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
January 26, 1993

Subject: Stack Test Review

To: Data File
Windsor Service
Cumru Township, Berks County

From: Richard St. Louis, Chief
Source Testing Section
Division of Source Testing and Monitoring
Bureau of Air Quality Control

Through: Acting Chief, Division of Source Testing and Monitoring

Windsor Service operates a Cenecor drum mix asphalt facility located in Cumru Township, Berks County. The facility has a design production capacity of 400 tons per hour and the capability of processing up to 30% by weight of recycled asphalt product (RAP).

Cold aggregate is proportioned, according to product specifications, into a drum mixer. The aggregate moves through the inclined drum into a drying zone where heat is supplied through the combustion of propane. The aggregate enters into a mixing zone where heated liquid asphaltic oil is added along with any mineral filler. RAP may be added to the mixture through a recycled aggregate feed collar located at the middle of the drum mixer. The mixed product is discharged into an enclosed slat conveyor transporting the product to heated storage silos.

The effluent from the mixer is ducted to a Cenecor baghouse, Model PB-66PM designed to handle 66,000 ACFM. The material collected by this unit is recycled to the mineral filler silo. The effluent is discharged to the atmosphere from the baghouse through a 48 inch square stack.

United Energy Services conducted particulate and volatile organic compounds (VOC) tests in the stack outlet on October 21-22, 1992. Although the particulate and VOC test runs were conducted in accordance with a preapproved test protocol, they were difficulties associated with the VOC test program, especially with Run No. 2. High moisture content of the effluent resulted in the freezing of the sample trap used to collect the condensible fraction of the VOCs. Although a second trap was substituted, there was an apparent positive bias associated with this substitution as compared with Run Nos. 1 and 3. Therefore, Run No. 2 should not be included in determining the average VOC emission rate. The particulate and VOC test results, other than the test run noted above, are acceptable to the Department.

The following data was extracted from the test report:

Volatile Organic Compounds Emission Test

Test Run No.	Run #1	Run #2	Run #3	Allowable
Test Date	10/22/92	10/22/92	10/22/92	N/A
Emission Rate (lbs/ton)	0.054	0.151	0.072	0.07
Mass Rate (lbs/hr)	15.5	41.6	20.7	N/A

Particulate Emission Tests

Test Run No.	Run #1	Run #2	Run #3	Allowable
Test Date	10/21/92	10/22/92	10/22/92	N/A
Concentration (gr/dscf)	0.011	0.019	0.015	0.02
Mass Rate (lbs/hr)	3.30	5.66	4.23	N/A
Opacity %	0	0	0	N/A

cc: Roger A. Fitterling, Reading District Office
File No. 06-303-024
EPA/RSL
C&E - Jim Benson
Reading File - Source Testing

RSL:pkc

SOURCE SAMPLING REPORT FOR MEASUREMENT

OF PARTICULATE, VOLATILE ORGANIC COMPOUND, AND VISIBLE EMISSIONS

WINDSOR SERVICE, INC.
ASPHALT PLANT - BAGHOUSE EXHAUST

SOUTH READING, PA

UESC, REPORT 015-664-001

NOVEMBER, 1992

Prepared by

United Energy Services Corporation
Air Quality Testing Services
525 Lancaster Avenue
Reading, Pennsylvania 19611

United Energy Services Corporation

The Critical Link.

November 24, 1992

Mr. Gary Burinsky
Windsor Service, Inc.
P.O. Box 13787
Reading, PA. 19612

Re: Submittal of Source Sampling Report For Measurement of Particulate, Volatile Organic Compound and Visible Emissions
UESC Report 015-664-001

Dear Mr. Burinsky:

We are pleased to submit four (4) copies of our Report 015-664-001, dated November 1992. This report contains results of source sampling for particulate, volatile organic compound, and visible emissions as conducted on October 21, 22, and 23, 1992.

The source sampling program defined by this report incorporates standard sampling procedures. The results of the sampling program are representative of flue gas emissions at the baghouse exhaust for the drum mix asphalt plant under referenced operating conditions.

Information contained in this report and the accompanying appendices includes field data, laboratory analysis, and a computer printout of all results developed by the testing program. We have attempted to present this information in a form that is readily discernible and suitable for your continued use.

United Energy Services Corp. is pleased to have been of service to Windsor Service, Inc., and trusts that this report will meet your acceptance.

Very truly yours,

M. Gary Helm
Air Quality Specialist
Air Quality Testing Services

MG/sds

525 Lancaster Avenue, Reading, Pennsylvania 19605
Telephone (215) 375-0351 Telecopy (215) 375-0356
A Subsidiary of the Company

FOREWORD

The source sampling program as defined by this report was confined to the measurement of particulate, volatile organic compound, and visible emissions, and also pertinent flue gas characteristics at the baghouse exhaust serving the asphalt plant. This data was used to determine compliance with applicable Pennsylvania Department of Environmental Resources air pollution control regulations.

In the completion of the EPA Method 25 Volatile Organic Compound sampling there was a problem with the second run. During run number W-V-2, the sample trap that was sitting in dry ice became too cold and froze the sample passing through, cutting off the sample flow completely. We (UESC) elected to replace the sample trap, and completed the run. Where the problem arises, is in the analysis of these two traps. As stated in the letter from Triangle Environmental Services, dated November 18, 1992 (Appendix 4), this analysis was influenced by two factors. These two factors are the bias caused by CO_2 entrapped in ice in the sample traps, and the increased dilution factor as a result of the lower sample volumes, both of which will cause a high bias of the test results. The CO_2 trapped in the ice is reported as part of the total gaseous non-methane organics when the condensible portion of the sample is oxidized and analyzed. The low sample volumes (approximately 2 liters/trap) necessitates a greater dilution factor when analyzing the traps. This greater dilution factor will increase the significance of the high bias on the test results. For these reasons, UESC requests that the results from test W-V-2 be invalidated, and not used when determining compliance.

TABLE OF CONTENTS

Item	Title	Page
TITLE PAGE		
LETTER OF TRANSMITTAL		
FOREWORD		
TABLE OF CONTENTS		
SECTION I - SUMMARY OF TESTS RESULTS		I-1
TABLES AND FIGURES		
SECTION II - ANALYSIS		
1.	Introduction	II-1
2.	Description of Process	II-1
3.	Sampling Program Procedures	II-1
4.	Results	II-1
5.	Discussion	II-2
	5.1 Sampling Conditions	II-2
	5.2 Exhaust Flue Gas Volume and Composition	II-2
	5.3 Unit Operating Conditions	II-2
	5.4 Emissions	II-3
SECTION III - APPENDICES		
1.	Project Participants	
2.	Testing and Analytical Procedures	
3.	Operating Data	
4.	Analytical Results	
5.	Raw Field Data	

TABLE OF CONTENTS (cont'd)

Item	Title	Page
6.	Computer Printouts (Flue Gas Characteristics Isokinetic Calculations, and Test Results for Emissions)	
7.	Calibrations	
8.	Sample Calculations	

SECTION I - SUMMARY OF TEST RESULTS

A summary of test results developed by the source sampling program is presented in Tables 1 and 2. As such, the results are considered representative of the emissions from the asphalt plant baghouse under referenced operating conditions.

The results show that baghouse exhaust had a particulate emission concentration of 0.015 gr/dscf. This is below the allowable emission concentration of 0.02 gr/dscf. The volatile organic compound emission rate is 0.063 lbs/ton of asphalt produced for runs W-V-1 and W-V-3 If run W-V-2 is included, the emission rate is increased to 0.092 lbs/ton of asphalt produced; however, UESC does not feel the data from W-V-2 is an accurate representation of volatile organic compound emissions. It is the opinion of UESC that the VOC compliance determination should be based on the average of test runs W-V-1 and W-V-3 which demonstrate that this source is below the allowable emission concentration.The allowable volatile organic compound emission rate is 0.07 lbs/ton of asphalt produced. The visible emission test results show an average opacity of 0.0%. This is below the allowable limit of 20% opacity.

TABLE 1

SUMMARY OF TEST RESULTS
WINDSOR SERVICE, INC. - SOUTH READING, PA

PARTICULATE AND OPACITY
UESC, REPORT 015-664-001

DATE	10/21/92	10/22/92	10/22/92
LOCATION	BAGHOUSE EXHAUST		
RUN NUMBER	1	2	3
PRODUCTION RATE (tons/hr)	295	282	275
FLOW (DSCFM)	33,634	35,645	32,129
MOISTURE (%)	21.9	22.1	26.2
PARTICULATE			
GR/DSCF	0.011	0.019	0.015
AVERAGE (gr/dscf)		0.015	
ALLOWABLE (gr/dscf)		0.02	
OPACITY			
PERCENT	0.0	0.0	0.0
AVERAGE (%)		0.0	
ALLOWABLE %)		0.0	

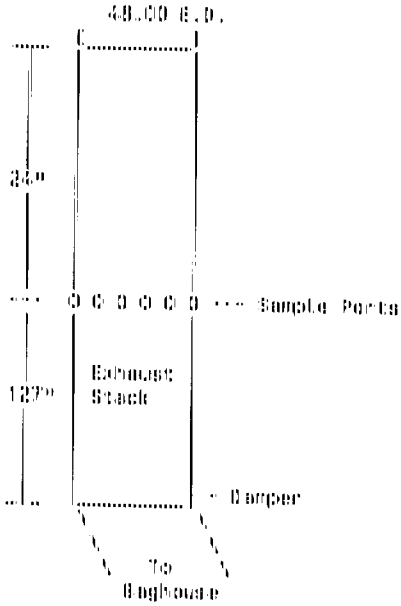
TABLE 2

SUMMARY OF TEST RESULTS
WINDSOR SERVICE, INC - SOUTH READING, PA.

VOLATILE ORGANIC COMPOUNDS
UESC, REPORT 015-664-001

DATE	10/22/92		
LOCATION			
RUN NUMBER	1	2	3
FEED RATE (tons/hr)	235	276	288
FLOW (dscfm)	34,900	34,900	34,900
VOLATILE ORGANIC COMPOUNDS			
LBS/HR	15.5	41.6	20.7
LBS/TON	0.054	0.151	0.072
[a]AVERAGE (lbs/ton)		0.063	
ALLOWABLE (lbs/ton)		0.07	

[a] Average does not include run W-V-2. If W-V-2 is included, the average is 0.092 lbs/ton.



The exhaust stack cross section was divided into 26 equal rectangular elemental areas, with the sample points being located at the centroid of each area.

DIMENSIONS

Depth = 48 inches
Width = 48 inches
Equivalent diameter = 48.00
Area 2304

DISTANCE FROM NEAREST DISTURBANCE

	Downstream	Upstream
Feet & Inches	10 7	2 0
Inches	127	24
Diameters	2.65	0.50

NUMBER OF POINTS (Required) 26
NUMBER OF PORTS 6

POINTS PER PORT 4.00
(If not an integer already, use next largest integer)
POINTS PER PORT (Revised) 4

NUMBER OF POINTS (Actual) 24

TRAVERSE POINT LOCATION

Traverse Point	Distance From Port (Inches)	(% of Duct Depth)
1	6.00	0.125
2	18.00	0.375
3	30.00	0.625
4	42.00	0.875

FIGURE 1

LOCATION OF TRAVERSE POINTS AND SAMPLE PORTS
ASPHALT PLANT BAGHOUSE EXHAUST
WINDSOR SERVICE, INC. - SOUTH READING PLANT

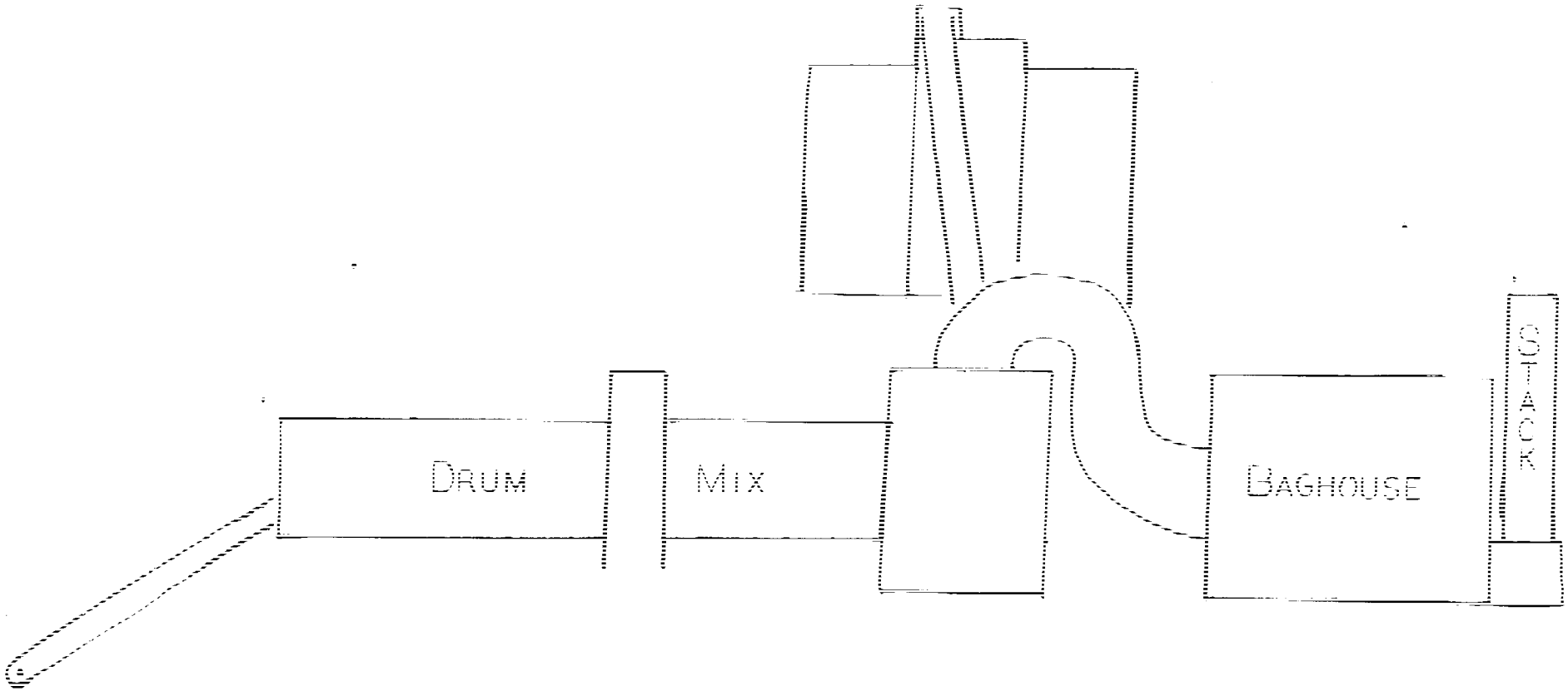


FIGURE 2

Process Flow Diagram

SECTION II - ANALYSIS

1. Introduction

The data presented in this report represents the results of a compliance source sampling program for the determination of particulate, volatile organic compound, and visible emissions, and also pertinent flue gas characteristics at the baghouse exhaust serving the asphalt plant.

Specific requirements of this source sampling program include the following:

a. Identification of particulate emissions expressed as a concentration (gr/dscf) and an emissions rate (lbs/hr).

b. Identification of volatile organic emissions expressed as an emission rate (lbs/hr) and (lbs/ton of asphalt produced).

c. Identification of visible emissions expressed as a percent opacity.

d. Average flue gas temperature, moisture, and volume of flow at the sampling location.

e. Orsat analysis of flue gas O_2 and CO_2 concentration at the sampling location.

The sampling program was completed on October 21, 22, and 23, 1992 by the G/C, Inc./UESC field test crew, with the assistance of personnel assigned by Windsor Service.

2. Description of Process

The Windsor Service South Reading plant has one drum mix asphalt plant in operation. During testing, the plant was producing a top coat utilizing recycled asphalt products in the mix. Exact operating data may be found in Appendix III. Emissions from the drum mix traveled through the baghouse, the fan, and then out the exhaust stack.

Figure 2 represents a process flow diagram for the asphalt plant.

3. Sampling Program Procedures

Three particulate tests were conducted utilizing EPA Method 5 modified to meet PADER requirements.

Three volatile compound tests were conducted utilizing EPA Method 25.

Three visible emission tests were conducted according to EPA Method 9.

The location and number of sampling ports and traverse points are detailed in Figure 1.

4. Results

Test data developed by the test runs, together with analytical results from the laboratory analysis of samples generated by the field sampling program, are reproduced in the Appendices included with this report. Information on basic gas characteristics developed by the test runs are located in the printouts included as Appendix V.

A summary of pertinent test results and essential information to evaluate test results are included within this report as Tables 1 and 2.

5. Discussion

5.1 Sampling Conditions

During the completion of this test program, there were a few interruptions in the operation of certain test trains.

During Test W-P-2, a ten minute delay occurred in the first port as a result of tripping a breaker which caused a power loss at the control console.

During Test W-V-2, there was a one hour, twenty-five minute delay owing to the clogging of the sample trap. This trap was subsequently replaced and the test resumed.

During Test W-V-3, there was a five minute delay to thaw the sample trap. Also, there was a one hour, twelve minute delay as a result of an operational stoppage at the asphalt plant.

5.2 Exhaust Flue Gas Volume and Composition

Test data for measurement of exhaust flue gas volume and related velocities developed by traversing of the stack show that the measured gas volumes during the tests were consistent with expected values. For the purposes of this report, indicated emissions are based on this measured gas volume.

5.3 Unit Operating Conditions

This sampling program was undertaken as a compliance test program for the drum mix asphalt plant exhaust. In the execution of this program, all applicable operating conditions were referenced. An attempt was made to operate the plant at normal conditions while producing a top coat utilizing recycled asphalt products in the mix. Operating conditions were monitored throughout the duration of the sampling program by Windsor Service personnel.

5.4 Emissions

The reported particulate emissions, as summarized in Table 1, are expressed as a concentration (gr/dscf) and an emission rate (lbs/hr) as measured. The reported volatile organic compound emissions as summarized in Table 2 are expressed as rate (lbs/hr) and (lbs/ton of asphalt produced) as measured. The reported visible emissions as summarized in Table 1 are expressed as opacity (percent).

SECTION III

APPENDICES

SECTION III - APPENDICES

Table of Contents

1. Project Participants

2. Testing and Analytical Procedures

3. Operating Data

   3.1 October 21

   3.2 October 22

   3.3 October 23

4. Analytical Results

   4.1 Particulate

   4.2 Volatile Organic Compounds

5. Raw Field Data

   5.1 Particulate

   5.2 Volatile Organic Compounds

   5.3 Visible Emissions

6. Test Results

   6.1 Particulate

   6.2 Volatile Organic Compounds

   6.3 Visible Emissions

7. Calibration Data

8. Sample Calculations

APPENDIX I

PROJECT PARTICIPANTS

APPENDIX I

PROJECT PARTICIPANTS

The following members of the G/C, Inc./UESC staff participated in the planning and execution of this project and the preparation of this report.

UESC Crew

George Albright	Senior Engineering Technician
Gary Helm	Air Quality Specialist
Eric Roland	Air Quality Specialist

Laboratory Participants

Vaughn O'Neill	SSM Laboratories
Wayne Stallings	Triangle Environmental Services

APPENDIX II

TESTING AND ANALYTICAL PROCEDURES

APPENDIX D

TESTING AND ANALYTICAL PROCEDURES

Particulate	Method 5
Visible	Method 9
Volatile Organic Compounds	Method 25

Methods appear in entirety in Title 40 of the Code of Federal Regulations (CFR), Part 60, Appendix A.

