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.

Commonwealth of Pennsylvania
Environmental Resources
October 8, 1991

Subject: Source Test Review

To: Data File
Glenn O. Hawbaker, Inc.
Spring Township, Centre County

From: Richard St. Louis, Chief RSL
Source Testing Unit
Division of Technical Services and Monitoring
Bureau of Air Quality Control

Through: Chief, Source Testing and Monitoring Section

Glenn O. Hawbaker, Inc. operates a drum mix asphalt facility in Spring Township, Centre County. Cold aggregate is proportioned to product specifications onto a belt conveyor to the feed end of a rotary drum drier. Recycled asphaltic products (RAP) may be fed into the drier at a point approximately 20 feet from the burner end. Heated asphaltic oil is injected into the drier approximately 25 and 35 feet from the burner. The finished product is discharged into awaiting trucks.

Heat is applied to the drier through the combustion of natural gas. The effluent from the drier is drawn by an induced draft fan to a venturi scrubber operating at a pressure drop of approximately 20-21 inches WG. Water flow rate to the scrubber is approximately 580-600 gpm. The effluent is exhausted to the atmosphere through a 38" x 43" stack having a discharge point approximately 23 feet above grade.

Keystone Environmental Resources, Inc. conducted particulate and VOC emissions test on July 16-17, 1991. Three particulate (PADER Method) and three VOC (M-25A) test runs were conducted while the facility was not running any RAP material. A fourth particulate and VOC run was conducted while producing a product with 25% RAP. Richard Maxwell of the Northcentral Regional Office, who observed the majority of the test program, reported that a glass connector, likely a cyclone bypass, was found to be broken at the conclusion of the second run. Although the report does not make note of this, Keystone Environmental Resources informed Mr. Maxwell that breakage likely occurred when the probe was "bumped" upon being removed from the stack. There is no indication from the raw data of the test report that breakage may have occurred during the actual sampling.

The test report is thus found to be acceptable to the Department.

The following test results are extracted from the test reports:

Run No.	1	2	3	4
Part. gr/dscf	0.009	0.008	0.006	0.012
lbs/hr	2.18	1.98	1.40	2.35
VOC ppm	224	209	170	279
lbs/ton	0.055	0.048	0.037	0.059

ccs: Richard Maxwell, Northcentral Regional Office
14-303-007 through Krishnan Ramamurthy
EPA/RSL
Reading File - Source Testing

RSLsbam

COMMONWEALTH OF PENNSYLVANIA

August 22, 1991

SUBJECT: Test Report Review
Glenn O. Hawbaker, Inc.
Spring Township, Centre County
Plan Approval 14-303-007

TO: Richard St. Louis

FROM: Richard L. Maxwell, Jr.
Chief, Engineering Services
Bureau of Air Quality Control
Williamsport Regional Office

Attached is a test report for particulate and VOC testing performed by Keystone Environmental Resources on a drum mix asphalt concrete plant on 7/16 and 7/17/91. Also attached is a copy of my test observation memo. Would you please have someone on your staff review this report for Chapter 139 conformance, etc.

It is noted that the test report does not discuss the broken probe/filter holder connector found on the second run (discussed in my observation memo).

I would prefer that you not comment upon the compliance status of the test results for several reasons (which I would be happy to further discuss if you wish). Also, the results of the RAP run should not be averaged in with the results of the first three runs.

Although the plant is subject to NSPS Subpart I, Method 9 opacity observations were waived for the first three test runs.

The test protocol was reviewed by Rick Begley (in June 1990 - this is a retest).

RLM/sks

cc: File

RSL
9/27/91

RECEIVED
AUG 23 1991
DEP AIR QUALITY CONTROL
DIV. OF TECH. SERVICES

COMMONWEALTH OF PENNSYLVANIA

July 23, 1991

SUBJECT: Glenn O. Hawbaker, Inc.
Spring Township, Centre County
Plan Approval No. 14-303-007

TO: Files

FROM: Richard L. Maxwell, Jr.
Chief, Engineering Services
Air Quality Control
Northcentral Region

On 7/16 and 7/17/91, I observed the performance of particulate and Method 25A VOC stack testing on a NSPS subject drum mix asphalt concrete plant and associated scrubber. The testing was performed by Keystone Environmental Resources. Hawbaker was represented on site by Rusty Hamer and Jim Hurlburt.

The particulate and VOC sampling were performed simultaneously. Three runs were performed on 7/16 while the plant was processing virgin materials and one run was performed on 7/17 while it was processing 25% RAP. I observed runs 2 and 3 on the 16th and the RAP run on the 17th.

The production rate on the 16th was 300 TPH and on the 17th, it was 275 TPH. The mix being produced on the 16th was L top (low skid resistance) while the mix on the 17th was BCBC which is a base mix. The liquid asphalt being used was AC-20 at a rate of 5.9% on the 16th and 2.4% on the 17th. The source of supply is apparently Sun Refining and Marketing (as evidenced by a delivery ticket dated 7/16, 6:10 a.m., observed in the plant control room). The liquid asphalt temperature was noted to be 305°F on the 16th. I did not note the temperature on the 17th.

The scrubber operated at a pressure drop of 20-21 inches and a flow rate of 580-600 gpm.

The sampling location was the same one used previously (109 inches above the fan top and 83 inches prior to the stack exit) and the particulate sampling point matrix in the 43" x 38" stack was a 5x5, as it was during previous testing. (Actually, the particulate sampling excluded one of these 25 points, the middle port far wall or 38.7" point, as the VOC sampling probe, which remained stationary throughout all of the test runs, interfered with the performance of particulate sampling at this point. The sampling noted at this point on the data sheets was actually done at the 4th or 30.1" point.) Each particulate sampling point was sampled for three minutes (except the middle port 30.1" point which was sampled for six minutes).

I observed the final leak check for the first particulate test run (.012 cfm at 5" Hg), the final leak check for the second run (approximately .01 cfm at 10" Hg), the final leak check for the third run (.014 cfm at 11" Hg) and the final leak check for the fourth or 7/17 RAP run (.016 cfm at 12" Hg). It should be noted that the final leak check for the second run was performed from the filter holder inlet only rather than through the entire sampling train. This was due to the fact that the glass connector between the probe and the filter holder was broken. The operator claimed to have "bumped" the probe during its removal from the last port at the conclusion of testing and was confident that this was when the connector was broken rather then during the actual testing. This claim appears to be supported by the fact that the moisture content calculated for this run did not differ significantly from that determined for the first run, but the results and raw data for this run should be scrutinized closely and the run discarded if there is even the slightest question.

The hydrocarbon analyzer was a Byron model 402 FID. Calibration was being performed with 9,500 ppm methane and a Metronics model 2 calibrator. The actual concentrations generated by the calibrator were 950, 809 (except for run #1 which was 852), 470 and 286 ppm. Calibration took place prior to each run and at the conclusion of testing on each day. Additionally, a 95 ppm methane audit gas was used at the conclusion of each run.

The hydrocarbon concentrations were claimed tp have been approximately 230-235 ppm during the first test run. During the second run, I observed them to be approximately 230 ppm for two-thirds of the test and 170 ppm for the remainder of the test following an abrupt unexplained drop (no changes made or noted in plant operating parameters). During the third run, they appeared to remain at the 170 ppm level. During the fourth or RAP run, the concentrations were higher, 270-300 ppm.

Keystone did not do opacity observations during the first three runs but did make observations during the RAP run (as previously approved by me). Although their readings, done in accordance with Method 9 procedures, were all zeros, which I confirmed, there was something faintly visible when one observed the exhaust looking into the sun. This also appeared to be true on the 16th. There was no discernable difference in stack appearance between the 16th and the 17th. There was a slight amount of water vapor noticeable earlier in the morning on both days, but not during the majority of the testing. Both days were sunny, hot and dry. The 16th was relatively clear but some haze had formed by the 17th.

Other items of interest are:

- Rusty claimed that nothing special had been done to the scrubber system settling ponds in preparation for the testing (water replacement, etc.).

- The flow rate reading appeared to vary somewhat depending upon where on the gauge one began the reading (a one minute reading starting at zero resulted in a value of 580 gpm, whereas a one minute reading starting at 500 resulted in a value of 600 gpm).

- Borderline dusting was noticeable from the plant's aggregate feed setup on both days, particularly from the vibrating scalper screen. Considering the dry conditions, the amount of dust was probably abnormally high. Jim Hurlburt said that the scalper is much larger than it needs to be and that it will probably be replaced with a significantly smaller one next winter. There are no water sprays on the feed system.

- Most of the RAP run on the 17th was fresh material rather than stockpiled RAP.

- The bulk silo has not been hooked up. It may eventually used for "cony" fibers, a mixture of chopped fiberglass and dust, used for curbing mix.

- The company has purchased a portable Enerac combustion analyzer which they intend to use to keep their burner in tune. The sampling tap they have built into the dryer is located prior to the asphalt injection point so will not pick up any hydrocarbon influence from the asphalt. It is, however, located approximately 3 ft. downstream of the RAP introduction point. Readings taken during the testing indicated a CO concentration of approximately 100 ppm and a nondetectable hydrocarbon concentration (including the RAP test).

- The dryer burner was being fired on natural gas.

RLM:lm

cc: Hawk Run

7/16/91

TIME		STONE FEED RATE	ASPHALT CONCRETE PROD. RATE	GAS BURNER	DRYER DRAFT	MIX TEMP.	KNOCKOUT BOX TEMP.	SCRUBBER Δp	SCRUBBER FLOWRATE				
9:19		281.3 tph	297.9 tph			279°F	259°F	20.5"					
10:05	TEST #2		START										
10:10		280.7	298.2	30%	.21"	261	258	19.5		MIX TEMP. COMING UP			
10:23		280.4	299.5	30	.21	292	273	21.0					
10:37		281.8	297.0	29	.20	294	276	21.0					
10:40									580 cfm				
10:55		282.5	298.7	29	.22	285	271	21.5					
11:08									580				
11:10		282.1	297.1	28	.20	287	273	21.5					
11:23		281.0	298.5	28	.22	285	273	21.5					
11:29	TEST #2		OVER										
12:37	TEST #3		START										
12:39		286.5	303.2	46	.17	229	244	20.0		MIX TEMP. COMING UP			
12:44									585				
1:04		283.0	300.8	29	.24	289	272	21.0					
1:18									575				
1:21		280.8	298.6	29	.15	290	274	20.5					
1:37		284.0	300.3	29	.22	291	277	21.0					
1:41									575				
1:52		282.4	300.6	29	.27	291	278	21.0					
2:03		282.6	301.1	29	.15	293	280	21.0					
2:07	TEST #3		OVER										

7/16/91

TIME	HC CONCEN.		COMMENTS
10:05	TEST # 2	START	
10:27	200 ppm		
10:49	230		HC DRIFTED UP
11:17	170		ABRUPT DROP FROM 230 ppm ≈ 10 MINUTES AGO
11:29	TEST #4	OVER	
12:37	TEST #3	START	
12:48	190		
1:13	175		
1:30	170		
1:50	170		CONC. STEADY
2:04	160		
2:07	TEST #3	OVER	

7/17/91

TIME		STONE FEED RATE	RAP FEED RATE	AC-20 FEED RATE	ASPHALT CONCRETE PROD. RATE	GAS BURNER	DRYER DRAFT	MIX TEMP	KNOCKOUT BOX TEMP	SCRUBBER DP	SCRUBBER FLOWRATE		
9:15		200.2 TPH	66.8 TPH	6.53 TPH	273.7 TPH	35%	.15"	363 °F	348°F	20.5"			
9:20	TEST START												
9:28													
9:32		201.6	65.8	6.6	275.1	28	.25	279	319	21.0	590 cfm		
9:45		201.2	67.9	6.66	276.8	28	.28	277	315	21.0			
9:56		199.6	67.1	6.58	274.4	28	.19	275	318	21.5			
10:05											590		
10:09		201.6	64.6	6.56	272.5	28	.23	283	324	21.0			
10:25		201.7	65.9	6.60	274.1	28	.26	277	316	21.5			
10:36		204.5	64.7	6.79	278.3	28	.17	277	314	21.0			
10:43	TEST OVER												

7/17/91

TIME	HC CONCEN.	COMMENTS
9:20	260-270 ppm	TEST START
9:36	250	
9:48	260	
9:59	300	
10:15	280-290	
10:31	300	CONCENTRATION STEADY FOR LAST 30 MINUTES
10:39	270	DROPPED FROM 300 → 270 BACK UP TO 300 THEN → 270 AGAIN
10:43	TEST OVER	

RECEIVED

AUG 9 1991

DER-AIR QUALITY CONTROL
WILLIAMSPORT REGION

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
COMPLIANCE TEST PROGRAM
SCRUBBER EXHAUST STACK

Prepared for:

GLENN O. HAWBAKER, INC.
STATE COLLEGE, PENNSYLVANIA

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
3000 TECH CENTER DRIVE
MONROEVILLE, PA 15146

PROJECT NUMBER 375019-02

AUGUST 1991

TABLE OF CONTENTS

PAGE

1.0 INTRODUCTION 1-1

2.0 METHODOLOGIES 2-1

2.1 Gas Velocity and Flow Rate 2-1
2.2 Total Particulate Matter 2-1
2.3 Total Hydrocarbons 2-2
2.4 Visible Emissions Determinations 2-2

3.0 RESULTS 3-1

LIST OF TABLES

3-1 Total Particulate Matter and Total Hydrocarbons Emissions 3-1a

LIST OF FIGURES

2-1 Schematic Diagram of Stack and Traverse Points 2-1a

1.0 INTRODUCTION

On July 16 and 17, 1991, a compliance test program was conducted for Glenn O. Hawbaker, Inc., on the scrubber exhaust stack of the Central Valley Asphalt drum mix plant operated in Pleasant Gap, PA. The purpose of the testing was to determine the (1) concentration and mass emission rate of particulate matter, (2) concentration of total hydrocarbon (THC) vapors, and (3) presence of visible emissions from the stack as required by 40 CFR 60 Subpart I, EPA Standards of Performance for Asphalt Concrete Plants, and Sections 123.13(b) and 123.41 of the Pennsylvania Department of Environmental Resources (DER) Source Testing Manual (Revision No. 1, January 1983).

Testing was performed by the Air Quality Engineering Division of Keystone Environmental Resources, Inc. The test crew was comprised of Keith Schmidt, Richard Casselberry, and Thomas Morgan. All test procedures were witnessed by Richard Maxwell of the PA DER.

2.0 METHODOLOGIES

Particulate matter and THC sampling and Visible Emissions Observations were performed in accordance with EPA Stationary Source Sampling Methods and Pennsylvania DER Source Testing Methods. Specifics of the individual procedures are outline in the following sections.

2.1 Gas Velocity and Volumetric Flow Rate

Determination of the location of the traverse points, gas velocity, volumetric flow rate, dry gas molecular weight, and moisture content of the exhaust gas were performed for each of the four tests in accordance with EPA Stationary Source Sampling Methods 1 through 4. The process exhaust exited through a 38" (width) by 43" (depth) stack. A total of 25 traverse points (5 per sampling port) were sampled; the location of the traverse points were calculated in accordance with EPA Method 1. Sampling was conducted through 5 ports, with each traverse point sampled for 3 minutes. A schematic diagram of the stack and traverse points is presented in Figure 2-1. A type S Pitot tube was inserted in the exhaust stack to determine gas velocity and volumetric flow rate in accordance with EPA Method 2. During each test, fixed gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2, by difference) were determined with the use of a Fyrite apparatus as specified by EPA Method 3. These gas concentrations were used to compute the molecular weight of the sampled gas. Moisture content of the sample gas was determined by calculating the weight gain of sample train impingers in accordance with EPA Method 4.

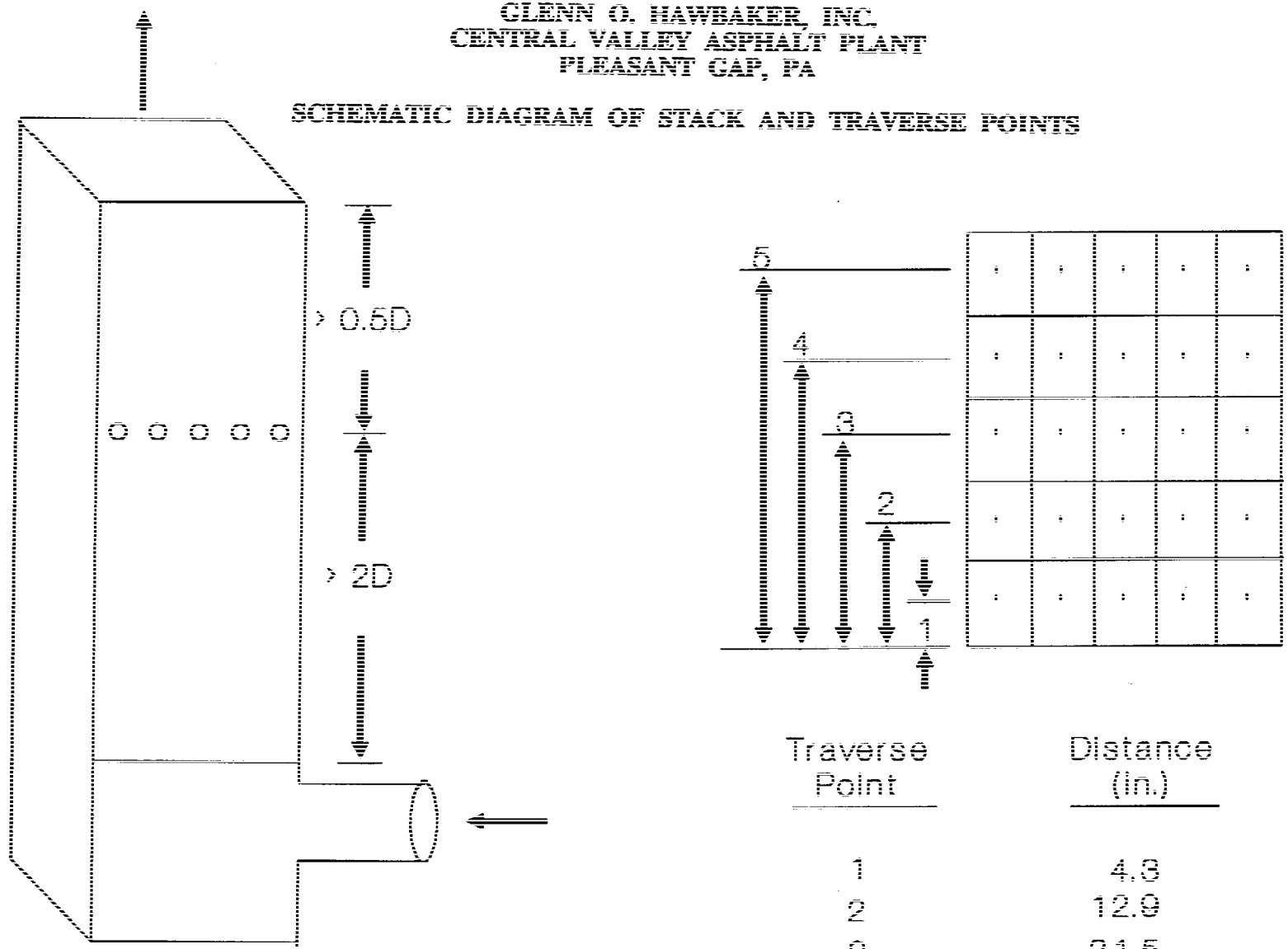
2.2 Totall Particulate Matter

Determination of total particulate matter concentrations and mass emission rates were performed in accordance with EPA Method 5 and PA DER Source Sampling Methods, Sections 139.11 and 139.12. Clean up of the sampling train included a water and acetone rinse of both the front-half and back-half components. The water soluble and water insoluble portions of the front-half of the sampling train were determined as a total, while the water soluble and water insoluble portions of the back-half were determined separately in accordance with Section 139.12 of the PA DER Source Testing Manual. All rinses and filters were dried, desiccated, and weighed to a constant weight.

FIGURE 2-1

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PA

SCHEMATIC DIAGRAM OF STACK AND TRAVERSE POINTS



Traverse Point	Distance (in.)
1	4.3
2	12.9
3	21.5
4	30.1
5	38.7

Stack Width (in.) = 38 Stack Depth (in.) = 43
D = Equivalent Stack Diameter = 45.6 in.

2.3 Total Hydrocarbons

Concentrations of total hydrocarbon vapors were determined with a Beckman Model 402 Hydrocarbon Analyzer (flame ionization detector) in accordance with EPA Stationary Source Sampling Method 25A. The THC concentrations, which were recorded continuously with a Linear Model 2503 stripchart recorder, were expressed in terms of methane (CH_4). The Beckman analyzer was calibrated before and after each particulate matter test with gases containing known concentrations of methane (99, 286, 470, 849, and 950 ppm, CH_4, NIST traceable). As per calibration requirements of Method 25A, the difference between the known concentrations and the measured concentrations must not exceed 5 percent of the known concentrations. The Beckman gas analyzer was zeroed using a hydrocarbon-free air source.

2.4 Visible Emissions Determinations

All visible emissions determinations were performed in accordance with EPA Stationary Source Sampling Method 9 and Section 123.43 (2) of the PA DER Source Testing Manual. Visible emissions were recorded for eighty-six minutes during the fourth particulate matter test, that is, during the operation in which recycled asphalt was processed.

3.0 RESULTS

The Test Protocol, which describes testing methodologies and measurement practices, can be found in Appendix A. This protocol was utilized for the Central Valley Asphalt 1990 test program. The protocol was followed exactly as written except for two minor deviations. First, there were four tests performed for this test program, and not three as specified in the test protocol. Second, visible emission measurements were recorded during the fourth test only, and not for all tests as had previously been done for the 1990 test program.

All testing was performed during periods of normal plant operation. To validate this, copies of the operational data including the scrubber water flow rate, scrubber pressure drop, dry aggregate feed rate, mixing temperature, percent dampering, material mix type and asphaltic concrete production rate, can be found in Appendix B.

