AP-42 Section Number: 9.10.1.2

Reference Number: 15

Title: Report to Great Lakes Sugar Company on Stack Particulate Samples Collected on the Pulp Drier at Fremont, Ohio

Affiliated Environmental Services, Inc.

Affiliated Environmental Services, Inc.

December 1992

affiliated Environmental services, inc.

Great Lakes Sugar Co.
Attn: Mr. Joe Flynn
3rd Floor Plaza North
P.O. Box 1348
Saginaw, MI 48605

REPORT TO GREAT LAKES SUGAR CO.

ON

STACK PARTICULATE SAMPLES
COLLECTED ON THE PULP DRIER AT
FREMONT, OH

SUBMITTED BY

AFFILIATED ENVIRONMENTAL SERVICES, INC.
3606 VENICE RD.
SANDUSKY, OH 44870

DATE OF TESTING: 12-2-92

DATE OF REPORT: 12-8-92

Joe Gillingham
FIELD TEST SUPERVISOR

Don Dauch
MANAGER, AIR SAMPLING DIVISION

copies: Leif, Ken, Tom
MARK, File - OH.EPA
2-10-93

FEB - 8 1993

OhioEPA
State of Ohio Environmental Protection Agency
Northwest District Office
347 North Dunbridge Road
P.O. Box 466
Bowling Green, Ohio 43402-0466
(419) 352-8461 **FAX** (419) 352-8468

George V. Voinovich
Governor

Re: Sandusky County
Great Lakes Sugar Company
0372030103
Stack Test

February 5, 1993

Mr. Joe Flynn
Great Lakes Sugar Company
P.O. Box 1348
Saginaw, Michigan 48605

Dear Mr. Flynn:

The stack test done on Ohio EPA Source No. P003 on December 2, 1992, has been reviewed and found to be in conformance with Ohio EPA methods and procedures.

Our test review confirms the following reported data as accurate:

	Critical Test Data (In Three Run Averages)	
	TSP	SO_2
1. Emission Rate:	**23.4 #/hr**	**57.2 #/hr**
2. Source Operating Rate:	**45 TPH**	
3. Isokinicity Rate:	**105.1%**	

All test information will be used by Ohio EPA personnel for permit processing and review. Thank you for your cooperation in this matter, and please call me if you have questions or comments.

Sincerely,

Curtis Eldridge
Division of Air Pollution Control

/jlm
pc: Bob Henn, DAPC, NWDO
Sarah Kirsh, DAPC, NWDO
Stack file
NWDO file

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INTRODUCTION

This report contains the results of stack particulate emissions testing performed by Affiliated Environmental Services, Inc. for Great Lakes Sugar at Fremont, OH. Testing was performed on 12-2-92 on the pulp drier. Beet pulp is dried in direct fired rotary drum dryers and the exhaust is cleaned by cyclones and vented out a 6' diameter stack. Production during the emissions test were monitored by Great Lakes Sugar. The times for testing can be found on the field data sheets. This was a 3 repetition test.

DESCRIPTION OF TEST

All tests were performed in accordance with EPA methods 1,2,3,4, 5 and 8 as described in the Federal Register. A twenty point sampling traverse was selected with sampling at three minutes per point. The equipment used for testing consisted of a fyrite gas analyzer and a RAC Stack Train Sampler (EPA type). A RAC type "S" pitot and heated glass sampling probe was used with the sampling train. All equipment was calibrated in the laboratory prior to the test. The calculations for the stack sampling parameters were performed on a computer. A description of the method 1-5 test follows on the next few pages. The data sheets can be found in the appendix.

METHOD 1

Sample and Velocity Traverses for Stationary Sources.

The location of the sampling site and traverse points are determined based on stack diameters and length of the stack.

METHOD 2

Determination of Stack Gas Velocity and Volumetric Flow Rate.

Velocities are measured with a type "S" pitot tube. Temperatures are measured with thermocouples.

METHOD 3

Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight.

A gas sample is extracted by using a bag simultaneously with the particulate tests. Analyses are performed using an Orsat and/or Fyrite Analyzer.

METHOD 4

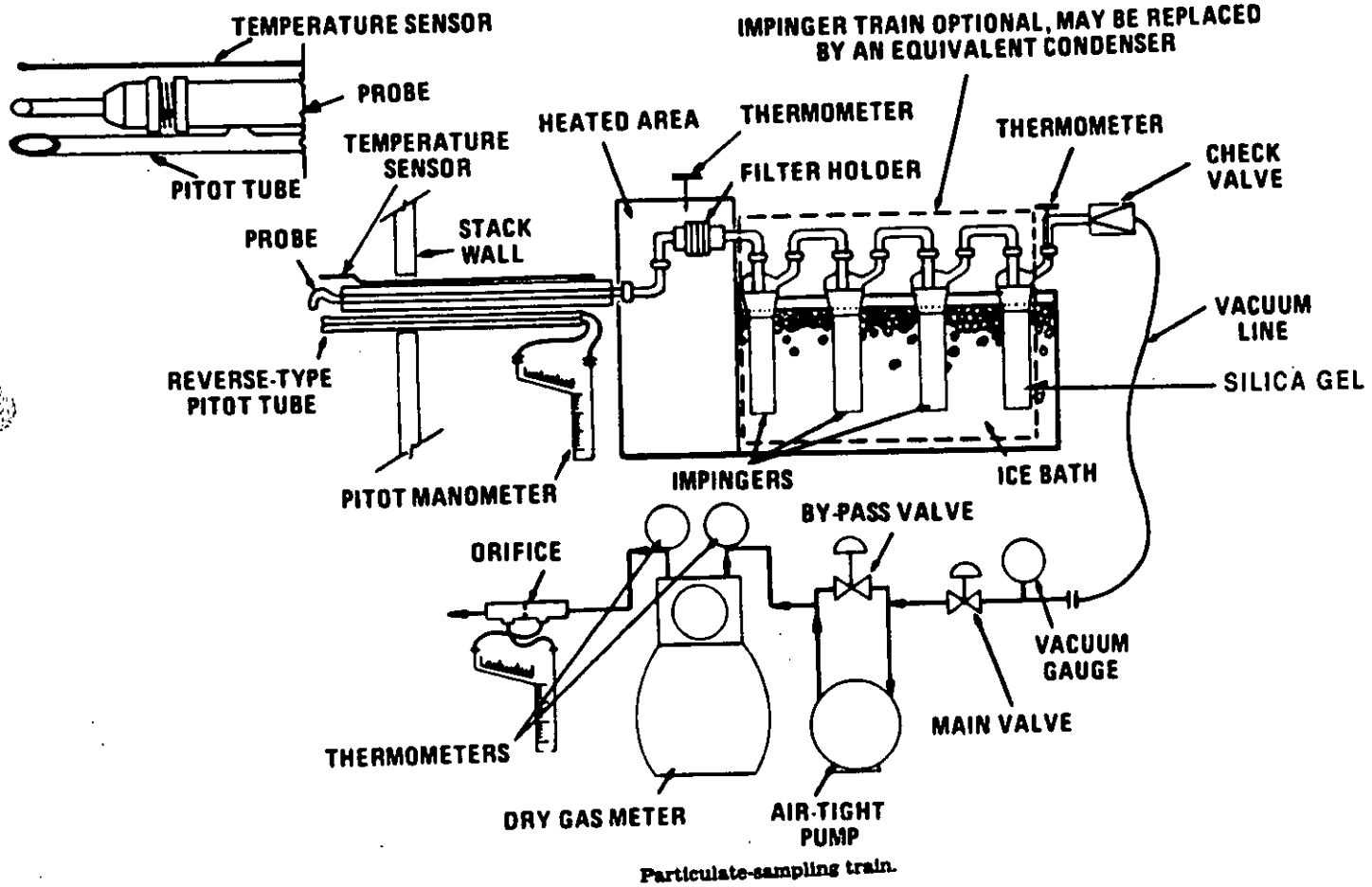
Determination of Moisture Content.

A gas sample is extracted at a constant rate from the source. Moisture is determined either volumetrically or gravimetrically.

METHOD 5

Determination of Particulate Emissions from Stationary Sources.

Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at 248 ± 25° F. A schematic of the sampling train is shown in Figure 1.



Particulate-sampling train.

Figure #1

STACK PARTICULATE AND SO_2 SUMMARY

Test No.	gr/dscf(A)	$x10^{-6}$ lbs/dscf(B)	lbs/hr	lbs/hr SO_2
1	0.0504	7.2234	20.71	55.46
2	0.0661	9.4678	27.47	58.08
3	0.0546	7.8179	21.97	58.04

(A) = Grains per dry standard cubic feet at 68°F and 29.92 inches Hg

(B) = Pounds per dry standard cubic feet at 68°F and 29.92 inches Hg

STACK GAS DATA SUMMARY

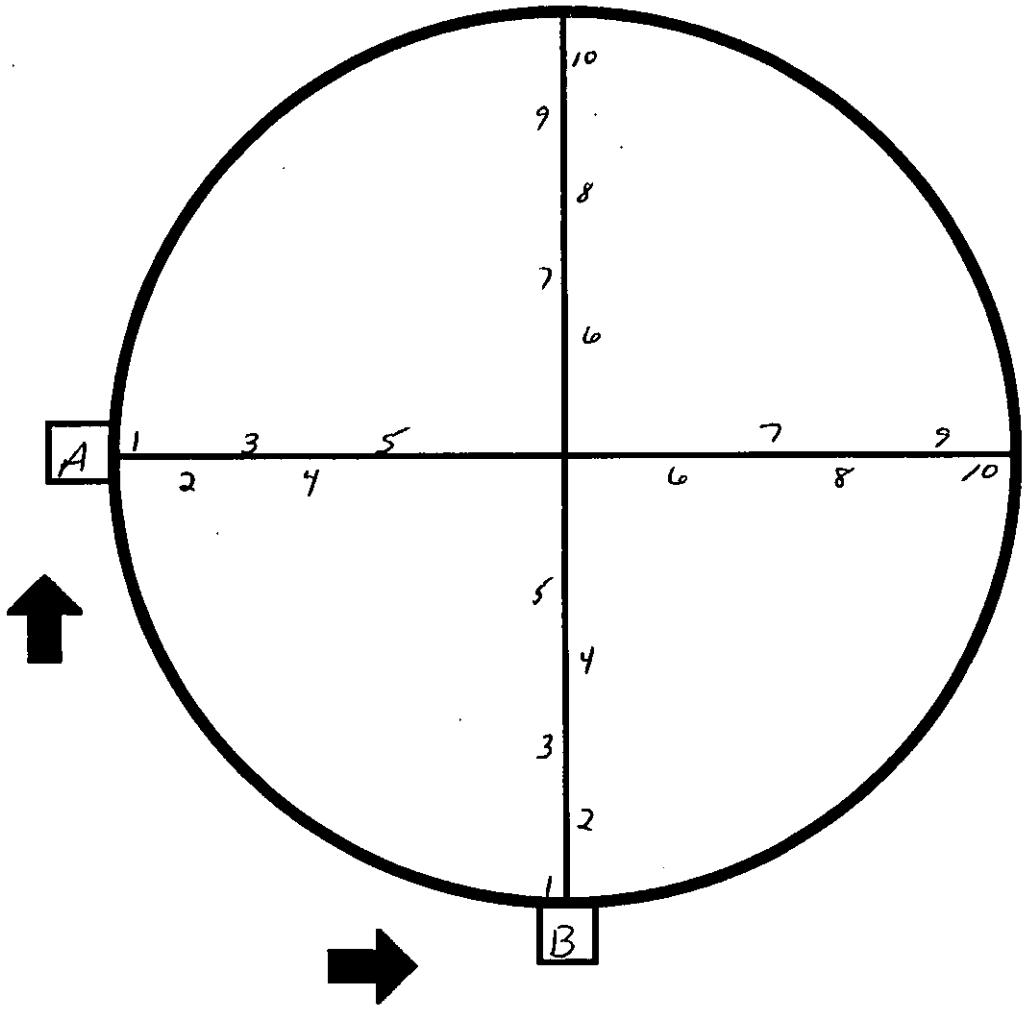
Temt No.	FLow Rate[A]	Temp. °F	Moisture %	CO_2 %	O_2 %
1	47,793	267	35.6	5.5	15.5
2	48,353	273	35.2	5.5	15.5
3	46,843	281	36.4	6.5	13.5

(A) = Dry standard cubic feet per minute at 29.92 inches and 68°F

LOCATION OF SAMPLING POINTS DURING PARTICULATE EMISSIONS TESTING

Distance A= 72" diameter

Distance B=



Sample Point #	Distance from Inside of Stack Wall (inches)	Sample Point #	Distance from Inside of Stack Wall (inches)
1	1.9"	6	47.4"
2	5.9"	7	55.7"
3	10.5"	8	61.5"
4	16.3"	9	66.1"
5	24.6"	10	70.1"

QUALITY CONTROL/QUALITY ASSURANCE

All equipment was fully calibrated at our laboratory prior to the test. The sampling nozzles were measured using a vernier caliper. The pitots were measured for proper alignment and dimensions. All thermometers and thermocouples were calibrated against ASTM glass thermometers. The RAC base units are checked in the field by comparison of a 10 minute run at 0.75 cfm (ΔH) to dry gas meter integration and single point check against critical orifice. Blank solutions (acetone, distilled water) are taken and analyzed at the laboratory to see if they are within specifications. A chain of custody was maintained by the field supervisor from the start of the test program to its completion. When the samples were returned to the laboratory they were placed under the control of the laboratory supervisor until analysis is completed.

FORMULAS USED IN CALCULATIONS

Gas Volume Sampled - Standard cubic feet = Vmc

$$17.64 \times (Vm) \times (Y) \times \left(\frac{Pbar + \frac{\Delta H}{13.6}}{Tm} \right)$$

Volume of Water Vapor - Standard cubic feet =Vwc

$$Vlc \times \left(\frac{PH20}{MH20} \right) \times \left(\frac{RTstd}{Pstd} \right) = (0.0471 \text{ ft/ml}) \times Vlc$$

Stack Moisture Content - Bws

$$Bws = \frac{Vwc}{Vwc + Vmc}$$

Dry Molecular Weight - Md

$$Md = 0.44 \times (\%CO2) + 0.32 \times (\%02) + 0.28 \times (\%CO+N2)$$

Stack Gas Molecular Weight - Ms

$$Ms = 18 \times (Bws) + Md \times (1-Bws)$$

Average Stack Velocity - Vs

$$Vs = 85.48 \times (Cp) \times \overline{(\Delta P)} \times \sqrt{\frac{Ts + 460}{Ps \times Ms}}$$

Stack Gas Volumetric Flow Rate - SCFH

$$3600 \times (1-Bws) \times Vs \times A \times \left(\frac{Tstd}{Ts} \right) \times \left(\frac{Ps}{Pstd} \right)$$

Isokinicity %

$$\frac{TS \times (1.667) \times (Vwc + Vmc)}{(min.) \times (17.64) \times Ps \times Vs \times Atip}$$

Stack Particulate Concentration - Pounds/hour

$$2.205 \times 10^{-6} \left(\frac{Mn}{Vm\ std} \right) \times SCFH$$

Grains/standard cu ft

$$0.0154 \left(\frac{Mn}{Vm\ std} \right)$$

Y = Calibration factor of sampling train

Pbar = Barometric pressure

R Tstd = 460 + 68 = 528

Pstd = 29.92 in Hg

Cp = Pitot tube coefficient

Ps = Stack static pressure + Pbar

A = Area of stack - sq ft

min = Minutes of test

Atip = Area of sampling nozzle sq ft

Mn = Weight gain of filter + probe wash

Vlc = Volume of liquid and silica collected

PLANT NAME: Great Lakes Sugar

SOURCE I.D.: Pulp dryer outlet DATE: 12-2-92

STACK PARTICULATE SAMPLE LABORATORY DATA SHEET

Run # 1 Lab Analysis by: Joe Gillingham

Date: 12-8-92

	FINAL WEIGHT mg	INITIAL WEIGHT mg	NET WEIGHT GAIN mg
Filter	705.0	633.9	71.1
Probe wash	103 888.8	103830.0	58.8
* Impingers	—	—	—

SILICA	IMPINGER
Final Weight = 560	Final Volume = 455
Initial Weight = 550	Initial Volume = 200
Total Gain +10	Total Gain +255

Total gain mg	129.9
Filter & Wash mg	129.9
- Acetone blank mg	-.15
Net Particulate Weight mg	129.75

Net particulate weight refers to the filter and wash minus the acetone blank.

