UNITED STATES SUGAR CORPORATION

111 Ponce de Leon Ave.
Clewiston, Florida 33440-1207
Telephone 863/902-8121
Fax 863/902-2729

ENVIRONMENTAL & SAFETY DEPARTMENT

June 27, 2006

Sherrill Culiver
Florida Department of Environmental Protection
PO Box 2549
Ft. Myers, Florida 33901

Dear Mr. Culiver:

As agreed at our June 8, 2006 meeting regarding the PM emissions from our new sugar dryer at the Clewiston Refinery, enclosed are the recent methods 5 and 201A PM test results. Also, the report done by Mr. Winkler, consultant, on the same subject. Additionally, a tentative schedule to control excess dryer emissions by an engineering solution or by increasing permit limits on the current equipment is included.

Since our meeting, we have hired Mr. David Taub, former Vice President of engineering for Entoleter, the emission control equipment supplier, as a consultant for this project. Mr. Taub will be here on July 12, 2006 to inspect the equipment. He has informed us that based on the information we have supplied him that the chevron demister recommended by Mr. Winkler may not work. We will know more after Mr. Taub's visit.

In addition, a permit application is being prepared to request increased emission limits for the dryer. The application will be forwarded within the week. It is our intent to continue with the engineering evaluation and design until a Department decision is made regarding our request to increase emission limits. If the Department has finished deliberations by the time equipment for the Entoleter needs to be ordered we will either order the equipment or cease the engineering work as appropriate. If deliberations are not completed we will put the engineering project on hold until the issues are resolved with the Department.

If you wish to discuss the above or have any questions, please call Don Griffin or myself. Mr. Griffin can be reached at 863-902-2711. My number is 863-902-3183.

Sincerely,
United States Sugar Corporation

Peter B. Briggs
Vice President, Environmental Compliance
& Programs

PB:tkw

CC: Ron Blackburn
Neil Smith
Don Griffin
Ed Almeida
Terry Cole
Bruce McManus

ACE
AIR CONSULTING
& ENGINEERING, INC.

2106 N.W. 67th Place • Suite 4 • Gainesville, Florida • 32653
(352) 335-1889 FAX (352) 335-1891

June 2, 2006

Mr. Don Griffin
U.S. Sugar Corporation
111 Ponce DeLeon Ave
Clewiston, Florida 33440-3032

Dear Mr. Griffin:

On May 23-25, 2006 Air Consulting and Engineering, Inc. performed particulate matter and PM10 emissions testing on the exhaust of the White Sugar Dryer Number 2 (EU29) at the Clewiston Mill. Emissions are summarized in Table 1. Attached are also our data sheets for PM and PM10
Respectfully,

AIR CONSULTING AND ENGINEERING, INC.

Dagmar F. L

Dagmar Fick
Mechanical Engineer

Enclosures

ACE File: 238 06 01

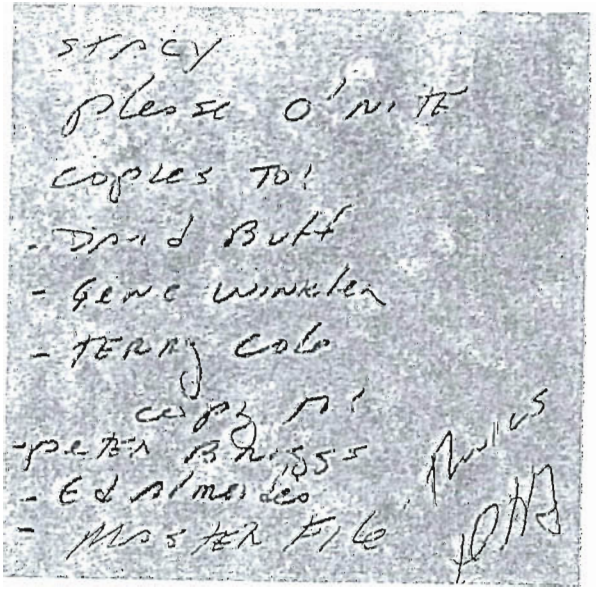

Table 1. Particulate Emission Summary
White Sugar Dryer No. 2
US Sugar Corporation - Clewiston Mill
Clewiston, Florida
May 23-25, 2006

Run Number	% Load	Time	Actual Flow Rate acfm	Dry Standard Flow Rate dscfm	Stack Temperature F	Particulate Emissions gr/dscf	Particulate Emissions lbs/hr	% Load	Time	PM10 Emissions gr/dscf	PM10 Emissions lbs/hr
5/24/06								5/23/06			
1	100	0852-0927	96546	83682	88.7	0.0364	26.10	50	1015-1040	0.00324	2.37
2	100	1002-1037	95849	82769	88.4	0.0262	18.61	50	1127-1200	0.00218	1.59
3	100	1100-1134	96872	83743	88.4	0.0291	20.89	50	1220-1254	0.00154	1.13
4	50	1208-1243	98102	85704	84.9	0.0267	19.65	100	1400-1433	0.00143	1.02
5	50	1303-1337	98919	86321	85.2	0.0440	32.55	100	1450-1554	0.00242	1.75
6	50	1350-1425	98614	85981	84.5	0.0283	20.89	100	1545-1619	0.00149	1.06
5/25/06								5/25/06			
7	100	0802-0836	96457	82866	89.5	0.0342	24.30	100	1024-1058	0.00143	1.02
8	100	0850-0925	96272	82501	88.7	0.0286	20.21	100	1110-1144	0.00131	0.94
9	100	0934-1008	97078	83246	89.8	0.0294	20.99	100	1153-1228	0.00177	1.26

Allowable Emissions:
PM - 0.005 gr/dscf and 4.2 lbs/hr

APPENDIX A

PARTICULATE MATTER DATA

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	1-100%		IMPINGER ml.	14.0
BEGIN TIME (hour : minute):	8:52 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	9:27 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.03	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	250.807	CUBIC FT.		
INITIAL METER:	230.012	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	1.0
PITOT Cp:	0.84		WASH mg.:	46.5

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	96546
AVG. SQ. RT. VEL. HEAD:	1.0000	VOLUMETRIC FLOW(WVSCFM):	3323
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	83682
AVG. STACK TEMP. (F):	88.7	VOLUMETRIC FLOW(SCFMwet):	87005
AVG. METER TEMP. (F):	93.4		
AVG. ORIFICE DIFFERENTIAL:	1.220	PARTICULATE EMISSION DATA:	
METER ACF:	20.795		
METER SCF:	20.148	POUNDS PER HOUR:	26.096
MEASURED SCF MOISTURE:	0.800	POUNDS PER SCF.:	5.2E-06
MEASURED MOISTURE %:	3.82	GRAINS PER SCF.:	0.0364
STACK TEMP. (deg. C):	31.5	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.4	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.83		
PERCENT WATER VAPOR:	3.82		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.42		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.6		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	106.68		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	2-100%		IMPINGER ml:	16.0
BEGIN TIME (hour : minute):	10:02 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	10:37 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.03	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	272.132	CUBIC FT.		
INITIAL METER:	251.076	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.7
PITOT Cp:	0.84		WASH mg.:	33.8

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	95849
AVG. SQ. RT. VEL. HEAD:	0.9923	VOLUMETRIC FLOW(WVSCFM):	3648
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	82769
AVG. STACK TEMP. (F):	88.4	VOLUMETRIC FLOW(SCFMwet):	86417
AVG. METER TEMP. (F):	96.5		
AVG. ORIFICE DIFFERENTIAL:	1.298	**PARTICULATE EMISSION DATA:**	
METER ACF:	21.056		
METER SCF:	20.292	POUNDS PER HOUR:	18.614
MEASURED SCF MOISTURE:	0.894	POUNDS PER SCF.:	3.75E-06
MEASURED MOISTURE %:	4.22	GRAINS PER SCF.:	0.0262
STACK TEMP. (deg. C):	31.3	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.3	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.80		
PERCENT WATER VAPOR:	4.22		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.38		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.2		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	108.63		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA.
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	3-100%		IMPINGER ml.	15.0
BEGIN TIME (hour : minute):	11:00 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	11:34 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.03	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	292.948	CUBIC FT.		
INITIAL METER:	272.443	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.6
PITOT Cp:	0.84		WASH mg.:	36.6

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	96872
AVG. SQ. RT. VEL. HEAD:	1.0031	VOLUMETRIC FLOW(WVSCFM):	3596
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	83743
AVG. STACK TEMP. (F):	88.4	VOLUMETRIC FLOW(SCFMwet):	87339
AVG. METER TEMP. (F):	97.4		
AVG. ORIFICE DIFFERENTIAL:	1.331	**PARTICULATE EMISSION DATA:**	
METER ACF:	20.505		
METER SCF:	19.730	POUNDS PER HOUR:	20.885
MEASURED SCF MOISTURE:	0.847	POUNDS PER SCF.:	4.16E-06
MEASURED MOISTURE %:	4.12	GRAINS PER SCF.:	0.0291
STACK TEMP. (deg. C):	31.3	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.3	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.80		
PERCENT WATER VAPOR:	4.12		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.39		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.8		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	104.39		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	4-50%		IMPINGER ml.	15.0
BEGIN TIME (hour : minute):	12:08 PM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	12:43 PM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.10	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	314.586	CUBIC FT.		
INITIAL METER:	293.210	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.5
PITOT Cp:	0.84		WASH mg.:	35.1

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	98102
AVG. SQ. RT. VEL. HEAD:	1.0206	VOLUMETRIC FLOW(WVSCFM):	3535
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	85704
AVG. STACK TEMP. (F):	84.9	VOLUMETRIC FLOW(SCFMwet):	89238
AVG. METER TEMP. (F):	98.2		
AVG. ORIFICE DIFFERENTIAL:	1.374	PARTICULATE EMISSION DATA:	
METER ACF:	21.376		
METER SCF:	20.543	POUNDS PER HOUR:	19.646
MEASURED SCF MOISTURE:	0.847	POUNDS PER SCF.:	3.82E-06
MEASURED MOISTURE %:	3.96	GRAINS PER SCF.:	0.0267
STACK TEMP. (deg. C):	29.4	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.2	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.28		
PERCENT WATER VAPOR:	3.96		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.41		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	60.6		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	106.20		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	5-50%		IMPINGER ml.	15.0
BEGIN TIME (hour : minute):	1:03 PM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	1:37 PM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.10	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	336.018	CUBIC FT.		
INITIAL METER:	314.941	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.5
PITOT Cp:	0.84		WASH mg.:	57.1

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	98919
AVG. SQ. RT. VEL. HEAD:	1.0288	VOLUMETRIC FLOW(WVSCFM):	3620
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	86321
AVG. STACK TEMP. (F):	85.2	VOLUMETRIC FLOW(SCFMwet):	89941
AVG. METER TEMP. (F):	99.6		
AVG. ORIFICE DIFFERENTIAL:	1.395	**PARTICULATE EMISSION DATA:**	
METER ACF:	21.077		
METER SCF:	20.205	POUNDS PER HOUR:	32.551
MEASURED SCF MOISTURE:	0.847	POUNDS PER SCF.:	6.28E-06
MEASURED MOISTURE %:	4.02	GRAINS PER SCF.:	0.0440
STACK TEMP. (deg. C):	29.5	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.2	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.31		
PERCENT WATER VAPOR:	4.02		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.40		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	61.1		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	103.71		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	6-50%		IMPINGER ml.	16.0
BEGIN TIME (hour : minute):	1:50 PM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	2:25 PM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.10	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	357.252	CUBIC FT.		
INITIAL METER:	336.342	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.8
PITOT Cp:	0.84		WASH mg.:	36.0