The probes and sampling train equipment were operated in accordance with EPA Stationary Source Sampling Methods 1 through 5. Copies of the pre-test and post-test calibration results can be found in Appendix C. Also included in Appendix C are calibration results for the Beckman gas analyzer. As mentioned previously, Method 25A requires that for the gas analyzer the difference between the known methane concentrations and the measured gas concentrations must be less than 5 percent of the known concentrations. For the four test runs, the difference between the actual and the recorded concentrations ranged from 0.2 to 4.7 percent. Therefore, the measured values from this equipment is considered valid. The zero point for the gas analyzer was set using a hydrocarbon-free air source.

Copies of the field data sheets for the particulate matter sampling can be found in Appendix D. The computer-generated emissions calculations for each test can be found in Appendix E. The particulate matter results have been summarized in Table 3-1.

Table 3-1 also lists other pertinent stack and sampling parameters including the stack gas flow rate in units of actual cubic feet per minute (acfm) and standard cubic feet per minute (scfm), moisture content of the stack gas, stack gas temperature, gas volume sampled for each test (dscf), and the isokinetics value for each test. The isokinetics value is equal to the

TABLE 3-1

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PA

PARTICULATE MATTER AND TOTAL HYDROCARBONS EMISSIONS DATA

EMISSIONS	TEST #1	TEST #2	TEST #3	TEST #4
Particulate Matter				
gr/scfd	0.009	0.008	0.006	0.012
lb/hr	2.18	1.98	1.40	2.35
Total Hydrocarbons				
ppm_v	224	209	170	279
lb CH_4 /ton concrete produced	0.055	0.048	0.037	0.059
STACK CONDITIONS				
Flow (acfm)	37316	35301	34553	31046
Flow (scfm)	33047	30675	29848	26738
Moisture Content (%)	10.39	9.83	13.42	12.79
Stack Temp. (°F)	126	137	141	142
SAMPLING CONDITIONS				
Sampling Time (min)	69.0	75.0	75.0	75.0
Sample Volume (scfd)	64.274	58.866	59.926	54.570
Isokinetics (%)	104.7	94.5	102.9	103.9

ratio of the average linear gas velocity sampled through the probe nozzle to the average stack gas velocity. An isokinetic value between 90 percent and 110 percent is considered acceptable. The four isokinetic values, 104.7 percent, 94.5 percent, 102.9 percent, and 103.9 percent, are therefore in the acceptable range. PA DER Source Testing Manual requires a minimum gas sample volume of 50 dry standard cubic feet (dscf). All gas sample volumes for the four test runs are at least 54 dscf, thus these tests have met the DER requirement. As promulgated by EPA 40 CFR 60 Subpart I and PA DER Source Testing Manual Section 139.12 (4), the sampling time should be at least 60 minutes. Sampling times of 69 minutes for test 1 and 75 minutes for tests 2, 3, and 4 are acceptable according to the EPA regulation.

Detailed THC emissions calculations can be found in Appendix E. Copies of the field log sheets and stripchart for the THC vapor determinations can be found in Appendix F.

Copies of the field data sheets for the visible emissions determinations and the observer's certification can be found in Appendix G. Visible emissions were recorded only for the fourth test. Measurements were taken for the entire length of the test run at 15 second intervals, as described in EPA Method 9. No visible emissions were observed during test four.

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX A

TEST PROTOCOL

TEST PROGRAM
GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT

EMISSIONS TEST PROGRAM

1.0 General Test Methodology

The protocol outlines the specific test procedures to be employed in performing particulate, total hydrocarbon, and visible emissions for the scrubber units for the drum mix plant for the Central Valley Asphalt, Inc. plant in Pleasant Gap.

Sampling methodology used will be based upon the US EPA methodology as found in 40 CFR 60 Appendix A, and amended for PA DER requirements. Sampling procedures are outlined in the following sections.

2.0 Specific Test Requirements

The program requires the determination of the stack gas flow rate which will incorporate Methods 1 through 4. Fixed gases (oxygen, carbon dioxide, and nitrogen by difference) will be determined using Fyrite apparatus. The determination of particulate will be accomplished using EPA Method 5 sample train and procedures, modified to incorporate PA DER requirements for sample volume (50 dscf), sample recovery (water rinses of the front half, recovery of back half impinger water and rinses), and analysis (front half water rinse analysis and filterable catch in the back half). Visible emissions (VE) determinations will be made simultaneously with the particulate determinations. VE determinations will be made by an observer with a current certificate as specified in Method 9. Three sets of particulate and VE determinations will be made.

The program will continuously record concentrations of total hydrocarbon (THC). Three one-hour tests will be performed during the test program. The procedure utilized will follow EPA Method 25A. The period of time for each test has been set for 60 minutes. The approval of the DER source test observer will be solicited in the field should any modifications to the protocol be necessary.

2.1 Process Operation

Testing will only occur during periods of normal operation. In the event of nonrepresentative process operation or equipment malfunction, testing will be temporarily suspended until operating parameters are similar to those preceding the delay. Records will be maintained explaining any such interruption. Pertinent operating parameters will be recorded during each test to document production levels.

Process data recorded during each test run will include aggregate feed rates, type of mixes produced, pressure drop across the throat of the scrubber, and the water circulation rate through the scrubber. This data will be recorded at 15 minute intervals.

2.2 Particulate and VE Measurement Procedure

The mix plant scrubber exhaust stack will be isokinetically sampled at a rate of 4 minutes per point for each of the 24 traverse points (12 per diameter). Sampling for the stack will be through two 90^0 opposed sampling ports. The resultant total test time of 96 minutes is believed adequate to obtain the required 50 dscf sample volume as specified in the DER procedure. The sample time and traverse point number will be adjusted, if necessary, to insure compliance with Method 1 and DER test methodologies. Test parameters will be recorded and sample flow adjustments made at 4 minute intervals. Simultaneous with the particulate testing will be visible emissions (VE) determinations. Observations will be recorded for a 60 minute period during each particulate test. A series of three tests will be made in this manner.

During each test the concentration of CO_2 and O_2 will be determined with a Fyrite gas analyzer for subsequent determination of molecular weight.

2.3 THC Measurement Procedure

Total hydrocarbon concentration will be determined for a minimum 60 minute period during each particulate determination. Calibrations and zero response will be

noted at the conclusion of each subsequent test run. The THC analyzer will be calibrated four times during the test program. Calibrations and zero checks will occur initially and immediately following each one hour test. Calibration standards will be (as close as practical) a minimum of 90 percent of scale and 40 percent of scale. Instrument zero will be determined using a hydrocarbon free air source.

Record keeping for THC tests which will be practiced will follow two methods. The first will include manual recording of the analyzer output by strip chart recorder. The second data accumulation utilizes a data logging device. Files on this unit will be developed for each 60 minute period.

3.0 Report Format

A report will be developed for the program as executed. The report will contain descriptions of the process tested, methods used including calibration procedures, and the results. Results used for the determination of particulate and total hydrocarbon will be reported on a mass basis. Concentration will also be reported for the exhaust stream. All field data sheets, strip charts, analytical reports, calibration data, and VE certification will be included in the appendices of the report.

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX B

PLANT OPERATIONAL DATA

Time	Inches	TPM	Temp	Dew
7:43	21	300	286	42%
7:55	21	300	287	48%
8:09	21½	300	288	48%
8:14	21	300	287	50%
8:19	21½	300	289	48%
8:24	20½	300	289	46%
8:29	21½	300	290	45%
8:34	21½	300	292	44%
8:39	22	300	292	47%
8:44	21½	300	288	49%
8:49	22	300	282	51%
8:54	21	300	287	46%
8:59	21	300	280	45%
9:04	21	300	279	45%
9:09	20½	300	279	47%
9:14	21½	300	278	52%
10:09	21	300	297	38%
10:19	21	300	293	38%
10:24	21	300	294	40%
10:29	21	300	294	40%
10:34	21½	300	288	44%
10:44	21	300	280	43%
10:49	21	300	285	40%
10:54	21	300	285	40%
10:59	21½	300	286	42%
11:04	21	300	285	38%
11:09	21½	300	281	43%
11:19	20½	300	288	36%
12:44	21	300	289	40%
12:54	20½	300	289	38%
13:01	21½	300	289	46%
13:11	21	300	289	43%
13:16	21	300	287	40%
13:21	21½	300	290	45%
13:26	21	300	291	40%

	Inches	TPH	Mix Temp	Damp
13:31	21	300	290	41 %
13:36	21	300	291	39 %
13:41	21	300	291	41 %
13:46	21	300	292	40 %
13:51	21	300	292	39 %

	Water pump	Time
1. 560 gals		8:08
2. 575 gals		8:18
3. 590 gals		8:28
4. 560 gals		8:41
5. 580 gals		9:01
6. 605 gals		9:18

		Time
1. 600 gals		10:15
2. 600 gals		10:28
3. 590 gals		10:45
4. 590 gals		11:00
5. 590 gals		11:15
6. 600 gals		11:29

		Time
1. 550 gals		1:06
2. 575 gals		1:24
3. 575 gals		2:08

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.
3000 Tech Center Drive
Monroeville, PA 15146

PROJECT Central Valley Asphalt PROJECT NO. 375019-02
SHEET ____ OF ____
DWG BY ____ DATE ____
CHK BY ____ DATE ____

RAP TEST

Time	MIN TEMP	DAMP	IN	TPH
9:14	290	45	20 ½	275
9:19	281	44	21	
9:24	279	42	21	
9:29	279	44	21	
9:34	276	40	21	
9:39	270	41	20 ½	
9:44	278	40	21	
9:55	278	46	21 ½	
10:00	280	43	21 ½	
10:04	284	40	21	
10:10	282	44	21	
10:19	276	44	21	
10:24	276	49	21 ½	
10:29	277	38	20 ½	
10:34	272	52	21 ½	

RAP = Recycled Asphalt Process

This process occurred during the fourth test run.

Recycled Asphalt - RAP 7-17-91

Scrubber Pump

Time	GPM
9:56	600
10:18	590
10:32	575

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	07:29	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	122.5	122.5	00016.09	0.5
AGG 2	50.0	122.5	122.5	00017.06	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	13.80	13.83	00001.673	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			239.2	000031.92	0.4

AVERAGE A/C CONTENT 5.88
REALTIME A/C CONTENT 5.90

MIX TEMP.= 314 F EXHAUST TEMP. = 292 F BURNER FUEL VALVE= 032
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC ****
07/16/1991	07:34	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTUR
AGG 1	50.0	141.0	141.0	00027.34	0.5
AGG 2	50.0	141.0	141.0	00028.31	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	16.68	16.54	00002.942	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.5	000054.30	0.4

AVERAGE A/C CONTENT 5.88
REALTIME A/C CONTENT 5.84

MIX TEMP.= 302 F EXHAUST TEMP. = 279 F BURNER FUEL VALVE= 032 PE
A/C TEMP.= 305 F

DATE 07/16/1991 TIME 07:39 MIX# 1 SILO 3 ***** AUTOMATIC *****

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00038.97	0.5
AGG 2	50.0	141.0	141.0	00039.94	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.72	17.72	00004.380	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.6	000077.59	0.4

AVERAGE A/C CONTENT 5.89
REALTIME A/C CONTENT 5.93

MIX TEMP.= 289 F EXHAUST TEMP. = 268 F BURNER FUEL VALVE= 030 PE
A/C TEMP.= 305 F

DATE 07/16/1991 TIME 07:44 MIX# 1 SILO 3 ***** AUTOMATIC *****

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00050.72	0.5
AGG 2	50.0	141.0	141.0	00051.69	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.75	17.88	00005.857	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			382.5	000101.10	0.4

AVERAGE A/C CONTENT 5.89
REALTIME A/C CONTENT 5.94

MIX TEMP.= 286 F EXHAUST TEMP. = 263 F BURNER FUEL VALVE= 031 PERCEN
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	07:49	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00062.47	0.5
AGG 2	50.0	141.0	141.0	00063.44	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.78	17.71	00007.334	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.8	000124.68	0.4

AVERAGE A/C CONTENT 5.89
REALTIME A/C CONTENT 5.90

MIX TEMP.= 286 F EXHAUST TEMP. = 263 F BURNER FUEL VALVE= 031 PERCEN
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	07:54	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00074.18	0.5
AGG 2	50.0	141.0	141.0	00075.15	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.81	17.85	00008.808	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.9	000148.19	0.4

AVERAGE A/C CONTENT 5.89
REALTIME A/C CONTENT 5.92

MIX TEMP.= 286 F EXHAUST TEMP. = 263 F BURNER FUEL VALVE= 031 PERC
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	07:59	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00085.93	0.5
AGG 2	50.0	141.0	141.0	00086.90	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.69	17.78	00010.285	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			278.4	000171.64	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.93

MIX TEMP.= 287 F EXHAUST TEMP. = 264 F BURNER FUEL VALVE= 031 PERC
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:04	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00097.76	0.5
AGG 2	50.0	141.0	141.0	00098.73	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.64	17.81	00011.763	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.8	000195.25	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.95

MIX TEMP.= 287 F EXHAUST TEMP. = 264 F BURNER FUEL VALVE= 031 PERC
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:09	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00109.48	0.5
AGG 2	50.0	141.0	141.0	00110.46	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.62	17.47	00013.229	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.1	000218.66	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.85

MIX TEMP.= 289 F EXHAUST TEMP. = 265 F BURNER FUEL VALVE= 031 PERC
A/C TEMP.= 304 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:14	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00121.23	0.5
AGG 2	50.0	141.0	141.0	00122.21	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.72	17.52	00014.701	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.4	000242.14	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.89

MIX TEMP.= 287 F EXHAUST TEMP. = 265 F BURNER FUEL VALVE= 031 PERCI
A/C TEMP.= 304 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:19	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00132.94	0.5
AGG 2	50.0	141.0	141.0	00133.92	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.59	17.43	00016.166	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.6	000265.50	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.86

MIX TEMP.= 289 F EXHAUST TEMP. = 266 F BURNER FUEL VALVE= 031 PERCI
A/C TEMP.= 304 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:24	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00144.69	0.5
AGG 2	50.0	141.0	141.0	00145.67	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.62	17.49	00017.636	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.1	000335.79	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.85

MIX TEMP.= 292 F EXHAUST TEMP. = 270 F BURNER FUEL VALVE= 030 PE
A/C TEMP.= 304 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:39	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00179.90	0.5
AGG 2	50.0	141.0	141.0	00180.88	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.77	17.94	00022.047	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.4	000359.33	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.90

MIX TEMP.= 292 F EXHAUST TEMP. = 271 F BURNER FUEL VALVE= 030 PE
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:44	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00191.73	0.5
AGG 2	50.0	141.0	141.0	00192.71	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.76	17.82	00023.531	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.8	000382.98	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.88

MIX TEMP.= 288 F EXHAUST TEMP. = 269 F BURNER FUEL VALVE= 028 PERC
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:49	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00203.45	0.5
AGG 2	50.0	141.0	141.0	00204.43	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.51	17.71	00025.002	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.2	000406.30	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.96

MIX TEMP.= 282 F EXHAUST TEMP. = 265 F BURNER FUEL VALVE= 027 PER
A/C TEMP.= 304 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:54	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00215.27	0.5
AGG 2	50.0	141.0	141.0	00216.25	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.65	17.60	00026.475	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			279.8	000429.81	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.89

MIX TEMP.= 281 F EXHAUST TEMP. = 262 F BURNER FUEL VALVE= 029 PEF
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	08:59	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00226.95	0.5
AGG 2	50.0	141.0	141.0	00227.93	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.55	17.63	00027.929	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			279.9	000452.96	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.97

MIX TEMP.= 280 F EXHAUST TEMP. = 261 F BURNER FUEL VALVE= 030 PEF
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	09:04	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00238.70	0.5
AGG 2	50.0	141.0	141.0	00239.48	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.61	17.76	00029.391	
FILLER	0.0	0.00	0.00	00000.000	

AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.71	17.82	00076.837	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.8	001064.02	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.95

MIX TEMP.= 286 F EXHAUST TEMP. = 270 F BURNER FUEL VALVE= 029 PER
A/C TEMP.= 307 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	12:56	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00544.81	0.5
AGG 2	50.0	141.0	141.0	00546.26	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.81	17.75	00078.318	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			283.6	001087.59	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.93

MIX TEMP.= 290 F EXHAUST TEMP. = 272 F BURNER FUEL VALVE= 029 PER
A/C TEMP.= 308 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:01	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00554.56	0.5

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			279.9	000476.33	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.78

MIX TEMP.= 279 F EXHAUST TEMP. = 260 F BURNER FUEL VALVE= 031 PERCEI
A/C TEMP.= 305 F

DATE 07/16/1991 TIME 09:09 MIX# 1 SILO 3 ***** AUTOMATIC *****

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00250.41	0.5
AGG 2	50.0	141.0	141.0	00251.39	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.55	17.78	00030.849	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.3	000499.60	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.97

MIX TEMP.= 279 F EXHAUST TEMP. = 259 F BURNER FUEL VALVE= 031 PERCE
A/C TEMP.= 305 F

DATE 07/16/1991 TIME 09:14 MIX# 1 SILO 3 ***** AUTOMATIC *****

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00262.16	0.5
AGG 2	50.0	141.0	141.0	00263.14	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.57	17.47	00032.315	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.2	000522.93	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.86

MIX TEMP.= 279 F EXHAUST TEMP. = 259 F BURNER FUEL VALVE= 031 PERCEN
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	09:19	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00273.98	0.5
AGG 2	50.0	141.0	0.0	00274.34	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.67	16.68	00033.791	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.1	000546.50	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 6.17

MIX TEMP.= 279 F EXHAUST TEMP. = 260 F BURNER FUEL VALVE= 031 PERCEN
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	09:21	0	0	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	0.0	0.0	0.0	00274.57	0.5
AGG 2	0.0	0.0	0.0	00274.34	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	0.0	5.00	1.42	00034.188	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			0.8	000548.35	0.0

AVERAGE A/C CONTENT 0.00
REALTIME A/C CONTENT 0.00

MIX TEMP.= 268 F EXHAUST TEMP.= 267 F BURNER FUEL VALVE= 005 PERCEN
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:09	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00301.10	0.5
AGG 2	50.0	141.0	141.0	00302.31	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.66	17.45	00047.761	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.6	000600.55	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.88

MIX TEMP.= 290 F EXHAUST TEMP. = 267 F BURNER FUEL VALVE= 031 PERCE
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:14	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00312.81	0.5
AGG 2	50.0	141.0	141.0	00314.02	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.66	17.83	00049.224	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.3	000623.94	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.96

MIX TEMP.= 293 F EXHAUST TEMP. = 272 F BURNER FUEL VALVE= 030 PERCE
A/C TEMP.= 306 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:19	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00324.64	0.5
AGG 2	50.0	141.0	141.0	00325.85	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.61	17.49	00050.701	

CYCLE 1	0.0	0.0	0.0	000000.00	1.3
IDUAL A/C	0.0				
CYCLE SCALE			0.0	000000.00	1.3
SCALE			280.3	000647.51	0.4

VERAGE A/C CONTENT 5.90
ALTIME A/C CONTENT 5.92

IX TEMP.= 293 F EXHAUST TEMP. = 274 F BURNER FUEL VALVE= 030 PERCENT
TEMP.= 306 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:24	1	3	

ATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
1	50.0	141.0	141.0	00336.39	0.5
2	50.0	141.0	141.0	00337.60	0.3
3	0.0	0.0	0.0	00000.00	0.3
4	0.0	0.0	0.0	00000.00	0.5
5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.66	17.59	00052.168	
LER	0.0	0.00	0.00	00000.000	
ITIVE #2	0.0	0.00	0.00	00000.000	
CYCLE 1	0.0	0.0	0.0	000000.00	1.3
IDUAL A/C	0.0				
CYCLE SCALE			0.0	000000.00	1.3
SCALE			279.8	000670.88	0.4

VERAGE A/C CONTENT 5.90
ALTIME A/C CONTENT 5.82

IX TEMP.= 294 F EXHAUST TEMP. = 276 F BURNER FUEL VALVE= 030 PERCENT
TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:29	1	3	

ATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
1	50.0	141.0	141.0	00348.14	0.5
2	50.0	141.0	141.0	00349.35	0.3
3	0.0	0.0	0.0	00000.00	0.3
4	0.0	0.0	0.0	00000.00	0.5
5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.54	17.73	00053.633	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.6	000694.24	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.92

MIX TEMP.= 294 F EXHAUST TEMP. = 276 F BURNER FUEL VALVE= 029 PERCEN
A/C TEMP.= 305 F

DATE TIME MIX# SILO ***** AUTOMATIC *****
07/16/1991 10:34 1 3

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00359.85	0.5
AGG 2	50.0	141.0	141.0	00361.06	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.61	17.61	00055.100	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			284.2	000717.61	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.87

MIX TEMP.= 288 F EXHAUST TEMP. = 273 F BURNER FUEL VALVE= 029 PERCEN
A/C TEMP.= 306 F

DATE TIME MIX# SILO ***** AUTOMATIC *****
07/16/1991 10:44 1 3

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00383.31	0.5
AGG 2	50.0	141.0	141.0	00384.52	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.62	17.70	00058.037	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.2	000764.41	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.95

MIX TEMP.= 286 F EXHAUST TEMP. = 271 F BURNER FUEL VALVE= 029 PERC
A/C TEMP.= 306 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:49	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00395.17	0.5
AGG 2	50.0	141.0	141.0	00396.39	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.62	17.68	00059.519	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.7	000788.09	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.88

MIX TEMP.= 285 F EXHAUST TEMP. = 271 F BURNER FUEL VALVE= 029 PERC
A/C TEMP.= 306 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:54	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00406.85	0.5
AGG 2	50.0	141.0	141.0	00408.07	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.68	17.75	00060.987	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.0	000811.40	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.89

MIX TEMP.= 285 F EXHAUST TEMP. = 272 F BURNER FUEL VALVE= 029 PER
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	10:59	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00418.60	0.5
AGG 2	50.0	141.0	141.0	00419.82	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.74	17.74	00062.456	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.1	000834.83	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.94

MIX TEMP.= 286 F EXHAUST TEMP. = 273 F BURNER FUEL VALVE= 028 PER
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	11:04	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00430.35	0.5
AGG 2	50.0	141.0	141.0	00431.57	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.63	17.49	00063.920	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.9	000858.22	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.86

MIX TEMP.= 287 F EXHAUST TEMP. = 273 F BURNER FUEL VALVE= 028 PER
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	11:09	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00442.14	0.5
AGG 2	50.0	141.0	141.0	00443.36	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.64	17.56	00065.396	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.1	000881.72	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.90