APPENDIX III

OPERATING DATA

APPENDIX III

OPERATING DATA

3.1 October 21

3.2 October 22

3.3 October 23

APPENDIX III

OPERATING DATA

3.1 October 21

```
  RCT1   METERED
  4.0
  0.00   4.21
 (ACT1              4.21 %
 (REG)              4.20 %
 ------------------------------------------------------------------------------------------------------------------------

 30                 79LDS  1RCTS  30FLS                                                    10:30:37   10/21/92
 ------------------------------------------------------------------------------------------------------------------------
 4 277TPH 304F 1947CDS 4.203mm 305F [4.0321+ 0.03823
   VIS    3AP    +AC    BIN1   BIN2   BIN3   BIN4   BIN5   BIN6   BIN7   RCT1   HPL1   DUST
   2.1    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
   256    0      11.7   38     35     0      190    0      0      0      0      11     4
   95.9   0.0    4.20   14.1   13.0   0.0    68.0   0.0    0.0    0.0    0.0    4.1
   95.8   0.0    4.20   13.9   13.0   0.0    68.0   0.0    0.0    0.0    0.0    4.1
   2550.7 146.3  321.46 665.3  451.0  0.0    944.9  732.7  0.0    0.0    141.5  107.7  0.0
 (sm 0) (A/C 0) (Vacuum 0) (Vacuum 0) (Divert 0) (Dust 0)
 ------------------------------------------------------------------------------------------------------------------------
 ***CS:
 # 60F     0.62
 * ADDED    4.22
 *          4.14
   RCT1   METERED
   4.0
   0.00   4.22
 (ACT1              4.22 %
 (REG)              4.20 %
 ------------------------------------------------------------------------------------------------------------------------

 30                 79LDS  1RCTS  13FLS                                                    10:35:39   10/21/92
 ------------------------------------------------------------------------------------------------------------------------
   277TPH 309F 1577CDS 4.203mm 305F [4.0321+ 0.03823
   VIS    3AP    +AC    BIN1   BIN2   BIN3   BIN4   BIN5   BIN6   BIN7   RCT1   HPL1   DUST
   2.1    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
   259    0      11.3   39     36     0      188    0      0      0      0      11     6
   95.9   0.0    4.20   14.1   13.0   0.0    68.0   0.0    0.0    0.0    0.0    4.1
   95.6   0.0    4.20   14.2   13.1   0.0    68.4   0.0    0.0    0.0    0.0    4.1
   2550.0 146.3  321.46 669.1  456.0  0.0    961.0  732.7  0.0    0.0    141.5  108.7  0.0
 (sm 0) (A/C 0) (Vacuum 0) (Vacuum 0) (Divert 0) (Dust 0)
 ------------------------------------------------------------------------------------------------------------------------
 ***CS:
 # 60F     0.62
 * ADDED    4.18
 *          4.14
   RCT1   METERED
   4.0
   0.00   4.18
 (ACT)              4.19 %
 (REG)              4.20 %
 ------------------------------------------------------------------------------------------------------------------------

 30                 79LDS  1RCTS  13FLS                                                    10:40:44   10/21/92
 ------------------------------------------------------------------------------------------------------------------------
 4 277TPH 302F 1917CDS 4.203mm 305F [4.0321+ 0.03823
   VIS    3AP    +AC    BIN1   BIN2   BIN3   BIN4   BIN5   BIN6   BIN7   RCT1   HPL1   DUST
   2.1    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
   255    0      11.6   39     36     0      190    0      0      0      0      11     6
   95.9   0.0    4.20   14.1   13.0   0.0    68.0   0.0    0.0    0.0    0.0    4.1
   95.9   0.0    4.20   14.1   13.0   0.0    68.7   0.0    0.0    0.0    0.0    4.0
   2572.0 146.3  322.44 672.3  457.0  0.0    977.0  732.7  0.0    0.0    141.5  109.7  0.0
 (sm 0) (A/C 0) (Vacuum 0) (Vacuum 0) (Divert 0) (Dust 0)
 ------------------------------------------------------------------------------------------------------------------------
 ***CS:
```

```
      DCH2    DETERMD
 AC   4.0
      0.00    4.19
ORL  (ACT)                4.19 1
 R   (DES)                4.20 1
```

```
 TION                    73105  10CTS  10FLS                                                    10:45:43   30/21/92
 ..........................................................................................................
 ITE 276TPH 306F 23470DS 4.20Amac 305F 14.0001- 0.00021
      VIR    RAP    -AC    DCH1   DCH2   DCH3   DCH4   DCH5   DCH6   DCH7   DCT1   DFL1   DUST
 E    2.1    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
 E    257    0      11.6   39     35     0      389    0      0      0      0      11     6
      95.9   0.0    4.20   14.1   13.0   0.0    68.0   0.0    0.0    0.0    0.0    6.1
      95.0   0.0    4.20   14.2   13.0   0.0    68.6   0.0    0.0    0.0    0.0    6.1
 ..L  2594.7 146.3  123.42 675.6  460.1  0.0    953.1  732.7  0.0    0.0    341.5  110.6  0.0
 ...Amp 00  (L/C 00  (Vacuum 00  (Encoder 00  (Divert 00  (Dust 00
 ..........................................................................................................
 ISTICS:
 SAL 0 60F     0.62
 * AC ADDED    4.20
 . K           4.19
      DCH1    DETERMD
 . AC   4.0
      0.00    4.20
 ...L (ACT)                4.21 1
 ORL  (DES)                4.20 1
```

```
 ATION                   73105  10CTS  10FLS                                                    10:50:05   30/21/92
 ..........................................................................................................
  16 272TPH 302F 23770DS 4.20Amac 305F 14.0001- 0.00021
      VIR    RAP    -AC    DCH1   DCH2   DCH3   DCH4   DCH5   DCH6   DCH7   DCT1   DFL1   DUST
 RE   2.1    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
 .    275    0      11.2   41     38     0      201    0      0      0      0      11     6
      95.9   0.0    4.20   14.1   13.0   0.0    68.0   0.0    0.0    0.0    0.0    6.1
 .    96.1   0.0    4.20   14.2   12.9   0.0    68.9   0.0    0.0    0.0    0.0    3.0
 ..L  2615.0 146.3  124.39 470.9  463.1  0.0    1009.2 732.7  0.0    0.0    141.5  111.6  0.0
  Amp 00  (L/C 00  (Vacuum 00  (Encoder 00  (Divert 00  (Dust 00
 ..........................................................................................................
 STICS:
  . 0 60F     0.62
 . AC ADDED    4.15
 . K           4.19
      DCH1    DETERMD
 . AC   4.0
      4.00    4.15
 . . (ACT)                 4.15 1
 . . (DES)                 4.20 1
```

```
 . ION                   73106  10CTS  10FLS                                                    10:55:07   30/21/92
 ..........................................................................................................
 DCH 297TPH 305F 23470DS 4.20Amac 306F 14.0001- 0.00021
      VIR    RAP    -AC    DCH1   DCH2   DCH3   DCH4   DCH5   DCH6   DCH7   DCT1   DFL1   DUST
 .    2.1    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
 TE   203    0      12.3   43     39     0      207    0      0      0      0      11     7
      95.9   0.0    4.20   14.1   13.0   0.0    68.0   0.0    0.0    0.0    0.0    6.1
 .    96.0   0.0    4.20   14.2   13.0   0.0    68.7   0.0    0.0    0.0    0.0    3.9
 .ORL 2640.3 146.3  125.41 402.4  466.4  0.0    1026.3 732.7  0.0    0.0    341.5  111.6  0.0
 .. Amp 00  (L/C 00  (Vacuum 00  (Encoder 00  (Divert 00  (Dust 00
 ..........................................................................................................
 ..STICS:
```

```
 .0
 0.00    4.16
 (TB)                4.17 K
 B)                  4.20 K
```

```
                    70X05  10C75  10PL5                                          11:00:49   10/21/92
 ------------------------------------------------------------------------------------------------------
320TPB 307F 207T0N5 4.200kmc 306F [4.0KB]= 0.03323
 B    RAP    +6C    BXD1   BXD2   BXD3   BXD4   BXD5   BXD6   BXD7   BCT1   BPL1   BCB5
 1    0.0           5.4    6.6    2.8    0.6    1.0    0.0    0.0    6.4
292   0      13.3   43     40     0      21.4   0      0      0      0      1.2    6
 .9   0.0    4.20   14.1   13.0   0.0    63.0   0.0    0.0    0.0    0.0    4.1
 .9   0.0    4.20   14.0   13.0   0.0    69.0   0.0    0.0    0.0    0.0    4.1
.564.8 346.3  126.49 406.1  459.7  0.0    1044.0 732.7  0.0    0.0    146.5  133.6  0.0
 0)  (6/C 0)  (Uncale 0)  (Uncale 0)  (Divert 0)  (Dual 0)
 ------------------------------------------------------------------------------------------------------
 50P     8.62
 DEB     4.10
         4.14
 BCT1    3E3DB3D
 0
 00      4.10
 0.20                4.10 K
 B$0)                4.20 K
```

```
                    70X05  10C75  10PL5                                          11:01:54   10/21/92
 ------------------------------------------------------------------------------------------------------
 3PB 335P 3340T0N5 4.200kmc 306F [4.0KB]= 0.03323
TIR    RAP    +6C    BXD1   BXD2   BXD3   BXD4   BXD5   BXD6   BXD7   BCT1   BPL1   BCB5
 1     0.0           5.0    6.6    2.8    0.6    1.0    0.0    0.0    6.4
 1     0      13.1   43     40     0      21.5   0      0      0      0      1.2    6
95.9   0.0    4.20   14.1   13.0   0.0    60.5   0.0    0.0    0.0    0.0    4.3
95.9   0.0    4.20   13.0   13.0   0.0    59.0   0.0    0.0    0.0    0.0    4.0
 9.6 346.3  127.60 409.7  473.1  0.0    1062.0 732.7  0.0    0.0    141.5  134.7  0.0
 0)  (6/C 0)  (Uncale 0)  (Uncale 0)  (Divert 0)  (Dual 0)
 ------------------------------------------------------------------------------------------------------
  P      8.62
50DEB     4.27
          4.14
  T1      3E3DB3D
 0
 0.00     4.27
 0.20                4.27 K
 0.20                4.20 K
```

```
                    70X05  10C75  10PL5                                          11:10:33   10/21/92
 ------------------------------------------------------------------------------------------------------
3 TPB 332P 3400T0N5 4.200kmc 307F [4.0KB]= 0.03323
7     RAP    +6C    BXD1   BXD2   BXD3   BXD4   BXD5   BXD6   BXD7   BCT1   BPL1   BCB5
3.2   0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    5.4
290   0      13.2   50     37     0      0      334    0      0      0      12     7
5 4   9.6    0.00   10.9   30.5   0.0    0.0    49.0   0.0    0.0    9.6    3.5
9.4   0.0    0.20   30.5   20.3   0.0    0.0    94.7   0.0    0.0    0.0    4.5
2734.3 346.3  130.70 493.7  496.0  0.0    1074.0 736.4  0.0    0.0    141.5  115.7  0.0
 0)  (6/C 0)  (Uncale 0)  (Uncale 0)  (Divert 0)  (Dual 0)
 ------------------------------------------------------------------------------------------------------
```

```
   HCPT    HCHHHHD
...  4.0
     0.30    4.40
   (ACT)                4.75 %
   (HEG)                4.80 %
```

```
 OH                    73.1DS  18CYS  10FLS                                                    11:31:02   10/21/93
```

```
1030 3903TPH 300F 997CONS 4.00Smac 3077 (4.0001+ 0.0002)
    VIR    RAP    +AC    0301   0302   0303   0304   0305   0306   0307   RCT1   HFL1   DUST
    3.2    5.4           5.0    6.5    2.0    0.6    1.0    0.0    0.0    6.4
    253    29     13.4   58     56     0      0      153    0      0      29     10     5
    86.0   9.6    4.80   10.5   18.5   0.0    0.0    49.8   0.0    0.0    9.6    3.5
    86.0   9.6    4.80   10.9   18.5   0.0    0.0    49.3   0.0    0.0    9.6    3.5
    3801.3 155.6  131.23 522.9  496.0  0.0    1074.8 700.0  0.0    0.0    151.4  119.4  0.0
 (Pmm 0) (A/C 0) (Vscale 0) (Hscale 0) (Divert 0) (Count 0)
```

```
.SCCS:
 0 60F      8.52
 S ADDED    4.42
 T          4.15
    RCT1    METERED
    4.0
    0.38    4.42
 (ACT)                6.01 %
 (HEG)                6.00 %
```

```
TICH                   78.3DS  18CYS  10FLS                                                    11:36:06   10/21/93
```

```
 30 2967TPH 300F 1207CONS 4.00Smac 3077 (4.0001+ 0.0002)
    VIR    RAP    +AC    0301   0302   0303   0304   0305   0306   0307   RCT1   HFL1   DUST
    3.2    5.4           5.0    5.6    2.0    0.6    1.0    0.0    0.0    6.4
    255    26     13.0   58     57     0      0      153    0      0      29     10     7
    86.0   9.5    4.80   18.5   18.5   0.0    0.0    49.8   0.0    0.0    9.5    3.5
    86.9   9.5    4.80   18.7   18.4   0.0    0.0    49.6   0.0    0.0    9.5    3.4
    2922.9 158.0  134.36 517.7  500.8  0.0    1074.8 500.9  0.0    0.0    153.9  120.3  0.0
 (Pmm 0) (A/C 0) (Vscale 0) (Hscale 0) (Divert 0) (Count 0)
```

```
   TCS:
 0 60F      9.62
 AC ADDED   4.40
 T          4.15
    RCT1    METERED
 AC 4.0
    0.35    4.40
 (ACT)                4.75 %
 (HEG)                4.80 %
```

```
T...H                  78.0DS  18CYS  10FLS                                                    11:43:06   10/21/93
```

```
 0 3067TPH 300F 1507CONS 4.00Smac 3077 (4.0001+ 0.0002)
    VIR    RAP    +AC    0301   0302   0303   0304   0305   0306   0307   RCT1   HFL1   DUST
    3.2    5.4           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.6
    252    20     13.5   56     56     0      0      152    0      0      29     10     7
    86.5   9.6    4.80   10.5   18.9   0.0    0.0    49.0   0.0    0.0    9.6    3.5
    86.7   9.6    4.80   10.6   18.5   0.0    0.0    49.7   0.0    0.0    9.6    3.5
    2840.7 160.3  135.48 522.5  505.6  0.0    1074.0 513.8  0.0    0.0    156.4  131.3  0.0
 (Pmm 0) (A/C 0) (Vscale 0) (Hscale 0) (Divert 0) (Count 0)
```

```
 SCCS:
```

0.36 4.00

ACCUM. (LBS) 4.77 %

ACCUM. (BBLS) 4.00 %

DURATION 78LBS 10GPS 10PLS 11:06:00 10/21/93

---

0 01:30 300TPH 31.F 375TONS 4.00Gmm 30PF (4.0131.> 0.03323

	VIB	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCT1	BPL1	DUST
STURE	3.2	6.4		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
RATE	236	26	13.5	50	57	0	0	151	0	0	29	10	6
1	86.0	9.6	4.80	18.5	18.5	0.0	0.0	69.0	0.0	0.0	9.6	3.5	
1	86.0	9.6	4.80	18.9	18.5	0.0	0.0	69.3	0.0	0.0	9.6	3.5	
TOTAL	2866.3	162.7	136.61	527.3	510.4	0.0	1070.0	826.7	0.0	0.0	156.9	122.1	0.0

Grm=(Bins 0) (A/C 0) (Pscale 0) (Sscale 0) (Dwort 0) (Dust 0)

STATISTICS:

LB/GAL @ 60F 8.62

ASPH AC ADDED 4.49

TOTAL % 4.15

	BCT%	METERED
ASPH. AC	4.0	
	0.39	4.49

ACCUM. (ACT) 4.85 %

ACCUM. (BBL) 4.50 %

DURATION 78LBS 10GPS 10PLS 11:51:10 10/21/93

---

3 01:30 296TPH 30.F 200TONS 4.00Gmm 30PF (4.0131.> 0.03323

	VIB	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCT1	BPL1	DUST
STURE	3.2	6.4		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
RATE	206	27	13.0	56	57	0	0	156	0	0	29	10	4
	96.3	9.5	4.80	18.9	18.5	0.0	0.0	69.0	0.0	0.0	9.6	3.5	
ATS	96.9	9.5	4.80	19.2	18.4	0.0	0.0	50.3	0.0	0.0	9.5	3.4	
TOTAL	2006.0	165.0	137.72	532.1	515.2	0.0	1070.0	839.7	0.0	0.0	161.4	123.0	0.0

Grm=(Bins 0) (A/C 0) (Pscale 0) (Sscale 0) (Dwort 0) (Dust 0)

STATISTICS:

LB/GAL @ 60F 8.62

ASPH AC ADDED 4.41

TOTAL % 4.29

	BCT%	METERED
ASPH. AC	4.0	
	0.36	4.41

ACCUM. (ACT) 4.70 %

ACCUM. (BBL) 4.00 %

DURATION 70LBS 10GPS 10PLS 10:56:32 10/21/93

---

0 01:30 330TPH 31.F 107TONS 4.00Gmm 30PF (4.0131.> 0.03323

	VIB	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCT1	BPL1	DUST
URE	3.1	0.0		9.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
RATE	390	0	13.0	39	32	0	200	0	0	0	0	32	7
	95.9	0.0	4.20	34.1	11.0	0.0	60.0	0.0	0.0	0.0	0.0	4.1	
	95.6	0.0	4.20	33.5	12.6	0.0	69.4	0.0	0.0	0.0	0.0	4.1	
TOTAL	3913.9	166.3	130.86	536.0	510.9	0.0	1008.3	843.2	0.0	0.0	162.7	130.0	0.0

Grm=(Bins 0) (A/C 0) (Pscale 0) (Sscale 0) (Dwort 0) (Dust 0)

STATISTICS:

LB/GAL @ 60F 8.62

DESIG METHOD

AC 4.0

0.00 4.23

300. (ACT) 4.23 %

70. (REQ) 4.20 %

TIME 78CMS 10CTS 10PLS 13:15:20 10/21/92

---

4 283TPH 31.0F 1307CMS 4.203mbc 307F 14.0381• 0.03021

	VIS	RAP	•AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	HFL1	DUST
E	2.1	0.0		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
E	260	0	12.1	41	30	0	202	0	0	0	0	11	8
	95.9	0.0	4.20	34.1	13.0	0.0	68.0	0.0	0.0	0.0	0.0	4.1	
	95.9	0.0	4.20	34.1	12.9	0.0	68.7	0.0	0.0	0.0	0.0	4.1	
L.	3004.0	166.3	142.96	549.5	531.5	0.0	1156.1	942.2	0.0	0.0	162.7	120.0	0.0

(Lion 0) (L/C 0) (Vacuole 0) (Bacuole 0) (Dsvert 0) (Dust 0)

STICS:

36L 0 50F 8.63

AC 1000D 4.10

% 4.15

BCM1 METHOD

AC 4.0

0.00 4.18

. (ACT) 4.18 %

30. (REQ) 4.20 %

TIME 78CMS 10CTS 10PLS 13:21:33 10/21/92

---

4 283TPH 300F 1327CMS 4.203mbc 307F 14.0381• 0.03023

	VIS	RAP	•AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	HFL1	DUST
E	2.1	0.0		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
	263	0	11.0	40	30	0	190	0	0	0	0	11	9
	95.9	0.0	4.20	34.1	13.0	0.0	68.0	0.0	0.0	0.0	0.0	4.1	
	95.9	0.0	4.20	34.1	13.1	0.0	68.6	0.0	0.0	0.0	0.0	4.1	
	3035.9	166.3	143.90	553.2	530.7	0.0	1171.9	942.2	0.0	0.0	162.7	129.0	0.0

(Lion 0) (L/C 0) (Vacuole 0) (Bacuole 0) (Dsvert 0) (Dust 0)

STICS:

0 50F 8.63

AC 1000D 4.10

% 4.15

BCM1 METHOD

4.0

0.00 4.18

(ACT) 4.18 %

(REQ) 4.20 %

TIME 78CMS 10CTS 10PLS 13:36:24 10/21/92

---

4 280TPH 300F 1357CMS 4.203mbc 307F 14.0381• 0.03023

	VIS	RAP	•AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	HFL1	DUST
	3.2	0.0		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
	219	0	12.1	33	32	0	0	133	0	0	0	11	7
	06.8	9.6	4.00	10.5	10.9	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
	95.2	0.0	4.20	23.0	30.9	0.0	0.0	53.4	0.0	0.0	0.0	4.7	
.	3049.7	166.3	145.00	556.9	530.2	0.0	1109.0	943.1	0.0	0.0	162.7	130.0	0.0

(Lion 0) (L/C 0) (Vacuole 0) (Bacuole 0) (Dsvert 0) (Dust 0)

STICS:

```
AC  4.0
    0.00   4.19
COOL (ACT)                4.19 %
 OL (REQ)                 4.00 %

TION                  70X06  10C13  13PL5                                    13:30:36   10/23/92
13:30 363CFM 300F 207C06 4.80Kamc 307F 14.02Kl= 0.03K21
     VOR    RAP    =AC    RCK1   RCK2   RCK3   RCK4   RCK5   RCK6   RCK7   RCS1   HPL1   DOHT
 E   3.2    6.4           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
 E   235    24     12.4   54     53     0      0      144    0      0      30     30     6
     86.0   9.6    4.00   10.5   10.5   0.0    0.0    49.8   0.0    0.0    9.6    3.5
     86.0   9.6    4.00   10.6   10.4   0.0    0.0    49.7   0.0    0.0    9.5    3.5
 L   3069.9 160.2  146.36 561.4  542.7  0.0    1185.0 857.2  0.0    0.0    364.0  130.9  0.0
=30.00 0) (L/C 0) (Vocal.o 0) (Rocal.o 0) (Davort 0) (Dont 0)

STICS:
Sol. P 60F      0.62
C AC 4DDES      0.40
 S              4.15
     RCS1   RESTERED
 AC  4.0
     0.34   4.40
 (ACT)                    4.75 %
OL (REQ)                  4.00 %

TION                  70X06  10C13  10PL5                                    13:36:30   10/23/92
30 360CFM 305F 437C06 6.00Kamc 307F 14.00Kl= 0.03K21
     VOR    RAP    =AC    RCK1   RCK2   RCK3   RCK4   RCK5   RCK6   RCK7   RCS1   HPL1   DOHT
RE   3.2    6.4           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
     233    30     12.6   56     53     0      0      147    0      0      37     30     7
     86.0   9.6    4.00   10.5   10.5   0.0    0.0    49.8   0.0    0.0    9.6    3.5
     87.0   9.5    4.00   10.4   10.4   0.0    0.0    50.3   0.0    0.0    9.5    3.4
L   3090.2 170.3  147.11 565.9  547.2  0.0    1205.0 869.3  0.0    0.0    367.3  131.0  0.0
30.00 0) (L/C 0) (Vocal.o 0) (Rocal.o 0) (Davort 0) (Dont 0)

STICS:
 P 60F      0.62
AC 4DDES    0.39
S 3         0.35
     RCS1   RESTERED
 :   6.0
     0.43   4.39
 (ACT)                    4.82 %
 (REQ)                    4.00 %

 OH                   70X06  10C13  30PL5                                    13:40:30   10/23/92
30 0CFM 300F 60C06 0.00Kamc 307F 14.00Kl= 0.03K21
     VOR    RAP    =AC    RCK1   RCK2   RCK3   RCK4   RCK5   RCK6   RCK7   RCS1   HPL1   DOHT
     0.0    0.0           5.0    6.6    2.0    0.6    1.0    0.0    0.0    6.4
 E   0      0      12.4   0      0      0      0      0      0      0      0      0      0
     86.0   9.6    4.00   10.5   10.5   0.0    0.0    49.8   0.0    0.0    9.6    3.5
     0.0    0.0    0.00   0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0    0.0
L   3097.5 171.7  147.70 567.3  548.5  0.0    1199.4 832.6  0.0    0.0    368.9  132.3  0.0
Kamc 0) (L/C 0) (Vocal.o 0) (Rocal.o 0) (Davort 0) (Dont 0)

STICS:
```

APPENDIX III

OPERATING DATA

3.2 October 22

C DUCK DC 0.0

DCR 0.43 4.36

AC ACCUM. (DCR) 4.70 %

AC ACCUM. (REG) 4.00 %

RECONDITION 7DEDD LDCTS LDPLS 06:41:43 10/22/92

F I D 11:30 233TPH 297F 1527DDS 4.00Sooo 300F (4.0881.+ 0.0022)

	TIR	DAP	+AC	DXD1	DXD2	DXD3	DXD4	DXD5	DXD6	DXD7	DCTL	DPLL	DUST
CLISTURE	3.2	6.4		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
TPH RATE	209	24	10.3	40	49	0	0	136	0	0	23	6	9
X ASH	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
ASTE	87.0	8.9	4.00	10.1	10.4	0.0	0.0	51.3	0.0	0.0	8.9	3.2	
AT TOTAL	137.3	15.6	6.81	31.3	31.4	0.0	0.0	56.6	0.0	0.0	15.9	5.7	0.0

Screen=(Ident 0) (L/C 0) (Uncable 0) (Uncable 0) (Ident 0) (Dust 0)

C STATISTICS:

AC L/GAL @ 60F 0.53

WEIGHT AC ADDED 4.43

C TOTAL % 4.13

	DCTL	DETERMD
DECL AC	4.0	
CR	0.42	4.43

AC ACCUM. (DCT) 4.85 %

AC ACCUM. (REG) 4.00 %

RECONDITION 7DEDD LDCTS LDPLS 06:06:15 10/22/92

F I D 11:30 254TPH 293F 1730DDS 4.00Sooo 300F (4.0881.+ 0.0022)

	TIR	DAP	+AC	DXD1	DXD2	DXD3	DXD4	DXD5	DXD6	DXD7	DCTL	DPLL	DUST
DCLISTURE	3.2	6.4		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
TPH RATE	206	25	11.2	40	60	0	0	129	0	0	29	9	6
X ASH	86.0	9.6	4.00	10.5	10.9	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
X ASTE	86.7	9.6	4.00	10.8	10.9	0.0	0.0	49.4	0.0	0.0	9.6	3.9	
T TOTAL	155.0	17.7	7.73	35.3	35.4	0.0	0.0	35.5	0.0	0.0	17.9	6.0	0.0

Screen=(Ident 0) (L/C 0) (Uncable 0) (Uncable 0) (Ident 0) (Dust 0)

C STATISTICS:

L/GAL @ 60F 0.53

WEIGHT AC ADDED 4.00

C TOTAL % 4.13

	DCTL	DETERMD
DECL AC	4.0	
CR	0.39	4.40

AC ACCUM. (DCT) 4.00 %

AC ACCUM. (REG) 4.00 %

RECONDITION 7DEDD LDCTS LDPLS 06:50:17 10/22/92

F I D 11:30 224TPH 290F 1907DDS 4.693ooo 300F (4.0881.+ 0.0022)

	TIR	DAP	+AC	DXD1	DXD2	DXD3	DXD4	DXD5	DXD6	DXD7	DCTL	DPLL	DUST
CLISTURE	3.2	6.4		5.0	6.6	2.0	0.6	1.0	0.0	0.0	6.4		
TPH RATE	215	26	11.6	41	50	0	0	143	0	0	36	9	6
X ASH	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
ASTE	87.0	9.4	4.69	10.3	10.0	0.0	0.0	50.7	0.0	0.0	9.0	3.4	
AT TOTAL	173.9	19.9	4.66	39.5	39.6	0.0	0.0	106.9	0.0	0.0	30.3	7.3	0.0

Screen=(Ident 0) (L/C 0) (Uncable 0) (Uncable 0) (Ident 0) (Dust 0)

C STATISTICS:

POWER AC 4.0
ACT 0.30 4.32
AC ACCUM. (ACT) 4.71 K
AC ACCUM. (REG) 4.80 K

RECORDATION 70LB5 LBCTS LBPLS 06:06:19 10/22/92

F I B HEX30 268TPH 299F 317TONS 4.80Kmm 309F 14.03BL= 0.00023

	TEM	RAP	+AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCH1	HPLL	DUST
MOISTURE	3.2	6.4		5.0	6.6	2.0	0.6	1.0	0.0	0.0	5.4		
TPH RATE	214	29	11.7	51	51	0	0	130	0	0	25	9	8
1 REG	86.0	9.6	4.80	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
RATE	86.7	9.6	4.80	10.9	10.6	0.0	0.0	49.2	0.0	0.0	9.6	3.5	
TOTAL	192.5	22.2	9.64	43.0	43.9	0.0	0.0	114.4	0.0	0.0	22.3	0.0	0.0

Errors=(Blend 0) (AC 0) (Pucalo 0) (Bucalo 0) (Dolcourt 0) (Dust 0)

STATISTICS:

