.0000	0.0000	152.51	5.5715	0.0000	0.0000
10:45	14.255	57.502	5.0552	0.0000	0.0000	155.55	5.7151	0.0000	0.0000
10:47	14.251	58.472	5.1105	0.0000	0.0000	172.75	5.7115	0.0000	0.0000
10:47	14.242	59.105	5.1757	0.0000	0.0000	157.55	5.7555	0.0000	0.0000
10:52	14.105	59.701	5.1715	0.0000	0.0000	501.55	5.7555	0.0000	0.0000
10:52	14.151	50.215	5.1501	0.0000	0.0000	501.55	5.5571	0.0000	0.0000
10:58	14.157	50.525	5.2551	0.0000	0.0000	505.25	5.5011	0.0000	0.0000
10:58	14.141	51.155	5.2555	0.0000	0.0000	512.52	5.5115	0.0000	0.0000
11:50	14.055	51.495	5.5121	0.0000	0.0000	520.15	5.5157	0.0000	0.0000
11:50	14.150	52.057	5.5515	0.0000	0.0000	517.51	5.5555	0.0000	0.0000
11:51	14.125	52.155	5.2551	0.0000	0.0000	515.52	5.5515	0.0000	0.0000
11:51	14.075	52.057	5.2575	0.0000	0.0000	522.57	5.5501	0.0000	0.0000
11:52	14.202	52.415	5.2552	0.0000	0.0000	525.52	5.7512	0.0000	0.0000
11:52	14.115	53.155	5.2210	0.0000	0.0000	522.55	5.5555	0.0000	0.0000
7 MIN AVERAGE	14.155	50.521	5.2124	0.0000	0.0000	501.52	5.5051	0.0000	0.0000

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STACK NO. 1
POINT NO. 15 7|03

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:26	15.488	55.144	4.1554	0.0000	0.0000	187.55	4.5702	0.0000	0.0000
18:26	15.515	55.451	4.1389	0.0000	0.0000	193.89	4.5582	0.0000	0.0000
18:27	15.558	55.185	4.1713	0.0000	0.0000	183.43	4.5081	0.0000	0.0000
18:27	15.722	54.795	4.0385	0.0000	0.0000	181.19	4.4823	0.0000	0.0000
18:28	15.834	54.019	4.1910	0.0000	0.0000	171.81	4.5533	0.0000	0.0000
18:28	15.598	53.913	3.9844	0.0000	0.0000	159.55	4.5055	0.0000	0.0000
18:29	15.422	53.147	4.2548	0.0000	0.0000	258.29	4.7388	0.0000	0.0000
18:29	14.828	41.827	4.9782	0.0000	0.0000	330.37	5.4248	0.0000	0.0000
18:30	15.293	34.512	4.7718	0.0000	0.0000	232.81	4.9551	0.0000	0.0000
18:30	15.597	33.598	3.9204	0.0000	0.0000	174.81	4.5241	0.0000	0.0000
18:31	15.831	34.583	4.0531	0.0000	0.0000	155.32	4.5558	0.0000	0.0000
18:31	15.760	35.073	3.9352	0.0000	0.0000	153.44	4.4523	0.0000	0.0000
18:32	15.798	35.124	3.8487	0.0000	0.0000	153.19	4.4125	0.0000	0.0000
18:32	15.772	35.124	3.8417	0.0000	0.0000	149.32	4.4337	0.0000	0.0000
7 MIN 15 AVERAGE	15.518	46.088	4.1098	0.0000	0.0000	187.13	4.5255	0.0000	0.0000

46.088 4.109

STACK NO. 1
POINT NO. 15

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:34	15.892	33.742	3.9122	0.0000	0.0000	140.20	4.3301	0.0000	0.0000
18:34	15.824	33.838	3.8417	0.0000	0.0000	138.78	4.3355	0.0000	0.0000
18:35	15.892	33.435	3.7434	0.0000	0.0000	138.78	4.3301	0.0000	0.0000
18:35	15.998	32.971	3.7778	0.0000	0.0000	135.92	4.3328	0.0000	0.0000
18:36	15.858	32.358	3.9782	0.0000	0.0000	137.57	4.3594	0.0000	0.0000
18:36	15.828	32.103	3.7434	0.0000	0.0000	134.45	4.2883	0.0000	0.0000
18:37	15.858	31.850	3.7827	0.0000	0.0000	134.57	4.3594	0.0000	0.0000
18:37	16.002	31.542	3.8843	0.0000	0.0000	127.33	4.2345	0.0000	0.0000
18:38	15.988	31.488	3.9024	0.0000	0.0000	127.33	4.2537	0.0000	0.0000
18:38	16.021	31.433	3.5808	0.0000	0.0000	127.45	4.2188	0.0000	0.0000
18:39	15.980	31.335	3.7532	0.0000	0.0000	128.70	4.2451	0.0000	0.0000
18:39	15.855	31.130	3.7927	0.0000	0.0000	123.95	4.2744	0.0000	0.0000
18:40	15.888	30.925	3.7088	0.0000	0.0000	124.33	4.2372	0.0000	0.0000
18:40	16.122	30.974	3.5072	0.0000	0.0000	122.28	4.1388	0.0000	0.0000
7 MIN 15 AVERAGE	15.913	32.070	3.7434	0.0000	0.0000	131.52	4.2858	0.0000	0.0000

32.07 3.7434

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STACK NO. 1
POINT NO. 1 7103

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
20:45	14.884	15.002	4.8600	0.0000	0.0000	217.05	5.2550	0.0000	0.0000
20:46	15.264	16.591	4.3778	0.0000	0.0000	201.55	4.9527	0.0000	0.0000
20:47	15.884	17.255	4.4418	0.0000	0.0000	202.82	5.0258	0.0000	0.0000
20:47	15.134	18.200	4.4271	0.0000	0.0000	202.42	4.9431	0.0000	0.0000
20:48	16.200	21.512	4.3740	0.0000	0.0000	200.29	4.9262	0.0000	0.0000
20:48	16.124	22.784	4.4554	0.0000	0.0000	201.01	4.9842	0.0000	0.0000
20:49	16.268	23.850	4.2943	0.0000	0.0000	202.42	4.9774	0.0000	0.0000
20:49	15.200	24.844	4.8885	0.0000	0.0000	210.65	4.9275	0.0000	0.0000
20:50	16.267	25.285	4.4617	0.0000	0.0000	217.42	4.9880	0.0000	0.0000
20:50	16.458	27.761	4.8885	0.0000	0.0000	212.82	4.7817	0.0000	0.0000
20:51	16.306	28.878	4.8827	0.0000	0.0000	211.82	4.8376	0.0000	0.0000
20:51	16.426	30.250	4.1888	0.0000	0.0000	208.82	4.7888	0.0000	0.0000
20:52	16.452	30.870	4.4484	0.0000	0.0000	201.88	4.7828	0.0000	0.0000
20:52	16.581	31.878	4.1881	0.0000	0.0000	202.88	4.8878	0.0000	0.0000
Y MIN AVERAGE	16.153	24.821	4.8219	0.0000	0.0000	217.79	4.8888	0.0000	0.0000

24.021-4.3248

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
20:54	16.881	31.881	4.2187	0.0000	0.0000	193.05	4.8888	0.0000	0.0000
20:54	16.496	31.745	4.2461	0.0000	0.0000	192.48	4.8728	0.0000	0.0000
20:55	16.821	32.154	4.1488	0.0000	0.0000	188.81	4.8888	0.0000	0.0000
20:55	16.888	32.154	4.2182	0.0000	0.0000	181.81	4.8782	0.0000	0.0000
20:56	16.887	32.418	4.8811	0.0000	0.0000	186.48	4.8881	0.0000	0.0000
20:56	16.848	32.482	4.8748	0.0000	0.0000	181.48	4.8488	0.0000	0.0000
20:57	16.741	32.884	4.0885	0.0000	0.0000	177.85	4.4888	0.0000	0.0000
20:57	16.758	32.718	4.0882	0.0000	0.0000	172.88	4.4444	0.0000	0.0000
20:58	16.884	32.718	4.8881	0.0000	0.0000	158.87	4.2778	0.0000	0.0000
20:58	16.818	32.888	4.8882	0.0000	0.0000	144.48	4.0884	0.0000	0.0000
20:59	16.848	32.862	4.2884	0.0000	0.0000	137.78	4.7888	0.0000	0.0000
20:59	16.818	32.881	4.8858	0.0000	0.0000	134.87	4.7888	0.0000	0.0000
21:00	16.828	31.888	4.1841	0.0000	0.0000	128.88	4.8884	0.0000	0.0000
21:00	16.758	31.888	4.8448	0.0000	0.0000	188.88	4.8818	0.0000	0.0000
Y MIN AVERAGE	16.882	32.181	4.7881	0.0000	0.0000	185.71	4.2828	0.0000	0.0000

32.181-7-X01

Holly Sugar, Sydney, MT

Stack ID - Name = North Pulp Dryer - East Date(s) = 10-23-92

Run No. ID:	SL01	SL02	SL03	04	Avg.
Time, Start:	1024	1632	2002		
End:	1238	1827	2230		
Results, O_2 (%, dry)	17.085	15.358	16.591		
CO_2 (%, dry)	4.078	4.883	4.255		
SO_2 (ppm, dry)	34.089	70.956	39.928		
CO (ppm, dry)					
% H_2O (%)	38.68	39.06	see run sheets		
Vm, std (dscf)	46.201	37.792			
Isokinetic (%)	103.67	98.35			
Zero Drift, Post Test	—	—	—	—	—
O_2 cal zero					
drift, %					
CO_2 cal zero					
drift, %					
SO_2 cal zero					
drift, %					
Upscal Drift, Post Test	—	—	—	—	—
O_2 cal, span					
drift, %					
CO_2 cal, span					
drift, %					
SO_2 cal, span					
drift, %					
Spans O_2					
CO_2					
SO_2					

7000 series Cats

Sec

4.4.149

E

STACK NO. 1
POINT NO. 1 8101

TIME	O2	SO2 #1	SO2 #2	NOX	NOX(SO)	CO	CO2	I-AMP	STEAM
24 HR.	%	PPM @	PPM @	PPM @	PPM @	PPM @	%	%	LB/HR
10:25	16.214	16.888	3.2614	0.0000	0.0000	188.81	4.0617	0.0000	0.0000
10:26	16.164	16.874	3.2178	0.0000	0.0000	174.81	4.1488	0.0000	0.0000
10:27	16.224	16.781	3.0085	0.0000	0.0000	145.42	4.0442	0.0000	0.0000
10:28	16.411	16.125	2.8874	0.0000	0.0000	137.78	3.8812	0.0000	0.0000
10:29	16.471	17.884	2.8888	0.0000	0.0000	145.42	3.8167	0.0000	0.0000
10:29	16.481	15.888	2.8478	0.0000	0.0000	142.85	3.8121	0.0000	0.0000
10:28	16.481	16.485	2.8245	0.0000	0.0000	141.84	3.8487	0.0000	0.0000
10:28	16.517	16.888	2.7841	0.0000	0.0000	127.58	3.7845	0.0000	0.0000
10:28	17.222	15.585	2.2874	0.0000	0.0000	88.881	3.1285	0.0000	0.0000
10:28	16.485	14.888	1.8478	0.0000	0.0000	67.248	2.1488	0.0000	0.0000
10:48	16.887	13.885	0.8587	0.0000	0.0000	34.248	1.2478	0.0000	0.0000
10:49	16.178	15.258	1.4484	0.0000	0.0000	74.848	1.5484	0.0000	0.0000
10:41	15.888	27.147	5.2548	0.0000	0.0000	244.17	5.0154	0.0000	0.0000
10:41	15.151	28.878	4.8141	0.0000	0.0000	241.28	4.8784	0.0000	0.0000
Y MIN									
AVERAGE	16.228	16.888	2.8448	0.0000	0.0000	144.58	3.5848	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME	O2	SO2 #1	SO2 #2	NOX	NOX(SO)	CO	CO2	I-AMP	STEAM
24 HR.	%	PPM @	PPM @	PPM @	PPM @	PPM @	%	%	LB/HR