* Impingers analyzed for SO_2

PLANT NAME: Great Lakes Sugar

SOURCE I.D.: pulp dryer outlet DATE: 12-2-92

STACK PARTICULATE SAMPLE LABORATORY DATA SHEET

Run # 2

Lab Analysis by: Joe Gillingham

Date: 12-8-92

	FINAL WEIGHT mg	INITIAL WEIGHT mg	NET WEIGHT GAIN mg
Filter	729.2	631.1	98.1
Probe wash	103408.1	103342.5	65.6
* Impingers	—	—	—

SILICA	IMPINGER
Final Weight = 560	Final Volume = 430
Initial Weight = 550	Initial Volume = 200
Total Gain +10	Total Gain +230

Total gain mg	163.7
Filter & Wash mg	163.7
- Acetone blank mg	-.15
Net Particulate Weight mg	163.55

Net particulate weight refers to the filter and wash minus the acetone blank.

* Impingers analyzed for SO_2

PLANT NAME: GREAT LAKES SUGAR

SOURCE I.D.: Pulp dryer outlet DATE: 12-2-92

STACK PARTICULATE SAMPLE LABORATORY DATA SHEET

Run # 3 Lab Analysis by: Joe Gillingham

Date: 12-8-92

	FINAL WEIGHT mg	INITIAL WEIGHT mg	NET WEIGHT GAIN mg
Filter	708.3	635.8	72.5
Probe wash	109643.2	109591.3	51.9
* Impingers	—	—	—

SILICA	IMPINGER
Final Weight = 563	Final Volume = 412
Initial Weight = 550	Initial Volume = 200
Total Gain +13	Total Gain + 212

Total gain mg	124.4
Filter & Wash mg	124.4
- Acetone blank mg	-.15
Net Particulate Weight mg	124.25

Net particulate weight refers to the filter and wash minus the acetone blank.

* IMPINGERS ANALYZED for SO_2

AFFILIATED ENVIRONMENTAL SERVICES, INC.
3606 VENICE RD.
SANDUSKY, OHIO 44870

PLANT NAME: Great Lakes Sugar Pulp Dryer

DATE OF TEST: 12-2-92

STACK SAMPLING PARAMETERS

TEST RUN NUMBER 1

MINUTES OF TEST	60
VOLUME OF GAS COLLECTED cubic feet	44.646
METER CALIBRATION FACTOR Y	.93
BAROMETRIC PRESSURE	30.12
PRESSURE DIFFERENTIAL ACROSS ORIFICE DELTA H	1.48
METER TEMPERATURE (+460)	559
STACK STATIC PRESSURE (HG)	.0029
STACK TEMPERATURE (+460)	727
AVERAGE SQUARE ROOT OF VELOCITY HEAD	.855
VOLUME OF IMPINGER WATER COLLECTED ml	455
WEIGHT OF SILICA COLLECTED gms	10
AREA OF SAMPLING NOZZLE square feet	.0003436
PITOT TUBE COEFFICIENT	.84
AREA OF STACK square feet	28.27
CARBON DIOXIDE (DRY FRACTION)	5.5
CARBON MONOXIDE (DRY FRACTION)	0
OXYGEN (DRY FRACTION)	15.5
NITROGEN (DRY FRACTION)	79

STACK PARTICULATE DATA

GAS VOLUME STANDARD CONDITIONS DSCF	39.607
VOLUME OF WATER VAPOR cubic feet	21.902
PERCENT MOISTURE IN STACK GAS	35.6
DRY GAS MOLECULAR WEIGHT	29.5
STACK GAS MOLECULAR WEIGHT	25.406
VELOCITY OF STACK GAS feet per second	59.836
FLOW RATE OF STACK GAS DSCFH	2867553
FLOW RATE OF STACK GAS DSCFM	47793
ISOKINICITY %	113.7
WEIGHT GAIN OF IMPINGERS mg	0
WEIGHT GAIN OF FILTER mg	71.1
WEIGHT GAIN OF PROBE WASH mg	58.8
PARTICULATES COLLECTED POUNDS/HOUR	20.71
PARTICULATES COLLECTED GRAINS/DSCF	.0504
PARTICULATES COLLECTED POUNDS/DSCF	7.2234E-06

AFFILIATED ENVIRONMENTAL SERVICES, INC.
3606 VENICE RD.
SANDUSKY, OHIO 44870

PLANT NAME: Great Lakes Sugar

DATE OF TEST: 12-2-92

STACK SAMPLING PARAMETERS

TEST RUN NUMBER 2

MINUTES OF TEST	60
VOLUME OF GAS COLLECTED cubic feet	43.251
METER CALIBRATION FACTOR Y	.93
BAROMETRIC PRESSURE	30.12
PRESSURE DIFFERENTIAL ACROSS ORIFICE DELTA H	1.41
METER TEMPERATURE (+460)	563
STACK STATIC PRESSURE (HG)	.0029
STACK TEMPERATURE (+460)	733
AVERAGE SQUARE ROOT OF VELOCITY HEAD	.864
VOLUME OF IMPINGER WATER COLLECTED ml	430
WEIGHT OF SILICA COLLECTED gms	10
AREA OF SAMPLING NOZZLE square feet	.0003409
PITOT TUBE COEFFICIENT	.84
AREA OF STACK square feet	28.27
CARBON DIOXIDE (DRY FRACTION)	5.5
CARBON MONOXIDE (DRY FRACTION)	0
OXYGEN (DRY FRACTION)	15.5
NITROGEN (DRY FRACTION)	79

STACK PARTICULATE DATA

GAS VOLUME STANDARD CONDITIONS DSCF	38.09
VOLUME OF WATER VAPOR cubic feet	20.724
PERCENT MOISTURE IN STACK GAS	35.2
DRY GAS MOLECULAR WEIGHT	29.5
STACK GAS MOLECULAR WEIGHT	25.452
VELOCITY OF STACK GAS feet per second	60.66
FLOW RATE OF STACK GAS DSCFH	2901155
FLOW RATE OF STACK GAS DSCFM	48353
ISOKINICITY %	109
WEIGHT GAIN OF IMPINGERS mg	0
WEIGHT GAIN OF FILTER mg	98.1
WEIGHT GAIN OF PROBE WASH mg	65.6
PARTICULATES COLLECTED POUNDS/HOUR	27.47
PARTICULATES COLLECTED GRAINS/DSCF	.0661
PARTICULATES COLLECTED POUNDS/DSCF	9.4678E-06

AFFILIATED ENVIRONMENTAL SERVICES, INC.
3606 VENICE RD.
SANDUSKY, OHIO 44870

PLANT NAME: Great Lakes Sugar

DATE OF TEST: 12-2-92

STACK SAMPLING PARAMETERS

TEST RUN NUMBER 3

MINUTES OF TEST	60
VOLUME OF GAS COLLECTED cubic feet	39.961
METER CALIBRATION FACTOR Y	.93
BAROMETRIC PRESSURE	30.12
PRESSURE DIFFERENTIAL ACROSS ORIFICE DELTA H	1.12
METER TEMPERATURE (+460)	565
STACK STATIC PRESSURE (HG)	.0029
STACK TEMPERATURE (+460)	741
AVERAGE SQUARE ROOT OF VELOCITY HEAD	.856
VOLUME OF IMPINGER WATER COLLECTED ml	412
WEIGHT OF SILICA COLLECTED gms	13
AREA OF SAMPLING NOZZLE square feet	.0003409
PITOT TUBE COEFFICIENT	.84
AREA OF STACK square feet	28.27
CARBON DIOXIDE (DRY FRACTION)	6.5
CARBON MONOXIDE (DRY FRACTION)	0
OXYGEN (DRY FRACTION)	13.5
NITROGEN (DRY FRACTION)	80

STACK PARTICULATE DATA

GAS VOLUME STANDARD CONDITIONS DSCF	35.044
VOLUME OF WATER VAPOR cubic feet	20.018
PERCENT MOISTURE IN STACK GAS	36.4
DRY GAS MOLECULAR WEIGHT	29.58
STACK GAS MOLECULAR WEIGHT	25.365
VELOCITY OF STACK GAS feet per second	60.529
FLOW RATE OF STACK GAS DSCFH	2810605
FLOW RATE OF STACK GAS DSCFM	46843
ISOKINICITY %	103.4
WEIGHT GAIN OF IMPINGERS mg	0
WEIGHT GAIN OF FILTER mg	72.5
WEIGHT GAIN OF PROBE WASH mg	51.9
PARTICULATES COLLECTED POUNDS/HOUR	21.97
PARTICULATES COLLECTED GRAINS/DSCF	.0546
PARTICULATES COLLECTED POUNDS/DSCF	7.8179E-06

A.E. SERVICES, INC.

PARTICULATE SAMPLE DATA SHEET
(Method 5)

Avg. Fyrite Analysis: 5.5 % CO_2 15.5 % O_2

Location: GREAT LAKES Sugar
Stack: pulp dryer
Operator: Joe Billingham
Date: 12-2-92
Run Number: 1
Pitot Tube Coeff.: .84 /#
Area of Stack: 6'd.A 28.27

Ambient Temp.: 32°
Barometric Pres.: 30.12
Assumed Moisture %: 25%
Heater Box Setting: 248
Probe Length & No.: 2' glass /#
Nozzle Diameter & No.: .251 1/4 /#.0003436
Probe Heater Setting: 248

Additional Information:

START **STOP**

A 8:19 – 8:49

B 8:53 – 9:23

Base Unit # 6 y=.93

STATIC PRESSURE
"H2O (Ps) +.04
= "Hg. .0029

LEAK CHECK "Hg
Initial .012 At 15"
Final .003 At 7"

PITOT LEAK CHECK
Initial OK
Final OK

10 MIN. CHECK
Final
Initial

Witnessed by

Pt. #	Time Min.	Stack temp f	Δ P	√ Δ P	Δ H	Gas Sample Volume ft	Dry gas temp. inlet °f	Dry gas temp. outlet °f	Probe temp. °f	Box temp. °f	Vac. "Hg	Imp. gas temp. °f
A1	0 – 3	261	.74	.860	1.50	258.979	90	90	234	229	5.0	34
2	3 – 6	264	.77	.877	1.60	261.1	94	90	240	237	6.0	34
3	6 – 9	267	.72	.906	1.60	263.5	98	90	247	245	6.0	34
4	9 – 12	268	.85	.922	1.70	265.7	100	92	268	263	6.5	34
5	12 – 15	271	.87	.933	1.70	268.0	104	92	260	257	6.5	36
6	15 – 18	273	.90	.949	1.80	270.4	104	92	255	260	6.5	36
7	18 – 21	271	.88	.938	1.60	272.8	106	94	257	261	6.5	36
8	21 – 24	270	.80	.894	1.60	275.2	106	94	251	263	6.0	36
9	24 – 27	267	.70	.837	1.40	277.5	106	94	250	260	6.0	38
10	27 – 30	264	.54	.735	1.10	279.8	106	94	245	264	5.5	38
1B		261	.68	.825	1.40	281.8	100	94	247	265	5.5	38
2		264	.75	.866	1.50	283.9	102	94	258	265	6.0	38
3		267	.75	.866	1.50	286.1	102	94	257	264	6.0	38
4		267	.72	.849	1.40	288.4	104	94	260	251	6.0	40
5		270	.74	.860	1.50	290.6	106	94	263	253	6.0	40
6		273	.70	.837	1.40	292.9	106	94	260	261	6.0	40
7		271	.70	.837	1.40	295.2	106	96	257	267	6.0	40
8		267	.68	.825	1.40	297.3	106	96	255	264	6.0	40
9		264	.60	.775	1.20	299.7	108	96	243	257	6.0	40
10		264	.50	.707	1.00	301.7	108	96	249	251	5.5	40
						303.625						
total		5344		17.098	29.5		avg 103	avg. 94				
Avg.		267		.855	1.48	44.6646	Avg. 99	559				

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A.E. SERVICES, INC.

PARTICULATE SAMPLE DATA SHEET
(Method 5)

Avg. Fyrite Analysis: 5.5 % CO_2 15 % O_2

Location: Great Lakes Sugar
Stack: pulp dryer
Operator: Joe Gillingham
Date: 12-2-92
Run Number: 2
Pitot Tube Coeff.: .84 /#
Area of Stack: 6' d.a 28.27

Ambient Temp.: 34°
Barometric Pres.: 30.12
Assumed Moisture %: 30%
Heater Box Setting: 248
Probe Length & No.: 2' glass /#
Nozzle Diameter & No.: .250 /#.0003409
Probe Heater Setting: 248

Additional Information:

START / STOP

A 10:00 – 10:30

B 10:33 – 11:03

Base Unit # 6 Y = .93

STATIC PRESSURE
"H2O (Ps) 4.04
= "Hg. .0029

LEAK CHECK "Hg
Initial .005 At 7"
Final .003 At 7"

PITOT LEAK CHECK
Initial OK
Final OK

10 MIN. CHECK
Final
Initial

Witnessed by

Pt. #	Time Min.	Stack temp f	ΔP	√ΔP	ΔH	Gas Sample Volume ft	Dry gas temp. inlet °f	Dry gas temp. outlet °f	Probe temp. °f	Box temp. °f	Vac. "Hg	Imp. gas temp. °f
A1	0 – 3	275	.65	.806	1.20	303.977	90	90	241	230	6.0	40
2	3 – 6	278	.80	.894	1.50	305.9	94	90	247	238	6.5	40
3	6 – 9	275	.80	.894	1.50	307.9	96	90	265	243	6.5	40
4	9 – 12	271	.90	.949	1.70	310.0	102	92	250	268	7.0	40
5	12 – 15	268	.90	.949	1.70	312.3	104	92	248	250	7.0	40
6	15 – 18	268	.84	.917	1.60	314.5	108	94	254	250	7.0	42
7	18 – 21	265	.80	.894	1.50	317.0	110	94	260	255	10.5	42
8	21 – 24	268	.73	.854	1.40	319.2	112	96	240	247	6.0	42
9	24 – 27	265	.67	.819	1.30	321.5	114	96	247	252	6.0	40
10	27 – 30	267	.47	.686	.880	324.0	114	98	240	256	6.0	40
11		260	.70	.837	1.30	325.6	106	98	243	258	6.0	40
2		265	.75	.866	1.40	327.6	108	98	267	260	6.5	38
3		270	.75	.866	1.40	330.5	110	100	255	260	6.5	38
4		275	.75	.866	1.40	331.8	110	100	254	250	6.5	40
5		275	.77	.877	1.40	334.0	112	100	256	250	6.5	40
6		275	.85	.922	1.60	336.2	114	102	256	245	7.0	40
7		285	.85	.922	1.60	338.5	114	102	238	265	7.0	36
8		251	.82	.906	1.50	340.9	116	102	230	265	7.0	38
9		281	.72	.849	1.30	343.1	116	102	240	263	6.5	38
10		286	.50	.707	.940	345.2	118	104	243	258	6.0	40
						347.228						
total		5453		17.28	28.12		avg. 108	avg. 97				
Avg.		273		.864	1.41	43.251	Avg. 103	563				

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A.E. SERVICES, INC.