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	98614
AVG. SQ. RT. VEL. HEAD:	1.0258	VOLUMETRIC FLOW(WVSCFM):	3791
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	85981
AVG. STACK TEMP. (F):	84.5	VOLUMETRIC FLOW(SCFMwet):	89773
AVG. METER TEMP. (F):	99.8		
AVG. ORIFICE DIFFERENTIAL:	1.390	**PARTICULATE EMISSION DATA:**	
METER ACF:	20.91		
METER SCF:	20.039	POUNDS PER HOUR:	20.886
MEASURED SCF MOISTURE:	0.894	POUNDS PER SCF.:	4.05E-06
MEASURED MOISTURE %:	4.27	GRAINS PER SCF.:	0.0283
STACK TEMP. (deg. C):	29.2	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.2	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.22		
PERCENT WATER VAPOR:	4.22		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.38		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	60.9		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	103.26		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-25-06

RUN NUMBER:	7-100%		IMPINGER ml.	16.0
BEGIN TIME (hour : minute):	8:02 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	8:36 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.05	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	27.99	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	377.552	CUBIC FT.		
INITIAL METER:	357.524	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.5
PITOT Cp:	0.84		WASH mg.:	42.7

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	96457
AVG. SQ. RT. VEL. HEAD:	0.9965	VOLUMETRIC FLOW(WVSCFM):	3804
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	82866
AVG. STACK TEMP. (F):	89.5	VOLUMETRIC FLOW(SCFMwet):	86669
AVG. METER TEMP. (F):	90.5		
AVG. ORIFICE DIFFERENTIAL:	1.236	**PARTICULATE EMISSION DATA:**	
METER ACF:	20.028		
METER SCF:	19.483	POUNDS PER HOUR:	24.304
MEASURED SCF MOISTURE:	0.894	POUNDS PER SCF.:	4.89E-06
MEASURED MOISTURE %:	4.39	GRAINS PER SCF.:	0.0342
STACK TEMP. (deg. C):	31.9	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.4	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.97		
PERCENT WATER VAPOR:	4.39		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.36		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.5		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	104.17		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-25-06

RUN NUMBER:	8-100%		IMPINGER ml.	17.0
BEGIN TIME (hour : minute):	8:50 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	9:25 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.05	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	27.99	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	397.509	CUBIC FT.		
INITIAL METER:	378.041	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.7
PITOT Cp:	0.84		WASH mg.:	34.1

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	96272
AVG. SQ. RT. VEL. HEAD:	0.9947	VOLUMETRIC FLOW(WVSCFM):	4134
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	82501
AVG. STACK TEMP. (F):	88.7	VOLUMETRIC FLOW(SCFMwet):	86635
AVG. METER TEMP. (F):	94.9		
AVG. ORIFICE DIFFERENTIAL:	1.254	**PARTICULATE EMISSION DATA:**	
METER ACF:	19.468		
METER SCF:	18.788	POUNDS PER HOUR:	20.213
MEASURED SCF MOISTURE:	0.941	POUNDS PER SCF.:	4.08E-06
MEASURED MOISTURE %:	4.77	GRAINS PER SCF.:	0.0286
STACK TEMP. (deg. C):	31.5	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.4	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.84		
PERCENT WATER VAPOR:	4.77		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.32		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.4		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	100.90		

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-25-06

RUN NUMBER:	9-100%		IMPINGER ml.	16.0
BEGIN TIME (hour : minute):	9:34 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	10:08 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.05	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	27.99	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	417.668	CUBIC FT.		
INITIAL METER:	398.007	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	0.6
PITOT Cp:	0.84		WASH mg.:	35.4

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	97078
AVG. SQ. RT. VEL. HEAD:	1.0025	VOLUMETRIC FLOW(WVSCFM):	3942
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	83246
AVG. STACK TEMP. (F):	89.8	VOLUMETRIC FLOW(SCFMwet):	87188
AVG. METER TEMP. (F):	97.6		
AVG. ORIFICE DIFFERENTIAL:	1.291	**PARTICULATE EMISSION DATA:**	
METER ACF:	19.661		
METER SCF:	18.885	POUNDS PER HOUR:	20.990
MEASURED SCF MOISTURE:	0.894	POUNDS PER SCF.:	4.2E-06
MEASURED MOISTURE %:	4.52	GRAINS PER SCF.:	0.0294
STACK TEMP. (deg. C):	32.1	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.4	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	5.01		
PERCENT WATER VAPOR:	4.52		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.35		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.9		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	100.52		

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME:	U.S. SUGAR CORPORATION				
LOCATION:	CLEWISTON,FLORIDA				
SOURCE:	WHITE SUGAR DRYER				
DATE:	05-24-06				
RUN NUMBER:	1-100%	**START:**	8:52	**END:**	9:27

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.83	1.00	1.00	89	90
1 - 2	0.00	0.78	0.94	0.94	89	91
1 - 3	0.00	0.68	0.82	0.82	89	92
2 - 1		1.15	1.38	1.38	89	93
2 - 2		0.88	1.06	1.06	89	93
2 - 3		0.70	0.84	0.84	89	94
3 - 1		1.50	1.80	1.80	89	94
3 - 2		1.05	1.26	1.26	89	94
3 - 3		0.95	1.14	1.14	88	94
4 - 1		1.50	1.80	1.80	88	95
4 - 2		0.98	1.18	1.18	88	95
4 - 3		1.20	1.44	1.44	88	96
AVERAGES		1.017	1.220		88.67	93.42

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-24-06
RUN NUMBER: 2-100% **START:** 10:02 **END:** 10:37

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP, F	METER TEMP,F
1 - 1	0.00	0.85	1.11	1.11	88	95
1 - 2	0.00	0.77	1.00	1.00	88	95
1 - 3	0 00	0.70	0.91	0.91	88	95
2 - 1		1.05	1.37	1.37	88	95
2 - 2		0.86	1.12	1.12	88	96
2 - 3		0.70	0.91	0.91	88	96
3 - 1		1.40	1.82	1.82	89	96
3 - 2		1 10	1.43	1.43	89	97
3 - 3		0.92	1.20	1 20	88	98
4 - 1		1.40	1 82	1.82	89	98
4 - 2		0.98	1.27	1.27	89	98
4 - 3		1.25	1.63	1.63	89	99
AVERAGES:		0.998	1 298		88.42	96.50

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME:	U.S. SUGAR CORPORATION				
LOCATION:	CLEWISTON,FLORIDA				
SOURCE:	WHITE SUGAR DRYER				
DATE:	05-24-06				
RUN NUMBER:	3-100%	START:	11:00	END:	11:34

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.83	1.08	1.08	88	96
1 - 2	0.00	0.76	0.99	0 99	88	96
1 - 3	0.00	0 70	0.91	0.91	88	97
2 - 1		1.15	1.50	1.50	88	97
2 - 2		0.90	1.17	1.17	89	97
2 - 3		0.67	0.87	0.87	89	97
3 - 1		1.40	1.82	1.82	89	97
3 - 2		1.05	1.37	1.37	88	98
3 - 3		0 98	1.27	1.27	88	98
4 - 1		1.60	2.08	2 08	89	98
4 - 2		0.95	1.24	1.24	89	99
4 - 3		1.30	1 69	1.69	88	99
AVERAGES:		1.024	1.331		88.42	97.42

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-24-06
RUN NUMBER: 4-50% **START:** 12:08 **END:** 12:43

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.83	1.08	1.08	84	97
1 - 2	0.00	0.88	1.14	1.14	84	97
1 - 3	0 00	0.76	0.99	0.99	84	98
2 - 1		1.10	1.43	1.43	85	98
2 - 2		0.97	1.26	1.26	86	98
2 - 3		0.78	1.01	1.01	86	98
3 - 1		1.60	2.08	2.08	85	98
3 - 2		1.00	1.30	1.30	85	98
3 - 3		0.98	1.27	1.27	85	99
4 - 1		1.50	1.95	1.95	85	99
4 - 2		0.98	1.27	1.27	85	99
4 - 3		1.30	1.69	1.69	85	99
AVERAGES:		1.057	1 374		84.92	98.17

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-24-06
RUN NUMBER: 5-50% **START:** 13:03 **END:** 13:37

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.85	1.11	1.11	86	98
1 - 2	0.00	0.87	1.13	1.13	86	99
1 - 3	0.00	0.74	0.96	0.96	85	99
2 - 1		1.35	1.76	1.76	85	99
2 - 2		0.95	1.24	1.24	84	99
2 - 3		0.79	1 03	1.03	84	100
3 - 1		1 35	1.76	1.76	85	100
3 - 2		1.25	1.63	1.63	85	100
3 - 3		0.98	1.27	1.27	85	100
4 - 1		1.60	2.08	2.08	86	100
4 - 2		0.95	1.24	1.24	86	100
4 - 3		1.20	1.56	1.56	85	101
AVERAGES:		1.073	1.395		85.17	99.58

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-24-06
RUN NUMBER: 6-50% **START:** 13:50 **END:** 14:25

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.90	1.17	1.17	84	99
1 - 2	0.00	0.84	1.09	1.09	84	99
1 - 3	0.00	0.73	0.95	0.95	84	99
2 - 1		1.25	1.63	1.63	84	99
2 - 2		1.05	1.37	1.37	85	99
2 - 3		0.76	0.99	0.99	85	100
3 - 1		1.40	1.82	1.82	85	100
3 - 2		1.25	1.63	1.63	85	100
3 - 3		1.00	1.30	1.30	85	100
4 - 1		1.70	2.21	2.21	84	100
4 - 2		0.85	1.11	1.11	85	101
4 - 3		1.10	1.43	1.43	84	101
AVERAGES:		1.069	1.390		84.50	99.75

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-25-06
RUN NUMBER: 7-100% **START:** 8:02 **END:** 8:36

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.86	1.06	1.06	89	89
1 - 2	0.00	0.78	0.96	0.96	89	89
1 - 3	0.00	0.76	0.93	0.93	90	89
2 - 1		1.05	1.29	1.29	90	90
2 - 2		0.87	1.07	1.07	90	90
2 - 3		0.70	0.86	0.86	89	90
3 - 1		1.30	1.60	1.60	90	90
3 - 2		1.10	1.35	1.35	89	91
3 - 3		0.96	1.18	1.18	89	91
4 - 1		1.40	1.72	1.72	89	92
4 - 2		0.98	1.21	1.21	90	92
4 - 3		1.30	1.60	1.60	90	93
AVERAGES:		1.005	1.236		89.50	90.50

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-25-06
RUN NUMBER: 8-100% **START:** 8:50 **END:** 9:25

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP.F
1 - 1	0.00	0.88	1.10	1.10	88	93
1 - 2	0.00	0.75	0.94	0.94	88	93
1 - 3	0.00	0.68	0.85	0.85	87	93
2 - 1		1.10	1.38	1.38	87	94
2 - 2		0.86	1.08	1.08	88	94
2 - 3		0.72	0.90	0.90	89	95
3 - 1		1.50	1.88	1.88	90	95
3 - 2		1.10	1.38	1.38	90	95
3 - 3		0.95	1.19	1.19	89	96
4 - 1		1.35	1.69	1.69	89	96
4 - 2		1.00	1.25	1.25	90	97
4 - 3		1.15	1.44	1.44	89	98
AVERAGES:		1.003	1.254		88.67	94.92

AIR CONSULTING and ENGINEERING, INC.

