Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

Leamin

oal

AP-42 Section 11.6
Reference 55
Report Sect. 4
Reference 64

SOUTHWESTERN PORTLAND CEMENT COMPANY
MOUNTAIN DIVISION

P.O. Box 51, Nephi, Utah 84648 • (801) 864-3803

July 13, 1984

Mr. Brent C. Bradford
Executive Secretary
Utah Air Conservation Committee
PO Box 2500
Salt Lake City, UT 84110

Dear Mr. Bradford:

Today I am delivering a copy of the resuts of testing of the Leamington Cement Kiln on May 23, 25, and 26, 1984 to your Mr. Lynn Menlove.

This fulfills the requirements of your letter of May 4, 1984.

Please note that York Research Consultants have made an error on the test date for the particulate testing on the main kiln-raw mill stack. They report this test as being done on May 24. It was done on May 23, as verified by Mr. Menlove who was present.

Also enclosed are the computer printouts for May 26 (dated May 27, 1984) which York did not include.

If you have any questions please direct them to me at (619) 245-1681, or Randy Wiley at Leamington.

Sincerely,

SOUTHWESTERN CEMENT
Mountain Division

Douglas Y. MacIver

Douglas Y. MacIver
Manager Environmental Engineering

DYM/mlj

cc: Rick Patton
Dave Lower
Lynn Menlove
E. B. Thorn, JR. - L.A.

Enclosure

Environmental Consultants

PLANT PERFORMANCE TEST PROGRAM ON THE KILN AND ALKALI BYPASS STACKS AT THE SOUTHWESTERN CEMENT LEAMINGTON, UTAH PLANT

PREPARED FOR:

SOUTHWESTERN CEMENT

P. O. BOX 51

NEPHI, UTAH 84648

PREPARED BY:

YORK RESEARCH CONSULTANTS

938 QUAIL STREET

DENVER, COLORADO 80215

YRC PROJECT NUMBER 10-027-01

JUNE 21, 1984

York Research Consultants
938 Quail Street, Denver, Colorado 80215, Phone (303) 233-1513

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1.0 INTRODUCTION

York Research Consultants of Denver, Colorado, was contracted by Southwestern Portland Cement to evaluate particulate and NO_x emission levels from the mill kiln stack and the alkali bypass stack at their Leamington, Utah, facility. Testing was conducted during the week of May 21, 1984, for the purpose of determining compliance with the Utah State Department of Health's air quality standards.

The test program consisted of triplicate runs of EPA Reference Methods 5 and 7 on each stack, with concurrent determinations of moisture and stack gas flow rate. Gas analyses were performed with an Orsat analyzer. Key personnel present during the test program included:

Lynn R. Menlove	Utah State Department of Health
Randy Wiley	Southwestern Portland Cement
Douglas MacIver	Southwestern Portland Cement
Joseph C. Zuzolo	York Research Consultants
Michael Webb	York Research Consultants

Section 2.0 of this report summarizes and discusses the test results. Section 3.0 outlines the sampling and analytical procedures; Section 4.0 details the plant operating parameters. Included in the appendices are methods of calculation, field and laboratory data sheets, and test equipment calibration records.

2.0 SUMMARY AND DISCUSSION OF RESULTS

York Research Consultants of Denver, Colorado, conducted a compliance test program to evaluate particulate and NO_x emissions from the raw mill kiln stack and the alkali bypass stack at Southwestern Cement's Leamington, Utah, facility.

Tables 2-1 through 2-3 present the results of these test results for the raw mill kiln stack, and Tables 2-4 through 2-6 present the results of the alkali bypass system tests. The average particulate emissions for the raw mill kiln was 18.2 pounds per hour, with an NO_x emission of 631 pounds per hour. Average emissions for the alkali bypass system were 1.01 pounds per hour particulate and 61.6 pounds per hour of NO_x.

NO_x
631
61.6
692.6

During the raw mill kiln particulate tests program, problems with the raw mill system throughout the day caused a great deal of raw mill downtime. This downtime didn't directly affect the feed rate to the kiln, and particulate testing continued. A problem did arise with the kiln system which caused Test #3 to be terminated after sampling through three (3) of the four (4) ports. Test #3 has been included in this report ~~as~~ in all test averages.

Particulate emissions summarized in Tables 2-2 and 2-5 include calculations with front half and total particulate catch. State and Federal regulations govern only the front half (nozzle, probe, filter) particulate catch. Total catch includes condensed inorganic and organic particulates from the impinger train with the front half catch. This information has been provided only for informational purposes.

TABLE 2-1

PARTICULATE EMISSIONS
KILN OUTLET
MAY 24,1984

	TEST 1	TEST 2	TEST 3*	AVERAGE
TIME	0930-1130	1315-1440	1515-1615	
% ISOKINETIC	93.6	100.3	99.0	97.6
GAS VELOCITY (fps)	22.5	24.9	24.1	23.8
GAS TEMPERATURE (°F)	218.8	307.1	241.8	255.9
GAS FLOWRATE (DSCFM)	161,101	160,856	168,571	163,509
% CO_2	15.5	15.8	15.8	15.7
% O_2	9.9	10.1	10.1	10.0
% H_2O	9.4	7.5	8.2	8.4
GRAINS PER SCFD } Front half	0.0131	0.0129	0.0129	0.0130
POUNDS PER HOUR } Front half	18.1	17.8	18.6	18.2

163,500
19,700
183,200

* Test #3 terminated after three out of four ports tested due to kiln shutdown.

19.7 | 183,200

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST., DENVER, COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: KILN DUCT NUMBER: STACK
REPORT DATE: JUNE 5, 1984

TABLE 2-2
PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS				
TEST NUMBER		ONE	TWO	THREE	AVERAGE
DATE OF RUN		MAY 24,84	MAY 24,84	MAY 24,84	
BAROMETRIC PRESSURE	IN.HG	25.20	25.20	25.20	
STACK PRESSURE, ABS.	IN.HG	25.19	25.19	25.19	
STACK AREA	SQ. FT	201.06	201.06	201.06	
NET TIME OF RUN	MIN	88.0	72.0	54.0	
PERCENT ISOKINETIC		93.6	100.3	99.0	97.6
GAS DATA					
AVG STACK GAS VELOCITY	FPS	22.532	24.889	24.057	23.826
AVG STACK TEMP.	DEGF.	218.8	307.1	241.8	255.9
ACTUAL STACK FLOWRATE	ACFM	271818.	300249.	290208.	287425.
STK FLOWRATE,DRY,STD	DSCFM	161101.	160856.	168571.	163509.
MOLECULAR WT-DRY STK GAS		30.88	30.93	30.93	
MOLECULAR WT-STK GAS		29.66	29.96	29.87	
MOLE FRACTION DRY GAS		.906	.925	.918	
GAS ANALYSIS (DRY PERCENT BASIS					
CARBON DIOXIDE		15.50	15.80	15.80	15.70
OXYGEN		9.90	10.10	10.10	10.03
CARBON MONOXIDE		0.00	0.00	0.00	0.00
NITROGEN		74.60	74.10	74.10	74.27
MOISTURE BY VOL		9.40	7.50	8.20	8.39
SAMPLE COLLECTION DATA					
TOTAL H2O COLLECTED	ML	115.1	78.3	67.4	
VOL H2O VAPOR-STD COND	SCF	5.42	3.69	3.17	
VOL DRY GAS-METER COND	DCF	58.20	52.30	40.48	
VOL DRY GAS-STD COND	DSCF	51.94	45.50	35.30	
AVG GAS METER TEMP	DEGF.	80.1	94.1	93.0	
AVG ORIF PRESS DROP	IN.H2O	1.360	1.450	1.570	
PARTICULATE WEIGHT DATA					
NET WEIGHT PARTIAL	MG	44.00	38.00	29.40	37.13
NET WEIGHT TOTAL	MG	66.10	60.00	46.30	57.47
PARTICULATE EMISSIONS					
PARTIAL					
GRAINS PER SCFD		.01307	.01289	.01285	.01294
GRAINS PER SCFD 12 CO2		.01012	.00979	.00976	.00989
GRAINS PER ACF		.00775	.00690	.00746	.00737
POUNDS PER HOUR		18.05	17.77	18.57	18.13 - 64.5%
POUNDS PER PROCESS UNIT		0.00	0.00	0.00	0.00 -
TOTAL					
GRAINS PER SCFD		.01964	.02035	.02024	.02007
GRAINS PER SCFD 12 CO2		.01520	.01545	.01537	.01534
GRAINS PER ACF		.01164	.01090	.01175	.01143
POUNDS PER HOUR		27.11	28.05	29.24	28.13
POUNDS PER PROCESS UNIT		0.00	0.00	0.00	0.00

Front half = dust

w/ impingers

Pounds per hour impingers — 9.06 — 10.28 — 10.67 — 10.00 - 35.5

TABLE 2-3

NO_x EMISSIONS
KILN OUTLET
MAY 25, 1984

TEST NO.	NO. OF SAMPLES	TEST TIME	PPM, DRY @ 10% O_2	LB/HOUR*
1	4	0900-1000	521	610
2	4	1000-1100	563	660
3	4	1100-1200	532	623
			539 Avg	631 Avg

882 @ 3% O_2

7.5 # NO_x / Tcl

84.1 TPH cl.

* Lb/hour calculated using stack flowrate at dry conditions of 163.5 KDSCFM.

TABLE 2-4

PARTICULATE EMISSIONS
ALKALI BYPASS
MAY 26, 1984

	TEST 1	TEST 2	TEST 3	AVERAGE
TIME	0845-0950	1020-1125	1200-1305	
% ISOKINETIC	101.6	104.5	104.1	103.4
GAS VELOCITY (fps)	27.3	27.0	26.7	27.0
GAS TEMPERATURE (^{o}F)	265.3	262.9	272.9	267.1
GAS FLOWRATE (DSCFM)	19,996	19,727	19,494	19,739
% CO_2	2.0	1.8	1.8	1.9
% O_2	17.9	18.1	18.1	18.0
% H_2O	8.3	8.7	7.7	8.2
GRAINS PER SCFD	0.0071	0.0055	0.0054	0.0059
POUNDS PER HOUR	1.21	0.92	0.91	1.01

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST., DENVER, COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: ALKALI BY PASS DUCT NUMBER: STACK
REPORT DATE: JUNE 5, 1984

TABLE 2-5

PARTICULATE SUMMARY IN ENGLISH UNITS

DESCRIPTION	UNITS				
TEST NUMBER		ONE	TWO	THREE	AVERAGE
DATE OF RUN		MAY 26,84	MAY 26,84	MAY 26,84	
BAROMETRIC PRESSURE	IN.HG	25.30	25.30	25.30	
STACK PRESSURE, ABS.	IN.HG	25.28	25.28	25.28	
STACK AREA	SQ. FT	21.65	21.65	21.65	
NET TIME OF RUN	MIN	60.0	60.0	60.0	
PERCENT ISOKINETIC		101.6	104.5	104.1	103.4
GAS DATA					
AVG STACK GAS VELOCITY	FPS	27.303	26.978	26.728	27.003
AVG STACK TEMP.	DEGF.	265.3	262.9	272.9	267.1
ACTUAL STACK FLOWRATE	ACFM	35462.	35039.	34714.	35072.
STK FLOWRATE,DRY,STD	DSCFM	19996.	19727.	19494.	19739.
MOLECULAR WT-DRY STK GAS		29.04	29.01	29.01	
MOLECULAR WT-STK GAS		28.12	28.05	28.16	
MOLE FRACTION DRY GAS		.917	.913	.923	
GAS ANALYSIS (DRY PERCENT BASIS					
CARBON DIOXIDE		2.00	1.80	1.80	1.87
OXYGEN		17.90	18.10	18.10	18.03
CARBON MONOXIDE		0.00	0.00	0.00	0.00
NITROGEN		80.10	80.10	80.10	80.10
MOISTURE BY VOL		8.30	8.70	7.70	8.23
SAMPLE COLLECTION DATA					
TOTAL H2O COLLECTED	ML	76.3	82.0	70.4	
VOL H2O VAPOR-STD COND	SCF	3.59	3.86	3.31	
VOL DRY GAS-METER COND	DCF	44.40	45.16	45.00	
VOL DRY GAS-STD COND	DSCF	39.81	40.38	39.73	
AVG GAS METER TEMP	DEGF.	80.1	81.5	88.2	
AVG ORIF PRESS DROP	IN.H2O	1.570	1.530	1.490	
PARTICULATE WEIGHT DATA					
NET WEIGHT PARTIAL	MG	18.20	14.30	14.00	15.50
NET WEIGHT TOTAL	MG	28.40	21.80	22.00	24.07
PARTICULATE EMISSIONS					
PARTIAL					
GRAINS PER SCFD		.00705	.00546	.00544	.00599
Front half GRAINS PER SCFD 12 CO2		.04233	.03643	.03625	.03834
GRAINS PER ACF		.00398	.00308	.00305	.00337
POUNDS PER HOUR		1.21	.92	.91	1.01
POUNDS PER PROCESS UNIT		0.00	0.00	0.00	0.00
TOTAL					
GRAINS PER SCFD		.01101	.00833	.00854	.00929
w/ GRAINS PER SCFD 12 CO2		.06605	.05554	.05696	.05952
impinger GRAINS PER ACF		.00621	.00469	.00480	.00523
train POUNDS PER HOUR		1.89	1.41	1.43	1.57
POUNDS PER PROCESS UNIT		0.00	0.00	0.00	0.00
#/hr in impingers		0.68	0.49	0.52	0.56

TABLE 2-6

NO_x EMISSIONS
ALKALI BYPASS OUTLET
MAY 26, 1984

TEST NO.	NO. OF SAMPLES	TEST TIME	PPM, DRY @ 18% O_2	LB/HOUR*	lb/T
1	4	0900-1000	451	64.0	0.80
2	4	1000-1100	416	59.7	0.74
3	4	1100-1200	428	61.0	0.76

Avg - 61.6

Clinker rate = 80.16 TPH

* Lb/hour calculated using stack flowrate at dry conditions of 19.7 KDSCFM.

3.0 SAMPLING AND ANALYTICAL PROCEDURES

3.1 LOCATION OF SAMPLING PORTS

Sampling on the kiln stack was performed at four ports located at 90° to each other. The stack diameter was sixteen feet, and the ports were fifty-three feet (53') (3 stack diameters) downstream from the nearest flow disturbance and twelve feet (12') (0.75 stack diameters) upstream from the stack exit. The forty-four (44) traverse points were located in accordance with EPA Reference Method 1.

The alkali bypass stack had two (2) test ports located at 90° to each other. The stack diameter was five feet three inches (5'3"), with the ports located well within the minimum requirements of eight and two diameters from the closest disturbance and exit of the stack, respectively. EPA Reference Method 1 was used to locate the twelve (12) sampling points.

3.2 PARTICULATE SAMPLING PROCEDURE

The particulate emission sampling was performed in accordance with the EPA Reference Method 5 procedures as outlined in the Code of Federal Regulations, Title 40, Part 60, Appendix A, revised as of July 1, 1982.

EPA Reference Methods 1 through 4 were used to determine test point locations, stack gas volumetric flow rate, gas analysis for CO_2 and O_2, and moisture content.

Preliminary measurements were required to accurately estimate the stack gas parameters necessary to select an appropriate sampling nozzle.

The equipment used for particulate sampling was the Research Appliance Company STAKSAMPLR. It conforms to design specifications detailed in Construction Details of Isokinetic Source Sampling Equipment, APTD-0501. A pictograhic diagram of the sample extracation and calibrated metering system is shown in Figure 3-1.

The sample extraction and collection apparatus is a series of stainless steel and borosilicate glass tubing arranged to inertially separate and filter the particulate matter present in the extracted stack gas. This system is composed of a stainless steel nozzle and extraction probe liner and filter housing. These components are maintained at 250°F (±25°F) to prevent water condensation prior to the glass fiber filter.

The Gelman type A-E glass filter meets specifications of this test methodology. A thermocouple well was located in the front half of the glass filter holder to allow monitoring of filter temperature.

After filtration, the gaseous sample is cooled by four impingers that are connected in series and contained in an ice water bath. Moisture content is determined by the amount of condensate collected.

The second impinger is of the Greenburg-Smith design with the standard tip. The first, third, and fourth impingers are Greenburg-Smith design, but modified by replacing the standard tip with a one-half inch (1/2") ID glass tube.

The first two impingers initially contain one hundred milliliters (100 ml) each of water, and the fourth imipinger contains a known mass of indicating silica gel. At this point, the temperature of the extracted sample is maintained below 70°F to assure complete condensation of water vapor. Additional particulate matter collected in the impinger train is recovered for laboratory analysis. The dry, filtered gas is then pumped into a gas meter and through a calibrated orifice for the measurement of sampled gas volume and flow rate. Inlet and outlet gas meter temperatures are recorded for correction of the gas volume to a standard temperature of 68°F. The calibrated orifice is necessary to accurately control the flow rate of the gas entering the sampling nozzle; the pressure differential is also utilized to correct the gas volume to a standard pressure of 29.92 inches Hg. why

Stack gas composition sampling for carbon dioxide, oxygen, and nitrogen is performed at the orifice to provide the dry molecular weight of the stack gas. The dry, filtered gas was directed to an Orsat gas analyzer for CO_2 and O_2 measurement. N_2 is assumed to be the remaining component for purposes of gas density calculations.

Prior to initiating each test, the entire system is checked for leaks by sealing the nozzle and evacuating the sample train to 15 inches Hg. The post-test leak check is performed at a vacuum greater than the highest operating vacuum reached in the test. No appreciable leaks were detected throughout the test program in the particulate matter collection, which depends upon preserving isokinetic conditions (±10%) between the stack gas velocity and the velocity of the gas extracted through the sampling nozzle.

The stack gas velocity is calculated from stack gas temperature and S-type pitot tube pressure differential measurements. The pitot lines were leak checked after each test run. All temperatures are measured with Type K thermocouples and a digital potentiometer.

3.3 METHOD 7 - OXIDES OF NITROGEN (NO_x)

Reference Method 7, as found in Appendix A, Federal Register, Volume 42, No. 160, August 18, 1977, was used for NO_x sampling and analysis. Figure 3-2 is a schematic of the NO_x sampling train.

The flue gas was pulled through a heated stainless steel probe which was connected to a three-way glass stopcock tee and a two-liter round-bottomed glass vacuum flask. A rotary vane pump was used to create the necessary vacuum, and a mercury manometer linked into the system ensured accurate measurement of the vacuum pressures.

The nitrogen oxides in the flue gas samples were absorbed by a solution consisting of distilled water, concentrated sulfuric acid (H_2SO_4) and 3% hydrogen peroxide (H_2O_2). A twenty-five milliliter (25 ml) volume of this NO_x absorption solution was added to the two-liter flasks, which were then evacuated to a pressure within three inches (3") of mercury of the absolute barometric pressure. The vacuum was recorded utilizing the in-system mercury manometer. The system was leak checked prior to use. The probe was purged by a Thomas diaphragm pump to ensure that only flue gas remained in the system as the glass tee was rotated, opening the evacuated system to the sample probe. A grab sample was taken over approximately fifteen (15) seconds to allow the flask pressure to equilibrate with the stack pressure. The flask temperature was recorded during this time. The sample flasks were sealed and shaken vigorously for five (5) minutes to ensure absorption.

The flasks with flue gas samples and absorption solution were recovered in the field after they had been allowed to react for a minimum of sixteen (16) hours to complete the NO_x absorption.

3.4 LABORATORY ANALYSIS

3.4.1 Particulates

The samples were transported to Denver, Colorado, for analysis. The filters were desiccated for more than twenty-four (24) hours and weighed at six (6) hour intervals until two (2) consecutive weights differed by no more than 0.5 mg. The probe and impinger washes and the back half condensible catches were transferred from their sample jars to tared, labeled beakers, and were evaporated to dryness at ambient temperature and pressure. The beakers were desiccated for twenty-four (24) hours and weighed to a constant weight. The blank was processed in the same manner and the samples compensated accordingly.

3.4.2 Oxides of Nitrogen

The nitrogen oxides (NO_x) content of each sample was measured colorimetrically using the phenoldisulfonic (PDS) acid procedure. NO_x forms a yellow organic compound in solution with phenol. The intensity of this color was measured on a Bausch and Lomb Spec-70 and is directly proportional to the concentration of NO_x in the sample.

Each sample was transferred from its container to a 50 milliliter volumetric flask and diluted to the mark with deionized, distilled water. A 25 milliliter aliquot was removed with a class A pipette and transferred to a labeled porcelain evaporating dish. The solutions were evaporated to dryness on a steam bath and allowed to cool. Two milliliters of PDS acid were added to the residue and triturated thoroughly with a polyethylene policeman. One milliliter of deionized, distilled water and four drops of concentrated sulfuric acid were added, and the solutions were heated on a steam bath for three minutes with occasional stirring. The solutions were allowed to cool and twenty milliliters of deionized, distilled water were added to each. Ten to eleven milliliters of concentrated ammonium hydroxide were added with constant stirring to a pH of ten.

Samples containing solids were filtered through Whatman No. 41 filter paper into a 100 milliliter volumetric flask. The evaporating dishes were rinsed with three, five milliliter portions of deionized, distilled water and the rinses were also filtered. The filter was rinsed with three, fifteen milliliter portions of deionized, distilled water directly into the flask. The sample was then diluted to the mark with deionized, distilled water and mixed thoroughly.

Samples that did not contain solids were transferred to 100 milliliter volumetric flasks and diluted to the mark with deionized, distilled water and mixed thoroughly. The absorbance of all samples was measured at 400 nm. This information is recorded on the analytical data sheets.

The spectrophotometer calibration factor, K_c, was determined in the following manner:

Exactly 1.099 grams of dried potassium nitrate (KNO_3) were dissolved in deionized, distilled water, diluted to the mark in a 500 milliliter volumetric flask and mixed thoroughly. Ten milliliters of this solution were transferred to a 100 milliliter flask, diluted to the mark with deionized, distilled water, and mixed thoroughly. Aliquots of 0.0, 2.0, 4.0, 6.0, and 8.0 milliliters of this working standard were added to a series of five, fifty milliliter volumetric flasks (1 ml - 100 µg NO_2). Twenty-five milliliters of absorbing solution and ten milliliters of deionized, distilled water were added dropwise to each flask to adjust the pH between 9 and 12. The standards were diluted to the mark with deionized, distilled water, mixed thoroughly and analyzed in the same manner as the samples.

The spectrophotometer calibration factor was calculated according to the following equation:

$$K_c = 100 \left[\frac{A_1 + 2A_2 + 3A_3 + 4A_4}{A_1^2 + 2A_2^2 + 3A_3^2 + 4A_4^2} \right]$$

Where:

K_c = calibration factor
A_1 = absorbance of the 100 µg of the NO_2 standard (2.0 ml KNO_3)
A_2 = absorbance of the 200 µg of the NO_2 standard (4.0 ml KNO_3)
A_3 = absorbance of the 300 µg of the NO_2 standard (6.0 ml KNO_3)
A_4 = absorbance of the 400 µg of the NO_2 standard (8.0 ml KNO_3)

3.5 CALIBRATIONS

Nozzle, pitot tube, gas meter, barometer, and temperature sensor calibrations are performed according to Maintenance, Calibration, and Operation of Isokinetic Source Sampling Equipment, APTD-0576.

Appendix D contains all applicable calibration records.

3.5.1 Nozzle

The sampling nozzle is constructed of 316 stainless steel. Vernier calipers are used to measure the diameter of the nozzle at 60° intervals to the nearest 0.001 inches. No measurement may deviate from the average by more than 0.002 inches.

3.5.2 Pitot Tube

The S-type pitot tube is constructed of 316 stainless steel and welded to the extraction probe in an interference-free manner. The S-type pitot tube is calibrated with a standard pitot tube in a wind tunnel and meets design specifications found in the aforementioned publication.

3.5.3 Gas Meter

The gas meter is calibrated with a standard test meter traceable to a positive displacement meter calibration. The gas meter accuracy factor is calculated to an intermediate setting recorded for the test series.

3.5.4 Barometer

The aneroid barometer utilized in the test program is calibrated with a mercury barometer.

3.5.5 Temperature Sensor

The digital potentiometer was calibrated against a mercury-in-glass thermometer near the boiling and freezing points of water.

3.5.6 NO_x Flask

Each NO_x Flass/"Tee" configuration was completely filled with distilled water under ambient conditions and the resultant water was gravimetrically recorded for each system.

4.0 PLANT OPERATING CONDITIONS

The test program was conducted at Southwestern Cement's Leamington, Utah, facility. It was formerly owned by Martin Marietta. Table 4-1 summarizes available process operating parameters on May 24 and 26, 1984. Data was not provided for May 25 (kiln NO_x tests). Detailed plant computer summaries can be found in Appendix E.

Supplied later – See cover letter to Brent Bradford 7/13/84
DJm

Factor $KF_{(TPH)}$ to Clinker (TPH) = 0.58

TABLE 4-1

PLANT OPERATING CONDITIONS

1.73 Coal has 11,500 BTU/lb.

KILN STACK

RUN	DATE	TIME	KILN FEED RATE (TPH)	(TPH) Clinker	COAL FEED RATE (TPH)
1	5/25/84	0930-1130	139.9 —	81.1	12.63
2	5/24/84	1315-1440	138.9 —	80.6	12.40
3	5/24/84	1515-1615	137.2 —	79.6	12.03

ALKALI BYPASS

RUN	DATE	TIME	CURRENT (AMPS)	QUENCH AIR FLOW (KCFM)
1	5/26/84	0845-0950	55.20	18.68
2	5/26/84	1020-1125	52.36	17.69
3	5/26/84	1200-1305	51.86	17.50

NO_x @ 692.6 #/hr avg

Clinker @ 80.4 T/hr avg

KF @ 138.7 T/hr Avg

Coal @ 12.35 T/hr avg.

#NO_x/Ton Clinker = 8.61

#NO_x/T KF = 4.99

#NO_x/mm BTU = 2.44

Report Prepared by:

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Report Reviewed and
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APPENDICES

A. CALCULATIONS
B. FIELD DATA SHEETS
C. LABORATORY DATA SHEETS
D. CALIBRATION
E. PLANT OPERATING REPORTS

APPENDIX A

CALCULATIONS

DEFINITIONS
EPA REFERENCE METHOD 5
DETERMINATION OF PARTICULATE EMISSIONS
FROM STATIONARY SOURCES

A_n	=	Area of nozzle (ft^2)
A_s	=	Stack area (ft^2)
C	=	Dry particulate emissions (Gr/SCFD)
C'	=	Dry particulate emissions adjusted to 12% CO_2 (Gr/SCFD @ 12% CO_2)
CO_2, O_2, N_2, CO	=	Percent by volune (dry basis) in flue gas
C_p	=	Pitot tube coefficient
D_n	=	Sampling nozzle diameter (in.)
E	=	Dry particulate emissions (lb/hr)
% EA	=	Percent excess air
E_F	=	Emissions by F-factor (lb/MMBtu)
E_{FC}	=	Emissions by F_c Factor (lb/MMBtu)
E_{HI}	=	Emissions by actual heat input (lb/MMBtu)
E_n	=	Average normal emission rate (non-soot blow)
E_p	=	Prorated emission rate
E_{sb}	=	Emission rate during soot blow
F	=	F-factor (SCFD/MMBtu)
F_c	=	F_c Factor (SCF CO_2/MMBtu)
GCV	=	Gross caloric value of fuel fired (Btu/lb)
$\triangle H$	=	Average orifice pressure differential (in.H_2O)
H, C, S, N, O	=	Percent by weight of fuel fired
% I	=	Isokinetic sampling rate
% M	=	Percent moisture by volume in stack gas
M_d	=	Mole fraction of dry gas
M_f	=	Front half sample weight (milligrams)
M_t	=	Total sample weight (milligrams)
MW	=	Molecular weight of stack gas
MW_d	=	Molecular weight of dry stack gas
P_b	=	Barometric pressure (in. H_2O)
P_s	=	Stack gas pressure (in. Hg absolute)

DEFINITIONS
EPA REFERENCE METHOD 5
DETERMINATION OF PARTICULATE EMISSIONS
FROM STATIONARY SOURCES
(continued)

ΔP	=	Velocity head pressure (in. H_2O)
Q_A	=	Stack gas flow rate, stack conditions (ACFM)
Q_S	=	Stack gas flow rate, standard conditions, 68°F, 29.92 in. Hg (SCFMD)
T_m	=	Average dry gas meter temperature (°F)
T_s	=	Stack gas temperature (°F)
θ_{sb}	=	Time unit blows soot per day (hours)
θ	=	Test time (minutes)
V_m	=	Volume of gas sampled at meter conditions (ft^3)
V_m	=	Volume of dry gas sampled at standard conditions (ft^3)
V_s	=	Stack gas velocity at stack conditions (fps)
V_w	=	Volume of water condensed in impingers (ml)
V_w	=	Volume of water vapor at standard conditions, 68°F, 29.92 in. Hg (ft^3)
Y	=	Dry gas meter correction factor

METHOD OF CALCULATION
EPA REFERENCE METHOD 5
DETERMINATION OF PARTICULATE EMISSIONS
FROM STATIONARY SOURCES

The following are the basic equations used in calculating the data as found in the final summary.

1. Volume of dry gas sampled at standard conditions, 68°F, 29.92 in. Hg (ft^3)

$$V_m = \frac{17.65 \times V_m \times Y \left(P_b + \frac{\Delta H}{13.6}\right)}{T_m + 460}$$

2. Volume of water vapor at 68°F and 29.92 in. Hg (ft^3)

$$V_w = 0.04707 \times V_w$$

3. Percent moisture in stack gas

$$\%M = \frac{V_w}{V_m + V_w} \times 100$$

4. Mole fraction of dry gas

$$M_d = \frac{100 - \%M}{100}$$

5. Molecular weight of dry stack gas

$$MW_d = (\%CO_2 \times .44) + (\%O_2 \times .32) + (\%N_2 \times .28) + (\%CO \times .28)$$

6. Molecular weight of stack gas

$$MW = (MW_d \times M_d) + 18\ (1 - M_d)$$

7. Average stack gas velocity at stack conditions, fps

$$V_s = 85.49 \times C_p \times \left(\sqrt{\Delta p}\right)_{avg} \times \sqrt{\frac{(T_s + 460)_{avg}}{P_s \times MW}}$$

8. Stack gas flow rate, stack conditions, ACFM

$$Q_A = 60 \times V_s \times A_s$$

METHOD OF CALCULATION
EPA REFERENCE METHOD 5
DETERMINATION OF PARTICULATE EMISSIONS
FROM STATIONARY SOURCES
(Continued)

9. Stack gas flow rate, standard conditions, SCFMD

$$Q_s = \frac{1058.8 \times V_s \times A_s \times M_d \times P_s}{(T_s + 460)}$$

10. Percent isokinetic

$$\%I = \frac{\left(T_s + 460\right)\left[0.002669\ V_w + V_m \quad /17.64\right]}{60\Theta V_s P_s A_n} \times 100$$

11. Dry particulate emissions - Gr/SCFD

$$C = 0.01543 \times \frac{M_f}{V_m} \text{ or } C = 0.01543 \times \frac{M_t}{V_m}$$

12. Dry particulate emissions adjusted to 12% CO_2, Gr/SCFD, @ 12% CO_2

$$C' = C \times \frac{12}{\%CO_2}$$

13. Dry particulate emissions - lb/hr

$$E = 0.008572 \times C \times Q_s$$

14. Particulate emissions by actual heat input - lb/MMBtu

$$E_{HI} = \frac{E}{MMBtu/Hr}$$

15. % Excess air at sampling point

$$\%EA = \frac{(\%O_2 - 0.5\ \%CO)}{(0.264 \times \%N_2) - (\%O_2 - 0.5\ \%CO)}$$

16. F-factor SCFD/MMBtu

$$F = 10^6 \quad \frac{(3.64\ \%H) + (1.53\ \%C) + (.57\ \%S) + (1.4\ \%N) - (.46\ \%O)}{GCV}$$

METHOD OF CALCULATION
EPA REFERENCE METHOD 5
DETERMINATION OF PARTICULATE EMISSIONS
FROM STATIONARY SOURCES
(Continued)

17. F_c Factor - SCF CO_2/MMBtu

$$F = \frac{321 \times 10^3 \times \%C}{GCV}$$

18. Emissions by F-factor (lb/MMBtu)

$$E_F = \frac{CF}{7000} \left(\frac{20.0}{20.9 - \%O_2}\right)$$

19. Emissions by F_c factor (lb/MMBtu)

$$E_F = \frac{CF_c}{7000} \left(\frac{100}{\%CO_2}\right)$$

20. Prorated Emissions

$$E_p = E_n + \left(E_{sb} - E_n\right) \left(\frac{\theta_{sb}}{\theta}\right)$$

DEFINITIONS

EPA REFERENCE METHOD 7
DETERMINATION OF NITROGEN OXIDES EMISSIONS FROM STATIONARY SOURCES

Nomenclature:

Variable	Units	Definition
A	dimensionless	Absorbance of sample
A_1	dimensionless	Absorbance of 100 µg NO_2 standard
A_2	dimensionless	Absorbance of 200 µg NO_2 standard
A_3	dimensionless	Absorbance of 300 µg NO_2 standard
A_4	dimensionless	Absorbance of 400 µg NO_2 standard
AF	dimensionless	Total aliquot factor
C	lb/dscf	NO_x concentration
F_c	dscf/Btu x 10^6	F-factor, carbon basis
F_d	dscf/Btu x 10^6	F-factor, dry basis
K_c	dimensionless	Spectrophotometer calibration factor
m	micrograms	Mass of NO_x collected
P_f	inches Hg	Final flask pressure
ppm_d	parts per million dry basis	NO_x concentration
ppm_w	parts per million wet basis	NO_x concentration
T_f	^oR	Final flask temperature
T_i	^oR	Initial flask temperature
V_{sc}	dry standard, ml	Standard flask volume
V_f	ml	Actual flask volume
V_a	ml	Absorbing solution volume

METHOD OF CALCULATION

EPA REFERENCE METHOD 7
DETERMINATION OF NITROGEN OXIDES EMISSIONS FROM STATIONARY SOURCES

$$K_c = 100 \times \left[\frac{A_1 + 2A_2 + 3A_3 + 4A_4}{(A_1)^2 + (A_2)^2 + (A_3)^2 + (A_4)^2} \right]$$

$$V_{sc} = 17.64 \ (V_f - V_a) \left[\frac{P_f - P_i}{T_f \quad T_i} \right]$$

$$m = K_c \times A \times AF$$

$$C = 6.243 \times 10^{-5} \times \left(\frac{m}{V_{sc}} \right)$$

$$ppm_d = 8.377 \times 10^6 \times C$$

$$ppm_w = ppm_d \times \left[1 - (H2O/100) \right]$$

$$E = \frac{C \times F_d \times 20.9}{(20.9 - O_2)}$$

$$E = \frac{C \times F_c \times 100}{CO_2}$$

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST., DENVER, COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: KILN DUCT NUMBER: STACK
REPORT DATE: JUNE 5, 1984

PARTICULATE SUMMARY IN METRIC UNITS

DESCRIPTION	UNITS	ONE	TWO	THREE	AVERAGE
TEST NUMBER		ONE	TWO	THREE	AVERAGE
DATE OF RUN		MAY 24,84	MAY 24,84	MAY 24,84	
BAROMETRIC PRESSURE	MM.HG	640.08	640.08	640.08	
STACK PRESSURE, ABS.	MM.HG	639.83	639.83	639.83	
STACK AREA	M2	18.68	18.68	18.68	
NET TIME OF RUN	MIN	88.0	72.0	54.0	
PERCENT ISOKINETIC		93.6	100.3	99.0	97.6
GAS DATA					
AVG STACK GAS VELOCITY	M/S	6.868	7.586	7.333	7.262
AVG STACK TEMP.	DEGC.	103.8	152.8	116.6	124.4
ACTUAL STACK FLOWRATE	AM3/M	7697.	8502.	8218.	8139.
STK FLOWRATE,DRY,STD	DNM3/M	4562.	4555.	4773.	4630.
MOLECULAR WT-DRY STK GAS		30.88	30.93	30.93	
MOLECULAR WT-STK GAS		29.66	29.96	29.87	
MOLE FRACTION DRY GAS		.906	.925	.918	
GAS ANALYSIS (DRY PERCENT BASIS					
CARBON DIOXIDE		15.50	15.80	15.80	15.70
OXYGEN		9.90	10.10	10.10	10.03
CARBON MONOXIDE		0.00	0.00	0.00	0.00
NITROGEN		74.60	74.10	74.10	74.27
MOISTURE BY VOL		9.40	7.50	8.20	8.39
SAMPLE COLLECTION DATA					
TOTAL H2O COLLECTED	ML	115.1	78.3	67.4	
VOL H2O VAPOR-STD COND	NM3	.15	.10	.09	
VOL DRY GAS-METER COND	DM3	1.65	1.48	1.15	
VOL DRY GAS-STD COND	DNM3	1.47	1.29	1.00	
AVG GAS METER TEMP	DEGC.	26.7	34.5	33.9	
AVG ORIF PRESS DROP	MM.H2O	34.544	36.830	39.878	
PARTICULATE WEIGHT DATA					
NET WEIGHT PARTIAL	MG	44.00	38.00	29.40	37.13
NET WEIGHT TOTAL	MG	66.10	60.00	46.30	57.47
PARTICULATE EMISSIONS					
PARTIAL					
MG/NORMALIZED CU.METERS		29.91	29.50	29.41	29.61
MG NORM. CU.M 12 CO2		23.16	22.40	22.33	22.63
MG ACTUAL CU. METERS		17.73	15.79	17.07	16.87
KILOGRAMS/HOUR		8.19	8.06	8.42	8.22
KILOGRAMS/PROCESS UNIT		0.00	0.00	0.00	0.00
TOTAL					
MG/NORMALIZED CU.METERS		44.94	46.57	46.32	45.93
MG NORM. CU.M 12 CO2		34.78	35.36	35.17	35.10
MG ACTUAL CU. METERS		26.64	24.94	26.89	26.16
KILOGRAMS/HOUR		12.30	12.72	13.26	12.76
KILOGRAMS/PROCESS UNIT		0.00	0.00	0.00	0.00

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST. DENVER,COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: KILN
DUCT NUMBER: STACK
DUCT AREA: 201.06 SQ.FT. 16' DIAMETER
DUCT LOCATION: OUTLET
FILTER NUMBER: 60272

TEST NUMBER: ONE
TEST DATE: MAY 24,84
TEST COND: 140 TPH
BAR. PRESS-IN HG: 25.20
PITOT TUBE FACTOR: .840
TIME TEST STARTED: 0937
REPORT DATE: JUNE 5, 1984

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	0	346.130								
A1	2	347.450	.090	1.260	80.0	60.0	.380	195.0	20.170	102.5
A2	4	348.760	.090	1.250	84.0	62.0	.380	195.0	20.170	101.2
A3	6	350.040	.100	1.330	84.0	62.0	.380	193.0	21.230	93.6
A4	8	351.400	.130	1.510	84.0	62.0	.380	193.0	24.210	87.3
A5	10	352.750	.130	1.510	84.0	62.0	.380	193.0	24.210	86.7
A6	12	354.150	.150	1.630	84.0	62.0	.380	192.0	25.980	83.6
A7	14	355.500	.150	1.600	82.0	64.0	.380	192.0	25.980	80.6
A8	16	356.990	.150	1.600	82.0	64.0	.380	192.0	25.980	89.0
A9	18	358.360	.130	1.480	82.0	64.0	.380	192.0	24.190	87.9
A10	20	359.630	.100	1.300	82.0	66.0	.380	192.0	21.220	92.7
A11	22	360.940	.100	1.300	82.0	66.0	.380	191.0	21.200	95.5
START	22	360.940								
B1	24	362.300	.100	1.300	82.0	70.0	.380	193.0	21.230	98.9
B2	26	363.620	.120	1.420	82.0	72.0	.380	192.0	23.240	87.5
B3	28	364.980	.120	1.420	82.0	72.0	.380	191.0	23.220	90.0
B4	30	366.400	.150	1.600	82.0	72.0	.380	194.0	26.020	84.3
B5	32	367.830	.150	1.600	82.0	74.0	.380	194.0	26.020	84.8
B6	34	369.250	.150	1.600	82.0	74.0	.380	194.0	26.020	84.2
B7	36	370.680	.150	1.600	82.0	74.0	.380	194.0	26.020	84.8
B8	38	372.100	.150	1.600	80.0	76.0	.380	194.0	26.020	84.2
B9	40	373.550	.150	1.600	80.0	76.0	.380	194.0	26.020	85.9
B10	42	375.000	.150	1.600	80.0	76.0	.380	194.0	26.020	85.9
B11	44	376.330	.130	1.480	80.0	76.0	.380	194.0	24.230	84.7