STACK NO. 1
POINT NO. 1

E

TIME 24 HR.	O2 % D	SO2 #1 PPM D	SO2 #2 PPM D	NOX PPM D	NOX ISO PPM D	CO PPM D	CO2 % D	I-AMP %	STEAM LB/HR
11:04	15.417	54.849	4.8758	0.0000	0.0000	177.81	4.2758	0.0000	0.0000
11:04	15.484	55.258	4.8188	0.0000	0.0000	180.81	4.2688	0.0000	0.0000
11:04	15.258	55.847	4.8874	0.0000	0.0000	174.08	4.2774	0.0000	0.0000
11:04	15.487	54.881	4.8428	0.0000	0.0000	177.81	4.2874	0.0000	0.0000
11:05	15.488	54.881	4.8771	0.0000	0.0000	174.81	4.2887	0.0000	0.0000
11:05	15.282	55.451	4.8847	0.0000	0.0000	180.81	4.2747	0.0000	0.0000
11:05	15.428	55.088	4.8258	0.0000	0.0000	179.81	4.2842	0.0000	0.0000
11:05	15.218	55.787	4.8258	0.0000	0.0000	180.81	4.8118	0.0000	0.0000
11:07	15.288	57.487	4.8648	0.0000	0.0000	180.84	4.8282	0.0000	0.0000
11:07	15.271	55.218	4.8248	0.0000	0.0000	180.88	4.8887	0.0000	0.0000
11:08	15.441	55.748	4.8874	0.0000	0.0000	171.88	4.2788	0.0000	0.0000
11:08	15.848	57.888	4.7288	0.0000	0.0000	184.87	4.8848	0.0000	0.0000
11:08	15.888	48.488	4.2748	0.0000	0.0000	180.88	4.8144	0.0000	0.0000
11:08	15.488	57.748	4.4878	0.0000	0.0000	180.81	4.8878	0.0000	0.0000
Y MIN AVERAGE	15.484	54.881	4.1787	0.0000	0.0000	174.88	4.2887	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 % D	SO2 #1 PPM D	SO2 #2 PPM D	NOX PPM D	NOX ISO PPM D	CO PPM D	CO2 % D	I-AMP %	STEAM LB/HR
11:11	15.148	57.848	4.7774	0.0000	0.0000	184.48	4.8818	0.0000	0.0000
11:11	15.288	57.448	4.8888	0.0000	0.0000	181.88	4.8778	0.0000	0.0000
11:12	15.178	58.218	4.8848	0.0000	0.0000	188.48	4.8481	0.0000	0.0000
11:12	15.184	58.828	4.8788	0.0000	0.0000	184.88	4.8887	0.0000	0.0000
11:13	15.888	58.887	4.7124	0.0000	0.0000	188.41	4.8158	0.0000	0.0000
11:13	15.187	58.848	4.8488	0.0000	0.0000	184.88	4.8858	0.0000	0.0000
11:14	15.187	58.848	4.8844	0.0000	0.0000	188.88	4.8878	0.0000	0.0000
11:14	15.888	58.548	4.8878	0.0000	0.0000	187.88	4.8158	0.0000	0.0000
11:15	15.858	58.787	4.8878	0.0000	0.0000	188.88	4.8588	0.0000	0.0000
11:15	15.884	58.488	4.8488	0.0000	0.0000	188.84	4.8788	0.0000	0.0000
11:18	15.827	58.787	4.8844	0.0000	0.0000	188.88	4.8818	0.0000	0.0000
11:18	15.841	58.787	4.8881	0.0000	0.0000	188.48	4.8888	0.0000	0.0000
11:17	15.887	58.787	4.8848	0.0000	0.0000	188.18	4.8781	0.0000	0.0000
11:17	15.121	58.887	4.8888	0.0000	0.0000	188.18	4.8888	0.0000	0.0000
Y MIN AVERAGE	15.118	58.888	4.8487	0.0000	0.0000	188.87	4.8888	0.0000	0.0000

STACK NO. 1
POINT NO. 7

8101

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
11:51	16.642	16.101	4.7059	0.0000	0.0000	161.67	1.5103	0.0000	0.0000
11:51	16.615	16.062	4.6510	0.0000	0.0000	151.07	1.5552	0.0000	0.0000
11:52	16.637	16.166	4.7376	0.0000	0.0000	152.55	1.5505	0.0000	0.0000
11:52	16.603	16.111	4.8166	0.0000	0.0000	150.75	1.5782	0.0000	0.0000
11:53	16.615	16.557	4.8554	0.0000	0.0000	151.02	1.5552	0.0000	0.0000
11:53	16.676	16.555	4.7530	0.0000	0.0000	147.20	1.5037	0.0000	0.0000
11:54	16.601	16.500	4.6510	0.0000	0.0000	145.11	1.5543	0.0000	0.0000
11:54	16.701	16.207	4.5999	0.0000	0.0000	148.32	1.4922	0.0000	0.0000
11:55	16.615	16.719	4.7025	0.0000	0.0000	143.20	1.5555	0.0000	0.0000
11:55	16.720	16.411	4.7247	0.0000	0.0000	140.87	1.4755	0.0000	0.0000
11:55	16.595	16.154	4.5555	0.0000	0.0000	137.52	1.5001	0.0000	0.0000
11:56	16.707	16.255	4.7051	0.0000	0.0000	138.20	1.4555	0.0000	0.0000
11:57	16.595	16.555	4.7542	0.0000	0.0000	139.67	1.5001	0.0000	0.0000
11:57	16.741	16.154	4.5759	0.0000	0.0000	138.57	1.4553	0.0000	0.0000
Y MIN									
AVERAGE	16.619	16.352	4.5753	0.0000	0.0000	146.59	1.5102	0.0000	0.0000

STACK NO. 1
POINT NO. 8

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
11:58	0.5522	16.072	-0.000	0.0000	0.0000	0.1555	17.555	0.0000	0.0000
11:58	0.4701	16.153	0.1101	0.0000	0.0000	-1.555	17.552	0.0000	0.0000
12:00	0.2101	16.557	0.0005	0.0000	0.0000	-0.124	17.554	0.0000	0.0000
12:00	0.1525	14.551	0.1150	0.0000	0.0000	-0.521	17.555	0.0000	0.0000
12:01	0.1751	14.545	0.0005	0.0000	0.0000	-0.245	17.525	0.0000	0.0000
12:01	0.0021	14.745	0.1521	0.0000	0.0000	-0.555	17.552	0.0000	0.0000
12:02	0.1557	14.557	0.1425	0.0000	0.0000	0.7457	17.554	0.0000	0.0000
12:02	0.1555	14.155	-0.052	0.0000	0.0000	-2.455	17.525	0.0000	0.0000
12:03	0.1011	10.555	0.1427	0.0000	0.0000	22.745	17.551	0.0000	0.0000
12:03	15.541	17.050	4.7257	0.0000	0.0000	139.20	1.5555	0.0000	0.0000
12:04	15.552	15.545	4.7551	0.0000	0.0000	142.75	1.5575	0.0000	0.0000
12:04	15.710	15.751	4.5555	0.0000	0.0000	137.55	1.4555	0.0000	0.0000
12:05	15.551	15.252	4.7155	0.0000	0.0000	139.45	1.5575	0.0000	0.0000
12:05	15.155	15.745	4.0575	0.0000	0.0000	152.52	1.7047	0.0000	0.0000
Y MIN									
AVERAGE	5.7155	15.555	1.1415	0.0000	0.0000	52.555	10.125	0.0000	0.0000

7101

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16.7

4.75

16.498

E

STACK NO. 1
POINT NO. 1

8161

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
12:40	15.408	28.578	4.3465	0.0000	0.0000	202.55	4.7472	0.0000	0.0000
12:40	15.517	32.257	4.2107	0.0000	0.0000	195.43	4.5542	0.0000	0.0000
12:41	15.541	35.022	4.1810	0.0000	0.0000	195.18	4.5330	0.0000	0.0000
12:41	15.488	38.558	4.2500	0.0000	0.0000	193.55	4.5781	0.0000	0.0000
12:42	15.527	43.880	4.2500	0.0000	0.0000	191.08	4.5525	0.0000	0.0000
12:42	15.551	45.801	4.0828	0.0000	0.0000	181.18	4.5250	0.0000	0.0000
12:43	15.575	48.232	4.1782	0.0000	0.0000	188.81	4.5037	0.0000	0.0000
12:43	15.543	48.580	4.0277	0.0000	0.0000	188.43	4.5453	0.0000	0.0000
12:44	15.880	48.888	4.2363	0.0000	0.0000	181.08	4.5134	0.0000	0.0000
12:44	15.732	48.358	4.2008	0.0000	0.0000	178.31	4.7523	0.0000	0.0000
12:45	15.781	48.410	4.0537	0.0000	0.0000	171.84	4.4285	0.0000	0.0000
12:45	15.882	49.873	3.9775	0.0000	0.0000	170.37	4.3823	0.0000	0.0000
12:46	15.788	50.228	3.8877	0.0000	0.0000	165.57	4.4088	0.0000	0.0000
12:46	15.842	49.845	3.2810	0.0000	0.0000	134.07	4.3725	0.0000	0.0000
7 MIN AVERAGE	15.634	44.052	4.0877	0.0000	0.0000	181.88	4.5527	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
12:48	4.8767	38.538	0.3313	0.0000	0.0000	16.388	13.773	0.0000	0.0000
12:48	5.1483	38.880	0.3835	0.0000	0.0000	12.370	13.518	0.0000	0.0000
12:49	5.3848	33.898	0.5555	0.0000	0.0000	15.244	13.407	0.0000	0.0000
12:49	7.1212	30.279	0.9323	0.0000	0.0000	38.381	11.814	0.0000	0.0000
12:50	11.277	28.525	2.1840	0.0000	0.0000	122.43	3.1321	0.0000	0.0000
12:50	13.223	18.388	0.8287	0.0000	0.0000	40.111	1.4453	0.0000	0.0000
12:51	13.337	18.502	1.8888	0.0000	0.0000	110.71	2.2758	0.0000	0.0000
12:51	15.187	37.070	3.5401	0.0000	0.0000	148.84	4.0751	0.0000	0.0000
12:52	15.844	37.428	3.8585	0.0000	0.0000	138.57	4.2850	0.0000	0.0000
12:52	15.078	41.729	3.8814	0.0000	0.0000	135.85	4.1831	0.0000	0.0000
12:53	15.035	43.875	3.7581	0.0000	0.0000	133.82	4.2053	0.0000	0.0000
12:53	15.027	44.238	3.7540	0.0000	0.0000	134.57	4.2133	0.0000	0.0000
12:54	15.021	44.085	3.8548	0.0000	0.0000	125.70	4.2188	0.0000	0.0000
12:54	15.045	43.470	3.7040	0.0000	0.0000	123.33	4.1873	0.0000	0.0000
7 MIN AVERAGE	13.558	35.578	2.9814	0.0000	0.0000	83.315	8.3478	0.0000	0.0000

17.085 34.089 4.078

STACK NO. 1
POINT NO. 1 8102

E

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX15O PPM.D	CO PPM.D	CO2 %.D	T-AMB °F	STEAM LB/HR
14:58	14.829	81.483	4.8800	0.0000	0.0000	288.03	5.4219	0.0000	0.0000
14:58	14.859	84.585	4.8885	0.0000	0.0000	288.08	5.3874	0.0000	0.0000
14:59	14.829	83.891	4.8486	0.0000	0.0000	287.80	5.4219	0.0000	0.0000
14:59	14.700	81.888	4.7885	0.0000	0.0000	287.88	5.3808	0.0000	0.0000
15:00	14.880	82.005	4.8405	0.0000	0.0000	288.08	5.3888	0.0000	0.0000
15:00	14.758	82.313	4.8338	0.0000	0.0000	272.78	5.3104	0.0000	0.0000
15:01	14.715	83.285	4.8205	0.0000	0.0000	273.70	5.3475	0.0000	0.0000
15:01	14.712	84.053	4.8830	0.0000	0.0000	274.78	5.3582	0.0000	0.0000
15:02	14.784	84.770	4.8289	0.0000	0.0000	272.88	5.3050	0.0000	0.0000
15:02	14.748	88.897	4.8535	0.0000	0.0000	277.78	5.3183	0.0000	0.0000
15:03	14.889	88.821	4.8802	0.0000	0.0000	288.03	5.3874	0.0000	0.0000
15:03	14.708	87.424	4.8190	0.0000	0.0000	287.18	5.3828	0.0000	0.0000
15:04	14.758	87.884	4.8082	0.0000	0.0000	288.08	5.3104	0.0000	0.0000
15:04	14.718	88.180	4.3385	0.0000	0.0000	288.78	5.3475	0.0000	0.0000
7 MIN AVERAGE	14.765	84.544	4.3918	0.0000	0.0000	287.98	5.3585	0.0000	0.0000

STACK NO. 1
POINT NO. 2

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX15O PPM.D	CO PPM.D	CO2 %.D	T-AMB °F	STEAM LB/HR
15:06	14.718	88.228	4.8167	0.0000	0.0000	288.18	5.3475	0.0000	0.0000
15:06	14.807	88.532	4.7821	0.0000	0.0000	284.78	5.2878	0.0000	0.0000
15:07	14.724	88.583	4.7124	0.0000	0.0000	283.83	5.3388	0.0000	0.0000
15:07	14.737	70.044	4.8043	0.0000	0.0000	283.53	5.3228	0.0000	0.0000
15:08	14.715	70.147	4.7811	0.0000	0.0000	288.28	5.3475	0.0000	0.0000
15:08	14.828	88.883	4.8482	0.0000	0.0000	248.88	5.2483	0.0000	0.0000
15:09	14.918	88.834	4.7887	0.0000	0.0000	248.04	5.2872	0.0000	0.0000
15:09	14.743	87.838	4.8834	0.0000	0.0000	245.88	5.3238	0.0000	0.0000
15:10	14.832	88.818	4.7174	0.0000	0.0000	243.64	5.2488	0.0000	0.0000
15:10	14.821	88.818	4.7076	0.0000	0.0000	234.64	5.1888	0.0000	0.0000
15:11	14.824	88.784	4.2264	0.0000	0.0000	208.08	5.1888	0.0000	0.0000
15:11	12.245	83.288	2.8188	0.0000	0.0000	82.343	7.4833	0.0000	0.0000
15:12	8.8842	88.387	1.8288	0.0000	0.0000	48.888	12.317	0.0000	0.0000
15:12	5.7048	87.141	1.2287	0.0000	0.0000	33.112	13.138	0.0000	0.0000
7 MIN AVERAGE	13.383	88.888	4.0884	0.0000	0.0000	208.73	8.4888	0.0000	0.0000