PARTICULATE SAMPLE DATA SHEET
(Method 5)

Avg. Fyrite Analysis: 6.5 % CO_2 15 % O_2

Location: Great Lakes Sugar
Stack: pulp dryer
Operator: Joe Gillingham
Date: 12-2-92
Run Number: 3
Pitot Tube Coeff.: .84 /#
Area of Stack: 6' dia 28.27

Ambient Temp.: 36°
Barometric Pres.: 30.12
Assumed Moisture %: 35%
Heater Box Setting: 248
Probe Length & No.: 2' glass /#
Nozzle Diameter & No.: .250 /# .0003409
Probe Heater Setting: 248

Additional Information:

START / STOP

A 12:12 - 12:42

B 12:46 - 1:16

Base Unit # 6 Y = .93

STATIC PRESSURE "H2O (Ps) +.04 = "Hg. .0029

LEAK CHECK "Hg Initial .012 @ +9" Final .002 @ +7.5"

PITOT LEAK CHECK Initial OK Final

10 MIN. CHECK Initial Final

Witnessed by

Pt. #	Time Min.	Stack temp f	ΔP	√ΔP	ΔH	Gas Sample Volume ft	Dry gas temp. inlet °f	Dry gas temp. outlet °f	Probe temp. °f	Box temp. °f	Vac. "Hg	Imp. gas temp. °f
A1	0 - 3	271	.70	.837	1.10	369.810	100	98	251	244	5.0	40
2	3 - 6	276	.80	.894	1.20	371.7	102	98	247	253	5.5	40
3	6 - 9	279	.80	.894	1.20	373.7	104	98	254	255	5.5	40
4	9 - 12	283	.77	.877	1.20	376.1	106	100	250	250	5.5	40
5	12 - 15	283	.77	.877	1.20	378.2	106	100	254	247	5.5	42
6	15 - 18	285	.85	.922	1.30	380.2	108	100	260	250	6.0	40
7	18 - 21	284	.82	.906	1.20	382.1	110	100	253	250	5.5	40
8	21 - 24	280	.75	.866	1.10	384.3	112	102	261	245	5.0	38
9	24 - 27	280	.70	.837	1.10	386.3	112	102	267	247	5.0	38
10	27 - 30	277	.47	.1686	.710	388.4	112	102	265	253	4.0	38
1B		275	.75	.866	1.10	390.0	104	100	260	250	5.0	38
2		277	.82	.906	1.20	391.9	106	100	264	254	5.5	40
3		278	.85	.922	1.30	393.9	108	100	240	265	5.5	40
4		282	.85	.922	1.30	396.1	110	102	242	258	5.5	40
5		284	.87	.933	1.30	398.3	112	102	243	260	5.5	40
6		283	.78	.883	1.20	400.3	112	102	251	263	5.5	40
7		287	.75	.866	1.10	402.5	112	102	255	260	5.0	40
8		285	.65	.806	.980	404.5	112	102	260	257	4.5	38
9		283	.63	.794	.950	406.3	112	102	257	255	4.5	38
10		280	.40	.632	.600	408.2	112	100	250	250	4.0	40
						409.771						
total		5612		17.126	22.34		avg 109	avg 101				
Avg.		281		.856	1.12	39.961	Avg. 105	565				

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APPENDIX

Post-it™ brand fax transmittal memo 7671 | # of pages ▸

To Don Dauch	From Joe Flynn
Co.	Co.
Dept.	Phone #
Fax #	Fax #

Don Dauch
A.E.S.

Ref: Fremont stack test

Don:

pulp DRIER STANDARD formulars:

wet pulp to DRIER (tons/hr) =
(process weight rate)

$$\frac{\text{tons Beet sliced (tons/hr)} \times \text{\% solids in beets}}{1 - \left(\frac{\text{wet pulp moisture (\%)}}{100}\right)}$$

process weight DATA

TONS beets sliced	171 tons/hr
wet pulp moisture	77.2% moisture
% solids	6%

$$\text{process weight RATE} = \frac{171 \text{ tons/hr} \times 0.06}{1 - \left(\frac{77.2}{100}\right)}$$

45 tons/hr

19

Allowable discharge tons/hr =

Ohio EPA formula

$55(45)^{.11} - 40 = 43.60$ lbs/hr

$55(PWR)^{.11} - 40$

If you have any questions give me a call (512) 777-7300

Joe

SULFUR DIOXIDE ANALYTICAL DATA

Plant Great Lakes Sugar Date 12-2-92

Sample location Pulp dryer Analyst Don Daunt

Volume and normality of barium perchlorate

1 _____ ml _____ N

2 _____ ml _____ N 0.010 N, avg

3 _____ ml _____ N

Sample number	Sample identification number	Total sample volume (V_{soln}), ml	Sample aliquot volume (V_a),[a] ml	Volume of titrant (V_t),[b] ml		
				1st titration	2nd titration	Average
1	R-1	1000	10	10.90	10.80	10.85
2	R-2	1000	10	10.80	10.80	10.80
3	R-3	1000	10	10.30	10.20	10.25
4						
5						
6						
Blank		N/A	10	1 drop	1 drop	V_{tb} = 0

[a] Volume for the blank must be the same as that of the sample aliquot.

[b] $\frac{\text{1st titration}}{\text{2nd titration}}$ = 0.99 to 1.01 or |1st titration - 2nd titration| ≤0.2 ml.

Signature of analyst Don Daunt

Signature of reviewer or supervisor _____

SULFUR DIOXIDE CALCULATION FORM
(English units)

Sample Volume[a]

R-1

SO_2 Concentration

$N = 0.0100$ (g-eq)/ml, $V_t = 10.85$ ml, $V_{tb} = 0.0$ ml

$V_{soln} = 1000.00$ ml, $V_a = 10.0$ ml

$$C_{SO_2} = 7.06 \times 10^{-5} \frac{N\,(V_t - V_{tb})\,(V_{soln}/V_a)}{V_{m(std)}} = 1.934 \times 10^{-5} \text{ lb/dscf}$$

Equation 6-2

19.34×10^{-6} lb/dscf $\times$ 2.867553×10^{6} dscf/hr $= 55.46$ lb/hr SO_2

[a] Calculation form for data collected using Method 6 type equipment. The alternative use of Method 5 or Method 8 equipment will change V_m and $V_{m(std)}$ to $V_{m(std)} = 39.607$ ft^3.

R-2

SO_2 Concentration

$N = 0.0100$ (g-eq)/ml, $V_t = 10.80$ ml, $V_{tb} = 0.0$ ml

$V_{soln} = 1000.00$ ml, $V_a = 10.0$ ml

$$C_{SO_2} = 7.06 \times 10^{-5} \frac{N\,(V_t - V_{tb})\,(V_{soln}/V_a)}{V_{m(std)}} = 2.002 \times 10^{-5} \text{ lb/dscf}$$

Equation 6-2

20.02×10^{-6} lb/dscf $\times$ 2.901155×10^{6} dscf/hr $= 58.08$ lb/hr SO_2

[a] Calculation form for data collected using Method 6 type equipment. The alternative use of Method 5 or Method 8 equipment will change V_m and $V_{m(std)}$ to $V_{m(std)} = 38.090$ ft^3.

SULFUR DIOXIDE CALCULATION FORM
(English units)

R-3

Sample Volume[a]

SO_2 Concentration

$N = 0.010$ (g-eq)/ml, $V_t = 10.25$ ml, $V_{tb} = 0.0$ ml

$V_{soln} = 1000.00$ ml, $V_a = 10.0$ ml

$$C_{SO_2} = 7.06 \times 10^{-5} \frac{N\,(V_t - V_{tb})\,(V_{soln}/V_a)}{V_{m(std)}} = 2.065 \times 10^{-5} \text{ lb/dscf}$$

Equation 6-2

20.65×10^{-6} lb/dscf $\times$ 2.810605 $\times 10^{6}$ dscf/hr $= 58.04$ lb/hr SO_2

[a] Calculation form for data collected using Method 6 type equipment. The alternative use of Method 5 or Method 8 equipment will change V_m and $V_{m(std)}$ to $V_{m(std)} = 35.044$ ft^3.

SO_2 Concentration

$N = \_.\_\_\_\_$ (g-eq)/ml, $V_t = \_\_.\_\_$ ml, $V_{tb} = \_\_.\_\_$ ml

$V_{soln} = \_\_\_.\_\_$ ml, $V_a = \_\_.\_$ ml

$$C_{SO_2} = 7.06 \times 10^{-5} \frac{N\,(V_t - V_{tb})\,(V_{soln}/V_a)}{V_{m(std)}} = \_.\_\_\_ \times 10^{-5} \text{ lb/dscf}$$

Equation 6-2

[a] Calculation form for data collected using Method 6 type equipment. The alternative use of Method 5 or Method 8 equipment will change V_m and $V_{m(std)}$ to $V_{m(std)} = \_\_.\_\_\_$ ft^3.

NOZZLE CALIBRATION DATA FORM

Date 12-2-92 Calibrated by Joe Tillingham

Nozzle identification number	Nozzle Diameter[a]			ΔD,[b] mm (in.)	D_{avg}[c]
	D_1, mm (in.)	D_2, mm (in.)	D_3, mm (in.)		
A	.251	.251	.250		.251
B	.250	.250	.250		.250
C	.250	.251	.250		.250

where:

[a] $D_{1,2,3}$ = three different nozzles diameters, mm (in.); each diameter must be within (0.025 mm) 0.001 in.

[b] ΔD = maximum difference between any two diameters, mm (in.), $\Delta D \leq$ (0.10 mm) 0.004 in.

[c] D_{avg} = average of D_1, D_2, and D_3.

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM

Date 11-19-92 Thermocouple number RAC Meter Boxes

Ambient temperature 23 °C Barometric pressure 30.46 in. Hg

Calibrator D.K. Lucas Reference: mercury-in-glass Astm

other

Reference point number[a]	Source[b] (specify)	Reference thermometer temperature, °C	Thermocouple potentiometer temperature, °C	Temperature difference,[c] %
RAC #	Inlet	outlet		
1	72	72		
2	73	72		
3	72	72		
4	72	73		
6	71	72		

[a] Every 30°C (50°F) for each reference point.

[b] Type of calibration system used.

[c] $\left[\frac{(\text{ref temp, °C} + 273) - (\text{test thermom temp, °C} + 273)}{\text{ref temp, °C} + 273}\right] 100 \leq 1.5\%$.

Date 11-19-92

Metering System Identification: #6

Barometric pressure, P_b = 30.46 in. H_g

Calibrated by:

Orifice manometer setting ΔH in. H_2O	Spirometer (wet meter) gas volume V_w ft^3	Dry gas meter volume V_m ft^3	Temperatures				Time θ min.
			Spirometer (wet meter) t_w °F	Dry Gas Meter			
				Inlet T_i °F	Outlet T_o °F	Average T_m °F	
.5	7.708	8.373	68	86	76	81	20
1.0	11.075	12.397	68	96	80	88	20
1.5	13.389	15.115	70	100	84	92	20
2.0	14.670	16.629	70	100	86	93	20

CALCULATIONS

ΔH in. H_2O	Y $\frac{V_w P_b (t_m + 460)}{V_m \left[P_b + \frac{\Delta H}{13.6}\right] (t_w + 460)}$	ΔHθ $\frac{0.0317\ \Delta H}{P_b (t_o + 460)} \left[\frac{(t_w + 460)\ \theta}{V_w}\right]^2$
.5	Y = .94	ΔH = 1.82
1.0	Y = .93	ΔH = 1.75
1.5	Y = .92	ΔH = 1.80
2.0	Y = .92	ΔH = 1.99
Average	Y = .93	ΔH = 1.84

Y = Ratio of reading wet test meter to dry test meter; tolerance for individual values ± 0.02 from average.

ΔHθ = Orifice pressure differential that equates to 0.75 cfm of air θ 68°F and 29.92 inches of mercury, in. H_2O; tolerance for individual values ± 0.20 from average.

Figure 5.6. Example data sheet for calibration of metering system (English units).

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM

Date 11-19-92 Thermocouple number 7' glass

Ambient temperature 24 °C Barometric pressure 30.08 in. Hg

Calibrator [illegible] Reference: mercury-in-glass ASTM

other

Reference point number[a]	Source[b] (specify)	Reference thermometer temperature, °C	Thermocouple potentiometer temperature, °C	Temperature difference,[c] %
7 A	Boiling water	99.9	98	0.5
			2	0.7
7 B	ice bath	0.2	99	0.2
			2	0.7

[a]Every 30°C (50°F) for each reference point.

[b]Type of calibration system used.

[c]$\left[\frac{(\text{ref temp, °C} + 273) - (\text{test thermom temp, °C} + 273)}{\text{ref temp, °C} + 273}\right] 100 \leq 1.5\%$.

ANALYTICAL BALANCE CALIBRATION FORM

Balance name Mettler Number H30

Classification of standard weights

Date	0.1000 g	1.0000 g	10.000 g	50.0000 g	100.0000 g	Analyst
9-17-92	200.0	1.000.0			100 000.1	
9-21 92	200.0	1.0000			100.0001	
9-25-92	200.0	1.0000			100.0001	
9-29-92	200.0	1.0000			100.0001	
10-2-92	200.0	1.0000			100.0001	
10-5-92	200.0	1.0000			100.0001	
10-14-92	200.0	1.0000			100.0001	
10-19-92	200.0	1.0000			100.0001	
10-21-92	200.0	1.0000			100.0001	
10-22-92	200.0	1.0000			100.0001	
10-23-92	200.0	1.0000			100.0001	
10-27-92	200.0	1.0000			100.0001	
10-30-92	200.0	1.0000			100.0001	TS
11-2-92	200.0	1.0000			100.0001	TS
11-5-92	200.0	1.0000			100.0001	
11-9-92	200.0	1.0000			100.0001	
11-16-92	200.0	1.0000			100.0001	
11-17-92	200.0	1.0000			100.0001	TS
11-18-92	200.0	1.0000			100.0001	JOE G
11-20-92	200.0	1.0000			100.0001	
12-3-92	200.0	1.0000			100.0001	
12-4-92	200.0	1.0000			100.0001	

$\bar{X}$ AND R CHART

PROJECT NAME: Fyrite Calibration — MEASUREMENT PERFORMED: AIR — MEASUREMENT UNITS: Oxygen Percent %

DATE																													
MEASUREMENT CODE	1																												
	2																												
	3																												
MEASUREMENT RESULT	1	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0																
	2	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0																
	3	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0																
SUM		63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0																
AVERAGE $\bar{X}$		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0																
RANGE, R		0	0	0	0	0	0	0	0	0	0	0	0																

AVERAGES, $\bar{X}$ — 21.5 / 20.8 / 20.1

RANGES, R

Comments (Correct Action, etc.)	10-15-92	10-20-92	10-21-92	10-22-92	10-23-92	10-27-92	10-30-92	11-4-92	11-16-92	11-17-92	11-18-92	12-2-92
									Location G15		Same G15	

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? ✓ yes _____ no

Pitot tube openings damaged? ____ yes (explain below) ✓ no

α_1 = 2 ° (<10°), α_2 = 2 ° (<10°), β_1 = 1 ° (<5°),
β_2 = 1 ° (<5°)

γ = 1 °, θ = 1 °, A = 1.10 cm (in.)

z = A sin γ = 0.019 cm (in.); <0.32 cm (<1/8 in.),
w = A sin θ = 0.019 cm (in.); <.08 cm (<1/32 in.)