AC LB/GAL @ 60F 5.53
AVERAGE AC (DONE) 4.30
TOTAL X 4.14

	BCH1	DESIRED
REGL AC	4.0	
K	0.43	4.30

ACCUM. (ACT) 4.82 X
AC ACCUM. (REG) 4.80 X

RECORDATION 70LB5 LBCTS LBPLS 07:01:33 10/22/92

F I B HEX30 268TPH 300F 2397TONS 4.90Kmm 300F 14.08BL= 0.00023

	TEM	RAP	+AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCH1	HPLL	DUST
MOISTURE	2.9	6.4		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	216	26	11.0	50	51	0	0	133	0	0	25	9	10
1 REG	86.0	9.6	4.80	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
RATE	86.7	9.7	4.80	10.7	10.9	0.0	0.0	49.0	0.0	0.0	9.7	3.5	
TOTAL	211.4	26.4	10.53	60.1	48.2	0.0	0.0	130.0	0.0	0.0	26.6	0.9	0.0

Errors=(Blend 0) (AC 0) (Pucalo 0) (Bucalo 0) (Dolcourt 0) (Dust 0)

AC STATISTICS:

LB/GAL @ 60F 5.53
AVERAGE AC (DONE) 4.43
TOTAL X 4.35

	BCH1	DESIRED
REGL AC	4.0	
K	0.38	4.42

ACCUM. (ACT) 4.00 X
ACCUM. (REG) 4.00 X

RECORDATION 70LB5 LBCTS LBPLS 07:06:29 10/22/92

F I B HEX30 268TPH 300F 2523TONS 4.00Kmm 300F 14.08BL= 0.00023

	TEM	RAP	+AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCH1	HPLL	DUST
MOISTURE	2.9	5.3		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
TPH RATE	229	26	12.3	54	53	0	0	140	0	0	27	10	7
1 REG	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
RATE	86.7	9.7	4.00	10.9	10.7	0.0	0.0	49.0	0.0	0.0	9.7	3.5	
TOTAL	231.2	26.6	11.63	52.5	52.7	0.0	0.0	143.0	0.0	0.0	26.0	9.7	0.0

Errors=(Blend 0) (AC 0) (Pucalo 0) (Bucalo 0) (Dolcourt 0) (Dust 0)

STATISTICS:

```
% MODEL AC   4.0
ACH         0.36    0.30
AC ACCUM. (ACT)                 0.29 %
AC ACCUM. (REQ)                 0.00 %
```

```
COMBUSTION                      TONS  LOCTS  LOFLS                                                   07:11:29   10/22/92

F I D 11:30 279TPH 310F 285TONS 0.00Qmc 300F 14.0MBtu/ 0.00023
          VIB    RAP    +AC    BZN1   BZN2   BZN3   BZN4   BZN5   BZN6   BZN7   RCYL   MFLL   DUST
MOISTURE  2.9    5.2           5.1    7.0    1.5    0.6    0.7    0.0    0.0    5.2
TPH RATE  229    24     12.0  53     53     0      0      140    0      0      27     10     7
% MSO     86.9   9.6    4.80  10.5   10.5   0.0    0.0    49.0   0.0    0.0    9.6    3.5
% RATE    86.6   9.7    4.80  10.6   10.7   0.0    0.0    49.3   0.0    0.0    9.7    3.5
SOL TOTAL 254.2  28.0   12.66 57.0   57.2   0.0    0.0    156.1  0.0    0.0    29.2   10.5   0.0
Errors=(Mass 0) (A/C 0) (Pmcalc 0) (Hmcalc 0) (Mvert 0) (Dust 0)
```

```
AC STATISTICS:
AC LB/MLL @ 50F      8.53
FIRED AC ASDED       4.42
AC TOTAL %           4.17
          ACH    METERED
% MSO. AC   4.0
ACH         0.35    4.42
AC ACCUM. (ACT)                 4.70 %
AC ACCUM. (REQ)                 4.00 %
```

```
COMBUSTION                      TONS  LOCTS  LOFLS                                                   07:16:37   10/22/92

  I D 11:30 200TPH 300F 309TONS 4.00Qmc 300F 14.0MBtu/ 0.00023
          VIB    RAP    +AC    BZN1   BZN2   BZN3   BZN4   BZN5   BZN6   BZN7   RCYL   MFLL   DUST
MOISTURE  2.9    5.2           5.1    7.0    1.5    0.6    0.7    0.0    0.0    5.2
TPH RATE  220    23     12.4  54     53     0      0      142    0      0      27     10     12
  MSO     86.9   9.6    4.90  10.5   10.5   0.0    0.0    49.0   0.0    0.0    9.6    3.5
% RATE    86.7   9.6    4.80  10.4   10.6   0.0    0.0    49.3   0.0    0.0    9.6    3.5
SOL TOTAL 271.2  31.0   13.70 61.5   61.7   0.0    0.0    166.2  0.0    0.0    30.9   13.4   0.0
Errors=(Mass 0) (A/C 0) (Pmcalc 0) (Hmcalc 0) (Mvert 0) (Dust 0)
```

```
AC STATISTICS:
 LB/MLL @ 50F        8.53
 FIRED AC ASDED      4.43
AC TOTAL %           4.10
          ACH    METERED
  MSO. AC   4.0
ACH         0.36    4.43
AC ACCUM. (ACT)                 4.00 %
  ACCUM. (REQ)                 4.00 %
```

```
COMBUSTION                      TONS  LOCTS  MOFLS                                                   07:21:39   10/22/92

F I D 11:30 305TPH 290F 332TONS 4.60Qmc 300F 14.0MBtu/ 0.00023
          VIB    RAP    +AC    BZN1   BZN2   BZN3   BZN4   BZN5   BZN6   BZN7   RCYL   MFLL   DUST
  MOISTURE 2.9    5.2           5.1    7.0    1.5    0.6    0.7    0.0    0.0    5.2
TPH RATE  220    23     12.5  53     56     0      0      142    0      0      27     10     15
% MSO     86.9   9.6    4.80  10.5   10.5   0.0    0.0    49.0   0.0    0.0    9.6    3.5
  RATE    86.8   9.6    4.60  10.6   10.7   0.0    0.0    49.4   0.0    0.0    9.6    3.5
SOL TOTAL 291.3  33.1   14.76 66.0   66.2   0.0    0.0    176.3  0.0    0.0    31.9   12.3   0.0
Errors=(Mass 0) (A/C 0) (Pmcalc 0) (Hmcalc 0) (Mvert 0) (Dust 0)
```

```
AC STATISTICS:
AC LB/MLL @ 50F      8.53
```

[illegible]

% RECL AC 4.0

ACH 0.32 4.39

AC ACCUM. (ACH) 4.72 %

AC ACCUM. (REQ) 4.00 %

RECONCILIATION 7DIMS 1RCTS 1RPLS 07:36:33 10/22/92

F I D 11:30 20CTP9 30LF 35STONS 4.00Lmc 300F (4.00R1> 0.03R2)

	TIR	RAP	%AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	RCT1	RPL1	DUST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	230	23	12.5	53	53	0	0	146	0	0	27	10	5
% RED	86.8	9.6	4.30	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.9	9.5	4.30	10.4	10.1	0.0	0.0	50.3	0.0	0.0	9.5	3.4	
RAT TOTAL	311.2	35.0	15.77	70.5	70.7	0.0	0.0	190.4	0.0	0.0	36.2	13.1	0.0

Errors=(Mean 0) (%C 0) (Uncalc 0) (Mncalc 0) (Dismert 0) (Dust 0)

AC STATISTICS:

AC Lb/GAL @ 60F 8.53

EVIRSEH AC ADDED 4.46

AC TOTAL % 4.20

	RCT1	METERED
% RECL AC	4.0	
ACH	0.33	4.46

AC ACCUM. (ACT) 4.79 %

AC ACCUM. (REQ) 4.30 %

RECONCILIATION 7DIMS 1RCTS 1RPLS 07:36:39 10/22/92

F I D 11:30 20CTP9 30LF 37STONS 4.00Lmc 300F (4.00R1> 0.03R2)

	TIR	RAP	%AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	RCT1	RPL1	DUST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	229	29	12.4	53	53	0	0	146	0	0	27	10	0
% RED	86.8	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.9	9.5	4.00	10.3	10.3	0.0	0.0	50.3	0.0	0.0	9.5	3.4	
RAT TOTAL	331.3	37.1	16.79	75.0	75.2	0.0	0.0	202.6	0.0	0.0	38.5	13.9	0.0

Errors=(Mean 0) (%C 0) (Uncalc 0) (Mncalc 0) (Dismert 0) (Dust 0)

AC STATISTICS:

AC Lb/GAL @ 60F 8.53

EVIRSEH AC ADDED 4.35

AC TOTAL % 4.20

	RCT1	METERED
% RECL AC	4.0	
ACH	0.41	4.39

AC ACCUM. (ACT) 4.77 %

AC ACCUM. (REQ) 4.00 %

RECONCILIATION 7DIMS 1RCTS 1RPLS 07:36:39 10/22/92

F I D 11:30 20CTP9 29LF 40STONS 4.00Lmc 300F (4.00R1> 0.03R2)

	TIR	RAP	%AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	RCT1	RPL1	DUST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	229	30	13.5	53	53	0	0	143	0	0	27	30	0
% RED	86.8	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.8	9.6	4.00	10.6	10.5	0.0	0.0	49.6	0.0	0.0	9.6	3.3	
RAT TOTAL	358.0	39.6	17.03	79.5	79.7	0.0	0.0	214.7	0.0	0.0	40.9	14.0	0.0

Errors=(Mean 0) (%C 0) (Uncalc 0) (Mncalc 0) (Dismert 0) (Dust 0)

0.0

0.42 4.30

0. 1.6CF) 4.00 1

0. 0.0CD) 4.00 1

TEIOH TEIMS LOCTS LOPLS 07:41:37 10/23/93

(1130 2027PM 299F 42STOMS 6.00Lmm 300F (4.0331+ 0.00023

	VIR	RAP	~AC	BCM3	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	MPL1	DMST
	3.9	5.2		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.3		
	233	29	13.4	53	53	0	0	145	0	0	27	10	5
	06.9	9.6	4.80	19.9	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
	06.9	9.5	4.80	18.4	10.4	0.0	0.0	50.0	0.0	0.0	9.5	3.4	
0.	371.0	42.1	10.96	84.0	84.2	0.0	0.0	235.0	0.0	0.0	43.2	15.6	0.0

Mlan 0) (A/C 0) (Vncalo 0) (Uncalo 0) (Dlvmrt 0) (Dmrt 0)

STICS:

0. 50F 9.53

AC 4DDED 9.43

3 4.23

BCM1 DEPENED

AC 4.0

0.41 4.41

. (ACT) 4.03 1

5. (BEED) 4.00 1

.1130 TEIMS LOCTS LOPLS 07:40:39 10/23/93

(12 2027PM 299F 93CMS 5.00Lmm 300F (4.0331+ 0.00023

	VIR	RAP	~AC	BCM3	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM3	MPL1	DMST
	3.9	0.0		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.3		
	261	0	16.9	76	76	1.20	0	0	0	0	0	7	10
	97.5	0.0	5.00	36.6	26.6	60.3	0.0	0.0	0.0	0.0	0.0	3.5	
	97.5	0.0	5.00	36.5	26.6	60.4	0.0	0.0	0.0	0.0	0.0	3.4	
	393.5	43.5	20.46	89.9	90.1	0.3	0.0	229.3	0.0	0.0	44.4	16.4	0.0

Mlan 0) (A/C 0) (Vncalo 0) (Uncalo 0) (Dlvmrt 0) (Dmrt 0)

STICS:

0 50F 3.53

C 4DDED 5.06

3 4.23

BCM1 DEPENED

4.0

4.00 5.66

(ACT) 5.06 1

(BEED) 5.00 1

---

30 TEIOH LOCTS LOPLS 08:00:06 10/23/93

.113 2007PM 302F 50CMS 5.00Lmm 300F (4.0331+ 0.00023

	TIR	RAP	~AC	BCM3	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	MPL1	DMMP
	3.9	0.0		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.3		
	250	1	16.7	76	76	1.27	0	0	0	0	0	7	13
	97.3	0.0	5.00	36.6	26.6	60.3	0.0	0.0	0.0	0.0	0.0	3.3	
	97.9	0.0	5.00	36.6	26.5	60.3	0.0	0.0	0.0	0.0	0.0	3.3	
	406.3	43.5	21.46	96.3	96.5	10.9	0.0	229.3	0.0	0.0	46.4	17.0	0.0

Mlan 0) (A/C 0) (Vncalo 0) (Uncalo 0) (Dlvmrt 0) (Dmrt 0)

ICS:

0 50F

[illegible]

AC 0.00 9.01

AC ACCUM. (ACT) 9.01 %

AC ACCUM. (REQ) 9.00 %

RECORDATION 70LBS 1RCPS 10PLS 07:56:03 10/22/92

F I D XXXL2 280CPM 305F 577CUS 5.90Gmm 309F (4.0001+ 0.00023)

	VIR	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	RCYL	NFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	261	0	16.4	76	76	123	0	0	0	0	0	7	7
% RED	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.4	0.0	5.00	27.1	26.9	43.4	0.0	0.0	0.0	0.0	0.0	2.5	
DAT TOTAL	438.9	43.5	22.85	102.7	102.9	29.6	0.0	229.3	0.0	0.0	60.4	17.5	0.0

Grscrn=(Blnn 0) (A/C 0) (Uncalc 0) (Bncalc 0) (Ovwrt 0) (Dwrt 0)

AC STATISTICS:

AC lb/GAL @ 60F 9.53

AVERAGE AC ADDED 5.04

AC TOTAL % 6.37

	RCYL	REQUIRED
% RECL AC	4.0	
AC	0.00	5.04

AC ACCUM. (ACT) 5.04 %

AC ACCUM. (REQ) 5.00 %

RECORDATION 70LBS 1RCPS 10PLS 08:00:46 10/22/92

F I D XXXL2 280CPM 305F 0LTCUS 5.90Gmm 309F (4.0001+ 0.00023)

	VIR	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	RCYL	NFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	256	0	16.0	76	76	129	0	0	0	0	0	7	11
% RED	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.5	0.0	5.00	26.3	26.3	44.0	0.0	0.0	0.0	0.0	0.0	2.6	
DAT TOTAL	461.4	43.9	24.23	109.1	109.3	40.2	0.0	229.3	0.0	0.0	60.4	18.2	0.0

Grscrn=(Blnn 0) (A/C 0) (Uncalc 0) (Bncalc 0) (Ovwrt 0) (Dwrt 0)

AC STATISTICS:

AC lb/GAL @ 60F 0.93

AVERAGE AC ADDED 5.08

AC TOTAL % 6.42

	RCYL	REQUIRED
% RECL AC	4.0	
AC	0.00	5.08

AC ACCUM. (ACT) 5.09 %

AC ACCUM. (REQ) 5.00 %

RECORDATION 70LBS 1RCPS 10PLS 08:06:40 10/22/92

F I D XXXL2 280CPM 305F 1000CUS 5.90Gmm 309F (4.0001+ 0.00023)

	VIR	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	RCYL	NFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	256	1	16.6	77	79	126	0	0	0	0	0	7	13
% RED	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.4	0.0	5.00	27.0	26.6	44.0	0.0	0.0	0.0	0.0	0.0	2.5	
DAT TOTAL	400.1	43.9	25.62	115.9	115.7	50.9	0.0	229.3	0.0	0.0	60.4	16.0	0.0

Grscrn=(Blnn 0) (A/C 0) (Uncalc 0) (Bncalc 0) (Ovwrt 0) (Dwrt 0)

AC STATISTICS:

[illegible]

[illegible] 0.0

ACE 0.00 9.00

AC ACCUM. (ACE) 9.04 E

AC ACCUM. (OBD) 9.00 E

OBSERVATION TOXOB ABCTB LRPLS 00:11:30 10/23/92

F 1 0 11:32 204TPH 303F 1297CUB 9.80Kmo 309F (4.0KH)+ 0.03K23

	TIR	DAP	+AC	D3M1	D3M2	D3M3	D3M4	D3M5	D3M6	D3M7	D3T1	DPL1	D0BF
ACCESSORIES	3.9	0.0		9.1	7.0	1.9	0.6	0.7	0.0	0.0	9.3		
TPH RATE	251	0	16.9	75	76	129	0	0	0	0	0	7	7
X ABB	97.9	0.0	9.00	26.6	36.6	44.3	0.0	0.0	0.0	0.0	0.0	3.9	
X ABTR	97.4	0.0	9.00	26.5	36.7	44.1	0.0	0.0	0.0	0.0	0.0	3.9	
DAT TOTAL	506.7	03.5	37.03	131.9	122.3	63.6	0.0	229.3	0.0	0.0	46.4	19.4	0.0

Extractor(DLmo D) LbC 0(Tmmulo 0) Chcmlo 0(Dlcourt 0) Dmnt 0)

AC STATISTICS:

AC LbTALL 0 60P 0.33

ATTRITE AC ABOUD 9.00

AC TOTAL E 0.33

DCSI DCSTDDD

X ABCL AC 0.0

ACE 0.00 9.00

AC ACCUM. (ACE) 9.03 E

AC ACCUM. (OBD) 9.00 E

OBSERVATION TOXOB ABCTB LRPLS 00:16:58 10/23/92

F 1 0 11:32 293TPH 306F 1533CUB 9.67Kmo 309F (4.0KH)+ 0.03K23

	TIR	DAP	+AC	D3M1	D3M2	D3M3	D3M4	D3M5	D3M6	D3M7	D3T1	DPL1	D0BF
ACCESSORIES	3.9	0.0		9.1	7.0	1.9	0.6	0.7	0.0	0.0	9.3		
TPH RATE	263	3	16.6	77	76	127	0	0	0	0	0	7	0
X ABB	97.9	0.0	9.00	26.6	36.6	44.3	0.0	0.0	0.0	0.0	0.0	3.9	
X ABTR	97.9	0.0	9.67	26.7	36.9	44.1	0.0	0.0	0.0	0.0	0.0	3.9	
DAT TOTAL	529.4	03.9	30.39	130.9	120.6	93.2	0.0	229.3	0.0	0.0	46.4	30.0	0.0

Extractor(DLmo D) LbC 0(Tmmulo 0) Chcmlo 0(Dlcourt 0) Dmnt 0)

AC STATISTICS:

AC LbTALL 0 60P 0.33

ATTRITE AC ABOUD 9.60

AC TOTAL E 0.36

DCSI DCSTDDD

X ABCL AC 0.0

ACE 0.00 9.60

AC ACCUM. (ACE) 9.60 E

AC ACCUM. (OBD) 9.00 E

OBSERVATION TOXOB ABCTB LRPLS 00:23:06 10/23/92

F 1 0 11:32 300TPH 300F 1777CUB 9.00Kmo 309F (4.0KH)+ 0.03K23

	TIR	DAP	+AC	D3M1	D3M2	D3M3	D3M4	D3M5	D3M6	D3M7	D3T1	DPL1	D0BF
ACCESSORIES	3.9	0.0		9.1	7.0	1.9	0.6	0.7	0.0	0.0	9.3		
TPH RATE	290	0	16.9	76	76	129	0	0	0	0	0	7	0
X ABB	97.9	0.0	9.00	26.6	36.6	44.3	0.0	0.0	0.0	0.0	0.0	3.9	
X ABTR	97.4	0.0	9.00	26.7	36.7	44.0	0.0	0.0	0.0	0.0	0.0	3.9	
DAT TOTAL	951.9	03.9	39.90	136.9	139.0	03.9	0.0	229.3	0.0	0.0	46.4	30.0	0.0

Extractor(DLmo D) LbC 0(Tmmulo 0) Chcmlo 0(Dlcourt 0) Dmnt 0)

AC STATISTICS:

[illegible] 5.00 K

COMBUSTION TROUBLE LOGS LOFLS

00:30:00 10/22/98

F I D [illegible] 286TPH 304F 20.1TONS 5.00Amps 309F 14.0KHz 0.0KHz

	VIN	EXP	°AC	DEN1	DEN2	DEN3	DEN4	DEN5	DEN6	DEN7	DCTL	OPLS	DOST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
TPH RATE	259	0	15.4	75	76	119	0	63	0	0	0	7	6
% RED	86.0	9.6	6.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
% BATH	97.7	0.0	5.00	21.3	23.0	37.1	0.0	13.4	0.0	0.0	0.0	2.3	
BAT TOTAL	574.6	43.5	31.17	143.1	141.4	93.5	0.0	229.3	0.0	0.0	40.4	21.3	0.0

Grearm=(Blue 0) (L/C 0) (Vacuole 0) (Vacuole 0) (Colourless 0) (Dust 0)

AC STATISTICS:

AC LB/GAL @ 60F 9.53

OXYGEN AC ADDED 5.75

AC TOTAL % 4.50

	DCTL	DESIRED
% RECL AC	4.0	
ACT	0.50	5.75

AC ACCUM. (ACT) 5.75 %

AC ACCUM. (DES) 4.00 %

COMBUSTION TROUBLE LOGS LOFLS

00:30:00 10/22/98

F I D [illegible] 283TPH 294F 17.7TONS 4.00Amps 309F 14.0KHz 0.0KHz

	VIN	EXP	°AC	DEN1	DEN2	DEN3	DEN4	DEN5	DEN6	DEN7	DCTL	OPLS	DOST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
TPH RATE	233	39	12.3	93	54	0	0	140	0	0	27	30	0
% RED	96.4	9.6	6.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
% BATH	87.0	9.4	6.00	10.1	10.4	0.0	0.0	50.4	0.0	0.0	9.4	3.4	
BAT TOTAL	590.9	49.1	32.39	143.7	143.9	93.5	0.0	241.6	0.0	0.0	46.1	21.0	0.0

Grearm=(Blue 0) (L/C 0) (Vacuole 0) (Vacuole 0) (Colourless 0) (Dust 0)

AC STATISTICS:

AC LB/GAL @ 60F 9.53

OXYGEN AC ADDED 4.36

AC TOTAL % 9.65

	DCTL	DESIRED
% RECL AC	4.0	
ACT	0.39	4.36

AC ACCUM. (ACT) 4.76 %

AC ACCUM. (DES) 4.00 %

COMBUSTION TROUBLE LOGS LOFLS

00:30:00 10/22/98

F I D [illegible] 286TPH 297F 30.7TONS 6.00Amps 309F 14.0KHz 0.0KHz

	VIN	EXP	°AC	DEN1	DEN2	DEN3	DEN4	DEN5	DEN6	DEN7	DCTL	OPLS	DOST
MOISTURE	3.9	5.3		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
TPH RATE	232	30	12.6	93	53	0	0	146	0	0	30	30	0
% RED	96.0	9.6	6.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
% BATH	86.9	9.3	6.00	10.2	10.6	0.0	0.0	50.3	0.0	0.0	9.5	3.0	
BAT TOTAL	615.3	47.5	33.30	150.3	150.6	90.9	0.0	253.7	0.0	0.0	46.0	22.0	0.0

Grearm=(Blue 0) (L/C 0) (Vacuole 0) (Vacuole 0) (Colourless 0) (Dust 0)

AC STATISTICS:

AC LB/GAL @ 60F 9.53

[illegible] 0.00

	BCH3	METERED
% RECL AC	4.0	
ACH	0.40	6.41

AC ACCUM. (ACT) 4.01 %
AC ACCUM. (REG) 4.00 %

RECORDATION 78CMS 18CFS 10PLS

F I D 0.0130 2377PH 294F 527CMS 4.00Mmac 300F 14.0RH> 0.0022

00:42:03 10/22/92

	VIS	BAP	*AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCH8	HPLI	DOST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	241	27	12.6	54	53	0	0	144	0	0	27	10	5
% REG	86.9	9.6	4.80	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.9	9.5	4.00	18.7	18.5	0.0	0.0	49.5	0.0	0.0	9.5	3.4	
BAT TOTAL	655.2	49.9	34.43	154.7	150.9	93.5	0.0	265.8	0.0	0.0	50.7	23.7	0.0

Errors=(0.00 0) (A/C 0) (Pscale 0) (Bscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 10/SAL @ 60F	8.53
SYSTEM AC ASSED	4.38
AC TOTAL %	4.63