STACK NO. 1
POINT NO. 11

8102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	I-AMB "H	STEAM LB/HR
15:19	14.788	71.829	5.0517	0.0000	0.0000	449.75	5.2758	0.0000	0.0000
15:19	14.875	72.287	4.9888	0.0000	0.0000	442.00	5.2921	0.0000	0.0000
15:19	14.858	72.911	4.9877	0.0000	0.0000	449.50	5.2999	0.0000	0.0000
15:19	14.788	73.894	4.9288	0.0000	0.0000	448.00	5.2943	0.0000	0.0000
15:20	14.787	74.558	4.9995	0.0000	0.0000	451.25	5.2258	0.0000	0.0000
15:20	14.748	75.258	4.9747	0.0000	0.0000	458.52	5.2225	0.0000	0.0000
15:21	14.718	75.952	5.0517	0.0000	0.0000	455.52	5.2178	0.0000	0.0000
15:21	14.811	75.518	5.0422	0.0000	0.0000	452.52	5.1998	0.0000	0.0000
15:22	14.748	77.522	4.9141	0.0000	0.0000	455.12	5.2218	0.0000	0.0000
15:22	14.801	77.258	4.9888	0.0000	0.0000	453.25	5.1952	0.0000	0.0000
15:23	14.878	77.724	4.9258	0.0000	0.0000	450.53	5.2784	0.0000	0.0000
15:23	14.858	78.238	4.9188	0.0000	0.0000	452.75	5.2884	0.0000	0.0000
15:24	14.858	78.812	4.9185	0.0000	0.0000	457.52	5.2874	0.0000	0.0000
15:24	14.836	78.578	5.0558	0.0000	0.0000	454.12	5.1158	0.0000	0.0000
Y MIN AVERAGE	14.858	76.852	4.9888	0.0000	0.0000	452.30	5.2888	0.0000	0.0000

STACK NO. 1
POINT NO. 12

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOXISO PPM,D	CO PPM,D	CO2 %,D	I-AMB "H	STEAM LB/HR
15:25	14.838	80.287	5.0158	0.0000	0.0000	452.50	5.1148	0.0000	0.0000
15:25	14.898	80.884	4.9288	0.0000	0.0000	455.87	5.2888	0.0000	0.0000
15:27	14.858	80.888	4.9814	0.0000	0.0000	453.00	5.1882	0.0000	0.0000
15:27	14.878	81.821	4.9877	0.0000	0.0000	453.75	5.2784	0.0000	0.0000
15:28	14.881	82.248	4.9892	0.0000	0.0000	455.87	5.2782	0.0000	0.0000
15:28	14.814	82.305	4.9188	0.0000	0.0000	452.87	5.1852	0.0000	0.0000
15:28	14.748	84.128	5.1058	0.0000	0.0000	474.87	5.2218	0.0000	0.0000
15:29	14.887	84.788	5.1385	0.0000	0.0000	478.88	5.2714	0.0000	0.0000
15:30	14.721	85.105	5.1268	0.0000	0.0000	478.37	5.2422	0.0000	0.0000
15:30	14.898	85.888	5.1268	0.0000	0.0000	478.74	5.2888	0.0000	0.0000
15:31	14.841	85.531	5.0522	0.0000	0.0000	478.37	5.2118	0.0000	0.0000
15:31	14.878	87.788	5.1568	0.0000	0.0000	474.74	5.2784	0.0000	0.0000
15:32	14.888	88.477	5.1787	0.0000	0.0000	478.48	5.2884	0.0000	0.0000
15:32	15.018	88.818	4.9894	0.0000	0.0000	488.37	5.0028	0.0000	0.0000
Y MIN AVERAGE	14.888	81.872	5.0181	0.0000	0.0000	462.87	5.2814	0.0000	0.0000

STACK NO. 1
POINT NO. 9 8802 7102 W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "F	STEAM LB/HR
15:02	14.884	72.041	1.8868	0.0000	0.0000	251.15	5.1321	0.0000	0.0000
15:02	15.754	64.171	1.8823	0.0000	0.0000	282.69	4.4281	0.0000	0.0000
15:03	17.178	54.151	3.2887	0.0000	0.0000	196.85	3.2171	0.0000	0.0000
15:03	15.782	43.138	1.4124	0.0000	0.0000	241.15	1.1883	0.0000	0.0000
15:04	15.138	48.512	1.7764	0.0000	0.0000	257.47	1.8885	0.0000	0.0000
15:04	15.888	60.738	1.8818	0.0000	0.0000	282.28	5.0827	0.0000	0.0000
15:05	15.182	64.782	1.8188	0.0000	0.0000	287.41	5.0125	0.0000	0.0000
15:05	15.878	55.858	1.8885	0.0000	0.0000	251.15	5.0841	0.0000	0.0000
15:05	15.111	50.887	1.8881	0.0000	0.0000	283.64	5.0822	0.0000	0.0000
15:06	14.888	52.884	1.8885	0.0000	0.0000	283.84	5.1188	0.0000	0.0000
15:07	14.888	51.884	5.0223	0.0000	0.0000	287.64	5.1183	0.0000	0.0000
15:07	15.887	50.418	5.0025	0.0000	0.0000	253.48	5.0882	0.0000	0.0000
15:08	15.881	58.218	1.8882	0.0000	0.0000	278.78	5.0814	0.0000	0.0000
15:08	15.188	57.387	1.8188	0.0000	0.0000	272.28	5.0878	0.0000	0.0000
Y MIN AVERAGE	15.887	55.188	1.8888	0.0000	0.0000	262.88	4.8861	0.0000	0.0000

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STACK NO. 1
POINT NO. 10 8(0)2 E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "F	STEAM LB/HR
15:10	14.888	55.758	5.0128	0.0000	0.0000	274.18	5.1538	0.0000	0.0000
15:10	14.812	55.881	1.8882	0.0000	0.0000	278.28	5.1778	0.0000	0.0000
15:11	14.821	55.178	1.8881	0.0000	0.0000	276.55	5.1888	0.0000	0.0000
15:11	14.888	54.888	1.8882	0.0000	0.0000	255.58	5.1835	0.0000	0.0000
15:12	14.848	48.758	1.7764	0.0000	0.0000	288.82	5.2158	0.0000	0.0000
15:12	14.778	58.284	5.0128	0.0000	0.0000	288.82	5.2871	0.0000	0.0000
15:13	14.888	58.282	5.1818	0.0000	0.0000	318.14	5.8874	0.0000	0.0000
15:13	14.712	70.718	1.8844	0.0000	0.0000	316.14	5.8882	0.0000	0.0000
15:14	14.888	71.171	1.8878	0.0000	0.0000	318.88	5.8888	0.0000	0.0000
15:14	14.718	71.222	5.0818	0.0000	0.0000	312.51	5.8478	0.0000	0.0000
15:15	14.788	78.888	1.8882	0.0000	0.0000	317.78	5.2881	0.0000	0.0000
15:15	14.718	78.481	1.8888	0.0000	0.0000	322.14	5.8188	0.0000	0.0000
15:16	14.888	78.188	1.8141	0.0000	0.0000	324.78	5.8888	0.0000	0.0000
15:16	14.878	78.147	1.8888	0.0000	0.0000	328.18	5.8781	0.0000	0.0000
Y MIN AVERAGE	14.778	88.888	1.8282	0.0000	0.0000	301.84	5.2818	0.0000	0.0000

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STACK NO. 1
POINT NO. 6

7102

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
15:30	15.193	55.201	1.5747	0.0000	0.0000	202.55	1.5551	0.0000	0.0000
15:30	15.595	55.555	1.5550	0.0000	0.0000	207.50	1.5515	0.0000	0.0000
15:31	15.529	55.153	1.5555	0.0000	0.0000	201.73	1.5155	0.0000	0.0000
15:31	15.152	55.105	1.1551	0.0000	0.0000	202.05	1.7520	0.0000	0.0000
15:32	15.552	55.757	1.5555	0.0000	0.0000	205.05	1.7711	0.0000	0.0000
15:32	15.125	55.515	1.5551	0.0000	0.0000	205.77	1.7414	0.0000	0.0000
15:33	15.555	55.521	1.1711	0.0000	0.0000	205.13	1.7555	0.0000	0.0000
15:33	15.155	57.552	1.5125	0.0000	0.0000	207.30	1.5557	0.0000	0.0000
15:34	15.115	57.151	1.5551	0.0000	0.0000	205.12	1.7115	0.0000	0.0000
15:34	15.115	57.151	1.5751	0.0000	0.0000	211.57	1.7352	0.0000	0.0000
15:35	15.555	57.275	1.1551	0.0000	0.0000	212.17	1.7557	0.0000	0.0000
15:35	15.555	57.555	1.1511	0.0000	0.0000	215.55	1.7555	0.0000	0.0000
15:35	15.557	57.555	1.5554	0.0000	0.0000	215.55	1.7575	0.0000	0.0000
15:35	15.125	57.151	1.5512	0.0000	0.0000	215.55	1.7515	0.0000	0.0000
Y MIN AVERAGE	15.152	55.521	1.5557	0.0000	0.0000	205.75	1.7275	0.0000	0.0000

E

STACK NO. 1
POINT NO. 8

8102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
15:30	15.351	57.177	1.5551	0.0000	0.0000	215.52	1.7551	0.0000	0.0000
15:30	15.115	55.515	1.5577	0.0000	0.0000	215.12	1.7115	0.0000	0.0000
15:30	15.105	55.515	1.5557	0.0000	0.0000	211.57	1.7155	0.0000	0.0000
15:30	15.117	55.521	1.5755	0.0000	0.0000	215.12	1.5255	0.0000	0.0000
15:40	15.112	57.522	1.7515	0.0000	0.0000	215.30	1.7115	0.0000	0.0000
15:40	15.550	55.511	1.5553	0.0000	0.0000	211.52	1.7557	0.0000	0.0000
15:41	15.250	55.515	1.5525	0.0000	0.0000	215.30	1.5555	0.0000	0.0000
15:41	15.552	57.522	1.7511	0.0000	0.0000	220.17	1.7711	0.0000	0.0000
15:42	15.551	57.125	1.7555	0.0000	0.0000	217.57	1.7551	0.0000	0.0000
15:42	15.535	55.511	1.7515	0.0000	0.0000	217.05	1.5155	0.0000	0.0000
15:43	15.515	55.201	1.7155	0.0000	0.0000	211.55	1.5555	0.0000	0.0000
15:43	15.105	55.505	1.5527	0.0000	0.0000	205.55	1.7155	0.0000	0.0000
15:44	15.552	55.715	1.7555	0.0000	0.0000	212.17	1.7711	0.0000	0.0000
15:44	15.550	55.570	1.5255	0.0000	0.0000	211.55	1.7557	0.0000	0.0000
Y MIN AVERAGE	15.570	55.752	1.7177	0.0000	0.0000	215.55	1.7555	0.0000	0.0000

STACK NO. 1
POINT NO. 15 7102 W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
15:50	15.551	51.475	0.3595	0.0000	0.0000	155.55	0.5715	0.0000	0.0000
15:50	15.529	51.120	0.5751	0.0000	0.0000	151.55	0.5925	0.0000	0.0000
15:51	15.520	52.505	0.5155	0.0000	0.0000	150.95	0.7005	0.0000	0.0000
15:51	15.555	52.152	0.1541	0.0000	0.0000	95.155	0.7521	0.0000	0.0000
15:52	15.551	52.072	0.3302	0.0000	0.0000	95.217	0.5715	0.0000	0.0000
15:52	15.705	51.515	0.1035	0.0000	0.0000	92.555	0.5255	0.0000	0.0000
15:53	15.577	51.550	0.3115	0.0000	0.0000	91.512	0.7055	0.0000	0.0000
15:53	15.555	51.055	0.1157	0.0000	0.0000	95.717	0.5515	0.0000	0.0000
15:54	15.547	51.055	0.3515	0.0000	0.0000	91.717	0.5757	0.0000	0.0000
15:54	15.715	51.055	0.1155	0.0000	0.0000	95.555	0.5152	0.0000	0.0000
15:55	15.557	50.505	0.3575	0.0000	0.0000	95.015	0.5515	0.0000	0.0000
15:55	15.547	50.222	0.5171	0.0000	0.0000	95.555	0.5757	0.0000	0.0000
15:55	15.547	49.522	0.1575	0.0000	0.0000	95.051	0.5757	0.0000	0.0000
15:55	15.751	49.717	0.3151	0.0000	0.0000	95.725	0.5751	0.0000	0.0000
Y MIN	15.568								
AVERAGE	15.555	51.555	0.4219	0.0000	0.0000	91.771	0.5577	0.0000	0.0000