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST., DENVER, COLORADO 80221

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
DUCT NUMBER: STACK

TEST COND: 140 TPH
UNIT TESTED: KILN
DUCT LOCATION: OUTLET

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	44	376.330								
C1	46	377.580	.080	1.160	80.0	80.0	.380	192.0	18.980	100.8
C2	48	378.800	.080	1.160	80.0	80.0	.380	192.0	18.980	98.4
C3	50	380.000	.080	1.160	80.0	80.0	.380	191.0	18.960	96.7
C4	52	381.230	.080	1.160	82.0	80.0	.380	190.0	18.950	98.8
C5	54	382.460	.080	1.160	82.0	80.0	.380	190.0	18.950	98.8
C6	56	383.700	.080	1.160	82.0	80.0	.380	190.0	18.950	99.7
C7	58	385.050	.100	1.350	82.0	80.0	.380	200.0	21.350	97.8
C8	60	386.400	.100	1.350	82.0	80.0	.380	210.0	21.510	98.6
C9	62	387.650	.100	1.360	84.0	80.0	.380	215.0	21.590	91.4
C10	64	389.400	.180	2.450	84.0	80.0	.380	225.0	29.180	96.4
C11	66	391.150	.180	2.450	88.0	82.0	.380	225.0	29.180	95.9
START	66	391.450								
D1	68	392.920	.120	1.500	80.0	90.0	.380	275.0	24.680	101.9
D2	70	394.350	.120	1.500	80.0	94.0	.380	280.0	24.760	99.1
D3	72	395.700	.100	1.240	80.0	94.0	.380	282.0	22.630	102.6
D4	74	397.000	.100	1.250	80.0	96.0	.380	283.0	22.650	98.7
D5	76	398.080	.060	.750	80.0	96.0	.380	282.0	17.530	105.6
D6	78	399.120	.060	.750	80.0	96.0	.380	285.0	17.570	101.9
D7	80	400.300	.080	1.000	82.0	98.0	.380	289.0	20.340	100.1
D8	82	401.540	.080	1.000	82.0	98.0	.380	292.0	20.380	105.4
D9	84	402.550	.060	.740	82.0	98.0	.380	295.0	17.680	99.2
D10	86	403.580	.060	.740	82.0	98.0	.380	296.0	17.700	101.3
D11	88	404.630	.060	.730	82.0	98.0	.380	300.0	17.740	103.5

YORK RESEARCH CONSULTANTS
938 QUAIL ST. DENVER,COLORADO 80215

JOB NUMBER: 10-027-

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: KILN
DUCT NUMBER: STACK
DUCT AREA: 201.06 SQ.FT. 16' DIAMETER
DUCT LOCATION: OUTLET
FILTER NUMBER: 60274

TEST NUMBER: TWO
TEST DATE: MAY 24,84
TEST COND: 140 TPH
BAR. PRESS-IN HG: 25.20
PITOT TUBE FACTOR: .840
TIME TEST STARTED: 1317
REPORT DATE: JUNE 5, 1984

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	0	405.000								
D1	3	407.200	.120	1.380	80.0	100.0	.380	342.0	25.650	103.5
D2	6	409.400	.120	1.380	80.0	100.0	.380	342.0	25.650	103.5
D3	9	411.000	.060	.690	82.0	102.0	.380	339.0	18.100	105.7
D4	12	412.550	.060	.690	82.0	102.0	.380	335.0	18.050	102.1
D5	15	414.300	.080	.930	82.0	104.0	.380	335.0	20.850	99.7
D6	18	416.100	.080	.930	82.0	104.0	.380	335.0	20.850	102.6
START	18	416.100								
C1	21	418.470	.150	1.770	82.0	106.0	.380	330.0	28.460	98.4
C2	24	420.870	.150	1.770	82.0	106.0	.380	330.0	28.460	99.6
C3	27	423.230	.150	1.780	82.0	108.0	.380	333.0	28.510	98.0
C4	30	425.510	.130	1.530	82.0	108.0	.380	332.0	26.530	101.5
C5	33	427.800	.130	1.530	82.0	108.0	.380	332.0	26.530	102.0
C6	36	431.100	.130	1.530	82.0	110.0	.380	332.0	26.530	146.7
START	36	431.100								
B1	39	432.720	.100	1.180	80.0	110.0	.380	330.0	23.230	82.1
B2	42	434.200	.100	1.180	80.0	110.0	.380	330.0	23.230	75.0
B3	45	436.420	.130	1.580	80.0	110.0	.380	302.0	26.020	97.0
B4	48	438.650	.130	1.580	80.0	110.0	.380	295.0	25.900	97.0
B5	51	441.050	.150	1.890	80.0	110.0	.380	282.0	27.580	96.4
B6	54	443.300	.100	1.270	80.0	110.0	.380	270.0	22.340	109.6
START	54	443.300								
A1	57	445.600	.120	1.520	80.0	110.0	.380	270.0	24.470	102.4
A2	60	447.800	.120	1.520	80.0	110.0	.380	265.0	24.380	97.6
A3	63	450.000	.120	1.520	80.0	110.0	.380	260.0	24.300	97.2
A4	66	452.300	.150	1.920	80.0	110.0	.380	250.0	26.980	90.4
A5	69	454.800	.150	1.920	80.0	110.0	.380	250.0	26.980	98.3
A6	72	457.300	.150	1.920	80.0	110.0	.380	250.0	26.980	98.3

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST. DENVER,COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: KILN
DUCT NUMBER: STACK
DUCT AREA: 201.06 SQ.FT. 16' DIAMETER
DUCT LOCATION: OUTLET
FILTER NUMBER: 60297

TEST NUMBER: THREE
TEST DATE: MAY 24,84
TEST COND: 140 TPH
BAR. PRESS-IN HG: 25.20
PITOT TUBE FACTOR: .840
TIME TEST STARTED: 1515
REPORT DATE: JUNE 5, 1984

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	0	458.000								
A1	3	460.150	.100	1.270	80.0	110.0	.380	270.0	22.370	105.4
A2	6	462.300	.100	1.280	80.0	110.0	.380	270.0	22.370	105.4
A3	9	464.450	.120	1.540	80.0	110.0	.380	250.0	24.170	95.0
A4	12	466.600	.120	1.540	80.0	110.0	.380	248.0	24.130	94.9
A5	15	468.750	.120	1.560	80.0	110.0	.380	240.0	24.000	94.3
A6	18	471.250	.120	1.560	80.0	110.0	.380	240.0	24.000	109.7
START	18	471.250								
B1	21	473.560	.120	1.690	80.0	110.0	.380	230.0	23.830	100.7
B2	24	475.865	.130	1.690	80.0	110.0	.380	230.0	24.800	96.5
B3	27	478.170	.130	1.690	80.0	110.0	.380	228.0	24.760	96.4
B4	30	480.480	.130	1.690	80.0	110.0	.380	228.0	24.760	96.6
B5	33	482.900	.140	1.820	80.0	110.0	.380	225.0	25.640	97.3
B6	36	485.300	.140	1.820	80.0	110.0	.380	225.0	25.640	96.5
START	36	485.300								
C1	39	487.500	.100	1.310	80.0	100.0	.380	220.0	21.590	105.1
C2	42	489.690	.120	1.570	80.0	100.0	.380	246.0	24.100	97.4
C3	45	491.880	.120	1.570	80.0	98.0	.380	246.0	24.100	97.5
C4	48	494.050	.120	1.570	80.0	98.0	.380	246.0	24.100	96.7
C5	51	496.250	.120	1.570	80.0	96.0	.380	252.0	24.200	98.6
C6	54	498.480	.120	1.570	80.0	96.0	.380	258.0	24.300	100.4

YORK RESEARCH CONSULTANTS
938 QUAIL ST., DENVER, COLORADO 80215

JOB NUMBER: 10-027-01

CLIENT: SOUTHWESTERN CEMENT
UNIT TESTED: ALKALI BY PASS
REPORT DATE: JUNE 5, 1984

PLANT LOCATION: LEAMINGTON, UTAH
DUCT NUMBER: STACK

PARTICULATE SUMMARY IN METRIC UNITS

DESCRIPTION	UNITS	ONE	TWO	THREE	AVERAGE
TEST NUMBER					
DATE OF RUN		MAY 26,84	MAY 26,84	MAY 26,84	
BAROMETRIC PRESSURE	MM.HG	642.62	642.62	642.62	
STACK PRESSURE, ABS.	MM.HG	642.11	642.11	642.11	
STACK AREA	M2	2.01	2.01	2.01	
NET TIME OF RUN	MIN	60.0	60.0	60.0	
PERCENT ISOKINETIC		101.6	104.5	104.1	103.4
GAS DATA					
AVG STACK GAS VELOCITY	M/S	8.322	8.223	8.147	8.231
AVG STACK TEMP.	DEGC.	129.6	128.3	133.8	130.6
ACTUAL STACK FLOWRATE	AM3/M	1004.	992.	983.	993.
STK FLOWRATE,DRY,STD	DNM3/M	566.	559.	552.	559.
MOLECULAR WT-DRY STK GAS		29.04	29.01	29.01	
MOLECULAR WT-STK GAS		28.12	28.05	28.16	
MOLE FRACTION DRY GAS		.917	.913	.923	
GAS ANALYSIS (DRY PERCENT BASIS					
CARBON DIOXIDE		2.00	1.80	1.80	1.87
OXYGEN		17.90	18.10	18.10	18.03
CARBON MONOXIDE		0.00	0.00	0.00	0.00
NITROGEN		80.10	80.10	80.10	80.10
MOISTURE BY VOL		8.30	8.70	7.70	8.23
SAMPLE COLLECTION DATA					
TOTAL H2O COLLECTED	ML	76.3	82.0	70.4	
VOL H2O VAPOR-STD COND	NM3	.10	.11	.09	
VOL DRY GAS-METER COND	DM3	1.26	1.28	1.27	
VOL DRY GAS-STD COND	DNM3	1.13	1.14	1.13	
AVG GAS METER TEMP	DEGC.	26.7 = 80.1°F	27.5	31.2 = 88.16°F	
AVG ORIF PRESS DROP	MM.H2O	39.878	38.862	37.846	
PARTICULATE WEIGHT DATA					
NET WEIGHT PARTIAL	MG	18.20	14.30	14.00	15.50
NET WEIGHT TOTAL	MG	28.40	21.80	22.00	24.07
PARTICULATE EMISSIONS					
PARTIAL					
MG/NORMALIZED CU.METERS		16.13	12.49	12.45	13.71
MG NORM. CU.M 12 CO2		96.87	83.37	82.95	87.74
MG ACTUAL CU. METERS		9.11	7.05	6.98	7.71
KILOGRAMS/HOUR		.55	.42	.41	.46
KILOGRAMS/PROCESS UNIT		0.00	0.00	0.00	0.00
TOTAL					
MG/NORMALIZED CU.METERS		25.20	19.06	19.54	21.26
MG NORM. CU.M 12 CO2		151.15	127.10	130.35	136.20
MG ACTUAL CU. METERS		14.21	10.73	10.98	11.97
KILOGRAMS/HOUR		.86	.64	.65	.71
KILOGRAMS/PROCESS UNIT		0.00	0.00	0.00	0.00

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST. DENVER,COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: ALKALI BY PASS
DUCT NUMBER: STACK
DUCT AREA: 21.65 SQ.FT. 5'3" DIAMETER
DUCT LOCATION: OUTLET
FILTER NUMBER: 60304

TEST NUMBER: ONE
TEST DATE: MAY 26,84
TEST COND: 140 TPH
BAR. PRESS-IN HG: 25.30
PITOT TUBE FACTOR: .840
TIME TEST STARTED: 0845
REPORT DATE: JUNE 5, 1984

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	0	523.000								
A1	5	526.900	.170	1.880	80.0	80.0	.360	261.0	29.820	97.6
A2	10	530.800	.160	1.810	80.0	80.0	.360	264.0	28.990	100.8
A3	15	534.750	.170	1.880	80.0	80.0	.360	266.0	29.920	99.2
A4	20	538.400	.130	1.430	80.0	80.0	.360	267.0	26.180	104.8
A5	25	541.950	.130	1.430	80.0	80.0	.360	266.0	26.170	101.8
A6	30	545.450	.120	1.320	80.0	80.0	.360	268.0	25.170	104.6
START	30	545.450								
B1	35	548.970	.130	1.430	80.0	80.0	.360	263.0	26.110	100.7
B2	40	552.300	.100	1.100	78.0	82.0	.360	259.0	22.840	108.3
B3	45	555.830	.130	1.430	78.0	84.0	.360	266.0	26.170	101.1
B4	50	559.600	.150	1.650	76.0	84.0	.360	268.0	28.150	100.9
B5	55	563.450	.160	1.760	76.0	84.0	.360	268.0	29.070	99.8
B6	60	567.400	.160	1.760	76.0	84.0	.360	268.0	29.070	102.4

YORK RESEARCH CONSULTANTS JOB NUMBER: 10-027-01
938 QUAIL ST. DENVER,COLORADO 80215

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: ALKALI BY PASS
DUCT NUMBER: STACK
DUCT AREA: 21.65 SQ.FT. 5'3" DIAMETER
DUCT LOCATION: OUTLET
FILTER NUMBER: 60305

TEST NUMBER: TWO
TEST DATE: MAY 26,84
TEST COND: 140 TPH
BAR. PRESS-IN HG: 25.30
PITOT TUBE FACTOR: .840
TIME TEST STARTED: 1020
REPORT DATE: JUNE 5, 1984

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	METERTEMP (DEG.F) OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	0	567.700								
A1	5	571.850	.170	1.870	76.0	86.0	.360	259.0	29.820	103.9
B2	10	576.010	.170	1.870	76.0	86.0	.360	260.0	29.840	104.2
B3	15	579.670	.130	1.430	76.0	86.0	.360	260.0	26.090	104.7
B4	20	583.330	.130	1.430	76.0	86.0	.360	263.0	26.150	104.9
B5	25	586.990	.130	1.430	76.0	86.0	.360	263.0	26.150	104.9
B6	30	590.650	.130	1.430	76.0	86.0	.360	263.0	26.150	104.9
START	30	590.650								
B1	35	593.880	.100	1.100	76.0	86.0	.360	259.0	22.870	105.2
B2	40	597.510	.130	1.430	76.0	88.0	.360	263.0	26.150	103.9
B3	45	601.180	.130	1.430	76.0	88.0	.360	265.0	26.180	105.2
B4	50	604.830	.130	1.430	76.0	88.0	.360	265.0	26.180	104.6
B5	55	608.850	.160	1.760	76.0	88.0	.360	265.0	29.050	103.9
B6	60	612.860	.160	1.760	78.0	88.0	.360	270.0	29.150	103.9

YORK RESEARCH CONSULTANTS
938 QUAIL ST. DENVER,COLORADO 80215

JOB NUMBER: 10-027-01

CLIENT: SOUTHWESTERN CEMENT
PLANT LOCATION: LEAMINGTON, UTAH
UNIT TESTED: ALKALI BY PASS
DUCT NUMBER: STACK
DUCT AREA: 21.65 SQ.FT. 5'3" DIAMETER
DUCT LOCATION: OUTLET
FILTER NUMBER: 60296

TEST NUMBER: THREE
TEST DATE: MAY 26,84
TEST COND: 140 TPH
BAR. PRESS-IN HG: 25.30
PITOT TUBE FACTOR: .840
TIME TEST STARTED: 1200
REPORT DATE: JUNE 5, 1984

SAMPLE POINT --	ELAP TIME (MIN)	SAMPLE VOLUME (DCF)	PITOT RDG (INH2O)	ORIFICE RDG (INH2O)	METERTEMP (DEG.F) IN	METERTEMP (DEG.F) OUT	NOZ DIA (IN)	STACK TEMP (DF)	STACK VEL (FPS)	%I -- --
START	0	613.300								
A1	5	617.230	.170	1.870	76.0	94.0	.360	271.0	30.000	97.6
A2	10	621.380	.170	1.870	76.0	94.0	.360	271.0	30.000	103.0
A3	15	625.120	.130	1.430	76.0	94.0	.360	271.0	26.240	106.1
A4	20	628.860	.130	1.430	78.0	94.0	.360	272.0	26.250	105.9
A5	25	632.600	.130	1.430	78.0	96.0	.360	272.0	26.250	105.7
A6	30	636.120	.120	1.330	78.0	98.0	.360	272.0	25.220	103.4
START	30	636.120								
B1	35	639.690	.120	1.330	78.0	100.0	.360	274.0	25.260	104.8
B2	40	643.410	.130	1.430	80.0	100.0	.360	274.0	26.290	104.7
B3	45	647.140	.130	1.430	80.0	100.0	.360	274.0	26.290	105.0
B4	50	650.850	.130	1.430	80.0	100.0	.360	274.0	26.290	104.5
B5	55	654.565	.130	1.430	82.0	102.0	.360	275.0	26.310	104.3
B6	60	658.300	.130	1.430	82.0	102.0	.360	275.0	26.310	104.9

OXIDES OF NITROGEN EMISSIONS TEST RESULTS

PROJECT NO.:	10-027-01	TEST UNIT:	KILN
CLIENT:	SOUTHWESTERN CEMENT	LOCATION:	STACK
PLANT:	LEAMINGTON, UTAH	TEST DATE:	MAY 25, 1984

SAMPLE ID	1A	1B	1C	1D
TEST TIME	09:17	09:27	09:37	09:47
FIELD DATA				
FLASK VOLUME , ML	2014	2046	2044	2049
INITIAL PRES , IN HG	2.70	2.20	2.20	2.20
FINAL PRES , IN HG	23.50	24.70	23.50	23.50
INITIAL TEMP , DEG F	76	76	73	76
FINAL TEMP , DEG F	72	72	72	72
SAMPLE VOLUME , STP	1373	1509	1426	1431
LAB DATA				
TOTAL DILUTIONS	5	5	5	5
ABSORBANCE	0.380	0.320	0.320	0.362
NOX , MICROGRAMS	1566	1319	1319	1492
EMISSION RATES				
PARTS PER MILLION , DRY	596	457	484	545
PARTS PER MILLION , WET	546	419	443	499
POUNDS PER DRY STD CU FT	7.12E-5	5.46E-5	5.77E-5	6.51E-5
POUNDS PER MILLION BTUS	1.341	1.027	1.087	1.226 – How get ? Avg 1.170

FLUE GAS DATA		STANDARDS			
% MOISTURE	8.4	A-1	0.070	A-2	0.120
% OXYGEN	10.0	A-3	0.238	A-4	0.570
F-FACTOR	9820		KC	824.3	

4 SAMPLE AVERAGE

PARTS PER MILLION , DRY	521
PARTS PER MILLION , WET	477
POUNDS PER DRY STD CU FT	6.22E-5
POUNDS PER MILLION BTUS	1.170 ← ?

OXIDES OF NITROGEN EMISSIONS TEST RESULTS

PROJECT NO.:	10-027-01	TEST UNIT:	KILN
CLIENT:	SOUTHWESTERN CEMENT	LOCATION:	STACK
PLANT:	LEAMINGTON, UTAH	TEST DATE:	MAY 25, 1984

SAMPLE ID	2A	2B	2C	2D
TEST TIME	09:57	10:07	10:17	10:27
FIELD DATA				
FLASK VOLUME , ML	2043	2060	2019	2021
INITIAL PRES , IN HG	2.20	2.20	1.60	1.80
FINAL PRES , IN HG	23.80	23.30	23.30	23.60
INITIAL TEMP , DEG F	78	78	80	78
FINAL TEMP , DEG F	75	75	75	75
SAMPLE VOLUME , STP	1438	1417	1428	1435
LAB DATA				
TOTAL DILUTIONS	5	5	5	5
ABSORBANCE	0.370	0.384	0.360	0.380
NOX , MICROGRAMS	1525	1583	1484	1566
EMISSION RATES				
PARTS PER MILLION , DRY	555	584	543	571
PARTS PER MILLION , WET	508	535	497	523
POUNDS PER DRY STD CU FT	6.62E-5	6.97E-5	6.49E-5	6.81E-5
POUNDS PER MILLION BTUS	1.247	1.313	1.222	1.283 - ?

FLUE GAS DATA		STANDARDS			
% MOISTURE	8.4	A-1	0.070	A-2	0.120
% OXYGEN	10.0	A-3	0.238	A-4	0.570
F-FACTOR	9820	KC	824.3		

4 SAMPLE AVERAGE

PARTS PER MILLION , DRY	563
PARTS PER MILLION , WET	516
POUNDS PER DRY STD CU FT	6.72E-5
POUNDS PER MILLION BTUS	1.266 — ?

OXIDES OF NITROGEN EMISSIONS TEST RESULTS

PROJECT NO.:	10-027-01	TEST UNIT:	KILN
CLIENT:	SOUTHWESTERN CEMENT	LOCATION:	STACK
PLANT:	LEAMINGTON, UTAH	TEST DATE:	MAY 25, 1984

SAMPLE ID	3A	3B	3C	3D
TEST TIME	10:37	10:47	10:57	11:07
FIELD DATA				
FLASK VOLUME , ML	2075	2025	2029	2054
INITIAL PRES , IN HG	2.40	2.00	1.90	1.90
FINAL PRES , IN HG	23.90	23.60	23.80	22.90
INITIAL TEMP , DEG F	73	72	74	68
FINAL TEMP , DEG F	72	72	72	72
SAMPLE VOLUME , STP	1462	1432	1456	1412
LAB DATA				
TOTAL DILUTIONS	5	5	5	5
ABSORBANCE	0.351	0.360	0.368	0.342
NOX , MICROGRAMS	1447	1484	1517	1409
EMISSION RATES				
PARTS PER MILLION , DRY	518	542	545	522
PARTS PER MILLION , WET	474	496	499	478
POUNDS PER DRY STD CU FT	6.18E-5	6.47E-5	6.50E-5	6.23E-5
POUNDS PER MILLION BTUS	1.163	1.218	1.225	1.174 — ?

FLUE GAS DATA		STANDARDS			
% MOISTURE	8.4	A-1	0.070	A-2	0.120
% OXYGEN	10.0	A-3	0.238	A-4	0.570
F-FACTOR	9820		KC	824.3	

4 SAMPLE AVERAGE

PARTS PER MILLION , DRY	532
PARTS PER MILLION , WET	487
POUNDS PER DRY STD CU FT	6.35E-5
POUNDS PER MILLION BTUS	1.195

OXIDES OF NITROGEN EMISSIONS TEST RESULTS

PROJECT NO.:	10-027-01	TEST UNIT:	ALKALI BYPASS
CLIENT:	SOUTHWESTERN CEMENT	LOCATION:	STACK
PLANT:	LEAMINGTON, UTAH	TEST DATE:	MAY 26, 1984

SAMPLE ID	1A	1B	1C	1D
TEST TIME	09:00	09:15	09:30	09:45
FIELD DATA				
FLASK VOLUME , ML	2044	2046	2014	2049
INITIAL PRES , IN HG	3.00	3.00	2.80	3.00
FINAL PRES , IN HG	22.85	22.35	22.35	23.35
INITIAL TEMP , DEG F	103	105	105	102
FINAL TEMP , DEG F	68	68	68	68
SAMPLE VOLUME , STP	1352	1320	1311	1388
LAB DATA				
TOTAL DILUTIONS	5	5	5	5
ABSORBANCE	0.230	0.235	0.231	0.255
NOX , MICROGRAMS	1119	1144	1124	1241
EMISSION RATES				
PARTS PER MILLION , DRY	433	453	448	467
PARTS PER MILLION , WET	397	415	411	428
POUNDS PER DRY STD CU FT	5.17E-5	5.41E-5	5.35E-5	5.58E-5
POUNDS PER MILLION BTUS	0.974	1.019	1.008	1.051 ?

FLUE GAS DATA		STANDARDS			
% MOISTURE	8.3	A-1	0.070	A-2	0.132
% OXYGEN	10.0 ?	A-3	0.205	A-4	0.480
F-FACTOR	9820	KC	973.4		

4 SAMPLE AVERAGE

PARTS PER MILLION , DRY	451
PARTS PER MILLION , WET	413
POUNDS PER DRY STD CU FT	5.38E-5
POUNDS PER MILLION BTUS	1.013

OXIDES OF NITROGEN EMISSIONS TEST RESULTS

PROJECT NO.:	10-027-01	TEST UNIT:	ALKALI BYPASS
CLIENT:	SOUTHWESTERN CEMENT	LOCATION:	STACK
PLANT:	LEAMINGTON, UTAH	TEST DATE:	MAY 26, 1984

SAMPLE ID	2A	2B	2C	2D
TEST TIME	10:00	10:15	10:30	10:45
FIELD DATA				
FLASK VOLUME , ML	2075	2054	2029	2025
INITIAL PRES , IN HG	3.00	3.00	3.00	3.00
FINAL PRES , IN HG	23.35	24.35	24.15	23.85
INITIAL TEMP , DEG F	103	100	95	99
FINAL TEMP , DEG F	68	68	68	68
SAMPLE VOLUME , STP	1407	1459	1426	1404
LAB DATA				
TOTAL DILUTIONS	5	5	5	5
ABSORBANCE	0.230	0.245	0.220	0.235
NOX , MICROGRAMS	1119	1192	1071	1144
EMISSION RATES				
PARTS PER MILLION , DRY	416	427	393	426
PARTS PER MILLION , WET	384	394	363	393
POUNDS PER DRY STD CU FT	4.97E-5	5.10E-5	4.69E-5	5.08E-5
POUNDS PER MILLION BTUS	0.936	0.961	0.883	0.957 — ?

FLUE GAS DATA		STANDARDS			
% MOISTURE	7.7	A-1	0.070	A-2	0.132
% OXYGEN	10.0 ?	A-3	0.205	A-4	0.480
F-FACTOR	9820	KC	973.4		

4 SAMPLE AVERAGE

PARTS PER MILLION , DRY	416
PARTS PER MILLION , WET	384
POUNDS PER DRY STD CU FT	4.96E-5
POUNDS PER MILLION BTUS	0.934

OXIDES OF NITROGEN EMISSIONS TEST RESULTS

PROJECT NO.:	10-027-01	TEST UNIT:	ALKALI BYPASS
CLIENT:	SOUTHWESTERN CEMENT	LOCATION:	STACK
PLANT:	LEAMINGTON, UTAH	TEST DATE:	MAY 26, 1984

SAMPLE ID	3A	3B	3C	3D
TEST TIME	11:00	11:15	11:30	11:45
FIELD DATA				
FLASK VOLUME , ML	2019	2043	2037	2060
INITIAL PRES , IN HG	2.90	3.00	3.00	3.00
FINAL PRES , IN HG	24.05	22.85	23.85	23.05
INITIAL TEMP , DEG F	98	104	106	105
FINAL TEMP , DEG F	68	68	68	68
SAMPLE VOLUME , STP	1419	1351	1415	1377
LAB DATA				
TOTAL DILUTIONS	5	5	5	5
ABSORBANCE	0.240	0.230	0.225	0.240
NOX , MICROGRAMS	1168	1119	1095	1168
EMISSION RATES				
PARTS PER MILLION , DRY	430	433	405	444
PARTS PER MILLION , WET	393	395	370	405
POUNDS PER DRY STD CU FT	5.14E-5	5.17E-5	4.83E-5	5.30E-5
POUNDS PER MILLION BTUS	0.967	0.974	0.910	0.997 ?

FLUE GAS DATA		STANDARDS			
% MOISTURE	8.7	A-1	0.070	A-2	0.132
% OXYGEN	10.0 ?	A-3	0.205	A-4	0.480
F-FACTOR	9820		KC	973.4	

4 SAMPLE AVERAGE

PARTS PER MILLION , DRY	428
PARTS PER MILLION , WET	391
POUNDS PER DRY STD CU FT	5.11E-5
POUNDS PER MILLION BTUS	0.962 ?

APPENDIX B

FIELD DATA SHEETS

QUALITY ASSURANCE FORM

PARTICULATE SAMPLING DATA

EPA REFERENCE METHOD 5/8/17

PAGE 1 OF

Q.A.F.: S-042
REVISION: FOUR
ORIGINATOR: WERDEN
APPROVED:
EFFECTIVE DATE: 3/23/82

TEST ID

PROJECT NO. 10-027-01
CLIENT Southwestern Portland
PLANT ~~Kiln~~ Lemmington
UNIT KILN
LOCATION Outlet
CONDITION 140 TPH
DATE 5-24-84 5/23
TEST RUN ID ONE
OPERATORS

EQUIPMENT ID

CONTROL UNIT D-9
SAMPLE UNIT S-9
D.T.I./M-M Doric
NOZZLE .380
PROBE W.C. #4
PITOT TUBE W.C. #4
BAROMETER
PROBE SPECIFICATIONS
LINER MATERIAL SS
EFFECTIVE LENGTH 2ft
HEATER TEMP., °F 250°F
FILTER ID
HEATER TEMP., °F 250°F

LEAK-TEST DATA

INITIAL RATE
PITOT (-) O.K.
PITOT (+) O.K.
NOZZLE (-) <0.01@15"
ORIFICE (+) O.K.
FINAL RATE
PITOT (-) O.K.
PITOT (+) O.K.
NOZZLE (-) <0.01@15"
ORIFICE (+) O.K.

SAMPLE RATE DATA

CP
Δ HA
TM, °F
%H2O
PB, IN. HG
PSG, IN. H2O
TS, °F
DN, IN.

STACK DIMENSIONS

STACK PRESSURE DATA

PB, IN. HG 25.20
PSG, IN. H2O -.20

TS, °F

K3	200		
70	4.2		
TM, °F			

H.P. DATA ENTRY

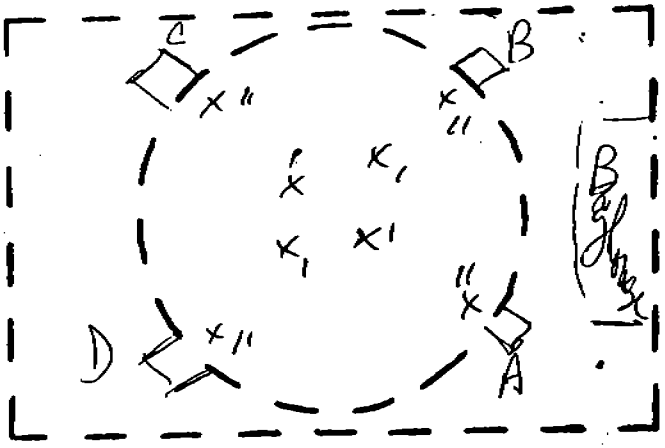
ΔH, IN. H2O
VM, C.F.
TM, °F
METER YD
H2O, G
TS, °F
√ΔP, IN. H2O
DN, IN.
% CO2
% O2
% N2
P.T. CP
TIME, MIN.
FD-FACTOR

MOISTURE DATA

	GROSS, G	TARE, G	NET, G
1	169	100	69
2	120	100	20
3	000	000	0
4	377.1	351.0	26.1
T			

PARTICULATE CATCH

PARTIAL, MG
TOTAL, MG



SAMPLE POINT LOCATION

B-1

57955 57956 57957

.41 =
4.1 = 195 @ 75

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm), ft³	Velocity Head Δp	Velocity Head √Δp	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F		
	0	0937	346.130											
A 1	2	39	347.450	.09	.300	1.26	195	80	60	4.0	250	ICED		
2	4	41	348.760	.09	.300	1.25	195	84	62	4.0	250	↓		
3	6	43	350.040	.10	.316	1.33	193	84	62	4.0	245	↓		
4	8	45	351.400	.13	.361	1.51	193	84	62	4.0	245			
5	10	47	352.750	.13	.361	1.51	193	84	62	4.0	245			
6	12	49	354.150	.15	.387	1.63	192	84	62	4.5	245	ICED		
7	14	51	355.500	.15	.387	1.60	192	82	64	4.5	250	↓		
8	16	53	356.990	.15	.387	1.60	192	82	64	4.5	250	↓		
9	18	55	358.360	.13	.361	1.48	192	82	64	4.0	250	↓		
10	20	57	359.630	.10	.316	1.30	192	82	66	4.0	250			
11	22	0959	360.940	.10	.316	1.30	191	82	66	4.0	250	ICED		
START	22	1008	360.940											
B 1	24	10	362.300	.10	.316	1.30	193	82	70	3.0	250	ICED		
2	26	12	363.620	.12	.346	1.42	192	82	72	4.0	265	↓		
3	28	14	364.980	.12	.346	1.42	191	82	72	4.0	265	↓		
4	30	16	366.400	.15	.387	1.60	194	82	72	4.0	250	↓		
5	32	18	367.830	.15	.387	1.60	194	82	74	4.0	250			
6	34	20	369.250	.15	.387	1.60	194	82	74	4.0	250			
7	36	22	370.680	.15	.387	1.60	194	82	74	4.0	255			
8	38	24	372.100	.15	.387	1.60	194	80	76	4.0	250			
9	40	26	373.550	.15	.387	1.60	194	80	76	4.0	250			
10	42	28	376.000	.15	.387	1.60	194	80	76	4.0	250			
11	44	1030	376.330	.13	.361	1.48	194	80	76	4.0	250			
			58.206		.32									

90 270 12.5 12.7 12.8
275 12.5 12.6 12.8
280 12.4 12.6 12.7

41 = 13.7 22 Nozzle .380

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm) ft³	Velocity Head Δp	Velocity Head $\sqrt{\Delta p}$	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F		
START	44	1035	376.330											
C 1	46	37	377.580	.08	.283	1.16	192	80	80	2.0	250	ICED		
2	48	39	378.800	.08	.283	1.16	192	80	80	2.0	250			
3	50	41	380.000	.08	.283	1.16	191	80	80	2.0	250			
4	52	43	381.230	.08	.283	1.16	190	82	80	2.0	260			
5	54	45	382.460	.08	.283	1.16	190	82	80	2.0	260			
6	56	47	383.700	.08	.283	1.16	190	82	80	3.0	260			
7	58	49	385.850	.10	.316	1.35	200	82	80	3.0	260			
8	60	51	386.400	.10	.316	1.35	210	82	80	3.0	260			
9	62	53	387.650	.10	.316	1.36	215	84	80	3.0	250			
10	64	55	389.400	.18	.424	2.45	225	84	80	6.0	250			
11	66	10 57	391.150	.18	.424	2.45	225	88	82	6.0	255			
START	66	11 15	391.450											
D 1	68	17	392.920	.12	.346	1.5	275	80	90	3.0	250			
2	70	19	394.350	.12	.346	1.5	280	80	94	3.0	250			
3	72	21	395.700	.10	.316	1.24	282	80	94	2.0	255			
4	74	23	397.100	.10	.316	1.25	283	80	96	2.0	255			
5	76	25	398.080	.06	.245	.75	282	80	96	2.0	255			
6	78	27	399.120	.06	.245	.75	285	80	96	2.0	255			
7	80	29	400.300	.08	.283	1.00	289	82	98	2.0	255			
8	82	31	401.540	.08	.283	1.00	292	82	98	2.0	255			
9	84	33	402.550	.06	.245	.74	295	82	98	2.0	260			
10	86	35	403.580	.06	.245	.74	296	82	98	2.0	260			
11	88	11 37	404.630	.06	.245	.73	300	82	98	2.0	260			
			58.200		.329	1.49	218.8		80.1					

Row Mill down @ C7 thru D11

QUALITY ASSURANCE
FORM

QAF No.: S-100
Revision: Two
Originator: Werden
Approved: JB
Effective Date:
June 1, 1982

GAS ANALYSIS FOR EXCESS AIR AND DRY MOLECULAR WEIGHT

Project No.: 10-027-01
Date: 5-24-84
Client: Southwestern Cement
Test No.: ~~045~~ One
Plant: Leamington
24-Hour Start: 0937
Unit: Kiln
24-Hour End: 1137
Location: Outlet
Operator: JB

Sampling Method

____ Single-Point, Grab
____ Single-Point, Integrated
X Multi-Point, Integrated

Analytical Method

X Orsat
____ C.E.M.S.

All results determined on a dry volume basis.

Acquired Data

Gas	Run No. 1	Run No. 2	Run No. 3
CO_2	15.5	15.5	15.4
O_2	25.5	25.4	25.4
CO			

?

Average Results

% Carbon Dioxide	15.5
% Oxygen	9.9
% Carbon Monoxide	

QUALITY ASSURANCE FORM

PARTICULATE SAMPLING DATA

EPA REFERENCE METHOD 5/8/17

PAGE 1 OF

Q.A.F.: S-042
REVISION: FOUR
ORIGINATOR: WERDEN
APPROVED:
EFFECTIVE DATE: 3/23/82

TEST ID

PROJECT NO. 10-027-01
CLIENT Southwestern Cement
PLANT Lemmington
UNIT Kiln
LOCATION Outlet
CONDITION 140 TPH
DATE 5-24-84
TEST RUN ID TWO
OPERATORS [illegible]

EQUIPMENT ID

CONTROL UNIT A-9
SAMPLE UNIT S-9
D.T.I./M-M Dorie
NOZZLE .380
PROBE W.C. #4
PITOT TUBE W.C. #1
BAROMETER
PROBE SPECIFICATIONS
LINER MATERIAL SS
EFFECTIVE LENGTH 2ft
HEATER TEMP., °F 250°F
FILTER ID
HEATER TEMP., °F 250°F

LEAK-TEST DATA

INITIAL RATE
PITOT (-) O.K.
PITOT (+) O.K.
NOZZLE (-) <0.005@15"
ORIFICE (+) O.K.
FINAL RATE
PITOT (-) O.K.
PITOT (+) O.K.
NOZZLE (-) <0.01@15"
ORIFICE (+) O.K.

SAMPLE RATE DATA

CP
Δ HA
TM, °F
%H2O
PB, IN. HG
PSG, IN. H2O
TS, °F
DN, IN.

STACK DIMENSIONS

STACK PRESSURE DATA

PB, IN. HG 25.20
PSG, IN. H2O -.20

TS, °F

K3			
TM, °F			

H.P. DATA ENTRY

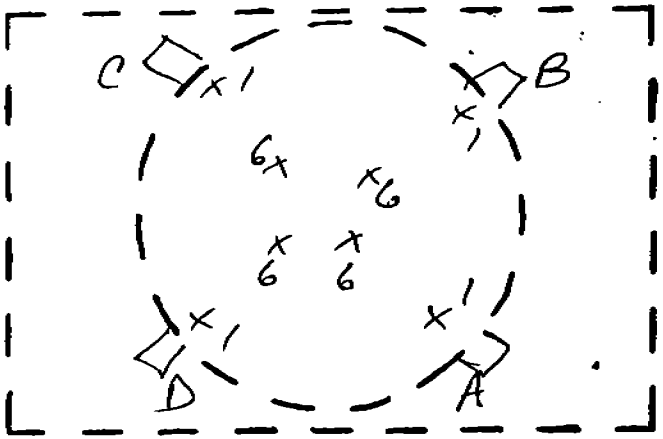
ΔH, IN. H2O
VM, C.F.
TM, °F
METER YD
H2O, G
TS, °F
√ΔP, IN. H2O
DN, IN.
% CO2
% O2
% N2
P.T. CP
TIME, MIN.
FD-FACTOR

MOISTURE DATA

	GROSS, G	TARE, G	NET, G
1	135	100	35
2	120	100	20
3	000	000	0
4	372.6	349.3	23.3
T			

PARTICULATE CATCH

PARTIAL, MG
TOTAL, MG



SAMPLE POINT LOCATION

57958 57959

11.5	11.6	11.7
350 11.4	11.5	11.6
360 11.2	11.3	11.4

TEST #2 KILN — TEDLAR H

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm) ft³	Velocity Head Δp	Velocity Head √Δp	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F
	0	1317	465.000									
D 1	3	20	467.200	.12		1.38	342	80	100	6.0	250	ICED
2	6	23	469.400	.12		1.38	342	80	100	6.0	250	ICED
3	9	26	471.000	.06		.69	339	82	102	3.0	250	
4	12	29	472.550	.06		.69	335	82	102	3.0	260	
5	15	32	474.300	.08		.93	335	82	104	4.0	255	
6	18	1335	476.100	.08		.93	335	82	104	4.0	260	
START	15	1338	476.100									
C 1	21	41	478.470	.15		1.77	330	82	106	8.0	250	
2	24	44	480.870	.15		1.77	330	82	106	8.0	250	
3	27	47	483.230	.15		1.78	333	82	108	8.0	250	
4	30	50	485.510	.13		1.53	332	82	108	6.0	260	
5	33	53	487.800	.13		1.53	332	82	108	6.0	260	
6	36	1356	491.900	.13		1.53	332	82	110	6.0	260	
START	36	1400	491.100									
B 1	39	03	492.720	.10		1.18	330	80	110	5.0	255	
2	42	06	494.200	.10		1.18	330	80	110	5.0	250	
3	45	09	496.420	.13		1.58	302	80	110	6.0	250	
4	48	12	498.650	.13		1.58	295	80	110	6.0	250	
5	51	15	440.850	.15		1.89	282	80	110	13.0	250	
6	54	1418	443.300	.10		1.27	270	80	110	6.0	250	
START	54	1422	443.300									
A 1	57	25	445.600	.12		1.52	270	80	110	9.0	250	
2	60	28	447.800	.12		1.52	265	80	110	9.0	250	
3	63	31	450.000	.12		1.52	260	80	110	9.0	250	
4	66	34	452.300	.12		1.55	260	80	110	12.0	250	
5	69	37	454.800	.15		1.92	250	80	110	12.0	250	
6	72	1440	457.300	.15		1.92	250	80	110	12.0	250	
			52.30		.347	1.44	307.5		111			

	90	95	100	270	12.7
300	12.1	12.2	12.3	280	12.6
310	12.0	12.1	12.2	290	12.4

Raw Mill down @ START

Raw Mill on line @ 1400 hrs —

B-6

QUALITY ASSURANCE
FORM

QAF No.: S-100
Revision: Two
Originator: Werden
Approved: [illegible]
Effective Date:
June 1, 1982

GAS ANALYSIS FOR EXCESS AIR AND DRY MOLECULAR WEIGHT

Project No.: 10-027-01 Date: 5-24-84

Client: Southwestern Cement Test No.: TWO

Plant: Leamington 24-Hour Start: 1317

Unit: Kiln 24-Hour End: 1440

Location: Outlet Operator: [illegible]

Sampling Method

____ Single-Point, Grab

____ Single-Point, Integrated

✓ Multi-Point, Integrated

Analytical Method

✓ Orsat

____ C.E.M.S.

All results determined on a dry volume basis.