	BCH1	METERED
% RECL AC	4.0	
ACH	0.30	4.38

AC ACCUM. (ACT) 4.76 %
AC ACCUM. (REG) 4.80 %

RECORDATION 78LMS 18CFS 10PLS

F I D 0.0130 2367PH 291F 857CMS 4.00Mmac 300F 14.0RH> 0.0022

00:47:00 10/22/92

	VIS	BAP	*AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCH8	HPLI	DOST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	233	26	12.5	53	53	0	0	141	0	0	27	10	7
% REG	86.0	9.6	4.80	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.7	9.7	4.80	18.5	18.7	0.0	0.0	49.4	0.0	0.0	9.7	3.5	
BAT TOTAL	555.6	52.2	35.60	159.2	159.4	93.5	0.0	277.9	0.0	0.0	53.1	24.5	0.0

Errors=(0.00 0) (A/C 0) (Pscale 0) (Bscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 10/SAL @ 60F	8.53
SYSTEM AC ASSED	4.37
AC TOTAL %	4.62

	BCH1	METERED
% RECL AC	4.0	
ACH	0.36	4.37

AC ACCUM. (ACT) 4.74 %
AC ACCUM. (REG) 4.80 %

RECORDATION 78CMS 18CFS 10PLS

F I D 0.0130 2007PH 280F 1097CMS 4.00Mmac 300F 14.0RH> 0.0022

00:52:06 10/22/92

	VIS	BAP	*AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCH8	HPLI	DOST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	222	28	12.5	53	54	0	0	143	0	0	27	10	35
% REG	86.0	9.6	4.80	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.0	9.6	4.00	18.4	18.7	0.0	0.0	49.6	0.0	0.0	9.6	3.5	
BAT TOTAL	672.6	56.7	36.52	163.7	163.9	93.5	0.0	290.0	0.0	0.0	55.4	25.4	0.0

Errors=(0.00 0) (A/C 0) (Pscale 0) (Bscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

	DCM3	DETERMIND
BEL. AC	6.0	
	0.39	4.34

ACCUM. (ACT) 4.73 %
ACCUM. (REQ) 4.80 %

SOLATION 70LDS 1BCMS 1DFLS 06:57:00 10/22/92

6 HCM38 200TPH 207F 1337CUMS 4.00%mm 309F 14.02%+ 0.00%21													
	VLR	RAP	+AC	HCM1	HCM2	HCM3	HCM4	HCM5	HCM6	HCM7	HCT1	HFL1	DUST
STONE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
SAND	235	29	12.6	53	53	0	0	145	0	0	27	10	5
	66.8	9.6	4.80	10.5	10.5	0.0	0.0	49.8	0.0	0.0	9.6	3.5	
	66.8	9.6	4.80	10.4	10.3	0.0	0.0	50.1	0.0	0.0	9.5	3.4	
TOTAL	695.7	57.1	37.57	168.2	168.4	93.5	0.0	302.1	0.0	0.0	57.8	36.2	0.0

(Dmm 0) (A/C 0) (Pucmlo 0) (Rucmlo 0) (Dsvert 0) (Dwrt 0)

STATISTICS:

TOTAL W 60F	8.53
BITU AC ADDED	6.30
TOTAL %	4.60

	HCT1	DETERMIND
BEL. AC	6.0	
	0.40	6.30

ACCUM. (ACT) 4.70 %
ACCUM. (REQ) 4.80 %

SOLATION 70LDS 1BCMS 1DFLS 09:02:30 10/22/92

1 HCM38 200TPH 209F 1577CUMS 4.00%mm 300F 14.02%+ 0.00%21													
	VLR	RAP	+AC	HCM1	HCM2	HCM3	HCM4	HCM5	HCM6	HCM7	HCT1	HFL1	DUST
STONE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
SAND	235	29	12.6	53	53	0	0	145	0	0	27	10	9
	86.8	9.6	4.60	10.5	10.5	0.0	0.0	49.8	0.0	0.0	9.6	3.5	
	86.8	9.6	4.60	10.4	10.3	0.0	0.0	50.1	0.0	0.0	9.6	3.5	
TOTAL	715.9	56.5	30.51	172.7	172.9	93.5	0.0	324.2	0.0	0.0	60.1	27.1	0.0

(Dmm 0) (A/C 0) (Pucmlo 0) (Rucmlo 0) (Dsvert 0) (Dwrt 0)

STATISTICS:

TOTAL W 60F	8.53
BITU AC ADDED	6.42
TOTAL %	6.59

	HCT1	DETERMIND
BEL. AC	4.0	
	0.41	6.42

ACCUM. (ACT) 4.83 %
ACCUM. (REQ) 4.80 %

SOLATION 70LDS 1BCMS 1DFLS 09:07:32 10/22/92

8 HCM38 200TPH 290F 2011CUMS 4.00%mm 300F 14.02%+ 0.00%21													
	VLR	RAP	+AC	HCM1	HCM2	HCM3	HCM4	HCM5	HCM6	HCM7	HCT1	HFL1	DUST
STONE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
SAND	226	29	12.4	53	53	0	0	143	0	0	27	10	11
	86.0	9.6	4.80	10.5	10.5	0.0	0.0	49.8	0.0	0.0	9.6	3.5	
	86.0	9.6	4.80	10.9	10.6	0.0	0.0	49.6	0.0	0.0	9.6	3.5	
TOTAL	796.0	62.0	39.66	177.2	177.4	93.5	0.0	336.6	0.0	0.0	62.6	27.9	0.0

(Dmm 0) (A/C 0) (Pucmlo 0) (Rucmlo 0) (Dsvert 0) (Dwrt 0)

STATISTICS:

[illegible] - [illegible]

H [illegible] AC 4.0

ACX 0.62 4.42

AC ACCUM. (ACT) 4.04 %

AC ACCUM. (REQ) 4.00 %

RECORDATION 78HS 1BCTS 1BPLS

09:13:14 10/22/93

F I 3 0230 281TPH 289F 2047CUS 4.00Amp 306F [4.0031+ 0.0023]

	TIR	RAP	*AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCTS	BPLS	DUST
MOISTURE	3.9	5.3		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	225	20	12.4	53	53	0	0	143	0	0	27	10	4
% RES	06.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	06.0	9.6	4.00	10.4	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
MAT TOTAL	756.1	64.4	60.70	131.7	182.9	93.5	0.0	336.5	0.0	0.0	54.8	20.8	0.0

Errors=(Bins 0) (A/C 0) (Tscale 0) (Bscale 0) (Divert 0) (Conv 0)

AC STATISTICS:

AC 1b/GAL P 60F 0.53

UTIMGLB AC 60DEG 0.43

AC TOTAL % 0.59

	RCTI	RCTEXED
% RESI AC	4.0	
ACX	0.39	4.43

AC ACCUM. (ACT) 4.03 %

AC ACCUM. (REQ) 4.00 %

RECORDATION 78HS 1BCTS 1BPLS

09:17:36 10/22/93

F I 4 0230 279TPH 290F 2207CUS 4.00Amp 300F [4.0031+ 0.0023]

	TIR	RAP	*AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCTS	BPLS	DUST
MOISTURE	3.9	5.3		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	230	29	12.3	53	53	0	0	145	0	0	27	10	9
% RES	06.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	06.9	9.5	4.00	10.4	10.5	0.0	0.0	49.9	0.0	0.0	9.5	3.4	
MAT TOTAL	776.1	66.7	61.70	106.2	106.4	93.5	0.0	350.6	0.0	0.0	67.1	29.6	0.0

Errors=(Bins 0) (A/C 0) (Tscale 0) (Bscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 1b/GAL P 60F 0.53

UTIMGLB AC 60DEG 0.42

AC TOTAL % 0.56

	RCTI	RCTEXED
% RESI AC	4.0	
ACX	0.41	4.42

AC ACCUM. (ACT) 4.00 %

AC ACCUM. (REQ) 4.00 %

RECORDATION 78HS 1BCTS 1BPLS

09:22:10 10/22/93

F I 0 0230 283TPH 290F 2537CUS 4.00Amp 307F [4.0031+ 0.0023]

	TIR	RAP	*AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCTS	BPLS	DUST
MOISTURE	3.9	5.3		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	227	27	12.6	53	53	0	0	146	0	0	27	10	14
% RES	06.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	06.9	9.5	4.00	10.3	10.3	0.0	0.0	50.0	0.0	0.0	9.5	3.4	
MAT TOTAL	796.3	69.1	62.70	190.7	190.9	93.5	0.0	363.7	0.0	0.0	65.4	30.9	0.0

Errors=(Bins 0) (A/C 0) (Tscale 0) (Bscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

```
[illegible]
[illegible] 0.0
ACX        * 0.30    4.09
AC ACCUM. (ACX)                  4.02 %
AC ACCUM. (DEED)                 4.00 %
```

```
RECORDATION                    70DHS  10CTS  10FLS                                                    09:27:20   10/22/92
F I B 0X03A 278TPH 290F 275CDHS 4.00Hmc 30TF (4.00H) 0.00123
            TIR     BAP     +AC     BIN1    BIN2    BIN3    BIN4    BIN5    BIN6    BIN7    BCT1    BPL1    DUST
MOISTURE    2.9     5.2             5.1     7.0     1.5     0.6     0.7     0.0     0.0     5.2
TPH RATE    232     27      12.4    53      53      0       0       146     0       0       37      10      4
% BED       96.8    9.5     4.00    10.5    10.5    0.0     0.0     49.3    0.0     0.0     9.5     3.9
% RATE      96.5    9.5     4.00    10.3    10.4    0.0     0.0     50.2    0.0     0.0     9.5     3.4
WGT TOTAL   836.3   71.4    43.82   195.2   195.4   93.5    0.0     374.0   0.0     0.0     71.0    31.3    0.0
Errors=(Bias 0) (A/C 0) (Pscale 0) (Bscale 0) (Slount 0) (Dunt 0)
```

```
AC STATISTICS:
AC 1b/GAL @ 60F      9.53
AVERAGE AC ADDED     4.45
AC TOTAL %           4.55
            ACT1    DETERMED
% BEED. AC   4.0
ACX          0.39    4.45
AC ACCUM. (ACT)                  4.35 %
AC ACCUM. (DEED)                 4.00 %
```

```
RECORDATION                    70DHS  10CTS  10FLS                                                    09:30:22   10/22/92
F I B 0X03A 275TPH 293F 295TDHS 4.00Hmc 30TF (4.00H) 0.00123
            TIR     BAP     +AC     BIN1    BIN2    BIN3    BIN4    BIN5    BIN6    BIN7    BCT1    BPL1    DUST
MOISTURE    2.9     5.2             5.1     7.0     1.5     0.6     0.7     0.0     0.0     5.2
TPH RATE    230     26      12.3    54      56      0       0       142     0       0       37      10      10
% BED       96.0    9.6     4.00    10.5    10.9    0.0     0.0     49.3    0.0     0.0     9.6     3.9
% RATE      96.0    9.6     4.00    10.7    10.7    0.0     0.0     49.3    0.0     0.0     9.6     3.9
WGT TOTAL   836.4   73.6    44.06   199.7   199.9   93.5    0.0     386.9   0.0     0.0     74.1    32.2    0.0
Errors=(Bias 0) (A/C 0) (Pscale 0) (Bscale 0) (Slount 0) (Dunt 0)
```

```
AC STATISTICS:
AC 1b/GAL @ 60F      4.53
AVERAGE AC ADDED     4.47
AC TOTAL %           4.54
            ACT1    DETERMED
% BEED. AC   4.0
ACX          0.34    4.47
AC ACCUM. (ACT)                  4.05 %
AC ACCUM. (DEED)                 4.00 %
```

```
RECORDATION                    70DHS  10CTS  10FLS                                                    09:37:30   10/22/92
F I B 0X03A 287TPH 290F 0TDHS 5.00Hmc 30TF (4.00H) 0.00123
            TIR     BAP     +AC     BIN1    BIN2    BIN3    BIN4    BIN5    BIN6    BIN7    BCT1    BPL1    DUST
MOISTURE    3.9     6.0             5.1     7.0     1.9     0.6     0.7     0.0     0.0     5.2
TPH RATE    299     3       10.1    77      76      130     0       0       0       0       0       0       03
% BED       97.5    6.0     5.00    36.6    36.6    40.3    0.0     0.0     0.0     0.0     0.0     3.9
% RATE      97.3    6.0     5.40    36.9    36.3    40.2    0.0     0.0     0.0     0.0     0.0     3.9
WGT TOTAL   857.9   75.7    65.90   309.0   308.3   90.1    0.0     398.6   0.0     0.0     70.1    39.0    0.0
Errors=(Bias 0) (A/C 0) (Pscale 0) (Bscale 0) (Slount 0) (Dunt 0)
```

```
AC STATISTICS:
```

	RCTL	RETURNED
% RECL AC	4.0	
ACT	0.00	5.67

AC ACCUM. (ACT) 5.67 %
AC ACCUM. (RET) 5.00 %

RECORDATION 7DIMS 10CYS 10FLS 09:42:35 10/22/92

F 1 0 DIM12 20.1TPH 396F 257DHS 5.00Lmnc 300F (4.0DRL) 0.03323

	VIR	RAP	+AC	DIM1	DIM2	DIM3	DIM4	DIM5	DIM6	DIM7	RCYL	HFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	250	0	16.5	74	75	125	0	0	0	0	0	7	5
% RED	97.5	0.0	5.00	26.5	25.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.4	0.0	5.00	26.2	27.1	44.1	0.0	0.0	0.0	0.0	0.0	2.5	
RAT TOTAL	850.4	75.7	47.33	211.4	211.6	306.7	0.0	393.5	0.0	0.0	75.1	33.6	0.0

Errors=(Dim 0) (A/C 0) (Uncalc 0) (Uncalc 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC LB/GAL @ 60F 8.53
STIRGEN AC ADDED 5.87
AC TOTAL % 4.56

	RCYL	RETURNED
% RECL AC	4.0	
ACT	0.00	5.87

AC ACCUM. (ACT) 5.87 %
AC ACCUM. (RED) 5.00 %

RECORDATION 7DIMS 10CYS 10FLS 09:47:30 10/22/92

F 1 0 DIM12 20.1TPH 306F 497DHS 5.00Lmnc 300F (4.0DRL) 0.03323

	VIR	RAP	+AC	DIM1	DIM2	DIM3	DIM4	DIM5	DIM6	DIM7	RCYL	HFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	299	0	16.6	76	75	129	0	0	0	0	0	7	0
% RED	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.5	0.0	5.00	26.3	26.2	44.9	0.0	0.0	0.0	0.0	0.0	2.5	
RAT TOTAL	903.0	75.7	46.73	217.7	216.0	129.4	0.0	393.5	0.0	0.0	75.1	34.2	0.0

Errors=(Dim 0) (A/C 0) (Uncalc 0) (Uncalc 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC LB/GAL @ 60F 8.53
STIRGEN AC ADDED 5.09
AC TOTAL % 4.50

	RCYL	RETURNED
% RECL AC	4.0	
ACT	0.00	5.09

AC ACCUM. (ACT) 5.90 %
AC ACCUM. (RED) 5.00 %

RECORDATION 7DIMS 10CYS 10FLS 09:51:31 10/22/92

F 1 0 DIM12 20.7TPH 306F 338DHS 5.00Lmnc 300F (4.0DRL) 0.03323

	VIR	RAP	+AC	DIM1	DIM2	DIM3	DIM4	DIM5	DIM6	DIM7	RCYL	HFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	295	0	16.4	77	77	127	0	0	0	0	0	7	10
% RED	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.5	0.0	5.00	26.6	26.7	44.0	0.0	0.0	0.0	0.0	0.0	2.5	
RAT TOTAL	925.7	75.7	50.06	224.2	224.0	130.0	0.0	393.5	0.0	0.0	75.1	36.9	0.0

Errors=(Dim 0) (A/C 0) (Uncalc 0) (Uncalc 0) (Divert 0) (Dust 0)

AC STATISTICS:

[illegible]

[illegible] 0.00 5.79

[illegible] ACCUM. (ACT) 5.79 %

[illegible] ACCUM. (REQ) 5.00 %

[illegible]CONDITION 70KDS 10CFS 100F.S 09:57:33 10/22/93

[illegible] 6 HEIGHT (100TPH) 326F 94CDHS 6.222mm: 307F (4.0KB) 0.0KB21

	VIN	BAP	+AC	BEN1	BEN2	BEN3	BEN4	BEN5	BEN6	BEN7	BCT1	BPL1	BUST
[illegible]STURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] RATE	254	0	11.5	75	75	1.29	0	0	0	0	0	7	11
[illegible]	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
[illegible]ATE	97.5	0.0	6.22	26.2	26.4	44.7	0.0	0.0	0.0	0.0	0.0	2.4	
[illegible] TOTAL	945.5	75.7	51.31	230.6	230.2	140.7	0.0	393.6	0.0	0.0	76.1	35.5	0.0

[illegible]: [illegible] 0) (A/C 0) (Uncalc 0) (Uncalc 0) (Divert. 0) (Dust. 0)

STATISTICS:

[illegible] 0 60F 0.53

[illegible] AC ADDED 6.09

TOTAL % 6.63

	BCT1	BEYONDED
[illegible] AC	6.0	
	0.00	6.09

[illegible] (ACT) 6.09 %

[illegible] ACCUM. (REQ) 5.00 %

[illegible]CONDITION 70KDS 10CFS 100F.S 10:02:35 10/22/93

[illegible] 0 HEIGHT 286TPH 300F 117THDS 5.400mm: 300F (4.0KB) 0.0KB21

	VIN	BAP	+AC	BEN1	BEN2	BEN3	BEN4	BEN5	BEN6	BEN7	BCT1	BPL1	BUST
[illegible]STURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] RATE	263	3	16.5	75	76	1.20	0	0	0	0	0	7	7
[illegible]	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
[illegible]ATE	97.5	0.0	5.00	26.5	26.4	44.5	0.0	0.0	0.0	0.0	0.0	2.4	
[illegible] TOTAL	960.1	75.7	52.60	236.9	236.6	151.4	0.0	393.6	0.0	0.0	76.1	36.1	0.0

[illegible]: [illegible] 0) (A/C 0) (Uncalc 0) (Uncalc 0) (Divert. 0) (Dust. 0)

STATISTICS:

[illegible] 0 60F 0.53

[illegible] AC ADDED 5.79

TOTAL % 6.65

	BCT1	BEYONDED
[illegible] AC	6.0	
	0.00	5.79

[illegible] (ACT) 5.79 %

[illegible] (REQ) 5.00 %

[illegible] [illegible] 70KDS 10CFS 100F.S 10:08:50 10/22/93

[illegible] HEIGHT 202TPH 305F 140THDS 5.900mm: 300F (4.0KB) 0.0KB21

	VIN	BAP	+AC	BEN1	BEN2	BEN3	BEN4	BEN5	BEN6	BEN7	BCT1	BPL1	BUST
[illegible]	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] RATE	250	0	16.3	76	76	139	0	0	0	0	0	7	13
[illegible]	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
[illegible]	97.5	0.0	5.00	26.5	26.3	44.5	0.0	0.0	0.0	0.0	0.0	2.4	
[illegible] TOTAL	990.7	75.7	56.00	303.0	303.0	302.0	0.0	393.6	0.0	0.0	76.1	36.1	0.0

[illegible]: [illegible] 0) (A/C 0) (Uncalc 0) (Uncalc 0) (Divert. 0) (Dust. 0)

[illegible]STATISTICS:

[illegible]

[illegible]

[illegible] 4.0

ACH 0.00 5.76

AC ACCUM. (ACT) 5.77 %

AC ACCUM. (REQ) 5.00 %

RECORDATION 78DHS 10CTS 13PLS 10:12:39 10/22/92

F 1 0 11:12 296TPH 305F 165TOHS 5.00%mc 300F (4.0GRS+ 0.03823)

	VIR	RAP	+AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCT1	BPL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
TPH RATE	268	0	16.0	77	76	125	0	0	0	0	0	7	5
% REQ	97.5	0.0	5.60	35.6	26.5	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.5	0.0	5.60	35.0	26.6	43.9	0.0	0.0	0.0	0.0	0.0	2.5	
%CT TOTAL	1013.3	75.7	55.46	249.0	249.0	172.7	0.0	393.6	0.0	0.0	76.1	37.3	0.0

Errors=(Bins 0) (A/C 0) (Vscale 0) (Hscale 0) (Dismart 0) (Dust 0)

AC STATISTICS:

AC Lb/GAL @ 60F 4.53

WEIGHT AC ADDED 5.76

AC TOTAL % 6.69

	BCT1	DESIRED
% REQ. AC	6.0	
ACH	0.00	5.76

AC ACCUM. (ACT) 5.76 %

AC ACCUM. (REQ) 5.00 %

RECORDATION 78DHS 10CTS 13PLS 10:17:03 10/22/92

F 1 0 11:30 291TPH 307F 81CUBS 5.20%mc 300F (4.0GRS+ 0.03823)

	VIR	RAP	+AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCT1	BPL1	DUST
MOISTURE	2.9	5.2		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
TPH RATE	229	35	14.0	53	53	0	0	139	0	0	39	7	4
% REQ	96.0	9.6	4.80	16.5	16.5	0.0	0.0	69.0	0.0	0.0	9.6	3.9	
% RATE	93.0	15.5	5.38	16.2	16.1	0.0	0.0	67.4	0.0	0.0	15.9	3.6	
%CT TOTAL	1039.2	75.0	56.84	255.9	255.0	179.1	0.0	390.6	0.0	0.0	76.4	37.9	0.0

Errors=(Bins 0) (A/C 0) (Vscale 0) (Hscale 0) (Dismart 0) (Dust 0)

AC STATISTICS:

AC Lb/GAL @ 60F 4.53

WEIGHT AC ADDED 4.97

AC TOTAL % 4.73

	BCT1	DESIRED
DESI. AC	4.0	
ACH	4.40	4.97

AC ACCUM. (ACT) 5.06 %

AC ACCUM. (REQ) 4.00 %

RECORDATION 78DHS 10CTS 13PLS 10:25:40 10/22/92

F 1 0 11:30 279TPH 300F 239CUBS 4.69%mc 307F (4.0GRS+ 0.03823)

	VIR	RAP	+AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCT1	BPL1	DUST
MOISTURE	2.9	9.2		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
TPH RATE	222	23	12.1	96	53	0	0	142	0	0	27	30	14
% REQ	86.0	9.6	4.00	36.5	16.5	0.0	0.0	69.0	0.0	0.0	9.6	3.9	
% RATE	86.0	9.6	4.69	39.0	16.6	0.0	0.0	69.1	0.0	0.0	9.6	3.9	
%CT TOTAL	1055.2	77.9	57.06	360.0	255.5	179.1	0.0	641.7	0.0	0.0	78.7	36.7	0.0

Errors=(Bins 0) (A/C 0) (Vscale 0) (Hscale 0) (Dismart 0) (Dust 0)

STATISTICS:

[illegible]

RECORDATION 7RIMS 1RCTS 1DFLS

10:27:06 10/22/92

F X B 0X30 2807PH 290F 477006 0.00Kmm 307F 14.0X01+ 0.0X023

	VZN	RAP	+AC	0X01	0X02	0X03	0X04	0X05	0X06	0X07	0CT1	0FL1	0HST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
TPH RATE	230	20	12.2	53	53	0	0	144	0	0	27	10	4
% REG	86.0	9.6	4.80	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.0	9.6	4.80	10.5	10.3	0.0	0.0	50.0	0.0	0.0	9.6	3.5	
MAT TOTAL	1875..	80.2	50.91	256.5	264.0	179.1	0.0	422.9	0.0	0.0	81.1	39.6	0.0

Errors=(Zero 0) (A/C 0) (Vscale 0) (Hscale 0) (Direct 0) (Dust 0)

AC STATISTICS:

AC Lb/GAL @ 60F 8.53

SYLREXE AC ASSED 4.37

AC TOTAL % 4.69

	0CT1	METERED
% REG. AC	4.4	
ACR	0.40	4.37

AC ACCUM. (LCT) 4.77 %

AC ACCUM. (REG) 4.80 %

RECORDATION 7RIMS 1RCTS 1DFLS

10:32:40 10/22/92

F X B 0X30 2767PH 290F 707005 4.90Kmm 307F 14.0X01+ 0.0X023

	VZN	RAP	+AC	0X01	0X02	0X03	0X04	0X05	0X06	0X07	0CT1	0FL1	0HST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
TPH RATE	227	27	12.2	53	50	0	0	144	0	0	27	10	9
% REG	86.9	9.6	4.80	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.9	9.6	4.80	10.5	10.6	0.0	0.0	49.6	0.0	0.0	9.6	3.4	
MAT TOTAL	1895.0	82.6	59.90	259.0	268.5	179.1	0.0	435.0	0.0	0.0	83.4	40.4	0.0