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STACK NO. 1
POINT NO. 15 4102 E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
15:50	15.525	51.355	1.5055	0.0000	0.0000	275.75	1.5155	0.0000	0.0000
15:50	15.197	49.555	1.4320	0.0000	0.0000	241.25	1.5505	0.0000	0.0000
15:50	15.555	45.555	3.5555	0.0000	0.0000	105.05	3.5755	0.0000	0.0000
15:50	15.505	50.250	3.5515	0.0000	0.0000	92.515	3.7052	0.0000	0.0000
17:00	15.515	52.525	3.5547	0.0000	0.0000	95.555	3.7505	0.0000	0.0000
17:00	15.155	52.551	3.4777	0.0000	0.0000	97.575	3.5255	0.0000	0.0000
17:01	15.512	52.575	3.5105	0.0000	0.0000	95.725	3.7525	0.0000	0.0000
17:01	15.505	50.752	3.5101	0.0000	0.0000	95.475	3.7555	0.0000	0.0000
17:02	15.411	50.250	3.5511	0.0000	0.0000	97.545	3.5755	0.0000	0.0000
17:02	15.555	50.552	3.5555	0.0000	0.0000	95.511	3.5575	0.0000	0.0000
17:03	15.515	50.555	3.5555	0.0000	0.0000	93.215	3.5552	0.0000	0.0000
17:03	15.552	50.752	3.7155	0.0000	0.0000	95.552	3.5571	0.0000	0.0000
17:04	15.255	51.155	3.7555	0.0000	0.0000	102.55	1.5111	0.0000	0.0000
17:04	15.251	52.525	3.5157	0.0000	0.0000	102.71	3.5515	0.0000	0.0000
Y MIN									
AVERAGE	15.255	50.515	3.7555	0.0000	0.0000	117.51	1.5152	0.0000	0.0000

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STACK NO. 1
POINT NO. 17 8102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "F	STEAM LB/HR
17:05	15.982	54.479	0.0000	0.0000	0.0000	173.21	1.2590	0.0000	0.0000
17:06	15.829	55.618	1.0000	0.0000	0.0000	1230.65	1.2993	0.0000	0.0000
17:07	15.987	58.220	1.1221	0.0000	0.0000	1250.05	1.2614	0.0000	0.0000
17:07	15.921	57.087	1.0287	0.0000	0.0000	1220.05	1.2912	0.0000	0.0000
17:08	15.934	58.981	1.1615	0.0000	0.0000	1777.85	1.5833	0.0000	0.0000
17:09	15.884	59.087	1.0876	0.0000	0.0000	1781.15	1.5225	0.0000	0.0000
17:09	15.814	61.847	1.0582	0.0000	0.0000	155.32	1.5555	0.0000	0.0000
17:09	15.886	62.871	1.1484	0.0000	0.0000	1830.55	1.5276	0.0000	0.0000
17:10	15.829	63.583	1.1113	0.0000	0.0000	177.13	1.5153	0.0000	0.0000
17:10	15.167	61.051	1.5355	0.0000	0.0000	150.53	1.5556	0.0000	0.0000
17:11	15.194	55.252	1.5515	0.0000	0.0000	150.00	1.5551	0.0000	0.0000
17:11	15.052	55.305	1.5255	0.0000	0.0000	200.00	5.0500	0.0000	0.0000
17:12	15.010	57.074	1.7075	0.0000	0.0000	211.17	5.0525	0.0000	0.0000
17:12	15.041	57.551	1.5575	0.0000	0.0000	215.52	5.0550	0.0000	0.0000
7 MIN AVERAGE	15.455	61.541	1.3575	0.0000	0.0000	1541.55	1.7075	0.0000	0.0000

STACK NO. 1
POINT NO. 18

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "F	STEAM LB/HR
17:14	15.258	58.057	1.3591	0.0000	0.0000	150.13	1.5551	0.0000	0.0000

STACK NO. 1
POINT NO. 1

8102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "F	STEAM LB/HR
17:34	14.575	61.543	4.0000	0.0000	0.0000	535.41	5.0021	0.0000	0.0000
17:34	14.919	67.833	5.0071	0.0000	0.0000	519.01	5.0055	0.0000	0.0000
17:35	14.929	61.116	5.2702	0.0000	0.0000	511.90	5.0075	0.0000	0.0000
17:35	14.027	44.597	5.0075	0.0000	0.0000	515.25	5.0725	0.0000	0.0000
17:35	14.005	49.197	5.0170	0.0000	0.0000	505.10	5.0021	0.0000	0.0000
17:35	14.075	51.550	5.2210	0.0000	0.0000	507.75	5.0001	0.0000	0.0000
17:37	14.225	55.045	5.1215	0.0000	0.0000	505.01	5.7725	0.0000	0.0000
17:37	14.251	55.155	5.0025	0.0000	0.0000	573.50	5.7450	0.0000	0.0000
17:37	14.305	55.711	5.1155	0.0000	0.0000	555.50	5.5255	0.0000	0.0000
17:38	14.255	54.257	4.9741	0.0000	0.0000	550.25	5.7715	0.0000	0.0000
17:38	14.405	54.501	5.1401	0.0000	0.0000	557.55	5.5705	0.0000	0.0000
17:38	14.305	55.141	5.0075	0.0000	0.0000	505.11	5.7055	0.0000	0.0000
17:40	14.215	55.117	5.0225	0.0000	0.0000	505.01	5.5525	0.0000	0.0000
17:40	14.155	55.421	5.0015	0.0000	0.0000	505.75	5.5555	0.0000	0.0000
Y MIN									
AVERAGE	14.240	55.000	5.1025	0.0000	0.0000	527.75	5.7555	0.0000	0.0000

STACK NO. 1
POINT NO. 2

7102

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB "F	STEAM LB/HR
17:42	14.552	55.475	4.0500	0.0000	0.0000	547.50	5.1555	0.0000	0.0000
17:42	14.551	55.555	4.7714	0.0000	0.0000	555.51	5.1551	0.0000	0.0000
17:43	14.715	55.551	4.7455	0.0000	0.0000	512.51	5.1415	0.0000	0.0000
17:43	14.555	55.555	4.5211	0.0000	0.0000	257.15	5.1515	0.0000	0.0000
17:44	14.575	55.575	4.5125	0.0000	0.0000	255.10	5.1217	0.0000	0.0000
17:44	15.075	55.555	4.5555	0.0000	0.0000	250.51	5.0511	0.0000	0.0000
17:45	15.215	55.155	4.1911	0.0000	0.0000	225.01	4.5555	0.0000	0.0000
17:45	15.575	55.151	4.2515	0.0000	0.0000	255.15	4.7751	0.0000	0.0000
17:45	15.575	51.551	4.0550	0.0000	0.0000	151.05	4.7751	0.0000	0.0000
17:45	15.551	51.745	4.1275	0.0000	0.0000	175.15	4.5555	0.0000	0.0000
17:47	15.557	53.551	4.5550	0.0000	0.0000	157.51	4.5211	0.0000	0.0000
17:47	15.551	53.155	4.5555	0.0000	0.0000	152.51	4.5515	0.0000	0.0000
17:48	15.555	52.755	4.7257	0.0000	0.0000	147.45	4.5755	0.0000	0.0000
17:48	15.051	52.551	4.7725	0.0000	0.0000	135.45	4.1511	0.0000	0.0000
Y MIN									
AVERAGE	15.275	55.272	4.5095	0.0000	0.0000	229.27	4.9522	0.0000	0.0000

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STACK NO. 1
POINT NO. 3 7102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
17:50	15.006	51.550	3.5550	0.0000	0.0000	125.33	4.2218	0.0000	0.0000
17:50	15.147	51.365	3.5538	0.0000	0.0000	121.56	4.1097	0.0000	0.0000
17:51	15.107	51.048	3.5547	0.0000	0.0000	122.34	4.1442	0.0000	0.0000
17:51	15.183	50.741	3.5818	0.0000	0.0000	114.21	4.0772	0.0000	0.0000
17:52	15.245	50.434	3.5587	0.0000	0.0000	112.58	4.0247	0.0000	0.0000
17:52	15.254	49.970	3.4975	0.0000	0.0000	108.34	4.0157	0.0000	0.0000
17:53	15.389	49.818	3.5122	0.0000	0.0000	106.55	3.9184	0.0000	0.0000
17:53	15.382	49.307	3.4433	0.0000	0.0000	98.455	3.8871	0.0000	0.0000
17:54	15.411	49.167	3.4305	0.0000	0.0000	93.855	3.8812	0.0000	0.0000
17:54	15.442	49.744	3.4433	0.0000	0.0000	93.843	3.9545	0.0000	0.0000
17:55	15.454	49.232	3.4777	0.0000	0.0000	94.842	3.9448	0.0000	0.0000
17:55	15.409	49.232	3.2552	0.0000	0.0000	90.594	3.8839	0.0000	0.0000
17:56	15.500	49.130	3.3252	0.0000	0.0000	92.720	3.8042	0.0000	0.0000
17:56	15.385	47.720	3.3545	0.0000	0.0000	98.244	3.8025	0.0000	0.0000
7 MIN AVERAGE	15.307 (15.307)	49.588	3.4863	0.0000	0.0000	104.30	3.9705	0.0000	0.0000

48.688 3.4867

STACK NO. 1
POINT NO. 4 8102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
17:56	15.414	47.258	3.3154	0.0000	0.0000	97.720	3.9765	0.0000	0.0000
17:58	15.455	47.105	3.2554	0.0000	0.0000	91.597	3.8334	0.0000	0.0000
17:58	15.500	47.054	3.3154	0.0000	0.0000	78.473	3.8042	0.0000	0.0000
17:58	15.420	45.950	3.2957	0.0000	0.0000	83.645	3.9732	0.0000	0.0000
18:00	15.571	45.852	3.3448	0.0000	0.0000	75.474	3.7431	0.0000	0.0000
18:00	15.472	45.337	3.1777	0.0000	0.0000	72.585	3.8291	0.0000	0.0000
18:01	15.585	45.440	3.3246	0.0000	0.0000	75.599	3.7882	0.0000	0.0000
18:01	15.577	45.133	3.2957	0.0000	0.0000	77.723	3.7378	0.0000	0.0000
18:02	15.524	45.572	3.3361	0.0000	0.0000	75.227	3.7828	0.0000	0.0000
18:02	15.445	45.415	3.2554	0.0000	0.0000	72.588	3.8453	0.0000	0.0000
18:03	15.503	44.855	3.1924	0.0000	0.0000	77.223	3.8815	0.0000	0.0000
18:03	15.471	37.420	4.0041	0.0000	0.0000	189.37	4.5841	0.0000	0.0000
18:04	15.007	29.573	4.3189	0.0000	0.0000	211.90	5.0852	0.0000	0.0000
18:04	15.901	30.977	3.5254	0.0000	0.0000	115.45	4.3222	0.0000	0.0000
7 MIN AVERAGE	15.270	43.378	3.4470	0.0000	0.0000	88.389	4.0025	0.0000	0.0000

STACK NO. 1
POINT NO. 5 8102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX180 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:06	15.137	38.760	3.3352	0.0000	0.0000	86.585	4.1178	0.0000	0.0000
18:06	15.202	39.188	3.3006	0.0000	0.0000	85.345	4.0818	0.0000	0.0000
18:07	15.107	38.888	3.4875	0.0000	0.0000	87.848	4.1442	0.0000	0.0000
18:07	15.147	40.183	3.5171	0.0000	0.0000	86.588	4.1087	0.0000	0.0000
18:08	15.078	40.448	3.3845	0.0000	0.0000	88.278	4.1521	0.0000	0.0000
18:08	15.110	40.448	3.3486	0.0000	0.0000	87.718	4.1415	0.0000	0.0000
18:09	15.110	40.810	3.3900	0.0000	0.0000	86.457	4.1415	0.0000	0.0000
18:09	15.038	41.624	3.8065	0.0000	0.0000	85.717	4.2025	0.0000	0.0000
18:10	15.887	41.728	3.5318	0.0000	0.0000	88.488	4.2472	0.0000	0.0000
18:10	15.888	41.884	3.8745	0.0000	0.0000	104.45	4.3218	0.0000	0.0000
18:11	15.783	42.702	3.7088	0.0000	0.0000	107.88	4.4151	0.0000	0.0000
18:11	15.838	43.317	3.8842	0.0000	0.0000	114.83	4.3763	0.0000	0.0000
18:12	15.775	43.418	3.8782	0.0000	0.0000	121.85	4.4311	0.0000	0.0000
18:12	15.858	44.382	3.7431	0.0000	0.0000	125.45	4.5320	0.0000	0.0000
7 MIN AVERAGE	15.881	41.345	3.5465	0.0000	0.0000	98.045	4.2432	0.0000	0.0000

STACK NO. 1
POINT NO. 5

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX180 PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:14	15.584	45.774	3.8833	0.0000	0.0000	132.85	4.5878	0.0000	0.0000
18:14	15.541	45.133	4.0533	0.0000	0.0000	137.85	4.5330	0.0000	0.0000
18:15	15.354	46.542	4.2008	0.0000	0.0000	145.45	4.7850	0.0000	0.0000
18:15	15.241	47.585	4.2500	0.0000	0.0000	155.18	4.8013	0.0000	0.0000
18:16	15.200	48.102	4.2265	0.0000	0.0000	151.07	4.8278	0.0000	0.0000
18:16	15.133	50.485	4.2884	0.0000	0.0000	171.18	4.8335	0.0000	0.0000
18:17	15.085	54.378	4.3551	0.0000	0.0000	177.44	5.0447	0.0000	0.0000
18:17	15.053	54.838	4.3828	0.0000	0.0000	188.12	5.0553	0.0000	0.0000
18:18	15.022	54.855	4.3878	0.0000	0.0000	183.30	5.0218	0.0000	0.0000
18:18	14.838	55.758	4.5081	0.0000	0.0000	200.55	5.1538	0.0000	0.0000
18:19	14.888	55.271	4.5008	0.0000	0.0000	208.17	5.1882	0.0000	0.0000
18:19	14.823	55.578	4.7272	0.0000	0.0000	214.17	5.2545	0.0000	0.0000
18:20	14.801	57.038	4.7518	0.0000	0.0000	224.87	5.2732	0.0000	0.0000
18:20	14.758	57.755	4.8018	0.0000	0.0000	230.04	5.3104	0.0000	0.0000
7 MIN AVERAGE	15.105	52.372	4.3858	0.0000	0.0000	181.31	5.0104	0.0000	0.0000