Acquired Data

Gas	Run No. 1	2	3
CO_2	15.6	15.6	15.6
O_2	25.6	25.6	25.6
CO			

Average Results

% Carbon Dioxide	15.6
% Oxygen	10.0
% Carbon Monoxide	

QUALITY ASSURANCE FORM

PARTICULATE SAMPLING DATA

EPA REFERENCE METHOD 5/8/17

PAGE 1 OF

Q.A.F.: S-042
REVISION: FOUR
ORIGINATOR: WERDEN
APPROVED:
EFFECTIVE DATE: 3/23/82

TEST ID

PROJECT NO. 10-027-01
CLIENT Southwestern Cement
PLANT Lemmington
UNIT Kiln
LOCATION Outlet
CONDITION 140 TPH
DATE 5-24-84
TEST RUN ID THREE
OPERATORS [illegible]

EQUIPMENT ID

CONTROL UNIT Δ-9
SAMPLE UNIT S-9
D.T.I./M-M Dorii
NOZZLE .380
PROBE W.C. #1
PITOT TUBE W.C. #1
BAROMETER
PROBE SPECIFICATIONS
LINER MATERIAL SS
EFFECTIVE LENGTH 7ft
HEATER TEMP., °F 250°F
FILTER ID
HEATER TEMP., °F 250°F

LEAK-TEST DATA

INITIAL RATE
PITOT (-) OK
PITOT (+) OK
NOZZLE (-) <0.01@15"
ORIFICE (+) OK
FINAL RATE
PITOT (-) OK
PITOT (+) OK
NOZZLE (-) <0.01@15"
ORIFICE (+) OK

SAMPLE RATE DATA

CP
Δ HA
TM, °F
%H2O
PB, IN. HG
PSG, IN. H2O
TS, °F
DN, IN.

STACK DIMENSIONS

STACK PRESSURE DATA

PB, IN. HG 25.20
PSG, IN. H2O -.20

TS, °F

K3				
TM, °F				

H.P. DATA ENTRY

ΔH, IN. H2O
VM, C.F.
TM, °F
METER YD
H2O, G
TS, °F
√ΔP, IN. H2O
DN, IN.
% CO2
% O2
% N2
P.T. CP
TIME, MIN.
FD-FACTOR

MOISTURE DATA

	GROSS, G	TARE, G	NET, G
1	125	100	25
2	110	100	10
3	5	000	5
4	388.5	362.1	26.4
T			

PARTICULATE CATCH

PARTIAL, MG
TOTAL, MG

See Test #2

SAMPLE POINT LOCATION

57949 57950 57951

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm), ft³	Velocity Head Δp	Velocity Head √Δp	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F		
	0	1515	458.000											
A 1	3	18	460.150	.10		1.27	270	80	110	6.0	250	ICED		
2	6	21	462.300	.10		1.38	270	80	110	6.0	250	←		
3	9	24	464.450	.12		1.54	250	80	110	7.0	250	ICED		
4	12	27	466.600	.12		1.54	248	80	110	7.0	250	↓		
5	15	30	468.750	.12		1.56	240	80	110	7.0	250			
6	18	1533	471.250	.12		1.56	240	80	110	7.0	250			
START	18	1535	471.250											
B 1	21	38	473.560	.13		1.69	230	80	110	8.0	250			
2	24	41	475.865	.13		1.69	230	80	110	8.0	250			
3	27	44	478.170	.13		1.69	228	80	110	8.0	250			
4	30	47	480.480	.13		1.69	228	80	110	8.0	265			
5	33	50	482.900	.14		1.82	225	80	110	8.0	265			
6	36	1553	485.300	.14		1.82	225	80	110	8.0	265			
	36	1555	485.300											
C 1	39	58	487.500	.10		1.31	220	80	100	9.0	265			
2	42	1601	489.690	.10		1.57	246	80	100	9.0	250			
3	45	04	491.880	.10		1.57	246	80	98	9.0	250			
4	48	07	494.050	.10		1.57	246	80	98	9.0	250			
5	51	10	496.250	.12		1.57	252	80	96	9.0	250			
6	54	1613	498.480	.12		1.57	258	80	96	9.0	250			
	54	1615												
D 1	57	18												
2	60	21												
3	63	24												
4	66	27												
5	69	30												
6	72	1633												
			40.480		.318	1.57	241.8		93					

270 12.7

QUALITY ASSURANCE
FORM

QAF No.: S-100
Revision: Two
Originator: Werden
Approved: [illegible]
Effective Date:
June 1, 1982

GAS ANALYSIS FOR EXCESS AIR AND DRY MOLECULAR WEIGHT

Project No.: 10-027-01 Date: 5-24-84

Client: Southwestern Cement Test No.: THREE

Plant: Lemmington 24-Hour Start: 1515

Unit: Kiln 24-Hour End: 1613

Location: Outlet Operator: [illegible]

Sampling Method

____ Single-Point, Grab

____ Single-Point, Integrated

✓ Multi-Point, Integrated

Analytical Method

✓ Orsat

____ C.E.M.S.

All results determined on a dry volume basis.

Acquired Data

Gas	Run No. 1	2	3
CO_2	15.8	15.8	15.9
O_2	25.9	25.9	25.9 ?
CO			

Average Results

% Carbon Dioxide	15.8
% Oxygen	10.1
% Carbon Monoxide	

QUALITY ASSURANCE
FORM

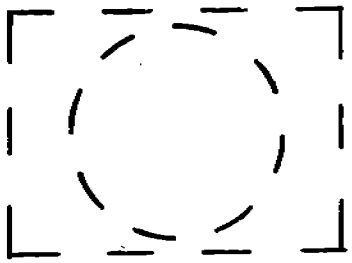
QAF S110
Revision: One
Originator: Werden
Approved: JEZ
Effective Date: 4/1/82

0900 cm in
JEZ

NITROGEN OXIDE FIELD DATA

Project 10-027-01
Client SOUTHWESTERN CEMENT
Plant LEAMINGTON
Unit KILN Raw Mill ON
Location STACK
Conditon 140 TPH

	Sample Data	Recovery Data
Date	5-25-84	5-26-84
Pb, in. Hg	25.20	25.30
Barometer ID		
Operator	JEZ	JEZ



SAMPLE POINT LOCATION

Sample Number	Sample Point	Sample Time	Flask Number	Flask Volume (ml)	Flask Pressure, in. Hg Initial Diff.	Initial Abs.	Final Diff.	Final Abs.	Flask Temperature, °F Initial	Final	Recovery Time	
1A	A-1	0917	4		-22.50	2.7	-1.8		76	72	0912	56954
1B	↓	0927	23		-23.00	2.2	-0.6		76	72	0910	56955
1C	↓	0937	27		-23.00	2.2	-1.8		73	72	0908	56956
1D	↓	0947	22		-23.00	2.2	-1.8		76	72	0906	56957
2A	↓	0957	9		-23.00	2.2	-1.5		78	75	0856	56958
B	↓	1007	7		-23.00	2.2	-2.0		78	75	0852	56959
C	↓	1017	33		-23.60		-2.0		80	75	0850	56960
D	↓	1027	25		-23.40		-1.7		78	75	0854	56961
3A	↓	1037	28		-22.80		-1.4		73	72	0904	56962
B	↓	1047	5		-23.20		-1.7		72	72	0858	56963
C	↓	1057	14		-23.30		-1.5		74	72	0900	56964
D	↓	1107	36		-23.30		-2.4		68	72	0902	56965

Blank 56966

QUALITY ASSURANCE FORM

PARTICULATE SAMPLING DATA

EPA REFERENCE METHOD 5/8/17

PAGE 1 OF

Q.A.F.: S-042
REVISION: FOUR
ORIGINATOR: WERDEN
APPROVED:
EFFECTIVE DATE: 3/23/82

TEST ID

PROJECT NO. 10-027-01
CLIENT Southwestern Cement
PLANT Lemmington
UNIT Alkali By Pass
LOCATION Outlet
CONDITION 140 TPH
DATE 5-26-84
TEST RUN ID ONG
OPERATORS DZ/MW

EQUIPMENT ID

CONTROL UNIT D-9
SAMPLE UNIT S-9
D.T.I./M-M Doric
NOZZLE .360
PROBE W.C #1
PITOT TUBE W.C #1
BAROMETER
PROBE SPECIFICATIONS
LINER MATERIAL SS
EFFECTIVE LENGTH 7ft
HEATER TEMP., °F 250
FILTER ID
HEATER TEMP., °F 250

LEAK-TEST DATA

INITIAL RATE
PITOT (-) OK
PITOT (+) OK
NOZZLE (-) 0.005@15
ORIFICE (+) OK
FINAL RATE
PITOT (-) OK
PITOT (+) OK
NOZZLE (-) 0.005@10"
ORIFICE (+) OK

SAMPLE RATE DATA

CP
Δ HA
TM, °F
%H2O
PB, IN. HG
PSG, IN. H2O
TS, °F
DN, IN.

STACK DIMENSIONS

STACK PRESSURE DATA

PB, IN. HG 25.30
PSG, IN. H2O -.30

TS, °F

K3			
TM, °F			

H.P. DATA ENTRY

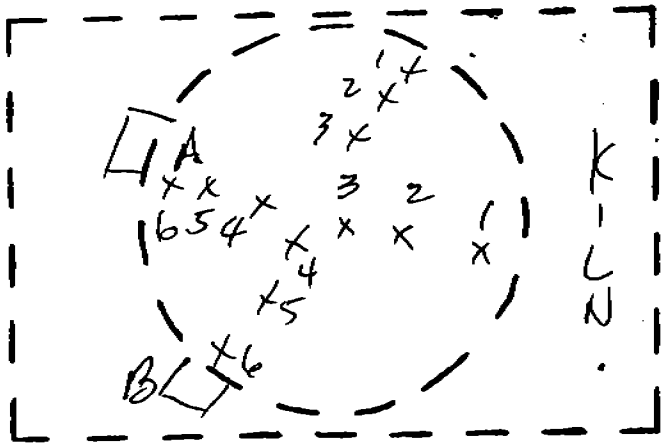
ΔH, IN. H2O
VM, C.F.
TM, °F
METER YD
H2O, G
TS, °F
√ΔP, IN. H2O
DN, IN.
% CO2
% O2
% N2
P.T. CP
TIME, MIN.
FD-FACTOR

MOISTURE DATA

	GROSS, G	TARE, G	NET, G
1	130	100	30
2	120	100	20
3	5	000	5
4	349.4	328.1	21.3
T			

PARTICULATE CATCH

PARTIAL, MG
TOTAL, MG



SAMPLE POINT LOCATION

57952 57953 57954

	60	70	100
260	11.1	11.3	11.5
70	10.9	11.1	11.3
80	10.8	11.0	11.2

255

TEST #1 Alcoa Outlet

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm), ft³	Velocity Head Δp	Velocity Head √Δp	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F		
	0	0845	523.000											
A 1	5	50	526.900	.17		1.88	261	80	80	8.0	250			
2	10	55	530.800	.16		1.81	264	80	80	8.0	250			
3	15	900	534.750	.17		1.88	266	80	80	8.0	250			
4	20	05	538.400	.13		1.43	267	80	80	6.0	250			
5	25	10	541.950	.13		1.43	266	80	80	6.0	250			
6	30	15	545.450	.12		1.32	268	80	80	6.0	250			
START		920	545.450											
B 1	35	25	548.970	.13		1.43	263	80	80	6.0	250			
2	40	30	552.300	.10		1.10	259	78	82	5.0	250			
3	45	35	555.830	.13		1.43	266	78	84	6.0	250			
4	50	40	559.600	.15		1.65	268	76	84	7.0	250			
5	55	45	563.450	.16		1.76	268	76	84	8.0	250			
6	60	0950	567.400	.16		1.76	268	76	84	8.0	250			
			44.400		.376	1.57	265.3	80.1						

QUALITY ASSURANCE
FORM

QAF No.: S-100
Revision: Two
Originator: Werden
Approved: [illegible]
Effective Date:
June 1, 1982

GAS ANALYSIS FOR EXCESS AIR AND DRY MOLECULAR WEIGHT

Project No.: 10-027-01
Date: 5-26-84
Client: Southwestern Cement
Test No.: ONE
Plant: Leamington
24-Hour Start: 0845
Unit: Alkali By-Pass
24-Hour End: 0950
Location: Outlet
Operator: Zuzolo

Sampling Method

_____ Single-Point, Grab

_____ Single-Point, Integrated

P Multi-Point, Integrated

Analytical Method

✓ Orsat

_____ C.E.M.S.

All results determined on a dry volume basis.

Acquired Data

Gas	Run No. 1	2	3
CO_2	2.0	2.0	2.0
O_2	19.90	19.9	19.9
CO			

Average Results

% Carbon Dioxide	2.0
% Oxygen	17.90
% Carbon Monoxide	

QUALITY ASSURANCE FORM

Q.A.F.: S-042
REVISION: FOUR
ORIGINATOR: WERDEN
APPROVED:
EFFECTIVE DATE: 3/23/82

PARTICULATE SAMPLING DATA

EPA REFERENCE METHOD 5/8/17

PAGE 1 OF

TEST ID

PROJECT NO. 10-027-01
CLIENT Southwestern Cement
PLANT Leamington
UNIT Alkali By Pass
LOCATION Outlet
CONDITION 140 TPH
DATE 5-26-84
TEST RUN ID TWO
OPERATORS JZ/MW

EQUIPMENT ID

CONTROL UNIT A-9
SAMPLE UNIT 5-9
D.T.I./M-M Dorii
NOZZLE .360
PROBE W.L. #1
PITOT TUBE W.L. #1
BAROMETER
PROBE SPECIFICATIONS
LINER MATERIAL SS
EFFECTIVE LENGTH 3 ft
HEATER TEMP., °F 250 °F
FILTER ID
HEATER TEMP., °F 250°F

LEAK-TEST DATA

INITIAL RATE
PITOT (-) O.K
PITOT (+) O.K
NOZZLE (-) <0.005@15"
ORIFICE (+) OK
FINAL RATE
PITOT (-) O.K
PITOT (+) O.K
NOZZLE (-) <0.005@15"
ORIFICE (+) O.K

SAMPLE RATE DATA

CP
Δ HA
TM, °F
%H2O
PB, IN. HG
PSG, IN. H2O
TS, °F
DN, IN.

STACK DIMENSIONS

STACK PRESSURE DATA

PB, IN. HG 25.30
PSG, IN. H2O -3

	TS, °F			
K3				
TM, °F				

H.P. DATA ENTRY

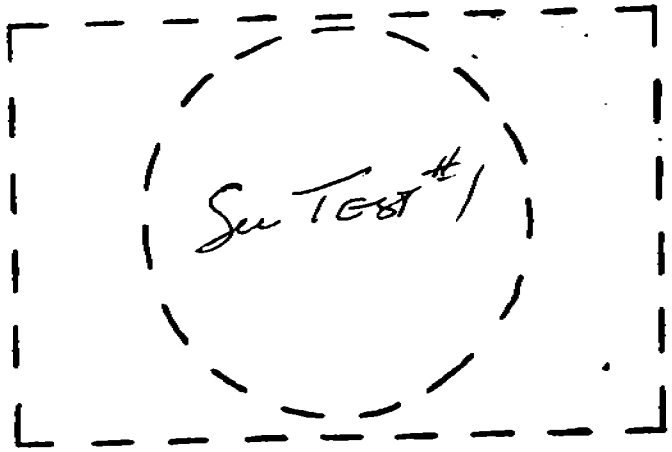
ΔH, IN. H2O
VM, C.F.
TM, °F
METER YD
H2O, G
TS, °F
√ΔP, IN. H2O
DN, IN.
% CO2
% O2
% N2
P.T. CP
TIME, MIN.
FD-FACTOR

MOISTURE DATA

	GROSS, G	TARE, G	NET, G
1	138	100	38
2	120	100	20
3	002	000	2
4	383.8	361.8	22
T			

PARTICULATE CATCH

PARTIAL, MG
TOTAL, MG



SAMPLE POINT LOCATION

57943 57944 57945

TEST #2

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm), ft³	Velocity Head Δp	Velocity Head √Δp	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F		
	0	1020	567.700											
A 1	5	25	571.850	.17		1.87	259	76	86	6.0	250			
2	10	30	576.010	.17		1.87	260	76	86	6.0	250			
3	15	35	579.670	.13		1.43	260	76	86	4.0	250			
4	20	40	583.330	.13		1.43	263	76	86	4.0	250			
5	25	45	586.990	.13		1.43	263	76	86	4.0	250			
6	30	1050	590.650	.13		1.43	263	76	86	4.0	250			
START		1055	590.650											
B 1	35	1100	593.880	.10		1.10	259	76	86	3.0	250			
2	40	1105	597.510	.13		1.43	263	76	88	4.0	250			
3	45	1110	601.180	.13		1.43	265	76	88	4.0	250			
4	50	15	604.830	.13		1.43	265	76	88	4.0	250			
5	55	20	608.850	.16		1.76	265	76	88	6.0	250			
6	60	1125	612.860	.16		1.76	270	78	88	6.0	250			
			45.160		.372	1.53	262.9		81.5					

QUALITY ASSURANCE
FORM

QAF No.: S-100
Revision: Two
Originator: Werden
Approved: JKB
Effective Date:
June 1, 1982

GAS ANALYSIS FOR EXCESS AIR AND DRY MOLECULAR WEIGHT

Project No.: 10-027-01 **Date:** 5-26-84

Client: Southwestern Cement **Test No.:** TWO

Plant: Leamington **24-Hour Start:** 1020

Unit: Alkali By Pass **24-Hour End:** 1125

Location: Oatley **Operator:** Zuzolo

Sampling Method

_____ Single-Point, Grab

_____ Single-Point, Integrated

✓ Multi-Point, Integrated

Analytical Method

✓ Orsat

_____ C.E.M.S.

All results determined on a dry volume basis.

Acquired Data

Gas	Run No. 1	Run No. 2	Run No. 3
CO_2	1.8	1.8	1.8
O_2	19.9	19.9	19.9
CO			

Average Results

% Carbon Dioxide	1.8
% Oxygen	18.10
% Carbon Monoxide	

QUALITY ASSURANCE FORM

PARTICULATE SAMPLING DATA

EPA REFERENCE METHOD 5/8/17

PAGE 1 OF

Q.A.F.: S-042
REVISION: FOUR
ORIGINATOR: WERDEN
APPROVED:
EFFECTIVE DATE: 3/23/82

TEST ID

PROJECT NO. 10-027-01
CLIENT Southeastern Cement
PLANT Leamington
UNIT Alkali By Pass
LOCATION Outlet
CONDITION 140 TPH
DATE 5-26-84
TEST RUN ID THREE
OPERATORS [illegible]

EQUIPMENT ID

CONTROL UNIT A-9
SAMPLE UNIT S-9
D.T.I./M-M Dorin
NOZZLE .360
PROBE W.C. #1
PITOT TUBE W.C. #1
BAROMETER
PROBE SPECIFICATIONS
LINER MATERIAL SS
EFFECTIVE LENGTH 7ft
HEATER TEMP., °F 250°F
FILTER ID
HEATER TEMP., °F 250°F

LEAK-TEST DATA

INITIAL RATE
PITOT (-) O.K.
PITOT (+) O.K.
NOZZLE (-) <0.01@15"
ORIFICE (+) O.K.
FINAL RATE
PITOT (-) O.K.
PITOT (+) O.K.
NOZZLE (-) <0.01@15"
ORIFICE (+) O.K.

SAMPLE RATE DATA

CP
Δ HA
TM, °F
%H2O
PB, IN. HG
PSG, IN. H2O
TS, °F
DN, IN.

STACK DIMENSIONS

STACK PRESSURE DATA

PB, IN. HG 25.30
PSG, IN. H2O -.30

TS, °F

K3			
TM, °F			

H.P. DATA ENTRY

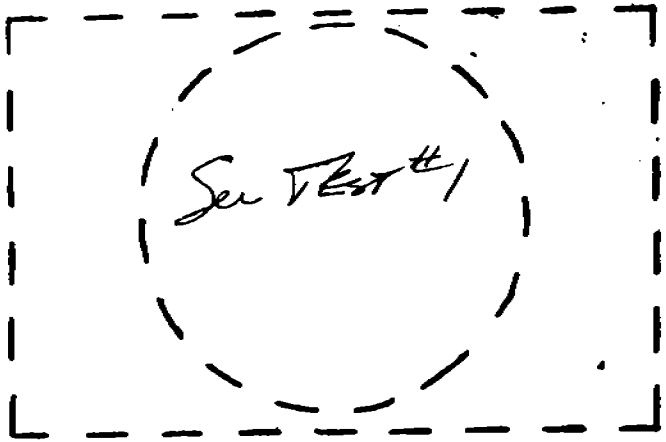
ΔH, IN. H2O
VM, C.F.
TM, °F
METER YD
H2O, G
TS, °F
√ΔP, IN. H2O
DN, IN.
% CO2
% O2
% N2
P.T. CP
TIME, MIN.
FD-FACTOR

MOISTURE DATA

	GROSS, G	TARE, G	NET, G
1	125	100	25
2	115	100	15
3	005	000	5
4	368.0	343.4	25.4
T			

PARTICULATE CATCH

PARTIAL, MG
TOTAL, MG



SAMPLE POINT LOCATION

57946 57947 57948

TEST #3

245

Traverse Point Number	Sampling Time, min.	Clock Time	Gas Meter Reading (Vm), ft³	Velocity Head Δp	Velocity Head √Δp	Orifice Pressure (ΔH)	Stack Temp. (Ts), °F	Dry Gas Meter Temperature Inlet	Dry Gas Meter Temperature Outlet	Pump Vacuum in Hg	Sample Box Temp. °F	Impinger Temp. °F		
	0	1200	613.300											
A1	5	05	617.230	.17		1.87	271	76	94	8.0	250			
2	10	10	621.380	.17		1.87	271	76	94	8.0	250			
3	15	15	625.120	.13		1.43	271	76	94	6.0	250			
4	20	20	628.860	.13		1.43	272	78	94	6.0	250			
5	25	25	632.600	.13		1.43	272	78	96	6.0	250			
6	30	1230	636.120	.12		1.33	272	78	98	6.0	250			
START		1235	636.120											
B1	35	40	639.690	.12		1.33	274	78	100	6.0	250			
2	40	45	643.410	.13		1.43	274	80	100	6.0	250			
3	45	50	647.170	.13		1.43	274	80	100	6.0	250			
4	50	55	650.850	.13		1.43	274	80	100	6.0	250			
5	55	1300	654.565	.13		1.43	275	82	102	6.0	250			
6	60	05	658.300	.13		1.43	275	82	102	6.0	250			

QUALITY ASSURANCE
FORM

QAF No.: S-100
Revision: Two
Originator: Werden
Approved: [illegible]
Effective Date:
June 1, 1982

GAS ANALYSIS FOR EXCESS AIR AND DRY MOLECULAR WEIGHT

Project No.: 10-027-01
Date: 5-26-84
Client: Southwestern Cement
Test No.: THREE
Plant: Leamington
24-Hour Start: 1200
Unit: Alkali By-Pass
24-Hour End: 1205
Location: Ourlet
Operator: [illegible]

Sampling Method

____ Single-Point, Grab

____ Single-Point, Integrated

✓ Multi-Point, Integrated

Analytical Method

✓ Orsat

____ C.E.M.S.

All results determined on a dry volume basis.

Acquired Data

Gas	Run No. 1	2	3
CO_2	1.8	1.8	1.8
O_2	19.9	19.9	19.9
CO			

Average Results

% Carbon Dioxide	1.8
% Oxygen	18.1
% Carbon Monoxide	

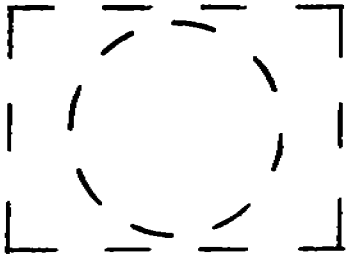
QUALITY ASSURANCE
FORM

QAF S110
Revision: One
Originator: Werden
Approved: [illegible]
Effective Date: 4/1/82

NITROGEN OXIDE FIELD DATA

Project 10-027-01
Client Southwestern Cement
Plant Alkali By Pass
Unit
Location Outlet
Conditon 140TPH

	Sample Data	Recovery Data
Date	5-26-84	5-27-84
Pb, in. Hg	25.30	25.35
Barometer ID		
Operator	[illegible]	



SAMPLE POINT LOCATION

Sample Number	Sample Point	Sample Time	Flask Number	Flask Volume (ml)	Flask Pressure, in. Hg Initial Diff.	Initial Abs.	Final Diff.	Final Abs.	Flask Temperature, °F Initial	Final	Recovery Time	
1A		0900	27		-22.30		-2.5		103	68	0700	5796
B		15	23		-22.30		-3.0		105	68	0705	5796
C		30	4		-22.50		-3.0		105	68	0710	5796
D		0945	22		-22.30		-2.0		102	68	0715	5796
2A		1000	28		-22.30		-2.0		103	68	0720	57965
B		15	36		-22.30		-1.0		100	68	0725	57966
C		30	14		-22.30		-1.2		95	68	0730	5796
D		1045	5		-22.30		-1.5		99	68	0735	57968
3A		1100	33		-22.40		-1.3		98	68	0740	57969
B		15	9		-22.30		-2.5		104	68	0745	5797
C		30	25		-22.30		-1.5		106	68	0750	57971
D		1145	7		-22.30		-2.3		105	68	0755	57972

APPENDIX C

LABORATORY DATA SHEETS

GRAVIMETRIC ANALYTICAL DATA

REV.: FOUR
EFF.: 2/5/8

PROJECT # 10-027-01
CLIENT Southwestern Cement
PLANT Leamington
LOCATION Kiln
TEST # ONE

DATE COMPLETED
COMMENTS :

FILTER(S)

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	FILTER I.D.	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57955	Mets Filter	Outlet	1	60272	0.4228	0.4048	0.0180

ACETONE WASHINGS

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	VOLUME ML	~~GROSS~~ TARE WT. ,G	~~TARE~~ GROSS WT. ,G	NET WT. ,G
57956	Mets F/2	Outlet	1	250	104.4316	104.4576	0.0260
57957	Mets B/2	Outlet	1	500	105.1211	105.1432	0.0221
ACETONE RESIDUE CORRECTION				TOT. VOL.	RES. CONC.	RES. ,G	TOT. NET ,G

NET GAIN, FILTER(S) 0.0180 G

NET GAIN, WASHINGS 0.0260 G

TOTAL GAIN, FRONT-HALF 0.0440 G

+ 0.0221

0.0661 B/H

QAF S-051
REV.: FOUR
EFF.: 2/5/82

GRAVIMETRIC ANALYTICAL DATA

PROJECT # 10-027-01
CLIENT SOUTHWESTERN CEMENT
PLANT LEAMINGTON
LOCATION KIN
TEST # TWO

DATE COMPLETED
COMMENTS :

FILTER(S)

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	FILTER I.D.	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57958	Mets Filter	Outlet	2	60274	0.4295	0.4195	0.0100

ACETONE WASHINGS

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	VOLUME ML	~~GROSS~~ TARE WT. ,G	~~TARE~~ GROSS WT. ,G	NET WT. ,G
57959	Mets F/2	Outlet	2	250	110.7711	110.7991	0.0280
57960	Mets B/2	Outlet	2	500	110.1234	110.1454	0.0220
ACETONE RESIDUE CORRECTION				TOT. VOL.	RES. CONC.	RES. ,G	TOT. NET ,G

NET GAIN, FILTER(S) 0.0100 G
NET GAIN, WASHINGS 0.0280 G
TOTAL GAIN, FRONT-HALF 0.0380 G
+0.0220
0.0600

GRAVIMETRIC ANALYTICAL DATA

REV.: FOUR
EFF.: 2/5/8

PROJECT # 10-027-01
CLIENT SOUTHWESTERN CEMENT
PLANT LEAMINGTON
LOCATION Kiln
TEST # THREE

DATE COMPLETED
COMMENTS :

FILTER(S)

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	FILTER I.D.	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57949	Mets Filt	Outlet	3	60297	.4258	.4164	0.0094

ACETONE WASHINGS

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	VOLUME ML	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57950	Mets F/2	Outlet	3	250	106.7323	106.7123	0.0200
57951	Mets B/2	Outlet	3	500	111.1169	111.1000	0.0169
ACETONE RESIDUE CORRECTION				TOT. VOL.	RES. CONC.	RES. ,G	TOT. NET ,G

NET GAIN, FILTER(S) 0.0094 G

NET GAIN, WASHINGS 0.0200 G

TOTAL GAIN, FRONT-HALF 0.0294 G

+0.0169

0.0463

QAF S-051
REV. : FOUR
EFF. : 2/5/82

GRAVIMETRIC ANALYTICAL DATA

PROJECT # 10-027-01
CLIENT SOUTHWESTERN CEMENT
PLANT LEAMINGTON
LOCATION Alkali By-Pass
TEST # ONE

DATE COMPLETED
COMMENTS :

FILTER(S)

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	FILTER I.D.	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57952	Mtrs Filter	Outlet	1	60305	0.4135	0.4063	0.0072

ACETONE WASHINGS

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	VOLUME ML	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57953	Mtrs F/2	Outlet	1	250	113.2250	113.2140	0.0110
57954	Mtrs B/2	Outlet	1	500	101.6278	101.6174	0.0104
ACETONE RESIDUE CORRECTION				TOT. VOL.	RES. CONC.	RES. ,G	TOT. NET ,G

NET GAIN, FILTER(S) 0.0072 G
NET GAIN, WASHINGS 0.0110 G
TOTAL GAIN, FRONT-HALF 0.0182 G
+0.0104
0.0284

GRAVIMETRIC ANALYTICAL DATA

PROJECT # 10-027-01
CLIENT Southwestern Cement
PLANT Leamington
LOCATION Alkali-By Pass
TEST # TWO

DATE COMPLETED
COMMENTS :

FILTER(S)

SAMPLE I.D. SAMPLE TYPE TEST LOC. TEST #	FILTER I.D.	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57943 Mat 5 Filter Outlet 2	60304	0.4280	0.4209	0.0071

ACETONE WASHINGS

SAMPLE I.D. SAMPLE TYPE TEST LOC. TEST #	VOLUME ML	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57944 Mat 5 F/2 Outlet 2	250	113.0172	113.0100	0.0072
57945 Mat 5 B/2 Outlet 2	500	109.6242	109.6217	0.0075
ACETONE RESIDUE CORRECTION	TOT. VOL.	RES. CONC.	RES. ,G	TOT. NET ,G

NET GAIN, FILTER(S) 0.0071 G
NET GAIN, WASHINGS 0.0072 G
TOTAL GAIN, FRONT-HALF 0.0143 G
+0.0075
0.0218

GRAVIMETRIC ANALYTICAL DATA

QAF S-051
REV.: FOUF
EFF.: 2/5/8

PROJECT # 10-027-01
CLIENT Southwestern Cement
PLANT Leamington
LOCATION Alkali By-Pass
TEST # THREE

DATE COMPLETED
COMMENTS :

FILTER(S)

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	FILTER I.D.	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57946	Alkali By-Pass	Outlet	3	60269	0.4112	0.4049	0.0063

ACETONE WASHINGS

SAMPLE I.D.	SAMPLE TYPE	TEST LOC.	TEST #	VOLUME ML	GROSS WT. ,G	TARE WT. ,G	NET WT. ,G
57947	Alkali F/2	Outlet	3	250	114.6790	114.6713	0.0077
57948	Alkali B/2	Outlet	3	500	100.7098	100.7010	0.0080
ACETONE RESIDUE CORRECTION				TOT. VOL.	RES. CONC.	RES. ,G	TOT. NET ,G

NET GAIN, FILTER(S) 0.0063 G
NET GAIN, WASHINGS 0.0077 G
TOTAL GAIN, FRONT-HALF 0.0140 G
+0.0080
0.0220

QUALITY ASSURANCE FORM

PAGE 1 OF 4

QAF NO.: 8-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01
Client: SOUTHWESTERN CEMENT
Plant: LEAMINGTON
Unit: KILN

Test Date: 5-25-84
Analysis Date: 5-29-84
Spectrophotometer ID:
Chemist: Zuzolo

SAMPLE ID	SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
STANDARDIZATION 0.0	50/25	2	—	0.0
STANDARDIZATION 100 MG	50/25	2	—	0.07
STANDARDIZATION 200 MG	50/25	2	—	0.120
STANDARDIZATION 300 MG	50/25	2	—	0.238
STANDARDIZATION 400 MG	50/25	2	—	0.570

QUALITY ASSURANCE FORM

PAGE 2 OF 4

QAF NO.: 8-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01
Client: SOUTHWESTERN CEMENT
Plant: LEAMINGTON
Unit: KILN

Test Date: 5-25-84
Analysis Date: 5-29-84
Spectrophotometer ID:
Chemist: Zuzolo

SAMPLE ID				SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
56954	Mtr #4	Outlet	1A	50/10	5.	—	.380
56955	Mtr 7 #23	Outlet	1B	50/10	5	—	.320
56956	Mtr 7 #27	Outlet	1C	50/10	5	—	.320
56957	Mtr 7 #22	Outlet	1D	50/10	5	—	.362

QUALITY ASSURANCE FORM

PAGE 3 OF 4

QAP NO.: B-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01
Client: SOUTHWESTERN CEMENT
Plant: LEAMINGTON
Unit: KILN

Test Date: 5-25-84
Analysis Date: 5-24-84
Spectrophotometer ID:
Chemist: Zuzolo

SAMPLE ID	SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
56958 Mtr 7 #9 Outlet 2A	50/10	5	—	.370
56959 Mtr 7 #7 Outlet 2B	50/10	5	—	.384
56960 Mtr 7 #33 Outlet 2C	50/10	5	—	.360
56961 Mtr 7 #35 Outlet 2D	50/10	5	—	.380

QUALITY ASSURANCE FORM

QAF NO.: B-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01
Client: Southwestern Cement
Plant: Lemmington
Unit: Kiln

Test Date: 5-25-84
Analysis Date: 5-29-84
Spectrophotometer ID:
Chemist: Zuzolo

SAMPLE ID				SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
56962	Mat 7 #28	Outlet	3A	50/10	5	—	.351
56963	Mat 7 #5	Outlet	3B	50/10	5	—	.360
56964	Mat 7 #4	Outlet	3C	50/10	5	—	.368
56965	Mat 7 #36	Outlet	3D	50/10	5	—	.342

QUALITY ASSURANCE
FORM

PAGE 1 OF 3

QAF NO.: 8-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01
Client: SOUTHWESTERN CEMENT
Plant: LEAMINGTON
Unit: Alkali By-Pass

Test Date: 5-26-84
Analysis Date: 5-30-84
Spectrophotometer ID:
Chemist: Zuzolo

SAMPLE ID				SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
57961	Mix 7 #27	Outlet B/P	1A	50/10	5	—	.230
57962	Mix 7 #23	Outlet B/P	1B	50/10	5	—	.235
57963	Mix 7 #4	Outlet B/P	1C	50/10	5	—	.231
57964	Mix 7 #22	Outlet B/P	1D	50/10	5	—	.255

QUALITY ASSURANCE FORM

PAGE 2 OF 3

QAP NO.: 8-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01

Client: SOUTHWESTERN CEMENT

Plant: FERMINGTON

Unit: Alkali By-Pass

Test Date: 5-26-84

Analysis Date: 5-30-84

Spectrophotometer ID:

Chemist: Zuzolo

SAMPLE ID				SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
57965	Mat 7 #28	Outlet B/P	2A	50/10	5	—	.230
57966	Mat 7 #36	Outlet B/P	2B	50/10	5	—	.245
57967	Mat 7 #14	Outlet B/P	2C	50/10	5	—	.220
57968	Mat 7 #5	Outlet B/P	2D	50/10	5	—	.235

QUALITY ASSURANCE
FORM

PAGE 3 OF 3

QAF NO.: 8-151
Revision: One
Originator: Werden
Approved:
Effective Date: 7-1-82

NITROGEN OXIDES SAMPLE SPECTROPHOTOMETRIC ANALYSIS

Project No.: 10-027-01
Client: SOUTHWESTERN CEMENT
Plant: LEAMINGTON
Unit: Alkali By-Pass

Test Date: 5-26-84
Analysis Date: 5-30-84
Spectrophotometer ID:
Chemist: Zuzolo

SAMPLE ID				SAMPLE VOLUME	ALIQUOT FACTOR	FURTHER DILUTION	ABSORBANCE AT 410 nm
57969	Mtr 7 #33	Outlet B/P	3A	50/10	5	—	.240
57970	Mtr 7 #9	Outlet B/P	3B	50/10	5	—	.230
57971	Mtr 7 #25	Outlet B/P	3C	50/10	5	—	.225
57972	Mtr 7 #7	Outlet B/P	3D	50/10	5	—	.240

APPENDIX D

CALIBRATION

QUALITY ASSURANCE
FORM

QAF C-1001
Revision: One
Originator: Werden
Approved: JCZ
Effective Date: 4/1/82

DRY GAS METER/ORIFICE CALIBRATION DATA

RAC Box ID 0-9 Date 4-23-84 Operator JCZ

Standard Meter ID 696552 Pb, in. Hg 24.76

ΔH = 0.5 in.H_2O Vacuum = 0 in. Hg

	Time	Standard Volume	Temperature In	Temperature Out	RAC Volume	Temperature In	Temperature Out
10:21	0	989.970			260.235		
	5		63	63		87	71
	10		63	63		89	73
	15		64	64		90	75
	20	999.012	64	64	269.890	92	77
		Total= 9.042	Ave.=63.5		Total=9.655	Ave.=	

ΔH = 1.0 in.H_2O Vacuum = 0 in. Hg

	Time	Standard Volume	Temperature In	Temperature Out	RAC Volume	Temperature In	Temperature Out
10:42	0	999.012			269.890		
	5		64	64		96	79
	10		64	64		98	81
	15		64	64		99	82
	20	1011745	64	64	283.364	101	83
		Total= 12.733	Ave.= 64		Total= 13.474	Ave.= 90	

ΔH = 2.0 in.H_2O Vacuum = 0 in. Hg

	Time	Standard Volume	Temperature In	Temperature Out	RAC Volume	Temperature In	Temperature Out
11.06	0	11.745			283.391		
	5		65	65		104	85
	10		65	65		106	86
	15		64	64		107	87
	20	29.504	64	64	301.898	108	88
		Total= 17.759	Ave.= 64.5		Total= 18.507	Ave.= 96	

QUALITY ASSURANCE
FORM

QAF C-1002
Revision: Two
Originator: Werden
Approved: [illegible]
Effective Date: 4/1/82

DRY GAS METER/ORIFICE CALIBRATION CALCULATION

Approximate Flow Rate	Manometer Orifice ΔH	STANDARD METER DATA				RAC UNIT METER DATA				Time θ (min)	$\Delta H@$	Yd
		Std. Meter Gas Volume CF_w	Inlet T_{wi}	Outlet T_{wo}	Average T_w °F	RAC Unit Meter Gas Vol. CF_d	Inlet T_{dsi}	Outlet T_{do}	Average T_d °F			
0.48	0.5	9.042	63.5	63.5	63.5	9.655	89.5	74	82	20	1.584	.968
0.67	1.0	12.733	64	64	64	13.474	98.5	81	90	20	1.577	.989
0.93	2.0	17.759	64.5	64.5	64.5	18.507	106	87	96	20	1.607	1.011
										AVERAGE	1.589	.989