Errors=(Zero 0) (A/C 0) (Vscale 0) (Hscale 0) (Direct 0) (Dust 0)

AC STATISTICS:

AC Lb/GAL @ 60F 8.53

SYLREXE AC ASSED 4.44

AC TOTAL % 4.59

	0CT1	METERED
% REG. AC	4.0	
ACR	0.39	4.44

AC ACCUM. (LCT) 4.46 %

AC ACCUM. (REG) 4.80 %

RECORDATION 7RIMS 1RCTS 1DFLS

10:37:50 10/22/92

F X B 0X30 2547PH 297F 937008 4.00Kmm 307F 14.0X01+ 0.0X023

	VZN	RAP	+AC	0X01	0X02	0X03	0X04	0X05	0X06	0X07	0CT1	0FL1	0HST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
TPH RATE	223	0	12.1	53	53	0	0	144	0	0	27	10	10
% REG	86.0	9.6	4.80	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.0	9.6	4.80	10.6	10.4	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
MAT TOTAL	1336.0	80.4	60.97	275.5	273.0	179.1	0.0	447.1	0.0	0.0	86.7	41.0	0.0

Errors=(Zero 0) (A/C 0) (Vscale 0) (Hscale 0) (Direct 0) (Dust 0)

STATISTICS:

AC Lb/GAL @ 60F 8.53

LYMREXE AC-ASSED 4.46

TOTAL % 4.60

	0CT1	METERED

[illegible] 0.00

	RCFL	DEFERRED
[illegible] AC	4.0	
ACF	0.01	4.96

AC ACCUM. (ACT) 4.77 %
AC ACCUM. (REG) 4.80 %

RECORDKEEPING 7DIMS 13CYS 10FLS 10:43:53 10/22/92

[illegible] 27:TPH 293F 11.67TONS 4.80%mac 307F 14.0GAL+ 0.0GAL)

	TCH	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	RCFL	DPLS	DUST
[illegible]	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH BATE	232	26	12.1	54	53	0	0	141	0	0	27	10	6
% REG	86.8	9.5	4.80	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% BATE	86.7	9.5	4.80	18.7	18.6	0.0	0.0	49.3	0.0	0.0	9.6	3.5	
DAT TOTAL	1134.5	86.0	55.99	278.0	277.5	179.1	0.0	459.2	0.0	0.0	90.1	43.1	0.0

Errors=(Blue 0) (A/C 0) (Vacuum 0) (Baghouse 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC ACCUM. @ 60F	9.53
[illegible] AC ADDED	4.47
AC TOTAL %	4.67

	RCFL	DEFERRED
% RECL. AC	4.0	
ACF	0.39	4.47

AC ACCUM. (ACT) 4.87 %
AC ACCUM. (REG) 4.80 %

RECORDKEEPING 7DIMS 13CYS 10FLS 10:47:55 10/22/92

[illegible] 259TPH 296F 13.97TONS 4.80%mac 306F 14.0GAL+ 0.0GAL)

	TCH	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	RCFL	DPLS	DUST
[illegible]	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH BATE	225	24	12.1	53	53	0	0	145	0	0	27	10	6
% REG	86.8	9.6	4.80	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% BATE	86.9	9.6	4.80	18.6	18.4	0.0	0.0	50.0	0.0	0.0	9.6	3.4	
DAT TOTAL	1154.5	80.2	65.01	282.5	282.0	179.1	0.0	471.3	0.0	0.0	90.6	43.0	0.0

Errors=(Blue 0) (A/C 0) (Vacuum 0) (Baghouse 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC ACCUM. @ 60F	8.53
[illegible] AC ADDED	4.09
AC TOTAL %	4.57

	RCFL	DEFERRED
% RECL. AC	4.0	
ACF	0.37	4.09

AC ACCUM. (ACT) 4.86 %
AC ACCUM. (REG) 4.80 %

RECORDKEEPING 7DIMS 10CYS 10FLS 10:53:37 10/22/92

[illegible] 274TPH 297F 16.67TONS 6.00%mac 308F 14.0GAL+ 0.0GAL)

	TCH	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	RCFL	DPLS	DUST
[illegible]	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH BATE	225	34	12.2	53	54	0	0	140	0	0	27	10	30
REG	86.8	9.6	4.80	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% BATE	87.0	9.6	4.80	18.3	18.6	0.0	0.0	50.3	0.0	0.0	9.4	3.4	
DAT TOTAL	1174.0	90.3	64.03	287.0	286.5	179.1	0.0	483.5	0.0	0.0	93.7	43.0	0.0

Errors=(Blue 0) (A/C 0) (Vacuum 0) (Baghouse 0) (Divert 0) (Dust 0)

[illegible] 4.00

AC ACCUM. (ACT) 4.01 %

AC ACCUM. (REQ) 4.00 %

[illegible] 78305 1BCTS 1BFLS 10:57:00 10/22/92

[illegible] 267TPH 256F 185TONS 4.90%moc 309F [4.00%]- 0.0[illegible]

	TIR	HAP	+AC	BCN1	BCN2	BCN3	BCN4	BCN5	BCN6	BCN7	BCT1	BFL1	DUST
[illegible]	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] RATE	229	24	12.0	53	54	0	0	143	0	0	27	10	6
% REG	86.0	9.6	4.00	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.0	9.6	4.00	18.7	18.9	0.0	0.0	49.1	0.0	0.0	9.6	3.5	
[illegible] TOTAL	1193.6	92.4	65.05	291.5	291.0	179.1	0.0	695.6	0.0	0.0	95.1	44.7	0.0

Errors=(Bias 0) (A/C 0) (Vscale 0) (Hscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 1hr/Avg. @ 60F 4.53

STIMSON AC ADDED 4.58

AC TOTAL % 4.65

	BCT1	METHODS
% REG. AC	4.0	
ACT	4.36	4.50

AC ACCUM. (ACT) 4.57 %

AC ACCUM. (REQ) 4.50 %

[illegible] 73105 1BCTS 1BFLS 11:03:01 10/22/92

[illegible] 266TPH 235F 200TONS 4.00%moc 300F [4.00%]- 0.0[illegible]

	TIR	HAP	+AC	BCN1	BCN2	BCN3	BCN4	BCN5	BCN6	BCN7	BCT1	BFL1	DUST
[illegible]	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] RATE	229	23	11.0	53	53	0	0	143	0	0	27	10	6
% REG	86.0	9.6	4.00	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	86.9	9.6	4.00	18.3	18.3	0.0	0.0	50.0	0.0	0.0	9.6	3.4	
[illegible] TOTAL	1213.4	94.5	56.07	296.0	295.5	179.1	0.0	507.7	0.0	0.0	97.6	45.5	0.0

Errors=(Bias 0) (A/C 0) (Vscale 0) (Hscale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 1hr/Avg. @ 60F 4.53

STIMSON AC ADDED 4.65

AC TOTAL % 4.65

	BCT1	METHODS
REQ. AC	4.0	
ACT	4.39	4.65

AC ACCUM. (ACT) 4.00 %

AC ACCUM. (REQ) 4.00 %

[illegible] 78108 1BCTS 1BFLS 11:00:03 10/22/92

[illegible] 201TPH 207F 231TONS 4.00%moc 300F [4.00%]- 0.0[illegible]

	TIR	HAP	+AC	BCN1	BCN2	BCN3	BCN4	BCN5	BCN6	BCN7	BCT1	BFL1	DUST
[illegible]	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] RATE	219	30	13.4	53	54	0	0	143	0	0	27	10	13
% REG	86.0	9.6	4.00	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
RATE	86.0	9.6	4.00	18.4	18.0	0.0	0.0	49.5	0.0	0.0	9.6	3.5	
[illegible] TOTAL	1233.2	96.7	67.09	300.5	300.0	179.1	0.0	519.0	0.0	0.0	99.0	46.4	0.0

Errors=(Bias 0) (A/C 0) (Vscale 0) (Hscale 0) (Divert 0) (Dust 0)

STATISTICS:

AC 1hr/Avg. @ 60F 4.53

[illegible] 6.0

[illegible] 0.00 4.00

[illegible] ACCUM. (ACF) 4.00 X

[illegible] ACCUM. (PACF) 4.00 X

[illegible]CORDATION 70X08 10CYS 10FLS 13:39:05 10/22/92

[illegible] 3 0 0X130 2785PH 293F 2541T0H5 4.00Kohm 307F 14.0X1+ 0.0X021

	VIN	BAP	+AC	0X01	0X02	0X03	0X04	0X05	0X06	0X07	RCVL	DFLL	DOST
[illegible]STOOK	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] 1.6TE	230	29	12.3	53	53	0	0	146	0	0	27	10	0
[illegible]050	96.8	9.5	4.80	16.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
[illegible]0TE	96.9	9.5	4.80	16.5	10.5	0.0	0.0	49.0	0.0	0.0	9.5	3.6	
[illegible] TOTAL	1252.9	99.1	50.11	305.0	304.5	179.1	0.0	531.9	0.0	0.0	102.1	47.2	0.0

[illegible]rors: (Bias 0) (A/C 0) (Uncale 0) (Bncale 0) (Sbcurt 0) (Ouct 0)

STATISTICS:

[illegible] 0 60F 5.53

[illegible]RGIN AC 1.0062 4.64

[illegible] 4.64

RCVL 1.0278E03

[illegible] 6.0

[illegible] 0.41 4.64

[illegible] ACCUM. (ACF) 6.05 X

[illegible] ACCUM. (PACF) 6.00 X

[illegible]ARDATION 70X05 10CYS 10FLS 13:40:00 10/22/92

[illegible] 0 0X130 2722PH 287F 2777T0H5 4.00Kohm 307F 14.0X1+ 0.0X021

	VIN	BAP	+AC	0X01	0X02	0X03	0X04	0X05	0X06	0X07	RCVL	DFLL	DOST
[illegible]STOOK	3.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
[illegible] 1.6TE	333	29	12.0	90	84	109	0	0	0	0	27	10	0
[illegible]6	97.5	0.0	5.80	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	3.5	
[illegible]0TE	90.3	7.0	4.50	20.9	21.5	40.2	0.0	0.0	0.0	0.0	7.0	3.5	
[illegible] TOTAL	1272.9	102.5	69.13	309.6	309.1	1005.0	0.0	502.5	0.0	0.0	104.6	48.1	0.0

[illegible]rors: (Bias 0) (A/C 0) (Uncale 0) (Bncale 0) (Sbcurt 0) (Ouct 0)

STATISTICS:

[illegible] 0 60F 9.93

[illegible] AC 1.0062 6.42

[illegible] 6.63

RCVL 1.0278E03

[illegible] 6.0

[illegible] 0.42 6.42

[illegible] ACCUM. (ACF) 6.04 X

[illegible] ACCUM. (PACF) 5.00 X

[illegible]DATION 70X06 10CYS 10FLS 13:29:40 10/22/92

[illegible] 0 0X112 3385PH 297F 3770H5 5.00Kohm 310F 14.0X1+ 0.0X021

	VIN	BAP	+AC	0X01	0X02	0X03	0X04	0X05	0X06	0X07	RCVL	DFLL	DOST
[illegible] FOOK	3.9	0.0		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
[illegible] 1.6TE	292	0	36.9	76	96	130	0	0	0	0	0	7	19
[illegible]060	97.5	0.0	5.80	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	3.9	
[illegible]0TE	97.5	0.0	5.80	26.4	26.3	44.0	0.0	0.0	0.0	0.0	0.0	3.4	
[illegible] TOTAL	1295.7	102.1	70.63	316.0	319.6	390.7	0.0	562.6	0.0	0.0	106.9	40.0	0.0

[illegible]rors: (Bias 0) (A/C 0) (Uncale 0) (Bncale 0) (Sbcurt 0) (Ouct 0)

[illegible]TISTICS:

[illegible] 0 60F 9.93

[illegible]

	ВСТР	ЗАПРОС
Э ВНЕШ. АС	0.0	
ИСЭ	0.00	9.79
АС ИСЭОПТ. СИСТР		9.00 Э
АС ИСЭОПТ. ПОМП		9.00 Э

ПИСОПАТЕОН 78ЕПЕ 1ИСТЭ 1ЭРТЛ

Р Э В ИЕЕЕ2 ЗЕЕЕТРЕ 290Р 607С05 9.80Зопе 309Р С4.0ВЕЕ+ 0.0ЕЕЕЕ

	УЕН	ВАР	ЧАС	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ
ИСЕЕТРЕЕЕ	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
ТРЕ ВАТЕ	250	0	16.1	77	76	130	0	0	0	0	0	7	6
Е ВЕЕ	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
Е ВАТЕ	97.5	0.0	5.00	26.5	26.1	44.9	0.0	0.0	0.0	0.0	0.0	2.5	
ЗЕЕ ТОТЕЕ	1310.1	102.1	71.40	322.4	322.0	301.3	0.0	562.6	0.0	0.0	104.9	49.4	0.0

Errors(Bias 0) (AVG 0) (Pseudo 0) (Pseudo 0) (Extert 0) (Dual 0)

АС ЕРТЕЕЕЕЕЕЕЕ

АС ЛЬЕВЕЕ 0 ВОР	0.33
ЕРЕЕЕЕЕ АС ЕЕЕЕЕ	5.03
АС ЗОТЕЕ Э	0.69

	ЗЕЕЕ	ЕЕЕТЕЕЕ
Э ВЕЕЕ АС	4.0	
ЕСЭ	0.00	9.62
АС ЕСЭОПТ. СЕСТР		9.62 Э
АС ЕСЭОПТ. ПОМП		9.00 Э

ЕЕЕЕЕЕЕЕЕЕЕ 2ЕЕЕЕ 1ИСТЭ 1ЭРТЛ

Р Э В ЕЕЕЕЕ 2ЕЕЕТРЕ 3ЕЕР 6ЕЕТЕЕ 9.40Зопе 3ЕЕР С4.0ВЕЕ+ 0.0ЕЕЕЕ

	УЕН	ВАР	ЧАС	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ
ИСЕЕТРЕЕЕ	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
ТРЕ ВАТЕ	260	0	16.5	75	76	136	0	0	0	0	5.2		
Е ВЕЕ	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2	0
Е ВАТЕ	97.4	0.0	5.00	26.4	26.7	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
ВАТ ЗОТЕЕ	1300.5	102.1	73.17	330.0	320.0	312.0	0.0	562.6	0.0	0.0	106.1	90.0	0.0

Errors(Bias 0) (AVG 0) (Pseudo 0) (Pseudo 0) (Extert 0) (Dual 0)

АС ЕТЕРЕЕЕЕЕЕЕ

АС ЛЬЕВЕЕ 0 ВОР	0.99
ЕТЕЕЕЕЕ АС ЕЕЕЕЕ	5.00
АС ТЕЕЕ Э	4.67

	ЗЕЕТ	ЕЕТЕЕЕЕ
Э ВЕЕЕ АС	4.0	
ЕСЭ	0.00	9.00
АС ЕСЭОПТ. СЕСТР		9.00 Э
АС ЕСЭОПТ. ПОМП		9.00 Э

ПИСОПАТЕОН 2ЕЕЕЕ 1ИСТЭ 1ЭРТЛ

Р Э В ЕЕЕЕЕ 3ЕЕЕТРЕ 3ЕЕР ЕЕЕТЕЕ 9.00Зопе 3ЕЕР С4.0ВЕЕ+ 0.0ЕЕЕЕ

	УЕН	ВАР	ЧАС	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ	ВЕЕЕ
ИСЕЕТРЕЕЕ	3.9	0.0		5.3	7.0	1.5	0.6	0.7	0.0	0.0	5.3		
ТРЕ ВАТЕ	290	0	16.6	90	70	139	0	0	0	0	0	7	04
Е ВЕЕ	97.9	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.0	
Е ВАТЕ	97.9	0.0	5.00	26.9	26.4	44.3	0.0	0.0	0.0	0.0	0.0	2.0	
ВАТ ТОТЕЕ	1303.0	102.1	74.94	330.3	334.0	322.6	0.0	562.6	0.0	0.0	100.9	90.6	0.0

Errors(Bias 0) (AVG 0) (Pseudo 0) (Pseudo 0) [illegible]

[illegible]

[illegible] 0.00

[illegible] 0.0

[illegible] 0.00 5.00

[illegible] ACCUM. (ACT) 5.00 %

[illegible] ACCUM. (REQ) 5.00 %

[illegible]CORRELATION 78305 1RCTS 1RFLS 11:43:10 10/22/92

F 1 0 11K.2 277TPH 296F 1177CMS 5.00%moc 31.0F 14.00%> 0.03523

	TIR	RAP	•AC	B301	B302	B303	B304	B305	B306	B307	RCT1	RFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	264	0	16.2	75	76	120	0	0	0	0	0	7	7
% ASB	97.5	0.0	5.50	25.6	26.5	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% BLTE	97.5	0.0	5.50	25.2	26.5	44.6	0.0	0.0	0.0	0.0	0.0	2.5	
WT TOTAL	1585.7	102.1	75.92	341.6	341.2	233.3	0.0	562.6	0.0	0.0	104.9	51.2	0.0

Errors= Blan 0) ATC 0) Vscale 0) Ascale 0) (Sivert 0) (Dust 0)

AC STATISTICS:

AC [illegible] 0 60F 0.53

[illegible] AC ADDED 5.83

AC TOTAL % 4.70

RCT1 METERED

SEC. AC 4.0

[illegible] 0.00 5.83

AC ACCUM. (ACT) 5.83 %

AC ACCUM. (REQ) 5.80 %

[illegible]CORRELATION 70305 1RCTS 1RFLS 11:00:30 10/22/92

F 1 0 11K.2 282TPH 304F 1355CMS 5.00%moc 31.1F 14.00%> 0.03523

	TIR	RAP	•AC	B301	B302	B303	B304	B305	B306	B307	RCT1	RFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	260	0	16.4	76	75	128	0	0	0	0	0	7	9
% ASB	97.5	0.0	5.00	26.6	25.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% BLTE	97.5	0.0	5.00	26.6	25.4	44.5	0.0	0.0	0.0	0.0	0.0	2.4	
WT TOTAL	1400.4	102.1	77.31	340.0	347.6	244.0	0.0	562.6	0.0	0.0	104.9	51.0	0.0

Errors= Blan 0) ATC 0) Vscale 0) (Ascale 0) (Sivert 0) (Dust 0)

AC STATISTICS:

[illegible] 0 60F 0.53

[illegible] AC ADDED 5.41

AC TOTAL % 4.71

RCT1 METERED

SEC. AC 4.0

[illegible] 0.00 5.31

AC ACCUM. (ACT) 5.41 %

AC ACCUM. (REQ) 5.00 %

[illegible]CORRELATION 70105 1RCTS 1RFLS 11:33:33 10/22/92

F 1 0 11K.2 284TPH 301F 1597CMS 5.00%moc 31.1F 14.00%> 0.03523

	TIR	RAP	•AC	B301	B302	B303	B304	B305	B306	B307	RCT1	RFL1	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	256	0	16.3	76	76	126	0	0	0	0	0	7	14
% ASB	97.5	0.0	5.00	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% BLTE	97.5	0.0	5.00	26.6	26.7	44.0	0.0	0.0	0.0	0.0	0.0	2.5	
WT TOTAL	1430.9	102.1	78.68	354.4	354.0	250.6	0.0	562.6	0.0	0.0	104.9	51.0	0.0

Errors= Blan 0) ATC 0) Vscale 0) (Ascale 0) (Sivert 0) (Dust 0)

STATISTICS:

[illegible]

[illegible]

0 RECL AC 4.0

ACH 0.00 5.79

AC ACCUM. (ACT) 5.75 %

AC ACCUM. (REQ) 5.80 %

RECORDATION 70DHS 15CFS 10PLS

11:50:25 10/22/92

F I 0 11:12 20CFPH 30CF 1207CHS 5.00%oac 31.2F [0.0121.> 0.00223

	VLR	BAP	>AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCT1	BPL1	DUST
BCISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	257	0	16.4	76	77	136	0	0	0	0	0		
% REM	97.5	0.0	5.80	26.5	26.6	44.3	0.0	0.0	0.0	0.0	0.0	7	8
% RATE	97.5	0.0	5.80	26.3	26.7	44.4	0.0	0.0	0.0	0.0	0.0	2.5	
NET TOTAL	3453.4	102.1	80.05	360.5	360.4	255.3	0.0	542.6	0.0	0.0	0.0	2.4	
Errors=(Bias 0) (A/C 0) (Vscale 0) (Hscale 0) (Dcvert 0) (Dust 0)											104.9	53.0	0.0

AC STATISTICS:

AC 10/SAL. 0 50F 4.53

STIRGIN AC ADDED 5.79

AC TOTAL % 4.74

	BCT1	BESERED
% RECL. AC	4.0	
ACH	0.00	5.79

AC ACCUM. (ACT) 5.90 %

AC ACCUM. (REQ) 5.50 %

RECORDATION 70DHS 10CFS 10PLS

12:03:27 10/22/92

F I 0 11:12 20CFPH 30CF 2067CHS 5.00%oac 31.2F [0.0121.> 0.00223

	VLR	BAP	>AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCT1	BPL1	DUST
BCISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	261	0	16.4	76	75	136	0	0	0	0	0		
% REM	97.5	0.0	5.80	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	7	9
% RATE	97.4	0.0	5.80	26.7	26.5	44.2	0.0	0.0	0.0	0.0	0.0	2.5	
NET TOTAL	3475.9	102.1	81.43	367.2	366.8	276.0	0.0	542.6	0.0	0.0	104.9	53.6	0.0
Errors=(Bias 0) (A/C 0) (Vscale 0) (Hscale 0) (Dcvert 0) (Dust 0)													

AC STATISTICS:

AC 10/SAL. 0 60F 4.53

STIRGIN AC ADDED 5.85

AC TOTAL % 4.75

	BCT1	BESERED
% RECL. AC	4.0	
ACH	0.00	5.85

AC ACCUM. (ACT) 5.85 %

AC ACCUM. (REQ) 5.80 %

RECORDATION 70DHS 10CFS 10PLS

12:00:29 10/22/92

F I 0 11:12 20CFPH 30CF 2307CHS 5.00%oac 31.2F [0.0121.> 0.00223

	VLR	BAP	>AC	BCH1	BCH2	BCH3	BCH4	BCH5	BCH6	BCH7	BCT1	BPL1	DUST
BCISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	253	0	16.3	75	76	136	0	0	0	0	0		
% REM	97.5	0.0	5.80	26.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	7	12
% RATE	97.4	0.0	5.80	26.6	26.5	44.2	0.0	0.0	0.0	0.0	0.0	2.5	
NET TOTAL	3490.9	102.1	82.00	373.6	373.2	386.6	0.0	542.6	0.0	0.0	0.0	2.5	
Errors=(Bias 0) (A/C 0) (Vscale 0) (Hscale 0) (Dcvert 0) (Dust 0)											104.9	54.2	0.0

AC STATISTICS:

AC 10/SAL. 0 60F 0.53

[illegible]

MOLE %: 4.0

SE 0.00 9.70

AC ACCUM. (MCF) 9.70 %

% ACCUM. (REC) 5.00 %

RECORDATION 7BUMS 1BCYS 3DFLS 12:13:31 10/22/93

F 1 0 11112 2047PH 3057 2547DMS 5.00Amps 31.0F 14.0PSI= 0.00023

	TIR	RAP	+AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCT1	BFL3	DUST
MOISTURE	3.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	266	0	16.5	76	76	127	0	0	0	0	0	7	7
% RES	97.5	0.0	5.80	25.6	26.6	44.3	0.0	0.0	0.0	0.0	0.0	2.5	
% RATE	97.5	0.0	5.80	25.6	26.5	44.3	0.0	0.0	0.0	0.0	0.0	2.0	
HAT TOTAL	1521.3	102.1	84.19	300.0	379.6	297.3	0.0	502.6	0.0	0.0	104.9	56.0	0.0