STACK NO. 1
POINT NO. 7 8102

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX1SO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:22	14.782	60.472	4.9561	0.0000	0.0000	268.81	5.2811	0.0000	0.0000
10:22	14.774	60.189	4.7625	0.0000	0.0000	240.78	5.2871	0.0000	0.0000
10:23	14.882	60.677	4.7781	0.0000	0.0000	240.81	5.2188	0.0000	0.0000
10:23	14.891	60.577	4.7875	0.0000	0.0000	251.75	5.3755	0.0000	0.0000
10:24	14.788	60.087	4.7618	0.0000	0.0000	253.41	5.3582	0.0000	0.0000
10:24	14.887	60.284	4.7821	0.0000	0.0000	253.81	5.3535	0.0000	0.0000
10:25	14.718	60.521	4.7818	0.0000	0.0000	250.81	5.3118	0.0000	0.0000
10:25	14.787	60.726	4.8188	0.0000	0.0000	250.83	5.3824	0.0000	0.0000
10:25	14.712	61.188	4.8852	0.0000	0.0000	253.15	5.3502	0.0000	0.0000
10:26	14.721	61.112	4.8255	0.0000	0.0000	274.78	5.3122	0.0000	0.0000
10:27	14.727	62.188	4.8185	0.0000	0.0000	250.52	5.3252	0.0000	0.0000
10:27	14.681	62.188	4.7811	0.0000	0.0000	257.82	5.1152	0.0000	0.0000
10:28	14.802	63.142	4.8288	0.0000	0.0000	250.82	5.1182	0.0000	0.0000
10:28	14.836	63.288	5.0022	0.0000	0.0000	282.52	5.1152	0.0000	0.0000
7 MIN AVERAGE	14.714	60.824	4.8278	0.0000	0.0000	258.78	5.3187	0.0000	0.0000

STACK NO. 1
POINT NO. 8 7102

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX1SO PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
10:30	14.826	64.268	5.0226	0.0000	0.0000	301.38	5.1218	0.0000	0.0000
10:30	14.888	64.287	4.8181	0.0000	0.0000	301.14	5.1814	0.0000	0.0000
10:31	14.811	64.068	5.0025	0.0000	0.0000	288.51	5.1278	0.0000	0.0000
10:31	14.818	63.841	4.9885	0.0000	0.0000	305.31	5.1888	0.0000	0.0000
10:32	14.826	63.818	5.0588	0.0000	0.0000	301.38	5.1272	0.0000	0.0000
10:32	14.861	63.988	4.9861	0.0000	0.0000	287.77	5.1777	0.0000	0.0000
10:33	14.861	64.588	5.0188	0.0000	0.0000	295.85	5.1887	0.0000	0.0000
10:33	14.895	62.188	4.9818	0.0000	0.0000	277.15	5.1811	0.0000	0.0000
10:34	15.273	13.317	3.6588	0.0000	0.0000	185.15	4.8887	0.0000	0.0000
10:34	15.818	10.881	4.0861	0.0000	0.0000	184.18	4.3858	0.0000	0.0000
10:35	14.842	12.887	4.5781	0.0000	0.0000	278.83	5.1818	0.0000	0.0000
10:35	14.718	11.888	4.8188	0.0000	0.0000	283.88	5.2182	0.0000	0.0000
10:36	14.778	15.188	4.8182	0.0000	0.0000	287.58	5.2587	0.0000	0.0000
10:36	14.718	15.688	4.8582	0.0000	0.0000	282.18	5.2178	0.0000	0.0000
7 MIN AVERAGE	14.881	66.162	4.7230	0.0000	0.0000	272.24	5.2218	0.0000	0.0000

66,162
4.7230

STACK NO. 1
POINT NO. 11 8102

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
10:54	14.151	45.050	1.7415	0.0000	0.0000	450.25	5.5750	0.0000	0.0000
10:54	14.053	35.541	1.3190	0.0000	0.0000	502.50	5.5510	0.0000	0.0000
10:55	14.006	41.552	1.2556	0.0000	0.0000	519.57	5.5512	0.0000	0.0000
10:55	13.947	51.107	1.2052	0.0000	0.0000	541.15	5.5115	0.0000	0.0000
10:55	13.955	55.115	1.2525	0.0000	0.0000	525.44	5.5010	0.0000	0.0000
10:55	13.925	54.105	1.2555	0.0000	0.0000	522.11	5.5275	0.0000	0.0000
10:57	13.955	55.201	1.2125	0.0000	0.0000	515.52	5.5225	0.0000	0.0000
10:57	13.955	55.521	1.1401	0.0000	0.0000	511.70	5.5555	0.0000	0.0000
10:55	13.951	55.552	1.1501	0.0000	0.0000	511.52	5.5705	0.0000	0.0000
10:55	13.972	55.555	1.2500	0.0000	0.0000	495.55	5.5501	0.0000	0.0000
10:55	13.955	70.215	1.2142	0.0000	0.0000	492.52	5.5530	0.0000	0.0000
10:55	14.005	77.575	1.2125	0.0000	0.0000	492.55	5.5555	0.0000	0.0000
10:00	13.915	72.1501	1.2571	0.0000	0.0000	472.00	5.5105	0.0000	0.0000
10:00	14.051	70.055	1.2125	0.0000	0.0000	455.55	5.5107	0.0000	0.0000
7 MIN AVERAGE	14.045	61.552	1.2015	0.0000	0.0000	495.11	5.5557	0.0000	0.0000

STACK NO. 1
POINT NO. 12

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
10:02	14.115	72.757	1.2555	0.0000	0.0000	452.72	5.5525	0.0000	0.0000
10:02	14.250	72.552	1.1550	0.0000	0.0000	445.21	5.7555	0.0000	0.0000
10:04	14.155	70.511	1.2225	0.0000	0.0000	445.47	5.5255	0.0000	0.0000
10:05	14.252	70.157	1.2552	0.0000	0.0000	441.72	5.7221	0.0000	0.0000
10:01	14.215	72.257	1.2555	0.0000	0.0000	455.57	5.7515	0.0000	0.0000
10:01	14.215	71.555	1.2555	0.0000	0.0000	427.15	5.5557	0.0000	0.0000
10:05	14.251	72.052	1.2545	0.0000	0.0000	427.55	5.7115	0.0000	0.0000
10:05	14.215	72.052	1.2525	0.0000	0.0000	425.45	5.7515	0.0000	0.0000
10:05	14.255	72.555	1.2750	0.0000	0.0000	451.22	5.5477	0.0000	0.0000
10:05	14.255	72.502	1.2505	0.0000	0.0000	454.47	5.5211	0.0000	0.0000
10:07	14.255	72.502	1.2750	0.0000	0.0000	452.50	5.7055	0.0000	0.0000
10:07	14.152	72.752	1.2255	0.0000	0.0000	440.22	5.5155	0.0000	0.0000
10:05	14.251	71.751	1.2255	0.0000	0.0000	445.51	5.7450	0.0000	0.0000
10:05	14.217	51.552	1.2555	0.0000	0.0000	515.51	5.7775	0.0000	0.0000
7 MIN AVERAGE	14.277	71.551	1.2252	0.0000	0.0000	445.15	5.7251	0.0000	0.0000

15.358 70.956 4.8803

STACK NO. 1
POINT NO. 13 8103

E

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
18:10	14.862	53.559	5.1010	0.0000	0.0000	340.00	5.1183	0.0000	0.0000
18:10	14.773	53.166	4.9787	0.0000	0.0000	285.84	5.2871	0.0000	0.0000
18:11	14.788	53.859	4.8859	0.0000	0.0000	266.02	5.2884	0.0000	0.0000
18:11	14.819	54.127	4.8885	0.0000	0.0000	278.78	5.2672	0.0000	0.0000
18:12	14.810	55.018	4.8167	0.0000	0.0000	278.40	5.2862	0.0000	0.0000
18:12	14.788	55.527	4.8787	0.0000	0.0000	274.88	5.2782	0.0000	0.0000
18:13	14.868	55.528	4.8861	0.0000	0.0000	287.55	5.2288	0.0000	0.0000
18:13	14.842	55.678	4.8185	0.0000	0.0000	288.84	5.1818	0.0000	0.0000
18:14	14.821	55.678	4.8888	0.0000	0.0000	282.88	5.1888	0.0000	0.0000
18:14	15.007	55.527	4.7124	0.0000	0.0000	288.88	5.0882	0.0000	0.0000
18:15	14.888	55.888	4.7818	0.0000	0.0000	288.81	5.1111	0.0000	0.0000
18:15	15.061	55.424	4.8208	0.0000	0.0000	288.81	5.0788	0.0000	0.0000
18:15	15.061	55.527	4.8188	0.0000	0.0000	288.41	5.0788	0.0000	0.0000
18:15	15.007	55.424	4.8288	0.0000	0.0000	282.77	5.0882	0.0000	0.0000
Y MIN AVERAGE	14.888	55.878	4.7888	0.0000	0.0000	278.28	5.1888	0.0000	0.0000

STACK NO. 1
POINT NO. 14

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX150 PPM,D	CO PPM,D	CO2 %,D	I-AMB %	STEAM LB/HR
19:19	15.088	55.888	4.8841	0.0000	0.0000	218.84	5.0181	0.0000	0.0000
19:19	15.124	55.478	4.8888	0.0000	0.0000	215.88	4.9842	0.0000	0.0000
19:19	15.288	55.117	4.8174	0.0000	0.0000	218.78	4.9827	0.0000	0.0000
19:19	15.388	55.881	4.8788	0.0000	0.0000	282.42	4.9188	0.0000	0.0000
19:20	15.228	55.888	4.8888	0.0000	0.0000	228.84	4.9888	0.0000	0.0000
19:20	15.388	55.788	4.8888	0.0000	0.0000	221.87	4.7878	0.0000	0.0000
19:21	15.382	55.848	4.8482	0.0000	0.0000	221.17	4.7711	0.0000	0.0000
19:21	15.488	55.188	4.8888	0.0000	0.0000	212.17	4.7828	0.0000	0.0000
19:22	15.488	55.842	4.8888	0.0000	0.0000	211.87	4.7828	0.0000	0.0000
19:22	15.471	54.881	4.8881	0.0000	0.0000	288.88	4.8841	0.0000	0.0000
19:23	15.388	55.141	4.8778	0.0000	0.0000	214.88	4.9188	0.0000	0.0000
19:23	15.482	55.888	4.8282	0.0000	0.0000	218.88	4.7188	0.0000	0.0000
19:24	15.388	55.888	4.8284	0.0000	0.0000	212.88	4.7884	0.0000	0.0000
19:24	15.888	55.888	4.8888	0.0000	0.0000	288.88	4.8822	0.0000	0.0000
Y MIN AVERAGE	15.388	55.848	4.8882	0.0000	0.0000	222.48	4.8888	0.0000	0.0000

STACK NO. 1
POINT NO. 17 7(03

W

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:42	15.113	28.788	3.5712	0.0000	0.0000	115.83	4.1388	0.0000	0.0000
18:42	15.015	28.887	3.7088	0.0000	0.0000	114.85	4.2238	0.0000	0.0000
18:43	15.144	28.643	3.4828	0.0000	0.0000	113.63	4.1123	0.0000	0.0000
18:43	15.104	28.482	3.4874	0.0000	0.0000	112.85	4.1458	0.0000	0.0000
18:44	15.182	28.684	3.5253	0.0000	0.0000	109.79	4.0884	0.0000	0.0000
18:44	15.081	28.333	3.5775	0.0000	0.0000	110.33	4.1575	0.0000	0.0000
18:45	15.150	28.185	3.5553	0.0000	0.0000	108.08	4.1070	0.0000	0.0000
18:45	15.277	28.082	3.4825	0.0000	0.0000	111.08	4.0612	0.0000	0.0000
18:46	15.107	28.873	3.7040	0.0000	0.0000	108.71	4.1442	0.0000	0.0000
18:46	15.128	28.570	3.6401	0.0000	0.0000	107.33	4.1268	0.0000	0.0000
18:47	15.147	28.355	3.5784	0.0000	0.0000	105.08	4.1087	0.0000	0.0000
18:47	15.171	28.314	3.5055	0.0000	0.0000	105.85	4.0884	0.0000	0.0000
18:48	15.233	28.355	3.5072	0.0000	0.0000	107.83	4.0353	0.0000	0.0000
18:48	15.187	28.007	3.6455	0.0000	0.0000	105.85	4.0751	0.0000	0.0000
7 MIN AVERAGE	15.148	28.002	3.6637	0.0000	0.0000	108.97	4.1152	0.0000	0.0000