COMPANY NAME: U.S. SUGAR CORPORATION
LOCATION: CLEWISTON,FLORIDA
SOURCE: WHITE SUGAR DRYER
DATE: 05-25-06
RUN NUMBER: 9-100% **START:** 9:34 **END:** 10:08

SOURCE PARAMETER ENTRIES

PORT-POINT	"inches"	VELOCITY HEAD	ORIFICE CALC.	DELTA P ACTUAL	STACK TEMP. F	METER TEMP,F
1 - 1	0.00	0.89	1.13	1.13	88	96
1 - 2	0.00	0.80	1.02	1.02	89	96
1 - 3	0.00	0.72	0.91	0.91	90	97
2 - 1		1.05	1.33	1.33	89	97
2 - 2		0.85	1.08	1.08	90	97
2 - 3		0.73	0.93	0.93	90	98
3 - 1		1.25	1.59	1.59	89	98
3 - 2		1.30	1.65	1.65	90	98
3 - 3		0.96	1.22	1.22	91	98
4 - 1		1.40	1.78	1.78	90	98
4 - 2		1.10	1.40	1.40	91	99
4 - 3		1.15	1.46	1.46	90	99
AVERAGES:		1.017	1.291		89.75	97.58

AIR CONSULTING and ENGINEERING, INC.
SAMPLE CALCULATIONS

U.S. SUGAR CORPORATION
CLEWISTON,FLORIDA
WHITE SUGAR DRYER
05-24-06

RUN NUMBER: 1-100%

NOZZLE AREA SQ.FT.:
An=Pi*(Rn)E2 = Pi*(Dn/2)E2 = Pi*[(Dn/2)E2]*[(1ft/12in)E2]
=Pi*(Dn)E2 / (576) = (3.1416)*[(0.193)E2]/(576)
= 0.000203

METER ACTUAL CU. FEET:
Vm = (Vm final) - (Vm initial)
= (250.807) - (230.012)
= 20.795

METER STANDARD CU. FEET:
VMstd=(K1)*(Vm)*(Y)*{(Pbar)+[(DHavg)/(13.6)]}/[(TMavg)+(460)]
= (17.64)*(20.795)*(1.0072)*{(30.09)+[(1.22)/(13.6)]}/[(93.4)+(460)]
= 20.148

MEASURED SCF MOISTURE:
VWstd=(K2)*(Vlc)
= (0.04707)*(14 + 3)
= 0.8

MEASURED % MOISTURE:
Bwm%={(VWstd)/[(VMstd)+(VWstd)]}*100%
= {(0.8)/[(20.148)+(0.8)]}*100%
= 3.82%

STACK TEMP. Deg C
Tsc=[(TSavg)-32]*5/9
= [(88.7)-32]*5/9
= 31.5

VAPOR PRESSURE (in Hg):
Pv={2.718E[18.6866-0.00244*(273+(Tsc))-4509.47/(273+(Tsc))-
149541/((273+(Tsc))E2)]}/3.375
= {2.718E[18.688-0.00244*(273+(31.5))-4509.47/(273+(31.5))-
149541/((273+(31.5))E2)]}/3.375
= 1.35

SATURATION MOISTURE %:
Bwsat%=(Pv)/(Ps)*100
=(1.35)/(28.03)*100
= 4.83

PERCENT WATER VAPOR:
Bwo% = Bwm% IF Bwm% < Bwsat%
Bwo% = Bwsat% IF Bwsat% < Bwm%
= 3.82

GAS MOLECULAR WT.(dry):
Md = [(0.440)*(%CO2)]+[(0.320)*(%O2)]+{(0.280)*[(%N2)+(%CO)]}
= [(0.440)*(%CO2)]+[(0.320)*(%O2)]+{(0.280)*[(100)-(%CO2)-(%O2)]}
= [(0.440)*(0)]+[(0.032)*(20.9)]+{(0.280)*(79.1)]}
= 28.8

GAS MOLECULAR WT.(wet):
Ms= {(Md)*[1-(Bwo%/100)]}+[(18.0)*(Bwo%/100)]
= {(28.8)*[1-(0.0382)]}+[(18.0)*(0.0382)]
= 28.42

PERCENT EXCESS AIR:
%EA={(%O2)/{[(0.264)*(%N2)]-(%O2)}}*(100%)
= {(20.9)/{[(0.264)*(79.1)]-(20.9)}}*(100%)
#VALUE!

AVERAGE VELOCITY(FPS): VSavg=(85.48)*(Cp)*(ASRVH)*{[(TSavg)+(460)]/[(Ms)*(Ps)]}E1/2
= (85.48)*(0.84)*(1)*{[(88.7)+(460)]/[(28.4)*(28.03)]}E1/2
= 59.6

PERCENT ISOKINETIC: %Iso={(K4)*(TSavg+460)*(VMstd)/{(Ps)*(Vs)*(An)*(time)*[1-(Bwo%/100)]}}
*100
={ (0.09450)*(88.7+460)*(20.148)/{(28.03)*(59.6)*(0.000203)*(30)*[1-(3.82/100)]} }*100%
= 106.7

VOLUMETRIC FLOW(ACFM): QS=(VSavg)*(As)*(60)
= (59.6)*(27)*(60)
= 96545.6

VOLUMETRIC FLOW(WVSCFM): WVSCFM=(QS)*(17.64)*(Bwo%/100)*(Ps)/(TSavg+460)
= (96545.6)*(17.64)*(3.82/100)*(28.03)/(88.7+460)
= 3323.4

VOLUMETRIC FLOW(DSCFM): QSstd=(QS)*(17.64)*[1-(Bwo%/100)]*(Ps)/(TSavg+460)
= (96545.6)*(17.64)*[1-(3.82/100)]*(28.03)/(88.7+460)
= 83681.8

PARTICULATE EMISSION DATA:

POUNDS PER HOUR: lb/Hr=(mg)*(QSstd)*(60)/[(VMstd)*(453600)]
= (47.5)*(83681.8)*(60)/[(20.148)*(453600)]
= 26.096

POUNDS PER SCF.: lb/SCF=(lb/Hr)/[(60)*(QSstd)]
= (26.096/[(60)*(83681.8)]
= 0.000005

GRAINS PER SCF.: Gr/SCF=(lb/SCF)*(7000)
= (0.000005)*(7000)
= 0.036

GRAINS PER SCF @ 7% O2: =(Gr/SCF)*(20.9-7.0)/[(20.9)-(%O2)]
= (0.036)*(13.9)/[(20.9)-(20.9)]
#DIV/0!

GRAINS PER SCF @ 50% E.A.: =(Gr/SCF)*[(100)+(%EA)]/(150)
#VALUE!
#VALUE!

POUNDS PER MMBTU: NA
NA
NA

AIR CONSULTING and ENGINEERING, INC.
NOMENCLATURE

%CO - Percent Carbon Monoxide.
%CO2 - Percent Carbon Dioxide.
%EA - Percent excess air.
%Iso - Percent isokenetics.
%N2 - Percent Nitrogen.
%O2 - Percent Oxygen.
An - Area of the nozzle, square feet.
As - Stack area, square feet.
ASRVH - Average of the square roots of the velocity heads.
Bwm% - Percent water vapor as measured.
Bwo% - Percent water vapor.
Bwsat% - Percent water vapor at saturation.
C3H8 - Propane.
CH4 - Methane.
CO - Carbon Monoxide
CO - Carbon Monoxide.
CO2 - Carbon Dioxide
Cp - Pitot coefficient.
Cso2 - Concentration of Sulfur Dioxide, pounds per dry standard cubic foot.
DHavg - Average meter orifice pressure differential.
Dn - Nozzle diameter.
E - Denotes exponent.
F - Fuel factor,standard cubic feet per million BTU.
Gr/SCF - Grains per dry standard cubic foot.
Hr - Hour.
K1 - A constant =17.64.
K2 - A constant = 0.04707.
K4 - A constant = 0.09450.
lb - pound.
lb/Hr - pounds per hour.
lb/MMBTU - Pounds per million British Thermal Units.
lb/SCF - Pounds per dry standard cubic foot.
Md - Molecular weight of dry stack gas.
mg - Mass of filter and dried probe wash, milligrams.
MMBTU - million British Thermal Units.
Ms - Molecular weight of wet stack gas.
NOx - Oxides of Nitrogen.
Pbar - Barometric pressure, inches of Mercury.
Pi - A constant = 3.14159....
PPM - Parts per million.
Ps - Stack pressure, inches Mercury.
Pv - Vapor pressure of water at stack temperature, inches Mercury.
Qs - Volumetric flow rate, actual cubic feet per minute.
QSstd - Volumetric flow rate, dry standard cubic feet per minute.
Rn - Nozzle radius, inches.
SCF - Standard cubic feet.
SO2 - Sulfur Dioxide.
TMavg - Average meter temperature, degrees Farenheit.
TSavg - Average stack temperature, degrees Farenhiet.
Tsc - Average stack temperature, degrees Celcious.
Vlc - Volume of moisture collected in the impingers and silica gel, milliliters.
Vm - Metered volume, actual cubic feet.
Vm final - Final meter reading, actual cubic feet.
Vm initial - Initial meter reading, actual cubic feet.
VMstd - Metered volume corrected to standard conditions, standard cubic feet.
VOC - Volitile organic compounds.
VSavg - Average stack velocity, feet per second.
VWstd - Standard volume of water vapor, standard cubic feet.
WVSCFM - Volumetric flow rate of water vapor, standard cubic feet per minute.
Y - Meter correction factor.

AIR CONSULTING & ENGINEERING, INC.

PARTICULATE LAB DATA ANALYSIS

CLIENT / SOURCE IDENTIFICATION U.S. Sugar - Clewiston, White Sugar Dryer

BALANCE CHECK:

1ST GROSS WT. - 0.0 0.0 0.5 0.5000 10.0 10.0000 100.0 99.9999 DATE 5-31-06 TIME 0810 %RH 41 TEMP 70 BY: (INIT.) CR

2ND GROSS WT. - 0.0 0.0 0.5 0.5001 10.0 10.0001 100.0 100.0000 DATE 5-31-06 TIME 1540 %RH 38 TEMP 71 BY: (INIT.) CR

RUN I.D.	FILTER/ CONT. NO.	VOLUME (ml)	1ST GROSS WT. (gm)	2ND GROSS WT. (gm)	AVG. GROSS WT. (gm)	TARE WT. (gm)	SUB NET WT. (gm)	BLANK (gm)	NET WT. (mg)
1	2973	N/A	0.4298	0.4299	0.4299	0.4289	0.0010		1.0
2	2974		0.4266	0.4268	0.4267	0.4260	0.0007		0.7
3	2975		0.4300	0.4301	0.4301	0.4295	0.0006		0.6
4	2976		0.4266	0.4264	0.4265	0.4260	0.0005		0.5
5	2977		0.4254	0.4255	0.4255	0.4250	0.0005		0.5
6	2978		0.4256	0.4257	0.4257	0.4249	0.0008		0.8
7	2979		0.4213	0.4212	0.4213	0.4208	0.0005		0.5
8	2980		0.4292	0.4294	0.4293	0.4286	0.0007		0.7
9	3001		0.4305	0.4306	0.4306	0.4300	0.0006		0.6
BLANK	3002	↓	0.4246	0.4246	0.4246	0.4246	0.0000		0.0
1	B-1	440	108.9063	108.9064	108.9064	108.8599	0.0465		46.5
2	B-2	485	114.2311	114.2309	114.2310	114.1972	0.0338		33.8
3	B-3	420	115.2615	115.2614	115.2615	115.2249	0.0366		36.6
4	B-4	590	107.4892	107.4890	107.4891	107.4540	0.0351		35.1
5	B-5	550	109.3442	109.3441	109.3442	109.2871	0.0571		57.1

NOTES:

AIR CONSULTING & ENGINEERING, INC.