Errors=(Hamm 0) (A/C 0) (Uncale 0) (Hacale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 35/50L @ 60F 9.53

LVCHGSIN AC ADDED 5.81

AC TOTAL % 4.77

BCM1 DESTROYED

% REQ. AC 6.0

ACK 0.00 5.81

AC ACCUM. (MCF) 5.81 %

AC ACCUM. (REC) 5.80 %

RECORDATION 7BUMS 1BCYS 1BFLS 12:30:33 10/22/93

F 1 0 11112 2037PH 3057 2787DMS 5.00Amps 31.3F 14.0PSI= 0.00021

	TIR	RAP	+AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCT1	BFL3	DUST
MOISTURE	2.9	0.0		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	191	1	16.5	52	43	0	0	225	0	0	0	7	9
% RES	96.9	0.6	4.80	18.5	18.5	0.0	0.0	49.8	0.0	0.0	0.6	3.5	
% RATE	97.0	0.0	5.80	15.9	13.2	0.0	0.0	68.5	0.0	0.0	0.0	2.1	
HAT TOTAL	1543.9	102.1	85.58	306.4	305.9	307.2	0.0	543.6	0.0	0.0	104.9	55.4	0.0

Errors=(Hamm 0) (A/C 0) (Uncale 0) (Hacale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 35/50L @ 60F 0.53

LVCHGSIN AC ADDED 5.80

AC TOTAL % 4.70

BCM1 DESTROYED

% REQ. AC 4.0

ACK 0.00 5.04

AC ACCUM. (MCF) 5.80 %

AC ACCUM. (REC) 4.90 %

RECORDATION 7BUMS 1BCYS 3DFLS 12:23:39 10/22/93

F 1 0 11130 2737PH 3302F 1537DMS 4.00Amps 31.2F 14.0PSI= 0.00023

	TIR	RAP	+AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCT1	BFL3	DUST
MOISTURE	2.9	5.2		5.1	7.0	1.5	0.6	0.7	0.0	0.0	5.2		
TPH RATE	225	27	12.0	53	53	0	0	160	0	0	32	10	10
% RES	96.0	9.6	4.00	18.5	18.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
% RATE	96.6	9.7	4.00	18.7	18.6	0.0	0.0	61.3	0.0	0.0	9.7	3.5	
HAT TOTAL	1564.3	105.9	86.74	300.0	300.0	307.3	0.0	555.9	0.0	0.0	105.7	56.3	0.0

Errors=(Hamm 0) (A/C 0) (Uncale 0) (Hacale 0) (Divert 0) (Dust 0)

AC STATISTICS:

AC 35/50L @ 60F 0.53

APPENDIX III

OPERATING DATA

3.2 October 23

0.00

0.39 4.00

L LCSD 4.79 %

L OBSD 4.00 %

TION TRIMS LBCYS DBPLS 07:10:33 10/23/92

11030 290TPH 304F 1677CMS 4.00%mm 301F 14.00%% 0.00023

	VIR	RAP	%AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	BPLA	DUST
	2.9	5.2		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
TS	241	27	12.0	55	55	0	0	150	0	0	20	10	0
	86.0	9.6	4.00	10.5	10.5	0.0	0.0	09.0	0.0	0.0	9.6	3.5	
	86.9	9.5	4.00	10.2	10.4	0.0	0.0	50.1	0.0	0.0	9.5	3.4	
L	343.7	15.6	19.25	80.0	88.9	91.3	0.0	92.0	0.0	0.0	17.0	11.3	0.0

=Gmm 0) (L/C 0) (Vncmlb 0) (Hncmlb 0) (Dwvert 0) (Dmnt 0)

STICS:

SAL 0 60F 0.53

AC ADMED 4.45

I 4.93

BCM1 DETERMED

%C 4.0

0.30 4.45

L (ACT) 4.84 %

L (DES) 4.80 %

ATION TRIMS LBCYS DBPLS 09:23:36 10/22/92

1130 289TPH 303F 1927CMS 4.00%mm 301F 14.00%% 0.00023

	VIR	RAP	%AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	BPLA	DUST
PF	2.9	5.2		5.1	7.0	1.9	0.6	0.7	0.0	0.0	5.2		
	236	27	12.9	56	56	0	0	149	0	0	20	10	9
	86.3	9.6	4.00	10.9	10.5	0.0	0.0	09.8	0.0	0.0	9.6	3.5	
	86.9	9.5	4.00	10.2	10.7	0.0	0.0	09.9	0.0	0.0	9.5	3.4	
L	364.5	17.9	20.33	93.4	93.6	91.3	0.0	104.5	0.0	0.0	19.4	13.2	0.0

Gmm 0) (L/C 0) (Vncmlb 0) (Hncmlb 0) (Dwvert 0) (Dmnt 0)

STICS:

L 0 60F 0.53

9 AC ADMED 4.46

I 4.09

BCM1 DETERMED

AC 4.0

0.38 4.46

L (ACT) 4.84 %

L (DES) 4.80 %

L ION TRIMS LBCYS DBPLS 09:30:30 10/23/92

1130 294TPH 303F 3167CMS 4.00%mm 301F 14.00%% 0.00023

	VIR	RAP	%AC	BCM1	BCM2	BCM3	BCM4	BCM5	BCM6	BCM7	BCM1	BPLA	DUST
	3.0	4.6		4.9	5.6	1.0	0.6	1.0	0.0	0.0	4.6		
TS	231	27	12.9	55	51	0	0	150	0	0	20	10	10
	86.0	9.6	4.00	10.5	10.5	0.0	0.0	09.0	0.0	0.0	9.6	3.5	
	86.9	9.5	4.00	10.9	10.5	0.0	0.0	09.0	0.0	0.0	9.5	3.0	
TAL	385.2	20.3	21.40	96.1	90.2	91.3	0.0	137.6	0.0	0.0	21.0	13.1	0.0

Gmm 0) (L/C 0) (Vncmlb 0) (Hncmlb 0) (Dwvert 0) (Dmnt 0)

TISTICS:

[illegible]

AC [illegible] 4.06

	[illegible]	[illegible]
[illegible] AC	4.0	
[illegible]	0.37	4.40

AC [illegible] (OCT) 4.70 %
C [illegible] (DEC) 4.00 %

[illegible]COMBUSTION 70X05 LBCTS LBFLS 07:33:40 10/23/92

[illegible] 3 [illegible]30 2400TPH 300F 2407CUBS 4.00%moc 312F [illegible]

	VIR	RAP	%AC	DX01	DX02	DX03	DX04	DX05	DX06	DX07	DCT1	DFL1	DUST
[illegible]STARE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible]B RATE	200	29	12.7	55	56	0	0	29.1	0	0	29	10	4
[illegible] 350	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.8	0.0	0.0	9.6	3.9	
[illegible]ACE	86.9	9.9	4.00	10.4	10.2	0.0	0.0	50.2	0.0	0.0	9.5	3.4	
[illegible]T TOTAL	405.9	22.7	22.47	102.8	102.9	91.3	0.0	129.6	0.0	0.0	24.2	14.0	0.0

[illegible] (Ukan 0) (AJC 0) (Uncalc 0) (Uncalc 0) (Dusort 0) (Dust 0)

STATISTICS:

[illegible] 5.6GAL 0 60F 4.53
[illegible] AC 4000D 4.42
TOTAL % 4.83

	DCT1	DCTREQD
[illegible] AC	4.0	
[illegible]	0.37	4.42

[illegible] (OCT) 4.00 %
[illegible] (DEC) 4.00 %

[illegible]COMBUSTION 70X05 LBCTS 30FLS 07:30:02 10/23/92

[illegible] 3 [illegible]30 2940TPH 307F 3650CUBS 4.00%moc 312F [illegible]

	VIR	RAP	%AC	DX01	DX02	DX03	DX04	DX05	DX06	DX07	DCT1	DFL1	DUST
[illegible]STARE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible]B RATE	200	20	13.9	55	55	0	0	249	0	0	20	10	6
[illegible]30	96.6	9.6	4.00	10.9	10.5	0.0	0.0	49.8	0.0	0.0	9.6	3.9	
[illegible]ACE	96.9	9.6	4.00	10.6	10.5	0.0	0.0	49.7	0.0	0.0	9.6	3.4	
[illegible]TOTAL	426.7	29.1	21.95	107.4	107.5	91.3	0.0	142.1	0.0	0.0	25.7	14.0	0.0

[illegible] (Ukan 0) (AJC 0) (Uncalc 0) (Uncalc 0) (Dusort 0) (Dust 0)

STATISTICS:

[illegible]5GAL 0 60F 0.93
[illegible]AC 4000D 0.38
TOTAL % 4.00

	DCT1	DCTREQD
[illegible] AC	4.0	
[illegible]	0.39	4.30

[illegible] (OCT) 4.77 %
[illegible] (DEC) 4.00 %

[illegible]COMBUSTION 70X05 LBCTS 30FLS 07:03:40 10/23/92

[illegible] 3 [illegible]30 2400TPH 300F 2407CUBS 4.00%moc 312F [illegible]

	VIR	RAP	%AC	DX01	DX02	DX03	DX04	DX05	DX06	DX07	DCT1	DFL1	DUST
[illegible]STARE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible]B RATE	239	36	15.6	58	59	0	0	249	0	0	20	10	9
[illegible]	96.0	9.6	4.00	10.9	10.5	0.0	0.0	49.8	0.0	0.0	9.6	3.9	
[illegible]6	96.9	9.9	4.00	10.6	10.3	0.0	0.0	49.7	0.0	0.0	9.6	3.9	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

R [illegible] 6.0
ACH 0.39 4.46
AC ACCUM. (ACT) 4.50 %
AC ACCUM. (DES) 4.60 %

RECORDATION 70DHS 10CFS 10FLS 07:40:46 10/23/92

F I B 01X30 20ATPH 30SF 3137CDS 4.00Kmc 31.1F (4.0001+ 0.0023)

	TIR	RAP	+AC	BXH1	BXH2	BXH3	BXH4	BXH5	BXH6	BXH7	BCT1	BPL1	DUST
MOISTURE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
TPH RATE	240	27	12.5	54	54	0	0	144	0	0	20	10	6
% RED	86.0	9.6	4.80	18.5	18.5	0.0	0.0	49.8	0.0	0.0	9.6	3.5	
% RATE	86.5	9.0	4.50	18.7	18.5	0.0	0.0	49.2	0.0	0.0	9.6	3.5	
DWT TOTAL	867.9	39.0	25.50	116.7	116.9	91.3	0.0	167.2	0.0	0.0	31.5	15.6	0.0

Errors=(Bias 0) (A/C 0) (Vacuole 0) (Rheoale 0) (Divert 0) (Dust 0)

AC STATISTICS:
AC Lb/GAL @ 60F 5.53
VIRGIN AC ADDED 4.46
AC TOTAL % 4.75

	RCT1	DESIRED
% RECL. AC	4.0	
ACH	0.39	4.46

AC ACCUM. (ACT) 4.85 %
AC ACCUM. (DES) 4.90 %

RECORDATION 70DHS 10CFS 10FLS 07:53:00 10/23/92

F I B 01X30 20ATPH 30SF 3137CDS 4.00Kmc 31.1F (4.0001+ 0.0023)

	TIR	RAP	+AC	BXH1	BXH2	BXH3	BXH4	BXH5	BXH6	BXH7	BCT1	BPL1	DUST
MOISTURE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
TPH RATE	237	26	12.9	59	59	0	0	152	0	0	20	10	7
% RED	86.0	9.6	4.80	18.5	18.9	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
% RATE	86.9	9.5	4.80	18.2	19.0	0.0	0.0	50.6	0.0	0.0	9.5	3.0	
DWT TOTAL	888.4	32.1	26.79	121.0	126.5	91.3	0.0	179.7	0.0	0.0	31.9	17.5	0.0

Errors=(Bias 0) (A/C 0) (Vacuole 0) (Rheoale 0) (Divert 0) (Dust 0)

AC STATISTICS:
C Lb/GAL @ 60F 0.53
VIRGIN AC ADDED 4.41
AC TOTAL % 4.73

	RCT1	DESIRED
% RECL. AC	4.0	
ACH	0.37	4.41

C ACCUM. (ACT) 4.79 %
C ACCUM. (DES) 4.80 %

RECORDATION 70DHS 30CFS 10FLS 07:30:50 10/23/92

F I B 01X30 290TPH 30SF 3617CDS 6.00Kmc 31.1F (4.0001+ 0.0023)

	TIR	RAP	+AC	BXH1	BXH2	BXH3	BXH4	BXH5	BXH6	BXH7	BCT1	BPL1	DUST
MOISTURE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
TPH RATE	239	29	12.0	56	59	0	0	148	0	0	20	10	6
% RED	86.0	9.6	4.80	18.5	18.5	0.0	0.0	49.8	0.0	0.0	9.6	3.9	
% RATE	86.0	9.5	4.80	18.7	18.0	0.0	0.0	49.6	0.0	0.0	9.6	3.9	
DWT TOTAL	509.0	34.5	27.82	136.0	136.2	91.3	0.0	192.2	0.0	0.0	36.9	18.4	0.0

Errors=(Bias 0) (A/C 0) (Vacuole 0) (Rheoale 0) (Divert 0) (Dust 0)

STATISTICS:

[illegible] 0CC0 0CC0000

[illegible] 4.0

0.41 0.41

[illegible] (0CT1) 0.03 K

[illegible] (0000) 0.00 K

[illegible] 7D3D3 1D3T0 1DPL5 00:03:51 30/23/92

[illegible] 200TPH 307F 306TDH3 4.00Knots 31.1F (4.0K31) 0.03K23

	TIR	DAP	+AC	D3D1	D3D2	D3D3	D3D4	D3D5	D3D6	D3D7	DCT1	DPL1	DUST
[illegible]	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
	341	29	12.7	50	95	0	0	167	0	0	20	10	5
	86.0	9.6	4.00	10.5	14.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
	86.7	9.7	4.00	10.3	14.7	0.0	0.0	49.7	0.0	0.0	9.7	3.5	
[illegible]	539.7	37.0	28.09	130.7	130.0	91.3	0.0	306.0	0.0	0.0	30.8	19.2	0.0

[illegible]mm 0) (0/C 0) (Pncmlo 0) (Bncmlo 0) (Dlcourt 0) (Dcurt 0)

[illegible]STICS:

[illegible] 0 60F 0.53

[illegible] 0000D 4.40

[illegible] 4.69

DCT1 DETERMED

[illegible] 4.0

0.41 4.40

[illegible] (0CT) 4.42 K

[illegible] (0000) 4.00 K

[illegible] 3D0 7D3D3 1D3T5 1DPL5 00:00:54 10/23/92

[illegible] 230TPH 306F 410TDH3 4.00Knots 31.1F (4.0K31) 0.03K23

	TIR	DAP	+AC	D3D1	D3D2	D3D3	D3D4	D3D5	D3D6	D3D7	DCT1	DPL1	DUST
	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible]	335	20	12.0	43	30	0	0	29	0	0	20	10	10
	86.0	9.6	4.00	10.5	14.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
	72.3	20.3	4.00	30.2	36.0	0.0	0.0	17.9	0.0	0.0	20.3	7.3	
[illegible]	350.4	39.9	29.96	135.2	135.3	91.3	0.0	216.5	0.0	0.0	41.2	20.1	0.0

[illegible]mm 0) (0/C 0) (Pncmlo 0) (Bncmlo 0) (Dlcourt 0) (Dcurt 0)

[illegible]STICS:

[illegible] 0 60F 4.53

[illegible] 1500D 4.43

[illegible] 4.60

DCT1 DETERMED

[illegible] 4.0

0.39 4.41

[illegible] (0CT) 4.00 K

[illegible] (0000) 4.00 K

[illegible] 7D0D0 1DC3S 1DPL0 00:03:06 10/23/92

[illegible] 0TPH 296F 419TDH3 0.00Knots 31.1F (4.0K31) 0.03K23

	TIR	DAP	+AC	D3D1	D3D2	D3D3	D3D4	D3D5	D3D6	D3D7	DCT1	DPL1	DUST
	0.0	0.0		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
	0	2	12.6	0	0	0	0	0	0	0	0	0	0
	96.0	9.6	0.00	14.5	14.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	552.1	40.3	30.29	135.2	135.3	91.3	0.0	216.5	0.0	0.0	41.0	20.0	0.0

[illegible]mm 0) (0/C 0) (Pncmlo 0) (Bncmlo 0) (Dlcourt 0) (Dcurt 0)

[illegible]

[illegible] AC 4.0

ACI 0.41 4.43

[illegible] ACCUM. CACTI 4.50 %

[illegible] ACCUM. CUSED 4.90 %

RECORDATION TRUNK LOCTS 19FLS 09:36:10 10/23/92

F I D 11130 257TPH 301F 677TONS 6.00Tons 305F (4.0131) 0.03023

	TIR	DAP	+AC	DZN1	DZN2	DZN3	DZN4	DZN5	DZN6	DZN7	DCTL	DPLA	DUST
DISTURB	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
TPH RATE	305	24	11.2	49	49	0	0	134	0	0	29	9	9
% BEG	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.5	0.0	0.0	9.6	3.5	
RATE	87.0	9.5	4.00	10.4	10.5	0.0	0.0	49.9	0.0	0.0	9.5	3.4	
DAP TOTAL	614.9	47.6	33.23	149.9	150.0	91.3	0.0	256.4	0.0	0.0	68.9	23.9	0.0

Errors=(Dzns 0) (A/C 0) (Pucals 0) (Bucals 0) (Dsvert 0) (Dunt 0)

AC STATISTICS:

AC 15/SAL @ 60F 0.33

AVERAGE AC ADDED 0.35

AC TOTAL % 0.62

	DCTL	DETERMD
% BEG AC	4.0	
ACI	0.30	4.35

AC ACCUM. (ACT) 4.73 %

AC ACCUM. (DES) 4.80 %

RECORDATION TRUNK LOCTS 19FLS 09:39:20 10/23/92

F I D 11130 270TPH 306F 09TONS 6.00Tons 306F (4.0013) 0.03023

	TIR	DAP	+AC	DZN1	DZN2	DZN3	DZN4	DZN5	DZN6	DZN7	DCTL	DPLA	DUST
DISTURB	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
TPH RATE	320	27	12.0	53	52	0	0	141	0	0	27	10	30
% BEG	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.3	
% RATE	86.0	9.5	4.00	10.7	10.3	0.0	0.0	49.7	0.0	0.0	9.5	3.9	
DAP TOTAL	634.2	49.6	34.22	150.3	154.4	91.3	0.0	260.3	0.0	0.0	51.3	23.7	0.0

Errors=(Dzns 0) (A/C 0) (Pucals 0) (Bucals 0) (Dsvert 0) (Dunt 0)

AC STATISTICS:

AC 15/SAL @ 60F 0.33

AVERAGE AC ADDED 0.32

AC TOTAL % 0.61

	DCTL	DETERMD
% BEG AC	4.0	
ACI	0.39	4.32

AC ACCUM. (ACT) 4.72 %

AC ACCUM. (DES) 4.00 %

RECORDATION TRUNK 10CTS 10FLS 09:40:32 10/23/92

F I D 11130 290TPH 300F 11TONS 6.00Tons 306F (4.0013) 0.03023

	TIR	DAP	+AC	DZN1	DZN2	DZN3	DZN4	DZN5	DZN6	DZN7	DCTL	DPLA	DUST
DISTURB	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
TPH RATE	339	30	13.7	59	59	0	0	149	0	0	30	10	9
% BEG	86.0	9.6	4.00	10.5	10.5	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
% RATE	86.0	9.6	4.00	10.0	10.5	0.0	0.0	50.1	0.0	0.0	9.6	3.9	
DAP TOTAL	654.6	51.9	35.26	150.0	159.0	91.3	0.0	300.7	0.0	0.0	53.9	30.6	0.0

Errors=(Dzns 0) (A/C 0) (Pucals 0) (Bucals 0) (Dsvert 0) (Dunt 0)

[illegible]

[illegible]

[illegible] 0.0

[illegible] 0.30 4.37

[illegible] ACCURL (ACT) 4.79 %

[illegible] ACCURL (REQ) 4.00 %

[illegible]CORRECTION 70.0MS 18CMS 10FPS 09:39:24 10/23/92

[illegible] 0 00:30 293TPH 31.2F 137CMS 4.80Kmm 306F 14.0BHL+ 0.00R21

	VIR	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BIN8	BPL1	DUST
MOISTURE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible] RATE	229	27	12.0	53	55	0	0	140	0	0	30	10	14
[illegible]	86.0	9.6	4.60	10.5	16.5	0.0	0.0	49.0	0.0	0.0	9.6	3.5	
[illegible]TE	86.7	9.6	4.80	10.1	16.6	0.0	0.0	50.0	0.0	0.0	9.6	3.5	
T TOTAL	675.2	54.2	36.33	153.5	163.7	91.3	0.0	293.2	0.0	0.0	55.9	25.5	0.0

Errors=(Bias 0) (A/C 0) (Pneu.Lo 0) (Hneu.Lo 0) (Oswert 0) (Dust 0)

STATISTICS:

[illegible] 0 60F 8.53

[illegible] AC ADDED 4.40

TOTAL % 4.59

	BIN1	DETERMED
[illegible] AC	4.0	
[illegible]	0.37	4.40

ACCURL (ACT) 4.77 %

[illegible] ACCURL (REQ) 4.00 %

[illegible]CORRECTION 70.0MS 18CMS 10FPS 09:44:26 10/23/92

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0 00:30 290TPH 31.2F 164.7CMS 4.80Kmm 307F 14.0BHL+ 0.00R21

	VIR	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BCT1	BPL1	DUST
[illegible]OISTURE	3.0	4.6		4.9	6.6	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible]RATE	233	29	12.5	56	56	0	0	150	0	0	20	10	10
[illegible]E	86.3	9.6	4.80	10.5	16.5	0.0	0.0	49.8	0.0	0.0	9.6	3.5	
[illegible]RATE	86.9	9.5	4.80	10.6	16.5	0.0	0.0	49.6	0.0	0.0	9.5	3.0	
[illegible] TOTAL	695.9	56.5	37.39	160.1	166.3	91.3	0.0	309.7	0.0	0.0	58.3	26.0	0.0

[illegible]rs=(Bias 0) (A/C 0) (Pneu.Lo 0) (Hneu.Lo 0) (Oswert 0) (Dust 0)

STATISTICS:

[illegible] 0 60F 8.53

[illegible]ED AC ADDED 4.29

[illegible] % 4.50

	BCT1	DETERMED
[illegible] AC	4.0	
[illegible]	0.40	4.29

[illegible] (ACT) 4.70 %

[illegible] (REQ) 4.00 %

[illegible]RDATION 70.0MS 18CMS 10FPS 09:09:30 10/23/93

[illegible] 3 00:30 290TPH 309F 165TCMS 4.80Kmm 307F 14.0BHL+ 0.00R23

	VIR	RAP	+AC	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BIN8	BPL1	DUST
[illegible]TURE	3.0	4.6		0.9	6.5	1.0	0.6	1.0	0.0	0.0	4.6		
[illegible] RATE	239	29	13.0	55	55	0	0	146	0	0	30	10	6
[illegible]	86.0	9.5	4.80	10.9	16.9	0.0	0.0	49.0	0.0	0.0	9.6	3.9	
[illegible]	86.7	9.7	4.80	10.6	16.7	0.0	0.0	49.3	0.0	0.0	9.7	3.9	
[illegible] TOTAL	716.4	59.0	30.46	172.0	173.0	91.3	0.0	334.3	0.0	0.0	60.7	32.3	0.0

[illegible]rs=(Bias 0) (A/C 0) (Pneu.Lo 0) (Hneu.Lo 0) (Oswert 0) (Dust 0)

[illegible]TATISTICS:

APPENDIX IV

ANALYTICAL RESULTS

APPENDIX IV

ANALYTICAL RESULTS

4.1 Particulate

4.2 Volatile Organic Compounds

APPENDIX IV

ANALYTICAL RESULTS

4.1 Particulate

SSM Laboratories

ANALYTICAL REPORT

Client: Gilbert/Commonwealth, Inc.