28.002 7.6637

E

STACK NO. 1
POINT NO. 18 8(03

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX15O PPM,D	CO PPM,D	CO2 %,D	T-AMB °F	STEAM LB/HR
18:50	15.253	27.587	3.4335	0.0000	0.0000	105.21	4.0087	0.0000	0.0000
18:50	15.233	27.431	3.6654	0.0000	0.0000	103.85	4.0353	0.0000	0.0000
18:51	15.242	27.188	3.4335	0.0000	0.0000	103.45	4.0273	0.0000	0.0000
18:51	15.208	27.137	3.5558	0.0000	0.0000	100.45	4.0555	0.0000	0.0000
18:52	15.155	26.778	3.4878	0.0000	0.0000	105.85	4.0837	0.0000	0.0000
18:52	15.148	26.727	3.6581	0.0000	0.0000	108.45	4.1150	0.0000	0.0000
18:53	15.030	26.881	3.8024	0.0000	0.0000	117.33	4.2105	0.0000	0.0000
18:53	15.558	38.811	3.8487	0.0000	0.0000	155.32	4.3684	0.0000	0.0000
18:54	15.852	38.248	3.7088	0.0000	0.0000	138.70	4.2580	0.0000	0.0000
18:54	15.182	36.850	3.8847	0.0000	0.0000	113.08	4.0884	0.0000	0.0000
18:55	15.107	37.377	3.8171	0.0000	0.0000	112.45	4.1442	0.0000	0.0000
18:55	15.110	38.462	3.6105	0.0000	0.0000	112.69	4.1415	0.0000	0.0000
18:56	15.035	38.884	3.8853	0.0000	0.0000	113.08	4.2053	0.0000	0.0000
18:56	15.024	38.220	3.7434	0.0000	0.0000	118.20	4.2158	0.0000	0.0000
7 MIN AVERAGE	15.110	32.870	3.8864	0.0000	0.0000	115.13	4.1413	0.0000	0.0000

STACK NO. 1
POINT NO. 19 8103

E

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX150 PPM.D	CO PPM.D	CO2 %.D	I-AMB "F	STEAM LB/HR
19:58	16.978	38.888	0.0021	0.0000	0.0000	142.84	1.0187	0.0000	0.0000
19:58	16.927	40.184	0.0002	0.0000	0.0000	139.07	1.0084	0.0000	0.0000
19:58	16.888	40.118	1.0000	0.0000	0.0000	141.28	1.0178	0.0000	0.0000
19:58	16.768	40.881	0.8618	0.0000	0.0000	142.78	1.0288	0.0000	0.0000
20:00	16.747	41.288	0.8812	0.0000	0.0000	142.07	1.0258	0.0000	0.0000
20:00	16.668	41.888	1.1026	0.0000	0.0000	152.81	1.0114	0.0000	0.0000
20:01	16.618	42.241	1.1782	0.0000	0.0000	151.81	1.0198	0.0000	0.0000
20:01	16.448	42.768	1.0778	0.0000	0.0000	156.68	1.0184	0.0000	0.0000
20:02	16.428	43.008	1.0181	0.0000	0.0000	172.21	1.0288	0.0000	0.0000
20:02	16.188	42.868	1.1172	0.0000	0.0000	178.81	1.0172	0.0000	0.0000
20:03	16.081	43.288	1.2788	0.0000	0.0000	177.68	1.0281	0.0000	0.0000
20:03	16.178	44.878	1.1128	0.0000	0.0000	178.81	1.0814	0.0000	0.0000
20:04	16.187	43.888	1.2718	0.0000	0.0000	180.81	1.0288	0.0000	0.0000
20:04	16.181	44.288	1.1074	0.0000	0.0000	181.88	1.0288	0.0000	0.0000
Y MIN									
AVERAGE	16.688	42.218	1.0018	0.0000	0.0000	161.27	1.0882	0.0000	0.0000

STACK NO. 1
POINT NO. 20 7103

W

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX150 PPM.D	CO PPM.D	CO2 %.D	I-AMB "F	STEAM LB/HR
20:05	15.182	28.782	1.3081	0.0000	0.0000	155.81	1.0786	0.0000	0.0000
20:05	15.882	29.151	1.1418	0.0000	0.0000	138.85	1.0281	0.0000	0.0000
20:07	15.888	25.878	1.0842	0.0000	0.0000	201.88	1.0188	0.0000	0.0000
20:07	14.882	27.548	1.0858	0.0000	0.0000	226.84	1.1181	0.0000	0.0000
20:08	15.884	28.828	1.0888	0.0000	0.0000	201.78	1.0878	0.0000	0.0000
20:08	15.818	28.788	1.7821	0.0000	0.0000	238.81	1.0888	0.0000	0.0000
20:08	14.882	28.884	1.0787	0.0000	0.0000	238.81	1.1888	0.0000	0.0000
20:08	14.821	28.818	1.7188	0.0000	0.0000	241.28	1.1888	0.0000	0.0000
20:10	14.878	28.721	1.7818	0.0000	0.0000	244.81	1.1271	0.0000	0.0000
20:10	14.888	31.581	1.8881	0.0000	0.0000	248.78	1.1888	0.0000	0.0000
20:11	14.878	32.184	1.7272	0.0000	0.0000	251.41	1.1181	0.0000	0.0000
20:11	14.888	32.161	1.7711	0.0000	0.0000	251.81	1.1188	0.0000	0.0000
20:12	14.881	32.184	1.7818	0.0000	0.0000	254.41	1.1421	0.0000	0.0000
20:12	14.844	32.887	1.8878	0.0000	0.0000	258.18	1.2888	0.0000	0.0000
Y MIN	15/								
AVERAGE	15.881	30.811	1.7888	0.0000	0.0000	227.87	1.0281	0.0000	0.0000

30.811 / 4.7098 /

STACK NO. 1
POINT NO. 3 7(03

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX1SO PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
21:02	15.762	31.551	3.0793	0.0000	0.0000	122.05	3.5553	0.0000	0.0000
21:02	15.770	31.155	3.2259	0.0000	0.0000	121.26	3.5704	0.0000	0.0000
21:03	15.805	31.335	2.9750	0.0000	0.0000	119.21	3.4605	0.0000	0.0000
21:03	15.835	31.182	3.0547	0.0000	0.0000	118.33	3.4243	0.0000	0.0000
21:04	15.855	31.335	3.0153	0.0000	0.0000	114.71	3.4110	0.0000	0.0000
21:04	17.032	31.079	2.9135	0.0000	0.0000	110.33	3.2353	0.0000	0.0000
21:05	17.192	30.977	2.9167	0.0000	0.0000	108.55	3.2144	0.0000	0.0000
21:05	17.229	30.721	2.9155	0.0000	0.0000	106.95	3.1745	0.0000	0.0000
21:05	17.256	30.557	2.7051	0.0000	21:05	-2.025	41.675	1.1515	0.0000
21:07	17.157	30.557	2.8355	0.0000	0.0000	99.591	3.2277	0.0000	0.0000
21:07	17.355	30.575	2.8512	0.0000	0.0000	100.95	3.0551	0.0000	0.0000
21:08	17.155	30.155	2.8525	0.0000	0.0000	98.157	2.9701	0.0000	0.0000
21:08	17.151	30.153	2.8507	0.0000	0.0000	98.057	2.9727	0.0000	0.0000
21:09	17.153	30.111	2.8571	0.0000	0.0000	98.215	2.9541	0.0000	0.0000
Y MIN	16.								
AVERAGE	15.941	30.955	3.1411	0.0000	0.0000	108.10	3.1905	0.0000	0.0000

33.098 3.1411

STACK NO. 1
POINT NO. 4 8(03

TIME 24 HR.	O2 %,D	SO2 #1 PPM,D	SO2 #2 PPM,D	NOX PPM,D	NOX1SO PPM,D	CO PPM,D	CO2 %,D	I-AMB °F	STEAM LB/HR
21:10	17.355	29.955	2.8155	0.0000	0.0000	101.05	3.0521	0.0000	0.0000
21:11	8.7755	27.302	1.0741	0.0000	0.0000	147.07	8.5151	0.0000	0.0000
21:11	15.525	24.791	3.3215	0.0000	0.0000	151.15	4.5353	0.0000	0.0000
21:12	15.815	23.010	3.5543	0.0000	0.0000	132.70	4.3059	0.0000	0.0000
21:12	15.955	22.532	4.0577	0.0000	0.0000	135.52	4.2557	0.0000	0.0000
21:13	15.942	22.525	4.1055	0.0000	0.0000	135.35	4.3725	0.0000	0.0000
21:13	15.929	22.535	4.1457	0.0000	0.0000	137.57	4.2953	0.0000	0.0000
21:14	15.952	23.501	4.1515	0.0000	0.0000	135.07	4.3351	0.0000	0.0000
21:14	15.952	23.511	4.0151	0.0000	0.0000	139.52	4.3351	0.0000	0.0000
21:15	15.952	23.505	3.9555	0.0000	0.0000	139.70	4.2345	0.0000	0.0000
21:15	15.954	23.505	4.1555	0.0000	0.0000	134.52	4.3510	0.0000	0.0000
21:15	15.945	23.552	4.1512	0.0000	0.0000	132.20	4.3700	0.0000	0.0000
21:15	15.975	24.005	4.1515	0.0000	0.0000	129.55	4.3151	0.0000	0.0000
21:17	15.952	23.552	4.0525	0.0000	0.0000	132.35	4.3547	0.0000	0.0000
Y MIN									
AVERAGE	15.535	24.555	3.9555	0.0000	0.0000	135.75	4.3552	0.0000	0.0000

7(03 15.783 32.434 3.929

STACK NO. 1
POINT NO. 5 8103

E

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX15O PPM.D	CO PPM.D	CO2 %.D	T-AMB °F	STEAM LB/HR
21:18	15.878	23.882	4.0237	0.0000	0.0000	132.83	4.2558	0.0000	0.0000
21:18	15.835	24.115	4.0434	0.0000	0.0000	131.53	4.2828	0.0000	0.0000
21:19	15.857	24.213	4.1221	0.0000	0.0000	134.57	4.3514	0.0000	0.0000
21:19	15.728	24.625	4.2500	0.0000	0.0000	141.70	4.4708	0.0000	0.0000
21:20	15.874	24.833	4.2745	0.0000	0.0000	144.85	4.5187	0.0000	0.0000
21:20	15.728	24.835	4.2845	0.0000	0.0000	145.85	4.4708	0.0000	0.0000
21:21	15.701	25.140	4.3531	0.0000	0.0000	147.82	4.4818	0.0000	0.0000
21:21	15.854	25.140	4.3140	0.0000	0.0000	153.18	4.5287	0.0000	0.0000
21:22	15.717	25.253	4.3355	0.0000	0.0000	154.88	4.4815	0.0000	0.0000
21:22	15.843	25.518	4.2053	0.0000	0.0000	154.07	4.5153	0.0000	0.0000
21:23	15.557	25.703	4.4077	0.0000	0.0000	155.57	4.5831	0.0000	0.0000
21:23	15.554	25.051	4.4074	0.0000	0.0000	151.57	4.5223	0.0000	0.0000
21:24	15.443	25.471	4.3385	0.0000	0.0000	152.58	4.7158	0.0000	0.0000
21:24	15.455	25.528	4.4517	0.0000	0.0000	171.31	4.7073	0.0000	0.0000
7 MIN AVERAGE	15.681	25.188	4.2732	0.0000	0.0000	148.35	4.5035	0.0000	0.0000

STACK NO. 1 8103
POINT NO. 8

TIME 24 HR.	O2 %.D	SO2 #1 PPM.D	SO2 #2 PPM.D	NOX PPM.D	NOX15O PPM.D	CO PPM.D	CO2 %.D	T-AMB °F	STEAM LB/HR
21:26	15.354	27.290	4.5285	0.0000	0.0000	152.05	4.7850	0.0000	0.0000
21:26	15.408	27.341	4.5845	0.0000	0.0000	154.81	4.7488	0.0000	0.0000
21:27	15.342	27.751	4.5180	0.0000	0.0000	155.55	4.8058	0.0000	0.0000
21:27	15.375	27.858	4.5553	0.0000	0.0000	155.53	4.7754	0.0000	0.0000
21:28	15.358	28.253	4.5528	0.0000	0.0000	151.93	4.7817	0.0000	0.0000
21:28	15.305	28.522	4.4811	0.0000	0.0000	155.43	4.8275	0.0000	0.0000
21:29	15.333	28.978	4.6157	0.0000	0.0000	151.83	4.9135	0.0000	0.0000
21:29	15.351	28.134	4.5747	0.0000	0.0000	152.30	4.7877	0.0000	0.0000
21:30	15.358	28.338	4.4158	0.0000	0.0000	152.43	4.7817	0.0000	0.0000
21:30	18.832	25.447	1.5837	0.0000	0.0000	55.230	1.8505	0.0000	0.0000
21:31	17.303	25.358	3.1531	0.0000	0.0000	145.57	3.1055	0.0000	0.0000
21:31	15.320	28.118	4.4815	0.0000	0.0000	151.12	4.8242	0.0000	0.0000
21:32	15.228	28.928	4.8042	0.0000	0.0000	200.30	4.9035	0.0000	0.0000
21:32	15.157	28.822	3.0801	0.0000	0.0000	122.55	4.8575	0.0000	0.0000
7 MIN AVERAGE	15.704	27.888	4.1341	0.0000	0.0000	172.23	4.4822	0.0000	0.0000

8603 16.591 39.928 4.255

4.4.3

Drift Records for CEH Tests

The Emission Measurement Group, Inc.