P_A 0.55 cm (in.) P_b 0.55 cm (in.)

D_t = 0.375 cm (in.)

Comments: 7155(B) Don Ward 12-3-92
assumed 0.84

Calibration required? ____ yes X no

TYPE S PITOT TUBE INSPECTION DATA FORM

Pitot tube assembly level? ✓ yes _____ no

Pitot tube openings damaged? _____ yes (explain below) ✓ no

α_1 = 2 ° (<10°), α_2 = 3 ° (<10°), β_1 = 2 ° (<5°),

β_2 = 1 ° (<5°)

γ = 1 °, θ = 2 °, A = 1.10 cm (in.)

z = A sin γ = 0.019 cm (in.); <0.32 cm (<1/8 in.),

w = A sin θ = 0.038 cm (in.); <.08 cm (<1/32 in.)

P_A 0.55 cm (in.) P_b 0.55 cm (in.)

D_t = 0.377 cm (in.)

Comments: 7'55 (A) and assume 0.84

12-3-92

Calibration required? _____ yes X no

12 PAGE LAB REPORT GREAT LAKES SUGAR CO. PLANT: FREMONT CAMPAIGN 1991-92 PAGE: 1

		DIFFUSER #1 SHIFTS			DIFFUSER #2 SHIFTS			BEETS SLICED			SUGAR IN COSSETES				STEAM ON BEETS					
DATE	DAYS	1ST	2ND	3RD	1ST	2ND	3RD	TOTAL DAY	TONS SLICED TODATE	AVE.	% SUGAR DAY	% SUGAR TODATE	TONS SUGAR DAY	TONS SUGAR TODATE	TEMP C BTS	TEMP C COSS	% STEAM DAY	% STEAM TD	PRODUCT DAY	PRODUCT TD
11/29	57.62	701	727	652	633	701	689	4103	222714	3865	15.52	16.94	636.79	37733.57	5	21	2.73	2.13	112.0	4742.1
11/30	58.62	678	659	718	527	618	686	3886	226600	3866	14.84	16.91	576.68	38310.25	6	24	3.07	2.15	119.3	4861.4
12/01	59.62	688	661	656	662	619	574	3860	230460	3865	14.90	16.87	575.14	38885.39	7	25	3.07	2.16	118.5	4979.9
12/02	60.62	636	678	687	483	632	580	3696	234156	3863	15.35	16.85	567.34	39452.73	7	24	2.90	2.17	107.2	5087.1
12/03	61.62	662	679	570	637	657	423	3628	237784	3859	14.69	16.82	532.95	39985.68	5	24	3.24	2.19	117.5	5204.6
12/04	62.62	670	686	668	576	668	662	3930	241714	3860	15.95	16.80	626.84	40612.52	2	20	3.07	2.20	120.7	5325.3
12/05	63.62	680	638	615	613	576	618	3740	245454	3858	15.46	16.78	578.20	41190.72	3	15	2.05	2.20	76.7	5402.0
WK 9								26843		3835	15.25		4093.94							
TD									245454	3858		16.78		41190.72				2.20		5402.0
12/06	64.62	690	602	663	499	437	688	3579	249033	3854	15.68	16.77	561.19	41751.91	3	20	2.90	2.21	103.8	5505.8
12/07	65.62	694	653	615	566	616	563	3707	252740	3852	16.03	16.75	594.23	42346.14	6	22	2.73	2.22	101.2	5607.0
12/08	66.62	670	645	641	641	653	629	3879	256619	3852	15.86	16.74	615.21	42961.35	8	25	2.90	2.23	112.5	5719.5
12/09	67.62	649	632	698	344	241	189	2753	259356	3835	16.00	16.73	440.48	43399.15	7	24	2.90	2.24	79.8	5799.3
12/10	68.62	616	499	640	488	555	434	3232	262588	3827	16.39	16.73	529.72	43928.87	7	25	3.07	2.25	99.2	5898.5
12/11	69.62	644	639	652	577	536	407	3455	266043	3821	16.62	16.73	574.22	44503.09	7	26	3.24	2.26	111.9	6010.4
12/12	70.62	568	655	653	468	515	602	3461	269504	3816	16.69	16.73	577.64	45080.73	7	26	3.24	2.27	112.1	6122.5
WK 10								24066		3438	16.18		3892.69							
TD									269504	3816		16.73		45080.73				2.27		6122.5
12/13	71.62	612	661	683	449	316	662	3383	272887	3810	16.98	16.73	574.43	45655.16	7	28	3.58	2.29	121.1	6243.6
12/14	72.62	671	634	665	666	608	625	3869	276756	3811	16.87	16.73	652.70	46307.86	7	24	2.90	2.30	112.2	6355.8
12/15	73.62	675	469	648	651	290	621	3354	280110	3805	17.22	16.74	577.56	46885.42	5	22	2.90	2.30	97.3	6453.1
12/16	74.62	700	581	307	320	314	332	2554	282647	3788	16.66	16.74	425.50	47308.07	5	22	2.90	2.31	74.1	6527.2
12/17	75.62	667	586	643	506	513	332	3247	285894	3781	16.83	16.74	546.47	47854.54	4	25	3.58	2.32	116.2	6643.4
12/18	76.62	657	585	590	366	580	585	3363	289257	3775	17.09	16.74	574.74	48429.28	1	24	3.92	2.34	131.8	6775.2
12/19	77.62	598	632	643	560	622	661	3716	292973	3774	16.35	16.74	607.57	49036.85	1	24	3.92	2.36	145.7	6920.9
WK 11								23486		3355	16.86		3958.97							
TD									292973	3774		16.74		49036.85				2.36		6920.9
12/20	78.62	655	655	653	566	588	609	3726	296699	3774	16.11	16.73	600.26	49637.11	2	25	3.92	2.38	146.1	7067.0
12/21	79.62	603	655	655	486	660	647	3706	300405	3773	16.42	16.73	608.53	50245.64	3	25	3.75	2.40	139.0	7206.0
12/22	80.62	673	669	651	663	655	645	3956	304361	3775	16.38	16.72	647.99	50893.63	5	24	3.24	2.41	128.2	7334.2
12/23	81.62	470	607	632	513	584	641	3447	307808	3771	16.45	16.72	567.03	51460.66	4	26	3.75	2.42	129.3	7463.5
12/24	82.62	637	653	656	647	442	662	3697	311505	3770	16.38	16.71	605.57	52066.23	4	25	3.58	2.44	132.4	7595.9
12/25	83.62	633	305	649	636	218	661	3102	314607	3762	16.45	16.71	510.28	52576.51	4	26	3.75	2.45	116.3	7712.2
12/26	84.62	547	584	643	583	581	637	3575	318182	3760	16.25	16.71	580.94	53157.45	6	25	3.24	2.46	115.8	7828.0
WK 12								25209		3601	16.35		4120.60							
TD									318182	3760		16.71		53157.45				2.46		7828.0

		DIFFUSION JUICE							DRAFT BY		THICK JUICE						THIN JUICE			
		BRIX			PURITY				SUGAR CONTENT		BRIX			PURITY			BRIX			
DATE	DAYS	DAY	TOTAL	TODATE	DAY	TOTAL	TODATE		DAY	TODATE	DAY	TOTAL	TODATE	DAY	TOTAL	TODATE	DAY	TOTAL	TODATE	
11/29	57.62	12.68	768.95	13.26	86.74	5176.47	89.25		137.84	140.18	57.3	3331.7	57.4	89.57	5270.55	90.87	12.4	732.3	12.6	
11/30	58.62	12.64	781.59	13.25	86.33	5262.80	89.20		132.51	140.11	55.8	3387.5	57.4	89.83	5360.38	90.85	11.4	743.7	12.6	
12/01	59.62	12.61	794.20	13.24	86.34	5349.14	89.15		134.01	139.96	55.9	3443.4	57.4	90.22	5450.60	90.84	12.1	755.8	12.6	
12/02	60.62	13.12	807.32	13.23	86.89	5436.03	89.12		131.23	139.94	58.7	3502.1	57.4	88.85	5539.45	90.81	12.1	767.9	12.6	
12/03	61.62	12.75	820.07	13.23	85.79	5521.82	89.06		131.10	139.78	62.3	3564.4	57.5	89.04	5628.49	90.78	11.9	779.8	12.6	
12/04	62.62	12.82	832.89	13.22	86.60	5608.42	89.02		141.05	139.78	60.4	3624.8	57.5	89.73	5718.22	90.77	11.7	791.5	12.6	
12/05	63.62	13.31	846.20	13.22	87.03	5695.45	88.99		130.27	139.66	57.5	3682.3	57.5	89.51	5807.73	90.75	12.1	803.6	12.6	
WK 9		12.85			86.53				134.00		58.2			89.54			12.0			
TD				13.22			88.99			139.66			57.5			90.75			12.6	
12/06	64.62	13.40	859.60	13.22	88.72	5784.17	88.99		128.70	139.57	60.9	3743.2	57.6	89.85	5897.58	90.73	12.3	815.9	12.6	
12/07	65.62	13.51	873.11	13.23	87.50	5871.67	88.96		131.63	139.34	59.6	3802.8	57.6	88.94	5986.52	90.70	12.9	828.8	12.6	
12/08	66.62	12.96	886.07	13.22	88.37	5960.04	88.96		134.64	139.28	54.4	3857.2	57.6	89.75	6076.27	90.69	12.7	841.5	12.6	
12/09	67.62	13.88	899.95	13.23	87.54	6047.58	88.94		127.98	139.12	56.7	3913.9	57.6	89.30	6165.57	90.67	12.0	853.5	12.6	
12/10	68.62	14.27	914.22	13.25	88.73	6136.31	88.93		126.21	138.93	56.0	3969.9	57.5	89.28	6254.85	90.65	12.6	866.1	12.6	
12/11	69.62	14.12	928.34	13.26	87.31	6223.62	88.91		131.16	138.85	51.6	4021.5	57.5	89.48	6344.33	90.63	13.2	879.3	12.6	
12/12	70.62	13.83	942.17	13.27	88.22	6311.84	88.90		133.11	138.76	50.6	4072.1	57.4	89.86	6434.19	90.62	13.2	892.5	12.6	
WK 10		13.71			88.06				130.37		55.6			89.49			12.7			
TD				13.27			88.90			138.76			57.4			90.62			12.6	
12/13	71.62	14.10	956.27	13.28	88.84	6400.68	88.90		132.36	138.66	51.3	4123.4	57.3	90.13	6524.32	90.62	13.1	905.6	12.6	
12/14	72.62	13.88	970.15	13.29	89.07	6489.75	88.90		133.38	138.55	57.6	4181.0	57.3	90.39	6614.71	90.61	13.6	919.2	12.6	
12/15	73.62	13.69	983.84	13.30	90.40	6580.15	88.92		135.83	138.50	61.7	4242.7	57.3	90.10	6704.81	90.61	13.0	932.2	12.6	
12/16	74.62	13.21	997.05	13.29	88.37	6668.52	88.91		139.29	138.62	60.8	4303.5	57.4	89.37	6794.18	90.59	11.6	943.8	12.6	
12/17	75.62	13.41	1010.46	13.30	88.21	6756.73	88.90		139.66	138.54	61.7	4365.2	57.4	89.77	6883.95	90.58	12.2	956.0	12.6	
12/18	76.62	13.22	1023.68	13.29	89.00	6845.73	88.91		142.28	138.62	61.3	4426.5	57.5	89.69	6973.64	90.57	12.5	968.5	12.6	
12/19	77.62	13.32	1037.00	13.29	88.12	6933.85	88.90		135.80	138.64	61.1	4487.6	57.5	89.42	7063.06	90.55	12.8	981.3	12.6	
WK 11		13.55			88.86				136.87		59.3			89.84			12.7			
TD				13.29			88.90			138.64			57.5			90.55			12.6	
12/20	78.62	13.29	1050.29	13.29	86.43	7020.28	88.86		137.73	138.62	61.8	4549.4	57.6	89.14	7152.20	90.53	12.6	993.9	12.6	
12/21	79.62	13.38	1063.67	13.30	87.72	7108.00	88.85		136.66	138.53	60.8	4610.2	57.6	89.37	7241.57	90.52	12.9	1006.8	12.6	
12/22	80.62	13.54	1077.21	13.30	88.25	7196.25	88.84		133.23	138.46	61.0	4671.2	57.7	89.27	7330.84	90.50	13.1	1019.9	12.6	
12/23	81.62	13.76	1090.97	13.30	86.95	7283.20	88.82		134.48	138.49	60.0	4731.2	57.7	89.27	7420.11	90.49	12.9	1032.8	12.6	
12/24	82.62	13.71	1104.68	13.31	86.43	7369.63	88.79		135.53	138.35	62.3	4793.5	57.8	89.86	7509.97	90.48	13.3	1046.1	12.6	
12/25	83.62	13.37	1118.05	13.31	85.65	7455.28	88.75		141.12	138.41	59.9	4853.4	57.8	89.64	7599.61	90.47	12.3	1058.4	12.6	
12/26	84.62	13.64	1131.69	13.31	85.65	7540.93	88.72		135.67	138.46	62.4	4915.8	57.8	89.97	7689.58	90.47	13.1	1071.5	12.6	
WK 12		13.53			86.73				136.26		61.1			89.50			12.9			
TD				13.31			88.72			138.46			57.8			90.47			12.6	