MIX TEMP.= 287 F EXHAUST TEMP. = 274 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	11:14	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00453.81	0.5
AGG 2	50.0	141.0	141.0	00455.03	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.57	17.48	00064.857	

RECYCLE 1	0.0	0.0	0.0	000000.00	
RESIDUAL A/C	0.0				1.3
RECYCLE SCALE					
AGG SCALE			0.0	000000.00	1.3
			278.8	000904.88	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.87

MIX TEMP.= 286 F EXHAUST TEMP. = 273 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	11:19	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00465.64	0.5
AGG 2	50.0	141.0	141.0	00466.86	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.76	18.00	00068.326	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	
RESIDUAL A/C	0.0				1.3
RECYCLE SCALE					
AGG SCALE			0.0	000000.00	1.3
			284.0	000928.56	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.97

MIX TEMP.= 283 F EXHAUST TEMP. = 272 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	11:24	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00477.43	0.5
AGG 2	50.0	141.0	0.0	00478.25	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.72	17.75	00069.810	
FILLER	0.0	0.00	0.00	00000.000	

RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.1	000952.15	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.92

MIX TEMP.= 284 F EXHAUST TEMP. = 272 F BURNER FUEL VALVE= 028 PF
A/C TEMP.= 307 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	11:26	0	0	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	0.0	0.0	00478.25	0.5
AGG 2	50.0	0.0	0.0	00478.25	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	5.00	2.77	00070.234	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			0.1	000954.45	0.4

AVERAGE A/C CONTENT 0.00
REALTIME A/C CONTENT 0.00

MIX TEMP.= 275 F EXHAUST TEMP. = 286 F BURNER FUEL VALVE= 012 PF
A/C TEMP.= 307 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	12:41	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00509.48	0.5
AGG 2	50.0	141.0	141.0	00510.93	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.77	17.68	00073.864	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			283.2	001016.62	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.90

MIX TEMP.= 289 F EXHAUST TEMP. = 268 F BURNER FUEL VALVE= 031 F
A/C TEMP.= 305 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	12:51	1,	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00533.06	0.5

[illegible]	[illegible]	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.78	17.74	00079.798	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.5	001111.16	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.89

MIX TEMP.= 289 F EXHAUST TEMP. = 272 F BURNER FUEL VALVE= 029 PER
A/C TEMP.= 308 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:06	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00568.27	0.5
AGG 2	50.0	141.0	141.0	00569.72	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.66	17.60	00081.268	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.8	001134.62	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.94

MIX TEMP.= 289 F EXHAUST TEMP. = 273 F BURNER FUEL VALVE= 029 PER
A/C TEMP.= 308 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:11	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00580.09	0.5
AGG 2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

AGG 4	0.0	0.0	0.0	00000.00	0.3
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.73	17.91	00082.752	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			281.4	001158.31	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.96

MIX TEMP.= 289 F EXHAUST TEMP. = 274 F BURNER FUEL VALVE= 029 PERCENT
A/C TEMP.= 308 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:16	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00591.81	0.5
AGG 2	50.0	141.0	141.0	00593.26	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.62	17.48	00084.219	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			280.1	001181.64	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.88

MIX TEMP.= 290 F EXHAUST TEMP. = 275 F BURNER FUEL VALVE= 029 PERCENT
A/C TEMP.= 308 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:21	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00603.49	0.5
AGG 2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

AGG 4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.74	17.80	00085.684	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
F CYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
F CYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.3	001205.02	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.96

MIX TEMP.= 290 F EXHAUST TEMP. = 275 F BURNER FUEL VALVE= 029 PERCENT
A/C TEMP.= 309 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:26	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00615.24	0.5
AGG 2	50.0	141.0	141.0	00616.68	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.74	17.88	00087.161	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
F CYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
F CYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.5	001228.58	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.95

MIX TEMP.= 291 F EXHAUST TEMP. = 276 F BURNER FUEL VALVE= 029 PERCENT
A/C TEMP.= 309 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:31	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00626.99	0.5
AGG 2	50.0	141.0	141.0	[illegible]	[illegible]

AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.74	17.69	00088.639	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			283.0	001252.15	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.88

MIX TEMP.= 290 F EXHAUST TEMP. = 277 F BURNER FUEL VALVE= 029 PE
A/C TEMP.= 309 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:36	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00638.74	0.5
AGG 2	50.0	141.0	141.0	00640.19	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.66	17.68	00090.118	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			283.3	001275.78	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.86

MIX TEMP.= 291 F EXHAUST TEMP. = 277 F BURNER FUEL VALVE= 029 PE
A/C TEMP.= 309 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/16/1991	13:41	1	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00650.45	0.5
AGG 2	50.0	141.0	141.0	00651.90	0.3

AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.78	17.99	00091.595	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.5	001299.34	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.98

MIX TEMP.= 291 F EXHAUST TEMP. = 277 F BURNER FUEL VALVE= 029 PER
A/C TEMP.= 308 F

DATE TIME MIX# SILO ***** AUTOMATIC *****
07/16/1991 13:46 1 3

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	50.0	141.0	141.0	00662.27	0.5
AGG 2	50.0	141.0	141.0	00663.72	0.3
AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.78	18.33	00093.086	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			283.0	001323.04	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 6.07

MIX TEMP.= 292 F EXHAUST TEMP. = 278 F BURNER FUEL VALVE= 029 PE
A/C TEMP.= 308 F

91-Jul-16 13:49:21 AC_ERROR A1 ON UNABLE TO CONTROL
91-Jul-16 13:49:24 AC_ERROR A1 OFF OUT OF ALARM

DATE TIME MIX# SILO ***** AUTOMATIC *****
07/16/1991 13:51 1 3

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE

AGG 3	0.0	0.0	0.0	00000.00	0.3
AGG 4	0.0	0.0	0.0	00000.00	0.5
AGG 5	0.0	0.0	0.0	00000.00	0.2
A/C	5.9	17.76	17.75	00094.566	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	0.0	0.0	0.0	000000.00	1.3
RESIDUAL A/C	0.0				
RECYCLE SCALE			0.0	000000.00	1.3
AGG SCALE			282.9	001346.63	0.4

AVERAGE A/C CONTENT 5.90
REALTIME A/C CONTENT 5.90

MIX TEMP.= 292 F EXHAUST TEMP. = 279 F BURNER FUEL VALVE= 029 PI
A/C TEMP.= 306 F

91-Jul-16 13:56:34 AC_ERROR A1 ON UNABLE TO CONTROL
91-Jul-16 13:56:49 AC_ERROR A1 OFF OUT OF ALARM

RAP

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:14	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00325.54	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00062.31	0.3
A/C	3.5	6.74	6.65	00043.211	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000024.64	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			68.6	000026.68	1.6
AGG SCALE			201.0	000726.93	0.3

AVERAGE A/C CONTENT 2.38 NEW 3.55 TOTAL
REALTIME A/C CONTENT 2.39

MIX TEMP.= 290 F EXHAUST TEMP. = 333 F BURNER FUEL VALVE= 031 PER
A/C TEMP.= 301 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:19	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00328.43	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6

ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000030.20	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			67.1	000032.28	1.6
AGG SCALE			201.6	000743.69	0.3

AVERAGE A/C CONTENT 2.39 NEW 3.55 TOTAL
REALTIME A/C CONTENT 2.37

MIX TEMP.= 281 F EXHAUST TEMP. = 323 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 300 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:24	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00331.35	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	165.2	00090.06	0.3
A/C	3.5	6.57	6.66	00044.320	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000035.82	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			66.2	000037.93	1.6
AGG SCALE			201.0	000760.56	0.3

AVERAGE A/C CONTENT 2.39 NEW 3.54 TOTAL
REALTIME A/C CONTENT 2.43

MIX TEMP.= 279 F EXHAUST TEMP. = 320 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 301 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:29	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00334.27	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6

ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000041.44	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			65.7	000043.51	1.6
AGG SCALE			202.0	000777.37	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.54 TOTAL
REALTIME A/C CONTENT 2.40

MIX TEMP.= 279 F EXHAUST TEMP. = 319 F BURNER FUEL VALVE= 028 PI
A/C TEMP.= 300 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:34	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00337.15	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00117.73	0.3
A/C	3.5	6.63	6.70	00045.416	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000046.99	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			67.0	000049.04	1.6
AGG SCALE			201.5	000794.00	0.3

AVERAGE A/C CONTENT 2.39 NEW 3.53 TOTAL
REALTIME A/C CONTENT 2.42

MIX TEMP.= 277 F EXHAUST TEMP. = 317 F BURNER FUEL VALVE= 028 P
A/C TEMP.= 301 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:39	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00340.04	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00131.53	0.3

ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000052.55	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			66.6	000054.62	1.6
AGG SCALE			201.0	000810.65	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.53 TOTAL
REALTIME A/C CONTENT 2.40

MIX TEMP.= 270 F EXHAUST TEMP. = 315 F BURNER FUEL VALVE= 028 PF
A/C TEMP.= 301 F

DATE TIME MIX# SILO ***** AUTOMATIC *****
07/17/1991 09:44 6 2

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00342.95	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00145.43	0.3
A/C	3.5	6.65	6.59	00046.521	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000058.15	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			68.3	000060.22	1.6
AGG SCALE			201.4	000827.35	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.53 TOTAL
REALTIME A/C CONTENT 2.39

MIX TEMP.= 278 F EXHAUST TEMP. = 319 F BURNER FUEL VALVE= 028 PEI
A/C TEMP.= 302 F

DATE TIME MIX# SILO ***** AUTOMATIC *****
07/17/1991 09:54 6 2

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00348.75	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6

ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000069.32	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			65.4	000071.38	1.6
AGG SCALE			199.3	000860.73	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.52 TOTAL
REALTIME A/C CONTENT 2.41

MIX TEMP.= 278 F EXHAUST TEMP. = 321 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 302 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	09:59	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00351.65	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00186.98	0.3
A/C	3.5	6.55	6.48	00048.163	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000074.91	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			66.7	000076.88	1.6
AGG SCALE			200.6	000877.41	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.52 TOTAL
REALTIME A/C CONTENT 2.37

MIX TEMP.= 280 F EXHAUST TEMP. = 322 F BURNER FUEL VALVE= 028 PE
A/C TEMP.= 302 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	10:04	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00354.55	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00200.78	0.3

FILLER	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000080.49	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			65.4	000082.38	1.6
AGG SCALE			202.7	000894.22	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.52 TOTAL
REALTIME A/C CONTENT 2.41

MIX TEMP.= 284 F EXHAUST TEMP. = 323 F BURNER FUEL VALVE= 028 PER
A/C TEMP.= 302 F

DATE 07/17/1991 TIME 10:09 MIX# 6 SILO 2 ***** AUTOMATIC *****

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00357.45	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00214.63	0.3
A/C	3.5	6.58	6.66	00049.256	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000086.08	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			66.4	000087.88	1.6
AGG SCALE			201.4	000910.94	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.52 TOTAL
REALTIME A/C CONTENT 2.40

MIX TEMP.= 282 F EXHAUST TEMP. = 322 F BURNER FUEL VALVE= 028 PER
A/C TEMP.= 303 F

DATE 07/17/1991 TIME 10:19 MIX# 6 SILO 2 ***** AUTOMATIC *****

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00363.26	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00242.38	0.3

ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000097.26	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			65.9	000098.99	1.6
AGG SCALE			201.7	000944.51	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.51 TOTAL
REALTIME A/C CONTENT 2.38

MIX TEMP.= 276 F EXHAUST TEMP. = 315 F BURNER FUEL VALVE= 028 PERC
A/C TEMP.= 303 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	10:24	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00366.15	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00256.19	0.3
A/C	3.5	6.66	6.66	00050.909	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000102.81	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			65.7	000104.48	1.6
AGG SCALE			206.0	000961.38	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.51 TOTAL
REALTIME A/C CONTENT 2.42

MIX TEMP.= 276 F EXHAUST TEMP. = 311 F BURNER FUEL VALVE= 028 PERC
A/C TEMP.= 302 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	10:29	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00369.05	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00279.04	0.3

[illegible]	[illegible]	[illegible]	[illegible]	00000.000	
RECYCLE 1	25.0	67.0	67.0	000108.39	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			66.2	000109.99	1.6
AGG SCALE			202.1	000978.26	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.51 TOTAL
REALTIME A/C CONTENT 2.43

MIX TEMP.= 278 F EXHAUST TEMP. = 314 F BURNER FUEL VALVE= 028 PER
A/C TEMP.= 303 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	10:34	6	2	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.8	34.8	00371.96	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	166.2	166.2	00283.93	0.3
A/C	3.5	6.51	6.58	00052.019	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	67.0	67.0	000114.00	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			66.9	000115.56	1.6
AGG SCALE			202.0	000995.17	0.3

AVERAGE A/C CONTENT 2.40 NEW 3.51 TOTAL
REALTIME A/C CONTENT 2.41

MIX TEMP.= 272 F EXHAUST TEMP. = 316 F BURNER FUEL VALVE= 028 PER
A/C TEMP.= 303 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	10:39	6	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.5	0.0	00373.30	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	[illegible]				

FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	66.3	0.0	000116.75	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			0.6	000118.78	1.6
AGG SCALE			0.0	001004.00	0.3

AVERAGE A/C CONTENT 2.38
REALTIME A/C CONTENT 0.00

MIX TEMP.= 276 F EXHAUST TEMP. = 398 F BURNER FUEL VALVE= 012 I
A/C TEMP.= 302 F

DATE	TIME	MIX#	SILO	***** AUTOMATIC *****
07/17/1991	10:40	6	3	

MATERIAL	MIX PERCENT	TARGET	ACTUAL	TONS	PERCENT MOISTURE
AGG 1	13.0	34.5	0.0	00373.30	0.4
AGG 2	0.0	0.0	0.0	00168.70	0.2
AGG 3	0.0	0.0	0.0	00168.65	0.2
AGG 4	0.0	0.0	0.0	00000.00	0.6
AGG 5	62.0	164.3	0.0	00289.66	0.3
A/C	3.5	5.00	2.04	00052.487	
FILLER	0.0	0.00	0.00	00000.000	
ADDITIVE #2	0.0	0.00	0.00	00000.000	
RECYCLE 1	25.0	66.3	0.0	000116.75	1.6
RESIDUAL A/C	4.5				
RECYCLE SCALE			0.5	000118.78	1.6
AGG SCALE			0.2	001004.00	0.3

AVERAGE A/C CONTENT 0.00
REALTIME A/C CONTENT 0.00

MIX TEMP.= 275 F EXHAUST TEMP. = 389 F BURNER FUEL VALVE= 005
A/C TEMP.= 302 F

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX C

EQUIPMENT CALIBRATION RESULTS

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 1 BP 28.75
DATE 01-28-91 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER	ORIFICE
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	CORRECT Y	COEFFICIENT H@
START			0.000	28.75				0.50	320.100		
HALF		75.0			93.0	86.0	89.5				
STOP	13.18		5.000						325.335		
CALCULATION	13.18	535.0	5.013	28.75			549.5	28.79	5.235	0.9822	1.985
START			0.000	28.75				1.00	326.200		
HALF		75.0			96.0	88.0	92.0				
STOP	9.20		5.000						331.448		
CALCULATION	9.20	535.0	5.013	28.75			562.0	28.82	5.248	0.9830	1.928
START			0.000	28.75				2.00	333.200		
HALF		75.0			101.0	89.0	95.0				
STOP	6.33		5.000						338.442		
CALCULATION	6.33	535.0	5.013	28.75			555.0	28.90	5.242	0.9869	1.814
AVERAGE										0.9840	1.908

POST TEST

BOX # 1 BP 29.02
DATE 7-29-91 OPERATOR AGL

	WET TEST METER				DRY TEST METER						
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	METER CORRECT Y	ORIFICE COEFFICIENT H@
START			0.000	29.02				2.25	751.100		
HALF		76.0			97.0	86.0	91.5				
STOP	5.95		5.005						756.336		
CALCULATION	5.95	536.0	5.018	29.02			551.5	29.19	5.236	0.9804	1.800
START			0.000	29.02				2.25	757.700		
HALF		76.0			89.0	87.0	93.0				
STOP	5.95		5.010						762.952		
CALCULATION	5.95	536.0	5.023	29.02			553.0	29.19	5.252	0.9810	1.792
START			0.000	29.02				2.25	764.100		
HALF		77.0			89.0	88.0	93.5				
STOP	5.93		5.010						769.369		
CALCULATION	5.93	537.0	5.023	29.02			553.5	29.19	5.269	0.9769	1.795
AVERAGE										0.9795	1.792
DIFFERENCE										0.47%	0.46%

MAGNEHELIC CALIBRATION

BOX# 1
DATE 7-29-91
OPERATOR AGL

0 to 10" H2O RANGE

MAGNEHELIC DELTA P	MANOMETER
0.50	0.50
1.00	1.05
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.05

0 to 0.50" H2O RANGE

MAGNEHELIC DELTA P	MANOMETER
0.50	0.51
0.40	0.41
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC DELTA H	MANOMETER
4.00	4.00
3.00	3.05
2.00	2.05
1.00	1.05
0.50	0.48

LEAK CHECK

DATE 7-30-91
OPERATOR AGL

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	776.080	776.255	0.175	12.000	0.000
WET	0.000	0.175	0.175		

PYROMETER CALIBRATION

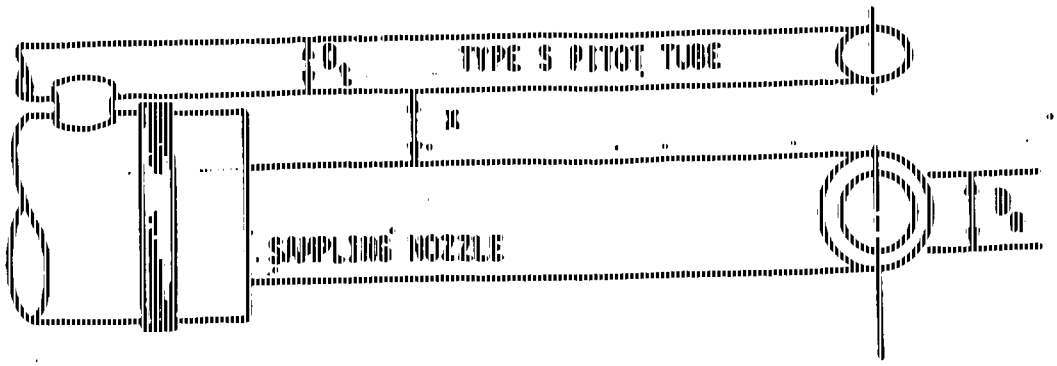
DATE 04-28-88
OPERATOR AGL

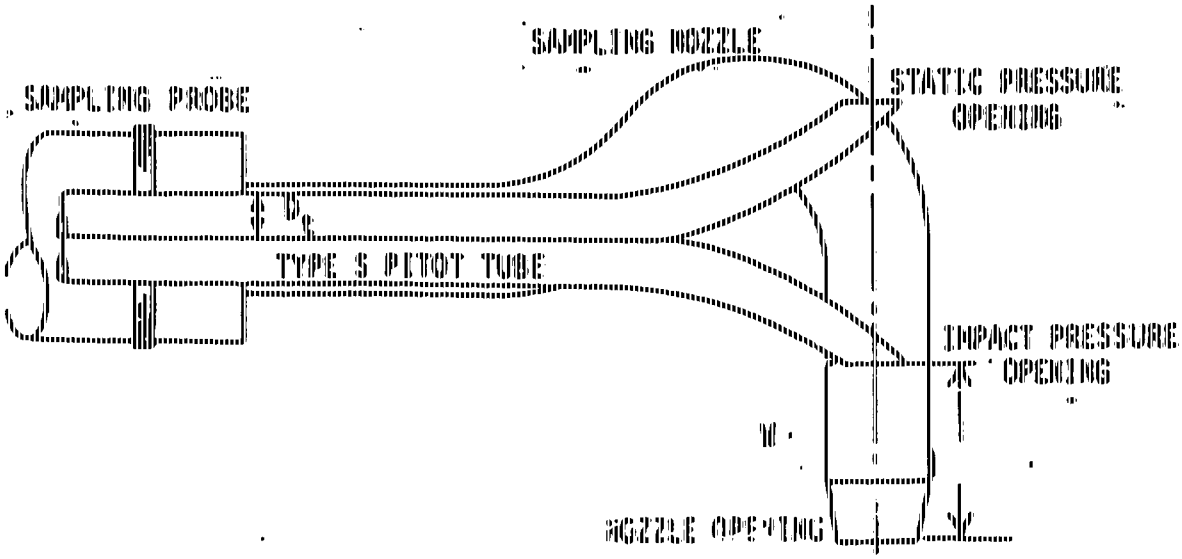
mV input	TEMP °F	TEMP READING °F
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PYROMETER CHECK

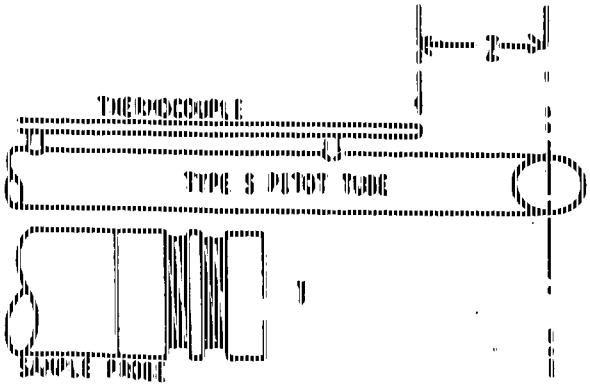
DATE 07-30-91
OPERATOR AGL

mV input	TEMP °F	TEMP READING °F
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	109.0
2.66	150	150.0
3.82	200	200.0
6.09	300	302.0
8.31	400	401.0
10.57	500	500.0





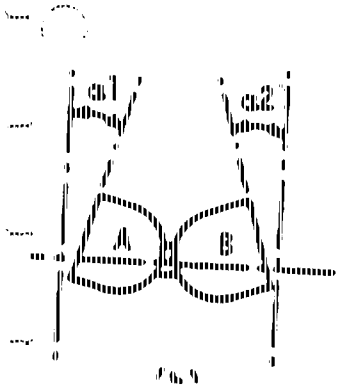
D_n = Nozzle diameter
D_t = 3/16 to 3/8"