PARTICULATE LAB DATA ANALYSIS

CLIENT / SOURCE IDENTIFICATION: U.S. Sugar - Clewiston, White Sugar Dryer

BALANCE CHECK:

1ST GROSS WT. - 0.0: 0.0 0.5: 0.5000 10.0: 10.0000 100.0: 99.9999 DATE: 5-31-06 TIME: 0810 %RH: 41 TEMP: 70 BY: (INIT.): CR

2ND GROSS WT. - 0.0: 0.0 0.5: 0.5001 10.0: 10.0001 100.0: 100.0000 DATE: 5-31-06 TIME: 1540 %RH: 38 TEMP: 71 BY: (INIT.): CR

RUN I.D.	FILTER/ CONT. NO.	VOLUME (ml)	1ST GROSS WT. (gm)	2ND GROSS WT. (gm)	AVG. GROSS WT. (gm)	TARE WT. (gm)	SUB NET WT. (gm)	BLANK (gm)	NET WT. (mg)
6	B-6	450	98.5742	98.5740	98.5741	98.5381	0.0360		36.0
7	B-7	470	109.9028	109.9027	109.9028	109.8601	0.0427		42.7
8	B-8	530	107.3171	107.3169	107.3170	107.2829	0.0341		34.1
9	B-9	490	107.6465	107.6465	107.6465	107.6111	0.0354		35.4
BLANK	B-10	200	113.1340	113.1338	113.1339	113.1323	0.0016		1.6

NOTES:

APPENDIX B

PM10 DATA

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 1-50% FROM: 10:15 TO: 10:49

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.027
AVG DELTA P:	1.055
AVG STACK TEMP (R):	544.6
AVG METER TEMP (R):	551.4
AVG DELTA H:	0.43
METER ACF:	12.703
METER SCF:	12.346
WATER SCF:	0.706
FRACTION WATER VAPOR:	0.054
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.25
AVG STACK VELOCITY (FPS):	61.07
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	85298.8
PERCENT ISOKINETICS:	88.6
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.482
STACK VISCOSITY (MICROPOISE):	180.48
AERODYNAMIC CUT SIZE (um):	9.64

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00324
POUNDS PER DSCF:	4.63E-07
POUNDS PER HOUR:	2.37

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 1-50% FROM: 10:15 TO: 10:49

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.92	85	0.959
1-2	0.78		0.883
1-3	0.81		0.900
1-4	0.82		0.906
1-5	0.77		0.877
1-6	0.91		0.954
2-1	0.92		0.959
2-2	0.88		0.938
2-3	0.80		0.894
2-4	0.86		0.927
2-5	0.72		0.849
2-6	0.99		0.995
3-1	1.4		1.183
3-2	1.5		1.225
3-3	1.3		1.140
3-4	0.92		0.959
3-5	0.91		0.954
3-6	1.3		1.140
4-1	1.7		1.304
4-2	1.6		1.265
4-3	1.4		1.183
4-4	0.93		0.964
4-5	1.3		1.140
4-6	1.3		1.140
4-7			
AVG:	1.073	85.0	1.027
AVG SQRT DELTA P SQUARED			1.054

INPUTS:

BAROMETRIC PRES. (in Hg)	30.12
STACK PRES. (in Hg)	28.13
METER TEMPERATURE (F)	90
METER DELTA H@	1.4435
MOISTURE FRACTION	0.043
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	545.0
METER TEMPERATURE (R):	550.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.37
VISCOSITY (PRELIMINARY):	182.26
CYCLONE FLOW RATE (Qs):	0.4621
DELTA H (@ Ts):	**0.429**
DELTA H (@ Ts - 50):	0.520
DELTA H (@ Ts + 50):	0.360
NOZZLE VELOCITY (ft/sec):	51.9
Rmin:	0.716
Vmin:	37.1
MINIMUM VELOCITY HEAD:	**0.391**
Rmax:	1.26
Vmax:	65.1
MAXIMUM VELOCITY HEAD:	**1.204**
AVG. STACK VELOCITY(FPM):	3655.16
OPTIMUM NOZZLE DIAMETER:	0.152

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 1-50% FROM: 10:15 TO: 10:49

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	163.523
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	150.820
BAROMETRIC PRES. (in Hg):	30.12	IMPINGER GAIN (ml):	12.0
STACK PRESSURE (in Hg):	28.13	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	1.1
METER DELTA H@:	1.444	WASH WEIGHT (mg):	1.5
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.94	0.430	85	90	1.17	
1-2	0.80	0.430	85	90	1.08	2.25
1-3	0.83	0.430	84	90	1.10	3.34
1-4	0.82	0.430	84	90	1.09	4.43
1-5	0.77	0.430	84	90	1.06	5.49
1-6	0.91	0.430	85	91	1.15	6.64
2-1	0.94	0.430	85	91	1.17	7.81
2-2	0.88	0.430	84	91	1.13	8.94
2-3	0.80	0.430	84	91	1.08	10.01
2-4	0.84	0.430	84	91	1.10	11.12
2-5	0.71	0.430	85	91	1.01	12.13
2-6	0.99	0.430	85	91	1.20	13.33
3-1	1.4	0.430	85	91	1.43	14.76
3-2	1.5	0.430	85	92	1.48	16.23
3-3	1.4	0.430	85	92	1.43	17.66
3-4	0.92	0.430	85	92	1.16	18.81
3-5	0.91	0.430	84	92	1.15	19.96
3-6	1.4	0.430	84	92	1.43	21.39
4-1	1.7	0.430	85	92	1.57	22.96
4-2	1.6	0.430	85	92	1.52	24.48
4-3	1.3	0.430	85	93	1.37	25.85
4-4	0.91	0.430	85	93	1.15	27.00
4-5	1.3	0.430	84	93	1.37	28.38
4-6	1.2	0.430	84	93	1.32	29.70
4-7						29.70
AVG:	1.07375	0.43	84.58333	91.41667		29.70

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 2-50% FROM: 11:27 TO: 12:00

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.023
AVG DELTA P:	1.046
AVG STACK TEMP (R):	544.6
AVG METER TEMP (R):	556.5
AVG DELTA H:	0.41
METER ACF:	12.448
METER SCF:	11.986
WATER SCF:	0.659
FRACTION WATER VAPOR:	0.052
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.27
AVG STACK VELOCITY (FPS):	60.78
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	85081.6
PERCENT ISOKINETICS:	86.0
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.466
STACK VISCOSITY (MICROPOISE):	180.63
AERODYNAMIC CUT SIZE (um):	9.89

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00218
POUNDS PER DSCF:	3.12E-07
POUNDS PER HOUR:	1.59

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 2-50% FROM: 11:27 TO: 12:00

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.90	85	0.949
1-2	0.80		0.894
1-3	0.82		0.906
1-4	0.79		0.889
1-5	0.78		0.883
1-6	0.93		0.964
2-1	0.93		0.964
2-2	0.88		0.938
2-3	0.80		0.894
2-4	0.87		0.933
2-5	0.72		0.849
2-6	1.00		1.000
3-1	1.4		1.183
3-2	1.3		1.140
3-3	1.5		1.225
3-4	0.92		0.959
3-5	0.93		0.964
3-6	1.4		1.183
4-1	1.6		1.265
4-2	1.6		1.265
4-3	1.4		1.183
4-4	0.93		0.964
4-5	1.4		1.183
4-6	1.3		1.140
4-7			
AVG:	1.079	85.0	1.030
AVG SQRT DELTA P SQUARED			1.061

INPUTS:

BAROMETRIC PRES. *(in Hg)*	30.12
STACK PRES. (in Hg)	28.13
METER TEMPERATURE (F)	96
METER DELTA H@	1.4435
MOISTURE FRACTION	0.06
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	545.0
METER TEMPERATURE (R):	556.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.19
VISCOSITY (PRELIMINARY):	181.00
CYCLONE FLOW RATE (Qs):	0.4598
DELTA H (@ Ts):	**0.414**
DELTA H (@ Ts - 50):	0.502
DELTA H (@ Ts + 50):	0.347
NOZZLE VELOCITY (ft/sec):	51.6
Rmin:	0.716
Vmin:	36.9
MINIMUM VELOCITY HEAD:	**0.385**
Rmax:	1.26
Vmax:	64.8
MAXIMUM VELOCITY HEAD:	**1.184**
AVG. STACK VELOCITY(FPM):	3678.82
OPTIMUM NOZZLE DIAMETER:	0.151

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 2-50% FROM: 11:27 TO: 12:00

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	176.153
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	163.705
BAROMETRIC PRES. (in Hg):	30.12	IMPINGER GAIN (ml):	11.0
STACK PRESSURE (in Hg):	28.13	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.7
METER DELTA H@:	1.444	WASH WEIGHT (mg):	1.0
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.90	0.410	84	96	1.15	
1-2	0.78	0.410	85	96	1.07	2.22
1-3	0.82	0.410	85	96	1.10	3.32
1-4	0.79	0.410	85	96	1.08	4.40
1-5	0.76	0.410	85	96	1.06	5.46
1-6	0.93	0.410	84	96	1.17	6.63
2-1	0.96	0.410	84	96	1.19	7.82
2-2	0.88	0.410	85	96	1.14	8.96
2-3	0.80	0.410	85	96	1.09	10.04
2-4	0.87	0.410	85	96	1.13	11.17
2-5	0.72	0.410	84	96	1.03	12.20
2-6	1.00	0.410	84	97	1.21	13.42
3-1	1.3	0.410	85	97	1.38	14.80
3-2	1.2	0.410	85	97	1.33	16.13
3-3	1.5	0.410	85	97	1.49	17.62
3-4	0.92	0.410	84	97	1.16	18.78
3-5	0.93	0.410	84	97	1.17	19.95
3-6	1.4	0.410	85	97	1.44	21.39
4-1	1.5	0.410	85	97	1.49	22.87
4-2	1.6	0.410	84	97	1.54	24.41
4-3	1.4	0.410	84	97	1.44	25.85
4-4	0.95	0.410	84	97	1.18	27.03
4-5	1.4	0.410	85	97	1.44	28.46
4-6	1.2	0.410	85	97	1.33	29.79
4-7						29.79
AVG:	1.062917	0.41	84.58333	96.54167		29.79