Percent Cal Drift of Runs

Holly Sugar Corporation

Pulp Dryers

10/19-10/23/93

Runs	Pollutant	O2	Pre-Cal	Post-Cal	Difference	%Drift
	SPAN =	25				
5101	ZERO		0.099	0.099	0.000	0.00
	UPSCALE		10.539	10.616	0.077	0.31
5102	ZERO		0.108	0.129	0.021	0.09
	UPSCALE		7.110	7.106	-0.004	-0.02
5103	ZERO		0.129	0.098	-0.031	-0.12
	UPSCALE		7.106	7.130	0.025	0.10
5104	ZERO		0.098	0.157	0.058	0.23
	UPSCALE		7.130	7.121	-0.009	-0.04
6101	ZERO		0.099	0.099	0.000	0.00
	UPSCALE		10.539	10.616	0.077	0.31
6102	ZERO		0.108	0.129	0.021	0.09
	UPSCALE		7.110	7.106	-0.004	-0.02
6103	ZERO		0.129	0.098	-0.031	-0.12
	UPSCALE		7.106	7.130	0.025	0.10
6104	ZERO		0.098	0.157	0.058	0.23
	UPSCALE		7.130	7.121	-0.009	-0.04
7101	ZERO		0.092	0.081	-0.011	-0.04
	UPSCALE		7.112	7.064	-0.048	-0.19
7102	ZERO		0.081	0.136	0.055	0.22
	UPSCALE		7.064	7.079	0.015	0.06
7103	ZERO		0.136	0.102	-0.034	-0.14
	UPSCALE		7.079	7.019	-0.060	-0.24
8101	ZERO		0.092	0.081	-0.011	-0.04
	UPSCALE		7.112	7.064	-0.048	-0.19
8102	ZERO		0.081	0.136	0.055	0.22
	UPSCALE		7.064	7.079	0.015	0.06
8103	ZERO		0.136	0.102	-0.034	-0.14
	UPSCALE		7.079	7.019	-0.060	-0.24

The Emission Measurement Group, Inc.

Percent Cal Drift of Runs

Holly Sugar Corporation

Pulp Dryers

10/19-10/23/93

Runs	Pollutant	CO2	Pre-Cal	Post-Cal	Difference	%Drift
	SPAN =	15				
5101	ZERO		0.010	-0.044	-0.054	-0.36
	UPSCALE		14.413	14.389	-0.024	-0.16
5102	ZERO		0.010	0.054	0.044	0.29
	UPSCALE		11.933	11.874	-0.059	-0.39
5103	ZERO		0.054	0.089	0.034	0.23
	UPSCALE		11.874	11.746	-0.128	-0.85
5104	ZERO		0.089	0.138	0.049	0.33
	UPSCALE		11.746	11.885	0.139	0.93
6101	ZERO		0.010	-0.044	-0.054	-0.36
	UPSCALE		14.413	14.389	-0.024	-0.16
6102	ZERO		0.010	0.054	0.044	0.29
	UPSCALE		11.933	11.874	-0.059	-0.39
6103	ZERO		0.054	0.089	0.034	0.23
	UPSCALE		11.874	11.746	-0.128	-0.85
6104	ZERO		0.089	0.138	0.049	0.33
	UPSCALE		11.746	11.885	0.139	0.93
7101	ZERO		-0.058	-0.018	0.040	0.27
	UPSCALE		11.840	11.840	0.000	0.00
7102	ZERO		-0.018	-0.018	0.000	0.00
	UPSCALE		11.840	11.888	0.048	0.32
7103	ZERO		-0.018	0.002	0.020	0.13
	UPSCALE		11.888	12.010	0.122	0.81
8101	ZERO		-0.058	-0.018	0.040	0.27
	UPSCALE		11.840	11.840	0.000	0.00
8102	ZERO		-0.018	-0.018	0.000	0.00
	UPSCALE		11.840	11.888	0.048	0.32
8103	ZERO		-0.018	0.002	0.020	0.13
	UPSCALE		11.888	12.010	0.122	0.81

The Emission Measurement Group, Inc.

Percent Cal Drift of Runs

Holly Sugar Corporation

Pulp Dryers

10/19-10/23/93

Runs	Pollutant	SO2	Pre-Cal	Post-Cal	Difference	%Drift
	SPAN =	100				
5101	ZERO		-0.670	-1.220	-0.550	-0.55
	UPSCALE		49.461	48.437	-1.024	-1.02
5102	ZERO		-0.204	0.102	0.306	0.31
	UPSCALE		101.120	98.615	-2.505	-2.51
5103	ZERO		0.102	1.075	0.973	0.97
	UPSCALE		98.615	97.386	-1.229	-1.23
5104	ZERO		1.075	-0.921	-1.996	-2.00
	UPSCALE		97.386	96.720	-0.666	-0.67
6101	ZERO		-0.670	-1.220	-0.550	-0.55
	UPSCALE		49.461	48.437	-1.024	-1.02
6102	ZERO		-0.204	0.102	0.306	0.31
	UPSCALE		101.120	98.615	-2.505	-2.51
6103	ZERO		0.102	1.075	0.973	0.97
	UPSCALE		98.615	97.386	-1.229	-1.23
6104	ZERO		1.075	-0.921	-1.996	-2.00
	UPSCALE		97.386	96.720	-0.666	-0.67
7101	ZERO		-1.481	-0.402	1.079	1.08
	UPSCALE		98.826	97.439	-1.387	-1.39
7102	ZERO		-0.402	1.020	1.422	1.42
	UPSCALE		97.439	98.382	0.943	0.94
7103	ZERO		1.020	0.683	-0.337	-0.34
	UPSCALE		98.382	98.001	-0.381	-0.38
8101	ZERO		-1.481	-0.402	1.079	1.08
	UPSCALE		98.826	97.439	-1.387	-1.39
8102	ZERO		-0.402	1.020	1.422	1.42
	UPSCALE		97.439	98.382	0.943	0.94
8103	ZERO		1.020	0.683	-0.337	-0.34
	UPSCALE		98.382	98.001	-0.381	-0.38

Appendix 4.5

CALCULATIONS AND COMPUTER PRINTOUTS

Constant of 17.64 = T_s/P_s = (68°F + 459.7°R)/29.92 in. Hg. Standard Conditions = 68°F and 29.92 " Hg. Conv. Factors: 15.4322 gr./gm., 453.597 gm./lb., 7000 gr./lb.
P_b = Barometric Pressure, in. Hg Absolute
ΔH = Average Gas Meter Pressure, in. w.g.
Y_d = Gas Meter Calibration Factor, dimensionless
V_m = Volume of Dry Gas Sampled, @ Meter Conditions, ft^3
T_m = Average Gas Meter Temperature, (°F + 459.7°R)
$V_{m\,std}$ = $(V_m)\ (Y_d)\ (17.74)\ (P_b + \Delta H / 13.5962) / T_m)$ = Volume of Meter @ Standard Condition
V_{lc} = Total H_2O Collected, Impingers plus Silica Gel, ml. or grams
T_s = (°F + 459.7°R) = Average Stack Temperature
$V_{w\,(lqd)}$ = Condensate Volume, Net, @ Impingers, ml.
$V_{w\,(sg)}$ = Weight of Water @ Silica Gel, gm.
$V_{w\,std}$ = $0.04707\ (V_{w\,(lqd)}) + 0.04715\ (V_{w\,(sg)})$
B_{ws} = $(V_{w\,std}) / (V_{s\,std} + V_{w\,std})$
$\bullet\ P_s^{1/2}$ = Average of Square Roots of Velocity Heads

d_n	= Diameter of Nozzle, in.
A_n	= d_n^2 / 183.3465 = Area of Nozzle, ft^2
% CO_2	= Carbon Dioxide, dry, (v/v)
% O_2	= Oxygen, dry, (v/v)
% SO_2	= Sulfur Dioxide, dry, (v/v) = (ppm x 10^{-4})
% N_2	= Nitrogen, by Difference from 100%
MW_d	= (0.4401 x % CO_2) + (0.320 x % O_2) + (0.6407 x % SO_2) + (0.28014 x N_2)
MW_s	= (MW_d) (1-B_{ws}) + 18.016 (B_{ws}) = Molecular Weight of Stack Gas, Actual
P_{st}	= Stack Static Pressure, in. w.g.
P_s	= (P_b) + (P_{st} / 13.5962) = Stack Pressure, in. Hg, Absolute
C_p	= Pitot Tube Coefficient, Dimensionless
V_s	= 85.49 (C_p) [(T_s / (P_s) MW_s) (ΔP_s)]$^{1/2}$ = Velocity of Stack Gases, fps
θ	= Time of Test, min. (also T_s)

% I	=	% Isokinetic Sampling Rate
		$100\ T_s\ [(0.002669\ (V_{lc})) + ((Y_d)\ (V_m)\ (P_b / T_m))] / [(\theta)\ (V_s\ (P_s)\ (A_n)\ 60]$
I_T	=	$T_s\ [(0.09450\ (T_s)\ V_{m(std)})] / [P_s\ V_s\ A_n\ \theta\ (1 - B_{ws})]$
	=	Intermediate Values for Isokinetic
D	=	Stack Diameter , ft.
A_s	=	0.7854 D
	=	Stack Area, ft^2
Q_a	=	$(V_s)\ (A_s)\ (60)$
	=	Stack Volumetric Flowrate, Actual, ACFM
Q_s	=	$(17.64)\ (Q_a)\ [(P_s) / (T_s)]\ (1 - B_{ws})$
	=	Stack Volumetric Flowrate, DSCFM
F_d	=	F-Factor, dry @ O_2 % of 0.0, dscf / 10^6BTU
%EA	=	$[(\%O_2) - (0.5)\ (\%CO)] / [(0.264)\ (\%N_2) - ((\%O_2) + (0.5)\ (\%CO))]\ (100)$
	=	% Excess Air in Duct (Combustion Source only)
F_o	=	$(20.9 - \%O_2) / \%\ CO_2$
	=	Orsat QC Performance Check Factor, Dimensionless

m_f	= Partic. @ Nozzle, Probe, Cyclone (or Bypass Filter L) & Filter, mg.
m_t	= Particulate @ Total, mg (incl. Back Half)
C_{fn}	= $[(m_f)\ (0.015432)]\ /\ V_{mstd}$ = Particulate @ Nozzle, Probe, Cyclone & Filter, gr./dscf
C_{tn}	= $(m_t)\ (0.015432)\ /\ V_{mstd}$ = Particulate @ Total, gr./dscf
P_{fn}	= $[(C_{fn})\ (Q_s)\ (60)]\ /\ 7000$ = Particulate @ Nozzle, Probe, Cyclone & Filter, lbs./hr.
P_{tn}	= $[(C_{tn})\ (Q_s)\ (60)]\ /\ 7000$ = Particulate @ Total, lbs./hr.
E	= $\{(C_{fn})\ (F_d)\ [(20.9\ /\ (20.0 - \%\ O_2)]\}\ /\ 7000$ = Particulate @ Nozzle, Probe, Cyclone & Filter, lbs./10^6BTU

C_{SO_2} = $[(7.061 \times 10^{-5} (V_t - V_{t_b}) (N) (V_{std} / V_{sample}))] / V_{m_{std}}$ = SO_2 Conc., lbs./dscf
C_{SO_2} = $[(1.081 \times 10^{-4} (V_t - V_{t_b}) (N) (V_{std} / V_{sample}))] / V_{m_{std}}$ = SO_2 Conc., lbs./dscf
PPMD = SO_2 lbs./dscf (2.59×10^{4}) (64.07)
PPMW = PPMD x $(1.0 - B_{ws})$

Appendix 4.6

Laboratory Analytical Results

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

BACKSIDE

Company Name:	Holly	Water Density (gm/ml):	1.000
Plant Name:	Sidney MT	Lab Conditions:	
Unit Name:	Union Boiler - East	Temp:	
Test Date:	10-21-03	Humidity:	
Analysts Sign.:	Michael D Sur	Reviewer Sign.:	

Sample Id./Run No.:	Blank	4/01	4/02	4/03	4/04
Beaker No.:	15	32 C ✓	49 ✓	55 ✓	43 ✓
Wash Volume (ml.):	250	197	270	265	523
Wt. of Water Wash (g):					
Tare Lab Book Page:	101.3676	B41	B41	B41	B43
1st Weight (g):	101.3675	99.2301	98.2438	99.1795	100.1424
2nd Weight (g):	101.3675	99.2302	98.2435	99.1794	100.1427
Average (g):		99.23015	98.24365	99.1796	100.14255
Final Lab Book Page:		B42	B42	B42	B44
1st Weight (g):	101.3712	99.2565	98.2759	99.2185	100.2161
2nd Weight (g):	101.3716	99.2561	98.2754	99.2186	100.2160
Average (g):	101.3714	99.2563	98.27565	99.21855	100.21605
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):		✓	✓	✓	✓
Net Corrected Wt. (mg):	0	23.1162	27.8420	34.8690	65.4458

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name: Holly
Plant Name: Sidney MT
Unit Name: Pulp Dryer South-West
Test Date: 10-(21-22)-93
Analysts Sign.: Allie Kaul / Jay