W ≥ 0
X ≥ 3/4" for 1/2" Nozzle
Y ≥ 3"
Z ≥ 2"

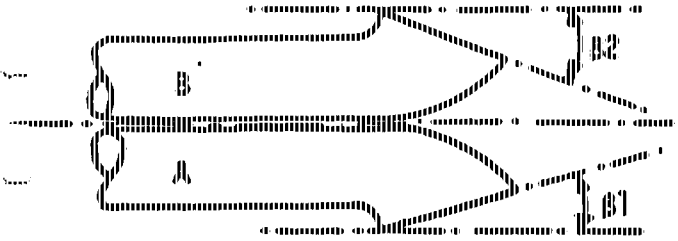
GEOMETRIC PITOT CALIBRATION

Probe No. 5-4
Date 2-25-91
Initials [illegible]

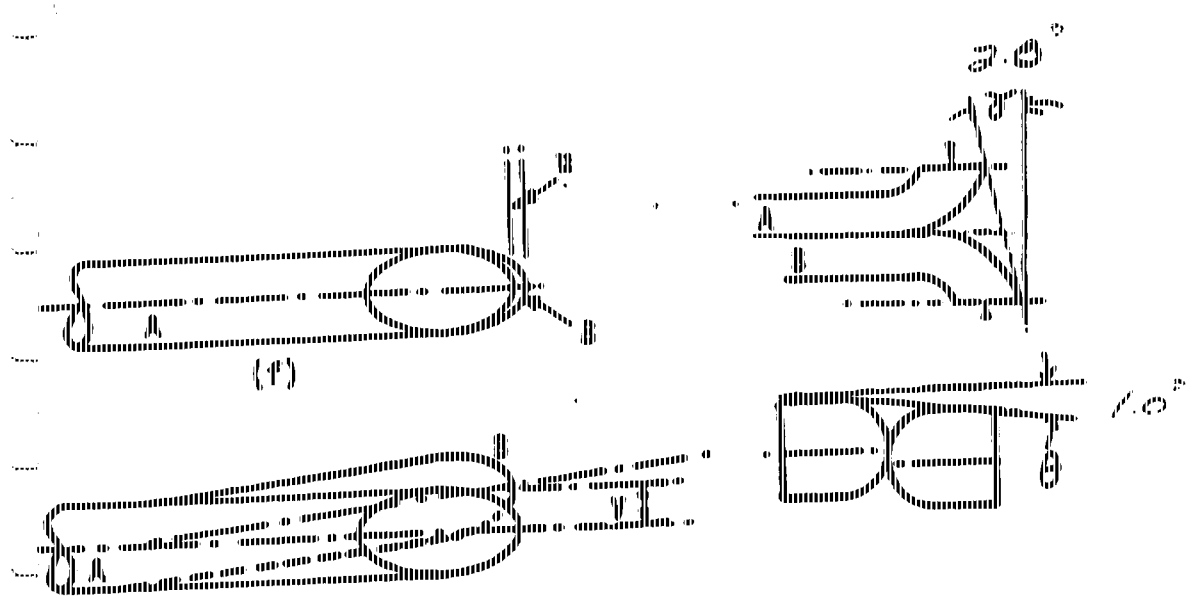


α1, α2 <10°

α1 = 0°
α2 = 1.0°
β1 = 0°
β2 = 0°
A = 0.883"
μ = 0.0308" μ = <0.125"
V = 0.0154" V = <0.03125"
W = 0.258" ω = >0
X = 0.723"
Y = 5.765 Y = > 3.0"
Z = 2.022" Z = > 2.0"
D_t = 0.381"

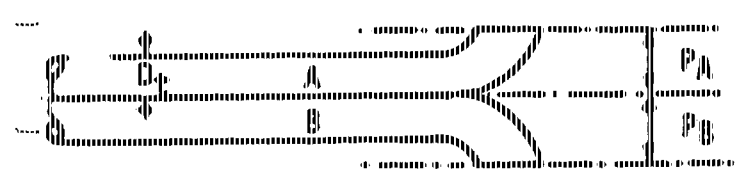


β1, β2 <5°



μ = A SIN γ 2.0°
V = A SIN θ 1.0°

A-SIDE PLANE



1.05 D_t <P <1.50 D_t
$P_A = P_B$
2.10 D_t <A <3.00 D_t

B-SIDE PLANE

PROBE #: 5-4

DATE: 7-28-91

INITIALS: OSZ

GEOMETRIC PITOT CALIBRATION

a1 = 0

a2 = 3

a1, a2 = <10°

B1 = 1

B2 = 0

B1, B2 = <5°

A = .385

μ = .008 μ = ≤0.1250"

V = .631 V = ≤0.03125"

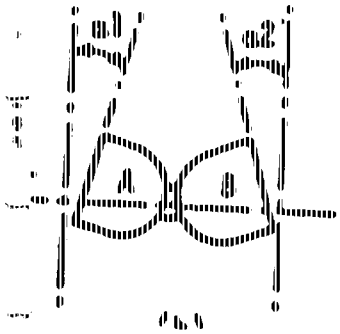
W = .5 W ≥ 0 (3/4" using 1/2" nozzle)

X = .950 X ≥ 0.745

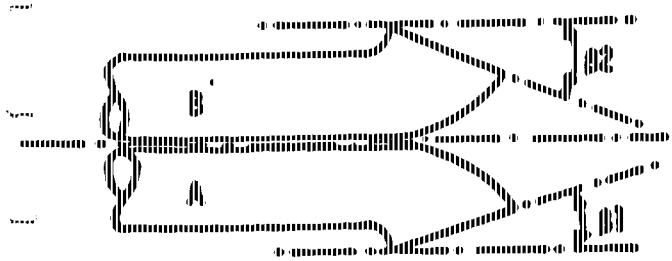
Y = 7+ Y ≥ 3.0"

Z = 3+ Z > 2.0"

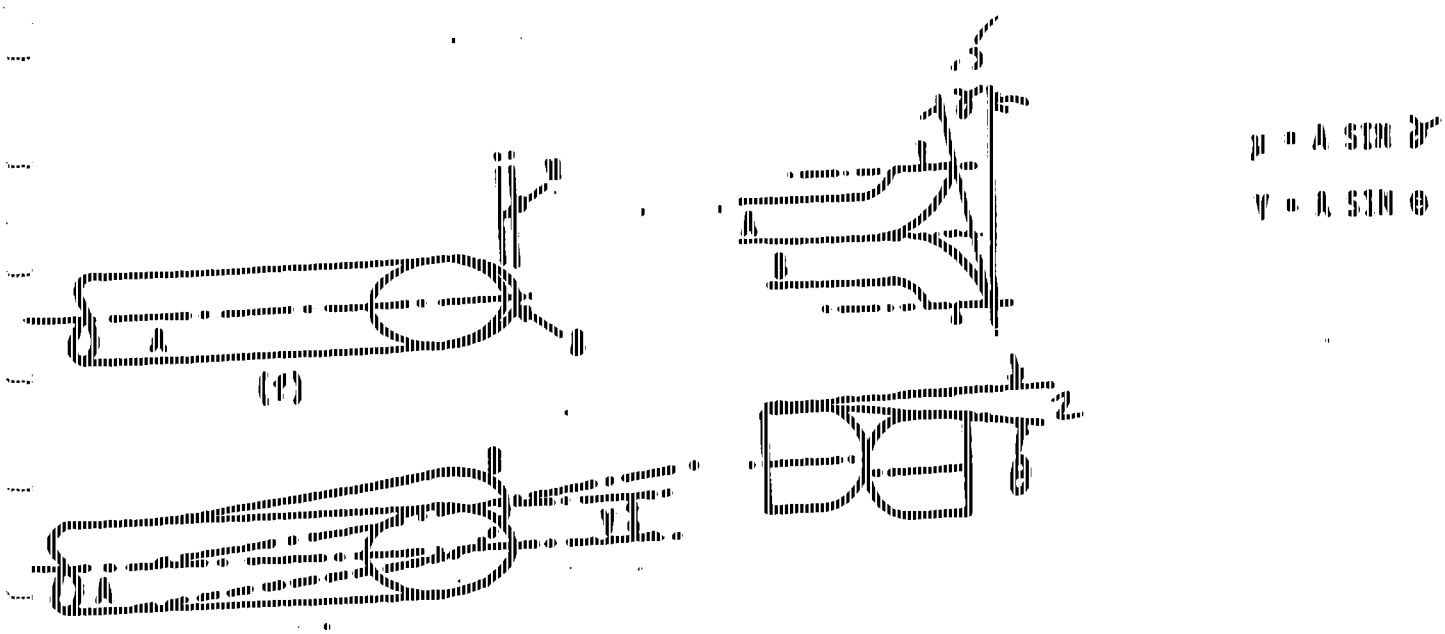
D_t = .375 D_t > .200 to .375 (3/16" to 3/8")



a1, a2 <10°



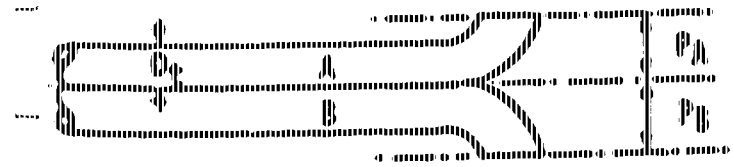
B1, B2 <5°



μ = A SIN γ

V = A SIN θ

A-SIDE PLANE

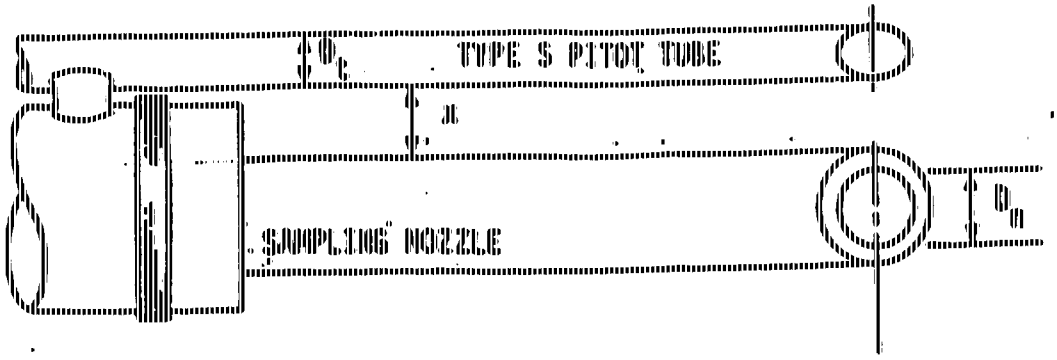


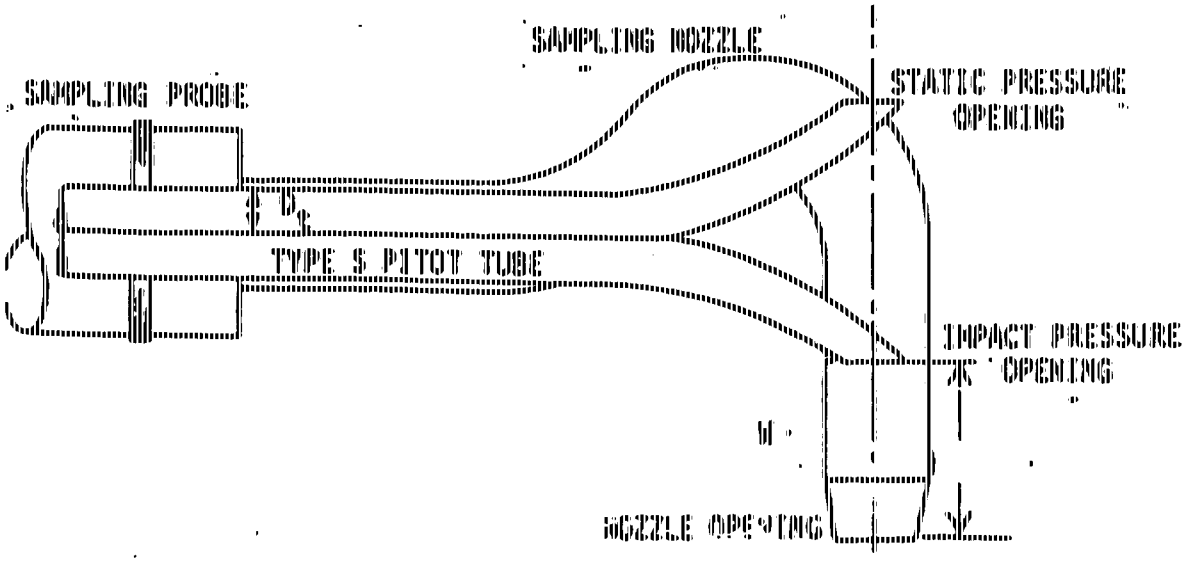
1.05 D_t < P < 1.50 D_t

P_A = P_B

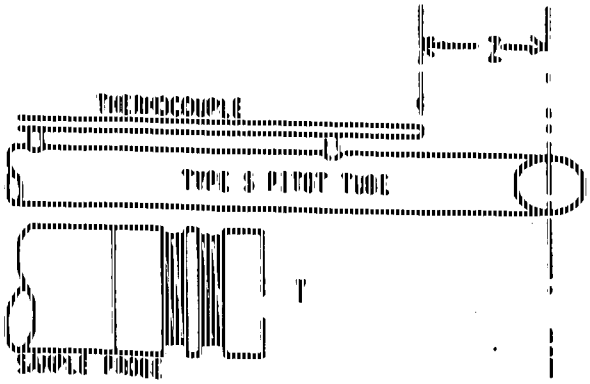
2.10 D_t < A < 3.00 D_t

B-SIDE PLANE





D_n = Nozzle diameter
D_t = 3/16 to 3/8"



W ≥ 0
X ≥ 3/4" for 1/2" Nozzle
Y ≥ 3"
Z ≥ 2"

CONTINUOUS INSTRUMENT CALIBRATION DATA

PLANT CVA
LOCATION Scrubber Exhaust
PROJ. NO#
TESTERS TM RC
COMMENTS: THC 1000 PPM RANGE
CH4 IN AIR STANDARDS

DATE 7-16-91
TEST # 1 CVA-DMP-4
PRE/POST TEST
REGULATORS

GAS ANALYZED THC
INSTRUMENT Beckman 402
SERIAL #
CALIBRATOR M2

INITIAL CAL

	CYLINDER #	CONCENTRATION % OR PPM	ANALYZER RESPONSE	RECORDER OUTPUT	ADJUSTED VALUE	PERCENT DEVIATION
	UNITS					
TIME: 0620	T56595	Ø PPM			ADJ SPAN	
	RR9656	9500 PPM				
	1.11/9.99	950 PPM	ADJ. 950	950	950	—
	0.98/9.99	849 PPM	852	852	—	+0.4%
	0.52/9.99	470 PPM	498	498	—	+3.8%
	0.31/9.99	286 PPM	292	292	—	+2.1%
TIME: 0920	FF36215	99 PPM	101 PPM	101	—	+2.0%
	AUDIT					
TIME:						

KEYSTONE ENVIRONMENTAL TECHNICAL INC.

CONTINUOUS INSTRUMENT CALIBRATION DATA

PLANT Central Valley Asphalt
LOCATION Scrubber Exhaust
PROJ. NO#
TESTERS [illegible]
COMMENTS: THC 1000 PPM RANGE
CH4 IN AIR STANDARDS

DATE 7-16-91
TEST # 2 CVA-DMP-5
PRE/POST TEST
REGULATORS

GAS ANALYZED THC
INSTRUMENT Beckman 402
SERIAL #
CALIBRATOR M2

	CYLINDER # UNITS	CONCENTRATION % OR PPM	ANALYZER RESPONSE	RECORDER OUTPUT	ADJUSTED VALUE	PERCENT DEVIATION
TIME: 0925	TS6595	0 PPM				
	RR9656	9500 PPM			NO ADJUSTMENT	
	1.11/9.99	950 PPM	951 PPM	951		+0.2 %
	0.93/9.99	809 PPM	807 PPM	807		-0.3 %
	0.52/9.99	470 PPM	458 PPM	458		-2.6 %
	0.31/9.99	286 PPM	273 PPM	273		-4.5 %
TIME: 740	FF36215 AUDIT	99 PPM	100 PPM	100		+ 1.0 %
TIME:						

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

CONTINUOUS INSTRUMENT CALIBRATION DATA

PLANT CENTRAL VALLEY ASPHALT
LOCATION SCRUBBER EXHAUST
PROJ. NO#
TESTERS KB TM RC
COMMENTS: TTC 1000 PPM RANGE
CH_4 IN AIR STANDARDS

DATE 7-16-91
TEST # 3 CVA-DMP-6
PRE/POST TEST
REGULATORS

GAS ANALYZED TPHC
INSTRUMENT BECKMAN 402
SERIAL #
CALIBRATOR MP

	CYLINDER #	CONCENTRATION % OR PPM	ANALYZER RESPONSE	RECORDER OUTPUT	ADJUSTED VALUE	PERCENT DEVIATION
	UNITS					
TIME:						
	T56595	Ø PPM			NO ADJUSTMENT	
1150	RR9656	9500 PPM				
	1.11/9.99	950 PPM	942 PPM	942		-0.8%
	0.93/9.99	809 PPM	803	803		-0.7%
	0.52/9.99	470 PPM	473	473		-0.6%
	0.31/9.99	286 PPM	280	280		-2.1%
TIME:						
1430	EE36215	99 PPM	102 PPM	102		+3.0%
	AUDIT					
	THRU PROBE					
	INLET					
FINAL CAL						
TIME:						
1436	T56595	Ø PPM	0.0	Ø		———
	RR9656	9500 PPM				
	1.11/9.99	950 PPM	934 PPM			-1.7%
	0.93/9.99	809 PPM	800 PPM			-1.1%
	0.52/9.99	470 PPM	474 PPM			+0.8%
	0.31/9.99	286 PPM	295 PPM			+3.1%

KEYSTONE

CONTINUOUS INSTRUMENT CALIBRATION DATA

PLANT CENTRAL VALLEY ASPHALT
LOCATION SCROBBER EXHAUST
PROJ. NO#
TESTERS [illegible] TM
COMMENTS: THC 1000 PPM RANGE
CH_4 IN AIR STANDARDS

DATE 7-17-91
TEST # 4 CVA-DMP-7
PRE/POST TEST
REGULATORS

GAS ANALYZED THC
INSTRUMENT BECKMAN 402
SERIAL #
CALIBRATOR M2

	CYLINDER #	CONCENTRATION % OR PPM	ANALYZER RESPONSE	RECORDER OUTPUT	ADJUSTED VALUE	PERCENT DEVIATION
	UNITS					
TIME: 0815	T56595	Ø PPM	ADJ → Ø	Ø	Ø	—
	RR9656	9500 PPM				
	1.11/9.99	950 PPM	953 PPM	953	NO ADJ	+0.3 %
	0.93/9.99	809 PPM	820 PPM	820		+1.4 %
	0.52/9.99	470 PPM	492 PPM	492		+4.7 %
	0.31/9.99	286 PPM	295 PPM	295		+3.1 %
TIME: 1055	T56595	Ø PPM	Ø PPM	0.0	NO ADJ	—
	RR9656	9500 PPM				
	1.11/9.99	950 PPM	960 PPM	960		+1.1 %
	0.93/9.99	809 PPM	811 PPM	811		-0.3 %
	0.52/9.99	470 PPM	474 PPM	474		+0.9 %
	0.31/9.99	286 PPM	287 PPM	287		
TIME: 0835	EE36215	99 PPM	102 PPM	102	—	+3.0 %
	AUDIT					
	THRU PROBE					
1115	EE36215	99 PPM	101 PPM	101	—	+2.0 %
	AUDIT					
	THRU PROBE					

KEYSTONE

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX D

STACK SAMPLING FIELD

DATA SHEETS

KEYSTONE

STACK SAMPLING DATA SHEET

PLANT: Central Valley Admin
DATE: 07-16-91
LOCATION: Reno State
TEST NO.: CVA-AMP-H
ACTIVITY NO:
NOZZLE: #39 .250
CONTROL BOX OPERATOR
STATIC PRESSURE Ps: +.60
PROBE HANDLER
PORT DIRECTION: A,B,C,D,E
CLEAN UP
BAROMETRIC PRESSURE 29.35

BWM: .1875 (6-28-91)
METER CORRECTION: .9927
PITOT CORRECTION: .84
CONTROL BOX NO.: ONE
MANOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

HOT BOX NO.: ~~X~~ 1
COLD BOX NO.: ~~X~~ 1
PROBE NO.: ~~5-6~~ 5-4
FILTER NO.: ~~588~~ 586
STACK DIA.:

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H2O	Orifice ΔH in. H2O Req.	Orifice ΔH in. H2O Act.	Meter Temp. Tm °F In	Meter Temp. Tm °F Out	Vacuum Vm in. Hg	Stack Temp. Ts °F	Probe Temp. Tp °F	Imp. Temp. Ti °C/°F	Hot Box Temp. Th °F	Comments
	38.7	07:50	102.534	.80	2.50	2.50	77	74	3.0	116	250°F	<65° Dry Ice	250°F	3 min/pt
A	30.1	07:53	102.534	.75	2.34	2.34	78	77	3.0	125				
	21.5	07:56		.80	2.50	2.50	91	79	3.5	126				
	12.9	07:59		1.0	3.12	3.12	94	80	4.0	125				
	4.3	08:02		1.0	3.10	3.12	96	81	4.0	130				
		0805	116.570											
	38.7	08:10	116.570	.75	2.32	2.32	97	87	3.0	130				
	30.1	0816		.75	2.32	2.32	99	87	3.0	132				
	21.5	0819		.75	2.32	2.32	100	89	3.0	130				
B	12.9	0822		.80	2.48	2.48	104	90	3.5	131				
	4.3	0825	130.020	.90	2.79	2.79	105	91	4.0	125				
	38.7	0831	130.020	.80	2.48	2.48	99	92	4.0	125				
	30.1	0837		.80	2.48	2.48	104	93	4.0	129				
	21.5	0840		.75	2.32	2.32	107	95	3.5	120				
C	12.9	0843		.75	2.32	2.32	108	96	3.5	121				
	4.3	0846	143.022	.70	2.17	2.17	101	97	3.5	121				

95.84

LEAK CHECK

	In Hg	Rate
Before	5.0	0.05 CFM
After		

ORSAT

	1	2	3
CO_2	4.0		
O_2	16.0		
CO			
N			

lb A2 % H_2O

Pitot check passed at -15 in. H2O

Impinger No.	Final	Initial	Difference
1	642.4	524.6	117.8
2	594.4	568.4	26.0
3	471.0	468.8	2.2
4	684.2	677.2	12.0
5			
			158.0

KEYSTONE ENVIRONMENTAL RESOURCES INC.