RAC Box ID D-9
Standard Meter ID 696552
Pb, in. Hg 24.76
Barometer ID lab Hg
Date 4-23-84
Operator JCZ

Calculations:

$$H@ = \frac{0.0317\Delta H}{Pb(Td + 460)} \left(\frac{(T_w + 460)\theta}{CF_w}\right)^2$$

$$Yd = \frac{CF_w \cdot Pb \cdot (Td + 460)}{CF_d\left(Pb + \frac{\Delta H}{13.6}\right)(T_w + 460)}$$

York Research Consultants

Pitot Tube Calibration

	ΔP_{std}	ΔP_s	$\frac{\Delta P_{std}}{\Delta P_s}$	F_s
a	.07	.10		0.828
b	.07	.10		0.828
a	.54	.76		0.835
b	.54	.76		0.835
a	.54	.76		0.835
b	.54	.76		0.835
a	.68	.96		0.833
b	.68	.96		0.833
a	.68	.96		0.833
b	.68	.96		0.833

$$F_s = F_{std}\sqrt{\frac{P_{std}}{P_s}}$$

$F_{std} = 0.99$

Pitot Tube # 1

Low F_s = a 0.828 , b 0.828

Mid F_s = a 0.835 , b 0.835

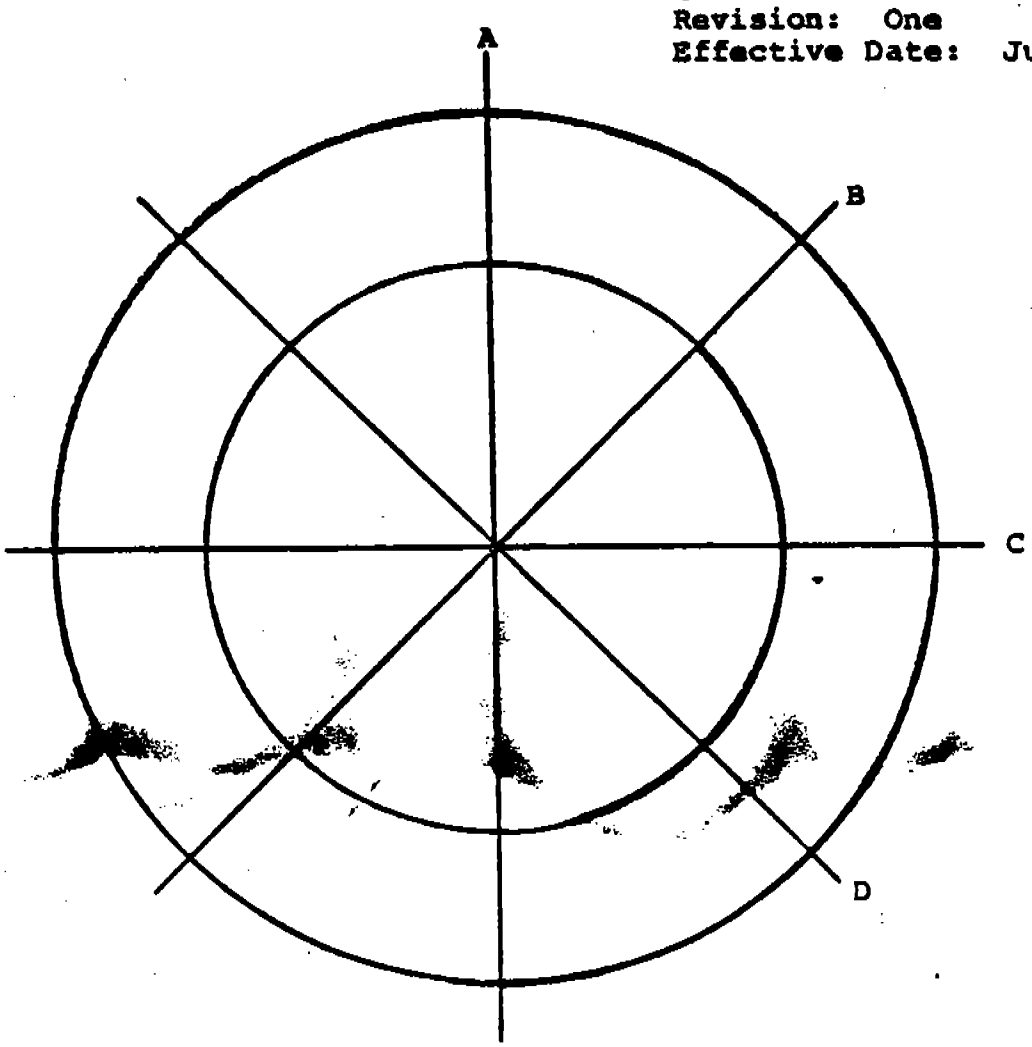
High F_s = a 0.833 , b 0.833

Calibrated by 4-24-84

Date JCZ

REFERENCE METHOD 7
NITROGEN OXIDES SAMPLING FLASK CALIBRATION

FLASK NO.	TOTAL VOLUME, ml	FLASK NO.	TOTAL VOLUME, ml
1	2047	26	2021
2	2043	27	2044
3	2030	28	2075
4	2014	29	2053
5	2025	30	2015
6	----	31	2089
7	2060	32	2004
8	2016	33	2019
9	2043	34	2021
10	2034	35	2089
11	2058	36	2054
12	2062	37	2034
13	2039	38	2078
14	2029	39	2033
15	2022	101	1974
16	2057	102	2060
17	2045	103	1973
18	2033	104	2043
19	2046	105	2048
20	2030	106	1943
21	2025	107	2024
22	2049	108	1914
23	2046	109	2068
24	2078	110	1945
25	2037		



Nozzle Measurements:

Before Testing:

A .380

B .380

C .380

D .380

After Testing:

A .380

B .380

C .380

D .380

Average Nozzle Size

Before Testing

$\frac{A+B+C+D}{4}$ = .380

After Testing

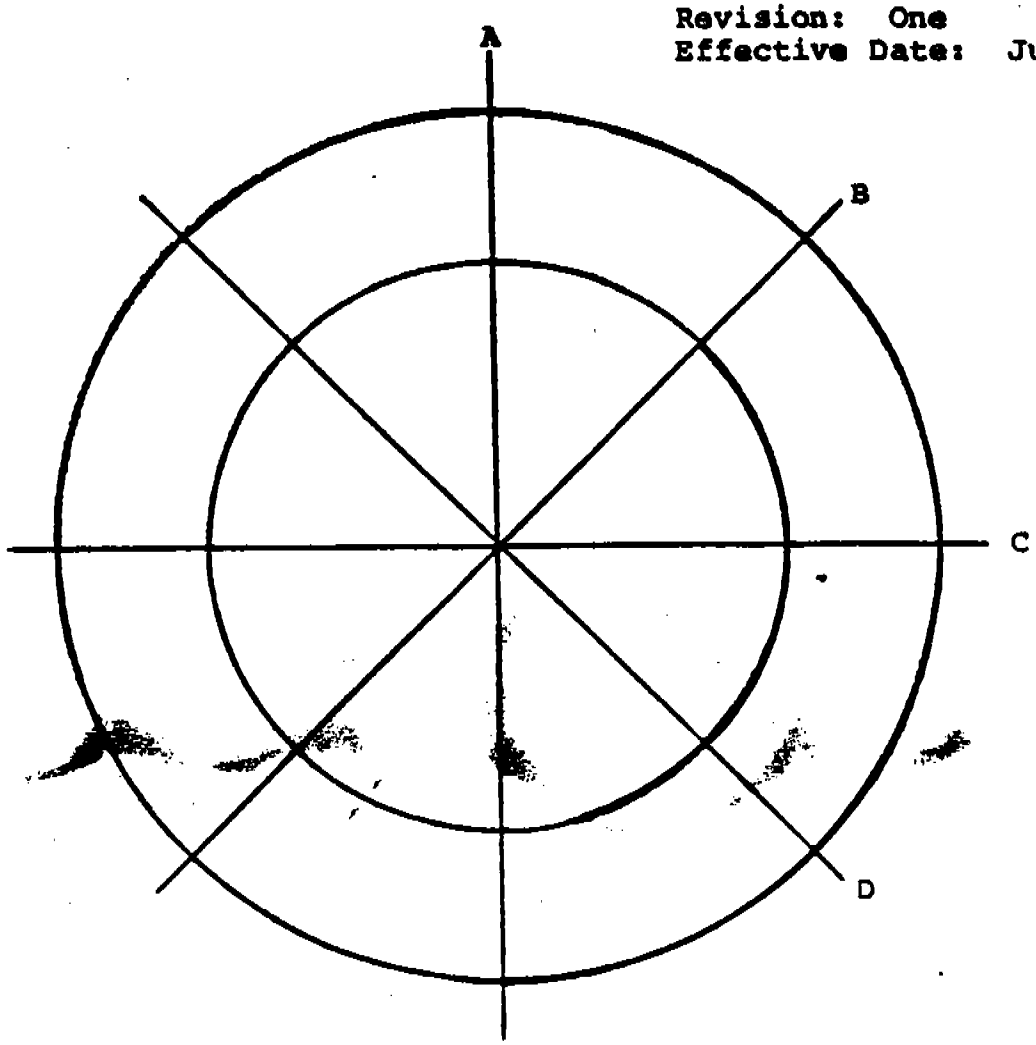
$\frac{A+B+C+D}{4}$ = .380

Nozzle # 79-380

Calibrated by 23

Date 5-23-84 / 5-24-84

Kelm



Nozzle Measurements:

Before Testing:

A .360

B .360

C .360

D .360

After Testing:

A .360

B .360

C .360

D .360

Average Nozzle Size

Before Testing

$\frac{A+B+C+D}{4}$ = .360

After Testing

$\frac{A+B+C+D}{4}$ = .360

Nozzle # 82-350

Calibrated by [illegible]

Date 5-26-84

[illegible]

APPENDIX E

PLANT OPERATING REPORTS
-- MAY 24, 1984
-- MAY 26, 1984

-- MAY 24, 1984

05-24-84

REPORT ID - 124 TITLE - COAL MILL FEED TIME 0103 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AWIC570	COAL BIN WEIGHT	TONS
AFIC570	WF R12 FD RATE	TPH
APDI571	MILL R22 DIF PRES	IN H2O
AII585	MILL R22 CUR	%AMP
ASI582	CL R22 3 SPD	%RPM
API5818	PM R22-1 HYD PRES	PSI
ALI577	BN R12 LEV	%
AII584	EL R3 CUR	%AMP

HOUR BEGAN	AWIC570	AFIC570	APDI571	AII585	ASI582	API5818	ALI577	AII584
19	2.069	12.31	22.50	74.06	23.05	603.6	-0.078	17.21
20	2.063	12.22	22.48	72.96	23.05	596.4	-0.062	17.56
21	2.036	12.45	22.66	74.83	23.04	591.4	-0.063	17.39
22	2.073	12.24	22.60	74.05	23.04	603.8	-0.079	20.21
23	2.041	12.37	22.67	74.10	23.04	595.4	-0.125	20.21
00	2.040	12.59	22.86	74.96	23.05	593.6	-0.124	17.27
01	2.043	12.64	22.71	75.82	23.05	600.2	-0.093	19.21
02	2.035	12.92	22.97	77.60	23.06	595.9	-0.063	17.25
03	2.047	12.96	23.12	77.13	23.06	596.8	-0.109	17.33
04	2.053	12.98	23.12	76.74	23.06	592.6	-0.079	19.05
05	2.068	12.91	23.10	76.91	23.06	590.2	-0.093	18.90
06	2.079	12.66	22.92	74.46	23.06	598.1	-0.093	13.77
07	2.020	13.05	23.18	77.40	23.06	598.1	-0.063	0.238
08	2.086	12.75	23.01	75.34	23.06	596.9	-0.078	0.238
09	2.063	12.68	22.92	74.11	23.06	594.7	-0.093	0.238
10	2.064	12.59	22.86	74.10	23.06	597.8	-0.095	0.238
11	2.062	12.52	22.69	74.32	23.07	596.2	-0.094	0.238
12	2.045	12.61	22.73	75.57	23.06	593.1	-0.124	0.238
13	2.083	12.39	22.63	74.60	23.06	595.7	-0.062	0.238
14	2.056	12.41	22.59	73.30	23.06	598.3	-0.095	0.238
15	2.051	12.03	22.67	71.91	23.07	601.3	-0.093	0.238
16	2.837	9.662	1.342	29.11	23.06	591.9	-0.094	18.19
17	2.963	9.230	0.179	27.83	23.06	591.7	-0.095	17.83
18	2.861	8.465	0.183	28.11	23.04	593.8	-0.109	17.90
19	2.765	8.572	0.310	28.07	23.03	592.7	-0.110	17.63
20	1.847	5.878	7.690	35.63	23.03	593.1	-0.108	19.20
21	1.796	3.051	8.903	38.31	23.03	592.6	-0.078	17.70
22	1.895	4.076	10.53	42.41	23.04	594.0	-0.095	21.21
23	1.776	9.309	19.32	59.28	23.06	601.0	-0.125	15.44
00	2.000	9.597	19.62	59.23	23.06	598.2	-0.124	3.069

05-24-84

REPORT ID - 146 TITLE - FF & KILN FIRING TIME 0121 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AZI515	DP F69 POS	XOPN
ATI513	FF IN TEMP	DEGF
ATI514	FF EX TEMP	DEGF
API516	FF IN DRAFT	IN H2O
API517	FF EX DRAFT	IN H2O
ATI594	MILL SEC AIR INLET TEMP	DEGF
ATI524	FD HOOD TEMP	DEGF
API525	FD HOOD DRAFT	IN H2O
AAI526A	KLN EX OXY	PCT
AAI526B	KLN EX COMB	PCT

HOUR BEGAN	AZI515	ATI513	ATI514	API516	API517	ATI594	ATI524	API525	AAI526A	AAI526B
19	81.22	1361	1652	1.495	3.225	413.1	1983	0.794	2.000	1.035
20	81.17	1373	1660	1.600	3.349	393.4	1985	0.770	1.761	0.850
21	81.14	1381	1643	1.336	2.960	385.1	1981	0.789	2.187	0.754
22	94.00	1358	1647	1.185	2.726	395.8	1969	0.840	3.145	0.409
23	93.95	1369	1649	1.166	2.666	430.6	1968	0.869	2.805	0.568
00	93.94	1360	1650	1.235	2.722	555.7	1954	0.924	2.756	0.525
01	93.94	1350	1653	1.299	2.813	597.7	1958	0.943	2.460	0.779
02	93.97	1353	1650	1.328	2.933	601.7	1960	0.970	2.923	0.752
03	93.97	1352	1653	1.419	3.120	732.6	1956	1.026	2.716	0.712
04	94.00	1353	1656	1.404	3.025	823.1	1954	1.011	2.577	0.847
05	93.98	1335	1657	1.399	3.021	815.8	1954	1.041	2.808	0.788
06	94.00	1349	1657	1.441	3.156	692.0	1901	1.044	2.650	0.637
07	94.03	1376	1664	1.671	3.249	777.0	1930	0.925	1.541	1.036
08	94.06	1363	1670	1.667	3.236	839.4	1951	0.928	1.646	0.925
09	94.05	1373	1691	1.732	3.269	778.7	1941	0.944	1.578	1.082
10	94.06	1380	1704	1.735	3.339	671.5	1923	0.957	1.679	1.238
11	94.07	1391	1703	1.713	3.354	623.5	1914	0.962	1.637	1.276
12	94.05	1389	1700	1.720	3.375	593.6	1919	1.000	1.523	1.030
13	94.07	1376	1706	1.746	3.397	572.5	1923	1.000	1.600	1.271
14	94.08	1397	1700	1.748	3.417	556.9	1943	0.993	1.429	1.136
15	94.10	1407	1684	1.534	3.103	525.5	1931	0.912	1.434	1.314
16	94.10	1319	1260	-0.310	-0.209	266.5	1642	-0.119	8.870	-----
17	94.09	1265	1213	-0.423	-----	233.3	1457	-0.131	-----	-----
18	94.10	1178	1133	-0.418	-----	207.5	1285	-0.123	-----	-----
19	94.13	1047	1024	-0.237	-0.121	189.8	1122	-0.182	-----	0.202
20	94.06	803.0	1031	-0.058	-0.207	177.2	1327	0.077	7.976	0.169
21	94.09	665.0	1088	0.129	-0.057	165.0	1582	0.195	4.344	0.388
22	83.33	627.0	1302	0.234	0.298	153.4	1766	0.242	1.655	0.661
23	45.82	892.2	1659	0.350	0.734	523.6	1779	0.178	2.368	1.423
00	44.27	932.0	1674	0.490	1.064	498.4	1864	0.257	2.027	0.537

05-24-84

REPORT ID - 147 TITLE - FF & KILN FIRING PG2 TIME 0123 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AII527	KILN CUR	XAMP
ASIC528	KILN SPD	XRPM
AFFC403	KLN FD RATE	TPH
ASIC590	RF R49A SPD	XRPM
API591	KLN COMB AIR PRES	IN H2O
AZIC592	DP R64 POS	XOPN
ATIC593	KLN COMB AIR TEMP	DEGF
AII597	PM R50 CUR	XAMP
AII599	PM R50-2 CUR	XAMP
AII598	BL R52 CUR	XAMP

HOUR BEGAN	AII527	ASIC528	AFFC403	ASIC590	API591	AZIC592	ATIC593	AII597	AII599	AII598
19	39.56	86.96	130.1	64.81	17.32	43.74	315.6	34.21	0.117	93.91
20	39.50	86.94	130.1	64.48	17.50	43.75	304.9	34.29	0.120	94.64
21	39.72	86.97	130.1	44.06	12.48	43.66	291.8	34.20	0.113	94.83
22	39.42	86.97	130.1	62.26	19.59	43.75	255.8	34.23	0.112	95.22
23	39.88	86.96	130.1	61.97	21.50	43.78	222.2	34.19	0.110	95.65
00	39.81	87.74	131.3	63.83	22.84	43.59	196.6	34.30	0.114	96.33
01	41.00	89.15	133.3	67.55	23.73	43.49	181.8	34.42	0.116	96.93
02	44.14	91.03	136.4	67.82	24.55	43.51	169.9	34.43	0.126	97.64
03	41.82	92.97	139.0	67.78	25.24	43.56	153.0	34.41	0.131	97.83
04	40.53	93.48	139.7	68.12	25.51	43.56	150.3	34.40	0.136	97.83
05	38.92	93.56	140.1	68.25	25.52	43.53	149.2	34.32	0.144	97.71
06	38.97	93.56	139.4	68.57	25.50	43.43	150.1	34.29	0.147	97.53
07	37.44	93.55	139.2	69.36	25.48	43.56	151.9	34.94	0.149	97.29
08	37.16	93.55	139.8	69.47	25.58	43.27	150.4	35.30	0.151	97.07
09	38.20	93.55	139.9	69.48	25.24	43.17	159.9	35.22	0.114	96.48
10	37.71	93.55	139.9	68.71	24.04	40.20	164.7	35.30	0.135	95.45
11	37.50	93.56	139.7	69.15	23.20	37.49	167.9	35.10	0.146	95.00
12	36.86	93.54	140.0	69.67	23.04	37.44	170.4	35.12	0.148	94.58
13	37.90	93.55	139.7	70.02	22.84	36.33	164.5	35.00	0.143	94.03
14	38.80	93.55	139.9	69.80	21.87	33.89	167.9	35.38	0.152	93.45
15	36.90	91.42	137.2	66.79	21.54	33.42	168.0	35.24	0.149	92.82
16	39.56	4.892	60.35	0.555	18.66	33.28	161.1	33.38	0.150	85.43
17	-----	3.914	55.03	0.531	19.68	33.32	142.5	33.06	0.131	85.50
18	-----	3.915	55.00	0.366	18.36	33.63	147.1	33.06	0.135	85.63
19	45.84	4.153	54.91	4.231	17.99	32.24	136.2	33.08	0.127	85.67
20	-----	3.935	31.58	26.33	13.20	18.92	138.9	33.60	0.129	87.52
21	-----	2.942	2.432	31.75	12.21	18.90	142.9	34.17	0.144	88.12
22	35.80	16.79	22.70	35.92	12.88	21.78	168.1	34.20	0.144	89.25
23	19.71	39.45	58.99	38.16	19.75	32.68	166.9	34.64	0.148	90.89
00	29.14	48.24	72.01	49.60	17.03	33.85	201.0	34.94	0.141	92.05

05-24-84

REPORT ID - 148 TITLE - FF & KILN FIRING PG3 TIME 0125 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI530	SCAN F85 NO 1 TEMP	DEGF
AZI530	SCAN F85 NO 1 POS	PCT
ATI531	SCAN F85 NO 2 TEMP	DEGF
AZI531	SCAN F85 NO 2 POS	PCT

HOUR BEGAN	ATI530	AZI530	ATI531	AZI531
19	237.4	50.43	215.4	48.61
20	233.7	51.08	212.5	48.45
21	233.1	50.26	212.3	49.23
22	232.0	48.38	212.7	50.02
23	232.7	48.22	212.7	46.42
00	233.0	49.74	212.7	47.88
01	234.4	49.19	211.8	47.15
02	237.9	48.94	210.0	48.79
03	240.9	49.40	210.7	49.69
04	243.7	49.16	210.8	48.53
05	246.8	49.97	211.9	46.19
06	246.9	50.55	210.0	47.15
07	246.7	49.63	209.8	48.65
08	248.0	48.69	212.1	50.33
09	250.8	48.17	211.7	48.62
10	252.2	48.72	212.0	46.48
11	256.1	48.98	212.6	48.02
12	255.4	49.09	215.2	48.74
13	254.2	51.00	215.2	49.15
14	254.1	49.72	215.3	49.40
15	252.9	50.05	216.9	48.99
16	223.0	28.18	209.8	44.53
17	226.8	54.21	214.0	0.884
18	207.3	23.75	215.7	31.87
19	212.4	36.27	210.3	18.75
20	212.2	33.28	209.8	19.93
21	215.8	40.53	209.3	13.76
22	215.5	54.80	210.6	19.65
23	237.1	51.19	207.7	45.57
00	236.0	47.80	206.8	48.70

05-24-84

REPORT ID - 140 TITLE - BYPASS AREA TIME 0109 DATE 05-24-84 THIS REPORT PERIODIC

POINT		DESCRIPTION	ENGR. UNITS
API518	BYP	INLET DRAFT	IN H20
API519	FN N18	INLET DRAFT	IN H20
ATIC521	BYPASS	INLET TEMP	DEGF
AZIC521	DP N18A	POS	XOPN
AII568	FN N18	CURV	XAMP
APDI523	DC N13	DIF PRES	IN H20
AFIC520	QUENCH	AIRFLOW	XCFM
AZIC520	DP N4	POS	XOPN
ATIC522	ST N6	EXIT TEMP	DEGF
AZIC522	VL N5	POS	XOPN

Inlet Temp By Pass

HOUR BEGAN	API518	API519	ATIC521	AZIC521	AII568	APDI523	AFIC520	AZIC520	ATIC522	AZIC522
19	1.206	3.763	596.3 °F	21.43	53.87	1.637	18.99	57.50	325.2	57.27
20	1.182	3.751	595.8	21.34	54.00	1.631	19.00	57.55	324.8	57.36
21	1.236	3.868	592.1	21.39	54.26	1.676	19.02	57.05	324.8	57.44
22	1.222	3.797	579.3	21.11	54.04	1.632	19.02	56.94	324.9	56.16
23	1.252	3.783	577.3	20.96	54.04	1.601	18.99	56.88	325.2	55.94
00	1.328	3.910	583.6	21.23	54.55	1.643	19.00	56.61	325.2	57.56
01	1.436	4.149	612.4	21.94	55.54	1.694	19.01	56.14	324.9	61.43
02	1.458	4.269	616.3	22.18	55.57	1.730	19.00	55.88	325.0	61.85
03	1.483	4.366	615.9	22.24	55.47	1.762	18.99	55.62	325.5	61.88
04	1.469	4.292	617.2	22.10	55.45	1.712	19.01	55.80	325.1	61.74
05	1.493	4.341	618.9	22.21	55.78	1.720	19.00	55.56	325.2	62.77
06	1.488	4.216	604.3	21.60	54.88	1.690	19.00	55.82	325.3	61.31
07	1.424	4.229	623.6	22.17	55.62	1.708	19.01	55.96	325.1	63.22
08	1.302	4.176	631.2	22.30	55.32	1.666	18.98	56.05	325.1	64.44
09	1.259	4.109	617.4	21.94	54.31	1.657	18.99	56.35	324.4	61.96
10	1.278	4.045	603.3	21.63	53.72	1.631	19.00	56.68	325.2	60.23
11	1.301	4.034	602.6	21.45	53.49	1.631	19.00	56.82	325.2	59.94
12	1.329	4.066	606.0	21.56	53.36	1.659	18.98	56.86	325.0	60.12
13	1.302	4.011	608.8	21.34	53.03	1.630	18.99	57.12	324.7	60.06
14	1.337	4.047	614.4	21.53	52.75	1.643	18.98	57.14	325.0	60.46
15	1.164	3.677	593.7	20.86	51.96	1.541	18.93	57.79	321.5	57.24
16	-----	0.494	412.2	3.199	17.64	0.793	8.097	20.37	298.5	4.529
17	-----	0.124	374.3	1.083	0.120	-----	-----	1.028	272.4	-----
18	-----	0.127	363.7	1.083	0.120	-----	-----	1.001	247.7	-----
19	2.125	0.138	356.2	1.081	0.119	-----	-----	0.974	230.6	-----
20	-----	-----	249.9	1.066	0.120	-----	-----	0.972	202.9	-----
21	-----	-----	188.8	1.056	0.119	-----	-----	0.964	179.2	-----
22	-----	4.694	168.8	1.060	1.120	0.608	2.153	1.154	161.9	-----
23	0.721	2.563	425.1	10.77	38.74	0.794	9.540	37.40	307.1	36.69
00	0.566	2.192	542.8	16.21	46.33	1.048	14.97	50.66	350.2	36.16

05-24-84

REPORT ID - 141 TITLE - BYPASS AREA PB2 TIME 0111 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AI1564	BC N6A- CUR	XAMP

HOUR BEGAN	AI1564
19	32.71
20	32.83
21	32.87
22	32.70
23	32.61
00	32.57
01	32.47
02	32.70
03	32.80
04	32.69
05	32.64
06	32.68
07	32.69
08	32.93
09	32.87
10	32.82
11	33.06
12	33.14
13	33.00
14	32.99
15	33.11
16	33.87
17	34.11
18	34.14
19	34.11
20	33.75
21	33.77
22	33.61
23	33.13
00	32.90

05-24-84

REPORT ID - 118 TITLE - RAW MILL AREA TIME 0051 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR UNITS
APDIC310	MILL D21 DIF PRES	IN H20
ABIC327	CL D21 4 SPD	XRPM
AII330	MILL D21 CUR	XAMP
AVI3258	MILL D21 VIB	IPS
ABI310	BT D17 SPD	XRPM
AII332	BT D17 CUR	XAMP
AII329	PM D53 CUR	XAMP
AII333	CP D55 CUR	XAMP
AFIC312	WF D3 FD RATE	TPH — ?
AFIC313	WF D7 FD RATE	TPH — ?

Fd rate Fd rate

HOUR BEGAN	APDIC310	ABIC327	AII330	AVI3258	ABI310	AII332	AII329	AII333	AFIC312	AFIC313
18	31.82	46.44	57.93	0.396	59.85	55.66	73.58	84.74	130.3	0.898
19	32.31	46.55	57.13	0.396	60.40	54.61	71.61	84.54	131.6	0.092
20	31.96	46.49	57.34	0.375	62.43	55.24	76.05	85.26	136.2	0.738
21	32.91	46.41	57.69	0.361	62.46	55.74	74.81	85.42	135.2	1.523
22	28.92	45.77	51.07	0.334	53.53	49.93	68.86	84.69	116.2	1.370
23	26.72	45.31	47.44	0.341	50.45	48.71	57.76	83.06	109.1	1.365
00	32.33	45.20	56.69	0.355	63.00	56.16	69.86	84.72	136.7	1.615
01	27.84	43.53	49.54	0.327	52.93	48.56	59.20	83.00	115.4	1.352
02	32.96	44.68	56.26	0.387	61.95	56.12	74.78	85.11	134.4	1.597
03	33.27	43.89	56.65	0.381	62.15	56.53	72.75	85.19	131.5	4.784
04	33.43	43.56	56.88	0.383	63.51	56.83	73.47	85.05	133.7	5.052
05	29.06	42.74	50.18	0.338	54.20	50.01	61.94	83.81	114.4	4.295
06	33.76	43.49	58.15	0.378	63.69	57.52	77.62	85.34	134.3	5.157
07	33.46	43.58	58.27	0.387	62.46	56.68	79.86	85.44	131.8	4.990
08	20.57	40.23	36.33	0.282	39.79	38.94	55.41	81.53	83.28	3.139
09	32.81	43.66	57.29	0.401	62.24	56.57	74.66	84.67	131.4	4.981
10	23.42	42.49	40.92	0.272	43.48	39.20	65.36	82.29	92.79	3.520
11	-0.858	39.29	1.182	0.024	0.774	2.744	38.84	76.20	3.557	0.489
12	1.988	39.15	3.314	0.060	2.601	4.655	39.93	76.28	6.050	1.075
13	3.997	35.89	7.485	0.093	7.253	9.718	40.96	76.45	15.01	0.633
14	21.26	35.52	42.89	0.368	44.65	46.97	53.44	81.49	95.87	4.268
15	17.26	37.27	21.76	0.216	22.07	22.76	43.42	79.21	45.58	1.755
16	9.079	37.27	0.314	0.040	-0.062	1.809	32.38	66.47	0.440	0.079
17	5.879	37.37	0.302	0.027	-0.063	1.810	-----	-----	0.423	0.078
18	3.920	37.38	0.298	0.021	-0.063	1.810	-----	-----	0.465	0.079
19	-1.790	37.33	0.297	0.013	-0.063	1.810	-----	-----	0.475	0.077
20	-1.781	37.34	0.303	0.013	-0.062	1.810	-----	-----	0.481	0.074
21	-1.782	37.29	0.303	0.013	-0.062	1.810	-----	-----	0.483	0.077
22	-1.786	37.17	0.303	0.015	-0.062	1.810	-----	-----	0.482	0.075
23	2.118	37.04	0.303	0.021	-0.062	1.812	-0.069	6.054	0.487	0.078

05-24-84

REPORT ID - 119 TITLE - RAW MILL AREA PB2 TIME 0053 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AFIC314	WF D11 FD RATE	TPH
AFIC315	WF D15 FD RATE	TPH
AFIC319	BGHS D38 BAGS DIF.	IN H20
ASIC319	FN D41 SPD	XRPM
APIC320	FN F6 EXIT DRAFT	IN H20
AZIC321	DP D40 POS	XOPN
AII331	FN D41 CUR	XAMP
APDI324	BGHS D38 DIF PRES	IN H20
API328B	PM D21 1 HYD PRES	PSI

HOUR BEGAN	AFIC314	AFIC315	AFIC319	ASIC319	APIC320	AZIC321	AII331	APDI324	API328B
18	12.72	5.960	6.103	103.4	0.715	99.63	71.25	11.02	833.5
19	12.84	6.014	6.537	103.5	0.680	99.63	70.97	11.46	825.6
20	13.20	6.240	6.402	103.6	0.556	99.61	71.85	12.18	813.9
21	12.96	6.218	6.295	103.6	0.673	99.57	71.57	12.18	806.7
22	11.12	5.326	6.529	103.6	0.778	98.65	73.39	12.52	831.0
23	10.49	5.020	6.173	103.4	0.640	98.53	74.91	12.62	857.8
00	13.08	6.274	6.203	103.2	0.574	99.55	73.92	12.85	829.3
01	11.03	5.264	5.883	103.0	0.727	97.32	73.86	12.58	857.3
02	12.84	6.163	5.829	102.8	0.646	99.00	73.26	12.98	823.5
03	12.89	6.184	6.026	102.8	0.650	99.00	73.33	13.09	816.4
04	13.17	6.324	5.730	102.6	0.666	99.00	73.30	12.98	809.7
05	11.25	5.383	5.827	102.5	0.664	97.77	73.85	12.82	850.5
06	13.21	6.342	5.888	102.6	0.647	99.00	73.02	12.97	833.3
07	12.98	6.223	5.945	102.4	0.752	98.90	73.71	12.88	828.6
08	8.133	3.872	6.107	102.2	0.623	94.87	72.69	10.90	895.7
09	12.90	6.192	5.935	101.8	0.682	99.69	72.24	11.77	839.9
10	9.107	4.336	6.290	100.7	0.684	92.16	71.74	11.66	891.0
11	0.459	0.151	7.532	100.4	0.502	98.02	74.24	11.97	889.2
12	0.674	0.227	6.854	100.4	0.628	92.88	69.53	10.88	622.8
13	1.563	0.664	6.683	100.4	0.609	96.01	69.31	10.73	787.4
14	9.494	4.607	6.196	100.4	0.796	97.15	69.46	9.483	872.9
15	4.497	2.091	6.697	100.1	0.505	96.49	73.05	10.22	959.5
16	0.131	-0.041	5.620	100.2	1.547	71.51	66.62	8.238	1067
17	0.135	-0.042	4.803	101.6	1.514	55.15	63.57	6.475	1069
18	0.143	-0.043	4.709	103.9	1.794	54.99	65.78	6.476	1074
19	0.144	-0.045	4.187	104.8	3.214	43.25	52.75	5.398	1082
20	0.144	-0.046	2.664	105.9	0.594	29.80	44.50	2.447	1082
21	0.144	-0.046	2.568	105.7	0.395	29.78	43.41	2.512	1083
22	0.144	-0.046	2.624	102.4	0.246	31.69	45.00	3.057	1079
23	0.139	-0.042	3.316	101.2	0.299	40.87	53.33	4.590	1080

05-24-84

REPORT ID - 120 TITLE - RAW MILL AREA P83 TIME 0055 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
APIC323	MILL D21 INLET DRAFT	IN H20
AZIC320	DP D34 POS	XOPN
ATIC322	FN F6 EXIT TO BYPASS	DEGF
AZIC322	DP D37 POS	XOPN
ATI317A	MILL D21 EXIT TEMP	DEGF
ATI318	MILL D21 INLET TEMP	DEGF
ATI317B	FN F6 INLET TEMP	DEGF
ATI326A	MILL D21 E BG TEMP	DEGF
ATI326B	MILL D21 W BG TEMP	DEGF
ATI326C	FN D41 N BG TEMP	DEGF

HOUR BEGAN	APIC323	AZIC320	ATIC322	AZIC322	ATI317A	ATI318	ATI317B	ATI326A	ATI326B	ATI326C
18	0.400	21.30	134.6	0.167	155.0	518.8	588.2	137.5	134.5	144.8
19	0.394	20.03	135.2	0.172	157.4	538.0	605.2	138.9	135.8	145.8
20	0.422	59.54	132.8	0.166	155.4	516.9	598.5	140.2	137.1	145.6
21	0.399	27.53	128.6	0.135	155.5	526.1	603.6	140.8	137.8	143.6
22	0.484	59.85	150.9	9.736	158.1	476.2	600.1	141.3	138.2	141.5
23	0.533	92.82	182.5	9.942	156.3	440.7	599.3	140.0	136.9	139.9
00	0.410	87.23	130.6	0.070	155.0	477.8	598.4	140.4	137.4	138.1
01	0.476	62.11	177.7	8.659	157.0	464.8	596.6	139.7	136.7	137.1
02	0.404	54.74	131.1	0.029	154.9	496.6	601.3	139.4	136.4	135.7
03	0.399	48.78	129.4	0.026	154.9	494.7	595.3	139.1	135.9	134.1
04	0.404	48.68	128.7	-0.012	154.9	494.0	593.8	138.5	135.5	132.5
05	0.415	56.76	173.6	7.579	157.3	472.3	594.9	137.5	134.4	132.2
06	0.402	40.64	132.3	-0.003	154.9	502.5	589.4	137.7	134.6	132.3
07	0.507	44.65	129.8	0.025	154.9	490.8	580.2	137.8	134.8	131.9
08	0.308	33.20	231.1	24.46	173.8	437.4	589.3	136.1	133.0	133.7
09	0.400	26.27	135.1	0.037	154.9	517.1	589.3	137.6	134.5	136.8
10	0.494	29.73	196.2	19.96	178.9	483.9	594.7	138.5	135.5	139.9
11	0.012	6.639	362.5	74.24	214.3	257.2	597.7	129.3	126.0	143.2
12	0.248	24.21	367.4	59.24	228.4	314.5	584.3	126.3	122.6	145.7
13	0.229	17.09	355.4	52.30	218.8	314.2	577.2	123.3	119.9	147.4
14	0.426	38.69	212.4	9.420	160.7	476.3	573.5	131.5	128.2	148.6
15	1.002	77.03	247.0	21.34	219.6	411.3	557.8	134.4	131.0	149.2
16	2.419	99.28	139.3	84.83	117.6	110.0	215.8	125.7	121.3	149.2
17	2.190	88.11	94.71	83.54	91.03	90.93	127.6	120.3	116.5	148.5
18	2.365	74.21	85.63	83.56	86.19	87.38	124.4	117.5	114.6	148.4
19	0.299	74.19	99.98	83.56	85.89	87.74	177.2	115.8	113.5	148.5
20	-0.122	74.19	155.1	83.55	88.17	90.10	321.7	115.0	112.6	145.3
21	-0.124	74.17	184.7	83.54	89.24	90.04	355.3	114.6	112.0	145.7
22	-0.114	74.13	205.1	83.50	90.09	90.28	376.8	113.2	110.5	144.5
23	0.122	74.11	214.7	83.51	197.2	263.7	461.4	111.2	108.4	144.5

05-24-84

REPORT ID - 121 TITLE - RAW MILL AREA PG4 TIME 0057 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI326D	FN D41- B BG TEMP	DEGF

HOUR BEGAN	ATI326D
18	154.8
19	153.9
20	147.6
21	139.3
22	135.7
23	134.2
00	130.2
01	129.1
02	125.7
03	123.5
04	124.3
05	124.3
06	123.1
07	125.5
08	131.7
09	135.7
10	145.2
11	156.6
12	164.0
13	168.0
14	166.0
15	163.6
16	162.7
17	159.6
18	157.8
19	156.2
20	154.9
21	154.4
22	153.8
23	152.9

05-24-84

REPORT ID - 122 TITLE - BLENDING & KILN FEED TIME 0059 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AWIC400	LEV BN- WEIGHT	TONS
AII404	EL E21 CUR	XAMP
AIIE51	EL E51 CUR	XAMP
AII406	PM E27 CUR	XAMP
AII407	CP E10 CUR	XAMP
AII408	CP E11 CUR	XAMP
AII409	CP E12 CUR	XAMP
AII410	CP E30 CUR	XAMP

HOUR BEGAN	AWIC400	AII404	AIIE51	AII406	AII407	AII408	AII409	AII410
18	6.654	31.59	0.355	56.65	85.67	84.54	66.59	86.76
19	6.750	30.97	0.355	57.64	91.23	86.09	66.04	86.78
20	6.751	31.11	0.353	57.33	91.52	86.65	66.39	86.97
21	6.749	31.22	0.355	56.67	91.77	86.95	66.56	87.30
22	6.750	31.44	0.355	56.66	92.13	87.13	66.23	87.68
23	6.751	31.33	0.355	56.24	92.06	86.82	65.89	87.97
00	6.750	31.48	0.353	57.15	92.11	86.60	65.83	87.95
01	6.750	31.69	0.355	57.25	92.22	86.24	65.36	87.74
02	6.749	31.93	0.353	58.68	92.39	86.73	66.31	88.31
03	6.750	32.36	0.355	60.21	92.63	87.02	66.63	88.70
04	6.751	32.32	0.355	59.89	92.58	86.47	66.19	88.41
05	6.748	32.17	0.355	60.26	92.46	86.07	65.88	88.23
06	6.455	32.68	0.355	60.08	84.73	85.58	66.16	87.79
07	6.165	32.76	0.355	60.41	89.26	85.09	65.74	87.58
08	6.201	32.47	0.352	60.54	92.18	85.41	65.91	87.36
09	6.200	32.29	0.353	61.05	92.14	85.65	66.25	87.22
10	6.198	32.08	0.321	60.21	92.06	85.61	66.09	87.01
11	6.201	32.17	0.284	60.08	91.44	85.80	66.52	87.51
12	6.199	32.10	0.287	59.13	90.98	85.49	66.66	87.47
13	6.202	32.04	0.284	60.18	90.18	84.85	66.18	86.92
14	6.202	31.96	0.284	59.98	90.27	84.92	66.33	87.25
15	6.209	31.62	0.284	59.23	90.04	85.02	66.66	87.17
16	6.202	23.21	0.284	29.93	89.89	85.83	68.04	79.27
17	6.201	22.23	0.284	29.50	89.41	85.15	67.09	78.17
18	6.200	22.42	0.288	29.64	89.46	85.43	67.28	78.17
19	6.201	21.95	0.351	29.66	89.60	85.90	67.55	78.06
20	6.385	20.00	0.357	27.08	89.23	85.95	67.24	75.65
21	6.653	17.05	0.355	23.83	89.32	86.07	67.39	72.79
22	6.458	19.06	0.353	27.10	89.33	86.39	67.62	75.65
23	6.198	22.60	0.355	33.10	89.38	85.63	67.01	80.04