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 3-50% FROM: 12:20 TO: 12:54

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.027
AVG DELTA P:	1.055
AVG STACK TEMP (R):	544.7
AVG METER TEMP (R):	558.3
AVG DELTA H:	0.42
METER ACF:	12.510
METER SCF:	12.007
WATER SCF:	0.612
FRACTION WATER VAPOR:	0.048
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.31
AVG STACK VELOCITY (FPS):	61.01
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	85713.4
PERCENT ISOKINETICS:	84.5
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.460
STACK VISCOSITY (MICROPOISE):	180.92
AERODYNAMIC CUT SIZE (um):	9.99

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00154
POUNDS PER DSCF:	2.2E-07
POUNDS PER HOUR:	1.13

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 3-50% FROM: 12:20 TO: 12:54

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.90	85	0.949
1-2	0.78		0.883
1-3	0.82		0.906
1-4	0.79		0.889
1-5	0.76		0.872
1-6	0.93		0.964
2-1	0.96		0.980
2-2	0.88		0.938
2-3	0.80		0.894
2-4	0.87		0.933
2-5	0.72		0.849
2-6	1.00		1.000
3-1	1.3		1.140
3-2	1.2		1.095
3-3	1.5		1.225
3-4	0.92		0.959
3-5	0.93		0.964
3-6	1.4		1.183
4-1	1.5		1.225
4-2	1.6		1.265
4-3	1.4		1.183
4-4	0.95		0.975
4-5	1.4		1.183
4-6	1.2		1.095
4-7			
AVG:	1.063	85.0	1.023
AVG SQRT DELTA P SQUARED			1.046

INPUTS:

BAROMETRIC PRES. (in Hg)	30.12
STACK PRES. (in Hg)	28.13
METER TEMPERATURE (F)	97
METER DELTA H@	1.4435
MOISTURE FRACTION	0.06
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	545.0
METER TEMPERATURE (R):	557.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.19
VISCOSITY (PRELIMINARY):	181.00
CYCLONE FLOW RATE (Qs):	0.4598
DELTA H (@ Ts):	**0.415**
DELTA H (@ Ts - 50):	0.503
DELTA H (@ Ts + 50):	0.348
NOZZLE VELOCITY (ft/sec):	51.6
Rmin:	0.716
Vmin:	36.9
MINIMUM VELOCITY HEAD:	**0.385**
Rmax:	1.26
Vmax:	64.8
MAXIMUM VELOCITY HEAD:	**1.184**
AVG. STACK VELOCITY(FPM):	3653.58
OPTIMUM NOZZLE DIAMETER:	0.152

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 3-50% FROM: 12:20 TO: 12:54

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	188.827
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	176.317
BAROMETRIC PRES. (in Hg):	30.12	IMPINGER GAIN (ml):	10.0
STACK PRESSURE (in Hg):	28.13	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.7
METER DELTA H@:	1.444	WASH WEIGHT (mg):	0.5
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.90	0.420	85	97	1.16	
1-2	0.80	0.420	84	97	1.09	2.25
1-3	0.82	0.420	84	97	1.11	3.36
1-4	0.79	0.420	85	98	1.09	4.45
1-5	0.78	0.420	85	98	1.08	5.52
1-6	0.93	0.420	85	98	1.18	6.70
2-1	0.93	0.420	85	98	1.18	7.88
2-2	0.89	0.420	85	98	1.15	9.03
2-3	0.80	0.420	85	98	1.09	10.13
2-4	0.87	0.420	85	98	1.14	11.27
2-5	0.72	0.420	84	98	1.04	12.30
2-6	1.00	0.420	85	98	1.22	13.53
3-1	1.4	0.420	84	98	1.45	14.97
3-2	1.3	0.420	85	99	1.39	16.37
3-3	1.5	0.420	85	99	1.50	17.86
3-4	0.92	0.420	85	99	1.17	19.03
3-5	0.93	0.420	85	99	1.18	20.21
3-6	1.4	0.420	85	99	1.45	21.66
4-1	1.5	0.420	85	99	1.50	23.16
4-2	1.6	0.420	84	99	1.55	24.70
4-3	1.3	0.420	84	99	1.39	26.09
4-4	0.96	0.420	84	99	1.20	27.29
4-5	1.4	0.420	85	99	1.45	28.74
4-6	1.3	0.420	84	99	1.39	30.13
4-7						30.13
AVG:	1.0725	0.42	84.66667	98.33333		30.13

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 4-100% FROM: 14:00 TO: 14:33

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.005
AVG DELTA P:	1.010
AVG STACK TEMP (R):	549.4
AVG METER TEMP (R):	558.4
AVG DELTA H:	0.43
METER ACF:	13.454
METER SCF:	12.912
WATER SCF:	0.659
FRACTION WATER VAPOR:	0.049
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.31
AVG STACK VELOCITY (FPS):	60.03
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	83394.9
PERCENT ISOKINETICS:	95.9
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.513
STACK VISCOSITY (MICROPOISE):	182.06
AERODYNAMIC CUT SIZE (um):	9.31

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00143
POUNDS PER DSCF:	2.04E-07
POUNDS PER HOUR:	1.02

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 4-100% FROM: 14:00 TO: 14:33

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.93	90	0.964
1-2	0.91		0.954
1-3	0.98		0.990
1-4	0.88		0.938
1-5	0.86		0.927
1-6	0.87		0.933
2-1	0.93		0.964
2-2	1.20		1.095
2-3	0.98		0.990
2-4	0.88		0.938
2-5	0.68		0.825
2-6	0.96		0.980
3-1	1.4		1.183
3-2	1.5		1.225
3-3	1.3		1.140
3-4	0.87		0.933
3-5	0.88		0.938
3-6	1		1.000
4-1	0.98		0.990
4-2	1.6		1.265
4-3	1.4		1.183
4-4	0.93		0.964
4-5	1.4		1.183
4-6	1.3		1.140
4-7			
AVG:	1.068	90.0	1.027
AVG SQRT DELTA P SQUARED			1.054

INPUTS:

BAROMETRIC PRES. (in Hg)	30.12
STACK PRES. (in Hg)	28.06
METER TEMPERATURE (F)	98
METER DELTA H@	1.4435
MOISTURE FRACTION	0.05
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	550.0
METER TEMPERATURE (R):	558.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.29
VISCOSITY (PRELIMINARY):	183.05
CYCLONE FLOW RATE (Qs):	0.4660
DELTA H (@ Ts):	**0.426**
DELTA H (@ Ts - 50):	0.516
DELTA H (@ Ts + 50):	0.358
NOZZLE VELOCITY (ft/sec):	52.3
Rmin:	0.716
Vmin:	37.5
MINIMUM VELOCITY HEAD:	**0.393**
Rmax:	1.26
Vmax:	65.7
MAXIMUM VELOCITY HEAD:	**1.207**
AVG. STACK VELOCITY(FPM):	3681.91
OPTIMUM NOZZLE DIAMETER:	0.152

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 4-100% FROM: 14:00 TO: 14:33

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	202.654
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	189.200
BAROMETRIC PRES. (in Hg):	30.12	IMPINGER GAIN (ml):	11.0
STACK PRESSURE (in Hg):	28.06	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.4
METER DELTA H@:	1.444	WASH WEIGHT (mg):	0.8
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME	
1-1	0.93	0.430	89	98	1.17		1.3
1-2	0.89	0.430	89	98	1.15	2.32	1.5
1-3	0.98	0.430	90	98	1.21	3.53	1.3
1-4	0.88	0.430	90	98	1.14	4.67	0.85
1-5	0.86	0.430	90	98	1.13	5.80	0.89
1-6	0.87	0.430	90	98	1.14	6.93	1
2-1	1.00	0.430	90	98	1.22	8.15	0.97
2-2	0.96	0.430	89	98	1.19	9.34	1.5
2-3	0.98	0.430	89	98	1.21	10.55	1.4
2-4	0.81	0.430	89	98	1.10	11.64	0.95
2-5	0.63	0.430	89	98	0.97	12.61	1.4
2-6	0.56	0.430	89	98	0.91	13.52	1.2
3-1	1.3	0.430	90	98	1.39	14.91	0.93
3-2	1.5	0.430	89	98	1.49	16.40	0.89
3-3	1.3	0.430	89	99	1.39	17.79	0.98
3-4	0.85	0.430	89	99	1.12	18.91	0.88
3-5	0.89	0.430	90	99	1.15	20.06	0.86
3-6	1	0.430	89	99	1.22	21.28	0.87
4-1	0.97	0.430	89	99	1.20	22.48	1.00
4-2	1.5	0.430	89	99	1.49	23.97	0.96
4-3	1.4	0.430	90	99	1.44	25.41	0.98
4-4	0.95	0.430	90	99	1.19	26.59	0.81
4-5	1.4	0.430	89	99	1.44	28.03	0.63
4-6	1.2	0.430	89	99	1.33	29.37	0.56
4-7						29.37	
AVG:	1.025417	0.43	89.375	98.41667		29.37	

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 5-100% FROM: 14:50 TO: 15:54

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.012
AVG DELTA P:	1.024
AVG STACK TEMP (R):	549.5
AVG METER TEMP (R):	560.2
AVG DELTA H:	0.43
METER ACF:	13.299
METER SCF:	12.723
WATER SCF:	0.612
FRACTION WATER VAPOR:	0.046
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.34
AVG STACK VELOCITY (FPS):	60.41
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	84141.4
PERCENT ISOKINETICS:	88.8
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.478
STACK VISCOSITY (MICROPOISE):	182.29
AERODYNAMIC CUT SIZE (um):	9.79

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00242
POUNDS PER DSCF:	3.46E-07
POUNDS PER HOUR:	1.75

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 5-100% FROM: 14:50 TO: 15:54

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	1.3	90	1.140
1-2	1.5		1.225
1-3	1.3		1.140
1-4	0.85		0.922
1-5	0.88		0.938
1-6	0.97		0.985
2-1	0.98		0.990
2-2	1.5		1.225
2-3	1.4		1.183
2-4	0.95		0.975
2-5	1.4		1.183
2-6	1.2		1.095
3-1	0.95		0.975
3-2	0.89		0.943
3-3	0.96		0.980
3-4	0.90		0.949
3-5	0.86		0.927
3-6	0.87		0.933
4-1	0.96		0.980
4-2	1.10		1.049
4-3	0.98		0.990
4-4	0.85		0.922
4-5	0.73		0.854
4-6	0.98		0.990
4-7			
AVG:	1.053	90.0	1.021
AVG SQRT DELTA P SQUARED			1.041

INPUTS:

BAROMETRIC PRES. (in Hg)	30.12
STACK PRES. (in Hg)	28.06
METER TEMPERATURE (F)	98
METER DELTA H@	1.4435
MOISTURE FRACTION	0.05
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	550.0
METER TEMPERATURE (R):	558.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.29
VISCOSITY (PRELIMINARY):	183.05
CYCLONE FLOW RATE (Qs):	0.4660
DELTA H (@ Ts):	**0.426**
DELTA H (@ Ts - 50):	0.516
DELTA H (@ Ts + 50):	0.358
NOZZLE VELOCITY (ft/sec):	52.3
Rmin:	0.716
Vmin:	37.5
MINIMUM VELOCITY HEAD:	**0.393**
Rmax:	1.26
Vmax:	65.7
MAXIMUM VELOCITY HEAD:	**1.207**
AVG. STACK VELOCITY(FPM):	3659.40
OPTIMUM NOZZLE DIAMETER:	0.153

AIR CONSULTING AND ENGINEERING,INC.