STACK SAMPLING DATA SHEET

PLANT: CENTRAL VALLEY ASPHALT
LOCATION: Penn State
ACTIVITY NO:
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 07-16-91
TEST NO.: CVA-DMP-4
NOZZLE: #39 .250
STATIC PRESSURE Ps: .60
PORT DIRECTION: ABCDE
BAROMETRIC PRESSURE 29.35

ΔH@: 1.875 (01-28-91)
METER CORRECTION: .9927
PITOT CORRECTION: .84
CONTROL BOX NO.: ONE
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-4
FILTER NO.: 586
STACK DIA.:

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_i °C/°F	Hot Box Temp. T_H °F	Comments
38.7	08:53	143.022	.60	1.86	1.86	102	97	3.0	120	250 °F	<68°F COLD DOWN	250°F	3 min/pt
30.1	08:56	143.022	.60	1.86	1.86	107	97	3.0	122				
21.5	08:59		.90	2.79	2.71	110	98	4.0	121				
12.9	09:02		.95	2.94	2.94	112	98	4.0	125				
4.3	09:05	157.008	1.0	3.10	3.10	113	99	4.0	120				
38.7	09:12	157.008	1.0	3.10	3.10	110	99	4.0	130				
30.1	09:15		.90	2.79	2.79	113	100	4.0	132				
21.5	09:18		.90	2.79	2.79	114	100	4.0	130				
12.9	09:21		.90	2.79	2.79	115	101	4.0	128				
4.3	09:24	171.740	.90	2.79	2.79	116	102	4.0	130				
~~38.7~~													
~~30.1~~													
~~21.5~~													
~~12.9~~													
~~4.3~~													

LEAK CHECK

	in Hg	Rate
Before	5.0"	<0.015 cfm
After	5.0"	<0.01 cfm

ORSAT

	1	2	3
CO_2	4.0		
O_2	16.0		
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE

STACK SAMPLING DATA SHEET

PLANT: Central Valley Asphalt
LOCATION: Reno Stack
ACTIVITY NO:
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 07-16-91
TEST NO.: CVA-Dmf-5
NOZZLE: F39 .250
STATIC PRESSURE Ps: .60
PORT DIRECTION: A,B,C,A,B
BAROMETRIC PRESSURE 29.35

AHM: 1.875 (07-30-91)
METER CORRECTION: .9927
PITOT CORRECTION: .84
CONTROL BOX NO.: one
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

HOT BOX NO.: 3
COLD BOX NO.: 3
PROBE NO.: 5-4
FILTER NO.: 565
STACK DIA.:

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_i °C/°F	Hot Box Temp. T_H °F	Comments
	38.7	10:05	179.550	1.3	4.19	4.19	109	106	10.0	120	260°F	45°F Dual Dam	250°F	3 min/pt
	30.1	10:08	172.350	.80	2.55	2.55	110	108	7.0	130				
	21.5	10:11		.75	2.39	2.39	110	108	7.0	135				
A	12.9	10:14		.90	2.86	2.86	119	109	7.5	140				
	4.3	10:17	186.575	1.0	3.18	3.18	120	109	8.0	135				
	38.7	10:22	186.575	.70	2.23	2.23	114	108	6.0	123				
	30.1	10:25		.75	2.39	2.39	112	108	7.0	135				
B	21.5	10:28		.70	2.23	2.23	117	108	6.5	130				
	12.9	10:31		.70	2.23	2.23	120	108	6.5	140				
	4.3	10:34	199.845	.75	2.39	2.39	120	109	6.5	141				
	38.7	10:39	197.845	.60	1.91	1.91	114	108	5.0	140				
	30.1	10:42		.60	1.91	1.91	117	108	5.0	141				
C	21.5	10:46		.65	2.07	2.07	120	108	5.0	141				
	12.9	10:48		.50	1.59	1.59	120	109	5.0	138				
	4.3	10:51	211.630	.60	1.91	1.91	121	110	5.0	135				

1A.78

LEAK CHECK

	In Hg	Rate
Before	6.0	0.0 cfm
After		

ORSAT

	1	2	3
CO_2	4.0		
O_2	15.2		
CO	—		
N			

9.8% H_2O

Impinger No.	Final	Initial	Difference
Final #1	647.6	542.0	105.6
Final #2	519.4	520.5	1.1
Final #3	441.0	439.3	1.7
Final #4	661.3	650.4	10.9
5			

136.1

KEYSTONE

STACK SAMPLING DATA SHEET

PLANT: Central Valley Agg. DATE: 07-16-91 BP: 1.8215 (6-20-91) HOT BOX NO.: 3

LOCATION: Rio Oso State TEST NO.: CVA-Amp-5 METER CORRECTION: .9927 COLD BOX NO.: 3

ACTIVITY NO: NOZZLE: #39 .250 PITOT CORRECTION: .84 PROBE NO.: 5-4

CONTROL BOX OPERATOR STATIC PRESSURE Ps: +.60 CONTROL BOX NO.: 0408 FILTER NO.: 565

PROBE HANDLER PORT DIRECTION: Middle NOMOGRAPH SET POINT: STACK DIA.:

CLEAN UP BAROMETRIC PRESSURE 29.35 LENGTHS OF UMBILICAL ___ x 25' ___ x 50' ___

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Notes
38.7	10:57	211.630	.60	1.91	1.91	118	111	6.0	142	
30.1	11:00	211.630	.60	1.91	1.91	121	111	5.5	141	
21.5	11:03		.65	2.07	2.07	122	111	5.5	141	
12.9	11:06		.65	2.07	2.07	123	112	5.5	140	
4.3	11:08	224.100	.75	2.37	2.37	124	113	6.0	140	
38.7	11:14	224.100	.70	2.21	2.21	118	118	6.0	140	
30.1	11:17		.70	2.21	2.21	125	118	6.0	141	
21.5	11:20		.70	2.21	2.21	124	113	6.0	141	
12.9	11:23		.80	2.55	2.55	124	114	6.5	144	
4.3	11:26	237.719	.90	3.18	3.18	126	113	7.5	140	

LEAK CHECK

	In Hg	Rate
Before	6.5"	0.02 cfm
After	10.6	0.02 cfm

Pre Post Filter Back

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.

1
2
3
4
5

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: Central Valley Asphalt
LOCATION: Penn State
ACTIVITY NO:
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 07-16-91
TEST NO.: CVA-DMP-6
NOZZLE: .250 #39
STATIC PRESSURE Ps:
PORT DIRECTION: A,B,C,D,E
BAROMETRIC PRESSURE 29.35

ΔH@: 1.875 (01-28-91)
METER CORRECTION: .9927
PITOT CORRECTION: .84
CONTROL BOX NO.: ONE
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: S-4
FILTER NO.: 566
STACK DIA.:

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
	38.7	12:44	238.875	.75	2.65	2.65	118	113	8.0	133	250	<68°F [illegible]	250	
	30.1	12:47	238.875	.65	2.30	2.30	118	112	8.0	143				
	21.5	12:50		.60	2.12	2.12	120	113	7.5	140				
A	12.9	12:53		.70	2.47	2.47	121	113	8.0	135				
	4.3	12:56	252.365	.85	3.00	3.00	121	113	9.0	136				
	38.7	13:01	252.365	.60	2.12	2.12	117	111	7.0	140				
B	30.1	13:04		.60	2.12	2.12	118	112	7.0	140				
	21.5	13:07		.65	2.30	2.30	121	111	7.5	143				
	12.9	13:10		.70	2.48	2.48	121	111	8.0	140				
	4.3	13:13	265.300	.75	2.65	2.65	121	111	8.5	139				
	38.7	13:18	265.300	.50	1.77	1.77	118	110	6.5	141				
	30.1	13:21		.50	1.77	1.77	118	111	6.5	142				
C	21.5	13:24		.60	2.12	2.12	118	111	7.0	142				
	12.9	13:27		.60	2.12	2.12	122	111	7.0	141				
	4.3	13:30	277.505	.65	2.30	2.30	123	112	7.5	144				

LEAK CHECK

	in Hg	Rate
Before	50"	<0.01 CFM
After		

ORSAT

	1	2	3
CO_2	~~15.0~~	4.0	
O_2	15.0	15.0	
CO			
N			

Pitot check [illegible] 1500 [illegible] 15 [illegible]

Impinger No.	Final	Initial	Difference
1	680.8	524.9	155.9
2	560.4	536.2	24.2
3	443.2	440.0	3.2
4	646.3	632.6	13.7
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: Central Valley Asphalt
DATE: 07-16-91
ΔH@: 1.875
HOT BOX NO.: 4
LOCATION: Penn State
TEST NO.: CVA-AMD-6
METER CORRECTION: .9927
COLD BOX NO.: 4
ACTIVITY NO:
NOZZLE: .250 #39
PITOT CORRECTION: .84
PROBE NO.: 5-4
CONTROL BOX OPERATOR
STATIC PRESSURE Ps: .60
CONTROL BOX NO.: ONE
FILTER NO.: 566
PROBE HANDLER
PORT DIRECTION: A.A.O.A.R.
NOMOGRAPH SET POINT:
STACK DIA.:
CLEAN UP
BAROMETRIC PRESSURE 29.35
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_i °C/°F	Hot Box Temp. T_H °F	Comments
39.7	13:35	277.505	.60	2.12	2.12	119	111	7.0	140	250°F	<48°F Good Down	250°F	3 min/ft
30.1	13:38	277.605	.65	2.30	2.30	123	111	8.0	138				
21.5	13:41		.65	2.30	2.30	123	112	8.0	145				
12.9	13:44		.60	2.12	2.12	123	112	8.0	145				
4.3	13:47	290.895	.80	2.83	2.83	123	112	9.0	142				
38.7	13:52	290.895	.90	3.18	3.18	119	112	9.5	135				
30.1	13:55		.90	3.18	3.18	123	114	10.0	136				
21.5	13:58		.80	2.83	2.83	123	112	10.0	146				
12.9	14:01		.75	2.65	2.65	123	112	9.0	143				
4.3	14:04	305.589	.80	2.83	2.83	124	112	9.5	141				

LEAK CHECK

	in Hg	Rate
Before	5.0"	<0.01 CFM
After	5"	<0.016 CFM

ORSAT

	1	2	3
CO_2	4.0		
O_2	15.0		
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: Central Valley Asphalt
LOCATION: Penn State
ACTIVITY NO:
CONTROL BOX OPERATOR: [signature]
PROBE HANDLER: Tm
CLEAN UP:

DATE: 07-17-91
TEST NO.: CVA-DMP-7
NOZZLE: .250 #39
STATIC PRESSURE Ps: +0.30
PORT DIRECTION: A,B,C,D,E
BAROMETRIC PRESSURE: 29.24

ΔH@: 1.875 (01-28-91)
METER CORRECTION: .9927
PITOT CORRECTION: .84
CONTROL BOX NO.: one
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 3
COLD BOX NO.: 3
PROBE NO.: 5-4
FILTER NO.: 628
STACK DIA.:

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_i °C/°F	Hot Box Temp. T_H °F	Comments
A	38.7	0920	305.927	1.0	3.47	3.47	100	89	10.0	140	250°F	68°F [illegible]	250°F	Brown/FT
	30.1		305.927	0.50	1.74	1.74	100	92	6.0	142				
	21.5			0.50	1.74	1.74	102	92	6.0	142				
	12.9			0.80	2.78	2.78	105	93	8.5	141				
	4.3	0935	318.934	0.90	3.09	3.09	107	95	9.5	142				
B	38.7	0937	318.934	0.40	1.37	1.37	104	96	4.5	140				
	30.1			0.50	1.72	1.72	107	97	5.5	141				
	21.5			0.50	1.72	1.72	108	98	5.5	140				
	12.9			0.50	1.72	1.72	109	98	5.5	140				
	4.3	0952	330.346	0.60	2.06	2.06	111	99	6.0	143				
C	38.7	0954	330.346	0.40	1.37	1.37	109	101	4.5	143				
	30.1			0.40	1.37	1.37	110	101	4.5	143				
	21.5			0.40	1.37	1.37	112	102	4.5	142				
	12.9			0.50	1.72	1.72	113	102	5.5	143				
	4.3	1009	340.830	0.40	1.37	1.37	113	103	4.5	142				

LEAK CHECK

	in Hg	Rate
Before	5.0	<0.01 cfm
After		

ORSAT

	1	2	3
CO_2	4.0%		
O_2	15.0%		
CO			
N			

Pitot check before [illegible] 15 sec [illegible]

Impinger No.	Final	Initial	Difference
1	659.6	522.2	137.4
2	589.5	568.3	21.2
3	439.7	438.6	1.1
4	688.2	678.1	10.1
5			

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX E

ANALYTICAL RESULTS

AND

EMISSIONS CALCULATIONS

Plant: CENTRAL VALLEY 7/16 + 7/17/91 Date: 7/22/91

Activity No. 375019 -02

PARTICULATE REPORTING FORM

Test Number	Component	Molecular Weight	Cyclone Weight	Filter Weight (g) PARTICULATE	Incol. Part. in Front Half	Incol. Part. in Back Half (g) 0.22 µm MILLIPORE	Soluble Part. in Back Half (g) H_2O + Acetone IMPINGER	Soluble Part. in Front Half (g) H_2O and ACETONE
CVA-DMP-4				.0085		.0139	.0512	.0135
CVA-DMP-5				.0077		.0098	~~TRACE~~ 0.0190	.0144
CVA-DMP-6				.0065		.0100	.0163	.0081
CVA-DMP-7				.0188		.0131	.0272	.0097
	ACETONE	BLANK	.0021 (g)					
	WATER	BLANK	.0029 (g)					
	WATER MILLIPORE	BLANK		.0007 (g)				

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASENT GAP PA
SCRUBBER OUTLET

DATE: 7-16-91
CHARGE #: ...150-375019
TEST #: CVA-DMP-4

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00860	2.18346

2. STACK CONDITIONS

FLOW (ACFM)	37316.
(SCFM)	33047.
MOISTURE CONTENT (%)	10.39
STACK TEMPERATURE (F)	125.7

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	69.0
SCFD GAS SAMPLED	64.274
PERCENT ISOKINETIC	104.70

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-4 7-16-91

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FPT/SEC
38.7A	750.0	102.534	.800	2.50	2.50	77.	74.	3.0	116.	53.5
30.1			.750	2.34	2.34	88.	77.	3.0	125.	52.2
21.5			.800	2.50	2.50	91.	79.	3.5	125.	53.9
12.9			1.000	3.12	3.12	94.	80.	4.0	125.	60.3
4.3A	805.0	116.570	1.000	3.12	3.12	96.	81.	4.0	130.	60.5
38.7B	813.0	116.570	.750	2.32	2.32	87.	87.	3.0	130.	52.4
30.1			.750	2.32	2.32	99.	87.	3.0	132.	52.5
21.5			.750	2.32	2.32	100.	89.	3.0	130.	52.4
12.9			.800	2.48	2.48	104.	90.	3.5	131.	54.2
4.3B	825.0	130.020	.900	2.79	2.79	105.	91.	4.0	125.	57.2
38.7C	834.0	130.020	.800	2.48	2.48	99.	92.	4.0	125.	53.9
30.1			.800	2.48	2.48	104.	93.	4.0	129.	54.1
21.5			.750	2.32	2.32	107.	95.	3.5	120.	52.0
12.9			.750	2.32	2.32	108.	96.	3.5	121.	52.0
4.3C	846.0	143.022	.700	2.17	2.17	108.	97.	3.5	121.	50.2
38.7D	853.0	143.022	.600	1.86	1.86	102.	97.	3.0	120.	46.5
30.1			.600	1.86	1.86	107.	97.	3.0	122.	46.6
21.5			.900	2.79	2.79	110.	98.	4.0	121.	57.0
12.9			.950	2.94	2.94	112.	98.	4.0	125.	58.7
4.3D	908.0	157.008	1.000	3.10	3.10	113.	99.	4.0	120.	60.0
38.7E	912.0	157.008	1.000	3.10	3.10	110.	99.	4.0	130.	60.5
30.1			.900	2.78	2.78	113.	100.	4.0	132.	57.5
21.5			.900	2.78	2.78	114.	100.	4.0	130.	57.4
12.9			.900	2.78	2.78	115.	101.	4.0	128.	57.3
4.3E	927.0	171.740	.900	2.79	2.79	116.	102.	4.0	130.	57.4

O R S A T

CO2	4.0
O2	16.0
CO	.0
N	80.0

IMPINGER NO. 1	117.8
2	26.0
3	2.2
4	.0
ABSORBED H2O	12.0

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.875	1-28-91
METER	0.9927	1-28-91
PITOT	0.84	2-25-91

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.01CFM	5.0

CONTROL BOX NO. 1 PROBE NO. 5-4 NOZZLE NO. 39

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-4 7-16-91

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.35
B.	AVG. DELTA H (IN H2O)	2.57
C.	METER PRESSURE (IN. HG.)	29.54
D.	STATIC PRESSURE (IN. H2O)	.60
E.	STATIC PRESSURE (IN. HG.)	.044
F.	STACK PRESSURE (IN. HG.) (A+E)	29.39
G.	STACK DIMENSIONS 43.0 X 38.0 IN.	
H.	STACK AREA (SQ. FT.) (LENGTH X WIDTH)	11.35
	NOZZLE DIAMETER	.2500
I.	NOZZLE AREA (SQ. FT.)	.000341
J.	AVG. STACK TEMP (DEG. R.)	585.7
K.	AVG. METER TEMP (DEG. R.)	557.6
L.	CONDENSATE VOL. (ML)	146.0
M.	ABSORBED H2O (ML)	12.0
N.	TOTAL H2O (ML)	158.0
O.	METERED GAS (CF)	69.206
P.	GAS METER CORRECTION	.9927
Q.	CORRECTED METERED GAS (CF)	68.701
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	7.963
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	76.663
T.	PERCENT H2O (100R/S)	10.39
	THEORETICAL MAXIMUM	13.84
	PERCENT WATER USED	10.39
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	64.274

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL. PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.040	X	.8961	X	44.0	=	1.58
CO	.000	X	.8961	X	28.0	=	.00
O2	.160	X	.8961	X	32.0	=	4.59
N2	.800	X	.8961	X	28.2	=	20.22
H2O		X	T/100= .1039	X	18.0	=	1.87
					MOLECULAR WEIGHT OF STACK GAS	=	28.25

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	54.81
Y.	AVG. FLOW RATE (CFM) (X*H*60)	37316.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	33047.
	STACK FLOW RATE (DRY)	29615.
AA.	SAMPLE TIME (SEC)	4140.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	104.70

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-4 7-16-91

PARAMETER	CYCLONE WT. (G)	MATL. ON FILTER (G)	INSOL. MATL. IN PROBE (G)	SOL. MATL. IN PROBE (G)
PARTICULATE	.00000	.00850	.00000	.01350

PARAMETER	INSOL. MATL. IN IMP. (G)	SOLUBLE MATL. IN IMP. (G)
PARTICULATE	.01390	.05120

PARTICULATE	.08710
ALL MATLS.	.08710

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00860	2.18346

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASENT GAP PA
SCRUBBER OUTLET

DATE: 7-16-91
CHARGE #: ...150-375019
TEST #: CVA-DMP-5

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00835	1.97854

2. STACK CONDITIONS

FLOW (ACFM)	35301.
(SCFM)	30675.
MOISTURE CONTENT (%)	9.83
STACK TEMPERATURE (F)	137.0

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	75.0
SCFD GAS SAMPLED	58.866
PERCENT ISOKINETIC	94.46

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASHALT
PLEASENT GAP PA — SCRUBBER OUTLET
CVA-DMP-5 — 7-16-91

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FPT/SEC
38.7A	1005.0	172.350	1.300	4.14	4.14	109.	106.	10.0	120.	68.4
30.1			.800	2.55	2.55	117.	108.	7.0	130.	54.1
21.5			.750	2.39	2.39	119.	108.	7.0	135.	52.6
12.9			.900	2.86	2.86	119.	109.	7.5	140.	57.9
4.3A	1020.0	186.575	1.000	3.18	3.18	120.	109.	8.0	135.	60.7
38.7B	1022.0	186.575	.700	2.23	2.23	114.	108.	6.0	123.	50.3
30.1			.750	2.39	2.29	118.	108.	7.0	125.	52.2
21.5			.700	2.23	2.23	118.	108.	6.5	130.	50.6
12.9			.700	2.23	2.23	120.	108.	6.5	140.	51.0
4.3B	1037.0	199.845	.750	2.39	2.39	120.	109.	6.5	141.	52.9
38.7C	1039.0	199.845	.600	1.91	1.91	114.	108.	5.0	140.	47.3
30.1			.600	1.91	1.91	118.	108.	5.0	141.	47.3
21.5			.650	2.07	2.07	120.	108.	5.0	141.	49.2
12.9			.500	1.59	1.59	120.	109.	5.0	138.	43.1
4.3C	1054.0	211.630	.600	1.91	1.91	121.	110.	5.0	135.	47.1
38.7D	1057.0	211.630	.600	1.91	1.91	119.	111.	5.0	142.	47.3
30.1			.600	1.91	1.91	121.	111.	5.5	141.	47.3
21.5			.650	2.07	2.07	122.	111.	5.5	141.	49.2
12.9			.650	2.07	2.07	123.	112.	5.5	140.	49.2
4.3D	1112.0	224.190	.750	2.39	2.39	124.	113.	6.0	140.	52.8
38.7E	1114.0	224.190	.700	2.32	2.32	119.	112.	6.0	140.	51.0
30.1			.700	2.32	2.32	123.	112.	6.0	141.	51.1
21.5			.700	2.32	2.32	124.	113.	6.0	141.	51.1
12.9			.800	2.55	2.55	124.	114.	6.5	144.	54.7
4.3E	1129.0	237.719	.900	3.18	3.18	125.	112.	7.5	140.	57.9