Acetone Density (gm/ml) 0.787
Lab Conditions:
Temp:
Humidity:
Reviewer Sign.:

Sample Id./Run No.:	Blank	M5 5101	M5 5102	PM-10 5103	PM-10 5104	~~PM-10~~ ~~5103~~→~~5104~~
Beaker No.:						
Wash Volume (ml.):						
Wt. of Acetone Wash (g):						
Tare Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Raw Net Wt. (mg):						
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):						
Filter Id. No.:		7479	7482	7486	7487	
Tare Lab Book Page:		F11	F11	F11	F11	
1st Weight (g):		0.3377	0.3345	0.3371	0.3348	
2nd Weight (g):		0.3375	0.3346	0.3370	0.3346	
Average (g):		0.3376	0.33455	0.33705	0.3347	
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):		.3546	.4932	.4583	.3927	
Raw Net Wt. (mg):						
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):		17.0	158.65	121.25	55.0	

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE - ~~Cyclone~~

Company Name: Holly
Plant Name: Frisco, MT
Unit Name: Pulp Dryer South-West
Test Date: 10-(21-22)-93
Analysts Sign.: Michael J Lay

Acetone Density (grm/ml) 0.787
Lab Conditions:
Temp:
Humidity:
Reviewer Sign.:

Sample Id./Run No.:	Blank	M5 5101→5102		PM-10 5103→5104	Cyclone 5103→5104	
Beaker No.:		7		58	57	
Wash Volume (ml.):		430		425	173	
Wt. of Acetone Wash (g):						
Tare Lab Book Page:		B 37		B45	B45	
1st Weight (g):		102.5480		101.7765	101.7121	
2nd Weight (g):		102.5481		101.7763	101.7119	
Average (g):		102.54805		101.7764	101.7120	
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):		102.59435		102.0783	102.0767	
Raw Net Wt. (mg):						
Blank Wt. (mg/g):				170.3051	194.5949	cyc
Blank Correction (mg):						
Net Corrected Wt. (mg):		7.3296	35.4871	140.6791	160.7434	PM-10
Filter Id. No.:						
Tare Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Raw Net Wt. (mg):						
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):						

0.159976
.84002
.46671728
.5332827

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

BACKSIDE

Company Name:	Holly	Water Density (gm/ml):	1.000
Plant Name:	Sidney, MT	Lab Conditions:	
Unit Name:	Pulp Dryer - South-West	Temp:	
Test Date:	10-(21-22)-93	Humidity:	
Analysts Sign.:	Michael J Kip	Reviewer Sign.:	

Sample Id./Run No.:	Blank	S101	S102	S103	S104
Beaker No.:		33 ✓	61 ✓	44 ✓	27 ✓
Wash Volume (ml.):		310 ✓	860 ✓	845 ✓	790 ✓
Wt. of Water Wash (g):					
Tare Lab Book Page:		B41	B41	B43	B43
1st Weight (g):		101.0401	106.2127	102.6575	98.6253
2nd Weight (g):		101.0399	106.2127	102.6577	98.6258
Average (g):		101.03995 ✓	106.2127 ✓	102.6576 ✓	98.62555 ✓
Final Lab Book Page:		B42	B42	B44	B44
1st Weight (g):		101.0691	106.2911	102.7534	98.7743
2nd Weight (g):		101.0689	106.2906	102.7536	98.7748
Average (g):		101.0690 ✓	106.29085 ✓	102.7535 ✓	98.77455 ✓
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):		✓	✓	✓	✓
Net Corrected Wt. (mg):	0	47.624	74.194	92.013	142.336

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name: Holly
Plant Name: Sidney MT
Unit Name: Pulp Dryer - South - East
Test Date: 10-(21-22)-93
Analysts Sign.: Michael J Lee

Acetone Density (gm/ml): 0.787
Lab Conditions:
Temp:
Humidity:
Reviewer Sign.:

add.

Sample Id./Run No.:	Blank	6101	6102	6103	6104	6102
Beaker No.:						
Wash Volume (ml.):						
Wt. of Acetone Wash (g):						
Tare Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Raw Net Wt. (mg):						
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):						
Filter Id. No.:		7480	7481	7485	7488	7484 (Filter B)
Tare Lab Book Page:		F11	F11	F11	F11	F11
1st Weight (g):		0.3363	0.3355	0.3361	0.3354	0.3384
2nd Weight (g):		0.3362	0.3355	0.3360	0.3355	0.3384
Average (g):		0.33625	0.3355	0.33605	0.33545	0.3384
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):		.35415	.39325	.38275	.52025	.37825
Raw Net Wt. (mg):						
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):		17.9	57.85	46.7	189.8	37.85

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

4.6.17

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name: Holly
Plant Name: [illegible]
Unit Name: Pulp Dryer South-East
Test Date: 10-(21→22)-93
Analysts Sign.: Michael J Rue

Acetone Density (gm/ml) 0.787
Lab Conditions:
Temp:
Humidity:
Reviewer Sign.:

		PM-10	Cyclone		M5	
Sample Id./Run No.:	Blank	6101→6102	6101→6102		6103→6104	
Beaker No.:		59	45		39	
Wash Volume (ml.):		540	542		362	
Wt. of Acetone Wash (g):						
Tare Lab Book Page:		B45	B45		B45	
1st Weight (g):		98.0159	102.4930		98.5653	
2nd Weight (g):		98.0156	102.4827		98.5650	
Average (g):		98.0157	102.48785		98.56515	
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):		98.1538	102.7342		98.7256	
		19.7986	117.6459	76.822	133.2212	
Raw Net Wt. (mg):		36.119	214.6243			
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):						
Filter Id. No.:						
Tare Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Final Lab Book Page:						
1st Weight (g):						
2nd Weight (g):						
Average (g):						
Raw Net Wt. (mg):						
Blank Wt. (mg/g):						
Blank Correction (mg):						
Net Corrected Wt. (mg):						

6101 .1440149
6102 .8559L
6103 .3657438
6104 .6342562

PM-10 cyclone

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

4.6.18

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

BACKSIDE

Company Name:	Holly	Water Density (gm/ml):	1.000
Plant Name:	Sidney, MT	Lab Conditions:	
Unit Name:	Pulp Dryer South-East	Temp:	
Test Date:	10-(21-23)-03	Humidity:	
Analysts Sign.:	Michael A Lip	Reviewer Sign.:	

Sample Id./Run No.:	Blank	6101	6102	6103	6104
Beaker No.:	26	32	31	42	30
Wash Volume (ml.):	500	323	1055	411	920
Wt. of Water Wash (g):					
Tare Lab Book Page:		B43	B43	B43	B43
1st Weight (g):	99.1374	98.3063	100.3914	101.7835	99.3490
2nd Weight (g):	99.1374	98.3067	100.3915	101.7828	99.3495
Average (g):	99.1374	98.3065	100.39145	101.78325	99.34925
Final Lab Book Page:		B44	B44	B44	B44
1st Weight (g):	99.1397	98.3236	100.6850	101.8519	99.4524
2nd Weight (g):	99.1397	98.3235	100.6855	101.8517	99.4523
Average (g):	99.1397	98.32355	100.68525	101.8518	99.45235
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):	0	15.5642	286.247	67.2594	98.868

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name: Holly
Plant Name: Sidney, MT
Unit Name: Pulp Dryer North-West
Test Date:
Analysts Sign.:

Acetone Density (gm/ml) 0.787
Lab Conditions:
Temp:
Humidity:
Reviewer Sign.:

Sample Id./Run No.:	Reagent Acetone Blank	M5 7101	~~Reagent Blank Acetone~~	PM10 7102→7103	Cyclone 7102→7103
Beaker No.:	2c	60		2a	19
Wash Volume (ml.):	445	590		500	203
Wt. of Acetone Wash (g):					
Tare Lab Book Page:	~~337~~ B-45 JF	B45		B45	
1st Weight (g):	~~103.6576~~	96.4944		101.4980	
2nd Weight (g):	~~103.6574~~	96.4942		101.4979	
Average (g):	~~103.6575~~ 101.49745 JF	96.4943		101.49795	105.20265
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):	101.49795	96.55135		101.61820	105.9370
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):				116.3911	113.3305
Filter Id. No.:					
Tare Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):					

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name:	Holly	Acetone Density (gm/ml)	0.787
Plant Name:	Sidney, MT	Lab Conditions:	
Unit Name:	Pulp Dryer - North-West	Temp:	
Test Date:	10-23-93	Humidity:	
Analysts Sign.:	Michael J Sept	Reviewer Sign.:	

Sample Id./Run No.:	Blank	7101	7102	7103	
Beaker No.:					
Wash Volume (ml.):					
Wt. of Acetone Wash (g):					
Tare Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):		62.3871	60.744	56.9442	
Filter Id. No.:		7493	7489	7496	
Tare Lab Book Page:		F13	F11	F13	
1st Weight (g):		0.3341	0.3337	0.3356	
2nd Weight (g):		0.3341	0.3338	0.3354	
Average (g):		0.3341	0.33375	0.3355	
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):		.38775	.37920	.38910	
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):		57.65	45.45	57.6	

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

4.6.21

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

BACKSIDE

Company Name:	Holly	Water Density (gm/ml):	1.000
Plant Name:	Sidney, MT	Lab Conditions:	
Unit Name:	Pulp Dryer - North-West	Temp:	
Test Date:	10-23-93	Humidity:	
Analysts Sign.:	Michael J Pay	Reviewer Sign.:	

Sample Id./Run No.:	Blank	7101	7102	7103	
Beaker No.:		16	20	~~60~~ 35	
Wash Volume (ml.):		590	750	~~35~~ 680	
Wt. of Water Wash (g):					
Tare Lab Book Page:		B43	B39	B43	
1st Weight (g):		98.7003	105.2440	99.1136	
2nd Weight (g):		98.6998	105.2441	99.1139	
Average (g):		98.70005	105.24405	99.11375	
Final Lab Book Page:		B44	B40	B44	
1st Weight (g):		98.8168	105.3158	99.1625	
2nd Weight (g):		98.8170	105.3162	99.1625	
Average (g):		98.8169	105.3160	99.1625	
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):	0	114.136	68.5	45.622	

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name:	Holly	Acetone Density (gm/ml)	0.787
Plant Name:	Sidney, MT	Lab Conditions:	
Unit Name:	Pulp Dryer - North-East	Temp:	
Test Date:	10-25-23	Humidity:	
Analysts Sign.:		Reviewer Sign.:	

Sample Id./Run No.:	Reagent Acetone Blank 10-25	8101	8102	8103	
Beaker No.:					
Wash Volume (ml.):					
Wt. of Acetone Wash (g):					
Tare Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):					
Filter Id. No.:		7492	7490	7497	
Tare Lab Book Page:		F13	F13	F13	
1st Weight (g):		0.3341	0.3342	0.3342	
2nd Weight (g):		0.3341	0.3342	0.3343	
Average (g):		0.3341	0.3342	0.33425	
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):		.3939	.4451	.51065 .51065	
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):					

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

4.6.23

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

FRONTSIDE

Company Name: Holly
Plant Name: Sunland, NM
Unit Name: Pulp Dryer North-East
Test Date: 10-23-93
Analysts Sign.: Michael Ly

Acetone Density (gm/ml): 0.787
Lab Conditions:
Temp:
Humidity:
Reviewer Sign.:

Sample Id./Run No.:	Blank	PM10 8101	Cyclone 8101	~~Blank~~	MS 8102→8103
Beaker No.:		17	36		34
Wash Volume (ml.):		552	285		535
Wt. of Acetone Wash (g):					
Tare Lab Book Page:		B45	B45		
1st Weight (g):		98.7745	104.7690		
2nd Weight (g):		98.7742	104.7678		
Average (g):		98.77435	104.7679		106.43345
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):		98.8308	104.8363		106.5062
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):					
Filter Id. No.:					
Tare Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Final Lab Book Page:					
1st Weight (g):					
2nd Weight (g):					
Average (g):					
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):					

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.

4.6.24

The Emission Measurement Group, Inc.

Particulate Lab Analytical Data Entry Sheet

BACKSIDE

Company Name:	Holl...	Water Density (gm/ml):	1.000
Plant Name:	Sidney MT	Lab Conditions:	
Unit Name:	Pulp Dryer North-East	Temp:	
Test Date:	10-23-93	Humidity:	
Analysts Sign.:	Michael Rey	Reviewer Sign.:	

Sample Id./Run No.:	Blank	8101	8102	8103	Post Test Dynamic Blank H2O
Beaker No.:		29	14	3	1a + 15a
Wash Volume (ml.):		335	725	830	450
Wt. of Water Wash (g):					
Tare Lab Book Page:		B43	B37	B37	B45
1st Weight (g):		98.2279	105.1454	103.6026	100.2175
2nd Weight (g):		98.2281	105.1457	103.6024	100.2177
Average (g):		98.2280	105.14555	103.6025	100.2176
Final Lab Book Page:		B44	B38	B38	B46
1st Weight (g):		98.3127	105.1697	103.6948	100.2120
2nd Weight (g):		98.3123	105.1693	103.6944	100.2123
Average (g):		98.3125	105.1695	103.6946	100.21215
Raw Net Wt. (mg):					
Blank Wt. (mg/g):					
Blank Correction (mg):					
Net Corrected Wt. (mg):					

Balance pre and post calibrations at 100.0008 g. (internal weight) +/- 0.0001g.) for each weighing.