		LIME ROCK BURNED				COKE BURNED				CAO INTRODUCED				LIME CAKE		SUGAR LOST IN CAKE				SUGAR LOST, SEWER				CO2
		--TONS--		ZON BEETS		--TON--		ZON ROCKS		---TONS---		ZON BEETS		----TONS----		--TONS--		ZON BTS		--TONS-		ZON BEETS		Z
DATE	DAY	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	TD	DAY	TODATE	DAY	TD	DAY	TD	DAY	TD	DAY	TD	GAS
11/29	58	217	11770	5.29	5.28	16	899	7.37	7.64	108.5	5885.0	2.64	2.64	548.0	31488.3	2.25	165.14	.05	.07					
11/30	59	212	11982	5.46	5.29	14	913	6.60	7.62	106.0	5991.0	2.73	2.64	555.0	32043.3	2.94	168.08	.08	.07					
12/01	60	225	12207	5.83	5.30	17	930	7.56	7.62	112.5	6103.5	2.91	2.65	533.2	32576.5	2.93	171.01	.08	.07					
12/02	61	209	12416	5.65	5.30	16	946	7.66	7.62	104.5	6208.0	2.83	2.65	629.5	33206.0	4.15	175.16	.11	.07					
12/03	62	232	12648	6.39	5.32	17	963	7.33	7.61	116.0	6324.0	3.20	2.66	591.8	33797.8	3.85	179.01	.11	.08					
12/04	63	237	12885	6.03	5.33	18	981	7.59	7.61	118.5	6442.5	3.02	2.67	727.0	34524.8	4.29	183.30	.11	.08					
12/05	64	240	13125	6.42	5.35	17	998	7.08	7.60	120.0	6562.5	3.21	2.67	693.6	35218.4	7.14	190.44	.19	.08					
WK 9		1572		5.86		115		7.32								27.55		.10						33
TD			13125		5.35		998		7.60								190.44		.08					
12/06	65	200	13325	5.59	5.35	15	1013	7.50	7.60	100.0	6662.5	2.79	2.68	578.0	35796.4	4.74	195.18	.13	.08					32
12/07	66	221	13546	5.96	5.36	16	1029	7.24	7.60	110.5	6773.0	2.98	2.68	594.1	36390.5	5.94	201.12	.16	.08					30
12/08	67	240	13786	6.19	5.37	17	1046	7.08	7.59	120.0	6893.0	3.09	2.69	674.2	37064.7	3.84	204.96	.10	.08					31
12/09	68	200	13986	7.26	5.39	13	1059	6.50	7.57	100.0	6993.0	3.63	2.70	546.4	37611.1	2.35	207.31	.09	.08					30
12/10	69	185	14171	5.72	5.40	11	1070	5.95	7.55	92.5	7085.5	2.86	2.70	505.5	38116.6	5.11	212.42	.16	.08					30
12/11	70	216	14387	6.25	5.41	15	1085	6.94	7.54	108.0	7193.5	3.13	2.70	521.7	38638.3	4.64	217.06	.13	.08					31
12/12	71	225	14612	6.50	5.42	15	1100	6.67	7.53	112.5	7306.0	3.25	2.71	582.9	39221.2	3.21	220.27	.09	.08					29
WK 10		1487		6.18		102		6.86								29.83		.12						30
TD			14612		5.42		1100		7.53								220.27		.08					
12/13	72	230	14842	6.80	5.44	18	1118	7.83	7.53	115.0	7421.0	3.40	2.72	595.9	39817.1	3.87	224.14	.11	.08					31
12/14	73	238	15080	6.15	5.45	19	1137	7.98	7.54	119.0	7540.0	3.08	2.72	687.9	40505.0	5.92	230.06	.15	.08					31
12/15	74	242	15322	7.22	5.47	19	1156	7.85	7.54	121.0	7661.0	3.61	2.73	664.8	41169.8	4.99	235.05	.15	.08					27
12/16	75	161	15483	6.30	5.48	11	1167	6.83	7.54	80.5	7741.5	3.15	2.74	421.5	41591.3	1.69	236.74	.07	.08					28
12/17	76	211	15694	6.50	5.49	15	1182	7.11	7.53	105.5	7847.0	3.25	2.74	512.1	42103.4	1.28	238.02	.04	.08					28
12/18	77	193	15887	5.74	5.49	15	1197	7.77	7.53	96.5	7943.5	2.87	2.75	468.4	42571.8	3.37	241.39	.10	.08					25
12/19	78	199	16086	5.36	5.49	16	1213	8.04	7.54	99.5	8043.0	2.68	2.75	515.5	43087.3	3.56	244.95	.10	.08					25
WK 11		1474		6.28		113		7.67								24.68		.11						28
TD			16086		5.49		1213		7.54								244.95		.08					
12/20	79	192	16278	5.15	5.49	14	1227	7.29	7.54	96.0	8139.0	2.58	2.74	497.4	43584.7	1.74	246.69	.05	.08					25
12/21	80	213	16491	5.75	5.49	16	1243	7.51	7.54	106.5	8245.5	2.87	2.74	588.4	44173.1	3.41	250.10	.09	.08					27
12/22	81	216	16707	5.46	5.49	16	1259	7.41	7.54	108.0	8353.5	2.73	2.74	495.4	44668.5	3.12	253.22	.08	.08					23
12/23	82	222	16929	6.44	5.50	17	1276	7.66	7.54	111.0	8464.5	3.22	2.75	557.8	45226.3	2.79	256.01	.08	.08					26
12/24	83	197	17126	5.33	5.50	11	1287	5.58	7.51	98.5	8563.0	2.66	2.75	487.6	45713.9	2.63	258.64	.07	.08					28
12/25	84	170	17296	5.48	5.50	15	1302	8.82	7.53	85.0	8648.0	2.74	2.75	469.6	46183.5	1.31	259.95	.04	.08					32
12/26	85	176	17472	4.92	5.49	13	1315	7.39	7.53	88.0	8736.0	2.46	2.75	431.4	46614.9	1.90	261.85	.05	.08					32
WK 12		1386		5.50		102		7.36								16.90		.07						28
TD			17472		5.49		1315		7.53								261.85		.08					

		ALKALINITY		LIME SALTS		PH					SULPHUR				SODA ASH				FILTER AIDS				PH	
DATE	DAY	1ST CARB	2ND CARB	THIN JUICE	STND LIQU	PRE. LIME	2ND CARB	THIN JUICE	THICK JUICE	STND LIQU	POUNDS DAY	POUNDS TD	#/TON DAY	BTS TD	POUNDS DAY	POUNDS TD	#/TON DAY	BTS TD	POUNDS DAY	POUNDS TD	#/TON DAY	BTS TD	DIFF # 1	JUICE # 2
11/29	58	.077	.015	.287	.262	11.8	9.0	8.8	8.1	8.0		68000				30700				65090			5.7	5.9
11/30	59	.081	.019	.254	.245	11.8	9.3	8.9	7.6	8.1	6000	74000			4400	35100			10235	75325			5.7	5.7
12/01	60	.081	.017	.285	.226	11.8	9.0	8.9	7.8	7.6		74000				35100				75325			5.5	5.6
12/02	61	.078	.019	.400	.314	11.8	9.1	8.7	7.3	7.5		74000				35100				75325			5.4	5.5
12/03	62	.081	.019	.395	.335	11.9	9.2	8.9	7.5	7.6		74000				35100				75325			5.6	5.6
12/04	63	.079	.017	.300	.307	12.0	9.1	8.9	8.1	7.9		74000				35100				75325			5.4	5.5
12/05	64	.082	.018	.394	.306	11.9	9.2	8.9	7.9	8.1		74000				35100				75325			5.4	5.5
WK 9		.080	.018	.331	.285	11.9	9.1	8.9	7.8	7.8	6000		.22		4400		.16		10235		.38		5.5	5.6
TD		.078	.018	.200	.190	11.8	9.2	8.9	8.4	8.3		74000		.30		35100		.14		75325		.31		
12/06	65	.075	.016	.380	.336	11.8	9.2	8.8	7.7	7.9		74000				35100				75325			5.7	5.8
12/07	66	.079	.018	.402	.333	11.8	9.1	8.9	7.5	7.8	6000	80000			700	35800			4163	79488			5.8	5.8
12/08	67	.081	.019	.371	.357	11.8	9.1	8.8	7.8	7.9		80000				35800				79488			5.8	5.9
12/09	68	.068	.019	.447	.352	11.8	9.2	8.8	7.6	7.8		80000				35800				79488			5.8	5.8
12/10	69	.071	.019	.370	.370	11.7	9.0	8.7	7.6	7.6		80000				35800				79488			5.7	5.8
12/11	70	.071	.019	.377	.333	11.7	9.0	8.8	8.0	8.0		80000				35800				79488			5.4	5.6
12/12	71	.073	.021	.363	.323	11.7	9.2	8.8	8.1	8.1		80000				35800				79488			5.5	5.6
WK 10		.074	.019	.387	.343	11.8	9.1	8.8	7.8	7.9	6000		.25		700		.03		4163		.17		5.7	5.8
TD		.078	.018	.218	.205	11.8	9.2	8.9	8.3	8.2		80000		.30		35800		.13		79488		.29		
12/13	72	.074	.019	.271	.257	11.8	9.1	8.9	8.1	8.3	10000	90000				35800			9062	88550			5.6	5.8
12/14	73	.076	.020	.238	.277	11.8	9.0	8.8	8.1	8.2		90000				35800				88550			5.3	5.8
12/15	74	.073	.020	.247	.197	11.9	9.1	8.6	7.8	8.0		90000				35800				88550			5.6	5.8
12/16	75	.067	.020	.369	.262	11.7	9.1	8.7	7.4	7.7		90000				35800				88550			5.7	5.8
12/17	76	.077	.018	.311	.349	11.7	9.1	8.9	8.2	8.0		90000				35800				88550			5.7	5.8
12/18	77	.072	.017	.356	.336	11.4	9.1	8.8	8.1	8.1		90000				35800				88550			5.7	5.8
12/19	78	.076	.017	.361	.327	11.6	9.1	8.8	7.8	7.9		90000				35800				88550			5.6	5.8
WK 11		.074	.019	.308	.286	11.7	9.1	8.8	7.9	8.0	10000		.43						9062		.39		5.6	5.8
TD		.078	.018	.226	.212	11.8	9.2	8.9	8.3	8.2		90000		.31		35800		.12		88550		.30		
12/20	79	.072	.019	.389	.345	11.6	9.2	8.8	8.0	7.8		90000				35800				88550			5.6	5.8
12/21	80	.075	.019	.350	.345	11.6	9.0	8.8	8.0	7.9	8000	98000			7200	43000			9292	97842			5.7	5.7
12/22	81	.074	.018	.350	.316	11.7	8.9	8.8	7.8	7.6		98000				43000				97842			5.6	5.7
12/23	82	.075	.021	.402	.352	11.6	9.2	8.9	8.0	7.9		98000				43000				97842			5.5	5.7
12/24	83	.076	.022	.350	.333	11.7	9.1	8.9	8.1	8.2		98000				43000				97842			5.5	5.7
12/25	84	.075	.018	.369	.308	11.7	9.1	8.9	8.2	8.3		98000				43000				97842			5.3	5.7
12/26	85	.073	.018	.322	.292	11.8	9.1	8.9	8.2	8.2		98000				43000				97842			5.6	5.8
WK 12		.074	.019	.362	.327	11.7	9.1	8.9	8.0	8.0	8000		.32		7200		.29		9292		.37		5.5	5.7
TD		.077	.018	.238	.222	11.8	9.2	8.9	8.2	8.2		98000		.31		43000		.14		97842		.31		

		PULP PRODUCED					PRESSED PULP			DRY PULP			PELLET PULP			% SUGAR IN PRESSED PULP			
		---TONS---		% ON BEETS			------% MOISTURE------			------% MOISTURE------			------% MOISTURE------			-% SUGAR-		---TONS---	
DATE	DAY	DAY	TODATE	DAY	TD	AVE	DAY	TOTAL	TODATE	DAY	TOTAL	TODATE	DAY	TOTAL	TODATE	DAY	TD	DAY	TD
11/29	58	234	13189	5.70	5.92	227	73.05	4271.37	73.64	12.19	660.00	11.38	10.49	611.72	10.55	.36	.35	14.77	786.
11/30	59	216	13405	5.56	5.92	227	73.47	4344.84	73.64	11.30	671.30	11.38	10.95	622.67	10.55	.38	.35	14.77	801.
12/01	60	215	13620	5.57	5.91	227	73.55	4418.39	73.64	12.34	683.64	11.39	11.06	633.73	10.56	.31	.35	11.97	813.66
12/02	61	210	13830	5.68	5.91	227	74.83	4493.22	73.66	11.06	694.70	11.39	10.31	644.04	10.56	.39	.35	14.41	828.07
12/03	62	201	14031	5.54	5.90	226	72.47	4565.69	73.64	9.78	704.48	11.36	10.34	654.38	10.55	.35	.35	12.70	840.77
12/04	63	229	14260	5.83	5.90	226	73.08	4638.77	73.63	10.67	715.15	11.35	10.70	665.08	10.56	.29	.35	11.40	852.17
12/05	64	214	14474	5.72	5.90	226	74.57	4713.34	73.65	11.14	726.29	11.35	10.85	675.93	10.56	.37	.35	13.84	866.01
WK 9		1519		5.66			73.57			11.21			10.67			.35		93.86	
TD			14474		5.90				73.65			11.35			10.56		.35		866.01
12/06	65	206	14680	5.76	5.89	226	71.77	4785.11	73.62	12.79	739.08	11.37	11.14	687.07	10.57	.38	.35	13.60	879.61
12/07	66	217	14897	5.85	5.89	226	74.15	4859.26	73.63	10.90	749.98	11.36	10.88	697.95	10.58	.47	.35	17.42	897.03
12/08	67	225	15122	5.80	5.89	226	76.77	4936.03	73.67	11.60	761.58	11.37	9.87	707.82	10.56	.44	.36	17.07	914.10
12/09	68	161	15283	5.85	5.89	225	73.78	5009.81	73.67	10.93	772.51	11.36	10.85	718.67	10.57	.45	.36	12.39	926.49
12/10	69	192	15475	5.94	5.89	224	73.60	5083.41	73.67	9.78	782.29	11.34	10.24	728.91	10.56	.41	.36	13.25	939.74
12/11	70	207	15682	5.99	5.89	224	75.58	5158.99	73.70	10.98	793.27	11.33	10.57	739.48	10.56	.45	.36	15.55	955.29
12/12	71	208	15890	6.01	5.90	224	73.55	5232.54	73.70	12.16	805.43	11.34	10.73	750.21	10.57	.45	.36	15.57	970.86
WK 10		1416		5.88			74.17			11.31			10.61			.44		104.85	
TD			15890		5.90				73.70			11.34			10.57		.36		970.86
12/13	72	206	16096	6.09	5.90	224	73.68	5306.22	73.70	11.53	816.96	11.35	10.25	760.46	10.56	.40	.36	13.53	984.39
12/14	73	234	16330	6.05	5.90	224	73.72	5379.94	73.70	10.73	827.69	11.34	10.27	770.73	10.56	.38	.36	14.70	999.09
12/15	74	206	16536	6.14	5.90	223	74.98	5454.92	73.72	10.66	838.35	11.33	9.53	780.26	10.54	.41	.36	13.75	1012.84
12/16	75	153	16689	5.99	5.90	223	77.28	5532.20	73.76	11.75	850.10	11.33	10.05	790.31	10.54	.40	.36	10.22	1023.06
12/17	76	196	16885	6.04	5.91	222	72.30	5604.50	73.74	11.25	861.35	11.33	10.74	801.05	10.54	.31	.36	10.07	1033.13
12/18	77	205	17090	6.10	5.91	222	73.80	5678.30	73.74	12.70	874.05	11.35	10.83	811.88	10.54	.35	.36	11.77	1044.90
12/19	78	220	17310	5.92	5.91	222	74.35	5752.65	73.75	12.21	886.26	11.36	10.99	822.87	10.55	.41	.36	15.24	1060.14
WK 11		1420		6.05			74.30			11.55			10.38			.38		89.28	
TD			17310		5.91				73.75			11.36			10.55		.36		1060.14
12/20	79	219	17529	5.88	5.91	222	74.38	5827.03	73.76	13.35	899.61	11.39	11.34	834.21	10.56	.29	.36	10.81	1070.95
12/21	80	220	17749	5.94	5.91	222	74.42	5901.45	73.77	12.90	912.51	11.41	10.95	845.16	10.56	.38	.36	14.08	1085.03
12/22	81	235	17984	5.94	5.91	222	76.32	5977.77	73.80	11.46	923.97	11.41	11.09	856.25	10.57	.46	.36	18.20	1103.23
12/23	82	205	18189	5.95	5.91	222	73.72	6051.49	73.80	11.12	935.09	11.40	10.24	866.49	10.57	.36	.36	12.41	1115.64
12/24	83	219	18408	5.92	5.91	222	74.05	6125.54	73.80	10.20	945.29	11.39	10.70	877.19	10.57	.32	.36	11.83	1127.47
12/25	84	185	18593	5.96	5.91	221	73.73	6199.27	73.80	10.43	955.72	11.38	10.90	888.09	10.57	.29	.36	9.00	1136.47
12/26	85	211	18804	5.90	5.91	221	71.82	6271.09	73.78	12.64	968.36	11.39	10.08	898.17	10.57	.40	.36	14.30	1150.77
WK 12		1494		5.93			74.06			11.73			10.76			.36		90.63	
TD			18804		5.91				73.78			11.39			10.57		.36		1150.77