O R S A T

CO2	4.0
O2	15.0
CO	.0
N	81.0

IMPINGER NO.	1	105.6
	2	17.9
	3	1.7
	4	.0
ABSORBED H2O		10.9

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.875	1-28-91
METER	0.9927	1-28-91
PITOT	0.84	2-25-91

LEAK CHECK

		RATE	IN.HG
INITIAL	LT	0.02CFM	5.0
FINAL	LT	0.02CFM	10.5

CONTROL BOX NO. 1 — PROBE NO. 5-4 — NOZZLE NO. 39

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-5 7-16-91

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.35
B.	AVG. DELTA H (IN H2O)	2.36
C.	METER PRESSURE (IN. HG.)	29.52
D.	STATIC PRESSURE (IN. H2O)	.60
E.	STATIC PRESSURE (IN. HG.)	.044
F.	STACK PRESSURE (IN. HG.) (A+E)	29.39
G.	STACK DIMENSIONS 43.0 X 38.0 IN.	
H.	STACK AREA (SQ. FT.) (LENGTH X WIDTH)	11.35
	NOZZLE DIAMETER	.2500
I.	NOZZLE AREA (SQ. FT.)	.000341
J.	AVG. STACK TEMP (DEG. R.)	597.0
K.	AVG. METER TEMP (DEG. R.)	574.7
L.	CONDENSATE VOL. (ML)	125.2
M.	ABSORBED H2O (ML)	10.9
N.	TOTAL H2O (ML)	136.1
O.	METERED GAS (CF)	65.369
P.	GAS METER CORRECTION	.9927
Q.	CORRECTED METERED GAS (CF)	64.892
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	7.074
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	71.966
T.	PERCENT H2O (100R/S)	9.83
	THEORETICAL MAXIMUM	18.53
	PERCENT WATER USED	9.83
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	58.866

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL. PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.040	X	.9017	X	44.0	=	1.59
CO	.000	X	.9017	X	28.0	=	.00
O2	.150	X	.9017	X	32.0	=	4.33
N2	.810	X	.9017	X	28.2	=	20.60
H2O		X	T/100= .0983	X	18.0	=	1.77
					MOLECULAR WEIGHT OF STACK GAS	=	28.28

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	51.85
Y.	AVG. FLOW RATE (CFM) (X*H*60)	35301.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	30675.
	STACK FLOW RATE (DRY)	27659.
AA.	SAMPLE TIME (SEC)	4500.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	94.46

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-5 7-16-91

PARAMETER	CYCLONE WT. (G)	MATL. ON FILTER (G)	INSOL. MATL. IN PROBE (G)	SOL. MATL. IN PROBE (G)
PARTICULATE	.00000	.00770	.00000	.01440

PARAMETER	INSOL. MATL. IN IMP. (G)	SOLUBLE MATL. IN IMP. (G)
PARTICULATE	.00980	.01900

PARTICULATE	.05090
ALL MATLS.	.05090

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00835	1.97854

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA
SCRUBBER OUTLET

DATE: 7-16-91
CHARGE #: ...150-375019
TEST #: CVA-DMP-6

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00632	1.40033

2. STACK CONDITIONS

FLOW (ACFM)	34553.
(SCFM)	29848.
MOISTURE CONTENT (%)	13.42
STACK TEMPERATURE (F)	140.5

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	75.0
SCFD GAS SAMPLED	59.926
PERCENT ISOKINETIC	102.92

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASENT GAP PA SCRUBBER OUTLET
CVA-DMP-6 7-16-91

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FPT/SEC
38.7A	1244.0	238.875	.750	2.65	2.65	118.	113.	8.0	133.	52.9
30.1			.650	2.30	2.30	118.	112.	8.0	143.	49.7
21.5			.600	2.12	2.12	120.	113.	7.5	140.	47.6
12.9			.700	2.47	2.47	121.	113.	8.0	135.	51.2
4.3A	1259.0	252.365	.850	3.00	3.00	121.	113.	9.0	136.	56.5
38.7B	1301.0	252.365	.600	2.12	2.12	117.	111.	7.0	140.	47.6
30.1			.600	2.12	2.12	118.	112.	7.0	140.	47.6
21.5			.650	2.30	2.30	121.	111.	7.5	143.	49.7
12.9			.700	2.48	2.48	121.	111.	8.0	140.	51.4
4.3B	1316.0	265.300	.750	2.65	2.65	121.	111.	8.5	139.	53.2
38.7C	1318.0	265.300	.500	1.77	1.77	118.	110.	6.5	141.	43.5
30.1			.500	1.77	1.77	118.	111.	6.5	142.	43.5
21.5			.600	2.12	2.12	118.	111.	7.0	142.	47.7
12.9			.600	2.12	2.12	122.	111.	7.0	141.	47.6
4.3C	1333.0	277.505	.650	2.30	2.30	123.	112.	7.5	144.	49.7
38.7D	1335.0	277.505	.600	2.12	2.12	119.	111.	7.0	140.	47.6
30.1			.650	2.30	2.30	123.	111.	8.0	138.	49.5
21.5			.650	2.30	2.30	123.	112.	8.0	145.	49.7
12.9			.600	2.12	2.12	123.	112.	8.0	145.	47.8
4.3D	1350.0	290.895	.800	2.83	2.83	123.	112.	9.0	145.	55.2
38.7E	1352.0	290.895	.900	3.18	3.18	119.	112.	9.5	135.	58.1
30.1			.900	3.18	3.18	123.	114.	10.0	136.	58.1
21.5			.800	2.83	2.83	123.	112.	10.0	145.	55.2
12.9			.750	2.65	2.65	123.	112.	9.0	143.	53.3
4.3E	1407.0	305.589	.800	2.83	2.83	124.	112.	9.5	141.	55.0

O R S A T	
CO2	4.0
O2	15.0
CO	.0
N	81.0

IMPINGER NO.	1	155.9
	2	24.2
	3	3.2
	4	.0
ABSORBED H2O		13.7

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.875	1-28-91
METER	0.9927	1-28-91
PITOT	0.84	2-25-91

LEAK CHECK

		RATE	IN.HG
INITIAL	LT	0.02CFM	5.0
FINAL	LT	.016CFM	11.5

CONTROL BOX NO. 1 PROBE NO. 5-4 NOZZLE NO. 39

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA — SCRUBBER OUTLET
CVA-DMP-6 — 7-16-91

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG	29.35
B.	AVG. DELTA H (IN H2O)	2.43
C.	METER PRESSURE (IN. HG.)	29.53
D.	STATIC PRESSURE (IN. H2O)	.60
E.	STATIC PRESSURE (IN. HG.)	.044
F.	STACK PRESSURE (IN. HG.) (A+E)	29.39
G.	STACK DIMENSIONS 43.0 X 38.0 IN.	
H.	STACK AREA (SQ. FT.) (LENGTH X WIDTH)	11.35
	NOZZLE DIAMETER	.2500
I.	NOZZLE AREA (SQ. FT.)	.000341
J.	AVG. STACK TEMP (DEG. R.)	600.5
K.	AVG. METER TEMP (DEG. R.)	576.3
L.	CONDENSATE VOL. (ML)	183.3
M.	ABSORBED H2O (ML)	13.7
N.	TOTAL H2O (ML)	197.0
O.	METERED GAS (CF)	66.714
P.	GAS METER CORRECTION	.9927
Q.	CORRECTED METERED GAS (CF)	66.227
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	10.265
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	76.492
T.	PERCENT H2O (100R/S)	13.42
	THEORETICAL MAXIMUM	20.03
	PERCENT WATER USED	13.42
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	59.926

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL. PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.040	X	.8658	X	44.0	=	1.52
CO	.000	X	.8658	X	28.0	=	.00
O2	.150	X	.8658	X	32.0	=	4.16
N2	.810	X	.8658	X	28.2	=	19.78
H2O		X	T/100= .1342	X	18.0	=	2.42
					MOLECULAR WEIGHT OF STACK GAS	=	27.87

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	50.75
Y.	AVG. FLOW RATE (CFM) (X*H*60)	34553.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	29848.
	STACK FLOW RATE (DRY)	25843.
AA.	SAMPLE TIME (SEC)	4500.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*K*AA*I*F*(1-T/100))	102.92

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-6 7-16-91

PARAMETER	CYCLONE WT. (G)	MATL. ON FILTER (G)	INSOL. MATL. IN PROBE (G)	SOL. MATL. IN PROBE (G)
PARTICULATE	.00000	.00650	.00000	.00810

PARAMETER	INSOL. MATL. IN IMP. (G)	SOLUBLE MATL. IN IMP. (G)
PARTICULATE	.01000	.01630
PARTICULATE	.04090	
ALL MATLS.	.04090	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00632	1.40033

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASENT GAP PA
SCRUBBER OUTLET

DATE: 7-17-91
CHARGE #: ...150-375019
TEST #: CVA-DMP-7

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.01174	2.34632

2. STACK CONDITIONS

FLOW (ACFM)	31046.
(SCFM)	26738.
MOISTURE CONTENT (%)	12.79
STACK TEMPERATURE (F)	141.8

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	75.0
SCFD GAS SAMPLED	54.570
PERCENT ISOKINETIC	103.87

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA — SCRUBBER OUTLET
CVA-DMP-7 — 7-17-91

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FPT/SEC
38.7A	920.0	305.927	1.000	3.42	3.42	100.	89.	10.0	140.	61.4
30.1			.500	1.74	1.74	100.	92.	6.0	142.	43.5
21.5			.500	1.74	1.74	102.	92.	6.0	142.	43.5
12.9			.800	2.78	2.78	105.	93.	8.5	141.	55.0
4.3A	935.0	318.934	.900	3.09	3.09	107.	95.	9.5	142.	58.3
38.7B	937.0	318.934	.400	1.37	1.37	104.	96.	4.5	140.	38.8
30.1			.500	1.74	1.74	107.	97.	5.5	141.	43.4
21.5			.500	1.74	1.74	108.	98.	5.5	140.	43.4
12.9			.500	1.74	1.74	109.	98.	5.5	140.	43.4
4.3B	952.0	330.346	.600	2.06	2.06	111.	99.	6.0	143.	47.7
38.7C	954.0	330.346	.400	1.37	1.37	109.	101.	4.5	143.	38.9
30.1			.400	1.37	1.37	110.	101.	4.5	143.	38.9
21.5			.400	1.37	1.37	112.	102.	4.5	142.	38.9
12.9			.500	1.74	1.74	113.	102.	5.5	143.	43.5
4.3C	1009.0	340.830	.400	1.37	1.37	113.	103.	4.5	142.	38.9
38.7D	1011.0	340.830	.400	1.37	1.37	110.	103.	4.5	142.	38.9
30.1			.400	1.37	1.37	113.	104.	4.5	142.	38.9
21.5			.500	1.74	1.74	117.	105.	5.5	142.	43.5
12.9			.600	2.06	2.06	116.	105.	6.0	142.	47.6
4.3D	1026.0	352.828	.600	2.06	2.06	117.	106.	6.0	142.	47.6
38.7E	1028.0	352.828	.600	2.06	2.06	115.	106.	6.0	142.	47.6
30.1			.600	2.06	2.06	118.	107.	6.0	142.	47.6
21.5			.600	2.06	2.06	119.	108.	6.0	143.	47.7
12.9			.700	2.40	2.40	120.	108.	7.0	143.	51.5
4.3E	1043.0	365.658	.700	2.40	2.40	120.	109.	7.0	142.	51.5

O R S A T

CO2	4.0
O2	15.0
CO	.0
N	81.0

IMPINGER NO.	1	137.4
	2	21.2
	3	1.1
	4	.0
ABSORBED H2O		10.1

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.875	1-28-91
METER	0.9927	1-28-91
PITOT	0.84	2-25-91

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.02CFM	12.0

CONTROL BOX NO. 1 — PROBE NO. 5-4 — NOZZLE NO. 39

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA — SCRUBBER OUTLET
CVA-DMP-7 — 7-17-91

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.35
B.	AVG. DELTA H (IN H2O)	1.93
C.	METER PRESSURE (IN. HG.)	29.49
D.	STATIC PRESSURE (IN. H2O)	.30
E.	STATIC PRESSURE (IN. HG.)	.022
F.	STACK PRESSURE (IN. HG.) (A+E)	29.37
G.	STACK DIMENSIONS 43.0 X 38.0 IN.	
H.	STACK AREA (SQ. FT.) (LENGTH X WIDTH)	11.35
	NOZZLE DIAMETER	.2500
I.	NOZZLE AREA (SQ. FT.)	.000341
J.	AVG. STACK TEMP (DEG. R.)	601.8
K.	AVG. METER TEMP (DEG. R.)	565.9
L.	CONDENSATE VOL. (ML)	159.7
M.	ABSORBED H2O (ML)	10.1
N.	TOTAL H2O (ML)	169.8
O.	METERED GAS (CF)	59.731
P.	GAS METER CORRECTION	.9927
Q.	CORRECTED METERED GAS (CF)	59.295
R.	H2O GAS VOLUME (CF) (0.00267N(E/C)	8.699
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	67.994
T.	PERCENT H2O (100R/S)	12.79
	THEORETICAL MAXIMUM	21.10
	PERCENT WATER USED	12.79
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	54.570

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.040	X	.8721	X	44.0	=	1.53
CO	.000	X	.8721	X	28.0	=	.00
O2	.150	X	.8721	X	32.0	=	4.19
N2	.810	X	.8721	X	28.2	=	19.92
H2O		X	T/100= .1279	X	18.0	=	2.30
					MOLECULAR WEIGHT OF STACK GAS	=	27.94

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	45.60
Y.	AVG. FLOW RATE (CFM) (X*H*60)	31046.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	26738.
	STACK FLOW RATE (DRY)	23317.
AA.	SAMPLE TIME (SEC)	4500.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	103.87

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

CENTRAL VALLEY ASPHALT
PLEASANT GAP PA SCRUBBER OUTLET
CVA-DMP-7 7-17-91

PARAMETER	CYCLONE WT. (G)	MATL. ON FILTER (G)	INSOL. MATL. IN PROBE (G)	SOL. MATL. IN PROBE (G)
PARTICULATE	.00000	.01880	.00000	.00970

PARAMETER	INSOL. MATL. IN IMP. (G)	SOLUBLE MATL. IN IMP. (G)
PARTICULATE	.01310	.02720

PARTICULATE	.06880
ALL MATLS.	.06880

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.01174	2.34632

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE
3000 Tech Center Drive
Monroeville, PA 15146

PROJECT: Central Valley Asphalt — PROJECT NO. 375019-09
SHEET ___ OF ___
THC lb/ton Determinations — DWG BY ___ DATE ___
CHK BY ___ DATE ___

THC represented as CH_4

$$\frac{\text{lb } CH_4/hr}{\text{tons of asphalt}/hr} = \text{lb } CH_4/\text{ton of asphalt product}$$

① First find lb CH_4/hr: $\left(ppm = \text{mol } CH_4 / 1\times10^6 \text{ mol AIR}\right)$

$$\boxed{ppm}\ \frac{\text{mol } CH_4}{1\times10^6 \text{ mol AIR}} \times \frac{\text{mol K}}{0.08205 \text{ L-atm}} \times \frac{1 \text{ atm}}{293\ ^\circ K} \times \frac{1 \text{ L}}{1000 \text{ cm}^3} \times$$

$$\frac{(2.54 \text{ cm})^3}{\text{in}^3} \times \frac{(12 \text{ in})^3}{\text{ft}^3} \times \text{scfm}\left(1 - \frac{\%H_2O}{100}\right) \times \frac{60 \text{ min}}{\text{hr}} \times$$

$$\frac{\text{lb } CH_4}{\text{mol } CH_4} \times \frac{1 \text{ lb } CH_4}{454 \text{ g } CH_4} = \text{lb } CH_4/hr$$

simplifying, we obtain:

$$(ppm)\left[\text{scfm}\left(1 - \frac{\%H_2O}{100}\right)\right] \times 2.4907\times10^{-6} = \_\_\_\_ \text{ lb } CH_4/hr$$

The following table summarizes calculations to obtain lb CH_4/ton asphalt:

TEST NO.	ppm_v	SCFM	$\frac{\%H_2O}{100}$	lb CH_4/hr	ton asphalt/hr	lb CH_4/ton asphalt
CVA-DMP-4	224	33047	0.1039	16.522	300	0.0551
CVA-DMP-5	209	30675	0.0983	14.398	300	0.0480
CVA-DMP-6	170	29848	0.1342	10.948	300	0.0365
CVA-DMP-7	279	26738	0.1299	16.254	275	0.0589

AVG ppm_v = 220.5

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX F

FIELD LOG SHEETS

AND

STRIP CHART

MONITORING STATION
INSTRUMENT DATA SHEET

PLANT	CENTRAL VALLEY ASPHALT	DATE	7-16-91	PAGE #	1 of 4
LOCATION	SCRUBBER EXHAUST	TEST #	1 CVA-DMP-4	MODEL 600 USED	NO
ACTIVITY #		HEATED LINE #	1	OTHER EQUIP.	HEATED BOX / PREFILTER
TESTERS	TMRC	B.P.		COMMENTS	ALL HEATED LINES @ 250°F

BECKMAN 402 1000 PPM RANGE

TIME	PARAMETER – UNITS					
	THC PPM					
0750	227					
0755	235					
0800	232					
0805	227					
0810	228					
0815	213					
0820	212					
0825	210					
0830	211					
0835	214					
0840	214					
0845	224					
0850	223					
0855	241					
0900	234					
0905	229					
0910	END					
AVG.	224					

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

MONITORING STATION
INSTRUMENT DATA SHEET

PLANT: CENTRAL VALLEY ASPHALT
LOCATION: SCRUBBER EXHAUST
ACTIVITY #:
TESTERS: TMRC

DATE: 7-16-91
TEST #: 2 CVA-DMP-5
HEATED LINE #: 1
B.P.:

PAGE #: 2 of 4
MODEL 600 USED: NO
OTHER EQUIP.: HEATED BOX/PREFILTER
COMMENTS: ALL HEATED LINES @ 250°F

BECKMAN 402 1000 PPM RANGE

TIME	PARAMETER – UNITS					
	THC PPM					
1005	147					
1010	378					
1015	181					
1020	193					
1025	212					
1030	210					
1035	215					
1040	225					
1045	231					
1050	224					
1055	220					
1100	237					
1105	221					
1110	168					
1115	163					
1120	163					
1125	162					
1130	END					
AVG.	209					

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

MONITORING STATION
INSTRUMENT DATA SHEET

PLANT: CENTRAL VALLEY ASPHALT
LOCATION: SCRUBBER EXHAUST
ACTIVITY #:
TESTERS: [illegible] TM RC

DATE: 7-16-91
TEST #: 3 CVA-DMP-6
HEATED LINE #: 1
B.P.:

PAGE #: 3 of 4
MODEL 600 USED: NO
OTHER EQUIP.: HEATED BOX / PREFILTER
COMMENTS: ALL HEATED LINES @ 250°F

BECKMAN 402 1000 PPM RANGE

TIME	PARAMETER – UNITS					
	THC PPM					
1244	202					
1249	186					
1254	173					
1259	169					
1304	177					
1309	173					
1314	172					
1319	158					
1324	162					
1329	161					
1334	165					
1339	163					
1344	172					
1349	171					
1354	167					
1359	161					
1404	165					
1407	END TEST					
AVG	170					

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

MONITORING STATION
INSTRUMENT DATA SHEET

PLANT: CENTRAL VALLEY ASPHALT
LOCATION: SCRUBBER EXHAUST
ACTIVITY #:
TESTERS: [illegible] TM

DATE: 7-16-91
TEST # (4) CVA-DMP-7
HEATED LINE #: 1
B.P.:

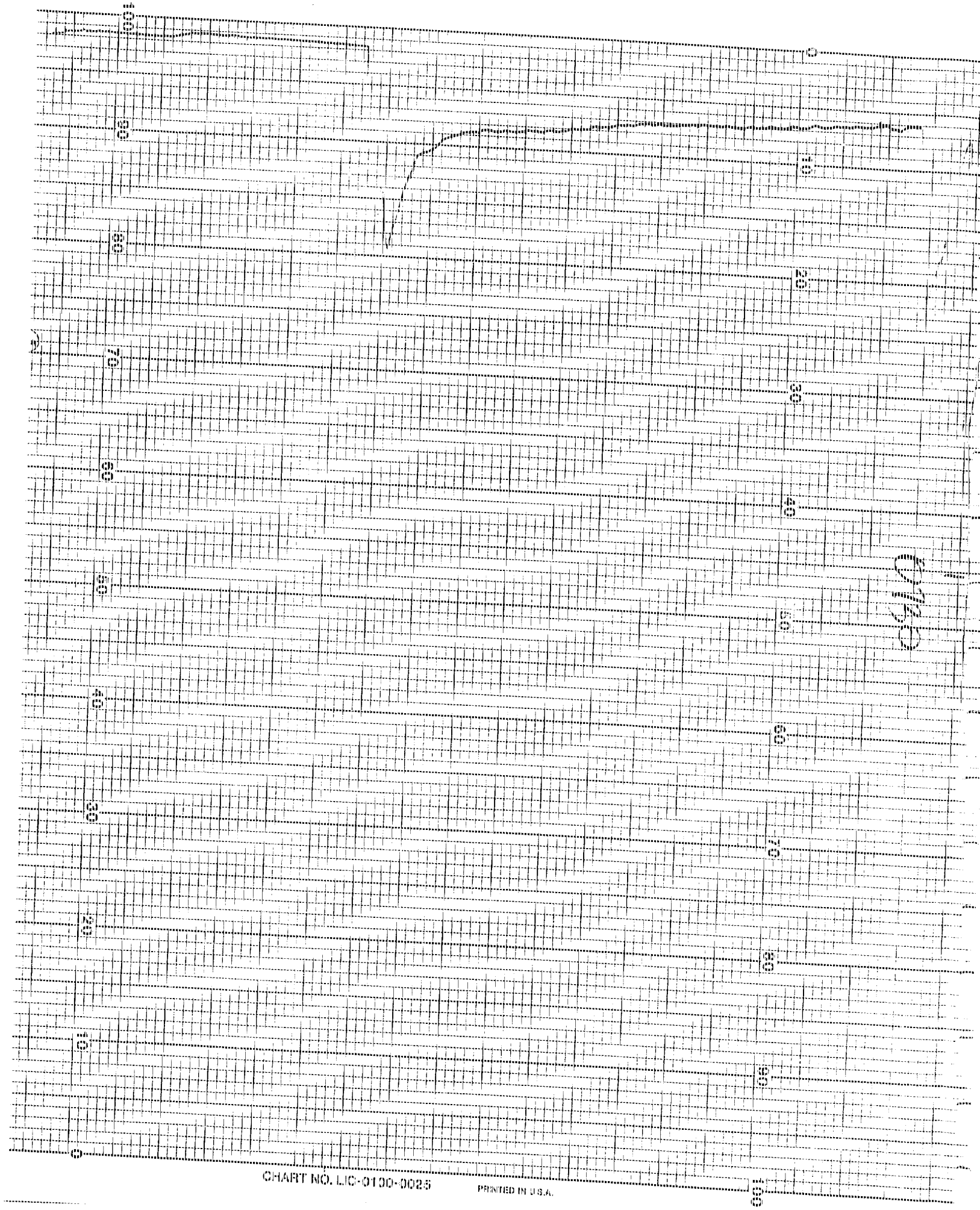
PAGE #: 4 of 4
MODEL 600 USED: NO
OTHER EQUIP.: HEATED BOX/PREFILTER
COMMENTS: ALL HEATED LINES @ 250°F