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 5-100% FROM: 14:50 TO: 15:54

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	216.177
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	202.878
BAROMETRIC PRES. (in Hg):	30.12	IMPINGER GAIN (ml):	10.0
STACK PRESSURE (in Hg):	28.06	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	1.0
METER DELTA H@:	1.444	WASH WEIGHT (mg):	1.0
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	1.2	0.430	89	99	1.40	
1-2	1.4	0.430	89	99	1.51	2.90
1-3	1.3	0.430	89	99	1.45	4.36
1-4	0.85	0.430	90	100	1.18	5.53
1-5	0.88	0.430	90	100	1.20	6.73
1-6	0.96	0.430	89	100	1.25	7.98
2-1	0.98	0.430	89	100	1.26	9.24
2-2	1.6	0.430	90	100	1.61	10.85
2-3	1.5	0.430	89	100	1.56	12.41
2-4	0.95	0.430	89	100	1.24	13.66
2-5	1.1	0.430	90	100	1.34	14.99
2-6	1.2	0.430	89	100	1.40	16.39
3-1	0.95	0.430	89	100	1.24	17.63
3-2	0.90	0.430	90	100	1.21	18.84
3-3	0.96	0.430	90	100	1.25	20.09
3-4	0.92	0.430	90	100	1.22	21.32
3-5	0.80	0.430	89	100	1.14	22.46
3-6	0.91	0.430	91	101	1.22	23.67
4-1	0.94	0.430	89	101	1.24	24.91
4-2	0.98	0.430	90	101	1.26	26.17
4-3	1.00	0.430	90	101	1.27	27.44
4-4	0.86	0.430	90	101	1.18	28.63
4-5	0.71	0.430	89	101	1.07	29.70
4-6	0.98	0.430	89	101	1.26	30.96
4-7						30.96
AVG:	1.034583	0.43	89.5	100.1667		30.96

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 6-100% FROM: 15:45 TO: 16:19

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.000
AVG DELTA P:	1.001
AVG STACK TEMP (R):	550.5
AVG METER TEMP (R):	560.8
AVG DELTA H:	0.43
METER ACF:	12.939
METER SCF:	12.366
WATER SCF:	0.612
FRACTION WATER VAPOR:	0.047
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.33
AVG STACK VELOCITY (FPS):	59.78
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	83009.0
PERCENT ISOKINETICS:	90.5
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.482
STACK VISCOSITY (MICROPOISE):	182.42
AERODYNAMIC CUT SIZE (um):	9.74

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00149
POUNDS PER DSCF:	2.13E-07
POUNDS PER HOUR:	1.06

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 6-100% FROM: 15:45 TO: 16:19

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.86	90	0.927
1-2	0.72		0.849
1-3	0.75		0.866
1-4	0.76		0.872
1-5	0.71		0.843
1-6	0.85		0.922
2-1	0.86		0.927
2-2	0.82		0.906
2-3	0.74		0.860
2-4	0.79		0.889
2-5	0.66		0.812
2-6	0.93		0.964
3-1	1.4		1.183
3-2	1.4		1.183
3-3	1.2		1.095
3-4	0.86		0.927
3-5	0.85		0.922
3-6	1.2		1.095
4-1	1.7		1.304
4-2	1.6		1.265
4-3	1.3		1.140
4-4	0.87		0.933
4-5	1.2		1.095
4-6	1.3		1.140
4-7			
AVG:	1.014	90.0	0.997
AVG SQRT DELTA P SQUARED			0.993

INPUTS:

BAROMETRIC PRES. (in Hg)	30.12
STACK PRES. (in Hg)	28.06
METER TEMPERATURE (F)	100
METER DELTA H@	1.4435
MOISTURE FRACTION	0.05
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	550.0
METER TEMPERATURE (R):	560.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.29
VISCOSITY (PRELIMINARY):	183.05
CYCLONE FLOW RATE (Qs):	0.4660
DELTA H (@ Ts):	**0.428**
DELTA H (@ Ts - 50):	0.517
DELTA H (@ Ts + 50):	0.359
NOZZLE VELOCITY (ft/sec):	52.3
Rmin:	0.716
Vmin:	37.5
MINIMUM VELOCITY HEAD:	**0.393**
Rmax:	1.26
Vmax:	65.7
MAXIMUM VELOCITY HEAD:	**1.207**
AVG. STACK VELOCITY(FPM):	3573.96
OPTIMUM NOZZLE DIAMETER:	0.155

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 6-100% FROM: 15:45 TO: 16:19

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	229.545
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	216.606
BAROMETRIC PRES. (in Hg):	30.12	IMPINGER GAIN (ml):	10.0
STACK PRESSURE (in Hg):	28.06	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.5
METER DELTA H@:	1.444	WASH WEIGHT (mg):	0.7
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.87	0.430	91	100	1.16	
1-2	0.72	0.430	91	100	1.06	2.22
1-3	0.76	0.430	91	100	1.09	3.31
1-4	0.83	0.430	90	100	1.14	4.44
1-5	0.73	0.430	91	100	1.07	5.51
1-6	0.86	0.430	90	100	1.16	6.67
2-1	0.85	0.430	91	101	1.15	7.82
2-2	0.86	0.430	90	101	1.16	8.97
2-3	0.73	0.430	90	101	1.07	10.04
2-4	0.82	0.430	91	101	1.13	11.17
2-5	0.86	0.430	91	101	1.16	12.32
2-6	0.92	0.430	91	101	1.20	13.52
3-1	1.2	0.430	90	101	1.37	14.88
3-2	1.5	0.430	90	101	1.53	16.41
3-3	1.2	0.430	90	101	1.37	17.78
3-4	0.89	0.430	90	101	1.18	18.95
3-5	0.85	0.430	90	101	1.15	20.10
3-6	1.3	0.430	90	101	1.42	21.53
4-1	1.4	0.430	91	101	1.48	23.00
4-2	1.5	0.430	91	101	1.53	24.53
4-3	1.3	0.430	91	101	1.42	25.95
4-4	0.93	0.430	90	101	1.20	27.15
4-5	1.1	0.430	90	101	1.31	28.46
4-6	1.4	0.430	90	101	1.48	29.93
4-7						29.93
AVG:	1.015833	0.43	90.45833	100.75		29.93

AIR CONSULTING AND ENGINEERING,INC.

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 7-100% FROM: 10:24 TO: 10:58

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.004
AVG DELTA P:	1.008
AVG STACK TEMP (R):	549.4
AVG METER TEMP (R):	557.9
AVG DELTA H:	0.43
METER ACF:	13.436
METER SCF:	12.893
WATER SCF:	0.659
FRACTION WATER VAPOR:	0.049
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.31
AVG STACK VELOCITY (FPS):	60.00
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	83262.6
PERCENT ISOKINETICS:	95.3
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.509
STACK VISCOSITY (MICROPOISE):	182.05
AERODYNAMIC CUT SIZE (um):	9.35

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00143
POUNDS PER DSCF:	2.05E-07
POUNDS PER HOUR:	1.02

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 7-100% FROM: 10:24 TO: 10:58

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.86	90	0.927
1-2	0.72		0.849
1-3	0.75		0.866
1-4	0.76		0.872
1-5	0.71		0.843
1-6	0.85		0.922
2-1	0.86		0.927
2-2	0.82		0.906
2-3	0.74		0.860
2-4	0.79		0.889
2-5	0.66		0.812
2-6	0.93		0.964
3-1	1.4		1.183
3-2	1.4		1.183
3-3	1.2		1.095
3-4	0.86		0.927
3-5	0.85		0.922
3-6	1.2		1.095
4-1	1.7		1.304
4-2	1.6		1.265
4-3	1.3		1.140
4-4	0.87		0.933
4-5	1.2		1.095
4-6	1.3		1.140
4-7			
AVG:	1.014	90.0	0.997
AVG SQRT DELTA P SQUARED			0.993

INPUTS:

BAROMETRIC PRES. (in Hg)	30.09
STACK PRES. (in Hg)	28.03
METER TEMPERATURE (F)	98
METER DELTA H@	1.4435
MOISTURE FRACTION	0.05
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	550.0
METER TEMPERATURE (R):	558.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.29
VISCOSITY (PRELIMINARY):	183.05
CYCLONE FLOW RATE (Qs):	0.4662
DELTA H (@ Ts):	**0.426**
DELTA H (@ Ts - 50):	0.515
DELTA H (@ Ts + 50):	0.358
NOZZLE VELOCITY (ft/sec):	52.3
Rmin:	0.716
Vmin:	37.5
MINIMUM VELOCITY HEAD:	**0.393**
Rmax:	1.25
Vmax:	65.7
MAXIMUM VELOCITY HEAD:	**1.206**
AVG. STACK VELOCITY(FPM):	3575.87
OPTIMUM NOZZLE DIAMETER:	0.155

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 7-100% FROM: 10:24 TO: 10:58

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	431.438
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	418.002
BAROMETRIC PRES. (in Hg):	30.09	IMPINGER GAIN (ml):	11.0
STACK PRESSURE (in Hg):	28.03	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.5
METER DELTA H@:	1.444	WASH WEIGHT (mg):	0.7
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.90	0.430	89	97	1.16	
1-2	0.68	0.430	89	97	1.01	2.17
1-3	0.77	0.430	90	97	1.08	3.25
1-4	0.83	0.430	90	97	1.12	4.37
1-5	0.73	0.430	89	97	1.05	5.41
1-6	0.85	0.430	90	97	1.13	6.54
2-1	0.86	0.430	89	98	1.14	7.68
2-2	0.94	0.430	89	98	1.19	8.87
2-3	0.75	0.430	90	98	1.06	9.93
2-4	0.83	0.430	90	98	1.12	11.05
2-5	0.86	0.430	89	98	1.14	12.19
2-6	0.94	0.430	89	98	1.19	13.37
3-1	1.2	0.430	89	98	1.34	14.72
3-2	1.35	0.430	90	98	1.42	16.14
3-3	1.2	0.430	89	98	1.34	17.48
3-4	0.92	0.430	89	98	1.18	18.66
3-5	0.88	0.430	89	98	1.15	19.81
3-6	1.35	0.430	90	98	1.42	21.23
4-1	1.4	0.430	89	98	1.45	22.69
4-2	1.5	0.430	89	98	1.50	24.19
4-3	1.25	0.430	89	99	1.37	25.56
4-4	0.95	0.430	90	99	1.19	26.75
4-5	1.2	0.430	90	99	1.34	28.10
4-6	1.4	0.430	89	99	1.45	29.55
4-7						29.55
AVG:	1.0225	0.43	89.375	97.91667		29.55

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 8-100% FROM: 11:10 TO: 11:44