05-24-84

REPORT ID - 122 TITLE - BLENDING & KILN FEED TIME 0059 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AWIC400	LEV BN- WEIGHT	TONS
AII404	EL E21 CUR	XAMP
AIIE51	EL E51 CUR	XAMP
AII406	PM E27 CUR	XAMP
AII407	CP E10 CUR	XAMP
AII408	CP E11 CUR	XAMP
AII409	CP E12 CUR	XAMP
AII410	CP E30 CUR	XAMP

HOUR BEGAN	AWIC400	AII404	AIIE51	AII406	AII407	AII408	AII409	AII410
18	6.654	31.59	0.355	56.65	85.67	84.54	66.59	86.76
19	6.750	30.97	0.355	57.64	91.23	86.09	66.04	86.78
20	6.751	31.11	0.353	57.33	91.52	86.65	66.39	86.97
21	6.749	31.22	0.355	56.67	91.77	86.95	66.56	87.30
22	6.750	31.44	0.355	56.66	92.13	87.13	66.23	87.68
23	6.751	31.33	0.355	56.24	92.06	86.82	65.89	87.97
00	6.750	31.48	0.353	57.15	92.11	86.60	65.83	87.95
01	6.750	31.69	0.355	57.25	92.22	86.24	65.36	87.74
02	6.749	31.93	0.353	58.68	92.39	86.73	66.31	88.31
03	6.750	32.36	0.355	60.21	92.63	87.02	66.63	88.70
04	6.751	32.32	0.355	59.89	92.58	86.47	66.19	88.41
05	6.748	32.17	0.355	60.26	92.46	86.07	65.88	88.23
06	6.455	32.68	0.355	60.08	84.73	85.58	66.16	87.79
07	6.165	32.76	0.355	60.41	89.26	85.09	65.74	87.58
08	6.201	32.47	0.352	60.54	92.18	85.41	65.91	87.36
09	6.200	32.29	0.353	61.05	92.14	85.65	66.25	87.22
10	6.198	32.08	0.321	60.21	92.06	85.61	66.09	87.01
11	6.201	32.17	0.284	60.08	91.44	85.80	66.52	87.51
12	6.199	32.10	0.287	59.13	90.98	85.49	66.66	87.47
13	6.202	32.04	0.284	60.18	90.18	84.85	66.18	86.92
14	6.202	31.96	0.284	59.98	90.27	84.92	66.33	87.25
15	6.209	31.62	0.284	59.23	90.04	85.02	66.66	87.17
16	6.202	23.21	0.284	29.93	89.89	85.03	68.04	79.27
17	6.201	22.23	0.284	29.50	89.41	85.15	67.09	78.17
18	6.200	22.42	0.288	29.64	89.46	85.43	67.28	78.17
19	6.201	21.95	0.351	29.66	89.60	85.90	67.55	78.06
20	6.385	20.00	0.357	27.08	89.23	85.95	67.24	75.65
21	6.653	17.05	0.355	23.83	89.32	86.07	67.39	72.79
22	6.458	19.06	0.353	27.10	89.33	86.39	67.62	75.65
23	6.198	22.60	0.355	33.10	89.38	85.63	67.01	80.04

05-24-84

REPORT ID - 123 TITLE - BLENDING & KILN FEED PG 2 TIME 0101 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AII405	PM E29 CUR	%AMP
AII905	CP K19	%AMP
AII406	PM E27 CUR	%AMP

HOUR BEGAN	AII405	AII905	AII406
19	1.523	40.63	57.64
20	1.584	42.07	57.33
21	1.700	40.23	56.67
22	1.850	41.27	56.66
23	1.717	40.82	56.24
00	1.886	39.33	57.15
01	1.807	38.14	57.25
02	1.851	34.85	58.68
03	1.865	40.77	60.21
04	1.783	37.96	59.89
05	1.734	35.40	60.26
06	1.722	40.96	60.08
07	1.689	37.30	60.41
08	1.531	38.55	60.54
09	1.572	38.04	61.05
10	1.359	36.21	60.21
11	1.336	38.31	60.08
12	1.381	36.58	59.13
13	1.257	34.15	60.18
14	1.210	37.42	59.98
15	1.255	36.96	59.23
16	1.431	40.10	29.93
17	1.576	48.03	29.50
18	1.710	44.55	29.64
19	1.776	31.68	29.66
20	1.695	26.40	27.08
21	2.009	25.88	23.83
22	2.147	28.67	27.10
23	1.981	30.69	33.10
00	1.561	29.76	36.41

05-24-84

REPORT ID - 125 TITLE - COAL MILL AREA TIME 0105 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
API572	MILL R22 INLET DRAFT	IN H2O
AZIC573	DP R34 POS	%OPN
AII586	FN R35 CUR	%AMP
APIC574	FN R35 EXIT DRAFT	IN H2O
AZIC574	DP R28 POS	%OPN
ATIC575C	DP R111 CONTROL	%
ATIC575A	MILL R22 EXIT TEMP	DEGF
ATIC575B	MILL R22 INLET TEMP	DEGF
AZIC575	DP R38 POSITION	%OPN

HOUR BEGAN	API572	AZIC573	AII586	APIC574	AZIC574	ATIC575C	ATIC575A	ATIC575B	AZIC575
19	7.209	97.75	67.45	0.498	68.67	181.5	148.5	181.5	0.792
20	7.144	97.54	67.27	0.494	68.88	182.6	148.8	182.6	0.777
21	7.194	97.60	67.51	0.504	68.44	180.5	147.1	180.5	0.767
22	7.202	97.61	67.17	0.515	67.86	183.1	147.5	183.1	0.750
23	7.104	97.50	67.64	0.487	69.08	179.5	146.2	179.5	0.767
00	6.858	97.56	67.69	0.500	69.62	179.8	147.4	179.8	0.777
01	7.015	97.56	67.36	0.501	68.97	180.8	147.4	180.8	0.777
02	6.998	97.52	67.18	0.511	68.25	179.9	147.1	179.9	0.740
03	6.628	97.69	67.30	0.511	69.91	178.8	147.3	178.8	0.686
04	6.439	97.78	67.35	0.497	70.39	180.4	148.4	180.4	0.694
05	6.583	97.75	67.28	0.490	69.87	181.8	148.5	181.8	0.694
06	6.589	97.76	67.60	0.506	70.46	181.4	148.4	181.4	5.907
07	6.414	97.75	67.54	0.531	70.34	177.7	146.5	177.7	0.778
08	6.545	97.88	67.18	0.480	70.24	181.6	148.9	181.6	0.809
09	6.449	97.85	67.13	0.495	70.78	182.4	149.0	182.4	13.46
10	6.635	97.56	66.89	0.483	70.26	183.4	148.1	183.4	19.94
11	7.390	97.56	66.58	0.509	67.50	181.6	147.9	181.6	0.988
12	7.489	97.59	66.27	0.538	66.67	182.8	147.6	182.8	0.969
13	7.282	97.63	66.93	0.519	68.16	179.4	145.9	179.4	0.946
14	7.194	97.66	66.72	0.513	68.44	178.7	146.0	178.7	0.944
15	6.756	97.69	66.36	0.590	71.06	181.0	148.3	181.0	6.771
16	2.026	25.39	31.25	5.162	0.067	213.8	142.1	213.8	2.447
17	2.798	11.61	25.71	0.496	20.55	205.4	128.9	205.4	1.016
18	2.987	11.42	25.98	0.500	20.28	183.6	118.8	183.6	1.023
19	3.184	12.60	26.84	0.807	21.88	162.7	112.1	162.7	1.026
20	2.250	37.00	53.40	0.417	88.78	151.9	125.6	151.9	1.013
21	2.759	37.39	52.60	0.501	93.14	154.6	127.4	154.6	1.013
22	4.838	41.22	55.62	0.498	68.05	177.9	131.1	177.9	0.974
23	4.097	62.09	65.83	0.490	67.98	168.4	136.0	168.4	0.947
00	6.380	63.99	65.22	0.505	68.93	176.6	147.4	176.6	0.944

05-24-94

REPORT ID - 139 TITLE - COAL MILL AREA PG2 TIME 0107 DATE 05-24-94 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI594	MILL BEG AIR INLET TEMP	DEGF
AAIC574	MILL R22 EXIT OXY	PCT
AZIC576	DP R101 POS	%OPN
ATI595	MILL PRH AIR INLET TEMP	DEGF
AZIC575A	DP R111 POS	%OPN
ATI578	CY GAS EXIT TEMP	DEGF
ATI579	CY MAT DSCH TEMP	DEGF
ATI580	HPR MAT TEMP	DEGF
ATI583A	MILL R22 E BG TEMP	DEGF
ATI583B	MILL R22 W BG TEMP	DEGF

HOUR BEGAN	ATI594	AAIC576	AZIC576	ATI595	AZIC575A	ATI578	ATI579	ATI580	ATI583A	ATI583B
19	413.1	11.29	98.77	559.5	36.54	144.0	148.7	128.1	106.0	109.5
20	393.4	11.19	98.82	556.2	36.52	144.8	149.2	127.9	106.5	110.1
21	385.1	11.14	98.75	556.3	36.48	143.1	147.4	127.7	106.5	109.9
22	395.8	11.31	98.69	549.6	36.45	143.1	147.6	127.5	106.2	109.3
23	430.6	11.10	98.69	546.8	36.44	141.8	146.4	127.4	105.8	109.1
00	555.7	11.20	98.69	552.8	41.24	142.6	147.5	127.4	105.5	108.7
01	597.7	11.36	98.67	548.2	41.60	142.9	147.6	127.3	105.0	108.1
02	601.7	11.41	98.64	555.2	42.17	142.4	147.3	127.2	104.5	107.7
03	732.6	11.80	98.56	549.7	49.39	142.2	147.3	126.9	104.0	107.2
04	823.1	11.94	98.54	546.0	52.26	143.2	148.3	126.6	103.8	107.0
05	815.8	11.96	98.56	545.0	50.85	143.4	148.5	126.4	103.7	106.8
06	692.0	11.86	98.57	545.0	51.42	143.9	148.6	126.9	103.5	106.7
07	777.0	12.13	98.56	535.5	56.33	141.2	146.3	127.6	103.4	106.6
08	839.4	12.07	98.63	540.2	52.10	143.6	148.7	127.7	103.7	106.9
09	778.7	12.13	98.63	546.8	51.33	144.3	149.1	127.3	104.5	107.8
10	671.5	12.20	98.66	548.6	47.49	143.3	148.2	127.1	104.9	108.3
11	623.5	11.56	98.55	545.2	40.24	143.4	148.1	127.5	105.2	108.7
12	593.6	11.48	98.38	539.8	40.25	143.6	147.9	127.5	105.5	108.9
13	572.5	11.55	98.38	530.6	40.25	141.8	146.0	127.5	105.9	109.2
14	556.9	11.35	98.38	534.4	40.26	142.0	146.2	127.5	106.3	109.5
15	525.5	11.04	93.76	523.9	35.62	142.0	147.9	127.6	106.4	109.8
16	266.5	21.27	0.434	363.0	0.513	140.5	144.2	127.7	104.6	106.6
17	233.3	21.40	0.385	266.6	0.500	131.2	133.0	127.9	103.6	105.2
18	207.5	21.27	0.393	219.6	0.490	121.3	122.2	127.5	104.3	105.1
19	189.8	21.36	5.436	185.3	0.474	113.0	114.1	126.9	104.4	105.4
20	177.2	18.46	99.70	246.5	0.449	118.7	121.8	126.5	104.7	105.4
21	165.0	17.79	94.09	299.6	0.428	121.3	125.0	126.1	105.2	106.0
22	153.4	15.41	93.45	320.3	0.411	122.6	128.0	126.0	104.9	105.6
23	523.6	12.37	99.60	397.2	40.74	130.2	135.8	126.5	105.0	107.4
00	498.4	11.66	99.63	477.1	34.95	141.6	147.3	126.8	105.0	108.0

05-24-84

REPORT ID - 142 TITLE - PREHEATER TIME 0113 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR UNITS
ATI563A	FN F6 N BG TEMP	DEGF
ATI563B	FN N18 S BG TEMP	DEGF
ATI563C	FN N18 N BG TEMP	DEGF
ATI563D	FN N18 S BG TEMP	DEGF
ABIC500	FN F4 SPD	XRPM
AZIC501	DP F6A POS	%OPN
AII503	FN F4 CUR	%AMP
APIC320	FN F4 EXIT DRAFT	IN H2O
AZIC321	DP D40 POS	%OPN

HOUR BEGAN	ATI563A	ATI563B	ATI563C	ATI563D	ABIC500	AZIC501	AII503	APIC320	AZIC321
19	164.1	162.7	163.6	161.6	96.54	-----	91.17	0.680	99.63
20	158.4	164.0	161.4	157.0	96.51	-----	91.28	0.556	99.61
21	149.9	163.4	157.5	150.8	96.44	-----	90.72	0.673	99.57
22	144.2	160.8	155.8	149.3	94.77	-----	89.19	0.778	98.65
23	141.3	160.4	154.6	146.7	94.66	-----	88.35	0.640	98.53
00	138.9	160.3	152.4	145.1	95.76	-----	90.02	0.574	99.55
01	136.9	160.3	151.1	143.9	97.59	-----	92.83	0.727	97.32
02	136.1	159.3	150.2	142.2	99.09	-----	95.22	0.646	99.00
03	135.7	158.2	149.1	140.3	99.23	-----	96.00	0.650	99.00
04	135.0	157.5	147.4	140.0	99.25	-----	95.70	0.666	99.00
05	134.0	156.9	146.0	139.4	99.23	-----	96.02	0.664	97.77
06	134.2	156.7	145.6	139.1	99.24	-----	96.34	0.647	99.00
07	134.7	156.7	147.2	141.3	99.25	-----	96.74	0.752	98.90
08	138.2	158.5	150.8	149.4	99.26	-----	97.59	0.623	94.87
09	143.3	160.7	154.4	158.5	-----	-----	96.59	0.682	99.69
10	150.6	161.1	156.4	167.3	-----	-----	96.67	0.684	92.16
11	157.3	163.0	159.8	167.6	-----	-----	96.87	0.502	98.02
12	164.6	164.2	163.8	166.1	-----	-----	98.41	0.628	92.88
13	170.6	166.1	167.0	166.7	-----	-----	98.44	0.609	96.01
14	174.4	168.5	168.7	167.2	-----	-----	97.65	0.796	97.15
15	176.5	170.1	169.1	168.6	82.74	-----	93.17	0.505	96.49
16	162.2	161.3	164.2	164.0	20.49	1.622	5.413	1.547	71.51
17	147.4	152.7	126.8	127.2	19.90	-----	5.230	1.514	55.15
18	135.7	144.8	115.2	114.7	19.82	-----	5.782	1.794	54.99
19	127.0	137.3	111.1	106.7	20.32	90.83	7.615	3.214	43.25
20	121.6	131.8	107.5	101.6	30.10	99.41	13.85	0.594	29.80
21	121.2	130.1	104.6	97.38	35.33	99.44	16.84	0.395	29.78
22	123.4	130.6	100.9	95.18	42.95	99.44	22.55	0.246	31.69
23	129.1	136.1	149.7	146.1	61.31	99.44	40.63	0.299	40.87
00	131.6	141.6	161.6	158.4	70.35	99.44	50.13	0.291	33.25

05-24-84

REPORT ID - 143 TITLE - PREHEATER P02 TIME 0115 DATE 05-24-84 THIS REPORT PERIODIC

POINT		DESCRIPTION	ENGR UNITS
API504	STG 1	EXIT DRAFT	IN H2O
API505	STG 2	EXIT DRAFT	IN H2O
API506	STG 3	EXIT DRAFT	IN H2O
API507	STG 4	EXIT DRAFT	IN H2O
API508	STG 3	CONE DRAFT	IN H2O
API509	STG 4	CONE DRAFT	IN H2O
AZI510	DP F1	POS	XOPN
AAI512A	STG 4	EXIT OXY	PCT
AAI512B	STG 4	EXIT COMB	PCT
AII596	FN R36B	CUR	XAMP

HOUR BEGAN	API504	API505	API506	API507	API508	API509	AZI510	AAI512A	AAI512B	AII596
19	27.14	20.56	14.50	8.380	13.34	9.019	96.07	1.754	0.663	76.78
20	27.37	20.69	14.75	8.590	13.57	9.014	95.29	1.814	0.630	76.88
21	27.13	20.42	14.30	8.228	12.99	7.557	95.25	1.498	0.774	77.00
22	26.30	19.66	13.75	7.849	12.35	6.956	95.23	1.658	0.777	76.70
23	26.07	19.35	13.55	7.772	12.17	6.745	95.16	1.162	1.047	76.67
00	26.60	19.74	13.93	7.996	12.50	7.409	95.13	1.479	0.883	76.71
01	27.85	20.73	14.57	8.369	13.46	7.889	95.11	1.311	0.882	76.68
02	28.32	21.30	14.86	8.603	13.75	8.452	95.06	1.421	0.898	76.97
03	28.59	21.51	15.18	8.814	13.99	8.513	95.06	1.399	0.977	76.58
04	28.77	21.73	15.31	8.815	14.19	8.521	95.04	1.173	1.007	76.09
05	28.69	21.57	15.30	8.765	14.03	7.700	95.02	1.324	0.994	76.34
06	28.66	21.41	15.25	8.862	14.29	7.190	95.02	1.572	0.890	76.15
07	28.99	21.84	15.55	8.851	14.97	7.470	95.05	1.345	0.913	76.17
08	28.83	21.61	15.30	8.776	14.59	6.890	95.11	1.466	0.804	75.94
09	28.44	21.49	15.33	8.839	14.29	7.006	95.11	1.603	0.776	75.79
10	28.41	21.26	15.11	8.860	13.97	6.947	95.20	1.773	0.711	75.86
11	28.45	21.46	15.30	8.870	14.37	7.443	95.47	1.682	0.674	76.02
12	29.16	22.00	15.82	8.929	15.03	7.327	95.75	1.794	0.563	76.02
13	29.21	22.00	15.70	9.100	14.97	7.431	95.74	2.159	0.506	76.20
14	29.51	22.31	16.00	9.161	15.58	7.677	95.71	2.005	0.526	76.35
15	27.08	20.45	14.72	8.447	14.11	6.406	95.58	1.866	0.783	76.65
16	2.742	0.877	-0.185	-0.396	-0.456	-0.193	95.43	-----	0.362	51.99
17	-----	-----	-----	-0.429	-0.620	-0.275	95.26	-----	0.304	41.11
18	-----	-----	-----	-0.433	-0.615	-0.285	95.23	-----	0.323	41.62
19	0.754	-0.009	-0.534	-0.220	-0.221	-0.053	95.22	-----	0.361	42.21
20	1.725	0.437	0.427	0.279	0.935	0.468	95.25	-----	0.376	57.01
21	2.468	0.964	0.804	0.598	1.431	0.815	95.23	-----	0.403	58.38
22	5.039	3.006	2.282	1.430	2.960	0.957	95.21	4.727	0.446	67.35
23	11.83	8.469	5.856	3.084	6.637	1.232	95.22	1.517	0.481	78.80
00	15.72	11.29	8.033	4.112	8.784	2.153	95.29	1.197	0.677	76.77

05-24-84

REPORT ID - 144 TITLE - PREHEATER P83 TIME 0117 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI511A	STG 1A MAT DIS TEMP	DEGF
ATI511C	STG 1A GAS EXIT TEMP	DEGF
ATI511B	STG 1B MAT DIS TEMP	DEGF
ATI511D	STG 1B GAS EXIT TEMP	DEGF
ATI511E	STG 2 MAT DIS TEMP	DEGF
ATI511F	STG 2 GAS EXIT TEMP	DEGF
ATI511G	STG 3 MAT DIS TEMP	DEGF
ATI511H	STG 3 GAS EXIT TEMP	DEGF
ATI511J	STG 4 MAT DIS TEMP	DEGF
ATIC511K	STG 4 GAS EXIT TEMP	DEGF

HOUR BEGAN	ATI511A	ATI511C	ATI511B	ATI511D	ATI511E	ATI511F	ATI511G	ATI511H	ATI511J	ATIC511K
19	747.8	750.1	755.7	761.5	1197	1204	1231	1426	1561	1615
20	742.1	745.3	749.4	753.8	1193	1200	1299	1424	1561	1615
21	749.7	755.1	756.3	762.5	1205	1210	1158	1444	1565	1621
22	747.5	751.2	756.9	762.4	1208	1215	1289	1455	1564	1622
23	744.6	750.0	757.0	763.8	1205	1212	1193	1446	1567	1626
00	742.3	748.6	749.8	757.8	1198	1205	1160	1447	1567	1625
01	743.5	747.1	747.8	755.9	1197	1204	1087	1438	1565	1624
02	748.2	751.5	758.1	765.8	1200	1207	1035	1438	1565	1622
03	737.3	742.2	748.7	756.5	1189	1196	1059	1427	1565	1625
04	736.8	742.1	746.1	756.0	1188	1193	1077	1424	1565	1624
05	737.1	742.3	749.0	758.5	1193	1199	1076	1425	1566	1624
06	734.9	739.2	745.8	754.2	1193	1201	1112	1425	1569	1623
07	729.4	732.9	736.9	747.0	1190	1198	1354	1422	1570	1625
08	740.3	743.8	746.3	756.6	1195	1203	1485	1430	1569	1625
09	738.9	742.2	744.2	753.1	1193	1201	1483	1423	1568	1624
10	742.1	743.8	746.1	755.8	1193	1200	1484	1422	1565	1624
11	743.6	745.0	748.5	756.8	1193	1200	1484	1428	1564	1624
12	746.9	746.2	752.8	760.2	1196	1205	1479	1429	1563	1623
13	749.9	747.5	752.6	760.3	1201	1209	1483	1432	1566	1627
14	743.6	744.1	745.7	756.6	1194	1202	1480	1432	1565	1624
15	727.8	730.1	735.1	742.4	1176	1174	1464	1404	1560	1614
16	701.0	511.0	656.5	517.2	858.1	1087	969.6	1273	1173	1336
17	736.0	441.3	622.4	449.1	669.6	1051	445.2	1194	1017	1225
18	734.0	443.3	634.0	452.1	622.1	1007	333.3	1128	884.4	1145
19	706.7	509.4	642.2	520.0	641.6	961.2	366.6	1045	744.8	1034
20	673.2	685.5	666.2	696.5	749.3	971.2	598.3	1004	860.5	1019
21	702.6	705.8	721.1	718.2	788.4	1001	640.8	1033	922.3	1070
22	737.5	704.7	704.4	722.1	903.1	1008	825.6	1140	977.1	1244
23	741.6	749.6	748.1	759.5	1197	1137	1358	1434	1551	1579
00	763.9	773.6	780.2	795.3	1221	1177	1480	1464	1552	1606

05-24-84

REPORT ID - 145 TITLE - PREHEATER P04 TIME 0119 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ABIC587	RF R47A SPD	XRPM
API588	FF PRI AIR PRES	IN H2O
AZIC589	DP R36A POS	%OPN

HOUR BEGAN	ABIC587	API588	AZIC589
19	82.58	29.86	100.1
20	82.05	29.75	100.0
21	84.11	30.00	100.1
22	86.20	30.41	100.1
23	88.91	30.64	100.0
00	86.09	30.43	100.0
01	86.55	30.38	100.1
02	89.08	30.28	100.0
03	91.14	30.42	100.0
04	91.78	30.71	100.1
05	92.21	30.48	100.1
06	91.00	30.54	100.1
07	93.44	30.58	100.2
08	90.89	30.47	100.4
09	87.97	30.27	100.4
10	89.10	30.26	100.4
11	89.36	30.30	100.6
12	90.23	30.21	100.7
13	88.19	30.16	100.7
14	86.68	29.84	100.5
15	83.71	30.05	100.3
16	1.951	4.217	41.57
17	1.937	1.747	7.549
18	1.820	1.707	9.814
19	1.672	1.684	11.23
20	1.570	4.680	34.02
21	1.507	4.807	35.88
22	12.39	12.94	60.48
23	49.22	29.20	100.1
00	59.04	29.67	100.1

05-24-84

REPORT ID - 149 TITLE - COOLER & CLINKER HANDLING TIME 0127 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR UNITS
AIIF94	DB F94 CUR	%AMP
AII560	DRAG F52 CUR	%AMP
AII561	EL F62 CUR	%AMP
AII567	CLK BKR F23 CUR	%AMP
APIC532	FR HOOD DRAFT	IN H20
AZIC532	DP F34A POS	%OPN
AII533	FN F34 CUR	%AMP

HOUR BEGAN	AIIF94	AII560	AII561	AII567	APIC532	AZIC532	AII533
19	98.95	-0.066	-0.238	37.08	0.046	52.23	85.57
20	98.12	-0.070	26.22	37.45	0.045	52.44	85.66
21	97.91	-0.068	44.09	36.93	0.045	52.77	85.96
22	97.05	-0.070	43.52	36.91	0.043	54.63	85.84
23	101.7	-0.055	28.02	36.62	0.046	55.62	86.85
00	98.52	-0.046	42.89	36.51	0.047	54.55	87.10
01	100.2	-0.051	37.88	36.82	0.046	51.55	86.32
02	101.4	-0.061	45.48	37.14	0.044	52.44	85.81
03	103.4	-0.062	45.57	37.07	0.047	52.11	85.79
04	104.0	-0.081	45.63	36.55	0.044	53.15	85.84
05	101.3	-0.074	45.11	36.57	0.047	52.21	86.13
06	99.41	-0.072	44.35	36.48	0.042	52.75	86.33
07	100.7	-0.087	44.90	36.64	0.050	53.07	85.54
08	99.32	-0.089	44.59	36.51	0.047	50.94	84.62
09	98.72	-0.075	44.27	36.42	0.045	47.86	83.39
10	98.16	-0.068	44.39	36.56	0.048	43.68	83.43
11	99.80	-0.062	44.59	36.87	0.043	44.41	82.57
12	99.88	-0.067	44.43	36.63	0.048	43.46	82.18
13	98.64	-0.069	36.81	36.48	0.046	40.47	83.00
14	99.72	-0.077	40.06	37.26	0.045	41.31	82.00
15	99.45	-0.101	44.08	37.31	0.019	47.98	82.23
16	87.03	-0.106	37.81	37.01	0.024	49.72	81.80
17	81.74	-0.108	34.54	36.43	0.038	19.15	78.48
18	81.27	-0.108	34.33	36.71	0.032	12.73	77.87
19	80.38	-0.102	34.02	36.29	-0.044	19.15	71.08
20	79.86	-0.091	33.66	35.94	0.120	0.439	68.76
21	80.40	-0.128	33.92	36.59	0.221	0.443	69.65
22	80.23	-0.191	30.47	36.64	0.252	0.444	69.59
23	86.18	-0.227	-0.319	36.69	0.048	3.196	67.89
00	89.84	-0.256	-0.314	36.65	0.038	11.01	73.28

05-24-84

REPORT ID - 150 TITLE - COOLER & CLINKER HANDLING P02 TIME 0129 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ABIC535	FN F17 SPD	%RPM
AII554	FN F17 CUR	%AMP
AFIC536	FN F18 AIRFLOW	KCFM
AZIC536	FN F18 POS	%OPN
AII555	FN F18 CUR	%AMP
AII565	CLR DRV NO 1 CUR	%AMP
AFIC537	FN F19 AIRFLOW	KCFM
AZIC537	FN F19 POS	%OPN
AFIC538	FN F20 AIRFLOW	KCFM

HOUR BEGAN	ABIC535	AII554	AFIC536	AZIC536	AII555	AII565	AFIC537	AZIC537	AFIC538
19	82.12	73.25	25.99	24.77	73.11	18.80	89.96	55.89	14.01
20	81.82	71.89	25.98	25.15	73.31	16.97	89.96	55.73	13.99
21	81.25	72.43	26.00	23.84	73.28	18.62	89.98	55.86	14.00
22	81.57	74.64	25.99	24.32	73.40	19.98	89.97	55.02	13.99
23	80.69	71.30	26.00	22.09	73.02	17.01	89.99	55.70	14.00
00	80.96	72.05	26.00	23.11	73.34	17.52	89.97	55.42	13.99
01	80.88	72.92	26.00	22.72	73.37	20.52	89.99	55.12	14.00
02	80.52	72.37	25.99	21.99	73.36	19.36	89.97	54.86	14.00
03	80.24	71.58	25.99	21.90	73.32	16.16	89.98	54.44	13.99
04	80.41	73.36	26.00	22.03	73.29	18.71	89.99	54.34	13.99
05	80.27	72.34	26.00	21.90	73.48	21.54	89.96	53.55	14.00
06	80.67	74.64	25.98	22.21	73.53	21.45	89.98	53.89	14.00
07	80.70	74.08	25.99	22.30	73.46	20.01	89.97	53.93	14.00
08	80.79	73.48	25.98	23.26	73.45	18.07	89.99	54.50	14.00
09	81.18	72.61	25.99	24.24	73.72	18.51	89.96	55.19	14.00
10	81.69	73.81	25.98	24.99	73.34	17.80	89.97	55.70	14.00
11	82.16	72.46	25.99	25.49	73.05	18.41	89.96	56.68	13.99
12	82.56	72.82	25.99	26.63	72.94	19.45	89.98	57.38	14.00
13	83.18	74.48	25.99	28.57	73.36	18.44	89.97	57.64	13.99
14	83.31	75.37	26.00	28.65	72.84	18.28	89.98	57.90	13.99
15	83.38	73.12	26.01	29.46	72.86	17.18	89.96	58.46	13.99
16	51.62	31.41	21.55	1.488	54.63	11.16	65.06	4.192	9.345
17	43.94	25.52	21.82	0.860	53.76	8.675	62.91	0.858	7.870
18	40.73	21.91	21.29	0.833	52.67	7.842	62.13	0.833	7.415
19	39.46	21.66	21.33	0.824	52.47	7.636	58.37	4.629	7.272
20	36.22	17.32	21.50	0.807	52.70	7.437	55.00	17.94	7.195
21	35.11	16.04	21.57	0.805	52.55	7.427	55.00	16.63	7.162
22	41.69	21.44	20.77	0.805	52.42	9.057	54.99	15.59	7.141
23	60.58	38.24	17.88	0.676	51.11	14.18	69.11	40.96	8.929
00	69.51	52.26	19.07	6.905	54.61	14.96	78.64	46.74	12.82

05-24-84

REPORT ID - 151 TITLE - COOLER & CLINKER HANDLING PG3 TIME 0131 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR UNITS
AZIC538	FN F20 POS	XOPN
AII557	FN F20 CUR	XAMP
AII566	CLR DRV NO 2 CUR	XAMP
AFIC539	FN F21 AIRFLOW	KCFM
AZIC539	FN F21 POS	XOPN
AII558	FN F21 CUR	XAMP
AFIC540	FN F22 AIRFLOW	KCFM
AZIC540	FN F22 POS	XOPN
AII559	FN F22 CUR	XAMP
API541	GRT PREG NO 1	IN H2O

HOUR BEGAN	AZIC538	AII557	AII566	AFIC539	AZIC539	AII558	AFIC540	AZIC540	AII559	API541
19	25.51	76.24	19.05	48.03	47.62	60.62	43.01	59.46	83.75	16.24
20	24.83	75.88	19.88	48.03	46.69	60.66	43.00	57.78	84.54	16.27
21	25.21	77.25	19.22	48.01	46.51	61.20	43.00	57.71	85.19	16.14
22	23.91	77.41	18.90	47.98	45.15	61.05	42.98	55.27	85.40	16.39
23	26.29	77.40	17.50	47.99	48.65	61.32	42.96	60.56	85.98	16.06
00	24.95	77.74	15.78	48.02	46.69	61.52	43.00	57.82	86.23	16.30
01	23.13	77.15	18.48	47.44	45.47	61.16	42.98	56.69	86.32	16.29
02	26.86	78.15	16.34	47.02	46.95	61.06	42.95	59.05	86.79	16.17
03	26.09	78.48	16.98	46.98	46.63	61.20	43.02	58.98	86.90	16.10
04	26.18	78.31	16.19	47.00	46.69	61.50	42.96	58.71	87.04	16.15
05	24.57	78.86	15.91	47.02	44.63	61.63	43.07	55.97	87.29	16.17
06	23.33	78.75	16.55	47.00	43.49	61.60	42.98	53.81	87.34	16.30
07	24.15	78.31	18.02	45.67	43.21	60.87	42.97	54.91	87.40	16.24
08	24.28	77.84	16.82	44.72	42.41	59.83	42.77	54.16	86.26	16.11
09	22.55	76.82	17.09	43.30	41.00	58.68	40.88	50.25	83.77	16.17
10	23.68	78.19	17.23	42.97	40.51	57.76	39.61	48.13	81.63	16.17
11	25.45	75.29	17.68	42.94	41.48	57.36	38.94	48.47	80.04	16.18
12	26.28	74.98	15.44	43.00	42.17	56.93	39.01	49.55	79.50	16.17
13	23.98	74.95	16.98	42.93	41.06	56.64	39.01	47.97	79.13	16.27
14	25.55	73.72	17.22	42.95	41.96	55.72	38.95	49.35	78.27	16.20
15	26.34	73.41	16.94	42.89	42.57	55.66	38.90	50.03	78.13	16.18
16	9.160	57.85	15.30	21.97	23.07	41.06	19.99	22.14	53.42	4.296
17	2.199	52.00	8.458	16.35	18.72	38.71	14.45	10.85	47.07	2.076
18	0.141	50.59	6.260	15.00	17.48	38.36	12.98	8.324	45.59	1.340
19	0.210	50.45	6.556	15.05	17.46	38.22	12.96	9.323	45.56	1.190
20	0.132	50.44	3.736	14.82	17.10	38.49	13.01	10.64	45.85	0.657
21	0.169	50.56	4.398	14.99	16.80	38.10	13.00	10.48	45.80	0.412
22	0.440	51.38	4.734	15.02	16.65	38.35	13.00	10.32	46.10	2.048
23	14.77	57.27	14.49	18.51	22.39	39.67	16.50	18.05	50.11	7.367
00	24.03	71.37	11.05	25.01	26.68	42.96	24.23	29.11	59.54	10.80

05-24-84

REPORT ID - 153 TITLE - COOLER & CLINKER HANDLING PGS TIME 0135 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI549	N GRT PL NO 1 TEMP	DEGF
ATI550	S GRT PL NO 1 TEMP	DEGF
ATI551	N GRT PL NO 2 TEMP	DEGF
ATI552	S GRT PL NO 2 TEMP	DEGF
ATI569	CLINKER DIS TEMP	DEGF

HOUR BEGAN	ATI549	ATI550	ATI551	ATI552	ATI569
19	226.1	93.96	96.24	164.8	163.0
20	235.5	87.40	93.98	132.7	148.6
21	233.3	81.11	90.44	114.2	142.2
22	228.7	79.32	87.88	110.4	126.8
23	209.9	74.77	85.14	96.49	136.8
00	215.0	72.10	82.27	95.13	125.6
01	226.9	70.96	82.03	94.67	126.0
02	216.0	69.80	80.18	101.0	153.6
03	193.4	66.27	76.64	88.55	127.6
04	183.3	66.02	76.73	82.96	129.6
05	187.6	63.60	74.53	81.16	115.2
06	208.1	66.30	76.16	93.10	110.0
07	217.5	69.87	78.42	104.8	121.9
08	205.5	71.40	80.97	96.68	121.6
09	209.5	76.16	84.00	108.3	122.5
10	231.6	81.97	90.48	116.5	130.8
11	230.2	86.70	96.16	117.5	138.4
12	220.5	88.31	99.09	103.1	141.6
13	237.5	94.48	104.3	119.0	142.2
14	267.9	99.76	110.4	134.2	155.1
15	254.3	99.80	110.4	130.9	154.0
16	129.5	90.74	99.09	119.3	141.6
17	101.9	85.51	95.16	101.5	109.4
18	90.65	82.46	91.98	92.67	102.8
19	87.36	81.81	90.34	90.31	99.01
20	86.24	80.08	89.62	90.12	94.16
21	83.60	79.25	89.97	89.81	90.28
22	90.74	76.27	88.69	90.41	86.97
23	109.6	76.84	84.92	92.08	100.6
00	115.1	74.00	82.35	87.13	145.0

05-24-84

REPORT ID - 152 TITLE - COOLER & CLINKER HANDLING PG4 TIME 0133 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
APIC542	GRT PRES NO 2	IN H2O
ASIC542	CLR DRV NO 1 SPD	%RPM
API543	GRT PRES NO 3	IN H2O
APIC544	GRT PRES NO 4	IN H2O
ASIC544	CLR DRV NO 2 SPD	%RPM
API545	GRT PRES NO 5	IN H2O
API546	GRT PRES NO 6	IN H2O
ATIC547	DC F31 INLET TEMP	DEGF
AZI547	DP F33 POS	%OPN
APDI548	DC 131 DIF PRES	IN H2O

HOUR BEGAN	APIC542	ASIC542	API543	APIC544	ASIC544	API545	API546	ATIC547	AZI547	APDI548
19	16.99	42.30	10.72	7.440	51.57	7.657	7.864	232.3	0.337	8.946
20	17.01	42.22	10.80	7.297	51.56	7.490	7.649	229.4	0.179	8.998
21	16.93	41.74	10.91	7.373	51.57	7.499	7.637	228.1	0.142	9.030
22	17.11	41.24	10.72	6.994	51.57	7.106	7.235	227.5	0.046	9.143
23	16.86	39.58	11.18	8.262	51.57	8.421	8.484	236.3	0.029	9.313
00	17.08	41.01	11.08	7.703	51.83	7.845	7.966	230.8	-0.002	9.226
01	17.05	42.11	11.00	7.462	53.55	7.580	7.757	230.9	-0.001	8.968
02	17.00	42.99	11.18	8.240	54.65	8.319	8.487	238.8	-0.016	9.199
03	16.94	42.22	11.03	8.243	55.52	8.273	8.491	237.5	-0.028	9.233
04	16.97	41.58	10.92	8.262	58.68	8.232	8.421	238.6	-0.017	9.354
05	16.99	41.29	10.65	7.606	59.47	7.539	7.801	230.2	-0.007	9.136
06	17.07	42.61	10.70	7.157	59.47	7.006	7.299	231.1	-0.059	9.138
07	17.01	43.92	10.63	7.230	60.13	7.190	7.559	235.3	-0.036	9.234
08	16.94	41.55	10.60	7.043	60.46	6.951	7.253	231.6	0.005	9.028
09	17.03	42.41	10.74	6.714	60.46	6.503	6.736	236.5	0.079	8.788
10	16.98	42.39	10.72	6.542	60.46	6.241	6.403	236.5	0.295	8.487
11	16.98	42.55	10.83	6.884	60.46	6.535	6.638	243.9	0.366	8.533
12	16.99	41.04	10.85	7.024	60.46	6.706	6.813	243.1	0.460	8.409
13	17.05	41.65	10.71	6.308	60.45	6.012	6.152	236.7	0.349	8.051
14	16.99	43.91	10.69	6.636	60.45	6.330	6.542	242.0	0.382	8.159
15	17.01	42.68	10.82	6.874	60.45	6.506	6.712	248.5	0.351	8.646
16	6.048	20.43	3.437	2.336	25.34	2.193	2.237	236.2	0.331	8.687
17	3.956	20.00	2.225	1.348	20.71	1.160	1.003	176.5	0.217	6.081
18	3.162	20.00	1.666	0.877	20.71	0.740	0.564	148.1	0.199	4.995
19	2.929	20.00	1.385	0.947	20.72	0.867	0.730	125.0	0.151	4.569
20	2.539	20.00	1.086	0.522	20.71	0.506	0.374	100.2	0.086	2.848
21	2.313	20.00	0.939	0.303	20.74	0.312	0.199	95.67	0.047	2.807
22	3.723	22.45	1.401	0.452	20.71	0.359	0.181	103.7	0.022	2.722
23	8.280	28.52	5.576	4.750	21.37	3.769	2.755	167.6	0.027	3.398
00	10.98	26.29	6.792	5.415	25.94	4.367	4.494	169.0	0.047	4.693