MOLASSES PRODUCED

DATE	DAY	TONS DAY	TONS TODATE	% ON BEETS DAY	% ON BEETS TD	% SUGAR DAY	% SUGAR TD	TONS SUGAR DAY	TONS SUGAR TODATE	SUGAR % BEETS DAY	SUGAR % BEETS TD	BRIX DAY	BRIX TOTAL	BRIX TD	PURITY DAY	PURITY TOTAL	PURITY TODATE	Ph
11/29	58	263	10263	6.41	4.61	50.38	50.67	132.50	5200.14	3.23	2.33	82.0	4452.1	82.4	61.42	3316.17	61.41	6.4
11/30	59	233	10496	6.00	4.63	51.95	50.70	121.04	5321.18	3.11	2.35	83.0	4535.1	82.5	62.58	3378.75	61.43	6.3
12/01	60	232	10728	6.01	4.66	53.89	50.77	125.02	5446.20	3.24	2.36	84.2	4619.3	82.5	64.01	3442.76	61.48	6.4
12/02	61	203	10931	5.49	4.67	50.03	50.75	101.56	5547.76	2.75	2.37	81.6	4700.9	82.5	61.28	3504.04	61.47	6.5
12/03	62	200	11131	5.51	4.68	51.04	50.76	102.08	5649.84	2.81	2.38	83.6	4784.5	82.5	60.97	3565.01	61.47	6.3
12/04	63	216	11347	5.50	4.69	53.71	50.81	116.01	5765.85	2.95	2.39	82.0	4866.5	82.5	65.57	3630.58	61.54	6.2
12/05	64	206	11553	5.51	4.71	49.71	50.79	102.40	5868.25	2.74	2.39	81.6	4948.1	82.5	61.02	3691.60	61.53	6.2
WK 9		1553		5.79				800.61				82.6			62.41			6.3
TD			11553		4.71				5868.25					82.5			61.53	7.2
12/06	65	197	11750	5.50	4.72	50.55	50.79	99.58	5967.83	2.78	2.40	82.1	5030.2	82.5	61.58	3753.18	61.53	6.3
12/07	66	204	11954	5.50	4.73	52.12	50.81	106.32	6074.15	2.87	2.40	82.3	5112.5	82.5	63.32	3816.50	61.56	6.5
12/08	67	219	12173	5.65	4.74	52.55	50.84	115.08	6189.23	2.97	2.41	83.8	5196.3	82.5	62.80	3879.30	61.58	6.6
12/09	68	164	12337	5.96	4.76	50.99	50.85	83.62	6272.85	3.04	2.42	82.3	5278.6	82.5	62.02	3941.32	61.58	6.4
12/10	69	198	12535	6.13	4.77	51.23	50.85	101.44	6374.29	3.14	2.43	82.4	5361.0	82.5	62.15	4003.47	61.59	6.4
12/11	70	222	12757	6.43	4.80	50.94	50.85	113.09	6487.38	3.27	2.44	80.5	5441.5	82.4	63.33	4066.80	61.62	6.3
12/12	71	196	12953	5.66	4.81	50.84	50.85	99.65	6587.03	2.88	2.44	83.1	5524.6	82.5	61.17	4127.97	61.61	6.9
WK 10		1400		5.82				718.78				82.4			62.34			6.5
TD			12953		4.81				6587.03					82.5			61.61	7.2
12/13	72	191	13144	5.65	4.82	50.24	50.84	95.96	6682.99	2.84	2.45	82.3	5606.9	82.5	61.10	4189.07	61.60	6.4
12/14	73	210	13354	5.43	4.83	51.07	50.85	107.25	6790.24	2.77	2.45	83.1	5690.0	82.5	61.48	4250.55	61.60	6.7
12/15	74	194	13548	5.78	4.84	52.10	50.87	101.07	6891.31	3.01	2.46	83.8	5773.8	82.5	62.13	4312.68	61.61	7.0
12/16	75	160	13708	6.26	4.85	49.36	50.85	78.98	6970.29	3.09	2.47	80.2	5854.0	82.5	61.60	4374.28	61.61	6.8
12/17	76	195	13903	6.01	4.86	50.67	50.85	98.81	7069.10	3.04	2.47	81.7	5935.7	82.4	62.00	4436.28	61.62	6.5
12/18	77	192	14095	5.71	4.87	48.74	50.82	93.58	7162.68	2.78	2.48	82.1	6017.8	82.4	59.35	4495.63	61.58	6.4
12/19	78	210	14305	5.65	4.88	48.50	50.78	101.85	7264.53	2.74	2.48	81.6	6099.4	82.4	59.43	4555.06	61.55	6.6
WK 11		1352		5.76				677.50				82.1			61.01			6.7
TD			14305		4.88				7264.53					82.4			61.55	7.1
12/20	79	223	14528	5.98	4.90	49.19	50.76	109.69	7374.22	2.94	2.49	81.0	6180.4	82.4	60.75	4615.81	61.54	7.1
12/21	80	215	14743	5.80	4.91	50.69	50.76	108.98	7483.20	2.94	2.49	83.3	6263.7	82.4	60.87	4676.68	61.54	6.5
12/22	81	236	14979	5.97	4.92	50.72	50.76	119.70	7602.90	3.03	2.50	82.7	6346.4	82.4	61.32	4738.00	61.53	6.4
12/23	82	205	15184	5.95	4.93	50.40	50.75	103.32	7706.22	3.00	2.50	82.6	6429.0	82.4	61.02	4799.02	61.53	6.3
12/24	83	213	15397	5.76	4.94	50.84	50.75	108.29	7814.51	2.93	2.51	82.0	6511.0	82.4	62.02	4861.04	61.53	6.3
12/25	84	184	15581	5.93	4.95	50.69	50.75	93.27	7907.78	3.01	2.51	81.7	6592.7	82.4	62.00	4923.04	61.54	6.4
12/26	85	196	15992	5.48	5.03	50.61	50.75	99.20	8116.10	2.77	2.55	82.7	6675.4	82.4	61.25	4984.29	61.53	6.9
WK 12		1472		5.84				742.45				82.3			61.32			6.5
TD			15992		5.03				8116.10					82.4			61.53	7.1

TEMPERATURES

DATE	DAY	DIFF FEED WATER DAY	DIFF FEED WATER TOTAL	DIFF FEED WATER TD	PRESS WATER DAY	PRESS WATER TOTAL	PRESS WATER TD	RAW JUICE IN DAY	RAW JUICE IN TOTAL	RAW JUICE IN TD	RJ AFTER SPIRAL DAY	RJ AFTER SPIRAL TOTAL	RJ AFTER SPIRAL TD	TO 1ST CARB DAY	TO 1ST CARB TOTAL	TO 1ST CARB TD	TO 2ND CARB DAY	TO 2ND CARB TOTAL	TO 2ND CARB TD	TO EVAPORATOR DAY	TO EVAPORATOR TOTAL	TO EVAPORATOR TD	STANDARD LIQUOR DAY	STANDARD LIQUOR TOTAL	STANDARD LIQUOR TD
11/29	58	51	2953	51	80	4636	80	62	3464	63	85	4665	85	86	4963	86	94	5354	92	113	6733	116	95	5241	90
11/30	59	51	3004	51	79	4715	80	64	3528	63	86	4751	85	85	5048	86	94	5448	92	115	6848	116	88	5329	90
12/01	60	50	3054	51	80	4795	80	67	3595	63	88	4839	85	85	5133	86	95	5543	92	114	6962	116	91	5420	90
12/02	61	49	3103	51	79	4874	80	67	3662	63	87	4926	85	85	5218	86	92	5635	92	115	7077	116	89	5509	90
12/03	62	51	3154	51	79	4953	80	65	3727	63	86	5012	85	86	5304	86	94	5729	92	115	7192	116	88	5597	90
12/04	63	51	3205	51	79	5032	80	63	3790	63	85	5097	85	85	5389	86	94	5823	92	114	7306	116	90	5687	90
12/05	64	49	3254	51	80	5112	80	65	3855	63	88	5185	85	84	5473	86	89	5912	92	114	7420	116	88	5775	90
WK 9		50			79			65			86			85			93			114			90		
TD				51			80			63			85			86			92			116			90
12/06	65	51	3305	51	80	5192	80	62	3917	63	88	5273	85	85	5558	86	90	6002	92	117	7537	116	91	5866	90
12/07	66	49	3354	51	81	5273	80	69	3986	63	89	5362	85	85	5643	86	94	6096	92	113	7650	116	90	5956	90
12/08	67	50	3404	51	80	5353	80	67	4053	63	86	5448	85	85	5728	85	92	6188	92	114	7764	116	91	6047	90
12/09	68	52	3456	51	78	5431	80	64	4117	63	84	5532	85	85	5813	85	92	6280	92	116	7880	116	90	6137	90
12/10	69	52	3508	51	77	5508	80	65	4182	63	86	5618	85	84	5897	85	92	6372	92	114	7994	116	89	6226	90
12/11	70	52	3560	51	78	5586	80	66	4248	63	88	5706	85	84	5981	85	92	6464	92	113	8107	116	88	6314	90
12/12	71	53	3613	51	76	5662	80	66	4314	63	89	5795	85	82	6063	85	92	6556	92	115	8222	116	88	6402	90
WK 10		51			79			66			87			84			92			115			90		
TD				51			80			63			85			85			92			116			90
12/13	72	54	3667	51	79	5741	80	65	4379	63	83	5878	85	84	6147	85	92	6648	92	116	8338	116	91	6493	90
12/14	73	53	3720	51	75	5816	80	65	4444	63	84	5962	85	81	6228	85	92	6740	92	113	8451	116	89	6582	90
12/15	74	52	3772	51	78	5894	80	62	4506	63	80	6042	85	81	6309	85	93	6833	92	112	8563	116	89	6671	90
12/16	75	52	3824	51	80	5974	80	61	4567	63	83	6125	85	45	6354	85	90	6923	92	110	8673	116	89	6760	90
12/17	76	51	3875	51	80	6054	80	61	4628	63	82	6207	85	45	6399	84	90	7013	92	111	8784	116	91	6851	90
12/18	77	52	3927	51	82	6136	80	62	4690	63	84	6291	85	82	6481	84	90	7103	92	112	8896	116	92	6943	90
12/19	78	52	3979	51	81	6217	80	67	4757	63	88	6379	85	84	6565	84	90	7193	92	112	9008	115	93	7036	90
WK 11		52			79			63			83			72			91			112			91		
TD				51			80			63			85			84			92			115			90
12/20	79	51	4030	51	80	6297	80	64	4821	63	86	6465	85	84	6649	84	91	7284	92	113	9121	115	92	7128	90
12/21	80	53	4083	51	81	6378	80	66	4887	63	87	6552	85	85	6734	84	93	7377	92	113	9234	115	92	7220	90
12/22	81	53	4136	51	80	6458	80	68	4955	64	88	6640	85	85	6819	84	93	7470	92	111	9345	115	93	7313	90
12/23	82	51	4187	51	78	6536	80	67	5022	64	88	6728	85	86	6905	84	95	7565	92	113	9458	115	91	7404	90
12/24	83	52	4239	51	80	6616	80	66	5088	64	87	6815	85	85	6990	84	96	7661	92	112	9570	115	91	7495	90
12/25	84	52	4291	51	81	6697	80	65	5153	64	87	6902	85	85	7075	84	96	7757	92	113	9683	115	88	7583	90
12/26	85	52	4343	51	81	6778	80	65	5218	64	87	6989	85	86	7161	84	95	7852	92	114	9797	115	91	7674	90
WK 12		52			80			66			87			85			94			113			91		
TD				51			80			64			85			84			92			115			90

		STANDARD LIQUOR					WHITE PAN							HIGH GREEN				HIGH WASH			
		BRIX			PURITY	NO.	BRIX			PURITY				BRIX	PURITY			BRIX	PURITY		
DATE	DAY	DAY	TOTAL	TD		DAYS	DAY	TOTAL	TD	DAY	TOTAL	TD	PH	DAY	DAY	TOTAL	TD	DAY	DAY	TOTAL	TD
11/29	58	70.2	3960.7	68.2	90.3	57	93.0	5206.6	91.3	89.5	5146.7	90.3	7.6	80.6	79.8	4629.6	81.2	81.2	87.9	2962.9	89.8
11/30	59	70.3	4031.0	68.3	90.9	58	92.3	5298.9	91.4	89.4	5236.1	90.3	8.0	79.9	81.3	4710.9	81.2	80.7	87.2	3050.1	89.7
12/01	60	71.2	4102.2	68.3	90.6	59	93.2	5392.1	91.4	88.4	5324.5	90.2	7.4	80.2	81.1	4792.0	81.2	80.5	88.5	3138.6	89.7
12/02	61	70.4	4172.6	68.4	90.7	60	91.0	5483.1	91.4	90.6	5415.1	90.3	7.4	78.9	80.8	4872.8	81.2	79.5	89.1	3227.7	89.7
12/03	62	71.1	4243.7	68.4	90.3	61	91.4	5574.5	91.4	90.2	5505.3	90.3	7.2	79.0	80.2	4953.0	81.2	78.6	90.2	3317.9	89.7
12/04	63	68.5	4312.2	68.4	90.4	62	91.5	5666.0	91.4	89.8	5595.1	90.2	7.6	79.7	80.4	5033.4	81.2	78.6	88.6	3406.5	89.6
12/05	64	68.6	4380.8	68.4	91.0	63	91.4	5757.4	91.4	90.9	5686.0	90.3	7.9	79.3	82.2	5115.6	81.2	78.6	89.6	3496.1	89.6
WK 9		70.0			90.6		92.0			89.8			7.6	79.7	80.8			79.7	88.7		
TD				68.4					91.4			90.3					81.2				89.6
12/06	65	70.3	4451.1	68.4	90.6	64	91.5	5848.9	91.4	90.5	5776.5	90.3	7.5	79.7	80.9	5196.5	81.2	79.8	89.4	3585.5	89.6
12/07	66	69.1	4520.2	68.4	90.2	65	91.6	5940.5	91.4	90.4	5866.9	90.3	7.6	79.3	79.7	5276.2	81.2	79.5	92.9	3678.4	89.7
12/08	67	69.4	4589.6	68.5	89.5	66	91.5	6032.0	91.4	89.6	5956.5	90.3	7.6	79.7	78.6	5354.8	81.1	79.5	87.6	3766.0	89.7
12/09	68	69.2	4658.8	68.5	90.3	67	92.6	6124.6	91.4	86.0	6042.5	90.2	7.4	80.1	79.9	5434.7	81.1	79.8	92.4	3858.4	89.7
12/10	69	67.7	4726.5	68.5	90.6	68	91.3	6215.9	91.4	90.9	6133.4	90.2	7.3	78.7	80.5	5515.2	81.1	78.2	92.6	3951.0	89.8
12/11	70	65.2	4791.7	68.4	91.2	69	91.2	6307.1	91.4	90.6	6224.0	90.2	7.6	80.3	81.8	5597.0	81.1	79.5	90.5	4041.5	89.8
12/12	71	65.5	4857.2	68.4	91.3	70	90.7	6397.8	91.4	91.2	6315.2	90.2	7.8	79.1	81.5	5678.5	81.1	76.8	92.9	4134.4	89.9
WK 10		68.1			90.5		91.5			89.9			7.5	79.6	80.4			79.0	91.2		
TD				68.4					91.4			90.2					81.1				89.9
12/13	72	64.6	4921.8	68.3	90.4	71	92.0	6489.8	91.4	89.7	6404.9	90.2	7.8	80.0	79.3	5757.8	81.1	78.6	89.0	4223.4	89.9
12/14	73	68.5	4990.3	68.3	90.8	72	91.7	6581.5	91.4	90.6	6495.5	90.2	7.9	78.5	81.0	5838.8	81.1	77.5	92.1	4315.5	89.9
12/15	74	69.9	5060.2	68.3	90.6	73	90.7	6672.2	91.4	90.5	6586.0	90.2	7.7	76.5	81.3	5920.1	81.1	81.8	88.0	4403.5	89.9
12/16	75	69.8	5130.0	68.4	90.3	74	90.6	6762.8	91.4	89.8	6675.8	90.2	7.4	78.4	79.9	6000.0	81.1	77.3	90.4	4493.9	89.9
12/17	76	71.3	5201.3	68.4	89.9	75	91.5	6854.3	91.4	89.6	6765.4	90.2	7.6	77.2	79.7	6079.7	81.1	78.3	90.7	4584.6	89.9
12/18	77	70.2	5271.5	68.4	90.5	76	91.1	6945.4	91.4	90.2	6855.6	90.2	7.5	78.7	79.7	6159.4	81.0	77.6	94.3	4678.9	90.0
12/19	78	69.7	5341.2	68.4	90.8	77	90.2	7035.6	91.4	90.5	6946.1	90.2	7.8	78.8	81.3	6240.7	81.0	78.5	93.7	4772.6	90.0
WK 11		69.1			90.5		91.1			90.1			7.7	78.3	80.3			78.5	91.2		
TD				68.4					91.4			90.2					81.0				90.0
12/20	79	68.6	5409.8	68.4	90.6	78	91.0	7126.6	91.4	90.4	7036.5	90.2	7.6	78.5	80.4	6321.1	81.0	77.3	91.8	4864.4	90.1
12/21	80	68.4	5478.2	68.4	90.4	79	92.0	7218.6	91.4	90.2	7126.7	90.2	7.7	79.6	79.9	6401.0	81.0	77.9	90.5	4954.9	90.1
12/22	81	68.0	5546.2	68.4	90.9	80	91.0	7309.6	91.4	90.8	7217.5	90.2	7.3	77.5	81.1	6482.1	81.0	76.3	93.3	5048.2	90.1
12/23	82	67.7	5613.9	68.4	91.1	81	91.5	7401.1	91.4	90.6	7308.1	90.2	7.3	79.2	81.1	6563.2	81.0	78.8	91.7	5139.9	90.2
12/24	83	67.8	5681.7	68.4	90.9	82	91.1	7492.2	91.4	90.5	7398.6	90.2	7.6	78.6	81.7	6644.9	81.0	77.7	92.9	5232.8	90.2
12/25	84	67.5	5749.2	68.4	91.2	83	91.2	7583.4	91.4	90.8	7489.4	90.2	7.9	78.9	81.7	6726.6	81.0	77.3	90.7	5323.5	90.2
12/26	85	68.2	5817.4	68.4	90.8	84	91.2	7674.6	91.4	90.1	7579.5	90.2	7.9	78.5	81.4	6808.0	81.0	78.7	85.6	5409.1	90.2
WK 12		68.0			90.8		91.3			90.5			7.6	78.7	81.0			77.7	90.9		
TD				68.4					91.4			90.2					81.0				90.2