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.001
AVG DELTA P:	1.002
AVG STACK TEMP (R):	551.7
AVG METER TEMP (R):	559.0
AVG DELTA H:	0.43
METER ACF:	13.460
METER SCF:	12.892
WATER SCF:	0.612
FRACTION WATER VAPOR:	0.045
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.34
AVG STACK VELOCITY (FPS):	59.90
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	83058.3
PERCENT ISOKINETICS:	94.4
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.504
STACK VISCOSITY (MICROPOISE):	182.85
AERODYNAMIC CUT SIZE (um):	9.46

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00131
POUNDS PER DSCF:	1.88E-07
POUNDS PER HOUR:	0.94

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 8-100% FROM: 11:10 TO: 11:44

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.85	90	0.922
1-2	0.75		0.866
1-3	0.78		0.883
1-4	0.80		0.894
1-5	0.73		0.854
1-6	0.86		0.927
2-1	0.84		0.917
2-2	0.80		0.894
2-3	0.75		0.866
2-4	0.80		0.894
2-5	0.68		0.825
2-6	0.90		0.949
3-1	1.3		1.140
3-2	1.4		1.183
3-3	0.98		0.990
3-4	0.96		0.980
3-5	0.86		0.927
3-6	1.1		1.049
4-1	1.6		1.265
4-2	1.7		1.304
4-3	1.3		1.140
4-4	0.87		0.933
4-5	1.2		1.095
4-6	1.25		1.118
4-7			
AVG:	1.003	90.0	0.992
AVG SQRT DELTA P SQUARED			0.985

INPUTS:

BAROMETRIC PRES. (in Hg)	30.09
STACK PRES. (in Hg)	28.03
METER TEMPERATURE (F)	100
METER DELTA H@	1.4435
MOISTURE FRACTION	0.05
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	550.0
METER TEMPERATURE (R):	560.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.29
VISCOSITY (PRELIMINARY):	183.05
CYCLONE FLOW RATE (Qs):	0.4662
DELTA H (@ Ts):	**0.427**
DELTA H (@ Ts - 50):	0.517
DELTA H (@ Ts + 50):	0.359
NOZZLE VELOCITY (ft/sec):	52.3
Rmin:	0.716
Vmin:	37.5
MINIMUM VELOCITY HEAD:	**0.393**
Rmax:	1.25
Vmax:	65.7
MAXIMUM VELOCITY HEAD:	**1.206**
AVG. STACK VELOCITY(FPM):	3560.26
OPTIMUM NOZZLE DIAMETER:	0.155

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 8-100% FROM: 11:10 TO: 11:44

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	445.362
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	431.902
BAROMETRIC PRES. (in Hg):	30.09	IMPINGER GAIN (ml):	10.0
STACK PRESSURE (in Hg):	28.03	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.4
METER DELTA H@:	1.444	WASH WEIGHT (mg):	0.7
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.87	0.430	91	98	1.16	
1-2	0.75	0.430	91	98	1.08	2.24
1-3	0.76	0.430	92	98	1.09	3.33
1-4	0.83	0.430	92	98	1.13	4.46
1-5	0.71	0.430	91	98	1.05	5.51
1-6	0.86	0.430	92	99	1.15	6.66
2-1	0.83	0.430	92	99	1.13	7.80
2-2	0.86	0.430	92	99	1.15	8.95
2-3	0.73	0.430	91	99	1.06	10.02
2-4	0.82	0.430	92	99	1.13	11.14
2-5	0.87	0.430	92	99	1.16	12.30
2-6	0.92	0.430	92	99	1.19	13.50
3-1	1.2	0.430	91	99	1.36	14.86
3-2	1.5	0.430	91	99	1.52	16.39
3-3	1.2	0.430	92	99	1.36	17.75
3-4	0.89	0.430	92	99	1.17	18.93
3-5	0.85	0.430	92	99	1.15	20.07
3-6	1.3	0.430	92	99	1.42	21.49
4-1	1.4	0.430	91	99	1.47	22.97
4-2	1.5	0.430	92	99	1.52	24.49
4-3	1.3	0.430	92	100	1.42	25.91
4-4	0.96	0.430	92	100	1.22	27.13
4-5	1.1	0.430	91	100	1.31	28.44
4-6	1.4	0.430	92	100	1.47	29.91
4-7						29.91
AVG:	1.017083	0.43	91.66667	98.95833		29.91

AIR CONSULTING AND ENGINEERING,INC.

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 9-100% FROM: 11:53 TO: 12:28

NOZZLE AREA (FT SQ):	0.000148
AVG SQ RT DELTA P:	1.000
AVG DELTA P:	1.000
AVG STACK TEMP (R):	551.7
AVG METER TEMP (R):	560.8
AVG DELTA H:	0.43
METER ACF:	13.664
METER SCF:	13.046
WATER SCF:	0.659
FRACTION WATER VAPOR:	0.048
DRY MOLECULAR WEIGHT:	28.84
WET MOLECULAR WEIGHT:	28.31
AVG STACK VELOCITY (FPS):	59.89
STANDARD VOLUMETRIC FLOW RATE (DSCFM):	82798.5
PERCENT ISOKINETICS:	94.8
CYCLONE FLOW RATE AT ACTUAL CONDITIONS:	0.506
STACK VISCOSITY (MICROPOISE):	182.66
AERODYNAMIC CUT SIZE (um):	9.43

Pm-10 EMISSION RESULTS:

GRAINS PER DSCF:	0.00177
POUNDS PER DSCF:	2.53E-07
POUNDS PER HOUR:	1.26

AIR CONSULTING AND ENGINEERING,INC.
Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 9-100% FROM: 11:53 TO: 12:28

PRELIMINARY DETERMINATIONS:

VELOCITY TRAVERSE:

POINT	DELTA P	TEMP	(DP) E 0.5
1-1	0.93	91	0.964
1-2	0.91		0.954
1-3	0.98		0.990
1-4	0.88		0.938
1-5	0.86		0.927
1-6	0.87		0.933
2-1	0.93		0.964
2-2	1.20		1.095
2-3	0.98		0.990
2-4	0.88		0.938
2-5	0.68		0.825
2-6	0.96		0.980
3-1	1.4		1.183
3-2	1.5		1.225
3-3	1.3		1.140
3-4	0.87		0.933
3-5	0.88		0.938
3-6	1		1.000
4-1	0.98		0.990
4-2	1.6		1.265
4-3	1.4		1.183
4-4	0.93		0.964
4-5	1.4		1.183
4-6	1.3		1.140
4-7			
AVG:	1.068	91.0	1.027
AVG SQRT DELTA P SQUARED			1.054

INPUTS:

BAROMETRIC PRES. (in Hg)	30.09
STACK PRES. (in Hg)	28.03
METER TEMPERATURE (F)	100
METER DELTA H@	1.4435
MOISTURE FRACTION	0.05
%O2	20.9
% CO2	0.0
NOZZLE DIAMETER (in)	0.165

RESULTS:

STACK TEMPERATURE (R):	551.0
METER TEMPERATURE (R):	560.0
MOLECULAR WEIGHT DRY:	28.84
MOLECULAR WEIGHT WET:	28.29
VISCOSITY (PRELIMINARY):	183.31
CYCLONE FLOW RATE (Qs):	0.4671
DELTA H (@ Ts):	**0.428**
DELTA H (@ Ts - 50):	0.517
DELTA H (@ Ts + 50):	0.359
NOZZLE VELOCITY (ft/sec):	52.4
Rmin:	0.716
Vmin:	37.5
MINIMUM VELOCITY HEAD:	**0.394**
Rmax:	1.25
Vmax:	65.8
MAXIMUM VELOCITY HEAD:	**1.209**
AVG. STACK VELOCITY(FPM):	3687.23
OPTIMUM NOZZLE DIAMETER:	0.152

AIR CONSULTING AND ENGINEERING,INC.

Pm-10 METHOD 201A

CLIENT: U.S. SUGAR CORP
SOURCE: WHITE SUGAR DRYER
DATE: 5/23/06
RUN: 9-100% FROM: 11:53 TO: 12:28

DESIRED RUN TIME (MIN):	30	FINAL METER VOLUME:	459.637
NUMBER OF POINTS:	24	INITIAL METER VOLUME:	445.973
BAROMETRIC PRES. (in Hg):	30.09	IMPINGER GAIN (ml):	11.0
STACK PRESSURE (in Hg):	28.03	SILICA GEL (g):	3.0
METER "Y" FACTOR:	1.007	FILTER WEIGHT (mg):	0.7
METER DELTA H@:	1.444	WASH WEIGHT (mg):	0.8
NOZZLE DIAMETER (in):	0.165	% CO2:	0.0
STACK AREA (SQ FT):	27.000	% O2:	20.9

POINT	DELTA P	DELTA H	Ts	Tm	DWELL	TIME
1-1	0.87	0.430	92	100	1.17	
1-2	0.72	0.430	92	100	1.07	2.24
1-3	0.76	0.430	92	100	1.10	3.34
1-4	0.87	0.430	91	100	1.17	4.51
1-5	0.75	0.430	92	100	1.09	5.60
1-6	0.84	0.430	91	100	1.15	6.76
2-1	0.85	0.430	92	101	1.16	7.92
2-2	0.87	0.430	92	101	1.17	9.09
2-3	0.73	0.430	92	101	1.08	10.17
2-4	0.82	0.430	91	101	1.14	11.31
2-5	0.84	0.430	91	101	1.15	12.46
2-6	0.92	0.430	91	101	1.21	13.67
3-1	1.1	0.430	92	101	1.32	14.99
3-2	1.5	0.430	92	101	1.54	16.53
3-3	1.25	0.430	92	101	1.41	17.94
3-4	0.89	0.430	92	101	1.19	19.12
3-5	0.86	0.430	92	101	1.17	20.29
3-6	1.3	0.430	91	101	1.44	21.73
4-1	1.4	0.430	92	101	1.49	23.21
4-2	1.5	0.430	92	101	1.54	24.76
4-3	1.4	0.430	92	101	1.49	26.25
4-4	0.93	0.430	92	101	1.21	27.46
4-5	1.1	0.430	91	101	1.32	28.78
4-6	1.3	0.430	92	101	1.44	30.21
4-7						30.21
AVG:	1.015417	0.43	91.70833	100.75		30.21

AIR CONSULTING & ENGINEERING, INC.