BECKMAN 402 1000 PPM RANGE

TIME	PARAMETER – UNITS					
	THC PPM					
0920	277					
0925	295					
0930	256					
0935	245					
0940	258					
0945	257					
0950	281					
0955	292					
1000	284					
1005	291					
1010	283					
1015	304					
1020	287					
1025	296					
1030	293					
1035	270					
1040	276					
1045	END TEST 4					
AVG.	279					

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

NO. LIC-0100-0025 PRINTED IN USA.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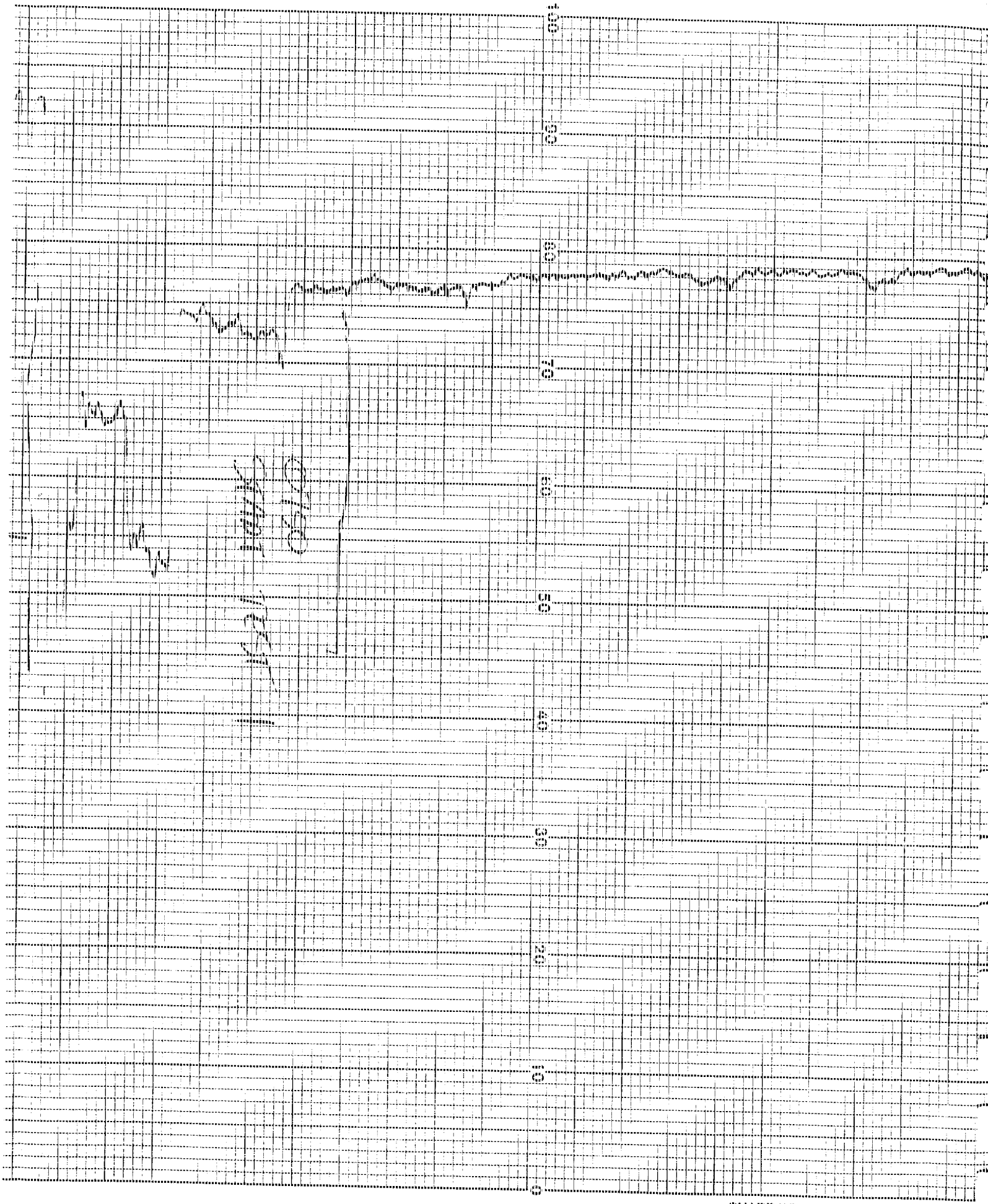
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PRINTED

CHART NO. LIC-0100-0025
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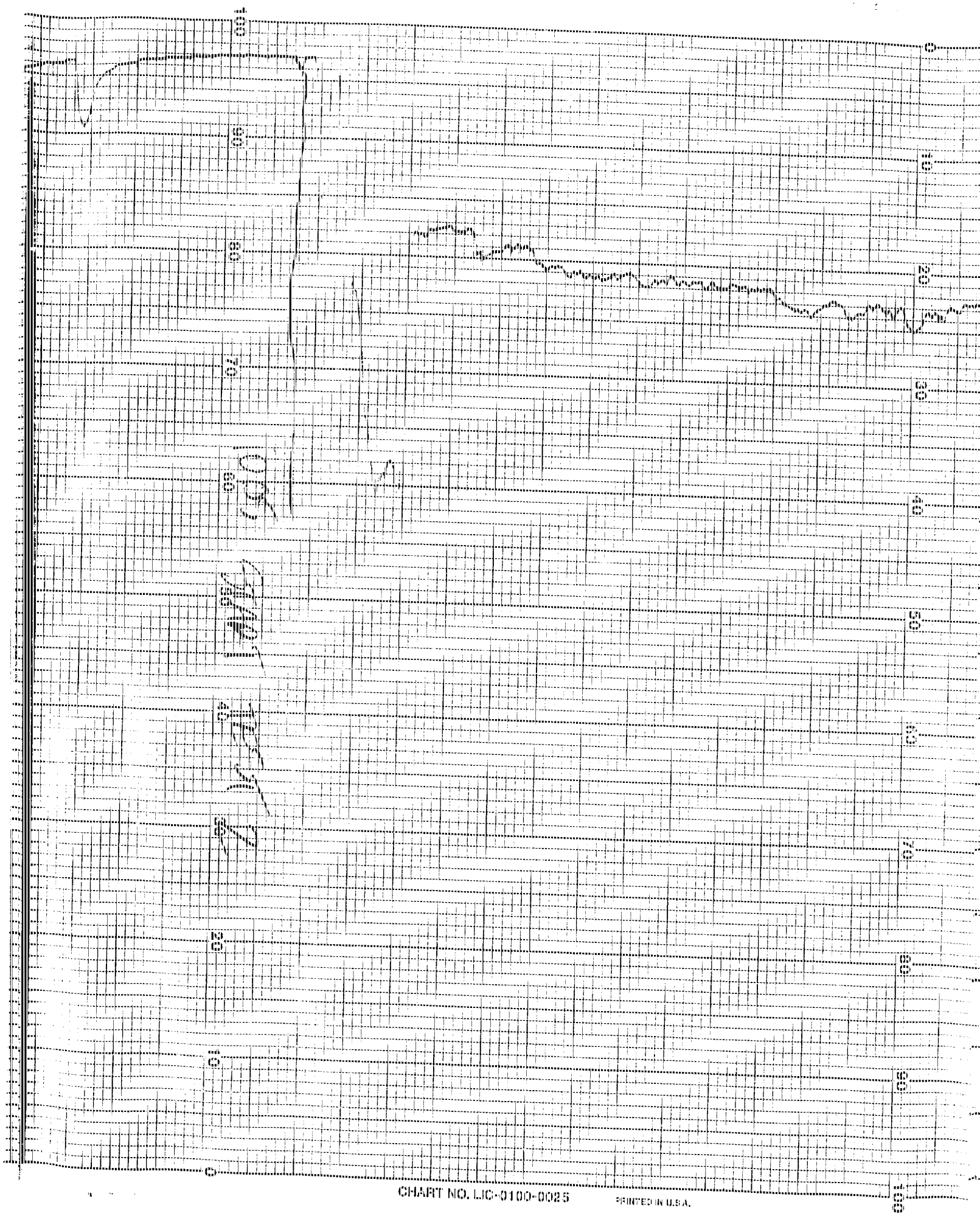
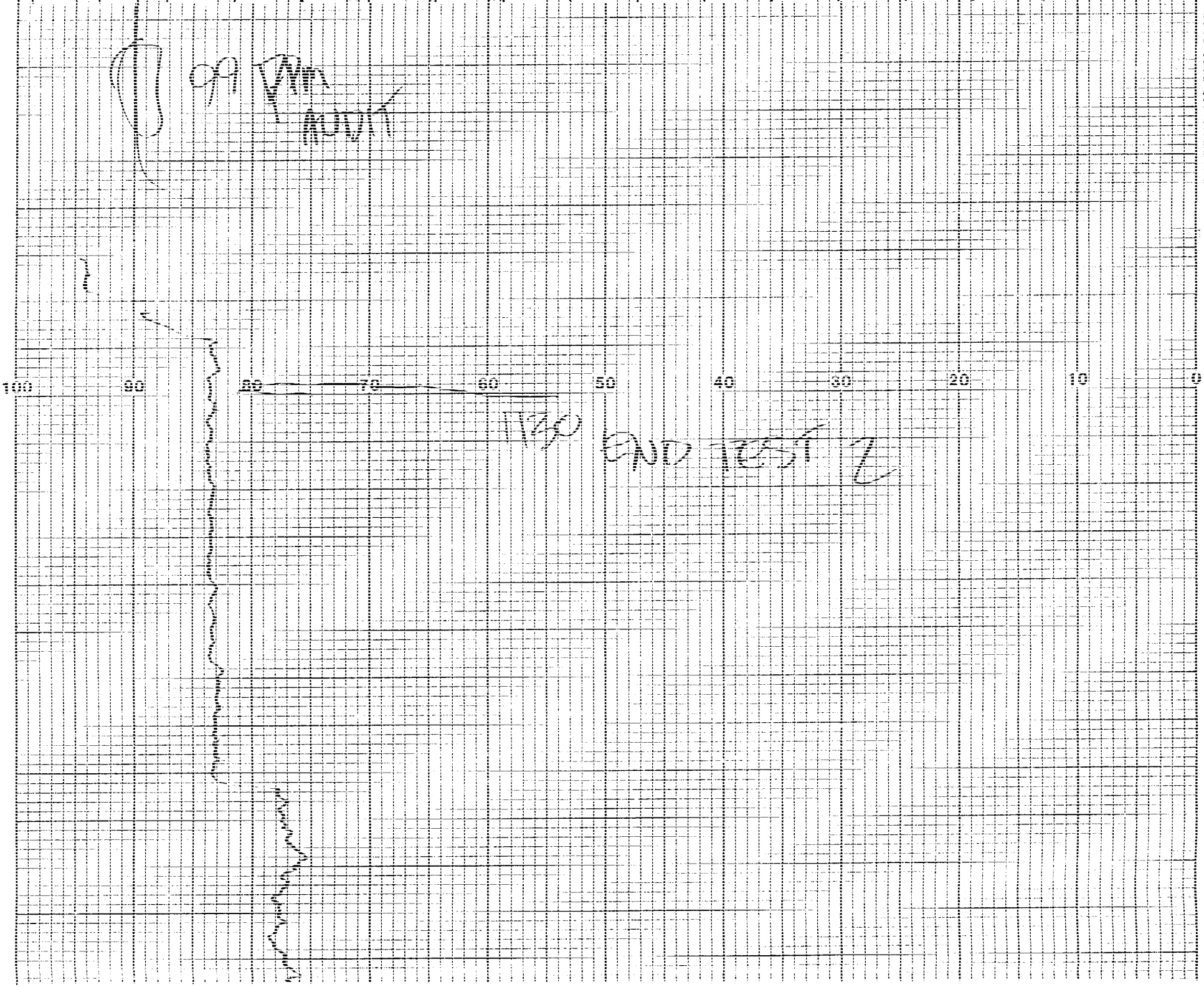
0
10
20
30
40
50
60
70
80
90
100





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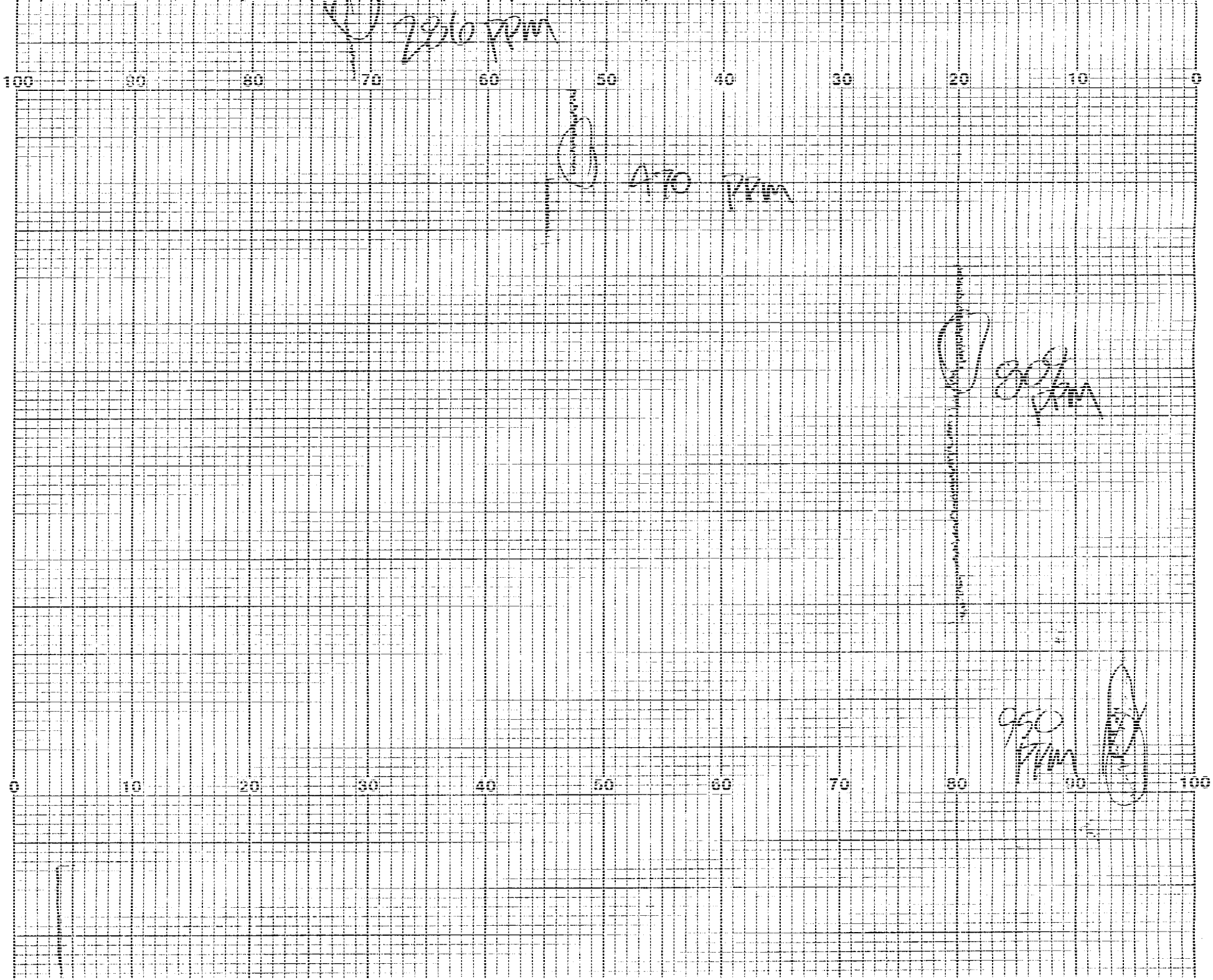
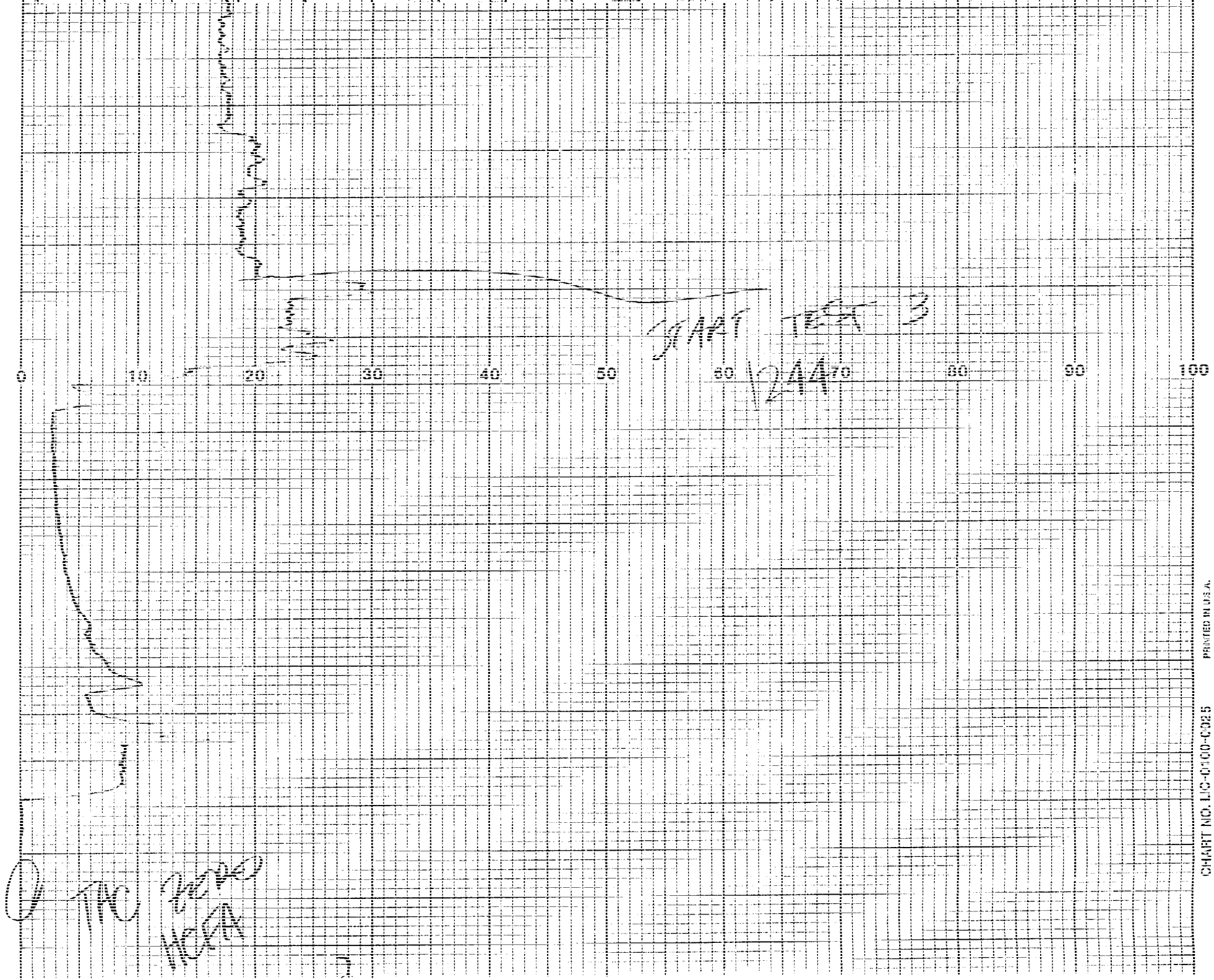