Report to: Steve Folk
Gilbert/Commonwealth, Inc.
P. O. Box 1498
Reading PA 19603

Project: 116814
Received: 22-OCT-92
Reported: 03-NOV-92

PURCHASE ORDER: 52977

Project Description: Windsor Service

	RESULT	UNITS	METHOD	DATE	ANALYST
W-P-1					
SSM Sample: 1065110					
sampled: 21-OCT-92 by: Client					
Particulate Weight - Filter	9.4	mg	EPA 5	27-OCT-92	VJO
PARTICULATE WEIGHT - WASH SOLUTIONS			EPA 5	27-OCT-92	VJO
Wt - Wash Soln' (0.22u filter)	7.6	mg			
Wt - Acetone Impinger	5.6	mg			
Wt - Acetone Probe	4.4	mg			
Wt - Water Probe	15.9	mg			
Wt - Water Impinger	3.1	mg			
W-P-2					
SSM Sample: 1065111					
sampled: 22-OCT-92 by: Client					
Particulate Weight - Filter	21.6	mg	EPA 5	27-OCT-92	VJO
PARTICULATE WEIGHT - WASH SOLUTIONS			EPA 5	27-OCT-92	VJO
Wt - Wash Soln' (0.22u filter)	10.9	mg			
Wt - Acetone Impinger	5.3	mg			
Wt - Acetone Probe	6.7	mg			
Wt - Water Probe	31.0	mg			
Wt - Water Impinger	2.1	mg			
W-P-3					
SSM Sample: 1065112					
sampled: 22-OCT-92 by: Client					
Particulate Weight - Filter	16.7	mg	EPA 5	27-OCT-92	VJO
PARTICULATE WEIGHT - WASH SOLUTIONS			EPA 5	27-OCT-92	VJO
Wt - Wash Soln' (0.22u filter)	12.4	mg			
Wt - Acetone Impinger	4.6	mg			
Wt - Acetone Probe	5.6	mg			

SSM /Laboratories

Client: Gilbert/Commonwealth, Inc.
Project: 116814

	RESULT	UNITS	METHOD	DATE	ANALYST
W-P-3					
SSM Sample: 1065112 - continued					
Wt - Water Probe	19.7	mg			
Wt - Water Impinger	1.0	mg			

Respectfully submitted,

Craig L. Stewart,
Inorganics Supervisor

50 Noble Street ■ P.O. Box 5527 ■ Reading, PA 19611-0527 ■ 215/376-4595 ■ Fax 215/376-8522

SSM

REQUEST FOR LABORATORY ANALYTICAL SERVICES

Page of
SSM Project No.: 11 & 12

PO # 52992 WO # Quote #

SEND INVOICE TO		REPORT RESULTS TO	
Name		Name	Steve Fable
Company		Company	G/O
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No. ( )	FAX No. ( )

Date Results Required:

Priority Charges Authorized? ☐ Yes ☐ No

Lab Approval for Rush TAT (initial)

Comments: Wind Aged D.S.

Phone Report ☐ Yes ☐ No

FAX Report ☐ Yes ☐ No

Project Description: Wind Aged Sources

Sampled by: C Beck

Date/Time:

Sample Condition upon receipt:

CLIENT SAMPLE IDENTIFICATION	Date / Time	COMP	GRAB	Number of Containers	ANALYSIS REQUESTED
WD-P-1 4 containers + filter	10/21				DER approved EPA METHOD 5
					IMP wash IMP Nitric (0.1) filter
WD-P-2 4 containers + filter	10/22				Probe Neutral Probe wash filter
WD-P-3 4 containers + filter	10/23				

CHAIN OF CUSTODY

	Date/Time		Date/Time
Relinquished by:		Relinquished by:	
Relinquished to:		Relinquished to:	
Relinquished by: [signature]	10/23/92	Relinquished by:	
Relinquished to: [signature]		Relinquished to:	

Form No. L05A REV. 3/92

APPENDIX IV

ANALYTICAL RESULTS

4.2 Volatile Organic Compounds

TRIANGLE ENVIRONMENTAL SERVICES
Post Office Box 13294
Research Triangle Park, N.C. 27709

November 18, 1992

Gary Helm
Gilbert Commonwealth
FAX Transmittal

Dear Gary:

This is to confirm and further explain our conversations concerning our report 92022 and the questions associated with the samples 2, 3, and 4. These were a sample tank and two sample traps analyzed separately with the results to be used to calculate the final concentrations. The analysis of sample 2 should not have been greatly affected by the use of two traps during sampling. The analysis of the two traps did present potential problems.

The two factors that presented the potential problem were the presence of sufficient moisture to cause the traps to begin to become plugged with ice and the sample volume associated with each trap. The moisture problem is present in most Method 25 sampling projects and is only a problem when ice plugs form or if the CO_2 concentration is such that a positive bias is indicated. Normally the positive bias is not much of a problem unless the expected concentrations are very low. In this case, however, the small sample volume works with this bias and any other small problems to become larger problems.

I believe that a positive bias would be indicated due to the reported concentration of 4.9% CO_2 in sample 2 and the presence of sufficient moisture to completely plug the trap (sample 3) with ice. The indications of partial blockage by ice was present in sample 4 as well. This bias is due to CO_2 becoming trapped in the ice and when the condensible fraction is oxidized and analyzed the trapped CO_2 is reported as TGNMO. I also believe that this bias was compounded by the low sample volume associated with the two traps. The amount of 4.9% CO_2 that would significantly affect the final concentration of a 2 liter sample would not affect a 4 liter or 6 liter sample as significantly.

This low sample volume causes a much greater dilution factor for each of the separate trap samples than was used on the other two samples involved. This larger dilution factor can greatly increase any small contamination or background to much larger proportions. If the areas of each of the analyses is compared they are very close in ranges. But the dilution factor causes the final reported concentration to be two or three times the larger sample. This does not mean that the samples were the same concentration, but that the dilution factor would cause a more pronounced effect on the two separate traps than a single trap with the same total concentration.

Sincerely,

Wayne Stollings

WS/wl

(919) 361-2890 Fax (919) 361-9474 (800) 367-4069

Method 25
Analytical Results

prepared for

GILBERT COMMONWEALTH

by

TRIANGLE ENVIRONMENTAL SERVICES, INC.

Larry W. Taylor
Method 25 Analyst

John Venezia
Method 25 Supervisor

Report

92022

November 16, 1992

METHOD 25 SAMPLE GA/GC DATA

DAILY CHECKS

4.3.1.1*

Condensate Recovery System Leak Check

Evacuate system to ≤10mm Hg absolute, isolate system, and monitor for ten minutes.
Requirements: Pressure Change ≤3mm Hg

4.3.1.2*

Condensate Recovery System Background Test

Analyze recovery system effluent for CO_2 concentrations.
Requirements: CO_2 ≤ 10 ppm

4.3.1.3*

Condensate Oxidation Catalyst Efficiency Check

Analyze 1% Methane standard through oxidation catalyst.
Requirements: CO_2 = CH_4 concentration ± 2%

5.3*

Daily Calibration

CO_2 Response Factor Check
Requirements: DRF (CO_2) = [RF (CO_2)] ± 5%

NMO Response Factor Check
Requirements: DRF (NMO) = [RF (NMO)] ± 5%

Triplicate injections of high level CO_2 and a mixture of CO, CH_4, and C_3H_8 are made before and after of each set of samples or on a daily basis, whichever occurs first.

Initial Condensate Recovery System Tests

5.1.1*

Carrier and Auxiliary Gas Blank

CO + CH_4 + CO_2 + NMO = Requirements ≤ 5 ppm

* USEPA Method 25 Protocol Reference Number

5.1.3* System Performance Check Date: 8/7/92

Average Percent

		Recovery	% RSD
50 uL	Hexane	101/102	.058/.101
50 uL	Decane	97/100	.120/.047
10 uL	Hexane	104/107	.118/.145
10 uL	Decane	98/97	.119/.232

Requirements: 100 ± 10% ≤5

Initial NMO Analyzer Performance Checks

5.2.1* Oxidation Catalyst Efficiency Check Date: 10/29/92

FID response with reduction catalyst in bypass mode = 0
Requirements: ≤1%

5.2.2* Reduction Catalyst Efficiency Check Date: 10/29/92

Response of CH_4 with Oxidation and reduction catalyst in series mode compared to response with both catalysts in bypass mode.
97.6 % Requirement 100 ± 5%

5.2.3* Analyzer Linearity Check + NMO Calibration Date: 10/29-30/92

	Requirement:
RF Value CO_2 - ± 1.9%	± 2.5%
RF Value NMO - ± 2.5%	± 2.5%
% RSD Values - .51%	≤2%
RF (NMO) = .98 / RF (CO_2)	1.0 ± 0.1

5.2.4* System Performance Check Date: 10/29-30/92

	Measured Value	Expected Value	Requirement
Propane in Mix	24.8	25.1	± 5%
Hexane	49.5	47.3	± 5%
Toluene	20.1	20.1	± 5%

* USEPA Method 25 Protocol Reference Number

Equipment Checks

4.1.2* **Clean Sampling Equipment Check**

Sample Unit	≤10 ppmC @ 100%
Trap	≤10 ppmC @ 100%
Tank	≤10 ppmC @ 100%

4.1.2* **Sample Tank Evacuation and Leak Check**

Evacuated to ≤10 mm Hg absolute, monitor for ≥1 hour, and pass for use if no pressure change is noted.

5.4* **Sample Tank and HCV Volumes**

Weigh empty, fill with deionized distilled water, measure temperature, and weigh to the nearest 2g and record the results. Calculate volume based on density of water at that temperature and record results in permanent file.

* USEPA Method 25 Protocol Reference Number

.....
Wayne Stollings
QA/QC Officer

TRIANGLE ENVIRONMENTAL SERVICES, INC.
METHOD 25 PROCEDURES

Calibration:

Initial checks and calibrations of the collection and analytical systems are repeated a maximum of three months after the previous calibrations are completed.

The daily calibration gas mixture consists of 50.0 ppm carbon monoxide, 50.9 ppm methane, 25.1 ppm propane, and .989% carbon dioxide. Triplicate injections of this gas are made immediately before and after each set of samples. The response factors (average integrated area/concentration in ppmC) are calculated daily from these injections. The average response factors must agree within 5% of the CO_2 and NMO response factors from the initial performance check. The average response factors for the before and after sets must also agree within 2% of each other before the analyses are considered valid.

Collection:

The trap is maintained at -78 °C while hydrocarbon free air is flushed through to the sample tank via the CO_2 NDIR analyzer. This flushing of CO_2 is continued until no response is noted on the NDIR. The sample tank is then pressurized to about 1060 mmHg and replaced by an intermediate collection vessel (ICV). The trap is then baked at 200 °C with hydrocarbon free air passing through the oxidation catalyst and the NDIR analyzer into the ICV. When no response is noted on the NDIR, an aliquot is injected into the NMO analyzer. Collection continues until the CO_2 concentration falls below 10 ppm as determined by the NMO analyzer. The ICV is then pressurized to about 1060 mmHg and analyzed with the sample tank.

Analysis:

The propane calibration mixture, sample tank, and ICV are analyzed identically using a computer controlled GC/FID with an automated gas sampling system.

A 1 ml aliquot is injected into the GC column, which is maintained at 80 °C. This is to elute CO, CH_4, and CO_2 which pass through the oxidation and reduction catalysts to the FID. The column is then back-flushed to elute the non-methane organic (NMO) fraction, which also passes through the oxidation and reduction catalysts to the FID. Triplicate injections are made for all samples and daily calibrations.

Calculations:

Calculations are done in accord with USEPA Method 25 procedures. A sample calculation for this set is provided. A blank is subtracted from the CO calculations to correct interference caused by the coelution of O_2 with CO. This is a constant value which is solely due to the characteristics of the column set.

Equipment:

Tanks and ICV's are evacuated and filled with ambient air filtered through charcoal twice while being baked at 150 °C. They are then evacuated to below 10 mmHg and monitored for at least an hour for leak checking (no change in pressure within an hour). They are then pressurized over ambient with hydrocarbon free air, analyzed to ensure <10 ppmC, and stored for later use.

Traps are analyzed to confirm less than 10 ppmC as per the collection of a sample, in addition each is then baked at 300 °C for thirty minutes to ensure cleanliness. A random analysis of 10% of the traps is done for an added QA/QC check of handling procedures.

Sample units are reconditioned to ensure clean filters are installed and that they operate properly. A teflon jumper replaces the trap, the unit is heated and is flushed with zero air for at least thirty minutes. An aliquot of this flow is injected into the analyzer. If the concentration of NMO is below 10 ppm the unit is made ready for use and stored for shipment.

TRIANGLE ENVIRONMENTAL SERVICES, INC.

COMMENTS ON THE ANALYSES
Report #92022

Traps Received: 10/26/92 w/Dry Ice Tanks Received: 10/26/92
Samples Analyzed: 11/12/92 Chain-of-custody forms: none

General: Due to interference caused by the coelution of O_2 with CO the analytical system reports a background concentration of CO. The reported CO concentrations reflect the deduction of a daily "blank" area count. This correction allows for more accurate reporting and comparison of the CO concentration of all analytical runs.

Sample # 3:
Trap CH arrived at TES, Inc. with the cap loose on both the long and short stems.

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 TABLE OF RESULTS

Name: GILBERT COMMONWEALTH ID 092022 Date: 11/12/92

#	Sample Description	Concentrations (ppmC) CO	CH4	CO2	Noncon-densibles	Conden-sibles	TGNMO	Mass Conc. (mgC/cu.m)
1	M-V-1	54	17	25306	25	219	244	122
2	M-V-2 TANK ONLY	75	22	49189	0	0	0	0
3	M-V-2 TRAP 1 ONLY	0	0	0	0	760	760	380
4	M-V-2 TRAP 2 ONLY	0	0	0	0	551	551	275
5	M-V-3	101	33	41109	0	327	327	163

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 SAMPLE CALCULATION

Note: All pressure values have been converted when necessary to mm Hg and all temperature values to Kelvin.

Name: GILBERT COMMONWEALTH ID 992022 Date: 11/12/92

Sample # 1 W-V-1

D A T A

Tank 21:

Volume (cu.m) = 0.008347

	Pressure (mm Hg)	Temp.(K)
Presampling	45.7	282.0
Postsampling	717.0	284.3
Final	1155.0	298.7

Trap A8

Collection Vessel:

Volume (cu.m) = 0.008317

	Pressure (mm Hg)	Temp.(K)
Final	1433.0	298.7

Calibration Data:

	Foreflush	Backflush
Response Factor (area units/ppmC)	196.9	183.6
CO Blank (area units)	501	

Areas:

CO	6,918	6,953	6,975
CH4	1,987	1,984	2,009
CO2	3,032,222	3,044,052	3,047,046
Noncondensibles	2,886	2,861	2,723
Condensibles	21,511	21,233	21,140

C A L C U L A T I O N S

Measured Concentrations, corrected for blank:

Cm(CO) = Area(CO) - CO Blank/RF(CO2)
= 6918 - 501 /196.9 = 32.6
= 6953 - 501 /196.9 = 32.8
= 6975 - 501 /196.9 = 32.9

Cm(CH4) = Area(CH4)/RF(CO2)
= 1987 /196.9 = 10.1
= 1984 /196.9 = 10.1
= 2009 /196.9 = 10.2

Cm(CO2) = Area(CO2)/RF(CO2)
= 3032222 /196.9 = 15399.8
= 3044052 /196.9 = 15459.9
= 3047046 /196.9 = 15475.1

Cm(Noncondensibles) = Area(Noncondensibles)/RF(NMO)
= 2886 /183.6 = 15.7
= 2861 /183.6 = 15.6
= 2723 /183.6 = 14.8

Cm(Condensibles) = Area(Condensibles)/RF(CO2)
= 21511 /196.9 = 109.2
= 21233 /196.9 = 107.8
= 21140 /196.9 = 107.4

Pressure-Temperature Ratio, Q(i) = P(i)/T(i):

postsampling tank: Q(1) = 717.042 / 284.2611 = 2.522477
presampling tank: Q(2) = 45.72003 / 282.0389 = .1621054
final tank: Q(3) = 1155 / 298.65 = 3.867404
final CV: Q(4) = 1433 / 298.65 = 4.798259

Volume Sampled (dscm) = 0.3857 x Tank Volume x [Q(1)-Q(2)]
= 0.3857 x .008347 x [2.5225 - 0.1621]
= 0.007599

Averages and % Relative Standard Deviations (%RSD) of Cm's are calculated.
(%RSD of C = %RSD of Cm)

Calculated Concentrations:

C(CO) = Q(3)/[Q(1)-Q(2)] x Cm(CO)
= 3.8674/(2.5225 - 0.1621) x 32.7 = 53.7

C(CH4) = Q(3)/[Q(1)-Q(2)] x Cm(CH4)
= 3.8674/(2.5225 - 0.1621) x 10.1 = 16.6

C(CO2) = Q(3)/[Q(1)-Q(2)] x Cm(CO2)
= 3.8674/(2.5225 - 0.1621) x 15444.9 = 25306.1

C(Noncondensibles)
= Q(3)/[Q(1)-Q(2)] x Cm(Noncondensibles)
= 3.8674/(2.5225 - 0.1621) x 15.4 = 25.2

C(Condensibles)
= Volume(CV)/Volume(Tank) x Q(4)/[Q(1)-Q(2)] x Cm(Condensibles)
= 0.008317/0.008347 x 4.7983/(2.5225 - 0.1621) x 108.1 = 219.1

Total Gaseous Non-Methane Organics(TGNMO)
=C(Noncondensibles)+C(Condensibles)
= 25.2 + 219.1
= 244.3

Mass Concentration
= 0.4993 x TGNMO
= 0.4993 x 244.3 = 122.0

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 DATA REPORT

Name: GILBERT COMMONWEALTH ID 992022 Date: 11/12/92

Sample # 1 W-W-1

TANK 21:

Volume (cu.m) = 0.008347

TRAP A8 COLLECTION VESSEL:

Volume (cu.m) = 0.008317

	Pressure (mm Hg)	Temp.(K)
Presampling	45.7	282.0
Postsampling	717.0	284.3
Final	1155.0	298.7

	Pressure (mm Hg)	Temp.(K)
Final	1433.0	298.7

Volume Sampled (dacm) = 0.007599

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	196.9	183.6
CO Blank (area units)	501	

Areas:

CO	6,918	6,953	6,975
CH4	1,987	1,984	2,009
CO2	3,032,222	3,044,052	3,047,046
Noncondensibles	2,886	2,861	2,723
Condensibles	21,511	21,233	21,140

Concentrations (ppmC):

		RSD
CO	53.6533	0.4458
CH4	16.5872	0.6848
CO2	25306.1000	0.2578
Noncondensibles	25.1958	3.1093
Condensibles	219.0609	0.9065
TGNMO	244.2567	

(= 121.9574 mgC/cu.m)

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 DATA REPORT

Name: GILBERT COMMONWEALTH ID #92022 Date: 11/12/92

Sample # 2 M-V-2 TANK ONLY

TANK 121: TRAP 0 CONDENSION VESSEL:

Volume (cu.m) = 0.008353 Volume (cu.m) = 0.008369

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	12.2	285.9			
Postsampling	402.3	287.6			
Final	1234.0	298.7	Final	0.0	273.2

Volume Sampled (dscm) = 0.004370

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	196.9	183.6
CO Blank (area units)	501	

Areas:

CO	5,335	5,389	5,329
CH4	1,443	1,451	1,438
CO2	3,179,008	3,185,049	3,173,824
Noncondensibles	0	0	0
Condensibles	0	0	0

Concentrations (ppmC):

		%BSD
CO	75.0384	0.5814
CH4	22.3413	0.4541
CO2	49189.4900	0.1767
Noncondensibles	0.0000	0.0000
Condensibles	0.0000	0.0000
TGNMO	0.0000	

(= 0.0000 mgC/cu.m)

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 DATA REPORT

Name: GILBERT COMMONWEALTH ID #92022 Date: 11/12/92

Sample # 3 W-W-2 TRAP 3 ONLY

TANK 121:
Volume (cu.m) = 0.008353

TRAP C8 COLLECTION VESSEL:
Volume (cu.m) = 0.008369

	Pressure (mm Hg)	Temp.(K)		Pressure (mm Hg)	Temp.(K)
Presampling	12.2	295.9			
Postsampling	199.6	296.5			
Final	0.0	273.2	Final	1401.0	298.7

Volume Sampled (dscm) = 0.002108

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	196.9	183.6
CO Blank (area units)	501	

Areas:

CO	0	0	0
CH4	0	0	0
CO2	0	0	0
Noncondensibles	0	0	0
Condensibles	20,819	20,927	20,758

Concentrations (ppmC):

		SRSD
CO	0.0000	0.0000
CH4	0.0000	0.0000
CO2	0.0000	0.0000
Noncondensibles	0.0000	0.0000
Condensibles	760.1723	0.4108
TGNMO	760.1723	

(= 379.5539 mgC/cu.m)

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 DATA REPORT

Name: GILBERT COMMONWEALTH ID 092022 Date: 11/12/92

Sample # 4 W-V-2 TRAP 2 ONLY

TANK 121:
Volume (cu.m) = 0.008353

TRAP EK COLLECTION VESSEL:
Volume (cu.m) = 0.008353

	Pressure (mm Hg)	Temp. (K)		Pressure (mm Hg)	Temp. (K)
Presampling	220.0	286.5			
Postsampling	402.3	287.6			
Final	0.0	273.2	Final	1574.0	298.7

Volume Sampled (dscm) = 0.002033

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	195.9	183.6
CO Blank (area units)	501	

Areas:

CO	0	0	0
CH4	0	0	0
CO2	0	0	0
Noncondensibles	0	0	0
Condensibles	12,891	13,071	13,007

Concentrations (ppmC):

		BRSD
CO	0.0000	0.0000
CH4	0.0000	0.0000
CO2	0.0000	0.0000
Noncondensibles	0.0000	0.0000
Condensibles	550.8752	0.7024
TGNMO	550.8752	

(= 275.0520 mgC/cu.m)

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 25 DATA REPORT

Name: GILBERT COMMONWEALTH ID #92022 Date: 11/12/92

Sample # 5 M-V-3

TANK 140:

Volume (cu.m) = 0.008373

TRAP #3 COLLECTION VESSEL:

Volume (cu.m) = 0.008333

	Pressure (mm Hg)	Temp. (K)
Presampling	14.2	278.7
Postsampling	385.1	283.7
Final	1127.0	298.7

	Pressure (mm Hg)	Temp. (K)
Final	1309.0	298.7

Volume Sampled (dscm) = 0.004218

Calibration Data:

	CO2	Backflush
Response Factor (area units/ppmC)	196.9	183.6
CO Blank (area units)	501	

Areas:

CO	7,307	7,361	7,386
CH4	2,251	2,269	2,296
CO2	2,783,753	2,806,597	2,814,944
Noncondensibles	0	0	0
Condensibles	19,243	19,325	19,195

Concentrations (ppmC):

		%RSD
CO	100.5096	0.5894
CH4	33.3353	0.9969
CO2	41108.1100	0.5763
Noncondensibles	0.0000	0.0000
Condensibles	326.5581	0.3414
TGNMO	326.5581	

(= 163.0505 mgC/cu.m)

APPENDIX V

RAW FIELD DATA

APPENDIX V

RAW FIELD DAA

5.1 Particulate

5.2 Volatile Organic Compounds

5.3 Visible Emissions

APPENDIX V

RAW FIELD DATA

5.1 Particulate

Sheet 1 of 2

PARTICULATE FIELD DATA

Client Walker

W. O. No.

Plant Kendall

Run No. C1-F-1

Location Cyclone Outlet

Date 10/21/92

Operator Roland

Sample Box No.

Meter Box No. 3/C8 y=1.00

MeterΔH

C Factor

VERY IMPORTANT - FILL IN ALL BLANKS

Read and record at the start of each test point

SKETCH

98.75"

Pitot Calibration

Thimble No.

Filter No.