		INTERMEDIATE (HIGH RAW) PAN							INTERMEDIATE SYRUP					LOW RAW PAN						
		BRIX			PURITY				BRIX	PURITY			NO.	BRIX			PURITY			
DATE	DAY	DAY	TOTAL	TD	DAY	TOTAL	TD	PH	DAY	DAY	TOTAL	TD	DAYS	DAY	TOTAL	TD	DAY	TOTAL	TD	PH
11/29	57	92.8	5299.0	93.0	79.3	4629.2	81.2	7.4	84.3	71.5	4134.0	72.5	57	93.7	5345.1	93.8	72.30	4164.96	73.07	7.2
11/30	58	91.8	5390.8	92.9	80.9	4710.1	81.2	7.8	83.4	71.8	4205.8	72.5	58	94.1	5439.2	93.8	72.74	4237.70	73.06	7.4
12/01	59	91.9	5482.7	92.9	80.7	4790.8	81.2	7.3	82.5	71.2	4277.0	72.5	59	93.4	5532.6	93.8	71.77	4309.47	73.04	7.2
12/02	60	91.3	5574.0	92.9	81.0	4871.8	81.2	7.0	82.0	72.2	4349.2	72.5	60	92.4	5625.0	93.8	73.04	4382.51	73.04	7.0
12/03	61	92.2	5666.2	92.9	80.1	4951.9	81.2	7.1	84.4	70.0	4419.2	72.4	61	93.1	5718.1	93.7	70.64	4453.15	73.00	6.8
12/04	62	91.7	5757.9	92.9	80.2	5032.1	81.2	7.4	82.8	71.6	4490.8	72.4	62	92.3	5810.4	93.7	74.44	4527.59	73.03	7.1
12/05	63	92.0	5849.9	92.9	81.9	5114.0	81.2	7.7	83.8	72.3	4563.1	72.4	63	92.3	5902.7	93.7	72.68	4600.27	73.02	7.1
WK 9		92.0			80.6			7.4	83.3	71.5				93.0			72.52			7.1
TD				92.9			81.2					72.4				93.7			73.02	
12/06	64	91.6	5941.5	92.8	81.3	5195.3	81.2	7.4	83.4	72.2	4635.3	72.4	64	92.2	5994.9	93.7	72.73	4673.00	73.02	7.3
12/07	65	91.5	6033.0	92.8	80.1	5275.4	81.2	7.4	83.2	71.2	4706.5	72.4	65	91.7	6086.6	93.6	72.17	4745.17	73.00	7.2
12/08	66	91.7	6124.7	92.8	79.1	5354.5	81.1	7.4	84.0	70.6	4777.1	72.4	66	92.0	6178.6	93.6	71.15	4816.32	72.97	7.2
12/09	67	91.7	6216.4	92.8	80.2	5434.7	81.1	7.3	82.7	71.3	4848.4	72.4	67	92.7	6271.3	93.6	71.80	4888.12	72.96	7.2
12/10	68	91.4	6307.8	92.8	80.9	5515.6	81.1	7.2	83.5	72.5	4920.9	72.4	68	92.2	6363.5	93.6	72.39	4960.51	72.95	7.1
12/11	69	92.0	6399.8	92.8	81.3	5596.9	81.1	7.4	81.3	72.4	4993.3	72.4	69	92.2	6455.7	93.6	73.60	5034.11	72.96	7.0
12/12	70	92.2	6492.0	92.7	80.9	5677.8	81.1	7.5	81.7	71.6	5064.9	72.4	70	90.7	6546.4	93.5	73.07	5107.18	72.96	7.3
WK 10		91.7			80.5			7.4	82.8	71.7				92.0			72.42			7.2
TD				92.7			81.1					72.4				93.5			72.96	
12/13	71	92.1	6584.1	92.7	80.3	5758.1	81.1	7.8	83.2	70.3	5135.2	72.3	71	93.4	6639.8	93.5	71.74	5178.92	72.94	7.5
12/14	72	91.6	6675.7	92.7	81.0	5839.1	81.1	7.7	79.7	72.0	5207.2	72.3	72	93.1	6732.9	93.5	72.22	5251.14	72.93	7.4
12/15	73	91.7	6767.4	92.7	81.6	5920.7	81.1	7.7	82.9	71.7	5278.9	72.3	73	92.6	6825.5	93.5	72.52	5323.66	72.93	7.5
12/16	74	91.6	6859.0	92.7	80.1	6000.8	81.1	7.4	82.1	70.2	5349.1	72.3	74	92.5	6918.0	93.5	70.95	5394.61	72.90	7.2
12/17	75	91.9	6950.9	92.7	79.4	6080.2	81.1	7.5	84.1	69.4	5418.5	72.2	75	92.6	7010.6	93.5	70.62	5465.23	72.87	7.1
12/18	76	92.5	7043.4	92.7	79.8	6160.0	81.1	7.6	83.2	70.4	5488.9	72.2	76	92.0	7102.6	93.5	70.89	5536.12	72.84	7.4
12/19	77	92.0	7135.4	92.7	81.5	6241.5	81.1	7.7	81.3	72.3	5561.2	72.2	77	92.8	7195.4	93.4	71.95	5608.07	72.83	7.5
WK 11		91.9			80.5			7.6	82.4	70.9				92.7			71.56			7.4
TD				92.7			81.1					72.2				93.4			72.83	
12/20	78	92.0	7227.4	92.7	80.0	6321.5	81.0	7.4	83.2	70.9	5632.1	72.2	78	92.5	7287.9	93.4	71.47	5679.54	72.81	7.2
12/21	79	92.5	7319.9	92.7	80.1	6401.6	81.0	7.4	82.3	71.6	5703.7	72.2	79	92.6	7380.5	93.4	72.38	5751.92	72.81	7.2
12/22	80	91.5	7411.4	92.6	80.9	6482.5	81.0	7.2	80.1	72.7	5776.4	72.2	80	92.5	7473.0	93.4	72.90	5824.82	72.81	7.0
12/23	81	91.3	7502.7	92.6	81.6	6564.1	81.0	7.4	83.0	72.0	5848.4	72.2	81	92.3	7565.3	93.4	72.71	5897.53	72.81	7.0
12/24	82	91.7	7594.4	92.6	81.3	6645.4	81.0	7.6	83.6	72.2	5920.6	72.2	82	92.5	7657.8	93.4	72.84	5970.37	72.81	7.2
12/25	83	92.1	7686.5	92.6	81.1	6726.5	81.0	7.8	84.1	72.4	5993.0	72.2	83	92.2	7750.0	93.4	72.88	6043.25	72.81	7.5
12/26	84	91.7	7778.2	92.6	81.6	6808.1	81.0	7.8	82.8	71.8	6064.8	72.2	84	92.3	7842.3	93.4	72.79	6116.04	72.81	7.5
WK 12		91.8			80.9			7.5	82.7	71.9				92.4			72.57			7.2
TD				92.6			81.0					72.2				93.4			72.81	

	WHITE PANS								INTERMEDIATE PANS						LOW RAW PANS					
DATE	NO PANS DAY	PANS TD	C/F MASSECUITE DAY	MASSECUITE TODATE	BAGS DAY	C/F TD	C/F DAY	T.B. TD	NO PANS DAY	PANS TD	C/F MASSECUITE DAY	MASSECUITE TODATE	C/F DAY	T.B. TD	NO PANS DAY	PANS TD	C/F MASSECUITE DAY	MASSECUITE TODATE	C/F DAY	T.B. TODATE
11/29	18	972	28350	1521080	35.8	38.1	6.9	6.8	8	411	11200	563350	2.7	2.5	7	328	7700	357700	1.9	1.6
11/30	19	991	29900	1550980	36.7	38.1	7.7	6.8	9	420	12300	575650	3.2	2.5	6	334	6600	364300	1.7	1.6
12/01	19	1010	29950	1580930	34.8	38.0	7.8	6.9	10	430	13800	589450	3.6	2.6	7	341	7700	372000	2.0	1.6
12/02	17	1027	26750	1607680	36.4	38.0	7.2	6.9	9	439	11900	601350	3.2	2.6	8	349	8800	380800	2.4	1.6
12/03	18	1045	28350	1636030	36.2	38.0	7.8	6.9	8	447	10950	612300	3.0	2.6	5	354	5500	386300	1.5	1.6
12/04	16	1061	25200	1661230	31.7	37.9	6.4	6.9	8	455	11000	623300	2.8	2.6	7	361	7700	394000	2.0	1.6
12/05	16	1077	25200	1686430	34.0	37.8	6.7	6.9	8	463	10800	634100	2.9	2.6	6	367	6600	400600	1.8	1.6
WK 9	123		193700		35.2		7.2		60		81950		3.1		6		50600		1.9	
TD		1077		1686430		37.8		6.9		463		634100		2.6		367		400600		1.6
12/06	18	1095	28350	1714780	34.9	37.8	7.9	6.9	9	472	12600	646700	3.5	2.6	6	373	6600	407200	1.8	1.6
12/07	18	1113	28350	1743130	36.2	37.7	7.6	6.9	8	480	10960	657660	3.0	2.6	6	379	6600	413800	1.8	1.6
12/08	16	1129	25200	1768330	37.4	37.7	6.5	6.9	8	488	10900	668560	2.8	2.6	6	385	6600	420400	1.7	1.6
12/09	18	1147	28450	1796780	34.2	37.7	10.3	6.9	9	497	12250	680810	4.4	2.6	8	393	8800	429200	3.2	1.7
12/10	16	1163	25200	1821980	32.0	37.6	7.8	6.9	8	505	10800	691610	3.3	2.6	7	400	7700	436900	2.4	1.7
12/11	14	1177	21750	1843730	36.3	37.6	6.3	6.9	8	513	11200	702810	3.2	2.6	7	407	7700	444600	2.2	1.7
12/12	15	1192	23500	1867230	33.5	37.5	6.8	6.9	7	520	9600	712410	2.8	2.6	7	414	7700	452300	2.2	1.7
WK 10	115		180800		34.9		7.5		57		78310		3.3		5		51700		2.1	
TD		1192		1867230		37.5		6.9		520		712410		2.6		414		452300		1.7
12/13	15	1207	23000	1890230	42.6	37.6	6.8	6.9	6	526	8400	720810	2.5	2.6	5	419	5500	457800	1.6	1.7
12/14	17	1224	26700	1916930	39.8	37.6	6.9	6.9	8	534	10900	731710	2.8	2.6	5	424	5500	463300	1.4	1.7
12/15	18	1242	28334	1945264	32.8	37.5	8.4	6.9	9	543	12100	743810	3.6	2.7	6	430	6600	469900	2.0	1.7
12/16	16	1258	25200	1970464	36.4	37.5	9.9	7.0	7	550	9750	753560	3.8	2.7	4	434	4400	474300	1.7	1.7
12/17	18	1276	28350	1998814	35.0	37.5	8.7	7.0	8	558	10900	764460	3.4	2.7	6	440	6600	480900	2.0	1.7
12/18	18	1294	28350	2027164	33.1	37.4	8.4	7.0	8	566	11200	775660	3.3	2.7	7	447	7700	488600	2.3	1.7
12/19	16	1310	24938	2052102	33.6	37.4	6.7	7.0	8	574	11200	786860	3.0	2.7	6	453	6600	495200	1.8	1.7
WK 11	118		184872		36.0		7.9		54		74450		3.2		7		42900		1.8	
TD		1310		2052102		37.4		7.0		574		786860		2.7		453		495200		1.7
12/20	17	1327	26800	2078902	34.7	37.4	7.2	7.0	8	582	11200	798060	3.0	2.7	7	460	7700	502900	2.1	1.7
12/21	17	1344	26750	2105652	35.7	37.3	7.2	7.0	9	591	12200	810260	3.3	2.7	8	468	8800	511700	2.4	1.7
12/22	16	1360	25160	2130812	35.7	37.3	6.4	7.0	9	600	12350	822610	3.1	2.7	7	475	7700	519400	1.9	1.7
12/23	17	1377	26750	2157562	33.4	37.3	7.8	7.0	8	608	10900	833510	3.2	2.7	7	482	7600	527000	2.2	1.7
12/24	18	1395	27950	2185512	33.5	37.2	7.6	7.0	9	617	12550	846060	3.4	2.7	7	489	7700	534700	2.1	1.7
12/25	18	1413	28300	2213812	34.2	37.2	9.1	7.0	8	625	11200	857260	3.6	2.7	6	495	6600	541300	2.1	1.7
12/26	17	1430	26500	2240312	36.8	37.2	7.4	7.0	9	634	12600	869860	3.5	2.7	7	502	7700	549000	2.2	1.7
WK 12	120		188210		34.8		7.5		60		83000		3.3		7		53800		2.1	
TD		1430		2240312		37.2		7.0		634		869860		2.7		502		549000		1.7