-- MAY 26, 1984

05-26-84

REPORT ID - 118 TITLE - RAW MILL AREA TIME 0051 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
APDIC310	MILL D21 DIF PRES	IN H20
ASIC327	CL D21 4 SPD	%RPM
AII330	MILL D21 CUR	%AMP
AVI325B	MILL D21 VIB	IPS
ASI310	BT D17 SPD	%RPM
AII332	BT D17 CUR	%AMP
AII329	PM D53 CUR	%AMP
AII333	CP D55 CUR	%AMP
AFIC312	WF D3 FD RATE	TPH
AFIC313	WF D7 FD RATE	TPH

HOUR BEGAN	APDIC310	ASIC327	AII330	AVI325B	ASI310	AII332	AII329	AII333	AFIC312	AFIC313
18	-0.522	39.90	0.304	0.017	-0.062	1.810	37.30	75.02	0.459	0.087
19	0.195	39.87	0.297	0.016	-0.062	1.810	37.36	75.02	0.472	0.086
20	4.683	38.43	11.75	0.118	12.18	14.75	43.24	76.43	26.07	1.114
21	29.34	45.13	56.96	0.356	60.48	56.82	75.24	82.64	126.9	5.272
22	30.61	45.64	57.81	0.401	61.37	56.38	80.84	82.98	129.1	5.407
23	27.70	44.66	50.41	0.379	52.54	52.46	61.99	81.94	111.4	5.784
00	29.88	45.68	53.92	0.377	59.04	57.39	61.59	82.85	123.0	6.664
01	30.57	45.67	54.88	0.363	61.54	57.89	68.30	82.83	127.7	6.923
02	31.34	45.60	55.64	0.336	63.15	58.10	69.74	83.14	131.5	7.109
03	31.78	45.61	55.82	0.338	62.75	57.88	71.16	83.70	130.5	7.031
04	31.94	45.57	55.11	0.338	61.06	57.72	70.16	83.79	127.8	6.154
05	31.99	45.53	54.10	0.379	58.51	57.91	63.88	82.78	122.7	5.859
06	32.63	45.47	54.82	0.427	57.95	57.05	60.31	82.74	122.6	4.329
07	32.03	45.51	54.56	0.446	57.38	56.93	59.53	82.77	122.0	3.607
08	32.01	45.59	55.65	0.407	58.23	58.49	62.12	83.33	124.4	3.666
09	32.51	45.94	56.91	0.367	60.92	58.15	66.77	83.82	129.4	3.808
10	32.96	46.97	58.66	0.363	60.39	57.60	75.33	84.19	128.6	4.030
11	26.66	45.94	48.42	0.369	47.34	48.00	59.79	84.00	99.88	4.208
12	32.29	47.18	59.78	0.399	60.24	56.95	78.36	84.42	127.0	5.263
13	32.51	47.29	59.41	0.381	63.43	57.69	82.47	84.36	132.8	5.590
14	32.74	47.23	59.00	0.340	66.78	58.63	87.65	84.94	139.1	6.224
15	33.24	47.27	60.68	0.352	64.29	57.55	86.88	84.60	132.7	6.581
16	33.25	47.38	61.61	0.381	62.67	58.43	89.07	84.11	129.1	10.54
17	29.91	47.42	58.14	0.376	61.95	57.57	84.22	84.08	122.1	7.770
18	30.85	47.45	58.63	0.352	64.10	58.07	83.79	84.43	126.4	9.241
19	30.29	47.45	57.27	0.343	64.09	57.90	80.11	84.25	129.3	9.828
20	30.71	47.44	57.23	0.325	64.08	58.06	77.95	84.24	129.2	9.776
21	32.49	47.09	59.99	0.325	64.06	58.22	81.62	83.90	129.1	9.781
22	32.29	46.09	60.08	0.373	64.04	58.58	84.56	84.42	129.4	9.774
23	31.00	45.97	57.03	0.347	64.02	59.22	75.33	83.79	123.3	8.701

05-26-84

REPORT ID - 119 TITLE - RAW MILL AREA PB2 TIME 0053 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AFIC314	WF D11 FD RATE	TPH
AFIC315	WF D15 FD RATE	TPH
AFIC319	BGHS D38 BAGS DIF.	IN H20
ASIC319	FN D41 SPD	%RPM
APIC320	FN F6 EXIT DRAFT	IN H20
AZIC321	DP D40 POS	%OPN
AII331	FN D41 CUR	%AMP
APDI324	BGHS D38 DIF PRES	IN H20
API328B	PM D21 1 HYD PRES	PSI

HOUR BEGAN	AFIC314	AFIC315	AFIC319	ASIC319	APIC320	AZIC321	AII331	APDI324	API328B
18	0.130	-0.034	2.730	100.4	0.301	32.63	44.19	2.830	1064
19	0.130	-0.033	2.839	101.6	0.304	34.83	46.17	3.324	1061
20	2.640	1.254	3.348	103.3	1.128	51.22	53.76	5.497	1017
21	12.81	6.097	5.433	101.3	1.529	99.32	73.00	10.32	845.3
22	13.06	6.121	5.525	100.1	0.855	99.27	73.60	10.69	832.9
23	11.39	5.421	5.626	99.50	1.111	97.60	74.14	11.90	852.3
00	12.57	5.892	5.700	99.22	0.761	99.13	75.03	12.06	834.9
01	13.11	6.140	5.491	99.31	0.766	99.08	74.78	11.74	826.8
02	13.45	6.307	5.581	99.08	0.677	99.08	74.18	11.77	816.6
03	13.37	6.266	5.668	99.52	0.668	99.07	73.54	11.59	811.1
04	13.02	6.102	5.592	100.2	0.693	99.07	73.88	11.74	808.1
05	12.48	5.842	5.594	100.2	0.629	99.05	74.57	12.29	809.7
06	12.35	5.784	5.683	100.6	0.658	99.03	74.28	12.56	809.4
07	12.22	5.731	5.727	100.9	0.658	99.06	74.39	12.76	808.3
08	12.41	5.815	5.824	101.1	0.611	99.10	74.34	13.03	814.1
09	12.98	6.083	6.372	102.1	0.590	99.19	73.83	12.44	819.7
10	12.87	6.032	9.171	104.3	0.631	99.25	73.26	9.259	821.8
11	10.10	4.721	6.774	105.5	0.705	98.84	74.32	9.933	867.4
12	12.83	6.136	6.871	106.3	0.638	99.56	72.98	9.390	843.1
13	13.52	6.973	6.863	106.8	0.609	99.56	72.86	9.393	835.4
14	14.44	7.343	6.975	103.6	0.589	99.56	72.17	9.322	831.2
15	14.50	7.068	7.150	101.6	0.707	99.55	71.20	9.063	829.0
16	14.12	6.887	7.296	101.2	0.707	99.56	70.67	9.018	829.1
17	18.31	7.239	7.274	100.9	0.667	99.56	73.00	9.531	822.6
18	17.50	7.348	7.329	100.9	0.616	99.56	72.51	9.435	822.3
19	14.46	7.039	7.372	100.9	0.635	99.57	72.92	9.522	817.5
20	14.45	7.042	7.228	100.7	0.651	99.51	73.35	9.496	811.8
21	14.44	7.039	7.300	100.4	0.653	99.50	72.74	9.254	807.8
22	14.45	7.038	7.277	100.2	0.620	99.50	72.90	9.391	807.4
23	20.52	7.637	7.105	99.69	0.694	99.46	74.41	9.646	807.6

05-26-84

REPORT ID - 120 TITLE - RAW MILL AREA P03 TIME 0055 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
APIC323	MILL D21 INLET DRAFT	IN H2O
AZIC320	DP D34 POS	%OPN
ATIC322	FN F6 EXIT TO BYPASS	DEGF
AZIC322	DP D37 POS	%OPN
ATI317A	MILL D21 EXIT TEMP	DEGF
ATI318	MILL D21 INLET TEMP	DEGF
ATI317B	FN F6 INLET TEMP	DEGF
ATI326A	MILL D21 E BG TEMP	DEGF
ATI326B	MILL D21 W BG TEMP	DEGF
ATI326C	FN D41 N BG TEMP	DEGF

HOUR BEGAN	APIC323	AZIC320	ATIC322	AZIC322	ATI317A	ATI318	ATI317B	ATI326A	ATI326B	ATI326C
18	0.095	58.12	206.5	78.50	216.8	299.0	430.5	113.7	111.3	148.0
19	0.170	74.28	186.5	78.50	222.7	284.1	415.2	111.6	110.2	147.2
20	0.694	74.72	226.5	58.82	182.2	186.4	450.9	111.4	110.3	145.7
21	1.746	64.11	144.4	0.080	160.2	316.8	521.1	123.4	120.7	143.4
22	0.993	71.49	136.2	0.043	160.0	332.3	543.4	129.0	125.7	140.6
23	1.102	58.72	166.4	4.793	161.3	383.4	570.1	127.0	123.7	138.4
00	0.794	87.32	138.7	-0.008	159.9	389.6	577.2	129.7	126.4	137.1
01	0.741	98.66	136.6	-0.043	159.9	391.0	575.1	130.3	127.1	135.5
02	0.663	98.88	136.2	-0.158	160.0	418.4	588.5	130.7	127.4	134.4
03	0.575	98.48	135.9	-0.106	159.9	423.1	593.8	131.4	128.0	133.2
04	0.506	82.77	135.0	-0.075	160.1	439.4	586.5	132.1	128.8	132.3
05	0.504	63.96	134.3	-0.055	160.0	468.4	588.5	132.6	129.2	130.5
06	0.489	46.10	133.1	-0.110	160.0	483.5	584.8	132.8	129.5	128.8
07	0.511	53.47	133.9	-0.056	159.9	480.4	581.5	132.8	129.5	128.8
08	0.445	65.44	132.3	-0.030	155.3	477.8	580.7	133.4	130.1	130.3
09	0.395	56.00	132.1	0.003	155.0	483.0	579.9	134.5	131.1	132.8
10	0.398	46.83	130.3	0.025	154.8	467.8	558.4	136.4	133.0	133.1
11	0.467	56.75	177.6	18.44	160.7	448.6	576.2	136.6	133.1	131.6
12	0.406	64.06	134.1	0.056	154.9	463.8	581.6	139.3	135.7	132.9
13	0.402	66.93	131.6	0.062	154.9	460.5	581.5	140.9	137.1	133.5
14	0.386	68.35	132.3	0.058	154.9	465.4	577.6	141.5	137.8	134.7
15	0.393	36.73	133.7	0.075	154.9	482.9	581.3	140.5	136.9	135.7
16	0.365	29.18	134.7	0.083	155.1	498.1	589.0	140.0	136.5	136.9
17	0.487	87.29	136.0	0.103	154.8	461.2	594.4	140.1	136.4	139.4
18	0.425	90.27	136.3	0.111	154.9	458.6	590.0	140.3	136.6	142.1
19	0.474	99.24	136.3	0.110	154.9	450.1	591.6	140.6	137.0	145.3
20	0.546	99.35	135.1	0.097	154.9	437.8	584.0	140.8	137.2	144.7
21	0.405	76.89	132.5	0.069	154.9	453.8	576.4	140.6	137.0	142.0
22	0.429	85.85	131.6	0.046	154.9	449.8	572.8	139.8	136.2	139.6
23	0.591	99.10	132.5	0.027	154.8	418.0	568.9	139.1	135.5	137.8

05-26-84

REPORT ID - 121 TITLE - RAW MILL AREA PG4 TIME 0057 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AT1326D	FN D41 S BG TEMP	DEGF

HOUR BEGAN	AT1326D
18	155.0
19	153.4
20	148.2
21	143.0
22	138.8
23	136.5
00	134.7
01	131.2
02	129.2
03	130.1
04	126.7
05	125.1
06	121.6
07	121.4
08	126.6
09	135.8
10	142.6
11	147.3
12	149.5
13	151.0
14	148.9
15	147.4
16	147.6
17	148.8
18	149.7
19	149.4
20	142.8
21	136.0
22	132.6
23	130.3

05-26-84

REPORT ID - 122 TITLE - BLENDING & KILN FEED TIME 0059 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AWIC400	LEV BN WEIGHT	TONS
AII404	EL E21 CUR	%AMP
AIIE51	EL E51 CUR	%AMP
AII406	PM E27 CUR	%AMP
AII407	CP E10 CUR	%AMP
AII408	CP E11 CUR	%AMP
AII409	CP E12 CUR	%AMP
AII410	CP E30 CUR	%AMP

HOUR BEGAN	AWIC400	AII404	AIIE51	AII406	AII407	AII408	AII409	AII410
18	6.859	17.13	0.282	23.82	88.61	82.68	67.48	73.87
19	6.873	17.02	0.284	23.79	88.35	82.33	67.24	73.79
20	6.244	20.29	0.284	28.96	88.23	82.18	66.89	77.87
21	6.196	24.12	0.282	35.95	88.42	81.98	66.27	81.05
22	6.198	26.15	0.282	38.67	88.97	82.26	66.15	82.91
23	6.198	28.39	0.281	42.92	89.18	82.40	66.03	84.93
00	6.201	28.49	0.246	43.54	89.24	82.35	66.25	84.98
01	6.200	28.70	0.216	43.46	89.60	82.18	65.83	84.73
02	6.200	28.63	0.214	43.31	89.78	82.34	65.84	84.78
03	6.205	28.51	0.213	43.15	89.98	82.63	66.45	85.39
04	6.298	30.00	0.225	49.03	90.21	82.83	66.36	86.61
05	6.513	31.91	0.247	55.47	90.14	82.37	65.83	87.44
06	6.601	32.54	0.269	59.45	90.00	82.12	65.73	87.88
07	6.599	32.93	0.271	64.26	90.05	82.12	65.57	87.83
08	6.602	32.83	0.282	63.66	89.99	82.30	65.76	87.59
09	6.601	32.47	0.284	62.26	89.95	82.52	65.99	87.56
10	6.600	32.29	0.284	62.57	90.24	82.95	66.03	87.52
11	6.604	31.15	0.333	56.15	89.78	82.89	66.18	86.61
12	6.599	29.59	0.355	48.58	89.48	82.86	66.05	85.24
13	6.601	29.53	0.379	49.42	89.47	83.07	65.90	85.06
14	6.600	29.51	0.371	49.73	89.90	84.06	66.54	85.12
15	6.600	29.55	0.355	48.88	90.18	84.29	66.91	85.34
16	6.600	29.45	0.353	49.06	90.52	84.30	66.17	85.20
17	6.601	29.44	0.298	49.05	90.39	84.40	66.17	85.20
18	6.599	29.48	0.282	49.32	90.52	84.63	66.56	85.41
19	6.601	29.53	0.284	49.70	90.86	84.89	66.57	85.46
20	6.599	29.52	0.284	49.39	91.04	84.82	66.14	85.36
21	6.601	29.50	0.284	49.07	91.30	84.70	65.74	84.98
22	6.599	29.31	0.284	49.31	91.00	84.86	66.43	85.11
23	6.600	29.58	0.278	48.85	91.29	85.04	66.33	85.12

05-24-84

REPORT ID - 123 TITLE - BLENDING & KILN FEED PO 2 TIME 0101 DATE 05-24-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AII405	PM E29 CUR	XAMP
AII905	CP K19	XAMP
AII406	PM E27 CUR	XAMP

HOUR BEGAN	AII405	AII905	AII406
19	1.022	28.74	23.79
20	1.542	36.81	28.96
21	1.479	30.65	35.95
22	1.115	32.60	38.67
23	0.947	28.90	42.92
00	0.772	31.68	43.54
01	0.722	30.03	43.46
02	0.802	32.67	43.31
03	0.881	31.52	43.15
04	0.941	39.07	49.03
05	0.993	35.00	55.47
06	0.987	35.30	59.45
07	1.145	37.92	64.26
08	1.148	37.49	63.66
09	1.196	38.10	62.26
10	1.371	42.21	62.57
11	1.508	42.59	56.15
12	1.491	41.24	48.58
13	1.579	38.42	49.42
14	1.565	43.90	49.73
15	1.298	43.29	48.88
16	1.256	41.28	49.06
17	1.266	41.83	49.05
18	1.298	41.28	49.32
19	1.151	39.68	49.70
20	0.997	42.21	49.39
21	0.977	37.66	49.07
22	0.953	38.77	49.31
23	0.889	39.34	48.85
00	0.837	44.44	51.18

05-26-84

REPORT ID - 124 TITLE - COAL MILL FEED TIME 0103 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AWIC570	COAL BIN WEIGHT	TONS
AFIC570	WF R19 FD RATE	TPH
APDI571	MILL R22 DIF PRES	IN H20
AII585	MILL R22 CUR	XAMP
AGI582	CL R22 3 BPD	XRPM
API581B	PM R22-1 HYD PRES	PSI
ALI577	BN R12 LEV	X
AII584	EL R3 CUR	XAMP

HOUR BEGAN	AWIC570	AFIC570	APDI571	AII585	AGI582	API581B	ALI577	AII584
19	1.614	2.185	6.449	34.24	23.06	597.7	-0.109	0.238
20	1.768	6.578	13.56	52.64	23.05	596.6	-0.085	0.238
21	1.901	9.862	19.83	61.64	23.07	597.5	-0.109	0.238
22	1.828	10.72	20.81	65.06	23.07	603.8	-0.094	5.215
23	1.840	11.88	21.75	70.63	23.09	600.4	-0.087	0.518
00	1.966	11.71	21.62	69.49	23.08	599.9	-0.103	0.238
01	1.966	11.43	21.40	68.25	23.08	595.2	-0.062	0.238
02	1.988	11.06	21.20	66.26	23.07	601.4	-0.062	0.238
03	1.932	11.29	21.39	67.41	23.07	599.3	-0.094	0.238
04	1.857	12.21	22.12	73.16	23.06	596.7	-0.078	0.238
05	1.882	12.89	22.73	78.02	23.07	594.3	-0.078	0.238
06	1.915	13.19	23.18	80.38	23.06	594.9	-0.092	17.68
07	1.954	13.09	23.10	79.16	23.07	595.3	-0.087	16.95
08	1.968	12.99	23.09	78.77	23.07	596.5	-0.124	15.86
09	1.957	12.83	22.92	77.40	23.06	596.7	-0.132	7.192
10	1.989	12.47	22.69	75.25	23.04	592.5	-0.116	4.971
11	2.001	12.70	22.89	77.79	23.04	598.0	-0.101	0.238
12	2.102	11.64	21.99	69.94	23.03	597.8	-0.078	0.238
13	2.012	11.68	22.05	70.59	23.03	596.8	-0.094	0.238
14	2.018	11.56	21.92	69.56	23.05	595.1	-0.078	0.238
15	1.992	11.77	22.00	70.69	23.06	595.1	-0.094	9.728
16	2.004	11.81	22.05	70.96	23.07	599.4	-0.094	0.238
17	1.975	12.11	22.22	72.31	23.07	601.8	-0.092	0.238
18	2.001	12.22	22.29	73.43	23.07	599.5	-0.109	0.238
19	2.029	12.03	22.19	72.55	23.07	593.1	-0.081	0.238
20	2.010	11.99	22.08	72.16	23.07	597.8	-0.081	0.238
21	1.994	12.17	22.19	73.47	23.07	593.6	-0.062	0.238
22	2.012	12.12	22.26	73.56	23.08	597.2	-0.094	16.67
23	2.009	12.14	22.11	73.41	23.08	599.9	-0.062	17.29
00	2.013	12.09	22.06	72.91	23.09	599.1	-0.078	13.31

05-26-84

REPORT ID - 125 TITLE - COAL MILL AREA TIME 0105 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
API572	MILL R22 INLET DRAFT	IN H20
AZIC573	DP R34 POS	%OPN
AII586	FN R35 CUR	%AMP
APIC574	FN R35 EXIT DRAFT	IN H20
AZIC574	DP R28 POS	%OPN
ATIC575C	DP R111 CONTROL	%
ATIC575A	MILL R22 EXIT TEMP	DEGF
ATIC575B	MILL R22 INLET TEMP	DEGF
AZIC575	DP R38 POSITION	%OPN

HOUR BEGAN	API572	AZIC573	AII586	APIC574	AZIC574	ATIC575C	ATIC575A	ATIC575B	AZIC575
19	2.783	29.43	45.11	0.509	56.88	161.4	111.7	161.4	0.675
20	5.684	45.78	57.07	0.509	65.94	169.1	125.6	169.1	0.692
21	7.693	65.84	65.99	0.494	65.70	169.2	141.4	169.2	0.694
22	7.226	71.44	66.51	0.500	68.24	175.6	145.9	175.6	0.671
23	6.924	79.19	66.21	0.522	69.55	179.4	148.3	179.4	0.596
00	6.815	78.09	66.08	0.513	70.49	183.4	150.1	183.4	22.73
01	7.318	76.25	66.40	0.503	68.56	180.3	148.3	180.3	11.95
02	6.789	73.81	66.46	0.481	70.38	180.2	148.4	180.2	35.20
03	6.948	75.29	66.21	0.492	69.65	180.4	148.4	180.4	34.64
04	7.002	81.44	66.34	0.501	69.74	180.6	147.7	180.6	4.968
05	6.911	85.94	66.42	0.499	69.34	181.4	147.8	181.4	0.639
06	6.650	87.98	66.91	0.502	70.08	181.6	148.1	181.6	0.629
07	6.547	87.29	67.00	0.501	70.84	182.2	149.0	182.2	0.654
08	6.522	86.59	67.08	0.498	71.10	180.8	148.7	180.8	0.668
09	6.337	85.55	66.82	0.492	72.56	181.3	148.2	181.3	29.83
10	6.641	83.21	66.36	0.494	71.16	180.1	147.3	180.1	0.928
11	6.635	84.69	66.05	0.518	70.25	181.3	146.5	181.3	0.952
12	6.312	77.63	66.45	0.504	72.38	183.1	149.4	183.1	24.14
13	6.284	77.85	66.61	0.505	72.45	181.5	148.4	181.5	35.01
14	6.198	77.11	66.46	0.501	73.03	181.3	148.4	181.3	35.83
15	6.309	78.47	66.48	0.493	72.17	181.2	148.4	181.2	35.99
16	6.308	78.74	66.31	0.511	72.62	181.1	148.3	181.1	36.75
17	6.373	80.82	66.36	0.507	72.32	181.3	148.4	181.3	36.05
18	6.440	81.43	66.28	0.490	72.08	181.3	148.4	181.3	33.54
19	6.318	80.29	66.38	0.504	72.56	181.5	148.4	181.5	36.89
20	6.493	79.96	66.37	0.502	71.79	181.1	148.4	181.1	35.87
21	6.748	81.13	66.50	0.493	70.52	180.6	148.4	180.6	27.46
22	6.737	80.86	66.47	0.503	70.25	180.9	148.3	180.9	29.80
23	6.844	80.93	66.83	0.504	69.98	180.6	148.4	180.6	27.04
00	6.809	80.61	66.72	0.514	70.25	180.4	148.4	180.3	33.14

05-26-84

REPORT ID - 139 TITLE - COAL MILL AREA PG2 TIME 0107 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI594	MILL SEC AIR INLET TEMP	DEGF
AAIC576	MILL R22 EXIT OXY	PCT
AZIC576	DP R101 POS	%OPN
ATI595	MILL PRH AIR INLET TEMP	DEGF
AZIC575A	DP R111 POS	%OPN
ATI578	CY GAS EXIT TEMP	DEGF
ATI579	CY MAT DSCH TEMP	DEGF
ATI580	HPR MAT TEMP	DEGF
ATI583A	MILL R22 E BG TEMP	DEGF
ATI583B	MILL R22 W BG TEMP	DEGF

HOUR BEGAN	ATI594	AAIC576	AZIC576	ATI595	AZIC575A	ATI578	ATI579	ATI580	ATI583A	ATI583B
19	129.9	18.38	60.49	242.5	0.361	109.1	111.5	131.5	100.8	101.8
20	138.9	13.31	99.55	372.2	0.621	118.9	124.2	130.4	101.9	102.9
21	363.0	11.64	99.59	459.1	7.180	134.5	140.9	129.0	103.1	105.4
22	520.8	11.45	99.54	489.8	29.81	140.6	146.0	128.4	102.6	105.8
23	761.8	12.06	99.58	514.1	46.91	143.2	148.2	127.8	102.6	105.6
00	657.0	11.78	99.69	528.2	28.01	146.0	150.6	127.2	102.6	105.8
01	254.2	11.31	99.69	529.7	0.486	143.6	148.2	126.5	102.4	104.7
02	127.1	11.76	99.66	541.5	0.498	143.9	148.6	125.9	102.2	105.3
03	108.2	11.93	99.75	546.8	0.486	144.0	148.5	125.5	101.9	105.0
04	452.9	11.73	99.72	542.6	28.54	143.5	147.8	125.3	102.5	106.2
05	669.7	11.84	99.75	546.5	41.32	143.2	147.9	125.6	102.8	106.5
06	767.9	11.89	99.68	542.9	45.05	143.4	148.0	126.4	103.2	106.9
07	826.1	11.86	99.59	539.2	46.29	144.4	149.0	126.6	103.6	107.5
08	823.1	11.60	99.63	539.8	45.28	143.9	148.5	126.9	103.9	107.9
09	704.4	11.71	99.72	539.0	45.34	144.2	148.4	127.3	104.5	108.5
10	835.9	11.73	99.73	519.9	45.35	142.9	147.0	128.3	105.2	109.4
11	840.8	11.84	99.81	526.6	45.38	141.7	146.1	128.9	106.3	110.5
12	675.1	12.27	99.84	535.2	45.33	144.5	149.2	128.3	107.3	110.7
13	614.8	12.22	99.81	533.3	45.30	143.4	148.1	127.4	108.1	111.8
14	568.4	12.40	99.75	532.4	45.31	142.9	148.3	126.5	108.5	111.6
15	549.3	12.46	99.73	533.3	45.31	143.2	148.4	126.7	107.4	111.0
16	507.2	12.29	99.78	537.8	45.31	143.6	148.5	126.7	106.6	110.5
17	514.6	12.02	99.78	544.6	45.36	144.0	148.6	126.5	106.3	110.6
18	541.2	12.00	99.56	542.7	45.38	144.1	148.6	126.1	106.5	110.7
19	448.5	12.23	99.50	544.0	45.38	144.2	148.6	125.7	106.8	111.0
20	464.1	12.08	99.38	537.9	45.34	144.2	148.6	125.5	106.6	111.0
21	547.0	12.08	99.39	531.8	45.30	143.9	148.5	125.2	106.3	110.5
22	543.4	12.24	99.34	527.1	45.28	143.9	148.4	125.1	105.5	109.7
23	579.5	12.04	99.38	522.9	45.28	144.0	148.6	125.1	104.9	109.1
00	517.8	12.20	99.33	525.4	45.27	143.9	148.5	125.2	104.4	108.6

05-26-84

REPORT ID - 14D TITLE - BYPASS AREA TIME 0109 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION		ENGR. UNITS
API518	BYP	INLET DRAFT	IN H2O
API519	FN N18	INLET DRAFT	IN H2O
ATIC521	BYPASS	INLET TEMP	DEGF
AZIC521	DP N18A	POS	%OPN
AII568	FN N18	CUR	%AMP
APDI523	DC N13	DIF PRES	IN H2O
AFIC520	QUENCH	AIRFLOW	KCFM
AZIC520	DP N4	POS	%OPN
ATIC522	BT N6	EXIT TEMP	DEGF
AZIC522	VL N5	POS	%OPN

HOUR BEGAN	API518	API519	ATIC521	AZIC521	AII568	APDI523	AFIC520	AZIC520	ATIC522	AZIC522
19	-----	-----	150.1	6.776	29.81	-----	8.005	34.08	144.3	-----
20	0.392	1.041	244.4	9.115	35.12	0.545	9.655	38.37	200.3	11.68
21	0.573	1.941	627.6	14.83	45.06	0.899	11.99	43.60	327.1	49.15
22	0.775	2.253	721.1	16.06	45.55	0.978	12.01	42.92	325.8	60.44
23	1.006	2.666	778.8	17.06	46.50	1.145	12.00	42.32	325.6	66.66
00	0.962	2.632	779.2	17.05	46.29	1.133	11.99	42.40	325.2	66.00
01	0.917	2.425	754.8	15.47	43.24	1.143	11.54	41.28	321.2	60.44
02	0.397	0.083	329.8	1.028	0.158	-----	1.001	0.685	228.2	0.172
03	0.631	1.826	375.6	12.83	36.54	1.134	12.78	38.19	224.8	31.67
04	1.039	3.386	567.6	21.28	56.70	1.527	19.00	56.95	251.8	67.31
05	1.200	3.653	602.6	21.90	57.97	1.577	18.99	56.40	249.5	71.69
06	1.436	3.980	620.5	22.27	58.04	1.685	19.02	55.99	249.8	70.19
07	1.421	4.002	646.4	22.71	57.73	1.727	19.00	56.23	249.7	72.51
08	1.254	3.677	604.7	22.01	56.40	1.615	19.00	56.77	249.9	68.45
09	1.188	3.540	578.5	21.53	55.70	1.550	18.98	57.01	249.7	65.29
10	1.145	3.426	579.5	20.57	53.49	1.477	18.06	55.13	322.4	54.66
11	1.086	3.269	578.9	19.92	51.76	1.447	17.50	54.22	324.9	53.78
12	1.007	3.196	578.2	19.91	51.80	1.433	17.51	54.47	325.0	53.38
13	1.020	3.231	578.5	20.04	51.91	1.270	17.49	54.48	325.2	53.16
14	1.008	3.194	578.8	19.93	51.49	0.848	17.51	54.60	325.0	53.10
15	1.018	3.213	578.3	20.03	51.48	1.047	17.49	54.61	324.9	53.30
16	0.995	3.174	578.4	20.17	51.92	1.004	17.50	54.80	324.9	52.64
17	0.974	3.153	578.9	20.11	51.78	0.884	17.51	55.03	324.9	51.96
18	1.033	3.329	612.4	20.66	52.37	1.173	17.52	54.94	325.8	57.21
19	1.027	3.395	629.9	20.91	52.53	1.138	17.49	54.98	325.0	58.75
20	0.958	3.330	638.4	20.97	52.81	1.293	17.49	55.11	324.9	59.16
21	1.014	3.536	666.9	21.56	53.89	1.258	17.52	54.77	326.0	62.37
22	1.006	3.556	668.9	21.57	53.64	1.212	17.50	54.67	324.9	62.83
23	0.966	3.483	667.1	21.41	53.65	1.322	17.50	54.64	324.4	61.14
00	0.995	3.467	656.4	21.27	53.44	1.439	17.49	54.52	324.4	61.30

05-26-84

REPORT ID - 141 TITLE - BYPASS AREA PG2 TIME 0111 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AII564	SC N6A CUR	XAMP

HOUR BEGAN	AII564
19	33.15
20	32.87
21	32.53
22	32.41
23	32.50
00	32.56
01	25.36
02	0.402
03	24.68
04	32.80
05	32.78
06	32.81
07	32.91
08	32.99
09	32.92
10	32.94
11	32.98
12	32.89
13	32.83
14	32.95
15	32.98
16	32.73
17	32.75
18	32.89
19	32.84
20	32.74
21	32.55
22	32.70
23	32.81
00	32.78

05-26-84

REPORT ID - 142 TITLE - PREHEATER TIME 0113 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI563A	FN F6 N BG TEMP	DEGF
ATI563B	FN N18 S BG TEMP	DEGF
ATI563C	FN N18 N BG TEMP	DEGF
ATI563D	FN N18 S BG TEMP	DEGF
ASIC500	FN F6 SPD	%RPM
AZIC501	DP F6A POS	%OPN
AII503	FN F6 CUR	%AMP
APIC320	FN F6 EXIT DRAFT	IN H2O
AZIC321	DP D4U POS	%OPN

HOUR BEGAN	ATI563A	ATI563B	ATI563C	ATI563D	ASIC500	AZIC501	AII503	APIC320	AZIC321
19	127.8	131.9	155.4	158.5	40.56	99.25	20.52	0.304	34.83
20	121.3	132.1	154.5	152.9	50.14	99.31	30.22	1.128	51.22
21	116.3	132.5	154.4	150.2	67.64	99.36	47.91	1.529	99.32
22	114.6	134.9	153.7	147.2	77.54	99.35	59.91	0.855	99.27
23	118.8	137.9	154.0	148.2	88.49	99.32	75.38	1.111	97.60
00	122.1	141.0	153.9	147.9	89.22	99.33	75.97	0.761	99.13
01	121.9	141.5	152.6	145.7	88.85	99.32	75.66	0.766	99.08
02	125.5	144.6	113.6	106.4	90.95	99.34	78.08	0.677	99.08
03	129.5	147.0	119.9	110.9	90.50	99.38	77.03	0.668	99.07
04	128.4	147.0	146.5	139.4	94.82	99.32	85.38	0.693	99.07
05	128.3	148.0	144.9	139.4	99.24	99.31	94.39	0.629	99.05
06	127.2	148.6	143.0	136.4	99.42	99.27	96.68	0.658	99.03
07	128.0	149.6	144.3	138.6	99.38	99.31	96.90	0.658	99.06
08	132.2	150.2	148.9	146.2	98.70	99.38	95.43	0.611	99.10
09	137.3	150.1	151.8	156.0	98.03	99.45	94.21	0.590	99.19
10	145.9	151.8	154.7	159.7	95.62	99.26	91.54	0.631	99.25
11	151.1	154.5	157.5	157.8	96.62	99.25	92.30	0.705	98.84
12	153.2	155.3	158.5	156.8	92.38	99.25	84.80	0.638	99.56
13	155.6	155.0	159.0	157.4	91.77	99.25	83.70	0.609	99.56
14	157.3	155.4	160.1	158.2	91.77	99.22	82.50	0.589	99.56
15	157.6	155.8	160.7	158.2	92.00	99.19	82.71	0.707	99.55
16	157.8	157.0	160.9	158.8	92.11	99.19	82.17	0.707	99.56
17	158.6	157.7	161.2	160.2	92.17	99.19	81.50	0.667	99.56
18	158.8	156.3	160.6	161.1	92.15	99.19	81.65	0.616	99.56
19	156.8	157.0	160.7	160.7	92.20	99.19	81.89	0.635	99.57
20	150.6	158.4	161.0	154.8	92.21	99.18	81.87	0.651	99.51
21	138.4	154.4	158.5	149.5	92.17	99.29	82.48	0.653	99.50
22	131.3	150.8	156.7	147.6	92.13	99.27	82.43	0.620	99.50
23	128.9	150.2	155.1	146.1	92.20	99.28	82.16	0.694	99.46
00	128.1	148.7	154.2	145.6	94.04	99.28	84.97	0.681	99.44

05-26-84

REPORT ID - 143 TITLE - PREHEATER PG2 TIME 0115 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION		ENGR. UNITS
API504	STG 1	EXIT DRAFT	IN H20
API505	STG 2	EXIT DRAFT	IN H20
API506	STG 3	EXIT DRAFT	IN H20
API507	STG 4	EXIT DRAFT	IN H20
API508	STG 3	CONE DRAFT	IN H20
API509	STG 4	CONE DRAFT	IN H20
AZI510	DP F1	POS	%OPN
AAI512A	STG 4	EXIT OXY	PCT
AAI512B	STG 4	EXIT COMB	PCT
AII596	FN R36B	CUR	%AMP

Stg 4 O_2 Comb

HOUR BEGAN	API504	API505	API506	API507	API508	API509	AZI510	AAI512A	AAI512B	AII596
19	3.221	0.926	0.705	0.524	1.244	0.288	95.15	-----	0.441	52.57
20	7.566	4.986	3.083	1.954	3.834	0.590	95.06	5.730	0.242	69.07
21	15.38	10.70	7.113	4.099	7.112	1.401	95.11	1.166	0.621	78.07
22	19.54	14.02	9.891	5.578	9.928	2.776	95.10	1.566	0.677	77.52
23	24.62	18.08	12.52	7.208	11.84	5.651	95.09	1.727	0.722	76.68
00	24.37	18.08	12.62	7.240	11.94	6.098	95.11	1.854	0.714	76.57
01	24.13	18.00	12.48	7.353	11.38	6.598	95.08	1.906	0.715	77.01
02	25.02	18.80	13.13	7.734	11.98	5.831	95.10	1.766	0.836	76.58
03	24.66	18.57	12.89	7.656	11.71	5.771	95.08	1.820	0.792	76.59
04	27.17	20.66	14.52	8.507	13.45	6.762	95.08	1.766	0.725	76.74
05	29.33	22.51	15.66	9.452	14.96	7.366	95.07	1.680	0.762	77.17
06	29.20	21.99	15.22	9.083	14.57	7.602	94.97	1.403	0.889	77.04
07	29.28	22.02	15.25	8.938	14.67	7.499	95.06	1.368	0.917	76.68
08	28.81	21.67	14.99	8.728	14.07	7.022	95.14	1.295	0.937	76.51
09	28.27	21.51	14.72	8.593	13.99	7.158	95.25	1.240	0.940	76.08
10	27.62	21.05	14.42	8.684	14.11	6.335	95.38	1.316	0.880	76.02
11	27.37	20.53	14.02	8.376	13.39	6.390	95.32	1.407	0.852	76.04
12	24.92	18.57	12.63	7.475	11.74	5.961	95.30	1.886	0.734	76.03
13	24.78	18.51	12.55	7.296	11.96	6.138	95.24	1.876	0.800	76.12
14	24.86	18.50	12.62	7.349	12.42	6.145	95.22	1.685	0.805	76.05
15	25.03	18.69	12.57	7.255	12.28	6.434	95.24	1.782	0.791	76.44
16	24.90	18.66	12.54	7.138	11.98	6.532	95.48	1.750	0.829	76.37
17	24.96	18.88	12.73	7.199	12.23	6.742	96.38	1.435	0.904	76.58
18	24.88	18.86	12.82	7.169	12.31	6.557	96.47	1.504	0.893	76.52
19	24.95	18.90	12.90	7.240	12.47	6.432	96.56	1.604	0.790	76.54
20	25.41	18.98	13.10	7.453	12.65	6.138	96.11	1.778	0.779	76.60
21	25.75	19.32	13.39	7.813	13.01	5.990	95.27	1.628	0.794	76.88
22	25.92	19.39	13.56	7.921	13.11	7.037	95.16	1.770	0.767	77.19
23	25.90	19.47	13.60	8.020	13.18	7.446	95.17	1.654	0.790	77.70
00	26.91	20.30	14.20	8.455	13.79	7.736	95.13	1.755	0.757	77.42

05-26-84

REPORT ID - 144 TITLE - PREHEATER PG3 TIME 0117 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION		ENGR. UNITS
ATI511A	STG 1A	MAT DIS TEMP	DEGF
ATI511C	STG 1A	GAS EXIT TEMP	DEGF
ATI511B	STG 1B	MAT DIS TEMP	DEGF
ATI511D	STG 1B	GAS EXIT TEMP	DEGF
ATI511E	STG 2	MAT DIS TEMP	DEGF
ATI511F	STG 2	GAS EXIT TEMP	DEGF
ATI511G	STG 3	MAT DIS TEMP	DEGF
ATI511H	STG 3	GAS EXIT TEMP	DEGF
ATI511J	STG 4	MAT DIS TEMP	DEGF
ATIC511K	STG 4	GAS EXIT TEMP	DEGF