PARTICULATE LAB DATA ANALYSIS

CLIENT / SOURCE IDENTIFICATION: U.S. Sugar - Clewiston, White Sugar Dryer

BALANCE CHECK:

1ST GROSS WT. - 0.0 0.0 0.5 0.5000 10.0 10.0000 100.0 99.9999 DATE 5-31-06 TIME 0810 %RH 41 TEMP 70 BY: (INIT.) CR

2ND GROSS WT. - 0.0 0.0 0.5 0.5001 10.0 10.0001 100.0 100.0000 DATE 5-31-06 TIME 1540 %RH 38 TEMP 71 BY: (INIT.) CR

RUN I.D.	FILTER/ CONT. NO.	VOLUME (ml)	1ST GROSS WT. (gm)	2ND GROSS WT. (gm)	AVG. GROSS WT. (gm)	TARE WT. (gm)	SUB NET WT. (gm)	BLANK (gm)	NET WT. (mg)
1	X0101	N/A	0.1483	0.1482	0.1483	0.1472	0.0011		1.1
2	X0102		0.1448	0.1448	0.1448	0.1441	0.0007		0.7
3	X0103		0.1496	0.1497	0.1497	0.1490	0.0007		0.7
4	X0104		0.1464	0.1466	0.1465	0.1461	0.0004		0.4
5	X0105		0.1453	0.1452	0.1453	0.1443	0.0010		1.0
6	X0106		0.1453	0.1455	0.1454	0.1449	0.0005		0.5
7	X0107		0.1472	0.1474	0.1473	0.1468	0.0005		0.5
8	X0108		0.1483	0.1484	0.1484	0.1480	0.0004		0.4
9	X0109		0.1468	0.1468	0.1468	0.1461	0.0007		0.7
BLANK	X0110	↓	0.1466	0.1465	0.1466	0.1466	0.0000		0.0
1	B-11	75	110.5424	110.5426	110.5425	110.5410	0.0015		1.5
2	B-12	80	112.5895	112.5896	112.5896	112.5886	0.0010		1.0
3	B-13	80	112.6882	112.6884	112.6883	112.6878	0.0005		0.5
4	B-14	75	112.4006	112.4005	112.4006	112.3997	0.0008		0.8
5	B-15	70	111.6904	111.6906	111.6905	111.6895	0.0010		1.0

NOTES:

AIR CONSULTING & ENGINEERING, INC.

PARTICULATE LAB DATA ANALYSIS

CLIENT / SOURCE IDENTIFICATION U.S. Sugar - Clewiston, White Sugar Dryer

BALANCE CHECK:

1ST GROSS WT. - 0.0 0.0 0.5 0.5000 10.0 10.0000 100.0 99.9999 DATE 5-31-06 TIME 0810 %RH 41 TEMP. 70 BY: (INIT.) CR

2ND GROSS WT. - 0.0 0.0 0.5 0.5001 10.0 10.0001 100.0 100.0000 DATE 5-31-06 TIME 1540 %RH 38 TEMP. 71 BY: (INIT.) CR

RUN I.D.	FILTER/ CONT. NO.	VOLUME (ml)	1ST GROSS WT. (gm)	2ND GROSS WT. (gm)	AVG. GROSS WT. (gm)	TARE WT. (gm)	SUB NET WT. (gm)	BLANK (gm)	NET WT. (mg)
6	B-16	75	98.0578	98.0580	98.0579	98.0572	0.0007		0.7
7	B-17	90	102.4157	102.4158	102.4158	102.4151	0.0007		0.7
8	B-18	85	98.8026	98.8028	98.8027	98.8020	0.0007		0.7
9	B-19	75	97.2042	97.2043	97.2043	97.2035	0.0008		0.8
BLANK	B-10	200	113.1340	113.1338	113.1339	113.1323	0.0016		1.6

NOTES:

June 9, 2006

Winkler APC, LLC
14911 Lake Olive Drive
Ft. Myers, FL 33919
Ph: 239-466-6367
Fax: 309-276-1399
Email: w1nkler@comcast.net

US Sugar Corporation
1731 South W.C. Owen Ave.
Clewiston, FL 33440-1207

ATT: Don Griffin

REF: USSC P.O. # C222147
White Sugar Dryer Dust Collector Study
June 2, 2006 ACE Test Report

Dear Mr. Griffin,

Summary:

The low emissions shown in PM10 test results indicate that the scrubber is doing a very good job of removing dry sugar dust particles. In general particles less than 10 microns are of greater concern than larger particles. The high grain loading in the Method 5 test results (compared to the low PM10 results) show that the scrubber is not properly removing the large (over 10 microns) recycle water droplets that are generated within the scrubber. The scrubber is emitting these large droplets containing 15% dissolved sugar solids-and these account for the higher grain loading in the Method 5 test than the PM10 test. These large droplets drop out on site and are a housekeeping problem.

Details:

Scrubber emissions are a combination of uncaptured dry solids and dissolved solids in droplets that escape from the mist eliminator. A properly operating 10" w.g. pressure drop venturi scrubber should have very little dry PM emissions above 1 micron and no dry PM emissions above 10 microns. Please Refer to "FIG. 1". There is an average of 0.0314 gr/dscf Total PM and an average of 0.00168 gr/dscf of PM under 10 microns. In a properly operating 10" w.g. scrubber there are virtually no emissions over 10 microns in size and the Method 5 results are virtually equal to the PM10 results. Since the Method 5 emissions is approximately 18 times the PM10 emissions- excessive droplet carryover from the scrubber must be occurring.

All wet scrubbers pass the air stream through a water droplet cloud. The fine solid particulate is captured on the droplets by inertial impaction. This dryer scrubber is a "gas atomized venturi" design. There are no spray nozzles and the droplet cloud is generated in the venturi throats. In the throats the droplet cloud is formed by the shear forces generated by very high velocity air flowing over water films.

The size of the water droplets formed is primarily a function of the air speed in the throats. The higher the air speed, the higher the pressure drop and the finer the droplet size generated. A properly operating 10" w.g. pressure drop scrubber generates a droplet distribution where the vast amount by weight is above 200 microns.

The significance of droplet size is that large 200 micron droplets will be caught in the Method 5 sampling train; but not in the PM10 sampling train. Therefore the carryover is masking the Method 5 results that we would achieve without the carryover. Please refer to "FIG.2". The sampling probe is not meant to remove dust -just to convey it to the final filter where it is captured and weighed. Only very large particles and droplets are captured in the probe and measured in the probe wash. One would normally expect 0.1-2.0 mg solids in the wash if the filter had 1.0 mg solids. There is an exceedingly high proportion of solids in the probe wash (46.5 mg) versus the filter (1.0 mg) and this is another indication that dissolved solids in droplets accounts for the majority of the weight in the Method 5 test. The PM10 test has equipment in the sample train to keep out large liquid drops over 10 microns and gives a more accurate measurement of the true sugar dust emission rate.

As I mentioned in the summary- these 200+ micron droplets cause a housekeeping problem. The dryer scrubber air stream exits the building through a horizontal duct whose roof is approximately 82' above grade. Since a 200 micron water droplet has a terminal settling velocity of 2.2 feet per second therefore it takes approximately 37 seconds for the droplet to reach the ground-regardless of wind speed. From visual inspections-most dropout is in the immediate area. If there is a steady wind the droplets can travel horizontally. For example-with a steady 30 mph (44 ft/sec) wind the 200 micron droplets would travel horizontally approximately (44x37=) 1628 feet before reaching the ground.

If horizontal dispersion is of concern a downward turning elbow could be put on the current horizontal outlet duct. If –for example-the elbow discharge velocity were 3000 fpm (50 ft/sec) then the droplet settling rate would be 52.2 ft/sec. This is 23 times the gravitational settling rate therefore the droplets would travel approximately 1/23rd of 1628 feet, or about 71 feet.

Regards,

Gene Winkler
Winkler APC LLC

FIG. 2

AIR CONSULTING and ENGINEERING, INC.
COMPLETE EMISSION DATA

COMPANY NAME:	U.S. SUGAR CORPORATION
LOCATION:	CLEWISTON,FLORIDA
SOURCE:	WHITE SUGAR DRYER
DATE:	05-24-06

RUN NUMBER:	1-100%		IMPINGER ml.	14.0
BEGIN TIME (hour : minute):	8:52 AM		SILICA GEL. gms.	3.0
END TIME (hour : minute):	9:27 AM		% O2:	20.90
TOTAL RUN TIME:	30	MINUTES	% CO2:	0.00
BAROMETRIC PRESSURE:	30.09	inches Hg.	"F" FACTOR:	NA
STACK PRESSURE:	28.03	inches Hg.		
NOZZLE DIAMETER:	0.193	INCHES		
METER CORR. FACTOR:	1.007		PARTICULATE DATA	
FINAL METER:	250.807	CUBIC FT.		
INITIAL METER:	230.012	CUBIC FT.		
STACK AREA:	27.000	SQ. FT.	FILTER mg.:	1.0
PITOT Cp:	0.84		WASH mg.:	46.5

EMISSION RESULTS

NOZZLE AREA (SQ. FT.):	0.000203	VOLUMETRIC FLOW(ACFM):	96546
AVG. SQ. RT. VEL. HEAD:	1.0000	VOLUMETRIC FLOW(WVSCFM):	3323
AVG. VEL. HEAD (in H20)	1.0167	VOLUMETRIC FLOW(DSCFM):	83682
AVG. STACK TEMP. (F):	88.7	VOLUMETRIC FLOW(SCFMwet):	87005
AVG. METER TEMP. (F):	93.4		
AVG. ORIFICE DIFFERENTIAL:	1.220	**PARTICULATE EMISSION DATA:**	
METER ACF:	20.795		
METER SCF:	20.148	POUNDS PER HOUR:	26.096
MEASURED SCF MOISTURE:	0.800	POUNDS PER SCF.:	5.2E-06
MEASURED MOISTURE %:	3.82	GRAINS PER SCF.:	0.0364
STACK TEMP. (deg. C):	31.5	GRAINS PER SCF @ 7% O2:	#DIV/0!
VAPOR PRESSURE:	1.4	GRAINS PER SCF @ 50% E.A.:	#VALUE!
SATURATION MOISTURE %:	4.83		
PERCENT WATER VAPOR:	3.82		
GAS MOLECULAR WT.(dry):	28.84		
GAS MOLECULAR WT.(wet):	28.42		
PERCENT EXCESS AIR:	NA		
AVERAGE VELOCITY(FPS):	59.6		
MMBTUH(if applicable):	NA		
PERCENT ISOKINETIC:	106.68		

FIG. 1

Table 1. Particulate Emission Summary
White Sugar Dryer No. 2
US Sugar Corporation - Clewiston Mill
Clewiston, Florida
May 23-25, 2006

Run Number	% Load	Time	Actual Flow Rate acfm	Dry Standard Flow Rate dscfm	Stack Temperature F	Particulate Emissions gr/dscf	Particulate Emissions lbs/hr	% Load	Time	PM10 Emissions gr/dscf	PM10 Emissions lbs/hr
5/24/06								5/23/06			
1	100	0852-0927	96546	83682	88.7	0.0364	26.10	50	1015-1040	0.00324	2.37
2	100	1002-1037	95849	82769	88.4	0.0262	18.61	50	1127-1200	0.00218	1.59
3	100	1100-1134	96872	83743	88.4	0.0291	20.89	50	1220-1254	0.00154	1.13
4	50	1208-1243	98102	85704	84.9	0.0267	19.65	100	1400-1433	0.00143	1.02
5	50	1303-1337	98919	86321	85.2	0.0440	32.55	100	1450-1554	0.00242	1.75
6	50	1350-1425	98614	85981	84.5	0.0283	20.89	100	1545-1619	0.00149	1.06
5/25/06								5/25/06			
7	100	0802-0836	96457	82866	89.5	0.0342	24.30	100	1024-1058	0.00143	1.02
8	100	0850-0925	96272	82501	88.7	0.0286	20.21	100	1110-1144	0.00131	0.94
9	100	0934-1008	97078	83246	89.8	0.0294	20.99	100	1153-1228	0.00177	1.26
						0.0314 AVG				0.00168 AVG	

Allowable Emissions:
PM - 0.005 gr/dscf and 4.2 lbs/hr

ENTOLETER PROJECT SCHEDULE