100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100


START TEST 3
1244
0
10
20
30
40
50
60
70
80
90
100
TAC ZERO
HCFA
CHART NO. LIC-0100-0025
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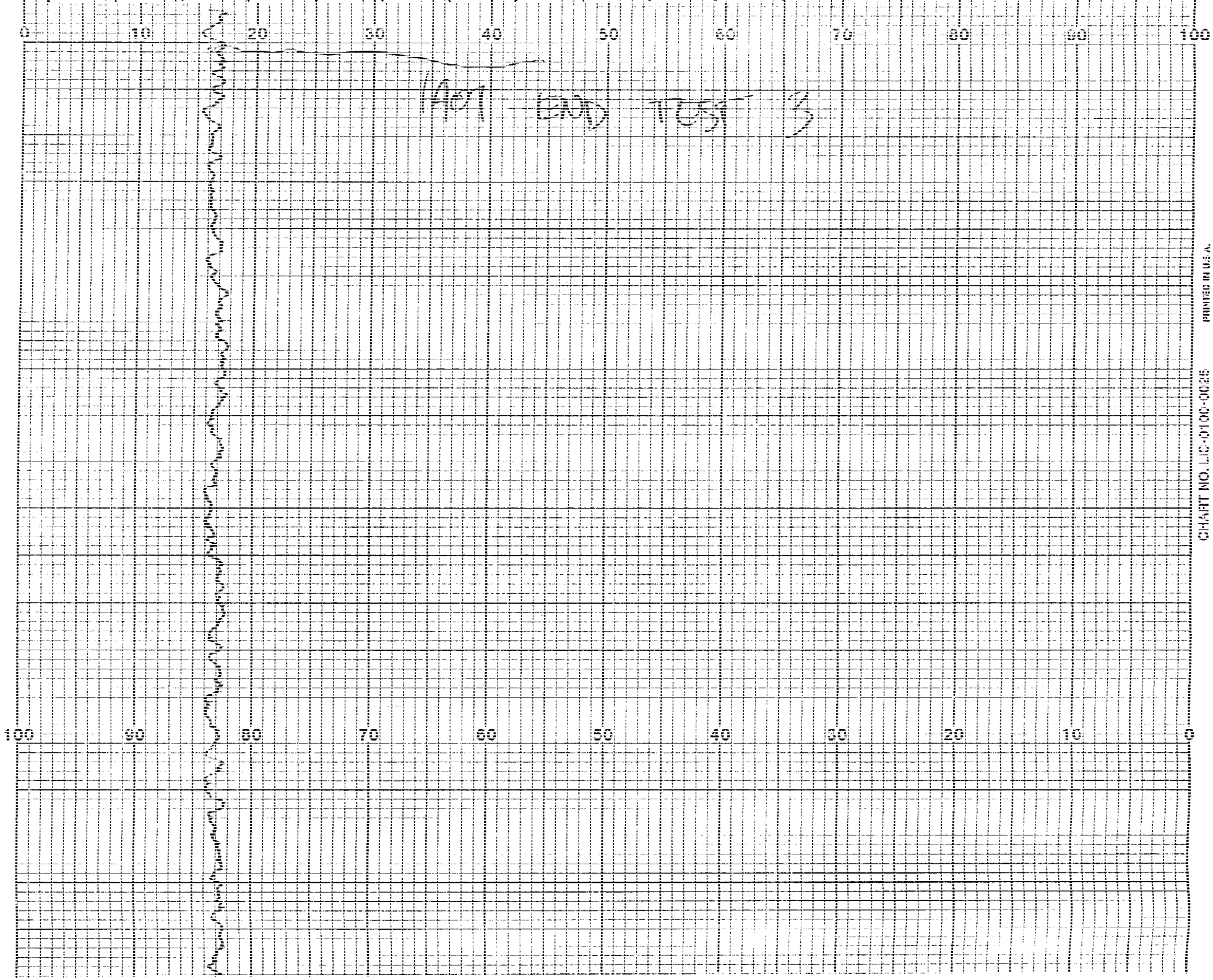
0
10
20
30
40
50
60
70
80
90
100
100
90
80
70
60
50
40
30
20
10
0
PART END TEST 3
CHART NO. LIC-0100-0025
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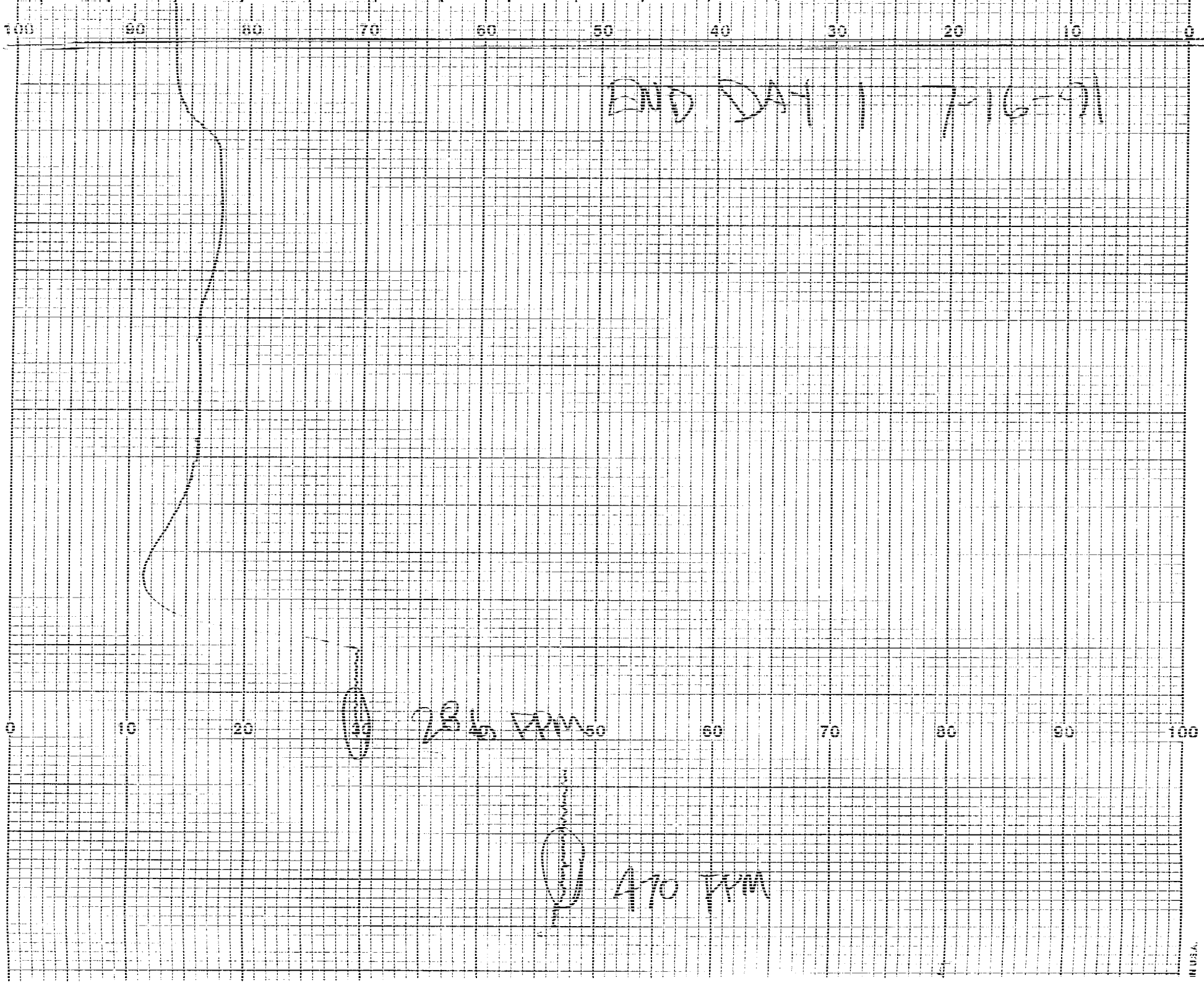
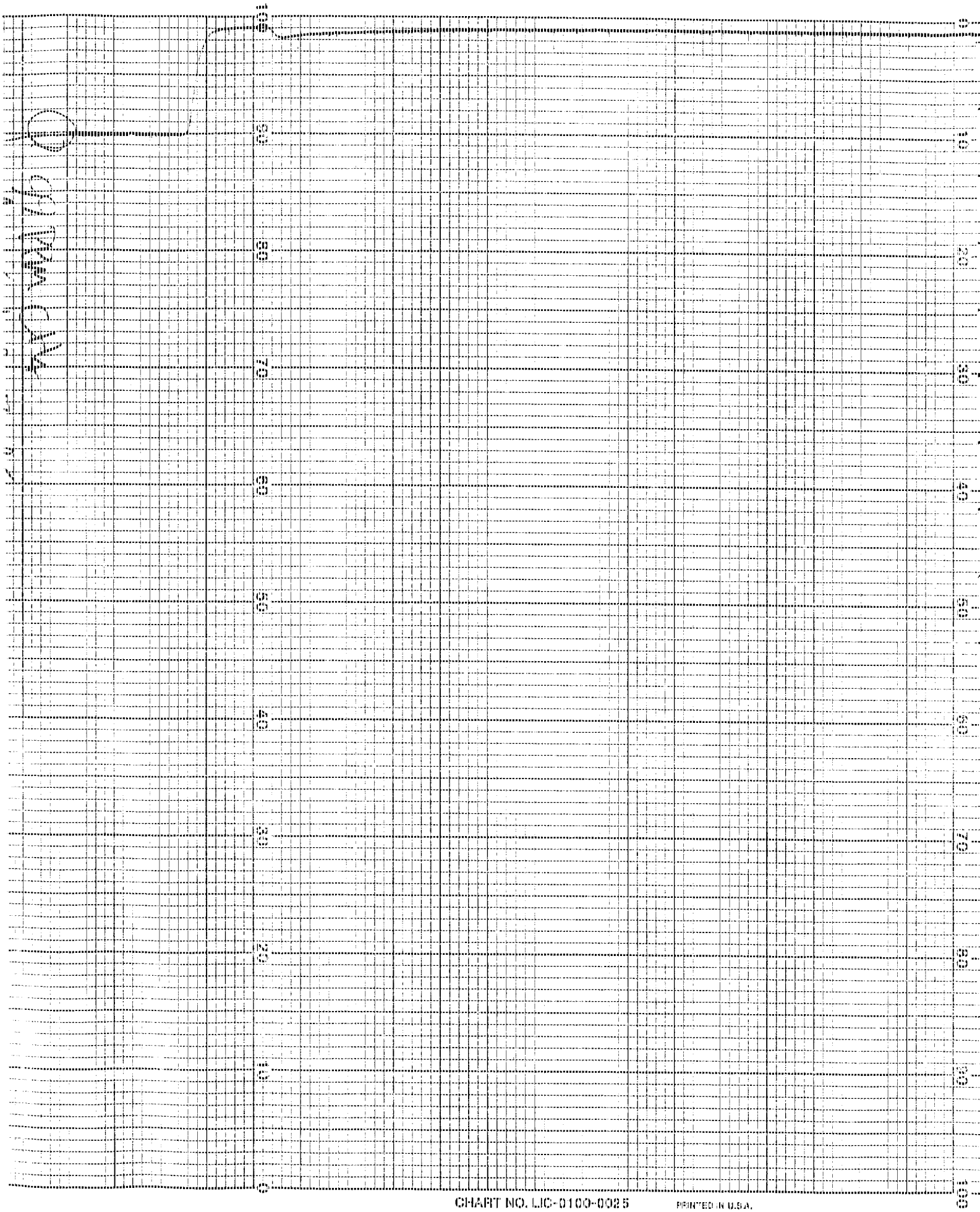
CHART NO. LIC-0100-002
0
10
20
30
40
50
60
70
80
90
100


100
90
80
70
60
50
40
30
20
10
0
END DAY 1 7-16-91
0
10
20
30
50
60
70
80
90
100
286 RPM
470 RPM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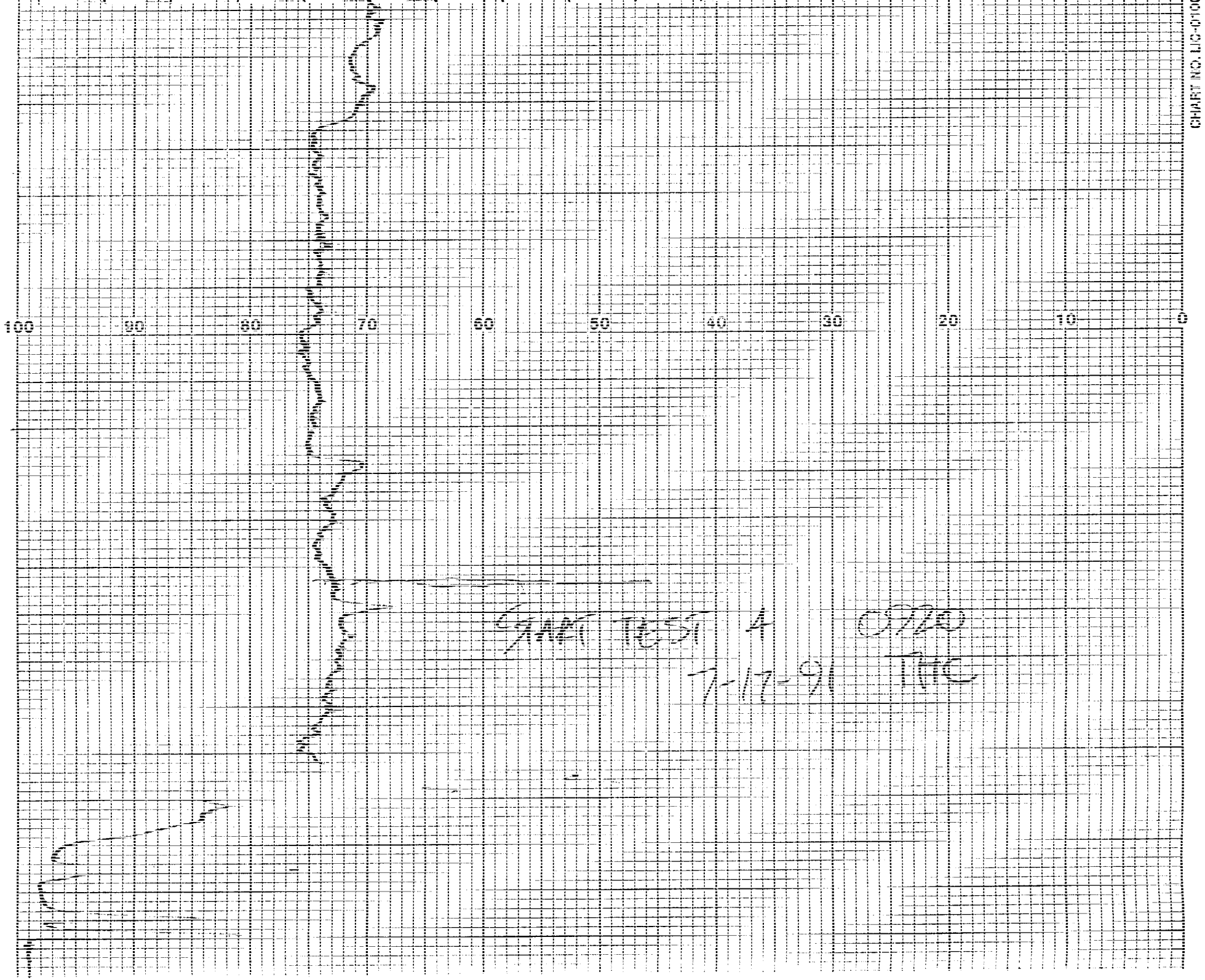
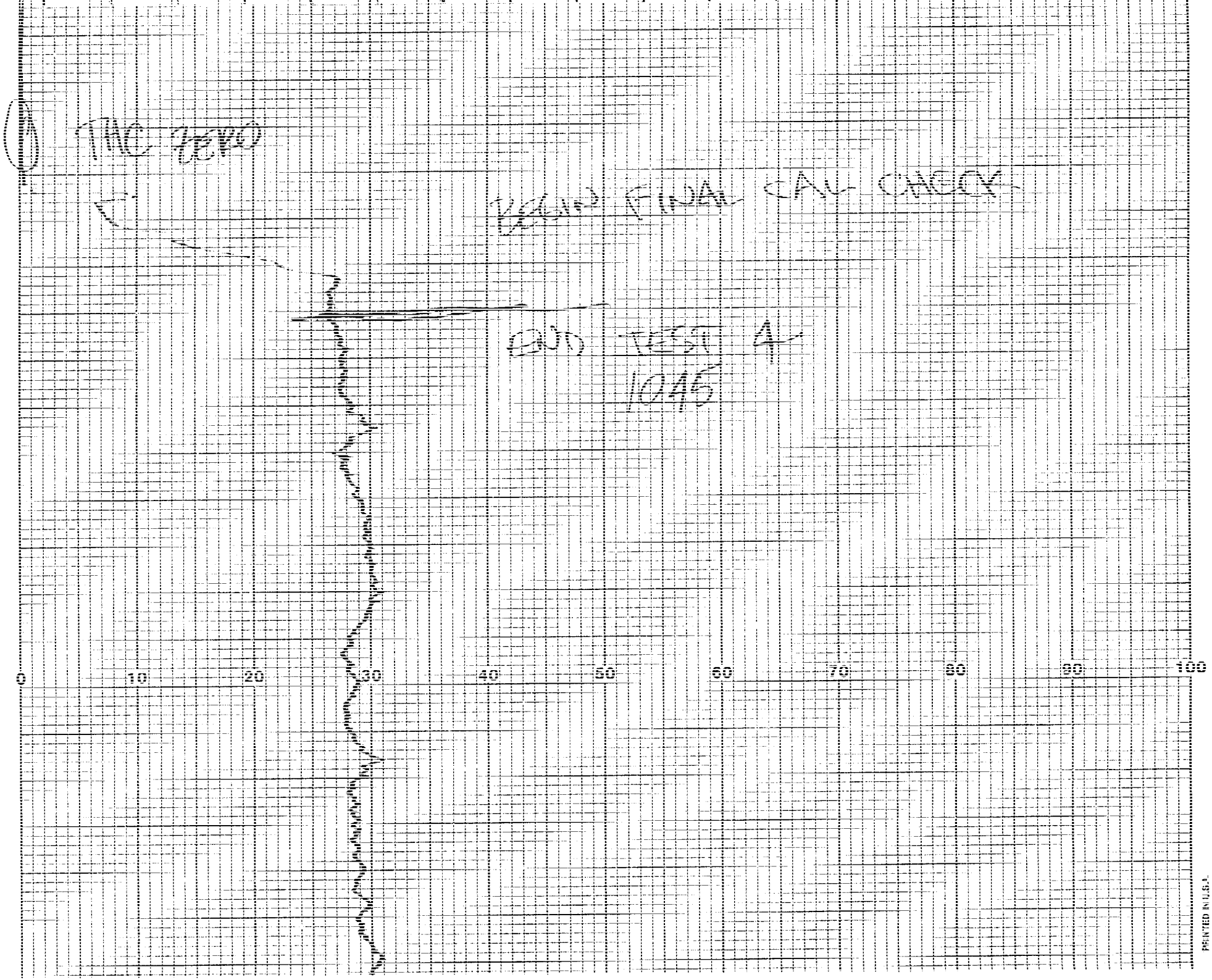

100
90
80
70
60
50
40
30
20
10
0
CHART TEST 4 0920
7-17-91 THC
CHART NO. LIC-0100



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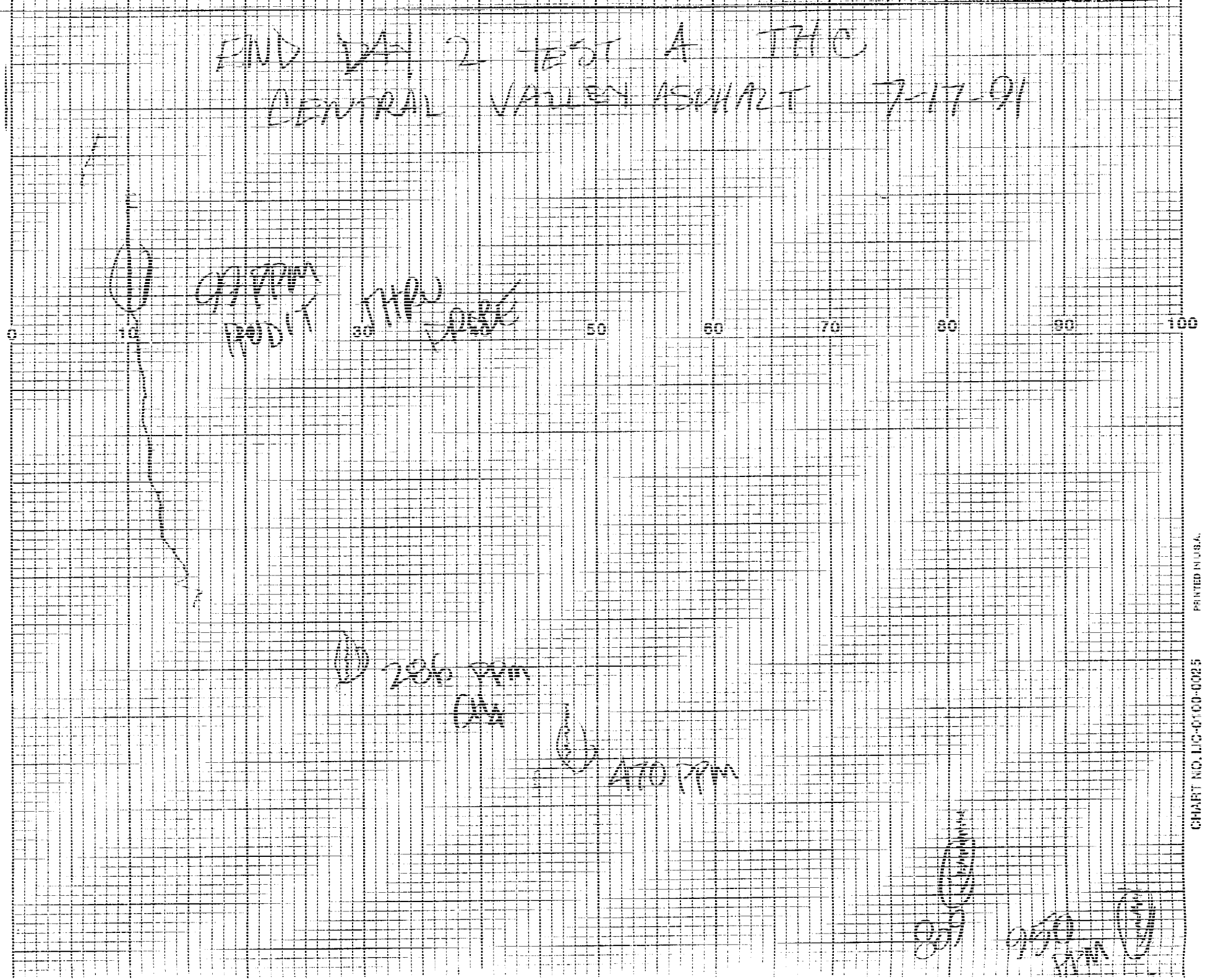
END DAY 2 TEST A THC
CENTRAL VALLEY ASPHALT 7-17-91
0
10
30
50
60
70
80
90
100
PRODUCT
286 PPM
470 PPM
PRINTED IN U.S.A.
CHART NO. LIC-0100-0025

COMPLIANCE TEST PROGRAM

SCRUBBER EXHAUST STACK

GLENN O. HAWBAKER, INC.
CENTRAL VALLEY ASPHALT PLANT
PLEASANT GAP, PENNSYLVANIA

APPENDIX G

VISIBLE EMISSIONS INFORMATION