HOUR BEGAN	ATI511A	ATI511C	ATI511B	ATI511D	ATI511E	ATI511F	ATI511G	ATI511H	ATI511J	ATIC511K
19	807.8	735.8	778.0	751.3	959.1	1124	782.5	1168	907.1	1191
20	773.5	766.1	792.8	776.5	1182	1163	1309	1350	1399	1504
21	766.2	783.3	787.4	795.5	1232	1179	1480	1430	1564	1605
22	767.0	774.6	780.1	785.7	1224	1202	1481	1428	1560	1608
23	772.4	775.5	773.6	774.9	1211	1215	1482	1435	1555	1608
00	769.3	772.4	769.3	769.2	1207	1213	1481	1443	1553	1610
01	763.2	767.9	762.3	763.3	1198	1205	1481	1441	1555	1608
02	776.4	778.0	779.0	780.1	1207	1215	1485	1458	1554	1610
03	782.5	784.0	784.9	786.1	1215	1223	1486	1465	1549	1609
04	764.7	766.9	771.8	773.6	1207	1215	1483	1457	1564	1625
05	758.2	758.8	762.7	763.5	1202	1208	1484	1452	1564	1627
06	751.5	746.6	762.7	762.5	1200	1209	1486	1448	1567	1629
07	746.2	739.7	756.6	756.6	1202	1209	1488	1445	1568	1628
08	746.5	741.5	755.3	755.5	1202	1209	1492	1443	1569	1627
09	746.9	743.8	752.3	752.9	1198	1205	1491	1445	1567	1625
10	732.9	729.6	738.1	739.3	1185	1193	1485	1431	1562	1615
11	751.6	749.6	752.9	755.5	1199	1208	1489	1445	1564	1625
12	764.1	763.9	759.5	763.1	1204	1214	1489	1453	1557	1620
13	760.7	761.2	758.0	762.9	1200	1210	1490	1456	1557	1619
14	757.6	759.7	754.3	761.0	1200	1208	1491	1460	1558	1619
15	760.2	763.2	757.6	764.7	1203	1211	1491	1458	1560	1619
16	765.1	768.5	757.7	764.4	1202	1210	1492	1455	1560	1619
17	765.3	770.4	761.6	769.3	1204	1211	1492	1466	1563	1620
18	759.6	763.7	760.6	767.4	1200	1207	1491	1458	1563	1619
19	762.6	765.8	758.7	765.5	1197	1204	1487	1454	1563	1620
20	759.7	763.3	757.7	764.2	1195	1203	1486	1452	1561	1619
21	753.4	755.0	751.1	759.0	1190	1197	1482	1447	1563	1619
22	755.4	758.3	751.4	760.2	1191	1199	1481	1446	1563	1618
23	750.3	755.3	745.0	753.9	1186	1193	1478	1441	1565	1621
00	749.2	755.5	742.0	750.0	1188	1195	1481	1444	1561	1618

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REPORT ID - 145 TITLE - PREHEATER PG4 TIME 0119 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ABIC587	RF R47A SPD	%RPM
API588	FF PRI AIR PRES	IN H2O
AZIC589	DP R36A POS	%OPN

HOUR BEGAN	ABIC587	API588	AZIC589
19	2.017	3.739	26.17
20	34.49	17.71	63.30
21	59.82	29.55	100.2
22	64.61	29.56	100.00
23	73.80	29.64	98.65
00	71.76	29.38	98.44
01	73.48	29.51	98.06
02	71.61	29.46	98.02
03	73.28	29.66	98.79
04	81.62	30.12	99.67
05	85.49	30.25	100.00
06	88.05	30.68	100.0
07	90.93	30.82	100.2
08	91.51	30.95	100.4
09	88.03	30.63	100.6
10	86.26	30.65	100.6
11	87.40	30.49	100.5
12	73.86	29.73	100.4
13	73.27	29.88	100.5
14	75.99	29.95	100.5
15	76.58	29.86	100.3
16	75.84	29.59	100.3
17	75.99	29.63	100.3
18	74.91	29.71	100.2
19	73.38	29.53	100.3
20	73.14	29.57	100.2
21	74.73	29.66	100.2
22	74.34	29.42	100.2
23	72.42	29.21	100.2
00	75.25	29.34	99.87

05-26-84

REPORT ID - 146 TITLE - FF & KILN FIRING TIME 0121 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AZI515	DP F69 POS	%OPN
ATI513	FF IN TEMP	DEGF
ATI514	FF EX TEMP	DEGF
API516	FF IN DRAFT	IN H2O
API517	FF EX DRAFT	IN H2O
ATI594	MILL SEC AIR INLET TEMP	DEGF
ATI524	FD HOOD TEMP	DEGF
API525	FD HOOD DRAFT	IN H2O
AAI526A	KLN EX OXY	PCT
AAI526B	KLN EX COMB	PCT

HOUR BEGAN	AZI515	ATI513	ATI514	API516	API517	ATI594	ATI524	API525	AAI526A	AAI526B
19	93.82	622.3	1187	0.075	-0.069	129.9	1834	0.026	9.026	-----
20	93.80	599.9	1613	0.125	0.274	138.9	1797	0.030	3.009	1.040
21	93.68	891.8	1666	0.504	1.058	363.0	1887	0.226	1.492	0.501
22	93.60	1165	1686	0.932	1.763	520.8	1929	0.344	1.204	0.850
23	93.57	1259	1672	1.446	2.554	761.8	1923	0.490	1.330	0.882
00	93.54	1300	1683	1.455	2.525	657.0	1925	0.493	1.091	0.981
01	93.51	1329	1663	1.463	2.549	254.2	1909	0.471	0.972	1.010
02	39.31	1358	1646	1.998	2.936	127.1	1843	0.495	1.160	0.656
03	45.58	1305	1634	1.867	2.876	108.2	1811	0.488	1.408	0.743
04	91.85	1342	1657	1.824	3.178	452.9	1887	0.556	1.231	0.575
05	91.82	1415	1664	2.236	3.691	669.7	1904	0.650	0.964	1.016
06	91.81	1400	1683	1.770	3.204	767.9	1900	0.841	1.824	1.033
07	91.84	1371	1685	1.634	3.149	826.1	1962	0.811	2.211	0.461
08	91.85	1377	1682	1.556	3.143	823.1	1949	0.747	2.340	0.500
09	91.88	1389	1680	1.500	3.183	704.4	1947	0.730	1.797	0.538
10	91.87	1418	1670	1.489	3.170	835.9	1912	0.762	1.938	0.588
11	91.87	1333	1686	1.435	3.045	840.8	1908	0.740	2.107	0.659
12	91.88	1347	1694	1.226	2.675	675.1	1919	0.697	2.032	0.611
13	91.92	1346	1682	1.209	2.622	614.8	1916	0.607	2.217	0.526
14	91.98	1326	1679	1.212	2.614	568.4	1904	0.562	2.149	0.594
15	92.08	1332	1681	1.208	2.639	549.3	1883	0.545	2.061	0.420
16	92.16	1332	1681	1.217	2.634	507.2	1898	0.533	1.990	0.555
17	92.24	1344	1678	1.256	2.647	514.6	1876	0.531	1.622	0.690
18	92.27	1349	1673	1.263	2.689	541.2	1874	0.541	1.377	1.114
19	92.37	1354	1677	1.344	2.691	448.5	1917	0.520	1.131	1.078
20	92.35	1368	1672	1.398	2.640	464.1	1941	0.473	1.237	1.169
21	92.32	1350	1646	1.468	2.661	547.0	2036	0.452	1.126	1.236
22	92.32	1372	1647	1.557	2.679	543.4	2035	0.426	1.041	0.914
23	92.22	1396	1653	1.563	2.752	579.5	2030	0.380	0.812	1.223
00	92.14	1406	1650	1.611	2.997	517.8	2003	0.370	1.050	0.848

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REPORT ID - 147 TITLE - FF & KILN FIRING PG2 TIME 0123 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AI1527	KILN CUR	%AMP
ASIC528	KILN SPD	%RPM
AFFC403	KLN FD RATE	TPH
ASIC590	RF R49A SPD	%RPM
AP1591	KLN COMB AIR PRES	IN H2O
AZIC592	DP R64 POS	%OPN
ATIC593	KLN COMB AIR TEMP	DEGF
AI1597	PM R50 CUR	%AMP
AI1599	PM R50-2 CUR	%AMP
AI1598	BL R52 CUR	%AMP

KF rate

HOUR BEGAN	AI1527	ASIC528	AFFC403	ASIC590	AP1591	AZIC592	ATIC593	AI1597	AI1599	AI1598
19	-----	3.915	2.046	20.54	13.00	33.88	168.7	33.98	0.153	86.89
20	17.99	26.29	36.17	33.22	12.91	33.75	184.9	34.34	0.155	88.61
21	25.03	46.05	68.73	47.47	12.92	33.75	260.7	34.69	0.156	90.77
22	29.87	58.69	87.70	55.47	15.28	33.76	278.7	35.34	0.161	92.45
23	36.31	72.89	109.0	62.54	15.80	33.69	280.5	35.33	0.161	93.73
00	35.95	73.97	110.7	61.85	16.37	33.69	275.6	35.33	0.160	94.36
01	35.36	74.91	112.0	60.65	16.19	33.71	275.1	35.36	0.157	94.39
02	33.54	74.38	111.3	56.97	16.19	33.72	277.2	35.08	0.158	94.08
03	31.85	73.72	110.2	60.27	16.81	33.73	269.8	35.49	0.159	94.87
04	33.67	82.07	122.6	66.09	18.44	33.70	231.2	35.53	0.163	95.58
05	36.44	89.03	133.3	70.42	20.24	33.87	197.5	35.44	0.161	96.60
06	36.16	92.10	137.7	72.95	21.77	33.68	162.0	35.38	0.156	97.08
07	36.16	93.66	140.0	73.52	22.30	33.41	154.2	35.24	0.155	96.84
08	35.73	93.65	140.1	71.21	22.41	33.39	156.3	35.38	0.143	95.78
09	35.32	93.66	140.1	72.06	22.82	33.46	152.3	35.62	0.154	95.76
10	30.02	93.65	140.1	67.12	22.76	33.53	151.4	35.65	0.148	94.67
11	30.18	88.61	132.4	67.91	22.93	33.59	146.9	35.71	0.152	94.28
12	36.20	79.97	119.6	66.67	22.35	33.63	150.7	35.27	0.159	94.17
13	35.56	79.97	119.5	66.43	22.46	33.67	151.6	35.34	0.158	93.79
14	35.14	79.97	119.5	66.60	22.42	33.70	148.3	35.41	0.151	93.72
15	36.08	79.96	119.6	69.02	22.40	33.71	151.4	35.44	0.155	93.47
16	36.61	79.97	119.8	70.94	22.33	33.74	156.4	35.54	0.158	93.51
17	35.89	79.96	119.8	71.32	22.16	33.66	160.3	35.53	0.152	93.68
18	35.50	79.97	119.5	71.59	22.34	33.49	160.1	35.51	0.156	93.91
19	35.10	79.97	119.6	71.58	22.33	33.54	159.5	35.36	0.157	94.11
20	34.27	79.97	119.7	71.70	22.54	33.53	150.0	35.24	0.158	94.28
21	33.78	79.96	119.6	71.67	22.58	33.60	145.0	35.29	0.160	94.49
22	35.22	79.96	119.6	71.82	22.46	33.81	150.4	35.56	0.162	94.97
23	34.93	79.97	119.5	71.82	22.55	33.78	150.0	35.58	0.163	95.56
00	33.66	81.86	122.3	70.99	22.63	33.76	150.8	35.30	0.162	95.63

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REPORT ID - 148 TITLE - FF & KILN FIRING PG3 TIME 0125 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI530	SCAN F85 NO 1 TEMP	DEGF
AZI530	SCAN F85 NO 1 POS	PCT
ATI531	SCAN F85 NO 2 TEMP	DEGF
AZI531	SCAN F85 NO 2 POS	PCT

HOUR BEGAN	ATI530	AZI530	ATI531	AZI531
19	245.5	54.95	219.1	43.71
20	245.7	43.15	212.9	49.13
21	246.3	50.32	211.2	48.21
22	244.3	49.80	209.7	49.03
23	244.1	51.48	212.2	49.74
00	244.8	51.52	212.1	50.57
01	244.7	50.99	211.4	48.01
02	245.0	48.89	210.5	46.88
03	246.3	49.84	210.9	49.27
04	243.1	50.05	210.5	49.49
05	245.2	50.72	211.2	48.68
06	247.0	50.85	211.5	47.27
07	249.0	49.42	211.6	46.59
08	246.9	51.28	212.6	48.35
09	249.0	48.50	213.9	48.18
10	247.8	50.01	215.5	49.07
11	244.5	48.75	216.3	48.95
12	243.5	52.53	217.5	47.99
13	243.5	49.76	218.9	48.68
14	247.4	49.87	221.6	51.84
15	252.2	49.70	221.1	49.66
16	248.8	51.41	219.0	49.13
17	248.1	50.70	223.6	50.11
18	246.7	50.80	223.9	51.84
19	247.1	51.70	223.9	46.48
20	244.3	51.82	219.3	48.11
21	244.6	52.75	222.0	47.93
22	245.7	48.31	221.3	49.06
23	247.4	49.89	221.4	46.79
00	247.3	50.98	220.1	47.68

05-26-84

REPORT ID - 149 TITLE - COOLER & CLINKER HANDLING TIME 0127 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AIIF96	DG F96 CUR	%AMP
AII560	DRAG F52 CUR	%AMP
AII561	EL F62 CUR	%AMP
AII567	CLK BKR F23 CUR	%AMP
APIC532	FR HOOD DRAFT	IN H2O
AZIC532	DP F34A POS	%OPN
AII533	FN F34 CUR	%AMP

HOUR BEGAN	AIIF96	AII560	AII561	AII567	APIC532	AZIC532	AII533
19	80.20	-0.450	-0.399	36.38	0.041	1.127	70.09
20	80.65	-0.444	-0.376	36.38	0.042	1.492	72.05
21	82.81	-0.396	-0.366	36.23	0.039	2.852	72.73
22	90.92	-0.373	-0.342	36.84	0.038	5.794	68.78
23	93.63	-0.352	11.05	36.86	0.037	11.91	70.56
00	101.2	-0.316	45.29	38.05	0.040	14.34	71.08
01	96.39	-0.298	43.26	36.21	0.037	17.03	72.38
02	100.8	-0.281	44.36	36.49	0.039	22.05	75.42
03	98.64	-0.269	43.63	36.86	0.042	20.99	76.04
04	97.31	-0.283	18.95	37.27	0.041	19.35	73.96
05	103.0	-0.254	19.09	37.46	0.040	18.34	73.46
06	102.2	-0.224	25.42	36.73	0.043	17.46	72.95
07	101.1	-0.202	36.11	36.73	0.036	18.81	74.26
08	99.27	-0.193	45.11	36.91	0.031	24.93	77.39
09	102.4	-0.182	35.35	37.25	0.037	46.14	84.54
10	106.7	-0.190	0.232	37.26	0.037	51.45	85.35
11	100.8	-0.186	2.089	36.78	0.039	52.79	87.43
12	96.78	-0.198	33.23	36.85	0.040	54.61	87.70
13	99.57	-0.184	33.23	36.72	0.040	56.93	87.16
14	97.90	-0.222	34.20	37.01	0.040	55.80	87.05
15	98.42	-0.267	20.45	37.39	0.042	55.92	86.77
16	99.93	-0.306	-0.345	37.75	0.040	55.58	86.60
17	99.66	-0.342	-0.352	37.84	0.041	56.70	86.59
18	99.08	-0.372	27.96	37.74	0.039	56.23	86.89
19	97.33	-0.414	43.63	37.37	0.040	59.00	87.25
20	98.81	-0.446	43.66	37.26	0.038	59.33	87.14
21	96.66	-0.466	42.54	37.24	0.045	57.31	87.71
22	97.86	-0.487	42.81	37.46	0.040	55.94	86.76
23	98.60	-0.473	30.26	37.68	0.041	55.00	87.23
00	99.79	-0.442	13.98	37.77	0.038	54.55	87.09

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REPORT ID - 150 TITLE - COOLER & CLINKER HANDLING PG2 TIME 0129 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ASIC535	FN F17 SPD	%RPM
AII554	FN F17 CUR	%AMP
AFIC536	FN F18 AIRFLOW	KCFM
AZIC536	FN F18 POS	%OPN
AII555	FN F18 CUR	%AMP
AII565	CLR DRV NO 1 CUR	%AMP
AFIC537	FN F19 AIRFLOW	KCFM
AZIC537	FN F19 POS	%OPN
AFIC538	FN F20 AIRFLOW	KCFM

HOUR BEGAN	ASIC535	AII554	AFIC536	AZIC536	AII555	AII565	AFIC537	AZIC537	AFIC538
19	42.24	20.68	21.20	0.682	53.62	9.592	55.85	4.190	9.007
20	44.79	25.05	20.91	0.660	53.49	10.58	60.88	23.58	9.726
21	66.61	43.45	17.91	3.350	52.64	18.44	72.41	44.63	12.97
22	68.99	46.68	18.32	6.913	53.87	22.76	75.82	45.86	14.32
23	73.69	56.41	21.19	11.35	60.31	21.44	79.95	52.00	15.99
00	74.59	58.34	22.00	12.34	62.28	22.88	80.05	48.50	16.01
01	75.40	63.00	21.99	12.28	62.42	22.98	79.96	46.59	15.98
02	75.24	63.55	21.99	12.23	62.40	19.59	79.99	48.72	16.00
03	75.43	64.07	21.99	12.08	62.26	20.61	79.98	45.83	16.02
04	75.31	61.79	21.98	11.99	62.43	20.86	79.98	45.81	15.99
05	74.83	62.34	21.99	11.82	62.66	21.73	79.98	46.57	16.00
06	74.99	62.57	21.99	11.77	62.71	20.40	79.97	46.86	16.00
07	75.80	63.52	22.01	11.94	62.74	22.44	80.00	47.20	16.00
08	75.66	63.24	22.00	12.48	62.89	22.66	79.99	46.74	15.99
09	76.33	62.74	21.99	12.77	62.61	21.83	79.97	47.83	16.01
10	75.44	60.87	22.01	12.46	62.07	20.08	79.99	48.67	15.99
11	75.91	62.40	21.98	13.05	62.06	18.09	79.99	46.66	16.02
12	81.84	71.10	21.99	17.26	64.81	20.09	79.97	48.18	15.98
13	81.95	72.13	21.98	17.18	64.67	20.68	79.97	48.74	16.01
14	82.41	73.37	21.99	18.10	64.88	18.42	80.01	48.99	16.00
15	82.68	72.67	21.99	17.74	64.81	20.98	79.97	49.28	15.98
16	82.87	72.33	21.98	18.58	64.80	21.58	79.96	49.67	15.98
17	82.61	70.84	22.01	18.19	64.56	18.87	79.98	49.47	15.99
18	80.73	69.84	22.00	15.52	63.54	17.86	80.01	48.60	16.01
19	80.83	69.84	21.98	15.91	63.82	20.53	79.96	48.35	16.00
20	80.28	66.12	21.99	15.45	64.04	16.76	80.00	48.51	16.01
21	80.07	68.77	21.99	14.69	63.61	19.97	80.00	47.64	15.99
22	80.13	68.82	21.99	15.35	63.63	24.02	79.97	47.46	16.00
23	80.81	69.80	21.99	13.91	64.02	22.29	79.98	47.15	16.00
00	81.54	71.53	22.00	14.06	64.69	21.59	80.56	47.93	16.00

05-26-84

REPORT ID - 151 TITLE - COOLER & CLINKER HANDLING PG3 TIME 0131 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AZIC538	FN F20 POS	%OPN
AII557	FN F20 CUR	%AMP
AII566	CLR DRV NO 2 CUR	%AMP
AFIC539	FN F21 AIRFLOW	KCFM
AZIC539	FN F21 POS	%OPN
AII558	FN F21 CUR	%AMP
AFIC540	FN F22 AIRFLOW	KCFM
AZIC540	FN F22 POS	%OPN
AII559	FN F22 CUR	%AMP
API541	GRT PRES NO 1	IN H2O

HOUR BEGAN	AZIC538	AII557	AII566	AFIC539	AZIC539	AII558	AFIC540	AZIC540	AII559	API541
19	9.264	59.85	6.997	20.03	19.44	40.64	18.00	17.78	52.55	2.117
20	12.07	61.42	7.298	20.14	18.92	40.00	18.11	17.95	52.74	2.773
21	20.87	74.20	14.09	22.40	21.78	41.55	20.40	21.76	55.79	9.935
22	25.36	79.63	22.28	23.27	24.05	42.08	21.24	24.58	56.95	10.98
23	33.51	84.91	30.60	28.00	29.78	45.15	25.91	31.88	62.90	13.01
00	29.47	83.42	11.54	28.91	31.56	46.15	27.04	34.32	64.55	13.41
01	28.33	85.51	41.11	30.43	30.94	47.40	26.97	32.81	64.89	13.70
02	32.13	86.11	38.44	31.06	34.26	47.88	28.92	37.78	68.22	13.61
03	23.83	86.54	18.08	31.98	32.24	48.51	30.07	36.71	70.06	13.74
04	26.27	85.73	19.25	32.97	31.67	49.24	29.98	35.23	69.85	13.79
05	30.69	86.28	19.06	33.07	33.49	49.81	29.98	36.87	70.48	13.65
06	28.20	86.29	19.62	33.01	33.02	49.63	29.99	36.62	69.95	13.77
07	28.00	86.14	19.95	33.89	34.19	50.40	34.55	42.02	76.95	13.81
08	27.29	85.62	19.91	36.57	36.33	52.33	37.96	46.77	81.20	13.86
09	31.49	85.44	19.37	48.23	48.28	60.45	44.92	65.84	86.92	14.03
10	33.85	84.36	17.93	52.25	68.22	62.08	44.48	78.03	85.73	13.58
11	26.40	85.92	15.39	55.80	58.76	64.65	45.72	71.28	86.50	13.79
12	27.81	84.92	18.11	54.76	50.49	64.05	44.77	58.78	85.76	16.52
13	29.54	84.36	16.44	55.09	54.54	64.02	45.07	65.34	86.09	16.51
14	29.12	84.56	16.42	55.03	53.11	63.81	44.97	63.35	85.75	16.68
15	28.85	85.58	16.01	54.96	53.97	63.42	44.93	64.03	85.33	16.79
16	30.00	82.99	15.75	55.04	54.56	62.96	45.00	65.10	85.37	16.85
17	30.06	83.46	15.00	54.99	54.69	63.10	44.99	65.19	85.25	16.68
18	28.70	84.12	16.67	54.97	53.94	63.28	44.96	64.17	85.30	15.73
19	28.01	84.46	15.59	55.09	53.55	64.61	45.06	63.07	85.79	15.82
20	30.43	84.23	16.65	55.05	56.07	64.87	44.96	65.58	86.49	15.71
21	27.45	85.62	16.36	55.00	51.38	64.53	45.00	60.11	87.08	15.74
22	26.73	85.41	17.45	55.11	49.33	62.72	45.05	59.00	87.27	15.84
23	27.10	86.37	19.46	55.03	48.28	62.88	45.00	57.35	87.81	16.26
00	27.72	86.21	19.83	54.89	48.51	63.17	44.94	57.66	87.80	16.72

05-26-84

REPORT ID - 152 TITLE - COOLER & CLINKER HANDLING PG4 TIME 0133 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
APIC542	GRT PRES NO 2	IN H2O
ASIC542	CLR DRV NO 1 SPD	%RPM
API543	GRT PRES NO 3	IN H2O
APIC544	GRT PRES NO 4	IN H2O
ASIC544	CLR DRV NO 2 SPD	%RPM
API545	GRT PRES NO 5	IN H2O
API546	GRT PRES NO 6	IN H2O
ATIC547	DC F31 INLET TEMP	DEGF
AZI547	DP F33 POS	%OPN
APDI548	DC 131 DIF PRES	IN H2O

HOUR BEGAN	APIC542	ASIC542	API543	APIC544	ASIC544	API545	API546	ATIC547	AZI547	APDI548
19	4.025	20.00	1.824	1.471	20.65	1.190	1.041	86.10	-0.059	2.577
20	4.579	20.00	2.109	1.586	20.66	1.299	1.233	86.35	-0.196	2.524
21	10.28	33.17	6.087	4.575	22.94	2.695	2.329	116.0	-0.173	2.775
22	11.46	46.89	7.850	6.860	25.70	4.290	3.993	187.5	-0.248	3.484
23	13.91	49.84	10.88	9.318	25.70	5.753	5.355	213.3	-0.212	4.467
00	14.21	46.35	10.42	9.239	32.19	6.365	6.124	229.5	-0.156	4.974
01	14.16	46.84	9.233	7.903	35.66	5.597	5.466	231.7	-0.156	5.443
02	14.16	43.58	10.41	9.772	37.65	7.250	6.965	238.8	-0.124	6.306
03	14.06	38.41	9.060	7.500	47.27	5.915	6.072	216.9	-0.099	6.364
04	14.20	46.21	9.174	7.271	47.54	5.333	5.355	223.1	-0.126	5.998
05	14.19	50.69	9.841	8.674	49.32	6.445	6.350	232.8	-0.163	5.846
06	14.25	51.05	9.762	8.427	51.13	6.158	6.111	233.5	-0.188	5.793
07	14.35	54.24	9.823	8.333	51.15	6.359	6.566	229.9	-0.187	5.857
08	14.30	54.83	9.272	7.774	56.50	6.436	6.814	233.9	-0.116	6.599
09	14.48	53.26	9.657	8.680	56.50	8.297	8.622	233.9	-0.036	8.352
10	14.20	53.32	9.925	9.706	56.50	9.558	9.379	238.9	0.040	8.738
11	14.15	45.86	8.829	8.366	56.51	8.396	8.442	223.0	0.041	8.809
12	16.58	42.78	9.544	7.269	56.51	7.059	7.160	224.2	0.040	8.827
13	16.50	38.83	9.700	8.087	56.49	8.087	8.205	232.4	0.181	8.933
14	16.72	38.08	9.784	7.865	56.47	7.783	7.890	230.7	0.197	8.799
15	16.77	38.23	9.845	8.001	56.42	7.934	7.963	230.2	0.134	8.819
16	16.84	38.74	9.957	8.067	56.39	8.061	8.096	229.9	0.141	8.809
17	16.70	38.58	9.918	8.073	56.38	8.038	8.095	233.4	0.261	8.894
18	15.78	40.99	9.443	7.807	56.40	7.833	7.912	232.4	0.316	8.867
19	15.84	41.67	9.340	7.565	56.41	7.645	7.721	233.6	0.303	9.027
20	15.88	41.18	9.596	8.193	56.38	8.299	8.241	232.6	0.199	9.120
21	15.76	40.14	9.268	7.333	56.37	7.246	7.329	224.4	0.029	8.934
22	15.81	43.43	9.226	7.148	56.39	6.993	7.234	232.8	-0.045	8.781
23	16.02	43.36	9.276	6.952	56.42	6.741	6.992	229.2	-0.035	8.707
00	16.51	42.67	9.564	7.162	56.49	6.949	7.136	231.4	-0.030	8.667

05-26-84

REPORT ID - 153 TITLE - COOLER & CLINKER HANDLING PG5 TIME 0135 DATE 05-26-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI549	N GRT PL NO 1 TEMP	DEGF
ATI550	S GRT PL NO 1 TEMP	DEGF
ATI551	N GRT PL NO 2 TEMP	DEGF
ATI552	S GRT PL NO 2 TEMP	DEGF
ATI569	CLINKER DIS TEMP	DEGF

HOUR BEGAN	ATI549	ATI550	ATI551	ATI552	ATI569
19	101.8	61.59	89.91	91.53	88.03
20	90.30	60.95	81.08	82.04	82.11
21	125.1	66.92	75.84	94.56	84.44
22	181.2	73.41	81.99	135.0	130.1
23	213.3	76.56	86.75	147.5	159.6
00	212.8	71.92	84.23	126.4	198.6
01	213.2	72.70	82.26	132.7	193.7
02	190.3	68.46	78.46	113.9	192.2
03	166.5	63.66	74.15	96.36	184.6
04	193.5	65.29	75.70	110.1	152.0
05	206.6	65.98	76.37	128.6	194.7
06	209.3	64.79	74.93	128.3	209.9
07	250.7	76.25	83.88	154.9	206.4
08	285.8	83.50	93.08	174.7	221.9
09	281.4	84.37	94.60	169.5	180.4
10	247.8	82.33	92.97	159.0	176.5
11	224.4	79.04	90.53	137.9	154.5
12	279.4	94.79	98.18	204.1	129.1
13	255.0	90.17	99.92	159.8	130.2
14	267.4	92.33	100.3	185.4	123.9
15	256.2	91.23	103.2	183.0	125.3
16	236.2	88.78	102.3	171.2	124.5
17	226.3	90.31	99.88	170.0	123.3
18	221.5	89.40	100.5	163.4	123.5
19	232.1	89.54	101.1	158.7	124.7
20	233.9	85.31	101.4	153.4	124.2
21	212.8	78.79	93.07	139.7	117.2
22	247.6	80.20	94.44	148.3	121.7
23	252.3	79.43	94.63	133.7	122.5
00	301.3	80.92	95.11	145.9	126.4

Was in back of '84 Leamington Since Test Report

05-27-84

REPORT ID - 110 TITLE - CRUSHING AREA

TIME 0047 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AIIC200	BT 88 CUR	%AMP
ASIC200	VF 82 SPD	%RPM
AII201	BT 80 CUR	%AMP
AII203	CRUSH 84 CUR	%AMP
AII202A	CRUSH 84 E 88 TEMP	DEGF
AII202B	CRUSH 84 W 88 TEMP	DEGF
AII302	BT C111 CUR	%AMP

HOUR BEGAN	AIIC200	ASIC200	AII201	AII203	AII202A	AII202B	AII302
18	40.72	80.07	38.11	41.78	116.0	111.0	58.72
19	16.54	29.80	13.71	17.19	114.9	110.4	53.20
20	0.754	0.444	-0.637	0.553	107.0	104.5	40.12
21	0.754	0.444	-0.584	0.553	101.4	98.35	57.15
22	0.807	0.417	-0.575	0.553	97.43	94.25	61.82
23	0.850	0.430	-0.611	0.553	93.86	90.73	59.14
00	0.862	0.438	-0.626	0.553	90.53	87.52	57.82
01	0.862	0.437	-0.630	0.553	87.22	84.33	63.68
02	0.862	0.434	-0.626	0.553	84.20	80.90	59.94
03	0.862	0.419	-0.626	0.553	81.31	77.84	65.00
04	0.862	0.418	-0.626	0.553	78.68	75.11	60.04
05	0.857	0.417	-0.624	0.553	76.22	72.34	64.47
06	22.23	28.07	16.56	17.43	75.28	70.75	62.76
07	59.68	87.27	47.44	45.08	87.20	79.43	59.39
08	64.89	89.82	48.89	46.43	94.03	87.34	54.37
09	51.23	89.81	43.76	43.54	97.29	92.60	53.15
10	38.25	59.29	32.81	42.61	98.77	96.25	39.99
11	51.50	74.97	40.73	45.52	101.0	102.0	57.94
12	51.16	85.17	41.00	45.14	105.0	111.3	54.47
13	44.09	85.32	38.22	42.31	107.4	111.4	56.27
14	7.526	8.016	6.264	10.37	106.8	109.5	52.13
15	0.754	0.427	-0.632	1.029	101.7	104.2	54.92
16	0.754	0.444	-0.585	1.029	98.35	100.6	60.71
17	0.754	0.444	-0.572	1.029	95.75	98.23	60.29
18	0.754	0.444	-0.566	1.029	93.94	96.17	57.69
19	0.754	0.444	-0.546	1.029	91.99	92.96	55.22
20	0.752	0.444	-0.520	1.029	89.71	89.39	54.62
21	0.754	0.444	-0.523	1.029	87.47	86.68	55.64
22	0.754	0.444	-0.526	1.029	85.50	84.42	55.76
23	0.754	0.444	-0.523	1.029	82.79	81.82	54.60

05-27-84

REPORT ID - 110 TITLE - RAW MILL AREA TIME 0051 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
APDIC310	MILL D21 DIF PRES	IN H2O
ASIC327	CL D21 + SPD	%RPM
AII330	MILL D21 CUR	%AMP
AVI3258	MILL D21 VIB	IPS
ASI310	BT D17 SPD	%RPM
AII332	BI D17 CUR	%AMP
AII329	FM D53 CUR	%AMP
AII333	CP D55 CUR	%AMP
AFIC312	WF D3 FD RATE	TPH
AFIC313	WF D7 FD RATE	TPH

HOUR BEGAN	APDIC310	ASIC327	AII330	AVI3258	ASI310	AII332	AII329	AII333	AFIC312	AFIC313
18	30.85	47.45	58.63	0.352	64.10	58.07	83.79	84.43	125.4	7.241
19	30.27	47.45	57.27	0.343	64.09	57.70	80.11	84.25	127.3	7.658
20	30.[illegible]1	47.44	57.23	0.325	64.08	58.06	77.75	84.24	127.2	7.776
21	32.49	47.09	59.79	0.325	64.06	58.52	81.62	83.90	129.1	9.781
22	32.29	46.09	60.08	0.373	64.04	58.68	84.56	84.42	129.4	9.774
23	31.90	45.77	57.85	0.347	64.02	57.22	75.33	83.79	123.3	8.701
00	31.10	45.85	56.70	0.329	64.01	57.38	76.72	84.17	128.1	9.194
01	31.47	45.[illegible]5	57.26	0.326	64.01	59.47	78.03	84.31	129.1	8.506
02	32.46	45.63	58.58	0.356	64.01	59.74	77.44	84.08	129.1	8.482
03	33.61	45.66	57.95	0.363	64.00	60.42	79.86	84.41	129.0	8.501
04	35.17	45.64	61.47	0.410	63.45	60.08	84.88	84.10	127.6	8.420
05	32.34	45.04	57.98	0.398	62.03	60.54	78.25	83.63	126.4	8.323
06	32.22	45.54	57.70	0.364	63.68	59.06	80.20	84.10	128.2	8.609
07	32.22	45.63	57.93	0.360	63.73	60.04	80.18	84.01	127.7	8.762
08	32.13	45.65	58.06	0.383	63.06	59.30	80.16	83.81	126.5	8.858
09	32.12	45.77	58.69	0.442	61.11	58.78	79.79	80.71	122.7	8.548
10	26.52	45.76	48.43	0.378	48.37	48.50	63.06	81.84	94.91	6.704
11	-1.546	11.01	0.888	0.008	-0.062	1.776	39.19	75.70	0.480	0.076
12	-1.76	1.472	0.345	0.003	-0.062	1.779	39.01	75.59	0.482	0.075
13	-1.777	1.472	0.341	0.002	-0.062	1.794	38.04	74.96	0.482	0.072
14	2.160	7.716	6.791	0.073	7.046	10.10	41.16	75.70	15.60	1.057
15	27.37	43.35	54.58	0.367	55.95	57.13	63.69	81.72	112.6	7.867
16	29.08	46.07	54.89	0.328	61.49	57.32	72.69	82.93	123.6	8.620
17	30.69	46.55	56.80	0.318	64.04	57.31	78.43	83.44	128.7	9.019
18	27.47	46.90	51.20	0.285	57.63	51.67	79.02	83.12	116.6	7.705
19	-1.788	9.079	0.342	-0.011	-0.062	1.770	37.90	75.60	0.446	0.076
20	-1.77	1.472	0.338	-0.014	-0.062	1.783	37.10	75.08	0.445	0.071
21	-1.76	1.472	0.317	-0.013	-0.062	1.795	37.30	75.07	0.429	0.070
22	-1.765	1.472	0.304	-0.012	-0.062	1.804	37.11	75.31	0.426	0.070
23	-1.764	1.473	0.303	-0.011	-0.062	1.805	36.88	74.72	0.429	0.069

05-27-84

REPORT ID - 119 TITLE - RAW MILL AREA PG2 TIME 0053 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AFIC314	WF D11 FD RATE	TPH
AFIC315	WF D15 FD RATE	TPH
AFIC319	BGHS D38 BAGS DIF.	IN H2O
ASIC319	FN D41 SPD	%RPM
APIC320	FN F6 EXIT DRAFT	IN H2O
AZIC321	DP D40 POS	%OPN
AII331	FN D41 CUR	%AMP
APDI324	BGHS D38 DIF PRES	IN H2O
API3288	PM D21 1 HYD PRES	PSI

HOUR BEGAN	AFIC314	AFIC315	AFIC319	ASIC319	APIC320	AZIC321	AII331	APDI324	API3288
18	17.50	7.348	7.329	100.7	0.616	99.56	72.51	9.435	822.3
19	14.46	7.039	7.372	100.9	0.635	99.57	72.92	9.522	817.5
20	14.45	7.042	7.228	100.[illegible]	0.651	99.51	73.35	9.496	811.8
21	14.44	7.039	7.300	100.4	0.653	99.50	72.74	9.254	807.8
22	14.45	7.038	7.277	100.2	0.620	99.50	72.90	9.391	807.4
23	20.32	7.637	7.105	99.69	0.694	99.46	74.41	9.646	807.6
00	15.31	7.450	6.355	99.60	0.681	99.44	74.25	9.727	806.2
01	14.77	7.796	6.726	99.55	0.660	99.44	74.32	9.654	806.9
02	14.75	7.787	7.060	99.59	0.699	99.38	73.45	9.658	808.6
03	14.75	7.989	6.892	99.40	0.692	99.38	72.56	9.344	808.1
04	14.64	7.91[illegible]	6.763	98.88	0.681	99.38	71.87	8.975	807.6
05	14.47	7.840	6.728	98.85	0.669	99.33	74.50	9.455	808.7
06	14.68	7.944	6.725	99.04	0.624	99.32	74.27	9.502	808.1
07	14.69	7.945	6.739	98.69	0.643	99.34	74.13	9.485	808.9
08	14.53	7.858	6.955	98.69	0.587	99.41	74.02	9.519	813.2
09	13.74	7.621	7.155	99.20	0.660	99.50	73.70	9.380	812.3
10	10.77	5.937	7.157	99.76	0.689	98.47	74.05	9.581	854.3
11	0.122	-0.033	7.991	99.75	-0.850	98.07	77.17	11.52	1028
12	0.123	-0.035	7.714	99.98	-0.882	99.60	74.01	10.70	1058
13	0.123	-0.037	7.464	100.1	-0.796	99.63	73.30	10.77	1069
14	1.714	0.854	7.023	100.1	-0.632	99.63	72.24	10.21	1040
15	12.62	6.981	6.873	100.3	0.776	99.63	69.72	8.697	839.4
16	13.86	7.676	6.956	100.3	0.743	99.63	72.08	9.226	840.1
17	14.45	8.000	7.196	100.4	0.775	99.63	71.44	9.111	840.7
18	13.02	7.194	7.502	100.3	0.778	96.89	71.64	9.360	855.2
19	0.130	-0.042	3.192	100.7	0.275	23.88	31.39	2.063	1037
20	0.129	-0.042	2.059	100.7	0.172	10.59	21.33	0.145	1070
21	0.129	-0.042	2.186	100.5	0.892	20.09	33.31	0.715	1087
22	0.128	-0.042	1.971	100.2	0.944	20.07	33.69	0.679	1090
23	0.124	-0.042	2.579	100.0	0.693	32.36	46.94	2.503	1088

05-27-84

REPORT ID 120 TITLE - RAW MILL AREA P03 TIME 0055 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AP1C323	MILL D21 INLET DRAFT	IN H20
AZIC320	DP D34 POS	%OPN
AT1C322	FN F6 EXIT TO BYPASS	DEGF
AZIC322	DP D37 POS	%OPN
AT1317A	MILL D21 EXIT TEMP	DEGF
AT1318	MILL D21 INLET TEMP	DEGF
AT1317B	FN F6 INLET TEMP	DEGF
AT1326A	MILL D21 E BG TEMP	DEGF
AT1326B	MILL D21 W BG TEMP	DEGF
AT1326C	FN D41 W BG TEMP	DEGF

HOUR BEGAN	AP1C323	AZIC320	AT1C322	AZIC322	AT1317A	AT1318	AT1317B	AT1326A	AT1326B	AT1326C
18	0.[illegible]	70.27	136.3	0.111	154.9	458.0	570.0	140.3	136.0	142.1
19	0.[illegible]	99.24	136.3	0.110	154.9	450.1	571.6	140.6	137.0	145.3
20	0.346	99.53	135.1	0.097	154.9	437.0	564.0	140.3	137.2	144.7
21	0.405	76.07	132.5	0.069	154.9	453.3	576.4	140.0	137.0	142.0
22	0.429	85.05	131.6	0.046	154.9	449.8	572.8	139.8	136.2	139.6
23	0.271	79.10	132.5	0.027	154.3	418.0	568.9	139.1	135.5	137.8
00	0.384	99.25	132.7	0.015	155.0	426.7	570.2	138.2	134.6	136.4
01	0.530	99.28	132.2	-0.014	155.0	438.1	567.7	137.2	133.7	134.9
02	0.400	87.91	131.5	-0.033	154.7	460.6	566.9	136.2	132.7	133.7
03	0.305	45.00	131.1	-0.062	155.0	487.7	571.9	135.5	132.0	132.1
04	0.386	0.357	130.3	-0.082	154.9	526.3	569.7	135.0	131.4	131.2
05	0.424	74.02	132.3	-0.083	154.9	469.6	564.7	134.3	131.2	130.8
06	0.397	82.26	132.6	-0.087	154.9	467.0	567.6	134.7	131.1	130.1
07	0.443	44.39	133.4	-0.092	154.9	471.6	570.3	134.6	131.0	129.7
08	0.423	70.75	135.0	-0.069	154.9	470.3	567.4	134.7	131.2	131.1
09	0.474	57.07	135.5	-0.038	154.9	475.3	573.8	135.1	131.5	133.6
10	0.454	53.70	181.4	11.66	161.0	463.2	578.6	134.0	130.3	137.0
11	-0.036	4.731	329.3	43.18	161.2	243.1	572.7	129.6	125.6	139.0
12	-0.105	0.284	339.2	70.00	143.7	135.5	561.9	122.7	118.1	139.7
13	-0.108	0.052	342.5	80.74	131.6	114.0	560.8	120.0	115.2	141.4
14	-0.126	4.000	332.4	67.69	130.3	150.8	559.5	118.5	113.7	142.9
15	0.404	19.14	160.3	0.168	154.9	504.8	573.1	128.2	124.4	144.5
16	0.397	-0.27	142.5	0.167	154.9	498.9	583.8	133.5	129.7	145.1
17	0.371	9.242	140.8	0.177	154.9	528.0	587.8	135.5	131.7	145.6
18	0.468	23.57	152.1	0.959	158.0	516.4	587.2	137.0	133.3	147.7
19	-0.112	0.221	193.0	78.77	164.6	248.3	321.7	130.8	126.9	148.8
20	-0.095	0.136	187.2	8.75	143.7	152.2	108.4	123.5	119.9	148.8
21	-0.071	0.094	78.86	78.71	129.5	126.8	99.20	120.3	117.3	147.4
22	-0.064	0.067	70.84	78.00	118.9	112.5	100.3	118.0	115.7	146.2
23	-0.062	0.050	183.4	78.63	111.9	100.3	365.7	116.1	114.2	143.8