DATE	DAY	SUGAR SACKED CWTS. DAY	SUGAR SACKED CWTS. TODATE	GROSS EXTRACTION % ON BEETS DAY	% ON BEETS TODATE	% ON SUGAR DAY	% ON SUGAR TODATE	POUNDS DAY	POUNDS TODATE	LAST YEARS SUGAR INTRODUCED % ON BEETS DAY	% ON BEETS TD	% ON SUGAR DAY	% ON SUGAR TD	NET EXTRACTION % ON BEETS DAY	% ON BEETS TD	% ON SUGAR DAY	% ON SUGAR TD
11/29	58	10163	579619	12.63	13.75	81.39	81.15	222	18131	.28	.43	1.78	2.54	12.36	13.32	79.61	78.61
11/30	59	10986	590605	12.38	13.72	83.44	81.13	341	18472	.38	.43	2.59	2.54	12.00	13.29	80.85	78.59
12/01	60	10425	601030	12.09	13.69	81.17	81.13	112	18584	.13	.42	.87	2.51	11.96	13.26	80.30	78.62
12/02	61	9739	610769	12.19	13.66	79.39	81.07	21	18605	.03	.42	.17	2.47	12.16	13.24	79.22	78.60
12/03	62	10250	621019	11.84	13.63	80.61	81.01	112	18717	.13	.41	.88	2.44	11.71	13.21	79.73	78.57
12/04	63	7977	628996	12.16	13.60	76.24	80.98		18717	.00	.40	.00	-2.41	12.16	13.20	76.24	78.57
12/05	64	8558	637554	12.26	13.58	79.31	80.96	21	18738	.03	.40	.19	2.38	12.23	13.19	79.11	78.58
WK 9		68098						829									
TD			637554						18738								
12/06	65	9885	647439	12.82	13.57	81.79	80.93	212	18950	.28	.40	1.75	2.37	12.55	13.18	80.03	78.56
12/07	66	10254	657693	13.83	13.58	86.28	81.05	288	19238	.39	.40	2.42	2.37	13.44	13.18	83.86	78.68
12/08	67	9434	667127	12.16	13.55	76.67	80.97	72	19310	.09	.39	.59	2.34	12.07	13.16	76.09	78.62
12/09	68	9728	676855	12.96	13.55	81.00	80.97	63	19373	.08	.39	.52	2.32	12.88	13.16	80.48	78.65
12/10	69	8076	684931	12.49	13.53	76.23	80.89	21	19394	.03	.38	.20	2.29	12.46	13.15	76.03	78.60
12/11	70	7896	692827	13.95	13.54	83.94	80.92	147	19541	.26	.38	1.56	2.28	13.69	13.16	82.38	78.63
12/12	71	7884	700711	13.11	13.53	78.52	80.89	91	19632	.15	.38	.91	2.27	12.95	13.15	77.61	78.62
WK 10		63157						894									
TD			700711						19632								
12/13	72	9798	710509	13.48	13.53	79.42	80.88	69	19701	.09	.38	.56	2.24	13.39	13.16	78.86	78.64
12/14	73	10619	721128	13.72	13.53	81.35	80.90	181	19882	.23	.37	1.39	2.23	13.49	13.16	79.96	78.67
12/15	74	9296	730424	13.86	13.54	80.48	80.87		19882	.00	.37	.00	2.20	13.86	13.17	80.48	78.67
12/16	75	9179	739603	13.28	13.54	79.71	80.86	21	19903	.03	.36	.18	2.18	13.25	13.17	79.53	78.68
12/17	76	9930	749533	13.52	13.54	80.36	80.86	153	20056	.21	.36	1.24	2.16	13.32	13.17	79.12	78.70
12/18	77	9381	758914	13.95	13.54	81.61	80.89	97	20153	.14	.36	.84	2.15	13.80	13.18	80.77	78.74
12/19	78	8388	767302	12.46	13.53	76.21	80.81	114	20267	.17	.36	1.04	2.13	12.29	13.17	75.17	78.68
WK 11		66591						635									
TD			767302						20267								
12/20	79	9292	776594	13.13	13.52	81.51	80.83	132	20399	.19	.36	1.16	2.12	12.95	13.17	80.35	78.71
12/21	80	9561	786155	12.90	13.52	78.56	80.78	120	20519	.16	.35	.99	2.11	12.74	13.16	77.57	78.68
12/22	81	8986	795141	12.81	13.51	78.19	80.78	104	20623	.15	.35	.90	2.10	12.66	13.16	77.29	78.69
12/23	82	8922	804063	13.13	13.50	79.83	80.76	42	20665	.06	.35	.38	2.08	13.07	13.16	79.46	78.68
12/24	83	9352	813415	12.65	13.49	77.22	80.74	121	20786	.16	.34	1.00	2.06	12.48	13.15	76.22	78.68
12/25	84	9675	823090	13.36	13.49	81.19	80.73	154	20940	.21	.34	1.29	2.05	13.14	13.15	79.90	78.68
12/26	85	9754	832844	13.34	13.49	82.07	80.72	129	21069	.18	.34	1.09	2.04	13.16	13.15	80.98	78.68
WK 12		65542						802									
TD			832844						21069								

		PULP DRIER GAS				PULP DRIER OIL				GAS + OIL			
		---CUBIC FEET---		----TONS 10K----		----GALLONS----		-----TONS 10K-----		----TONS 10K----		--% ON BEETS--	
DATE	DAY	TODAY	TODATE	TODAY	TODATE	TODAY	TODATE	TODAY	TODATE	TODAY	TODATE	TODAY	TODATE
11/29	58	.0	13915.0	.00	695.76	12851	665282	96.38	4990.36	96.38	5686.12	2.35	2.55
11/30	59	.0	13915.0	.00	695.76	12748	678030	95.60	5085.96	95.60	5781.72	2.46	2.55
12/01	60	.0	13915.0	.00	695.76	13720	691750	102.90	5188.86	102.90	5884.62	2.67	2.55
12/02	61	.0	13915.0	.00	695.76	12094	703844	90.70	5279.56	90.70	5975.32	2.45	2.55
12/03	62	.0	13915.0	.00	695.76	13379	717223	100.34	5379.90	100.34	6075.66	2.77	2.56
12/04	63	.0	13915.0	.00	695.76	12680	729903	95.10	5475.00	95.10	6170.76	2.42	2.55
12/05	64	.0	13915.0	.00	695.76	11211	741114	84.07	5559.07	84.07	6254.83	2.25	2.55
WK 9		.0		.00		88683		665.09		665.09		2.48	
TD			13915.0		695.76		741114		5559.07		6254.83		2.55
12/06	65	.0	13915.0	.00	695.76	12807	753921	96.05	5655.12	96.05	6350.88	2.68	2.55
12/07	66	.0	13915.0	.00	695.76	13157	767078	98.68	5753.80	98.68	6449.56	2.66	2.55
12/08	67	.0	13915.0	.00	695.76	12851	779929	96.39	5850.19	96.39	6545.95	2.48	2.55
12/09	68	.0	13915.0	.00	695.76	10859	790788	81.44	5931.63	81.44	6627.39	2.96	2.56
12/10	69	.0	13915.0	.00	695.76	12120	802908	90.90	6022.53	90.90	6718.29	2.81	2.56
12/11	70	.0	13915.0	.00	695.76	13815	816723	103.61	6126.14	103.61	6821.90	3.00	2.56
12/12	71	.0	13915.0	.00	695.76	13499	830222	101.24	6227.38	101.24	6923.14	2.93	2.57
WK 10		.0		.00		89108		668.31		668.31		2.78	
TD			13915.0		695.76		830222		6227.38		6923.14		2.57
12/13	72	.0	13915.0	.00	695.76	12999	843221	97.50	6324.88	97.50	7020.64	2.88	2.57
12/14	73	.0	13915.0	.00	695.76	15789	859010	118.42	6443.30	118.42	7139.06	3.06	2.58
12/15	74	.0	13915.0	.00	695.76	14963	873973	112.22	6555.52	112.22	7251.28	3.35	2.59
12/16	75	.0	13915.0	.00	695.76	11903	885876	89.27	6644.79	89.27	7340.55	3.50	2.60
12/17	76	.0	13915.0	.00	695.76	12141	898017	91.05	6735.84	91.05	7431.60	2.80	2.60
12/18	77	.0	13915.0	.00	695.76	7991	906008	59.93	6795.77	59.93	7491.53	1.78	2.59
12/19	78	.0	13915.0	.00	695.76	13229	919237	99.21	6894.98	99.21	7590.74	2.67	2.59
WK 11		.0		.00		89015		667.60		667.60		2.84	
TD			13915.0		695.76		919237		6894.98		7590.74		2.59
12/20	79	.0	13915.0	.00	695.76	12683	931920	95.13	6990.11	95.13	7685.87	2.55	2.59
12/21	80	.0	13915.0	.00	695.76	14442	946362	108.32	7098.43	108.32	7794.19	2.92	2.59
12/22	81	.0	13915.0	.00	695.76	11260	957622	84.45	7182.88	84.45	7878.64	2.13	2.59
12/23	82	.0	13915.0	.00	695.76	12409	970031	93.07	7275.95	93.07	7971.71	2.70	2.59
12/24	83	.0	13915.0	.00	695.76	14299	984330	114.74	7390.69	114.74	8086.45	3.10	2.60
12/25	84	.0	13915.0	.00	695.76	11291	995621	84.68	7475.37	84.68	8171.13	2.73	2.60
12/26	85	.0	13915.0	.00	695.76	13693	1009314	102.70	7578.07	102.70	8273.83	2.87	2.60
WK 12		.0		.00		90077		683.09		683.09		2.71	
TD			13915.0		695.76		1009314		7578.07		8273.83		2.60

		BOILER OIL				BOILER GAS				BOILER COAL				ALL BOILERS			
		GALLONS		--TONS 10K--		CUBIC FEET		--TONS 10K--		-----TONS-----		--TONS 10K--		-----TONS 10K---		Z ON BEETS	
DATE	DAY	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TODATE	DAY	TD
11/29	58	0	0	.00	.00	2049.0	122984.0	102.45	6159.81	137.4	6916.3	181.33	9127.87	283.78	15287.68	6.92	6.86
11/30	59	0	0	.00	.00	2027.0	125011.0	101.35	6261.16	135.8	7052.1	179.28	9307.15	280.63	15568.31	7.22	6.87
12/01	60	0	0	.00	.00	1906.0	126917.0	95.03	6356.19	134.9	7187.0	178.07	9485.22	273.10	15841.41	7.08	6.87
12/02	61	0	0	.00	.00	1809.0	128726.0	90.45	6446.64	134.4	7321.4	177.35	9662.57	267.80	16109.21	7.25	6.88
12/03	62	0	0	.00	.00	1688.0	130414.0	84.40	6531.04	144.5	7465.9	190.72	9853.29	275.12	16384.33	7.58	6.89
12/04	63	0	0	.00	.00	1934.0	132348.0	96.70	6627.74	143.1	7609.0	188.86	10042.15	285.56	16669.89	7.27	6.90
12/05	64	0	0	.00	.00	1850.0	134198.0	92.50	6720.24	142.1	7751.1	187.59	10229.74	280.09	16949.98	7.49	6.91
WK 9				.00				662.88				1283.20		1946.08		7.25	
TD					.00				6720.24				10229.74		16949.98		6.91
12/06	65	0	0	.00	.00	1736.0	135934.0	86.80	6807.04	141.9	7893.0	187.35	10417.09	274.15	17224.13	7.66	6.92
12/07	66	0	0	.00	.00	1685.0	137619.0	84.25	6891.29	140.2	8033.2	185.00	10602.09	269.25	17493.38	7.26	6.92
12/08	67	0	0	.00	.00	1657.0	139276.0	82.85	6974.14	133.6	8166.8	176.39	10778.48	259.24	17752.62	6.68	6.92
12/09	68	0	0	.00	.00	1593.0	140869.0	79.65	7053.79	132.5	8299.3	174.88	10953.36	254.53	18007.15	9.25	6.94
12/10	69	0	0	.00	.00	1770.0	142639.0	88.50	7142.29	136.6	8435.9	180.30	11133.66	268.80	18275.95	8.32	6.96
12/11	70	0	0	.00	.00	1681.0	144320.0	84.05	7226.34	141.7	8577.6	186.99	11320.65	271.04	18546.99	7.84	6.97
12/12	71	0	0	.00	.00	1919.0	146239.0	95.95	7322.29	138.3	8715.9	182.59	11503.24	278.54	18825.53	8.05	6.99
WK 10				.00				602.05				1273.50		1875.55		7.79	
TD					.00				7322.29				11503.24		18825.53		6.99
12/13	72	0	0	.00	.00	1993.0	148232.0	99.63	7421.92	139.2	8855.1	183.90	11687.14	283.53	19109.06	8.38	7.00
12/14	73	0	0	.00	.00	2370.0	150602.0	118.50	7540.42	141.3	8996.4	186.57	11873.71	305.07	19414.13	7.88	7.01
12/15	74	0	0	.00	.00	2073.0	152675.0	103.65	7644.07	141.7	9138.1	187.11	12060.82	290.76	19704.89	8.67	7.03
12/16	75	0	0	.00	.00	1607.0	154282.0	80.35	7724.42	138.7	9276.8	183.07	12243.89	263.42	19968.31	10.31	7.06
12/17	76	0	0	.00	.00	2558.0	156840.0	127.90	7852.32	135.9	9412.7	179.40	12423.29	307.30	20275.61	9.46	7.09
12/18	77	0	0	.00	.00	2855.0	159695.0	142.75	7995.07	124.1	9536.8	163.80	12587.09	306.55	20582.16	9.12	7.12
12/19	78	0	0	.00	.00	2402.0	162097.0	120.10	8115.17	126.7	9663.5	167.30	12754.39	287.40	20869.56	7.73	7.12
WK 11				.00				792.88				1251.15		2044.03		8.70	
TD					.00				8115.17				12754.39		20869.56		7.12
12/20	79	0	0	.00	.00	2249.0	164346.0	112.45	8227.62	137.1	9800.6	181.02	12935.41	293.47	21163.03	7.88	7.13
12/21	80	0	0	.00	.00	2196.0	166542.0	109.80	8337.42	139.0	9939.6	183.49	13118.90	293.29	21456.32	7.91	7.14
12/22	81	0	0	.00	.00	2260.0	168802.0	113.00	8450.42	137.2	10076.8	181.14	13300.04	294.14	21750.46	7.44	7.15
12/23	82	0	0	.00	.00	2416.0	171218.0	120.80	8571.22	131.2	10208.0	173.25	13473.29	294.05	22044.51	8.53	7.16
12/24	83	0	0	.00	.00	2339.0	173557.0	116.95	8688.17	131.0	10339.0	172.95	13646.24	289.90	22334.41	7.84	7.17
12/25	84	0	0	.00	.00	2264.0	175821.0	113.20	8801.37	134.7	10473.7	183.13	13829.37	296.33	22630.74	9.55	7.19
12/26	85	0	0	.00	.00	2692.0	178513.0	134.60	8935.97	109.7	10583.4	144.82	13974.19	279.42	22910.16	7.82	7.20
WK 12				.00				820.80				1219.80		2040.60		8.09	
TD					.00				8935.97				13974.19		22910.16		7.20