05-27-84

REPORT ID - 121 TITLE - RAW MILL AREA PG4 TIME 0057 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
ATI326D	FN 041 5 DG TEMP	DEGF

HOUR BEGAN	ATI326D
18	149.7
19	149.4
20	142.0
21	136.0
22	132.6
23	130.3
00	128.6
01	125.1
02	124.1
03	122.6
04	121.7
05	121.4
06	119.7
07	122.0
08	126.0
09	134.0
10	143.2
11	154.0
12	161.2
13	164.5
14	163.7
15	161.7
16	159.5
17	157.6
18	157.0
19	157.8
20	157.2
21	155.7
22	152.5
23	148.4

05-27-84

REPORT ID - 122 TITLE - BLENDING & KILN FEED TIME 0859 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	CHGR. UNITS
AWIC400	LEV OR WEIGHT	TONS
AII404	EL E21 CUR	%MOP
AIIE51	EL E31 CUR	%MOP
AII406	PM E27 CUR	%MOP
AII407	CP E10 CUR	%MOP
AII408	CP E11 CUR	%MOP
AII409	CP E12 CUR	%MOP
AII410	CP E30 CUR	%MOP

HOUR BEGAN	AWIC400	AII404	AIIE51	AII406	AII407	AII408	AII409	AII410
18	0.599	29.48	0.282	49.32	90.52	84.33	86.56	85.41
19	0.601	29.53	0.284	49.70	90.86	84.89	86.57	85.46
20	0.599	29.32	0.284	47.37	91.04	84.82	86.14	85.36
21	0.601	29.50	0.284	47.67	91.50	84.70	86.74	84.78
22	0.599	29.31	0.284	49.31	91.00	84.86	86.43	85.11
23	0.600	29.38	0.278	46.85	91.29	85.04	86.33	85.12
00	0.600	30.11	0.280	51.18	92.02	85.65	86.54	85.58
01	0.601	30.02	0.279	52.08	91.95	85.47	86.73	86.47
02	0.600	31.03	0.214	55.16	92.00	85.45	86.78	87.22
03	0.601	31.29	0.213	56.58	91.73	84.73	86.32	87.13
04	0.600	32.39	0.213	61.48	92.15	84.95	85.97	87.67
05	0.600	32.33	0.213	63.02	91.75	84.56	86.81	87.79
06	0.599	32.21	0.213	61.18	92.18	84.05	86.47	87.71
07	0.601	32.29	0.213	62.97	91.96	84.73	86.42	87.77
08	0.600	32.21	0.213	62.17	91.83	84.80	86.68	87.15
09	0.602	32.19	0.210	61.17	91.80	84.70	86.56	86.74
10	0.599	32.04	0.213	62.97	91.49	85.00	86.78	87.14
11	0.577	32.22	0.213	64.04	91.13	85.28	87.60	87.32
12	0.600	32.30	0.21[illegible]	66.61	90.67	85.02	87.73	87.50
13	0.601	32.18	0.245	64.46	90.82	84.11	87.21	87.06
14	0.600	32.43	0.266	65.15	89.13	83.31	86.76	87.05
15	0.600	32.00	0.26[illegible]	61.76	89.11	82.93	86.65	86.98
16	0.600	32.12	0.201	63.79	89.23	83.31	86.88	87.34
17	0.602	32.13	0.279	63.74	89.44	83.36	86.84	87.15
18	0.600	32.16	0.284	64.47	89.48	83.67	86.81	87.42
19	7.052	19.54	0.282	28.13	89.28	84.44	88.44	75.49
20	7.079	17.22	0.284	23.64	89.38	84.60	88.36	73.34
21	7.111	17.04	0.284	23.37	90.33	85.54	88.69	73.39
22	7.120	16.73	0.282	23.02	90.96	85.90	88.70	74.05
23	7.136	16.65	0.284	23.56	89.98	84.86	87.97	73.45

05-27-84

REPORT ID - 123 TITLE - BLENDING & KILN FEED PG 2 TIME 0101 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AII405	PM E29 CUR	%AMP
AII905	CP K19	%AMP
AII406	PM E27 CUR	%AMP

HOUR BEGAN	AII405	AII905	AII406
19	1.151	39.08	49.[illegible]
20	0.[illegible]	42.21	49.[illegible]
21	0.[illegible]	37.[illegible]	49.37
22	0.753	38.[illegible]	49.31
23	0.869	39.[illegible]	48.35
00	0.837	[illegible]	51.[illegible]
01	0.[illegible]01	43.[illegible]	52.[illegible]
02	0.[illegible]45	48.[illegible]	55.16
03	0.[illegible]99	42.[illegible]	[illegible]
04	0.[illegible]77	43.[illegible]	[illegible]
05	0.[illegible]14	[illegible]	[illegible]
06	[illegible]	[illegible]	[illegible]
07	[illegible]	[illegible]	[illegible]
08	0.701	42.[illegible]	[illegible]
09	0.777	42.38	[illegible]
10	0.[illegible]64	44.[illegible]	[illegible]
11	0.830	46.[illegible]	[illegible]
12	0.771	46.[illegible]	65.[illegible]
13	0.872	44.[illegible]	[illegible]
14	1.077	39.20	65.15
15	1.180	43.30	63.75
16	1.274	42.17	63.[illegible]
17	1.319	46.[illegible]	63.[illegible]
18	1.205	45.87	[illegible]
19	1.292	42.58	28.13
20	0.755	35.[illegible]	23.[illegible]
21	1.[illegible]	41.[illegible]	25.[illegible]
22	1.492	42.52	25.32
23	1.389	38.35	23.36
00	1.392	39.41	23.31

05-27-84

REPORT ID - 124 TITLE - COAL MILL FEED TIME 0103 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AWIC570	COAL BIN WEIGHT	TONS
AFIC570	WF R[illegible] FD RATE	TPH
APDI571	MILL R22 DIT PRES	IN H2O
AI1585	MILL R22 CUR	%AMP
ASI582	CL R22 [illegible]	%RPM
API5818	PA R22 [illegible] PRES	PSI
AL1577	[illegible]	%
AI1584	CL R3 CUR	%AMP

HOUR BEGAN	AWIC570	AFIC570	APDI571	AI1585	ASI582	API5818	AL1577	AI1584
19	2.027	12.05	22.19	72.56	23.07	593.1	-0.081	0.238
20	2.010	11.99	22.08	72.15	23.07	597.8	-0.081	0.238
21	1.994	12.[illegible]	22.19	73.47	23.07	593.6	-0.062	0.238
22	2.012	12.12	22.26	73.56	23.08	597.[illegible]	-0.094	16.67
23	2.009	12.14	22.11	73.41	23.08	599.9	-0.062	17.29
00	2.013	12.09	22.06	72.71	23.09	599.1	-0.078	13.31
01	1.962	12.08	22.31	74.12	23.07	593.6	-0.107	0.238
02	1.993	12.39	22.72	75.16	23.10	595.[illegible]	-0.091	0.238
03	2.000	12.79	22.70	77.45	23.09	596.6	-0.074	0.238
04	1.9[illegible]0	13.16	23.29	79.70	23.10	594.[illegible]	-0.099	0.238
05	1.946	13.25	23.39	80.77	23.10	595.[illegible]	-0.094	0.238
06	1.987	13.[illegible]	23.27	79.69	23.10	596.1	-0.120	0.238
07	2.056	12.72	22.70	77.07	23.10	601.[illegible]	-0.094	0.237
08	2.040	12.86	22.91	77.92	23.10	598.6	-0.112	15.09
09	2.035	12.7[illegible]	22.70	78.47	23.09	593.[illegible]	-0.122	7.458
10	2.038	12.73	22.71	78.77	23.09	592.3	-0.128	0.238
11	2.025	12.72	22.87	78.10	23.09	600.4	-0.081	0.238
12	1.986	13.23	23.91	82.62	23.09	591.1	-0.088	0.238
13	2.086	12.58	23.19	76.44	23.09	595.[illegible]	-0.109	10.83
14	2.016	12.76	23.24	78.32	23.09	593.1	-0.068	20.46
15	2.010	12.72	22.70	80.54	23.08	599.6	-0.088	0.558
16	2.057	12.[illegible]	22.82	76.32	23.08	594.[illegible]	-0.083	0.238
17	1.995	13.01	22.77	78.62	23.08	596.1	-0.104	0.238
18	1.967	11.70	20.67	76.37	23.08	599.4	-0.081	9.013
19	0.274	0.051	0.079	27.85	23.08	590.7	-0.112	0.238
20	0.300	0.319	0.087	28.07	23.08	592.0	-0.075	0.238
21	0.[illegible]	0.[illegible]	0.077	8.447	23.08	[illegible]	-0.065	0.238
22	0.[illegible]	0.201	0.076	0.994	23.09	65.49	-0.062	0.238
23	0.784	3.745	14.53	36.13	23.09	651.8	-0.065	0.238
00	1.573	3.762	14.71	35.62	23.09	609.5	-0.075	0.237

05-27-84

REPORT ID - 125 TITLE - COAL MILL AREA TIME 0105 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
API572	MILL R22 INLET DRAFT	IN H2O
AZIC573	DP R34 POS	%OPN
AII586	FN R35 CUR	%AMP
APIC574	FN R35 EXIT DRAFT	IN H2O
AZIC574	DP R28 POS	%OPN
ATIC575C	DP R311 CONTROL	%
ATIC575A	MILL R22 EXIT TEMP	DEGF
ATIC575B	MILL R22 INLET TEMP	DEGF
AZIC575	DP R38 POSITION	%OPN

HOUR dEGAN	API572	AZIC573	AII586	APIC574	AZIC574	ATIC575C	ATIC575A	ATIC575B	AZIC575
19	6.318	80.29	66.38	0.504	72.66	181.5	148.4	181.5	36.89
20	6.491	79.96	66.37	0.502	71.79	181.1	148.4	181.1	35.87
21	6.748	81.15	66.50	0.473	70.52	180.6	148.4	180.5	27.46
22	6.737	80.66	66.47	0.483	70.25	180.7	148.3	180.7	29.80
23	6.644	80.73	66.83	0.504	69.78	180.6	148.4	180.6	27.04
00	6.609	80.61	66.72	0.514	70.25	180.4	148.4	180.5	33.14
01	6.727	71.71	66.63	0.502	70.21	180.1	148.3	180.1	0.178
02	6.703	76.76	66.62	0.495	69.79	180.0	148.1	180.0	4.451
03	6.773	78.77	67.09	0.504	70.15	177.7	148.4	177.7	0.646
04	[illegible]	78.77	66.75	0.475	70.77	177.8	148.1	177.8	0.614
05	[illegible]	78.98	66.80	0.471	70.73	177.6	148.8	177.6	0.608
06	6.537	98.99	66.79	0.500	70.36	178.3	147.4	178.3	0.635
07	6.555	98.99	67.08	0.508	71.06	180.0	149.2	180.0	0.655
08	6.806	99.00	67.02	0.513	70.00	179.4	147.3	179.4	0.255
09	7.171	99.00	67.19	0.488	68.46	178.3	145.3	178.3	0.724
10	7.094	98.99	66.84	0.485	68.32	183.3	145.3	183.3	0.775
11	7.096	98.98	67.04	0.470	68.74	179.3	145.9	179.3	0.844
12	6.448	98.96	67.16	0.508	70.50	177.4	145.7	177.4	0.775
13	6.661	98.99	67.08	0.514	71.45	176.4	144.7	176.4	0.770
14	6.517	99.00	67.72	0.496	71.29	176.3	144.2	176.3	0.759
15	7.316	99.01	66.75	0.509	67.99	177.1	143.2	177.1	0.760
16	6.661	98.96	66.77	0.498	70.63	179.1	147.7	179.1	0.772
17	6.478	98.95	66.20	0.502	70.64	182.4	149.2	182.4	0.780
18	6.338	87.53	61.29	1.627	60.56	204.0	147.3	204.0	11.08
19	2.516	3.763	22.01	8.517	-0.128	221.7	126.4	221.7	1.341
20	1.844	3.833	22.34	7.023	0.377	150.6	113.4	150.6	0.792
21	1.550	3.718	5.483	3.015	-0.169	124.5	106.3	124.5	0.778
22	1.483	3.700	0.235	3.516	-0.361	111.7	99.78	111.7	0.777
23	3.724	51.20	64.39	0.764	72.33	140.4	116.3	140.4	0.745
00	4.068	52.16	64.95	0.502	74.1[illegible]	152.3	123.3	152.3	0.701

05-27-84

REPORT ID - 139 TITLE - COAL MILL AREA P02 TIME [illegible] DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AT1594	MILL SEC AIR INLET TEMP	DEGF
AAIC576	MILL R22 EXIT OXY	PCT
AZIC576	DP R101 POS	%OPN
AT1595	MILL PRH AIR INLET TEMP	DEGF
AZIC575A	DP R111 POS	%OPN
AT1578	CT GAS EXIT TEMP	DEGF
AT1579	CT MAT DSCH TEMP	DEGF
AT1580	MFR MAT TEMP	DEGF
AT1583A	MILL R22 E BG TEMP	DEGF
AT1583B	MILL R22 W BG TEMP	DEGF

HOUR BEGAN	AT1594	AAIC576	AZIC576	AT1595	AZIC575A	AT1578	AT1579	AT1580	AT1583A	AT1583B
19	448.[illegible]	12.25	99.30	544.0	45.38	144.2	148.6	125.7	106.3	111.0
20	464.1	12.08	99.38	537.9	45.34	144.2	148.6	125.6	106.6	111.0
21	547.0	12.06	99.39	531.0	45.30	143.7	148.5	125.2	106.3	110.5
22	543.4	12.24	99.34	527.1	45.28	143.7	148.4	125.1	105.0	109.7
23	579.5	12.04	99.38	522.9	45.28	144.3	148.6	125.1	104.9	109.1
00	517.0	12.20	99.33	525.4	45.27	143.9	148.5	125.2	104.4	108.6
01	636.5	11.99	99.27	525.5	45.72	143.8	148.4	125.2	104.[illegible]	108.1
02	650.5	11.91	99.27	527.0	45.79	143.6	148.2	125.[illegible]	103.5	107.7
03	654.9	11.99	99.30	530.0	46.11	142.0	148.5	126.4	103.1	107.1
04	715.0	11.99	99.52	530.5	48.06	141.5	148.2	126.9	102.7	106.5
05	839.1	12.20	99.45	525.1	51.58	141.9	148.7	127.5	102.5	106.4
06	865.9	11.96	99.44	527.2	51.34	142.5	147.4	128.1	102.5	106.4
07	878.9	12.15	99.47	528.0	51.41	144.4	147.2	129.5	102.4	106.4
08	612.5	11.99	99.51	529.0	51.41	143.5	147.7	129.7	102.5	106.5
09	343.4	11.37	99.56	534.1	51.41	141.7	148.0	129.5	103.0	107.0
10	279.0	11.77	99.61	536.6	51.45	141.4	145.6	129.4	104.0	107.9
11	244.3	11.37	99.69	530.1	51.48	141.9	146.2	129.0	104.6	108.5
12	214.1	10.67	99.68	526.1	51.43	140.0	144.0	128.4	105.0	108.9
13	192.0	10.86	99.66	525.4	51.41	140.5	143.0	127.8	105.0	109.5
14	175.5	10.94	99.66	524.5	51.40	140.2	144.5	127.4	105.8	109.8
15	162.7	11.37	99.72	535.2	51.41	139.1	143.4	127.1	106.2	110.1
16	546.8	12.02	99.71	544.7	51.42	142.0	147.6	126.8	106.5	110.5
17	789.2	12.12	99.71	548.1	51.28	145.3	149.5	126.7	107.0	111.1
18	706.3	13.08	85.30	544.7	43.36	144.2	148.3	126.4	107.4	111.3
19	347.9	21.64	0.413	408.0	0.479	133.9	137.4	120.7	104.4	106.5
20	284.6	22.39	0.361	309.9	0.413	122.4	124.8	111.9	102.7	104.2
21	244.5	22.56	0.324	245.4	0.368	113.7	112.0	105.0	100.4	101.5
22	218.9	22.63	0.354	209.7	0.364	107.8	107.9	[illegible]	96.70	97.70
23	198.3	19.71	96.83	286.6	0.328	111.2	113.4	106.3	98.23	98.67
00	179.0	19.43	99.44	307.9	0.237	118.4	123.2	108.4	99.27	98.97

05-27-84

REPORT ID - 140 TITLE - BYPASS AREA TIME 0109 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION		ENGR. UNITS
API518	BYP	INLET DRAFT	IN H2O
API519	FN N18	INLET DRAFT	IN H2O
ATIC521	BYPASS	INLET TEMP	DEGF
AZIC521	DP N18A	POS	%OPN
ATI568	FN N18	CUR	%AMP
APDI523	DC N13	DIF PRES	IN H2O
AFIC520	QUENCH	AIRFLOW	KCFM
AZIC520	DP N4	POS	%OPN
ATIC522	ST N6	EXIT TEMP	DEGF
AZIC522	VL N5	POS	%OPN

HOUR BEGAN	API518	API519	ATIC521	AZIC521	ATI568	APDI523	AFIC520	AZIC520	ATIC522	AZIC522
19	1.027	3.395	629.9	20.71	52.[illegible]3	1.138	17.47	54.70	325.0	58.75
20	0.958	3.330	638.4	20.77	52.81	1.293	17.49	55.11	324.7	59.16
21	1.014	3.536	666.7	21.36	53.09	1.258	17.52	54.[illegible]	326.0	62.37
22	1.006	3.656	668.7	21.57	53.64	1.212	17.50	54.57	324.7	62.03
23	0.766	3.483	667.1	21.41	53.65	1.322	17.50	54.64	324.4	61.14
00	0.795	3.467	656.4	21.27	53.44	1.[illegible]	17.47	54.[illegible]	324.4	61.30
01	0.771	3.571	645.[illegible]	20.[illegible]8	53.[illegible]	1.[illegible]	17.52	54.[illegible]	324.3	60.31
02	1.024	3.446	642.4	20.75	53.42	1.311	17.52	54.50	325.1	60.46
03	1.187	3.665	644.[illegible]	21.29	53.58	1.387	17.51	53.[illegible]5	325.7	61.45
04	1.361	3.665	654.[illegible]	21.[illegible]	54.[illegible]	1.307	17.51	53.25	324.7	63.51
05	1.397	3.842	651.7	21.46	54.41	1.241	17.51	53.27	325.6	63.62
06	1.443	3.881	637.7	21.28	53.74	1.207	17.50	52.[illegible]	324.3	61.82
07	1.382	3.729	617.3	20.75	53.47	1.127	17.51	53.[illegible]	324.7	59.19
08	1.367	3.674	612.3	20.76	53.34	1.055	17.49	53.42	325.1	58.63
09	1.390	3.759	607.5	21.10	53.34	0.851	17.50	53.32	324.6	58.13
10	1.365	3.780	612.4	21.08	53.06	0.858	17.50	53.82	324.7	58.46
11	1.311	3.671	617.0	20.62	52.23	1.000	17.50	53.73	325.3	58.66
12	1.246	3.595	618.7	20.74	51.75	1.027	17.50	54.22	324.3	58.41
13	1.235	3.544	600.7	20.62	51.65	1.146	17.51	54.43	325.1	56.52
14	1.187	3.475	601.3	20.50	52.13	1.122	17.50	54.62	325.1	56.31
15	1.406	3.655	598.4	20.63	51.70	1.1[illegible]	17.52	54.26	324.8	56.04
16	1.433	3.698	595.4	20.58	51.79	0.798	17.49	54.26	325.0	56.07
17	1.358	3.558	591.8	20.40	51.56	1.002	17.49	54.46	324.7	55.59
18	1.452	3.653	596.2	20.35	51.60	1.095	17.50	54.28	325.1	55.99
19	1.591	3.731	303.6	4.384	31.20	0.725	9.737	37.43	240.9	17.58
20	-----	-----	184.0	0.840	27.31	-----	6.009	27.63	190.3	-----
21	-----	-----	167.0	0.791	[illegible]	-----	6.011	27.49	169.7	-----
22	-----	-----	170.2	0.730	28.45	-----	6.012	27.24	164.1	-----
23	0.632	0.859	149.8	2.741	29.50	-----	6.007	26.59	147.1	-----
00	0.676	0.786	148.0	5.478	30.14	-----	6.020	26.35	140.3	-----

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REPORT ID - 141 TITLE - BYPASS AREA PG2 TIME 0111 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AI1564	SC HOA COR	SAMP

HOUR BEGAN	AI1564
19	32.[illegible]
20	32.[illegible]
21	32.[illegible]
22	32.70
23	32.81
00	32.[illegible]
01	32.01
02	32.[illegible]
03	32.[illegible]
04	32.[illegible]
05	32.[illegible]
06	32.75
07	32.[illegible]
08	32.81
09	32.[illegible]
10	32.60
11	33.14
12	33.17
13	32.71
14	32.82
15	32.53
16	32.[illegible]
17	32.62
18	32.[illegible]
19	33.22
20	33.22
21	33.25
22	33.18
23	32.73
00	33.12

05-27-84

REPORT ID - 142 TITLE - PREHEATER

TIME 0113 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AT150A	FN FO N BG TEMP	DEGF
AT150B	FN NIB S BG TEMP	DEGF
AT150C	FN NIB N BG TEMP	DEGF
AT150D	FN NIB S BG TEMP	DEGF
AS1C500	FN FS SPD	%RPM
AZ1C501	DP FAN FDS	%OPN
AT150.0	FN FS GAS	%OPP
AP1C520	FN FO EXIT DRAFT	IN H2O
AZ1C521	DP DAD FGS	%OPN

HOUR DEGMN	AT150A	AT150B	AT150C	AT150D
19	1[illegible].0	157.0	160.7	160.7
20	150.0	158.4	161.0	154.0
21	160.1	154.4	156.3	147.5
22	131.3	150.0	156.7	147.0
23	128.7	150.2	155.1	146.[illegible]
00	128.1	146.[illegible]	154.[illegible]	146.[illegible]
01	126.0	146.7	151.0	146.[illegible]
02	126.7	147.0	148.3	140.1
03	125.3	149.0	147.8	138.4
04	125.0	147.5	145.7	138.2
05	124.3	149.2	146.4	138.0
06	124.3	146.[illegible]	145.0	138.0
07	124.5	148.2	146.0	140.4
08	127.3	149.7	149.5	145.3
09	137.2	154.0	152.3	154.5
10	145.0	157.0	155.1	160.3
11	152.7	158.5	159.4	160.5
12	163.3	160.1	162.1	157.1
13	162.3	161.0	163.5	157.3
14	163.3	161.7	164.5	160.0
15	166.4	163.4	165.0	161.3
16	167.5	166.[illegible]	165.5	161.0
17	167.2	167.1	166.7	160.5
18	166.0	168.5	167.7	160.0
19	157.5	154.0	166.5	161.3
20	143.0	143.8	162.7	160.7
21	131.9	135.8	160.5	160.1
22	117.4	129.0	159.0	153.0
23	109.1	125.1	156.7	151.3
00	109.5	118.3	152.2	150.6

HOUR DEGMN	AS1C500	AZ1C501	AT150.0	AP1C520	AZ1C521
19	72.20	99.19	81.[illegible]	0.[illegible]	99.37
20	72.[illegible]	99.10	81.07	0.[illegible]	99.31
21	72.[illegible]	99.37	82.[illegible]	0.000	99.00
22	72.13	99.[illegible]	82.43	0.000	99.00
23	72.20	99.28	82.16	0.074	99.40
00	74.[illegible]	99.[illegible]	84.77	0.081	99.44
01	75.00	99.26	88.[illegible]	0.000	99.44
02	77.01	99.27	91.00	0.099	99.38
03	78.00	99.25	93.39	0.072	99.38
04	79.00	99.31	95.83	0.081	99.38
05	99.07	99.42	96.05	0.069	99.34
06	99.00	99.38	95.42	0.064	99.32
07	99.37	99.41	95.22	0.063	99.34
08	99.35	99.47	95.77	0.067	99.41
09	99.08	99.48	95.34	0.060	99.00
10	99.08	99.31	95.06	0.087	98.97
11	-----	99.34	96.07	-0.050	98.97
12	-----	99.38	95.38	-0.066	99.00
13	-----	99.38	96.17	-0.[illegible]	99.03
14	-----	99.33	97.56	-0.032	99.03
15	-----	99.32	97.00	0.[illegible]	99.03
16	-----	99.32	96.00	0.743	99.03
17	-----	99.34	96.84	0.775	99.03
18	-----	99.35	96.10	0.778	96.89
19	29.40	29.37	25.40	0.375	23.88
20	14.[illegible]	-----	24.70	0.172	10.59
21	15.00	-----	10.08	0.072	20.09
22	15.[illegible]	3.032	3.[illegible]	0.[illegible]	20.07
23	39.08	99.40	20.20	0.093	32.06
00	41.38	99.30	21.11	0.03	33.74

05-27 04

REPORT ID - 143 TITLE - PREHEATER P02 TIME 0110 DATE 05-27-04 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AP1504	STG 1 EXIT DRAFT	IN H2O
AP1505	STG 2 EXIT DRAFT	IN H2O
AP1506	STG 3 EXIT DRAFT	IN H2O
AP1507	STG 4 EXIT DRAFT	IN H2O
AP1508	STG 3 CONE DRAFT	IN H2O
AP1509	STG 4 CONE DRAFT	IN H2O
H21510	DP 1 P05	SCFH
HA15128	STG 4 EXIT OXY	PCT
HA15128	STG 4 EXIT COMB	PCT
A11596	FD X306 COR	SAMP

HOUR BEGIN	AP1504	AP1505	AP1506	AP1507	AP1508	AP1509	H21510	HA15128	HA15128	A11596
19	24.75	18.70	12.70	7.240	12.47	0.462	75.54	1.004	0.[illegible]0	76.54
20	25.41	18.78	13.10	7.433	12.65	0.138	76.11	1.278	0.[illegible]79	[illegible]
21	25.75	19.[illegible]	13.39	7.413	13.01	5.770	75.27	1.028	0.794	76.30
22	25.72	19.39	13.56	7.721	13.11	7.032	75.16	1.270	0.762	77.17
23	25.70	19.47	13.60	8.020	13.18	7.440	75.17	1.054	0.790	77.70
00	26.91	20.30	14.20	8.455	13.79	7.730	75.13	1.153	0.757	77.42
01	27.90	20.75	14.66	8.720	14.76	7.779	75.09	1.370	0.707	77.01
02	28.73	21.[illegible]	15.33	7.357	15.[illegible]	8.314	75.05	1.065	0.[illegible]	76.71
03	29.12	21.74	15.14	8.703	15.15	[illegible].181	75.02	1.[illegible]	0.821	76.07
04	29.37	21.83	15.05	8.753	15.06	[illegible].06	75.00	1.413	0.800	76.07
05	29.75	22.02	15.30	8.899	15.41	0.7[illegible]3	74.77	1.198	0.835	75.75
06	29.75	21.71	15.25	8.733	15.45	0.303	74.79	1.261	0.814	76.32
07	29.75	22.00	15.38	8.810	15.65	0.089	75.04	1.474	0.823	75.35
08	29.82	21.76	15.30	8.717	15.76	0.078	75.08	1.275	0.779	76.31
09	29.67	21.75	15.31	8.658	15.67	0.068	75.10	1.250	0.741	76.50
10	29.60	21.70	15.27	8.653	15.63	0.083	75.26	1.317	0.741	76.46
11	29.58	21.76	15.43	8.753	15.71	0.085	76.40	1.268	0.803	76.78
12	29.71	21.76	15.34	8.695	15.58	5.343	76.31	0.853	1.058	77.01
13	29.[illegible]	21.71	15.41	8.798	15.47	4.480	75.71	1.039	0.818	76.76
14	29.63	21.82	15.44	9.159	15.23	0.440	75.94	1.267	0.800	77.65
15	29.64	21.72	15.25	8.355	14.74	5.874	75.79	1.242	0.845	77.00
16	29.06	21.35	14.76	8.539	14.89	0.147	76.38	1.025	0.790	76.16
17	29.01	21.22	14.60	8.533	14.43	6.050	76.45	1.088	0.756	75.76
18	29.02	21.08	15.19	8.743	15.06	0.721	76.03	1.310	0.849	73.38
19	15.84	11.42	3.007	1.143	2.050	0.909	75.22	7.253	0.465	40.11
20	-----	-----	-0.308	-0.498	-0.500	-0.187	75.19	-----	0.437	39.34
21	-----	-----	-0.351	-0.409	-0.[illegible]	-0.1[illegible]	75.17	-----	0.402	39.44
22	-----	-----	-0.354	-0.415	-0.374	-0.123	75.17	-----	0.431	40.24
23	4.030	1.791	1.440	1.022	2.107	0.424	75.11	9.077	0.401	41.78
00	4.564	2.104	1.073	1.106	2.231	0.402	75.04	9.441	0.500	43.73

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REPORT ID - 144 TITLE - PREHEATER PG3 TIME 0117 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AFIS11A	STG 1A GAS DIS TEMP	DEGF
AFIS11C	STG 1A GAS EXIT TEMP	DEGF
AFIS11B	STG 1B GAS DIS TEMP	DEGF
AFIS11D	STG 1B GAS EXIT TEMP	DEGF
AFIS11E	STG 2 GAS DIS TEMP	DEGF
AFIS11F	STG 2 GAS EXIT TEMP	DEGF
AFIS11G	STG 3 GAS DIS TEMP	DEGF
AFIS11H	STG 3 GAS EXIT TEMP	DEGF
AFIS11I	STG 4 GAS DIS TEMP	DEGF
AFIS11K	STG 4 GAS EXIT TEMP	DEGF

HOUR BEGINN	AFIS11A	AFIS11C	AFIS11B	AFIS11D	AFIS11E	AFIS11F	AFIS11G	AFIS11H	AFIS11I	AFIS11K
19	762.0	768.0	758.7	765.5	1197	1204	1487	1494	1503	1620
20	759.7	763.1	757.7	764.2	1195	1203	1490	1492	1501	1619
21	756.4	755.0	751.1	757.0	1190	1197	1482	1497	1503	1619
22	755.4	758.3	751.4	760.2	1191	1199	1481	1490	1503	1618
23	758.1	755.7	749.0	754.9	1186	1193	1478	1491	1503	1621
00	749.2	755.0	742.3	750.0	1188	1195	1481	1494	1501	1618
01	745.4	752.[illegible]	740.1	747.0	1187	1193	1480	1487	1502	1619
02	741.3	748.0	736.[illegible]	743.7	1186	1192	1481	1490	1503	1620
03	747.3	750.[illegible]	745.0	752.0	1191	1198	1489	1490	1503	1623
04	741.2	745.0	744.3	749.0	1191	1198	1488	1491	1507	1622
05	736.4	738.0	738.0	742.4	1190	1198	1489	1490	1507	1624
06	738.4	737.4	740.0	740.0	1194	1200	1487	1490	1510	1626
07	740.3	741.0	743.7	740.0	1197	1202	1490	1493	1507	1624
08	741.4	741.0	742.0	747.1	1195	1200	1490	1492	1509	1624
09	743.7	742.[illegible]	745.3	750.3	1198	1204	1491	1490	1507	1625
10	743.7	744.7	744.2	750.1	1196	1202	1489	1489	1508	1622
11	741.0	739.8	743.2	746.5	1190	1197	1490	1492	1508	1623
12	738.2	733.0	735.3	741.1	1188	1194	1490	1485	1507	1623
13	734.0	734.[illegible]	735.2	741.3	1190	1196	1490	1494	1508	1622
14	735.4	734.0	736.1	743.1	1188	1195	1491	1489	1508	1624
15	746.2	745.0	746.3	751.5	1193	1200	1490	1491	1508	1625
16	750.5	749.7	753.0	759.9	1197	1204	1491	1498	1508	1624
17	752.0	750.1	751.3	758.1	1196	1204	1491	1490	1507	1625
18	748.7	748.0	752.0	750.5	1191	1200	1487	1491	1505	1621
19	507.7	551.5	602.3	550.0	800.3	908.7	1120	1207	1115	1372
20	347.7	322.8	347.0	328.1	507.7	957.0	975.7	1211	1297.0	1305
21	110.2	304.0	317.1	301.0	505.1	750.1	905.5	1103	1014.0	1220
22	102.[illegible]	304.7	304.1	271.3	[illegible]	731.0	917.0	1107	5[illegible]	1130
23	75.4	712.0	507.[illegible]	728.4	903.0	1007	794.0	1113	1007	1150
00	605.7	715.2	602.2	700.0	933.4	1019	945.7	1049	1012	1067

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REPORT ID - [illegible] TITLE - PREHEATER PG4 TIME 0119 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
A51C587	[illegible] SPD	[illegible]
AP1588	[illegible] AIR PRES	IN H2O
A21C589	[illegible]	[illegible]

HOUR BEGAN	A51C587	AP1588	A21C589
19	73.58	29.53	100.[illegible]
20	73.14	29.[illegible]	100.2
21	[illegible]	[illegible]	100.2
22	[illegible]	[illegible]	100.[illegible]
23	[illegible]	[illegible]	100.[illegible]
00	[illegible]	[illegible]	[illegible]
01	[illegible]	[illegible]	[illegible]
02	[illegible]	[illegible]	[illegible]
03	[illegible]	30.[illegible]	98.10
04	72.[illegible]	30.81	98.12
05	73.19	31.15	98.04
06	71.[illegible]	30.72	98.15
07	72.77	31.01	98.35
08	73.33	31.01	98.78
09	73.53	31.29	98.57
10	73.77	31.15	99.19
11	[illegible]	31.[illegible]	101.1
12	[illegible]	31.[illegible]	101.1
13	[illegible]	31.[illegible]	100.3
14	[illegible]	31.17	100.7
15	75.21	30.73	100.3
16	72.[illegible]	30.58	100.3
17	71.53	30.34	100.2
18	72.35	27.77	100.1
19	19.11	1.694	23.09
20	1.[illegible]78	1.[illegible]	4.755
21	1.[illegible]99	1.[illegible]22	4.304
22	2.020	1.[illegible]	3.774
23	2.[illegible]68	5.728	38.86
00	2.175	6.210	42.21

05-27-84

REPORT NO [illegible] TITLE [illegible] TIME 0121 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	UNITS
[illegible]	[illegible]	[illegible]
[illegible]	[illegible] TEMP	DEGF
[illegible]	[illegible] TEMP	DEGF
[illegible]	[illegible] DRHET	[illegible]
[illegible]	[illegible] DRHET	[illegible]
[illegible]	[illegible] INLET TEMP	DEGF
[illegible]	[illegible] TEMP	DEGF
[illegible]	[illegible] DRHET	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

HOUR BEGIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1917	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1941	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2035	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2030	[illegible]	[illegible]	[illegible]
00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2013	[illegible]	[illegible]	[illegible]
01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1973	[illegible]	[illegible]	[illegible]
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19	-----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	-----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-----	-----
21	-----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-----	-----
22	-----	[illegible]	[illegible]	[illegible]	-----	[illegible]	[illegible]	[illegible]	-----	-----
23	-----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
00	-----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

05-27-84

REPORT ID : 147 TITLE : [illegible] TIME [illegible] DATE 05 27 84 THIS REPORT PERIODIC

POINT	DESCRIPTION		CHORD UNITS
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A51C520	[illegible]	SPD	[illegible]
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A21C592	[illegible]	POS	[illegible]
A11C593	[illegible]	AIR TEMP	DEOF
A11597	[illegible]	CUR	[illegible]
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A11598	[illegible]	CUR	[illegible]

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23	[illegible]	[illegible]	119.5	[illegible]	22.55	33.78	150.0	[illegible]	0.163	95.56
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06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.163	95.72
07	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.161	95.32
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22	-----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.122	0.162	0.326
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REPORT [illegible] TITLE [illegible] TIME [illegible] DATE [illegible] THIS REPORT PERIODIC

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HOUR ENDED	[illegible]	[illegible]	[illegible]	[illegible]
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05-27-84

REPORT [illegible] TITLE - COOLER & CLINKER HANDLING TIME [illegible] DATE [illegible] THIS REPORT PERIODIC

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[illegible]	FR HOOD DRAFT	[illegible]
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HOUR SEGMENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
02	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
07	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
08	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
09	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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05-27-84

REPORT ID [illegible] TITLE COOLER & CLINKER HANDLING PO2 TIME [illegible] DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION		HOUR. UNITS
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HOUR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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02	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	16.00
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00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.001

05-27-84

REPORT ID [illegible] 0.0 TITLE - COOLER & CLINKER HANDLING CBL TIME [illegible] DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
[illegible]	[illegible] SPD	[illegible]
AI1564	FH [illegible] LOR	[illegible]
AF1[illegible]	FH [illegible] AIRFLOW	[illegible]
AZ1[illegible]	FH [illegible] POS	[illegible]
AI1[illegible]	FH [illegible] LOR	[illegible]
AI[illegible]	CLK DRV NO 1 CUR	[illegible]
AF1[illegible]	FH [illegible] AIRFLOW	[illegible]
[illegible]	[illegible] POS	[illegible]
AF1[illegible]	FH [illegible] AIRFLOW	[illegible]

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00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

REPORT [illegible] FOR TITLE = COOLER & CLEANER HANDLING PIG FOR [illegible] DATE [illegible] THIS REPORT PERIODIC

POINT	DESCRIPTION	Group DESC
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[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

HOUR dEtOmd	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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05-27-84

REPORT ID - 152 TITLE - COOLER & CLINKER HANDLING P84 TIME 0113 DATE 05-27-84 THIS REPORT PERIODIC

POINT	DESCRIPTION	ENGR. UNITS
AP1C542	GRT PRES NO 2	IN H2O
AS1C542	CLK DRV NO 1 SPD	ZRPM
AP1543	GRT PRES NO 3	IN H2O
AP1C544	GRT PRES NO 4	IN H2O
AS1C544	CLK DRV NO 2 SPD	ZRPM
AP1545	GRT PRES NO 5	IN H2O
AP1546	GRT PRES NO 6	IN H2O
AT1C547	DC FST INLET TEMP	DEGF
AS1547	DC FST POS	ZOPN
AP1C548	DC FST DIF PRES	IN H2O

HOUR SEGMENT	AP1C542	AS1C542	AP1543	AP1C544	AS1C544	AP1545	AP1546	AT1C547	AS1547	AP1C548
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05-27 04

REPORT ID - 153 TITLE - COOLER & CLINKER HANDLING POS TIME [illegible] DATE 05-27 04 [illegible] REPORT PERIODIC

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HOUR ENDING	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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16	[illegible]	90.00	104.0	131.0	[illegible]
17	281.0	92.17	110.1	138.8	140.7
18	306.3	[illegible]	113.2	[illegible]	147.3
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23	71.10	61.22	74.02	73.31	80.27
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05-27-34

REPORT ID [illegible] TITLE - RAW MIX HOLD POINTS TIME [illegible] DATE 05-2[illegible]-34 THIS REPORT PERIODIC

POINT		DESCRIPTION	ENGR. UNITS	SP
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AF[illegible]3138	WF [illegible]	FD RATIO	[illegible]	[illegible]
AF[illegible]3148	WF [illegible]	FD RATIO	[illegible]	[illegible]
AF[illegible]3158	WF [illegible]	FD RATIO	[illegible]	[illegible]