Ambient Temp. °F 50

Bar. Press. "Hg 27.78

Assumed Moisture % 9/70 %

Heater Box Setting, °F

Probe Tip Dia., in. 0.215"

Probe Length 5'

Probe Heater Setting

Avg. ΔP Avg. ΔH

POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H2O ΔP	ORIFICE Δ H IN. H2O DESIRED	ORIFICE Δ H IN. H2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP. °F	IMPINGER TEMP. °F	Cp/Cp	STACK TEMP. °F
A-1		1037	0.0	132.137	3.00		3.075	60	67	2				338
2			3.5	135.2	3.60		3.608	74	64	2	240	60		347
3			7.0	142.4	2.70		2.889	80	65	2				347
4			10.5	146.0	1.60		1.615	82	66	2				340
5			14.0	148.1	1.40		1.514	81	68	1				339
STOP		1055	17.5	150.515										
B-1		1100	0.0	150.515	3.10		3.357	67	66	2			5.4/6.1	342
2			3.5	153.9	1.90		2.018	80	68	1				337
3			7.0	156.5	1.19		1.191	80	68	1				345
4			10.5	158.6	0.77		0.797	82	68	1				349
5			14.0	160.4	1.10		1.180	83	70	1				345
STOP		1108	17.5	162.500										

COMMENTS:

STATIC

-1.6

-1.8

Client Wales

PARTICULATE FIELD DATA
(continued)

Sheet 7 of 7

W.O. No.

Plant Rockwell

Location Baghouse outlet

Run No. W-P-1

Date 10/21/65

POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H_2O ΔP	ORIFICE ΔH IN. H_2O DESIRED	ORIFICE ΔH IN. H_2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP °F	IMPINGER TEMP °F	CO_2 STACK PRESS IN. Hg	STACK TEMP. °F
C-1		1122	0.0	163.500	1.50		1.945	76	70	1	60	262		347
2			3.5	166.20	0.66		0.706	83	71	1			5.0	347
3			7.0	168.8	0.35		0.377	84	72	1				345
4			10.5	168.3	0.32		0.390	81	72	1				345
5			14.0	169.5	0.36		0.390	83	72	1				345
stop		1140	17.5	170.638										
D-1		1147	0.0	170.638	1.05		1.137	78	74	1				352
2			3.5	173.0	0.21		0.225	81	74	1				350
3			7.0	—	0.11		0.117	80	74	1				346
4			10.5	174.8	0.11		0.119	79	74	1				342
5			14.0	175.5	0.11		0.119	78	74	1			7.0	338
stop		1207	17.5	176.218										
E-1		1210	0.0	176.218	0.56		0.604	74	72	1				338
2			3.5	177.8	0.27		0.287	80	74	1				336
3			7.0	179.3	0.28		0.244	81	74	1				336
4			10.5	180.4	0.25		0.274	82	74	1				328
5			14.0	180.4	0.46		0.507	82	74	1				327
stop		1238	17.5	181.684										

COMMENTS:

post bak 1" = 0.017

0.MT16
= 0.26
= 0.44

SENECA ASSOCIATES, INC.
AIR POLLUTION CONTROL DEPT.
LABORATORY CLEAN UP AND REPORT FORM

Run Date: [illegible]

Run No.: [illegible]

Sample Log No.:

Operator: [illegible]

Client: [illegible] Service

V. O. No.:

Plant: [illegible]

Sampling Location: [illegible]

FRONT HALF

Probe-Acetone Wash
Probe, Thimble Holder, Cyclone Impingers,
Plate, Front Half Filter Holder-Acetone Wash

Lab No.	Location	
Lab No.	Location	

Container No.	Lab No.	Weight Gained

Thimble particulate weight

Filter No.	Lab No.	Weight Gained

Filter particulate weight

FRONT HALF Sub Total

BACK HALF

Impinger Content and Water Wash of Impingers
Connection and Back Half of Filter Holder

Lab No. Ether-Chloroform - Extract

Collected on 0.45μ Filter

Aqueous Condon

Impinger, Connection and Back Half of
Filter Holder - Acetone Wash

Lab No. Residue

BACK HALF Sub Total

TOTAL WEIGHT

MOISTURE

Impingers:

340
338

Final Volume 511

Initial Volume 300

Net Volume 211

Silica Gel

Weight after test:	251			
Weight before test:	238			
Net Weight:	27			
Container No.:	1	2	3	4

TOTAL WEIGHT-Silica Gel 27

TOTAL VOLUME, Impingers 222

TOTAL MOISTURE 249

Comments:

LAB: DATE RECEIVED

DATE REPORTED

WORKERS NAMES

HOS/APC 1104

Sheet 1 of 2

PARTICULATE FIELD DATA

Client [illegible]

W. O. No. _____

Plant [illegible]

Run No. [illegible]

Location [illegible]

Date [illegible]

Operator [illegible]

Sample Box No. _____

Meter Box No. [illegible] Y5/100

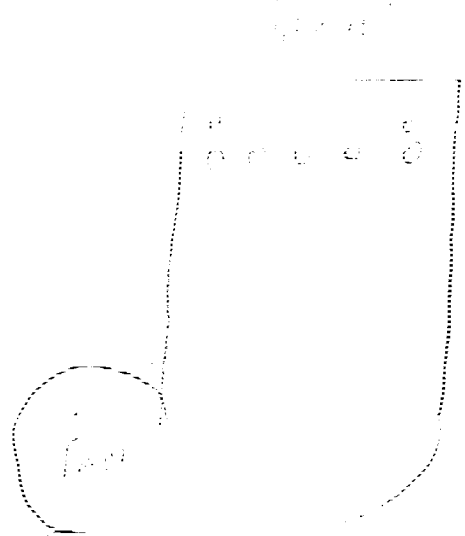
Meter ΔH _____

C Factor _____

VERY IMPORTANT - FILL IN ALL BLANKS

Read and record at the start of each test point

SKETCH



Pitot Calibration _____

Thimble No. _____

Filter No. _____

Ambient Temp. °F [illegible]

Bar. Press. "Hg 30.17

Assumed Moisture % [illegible]

Heater Box Setting, °F _____

Probe Tip Dia., In. [illegible]

Probe Length [illegible]

Probe Heater Setting _____

Avg. ΔP _____ Avg. ΔH _____

POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H2O ΔP	ORIFICE ΔH IN. H2O DESIRED	ORIFICE ΔH IN. H2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP. °F	IMPINGER TEMP. °F	[illegible]	STACK TEMP. °F
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		0.261	46	47	0	[illegible]	38		339
			[illegible]	187.0	0.52		0.494	47	42	0				341
		[illegible]	[illegible]	186.5	0.54		0.499	46	42	0				[illegible]
	[illegible]	[illegible]	[illegible]	188.0	0.77		0.770	50	47	0				352
			[illegible]	189.9	[illegible]		0.904	[illegible]	[illegible]	0			60/min	358
[illegible]		[illegible]	[illegible]	191.697										
		0756	40	191.597	[illegible]		0.56	45	46	0	24	37		360
			40	[illegible]	0.44		0.47	50	46	0				358
			[illegible]	194.8	0.74		0.78	53	48	0				357
			[illegible]	196.8	[illegible]		0.92	60	[illegible]	0				356
			[illegible]	[illegible]	[illegible]		1.12	64	[illegible]	0				349
[illegible]		0756	[illegible]	[illegible]										

COMMENTS: [illegible]

[illegible]

- 0.30

- 0.24

Client [illegible]

PARTICULATE FIELD DATA
(continued)

Sheet 4 of 7

W.O. No. _____

Plant [illegible]

Location [illegible]

Run No. [illegible]

Date 10/22/92

POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H_2O ΔP	ORIFICE ΔH IN. H_2O DESIRED	ORIFICE ΔH IN. H_2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP °F	IMPINGER TEMP °F	CO/O2	STACK TEMP. °F
[illegible]		0903	[illegible]	201.190	1.20		1.30	62	48	1	650	45		344
2			[illegible]	203.6	0.85		0.93	60	50	1				345
3			[illegible]	206.8	0.64		0.69	61	50	0			[illegible]	344
4				209.6	[illegible]		[illegible]	63	50	1				343
5			[illegible]	209.6	0.90		0.97	65	51	0				348
[illegible]		0913	[illegible]	211.765										
D-1		0917	[illegible]	211.765	2.00		2.21	58	50	0				341
2			[illegible]	216.1	1.80		1.95	66	51	0				343
3			[illegible]	217.9	1.10		1.10	66	52	1			49/20.1	347
4			[illegible]	220.4	0.77		0.84	66	52	1				353
5			[illegible]	222.3	0.80		0.87	66	52	1				352
[illegible]		[illegible]	[illegible]	224.402										
1		0940	[illegible]	224.402	2.40		2.61	61	52	2				343
2			[illegible]	228.0	2.90		3.15	70	53	3				359
3			[illegible]	231.5	2.10		2.28	74	56	3				356
4			[illegible]	234.5	1.40		1.61	74	56	2				359
5			[illegible]	237.3	1.70		1.85	82	49	2				347
[illegible]		0950	[illegible]	240.245										

[illegible]

-0.35

-0.18

-0.7

GELMAN ASSOCIATES, INC.
AIR EVALUATION CONTROL DEPT.
PARTICULATE CLEAN UP AND REPORT SHEET

Run Name: [illegible]

Run No.: [illegible]

Sample Box No.: .....

Operator: [illegible]

Client: [illegible]

C. O. No.: .....

Plant: [illegible]

Sampling Location: [illegible]

PRELIMINARY

Laboratory Number

Probe-Acetone Wash

Probe, Nozzle Holder, Cyclone (Bypass), Flask, Front Half Filter Holder-Acetone Wash

Lab No. ..... Residue .....mg

Lab No. ..... Residue .....mg

Nozzle No.	Lab No.	Weight Increase
.....	.....	.....mg
.....	.....	.....mg
.....	.....	.....mg
.....	.....	.....mg

Nozzle particulate weight .....mg

Filter No.	Lab No.	Weight Increase
.....	.....	.....mg
.....	.....	.....mg
.....	.....	.....mg
.....	.....	.....mg

Filter particulate weight .....mg

FRONT HALF Sub Total .....mg

BACK HALF

Impinger Contents and Water Wash of Impingers Connectors and Back Half of Filter Holder

Lab No. ..... Ether-Chloroform Extract .....mg

Collected on 0.45μ Filter .....mg

Aqueous Residue .....mg

Impinger, Connectors and Back Half of Filter Holder - Acetone Wash

Lab No. ..... Residue .....mg

BACK HALF Sub Total .....mg

TOTAL WEIGHT .....mg

MOISTURE

Impingers:

	300
	300

Final Volume	625
Initial Volume	300
Net Volume	325

Silica Gel

Weight after test:	264	.....	.....	.....
Weight before test:	239	.....	.....	.....
Net Weight	25	.....	.....	.....
Container No.:	1.	2.	3.	4. .....

TOTAL WEIGHT-Silica Gel 25 .....mg

TOTAL VOLUME- Impingers 325 .....ml

TOTAL MOISTURE 350 .....mg

Comments: .....

.....

LAB: DATE RECEIVED: .....

DATE REPORTED: .....

.....
CHEMIST

GGS/APC 11/76

Sheet 1 of 2

PARTICULATE FIELD DATA

Client [illegible]

W. O. No. _____

Plant [illegible]

Run No. [illegible]

Location Baghouse outlet

Date [illegible]

Operator [illegible]

Sample Box No. _____

Meter Box No. 3158 Y# 1.00

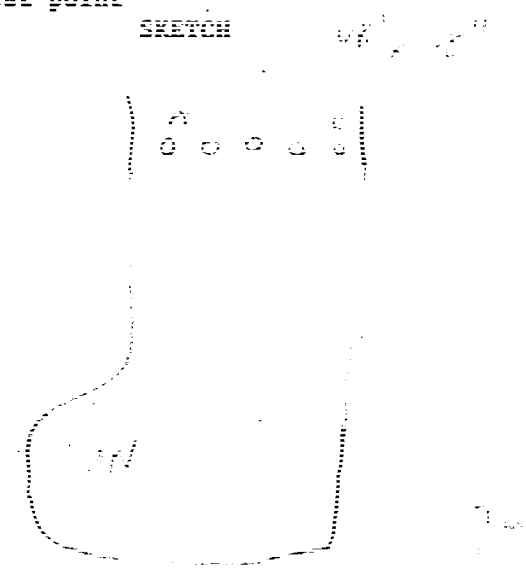
MeterΔH _____

C Factor _____

VERY IMPORTANT - FILL IN ALL BLANKS

Read and record at the start of each test point

SKETCH



Pitot Calibration _____

Thimble No. _____

Filter No. _____

Ambient Temp. °F _____

Bar. Press. "Hg 30.27

Assumed Moisture % 22.0%

Heater Box Setting, °F _____

Probe Tip Dia., In. 0.275

Probe Length [illegible]

Probe Heater Setting _____

Avg. ΔP _____ Avg. ΔH _____

POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H2O ΔP	ORIFICE Δ H IN. H2O DESIRED	ORIFICE Δ H IN. H2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP. °F	IMPINGER TEMP. °F	Co/Co2	STACK TEMP. °F
[illegible]		0940	[illegible]	240.481	2.20		2.35	80	52	1	220	59		349
[illegible]			[illegible]	243.1	2.90		3.10	80	59	2				340
[illegible]			[illegible]	247.4	2.20		2.37	79	56	2				341
[illegible]			[illegible]	250.7	1.90		0.65	68	50	2			4.0/18.0	345
[illegible]			[illegible]	253.5	1.60		1.72	66	58	1				339
[illegible]		1000	[illegible]	256.791										
[illegible]		[illegible]	[illegible]	[illegible]	1.90		2.08	58	[illegible]	2				340
[illegible]			[illegible]	260.3	1.70		1.87	[illegible]	58	2				340
[illegible]			[illegible]	[illegible]	0.95		1.01	66	58	0			[illegible]	344
[illegible]			[illegible]	264.3	0.77		0.78	66	58	0				347
[illegible]			[illegible]	[illegible]	0.57		0.64	67	[illegible]	0				348
[illegible]		[illegible]	[illegible]	268.715										

COMMENTS:

[illegible]

[illegible]

Client [illegible] Square

PARTICULATE FIELD DATA
(continued)

Sheet [illegible] of [illegible]

W.O. No. _____

Plant [illegible]

Location Boiler Outlet

Run No. [illegible]

Date 10/[illegible]/92

POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H_2O ΔP	ORIFICE ΔH IN. H_2O DESIRED	ORIFICE ΔH IN. H_2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP °F	IMPINGER TEMP °F	[illegible]	STACK TEMP. °F
[illegible]		1025	[illegible]	268.995	1.20		1.30	58	50	0	250	50		351
2			[illegible]	270.4	0.61		0.66	65	58	0			4.0/[illegible]	350
3			[illegible]	272.2	0.50		0.54	65	58	0				350
4			[illegible]	274.0	0.58		0.60	65	58	0				350
5			[illegible]	275.6	0.75		0.81	65	57	0				350
[illegible]		1045	[illegible]	277.522										
[illegible]														
[illegible]		1048	[illegible]	277.522	0.66		0.71	60	58	0				348
2			[illegible]	279.4	0.28		0.40	66	60	0			4.0/[illegible]	345
3			[illegible]	280.8	0.74		0.39	66	60	0				348
4			[illegible]	282.3	0.63		0.67	66	60	0				348
5			[illegible]	284.1	0.60		0.86	70	62	0				348
[illegible]		1102	[illegible]	286.170										
[illegible]														
[illegible]		1112	[illegible]	286.170	0.31		0.33	67	62	0	240	62		340
2			[illegible]	287.5	0.27		0.29	70	64	0				339
3			[illegible]	288.7	0.35		0.37	71	64	0				339
4			[illegible]	290.1	0.65		0.70	73	64	0				337
5			[illegible]	292.0	0.68		0.75	70	62	0				335
[illegible]		1132	[illegible]	293.814										

[illegible]

[illegible]

-0.31

-0.22

-0.22

GEIGER ASSOCIATES, INC.
AIR EXCEPTION SECTION, DEPT.
PARTICULATE CLEAN UP AND REPORT SHEET

Run Date: [illegible]

Run No.: [illegible]

Sampler Box No.: .....

Operator: [illegible]

Client: [illegible]

W. O. No.: .....

Plant: [illegible]

Sampling Location: [illegible]

FRONT HALF

Nozzle-Probe Wash
Probe, Thimble Holder, Cyclone (Optional),
Plate, Front Half Filter Holder-Acetone Wash

Laboratory Results

Lab No. ..... Residue .....mg

Lab No. ..... Residue .....mg

Thimble No.	Lab No.	Dryer Results
		.....mg
		.....mg
		.....mg
		.....mg

Thimble particulate weight .....mg

Filter No.	Lab No.	Filter Results
		.....mg
		.....mg
		.....mg
		.....mg

Filter particulate weight .....mg

FRONT HALF Sub Total .....mg

BACK HALF

Impinger Contents and Water Wash of Impinger Connectors and Back Half of Filter Holder

Lab No. ..... Ether-Chloroform Extract .....mg

Collected on Solid Filter .....mg

Aqueous Residue .....mg

Impinger, Connectors and Back Half of Filter Holder - Acetone Wash

Lab No. ..... Residue .....mg

BACK HALF Sub Total .....mg

TOTAL WEIGHT .....mg

MOISTURE

Impingers: 533.1

Final Volume 632.2

Initial Volume 300.0

Net Volume 332.2

Silica Gel

Weight after test: 363

Weight before test: 332

Net Weight 31

Container No.: 1. ..... 2. ..... 3. ..... 4. .....

TOTAL WEIGHT - Silica Gel 31 .....mg

TOTAL VOLUME, Impingers 332 .....ml

TOTAL MOISTURE 443.2 .....mg

Comments: .....

Lab: DATE RECEIVED .....

DATE RECORDED .....

.....
ANALYTICAL CHEMIST

HPS/GPC 12/74

APPENDIX V

RAW FIELD DATA

5.2 Volatile Organic Compounds

VOC METHOD 25

CLIENT: Cirbasc S.A.

DATE: 10/22/92

LOCATIONS: Bypass Stack

RUN NO.: C-V-1

START TIME	MINUTES	Barometer	TEMPERATURE PRE-SET	TEMPERATURE ACTUAL	FLOW RATE (Deg. Fahrenheit Calibration)	VACUUM
0933	0	30.20			65	28.4
	5				65	25.6
	10		254	265	65	23.0
	15		256	264	65	20.4
	20		249	265	65	17.9
	25		250	266	65	14.3
	30		252	265	65	22
	35		251	265	65	10.0
	40		257	265	65	7.0
	45		249	265	65	6.2
	50		248	265	65	4.2
0928	55	30.23	246	265	[illegible]	2.0
	60					

292 Tag 48

52

ORSAT

CO_2		O_2

LEAK TEST PROCEDURE with probe mounted in place and connected,

1. Turn stop-cock to flow ambient air only
2. Turn on pump and open coarse valve (red handle)
3. Open roto-meter to permit good (over 1 liter/minute) air flow.
4. Visually observe air bubbling through all impingers, and make sure gas meter dial moves.
5. Turn stop-cock to close off flow to impingers.
6. Adjust flow knob on control box to obtain 10" of vacuum.
7. Visually observe roto-meter ball fall to zero flow.
8. Visually observe bubbling in impingers. Bubbling should stop. (A single, small bubble once every few seconds is acceptable).
9. Dry gas meter dial should not move at all.
10. Carefully turn stop-cock to allow ambient air flow through impingers. Do not allow stack gas to enter. Observe bubbling and meter operation.
11. Begin to close roto-meter until low flow (0.4 liter/minute) rate is achieved.
12. Shut off red valve and pump.
13. Perform leak test before and after test.

TO SAMPLE

(1) Heat glassware and stop-cock in hot box.

(2) Use Dyna-pump to purge stack gas thru stop-cock; then rotate stop-cock to flow stack gas only and adjust roto-meter to obtain 0.4 liter/min flow rate.

Total sample must not exceed 1 cubic foot in one hour.

Orsat CO_2 readings are required!

BAROMETER: 29.28

CONTROL BOX:

Y =

USEPA METHOD 5 & 25

CLIENT: Quaker State DATE: 10/22/91

LOCATION: Bypass Exhaust RUN NO.: 4-V-2

START TIME	MINUTES	Gas METER	TEMPERATURE Filter	TEMPERATURE Probe	FLOW RATE (Liters/min)	VACUUM (inches Hg)
0951	0	30.28	233	266	0.65	29.8
56	5		247	266	65	28.6
0	10		256	265	65	27.3
06	15		252	266	65	26.2
11	20		248	265	65	25.0
16	25		248	265	65	23.7
21	30		249	265	65	22.6
1145	35		250	261	65	21.6
50	40		235	265	65	20.4
55	45	30.34	247	265	65	19.2
00	50		248	265	65	17.8
05	55		256	265	65	16.6
10	60		251	265		14.4

30 inches Hg
leak test
page 4 of 5
5-6

stop at 0955
Trap clogged
replace trap
page 5-6
restart 1145

ORSAT

CO_2		O_2

BAROMETER

CONTROL BOX

Y =

LEAK TEST PROCEDURE with probe mounted in place and connected,

1. Turn stop-cock to flow ambient air only
2. Turn on pump and open coarse valve (red handle)
3. Open roto-meter to permit good (over 1 liter/minute) air flow.
4. Visually observe air bubbling through all impingers, and make sure gas meter dial moves.
5. Turn stop-cock to close off flow to impingers.
6. Adjust flow knob on control box to obtain 10" of vacuum.
7. Visually observe roto-meter ball fall to zero flow.
8. Visually observe bubbling in impingers. Bubbling should stop. (A single, small bubble once every few seconds is acceptable).
9. Dry gas meter dial should not move at all.
10. Carefully turn stop-cock to allow ambient air flow through impingers. Do not allow stack gas to enter. Observe bubbling and meter operation.
11. Begin to close roto meter until low flow (0.4 liter/minute) rate is achieved.
12. Shut off red valve and pump.
13. Perform leak test before and after test.

TO SAMPLE

(1) Heat glassware and stop-cock in hot box.

(2) Use Dyna-pump to purge stack gas thru stop-cock; then rotate stop-cock to flow stack gas only and adjust roto-meter to obtain 0.4 liter/min flow rate.

Total sample must not exceed 1 cubic foot in one hour.

Orsat CO_2 readings are required!

VOC METHOD 5B/ 25

CLIENT: Dupsac

DATE: 10/23/92

LOCATION: Engine Exhaust

RUN NO.: U-V-3

START TIME	MINUTES	DRY METER	TEMPERATURE Probe (°F)	TEMPERATURE Filter (°F)	FLOW RATE (cc/min)	VACUUM
0718	0	30.46	251	265	65	29.4
23	5		250	265	65	28.4
28	10		251	265	65	27.1
38	15		249	265	65	25.7
38	20		250	265	65	24.2
43	25		251	265	65	23.2
48	30		250	265	65	22.1
53	35		250	265	65	20.7
63	40		250	265	65	19.7
68	45		251	265	65	18.0
73	50		251	266	65	16.7
0928 38	55		249	264	65	16.2
0935 28	60	30.46	251	265		15.0

bak vac 29.7
dead
Purge 4 42
65cc 5 min

step 6
5 min
to keep tap

086 step
0934 092p

ORSAT

CO_2		O_2

LEAK TEST PROCEDURE: with probe mounted in place and connected,

1. Turn stop-cock to flow ambient air only
2. Turn on pump and open coarse valve (red handle)
3. Open roto-meter to permit good (over 1 liter/minute) air flow.
4. Visually observe air bubbling through all impingers, and make sure gas meter dial moves.
5. Turn stop-cock to close off flow to impingers.
6. Adjust flow knob on control box to obtain 10" of vacuum.
7. Visually observe roto-meter ball fall to zero flow.
8. Visually observe bubbling in impingers. Bubbling should stop. (A single, small bubble once every few seconds is acceptable).
9. Dry gas meter dial should not move at all.
10. Carefully turn stop-cock to allow ambient air flow through impingers. Do not allow stack gas to enter. Observe bubbling and meter operation.
11. Begin to close roto meter until low flow (0.4 liter/minute) rate is achieved.
12. Shut off red valve and pump.
13. Perform leak test before and after test.

TO SAMPLE

(1) Heat glassware and stop-cock in hot box.
(2) Use Dyna-pump to purge stack gas thru stop-cock; then rotate stop-cock to flow stack gas only and adjust roto-meter to obtain 0.4 liter/min flow rate.

Total sample must not exceed 1 cubic foot in one hour.
Orsat CO_2 readings are required!

BAROMETER

CONTROL BOX

GILBERT ASSOCIATES, INC.
AIR POLLUTION CONTROL DEPARTMENT
FIELD MOISTURE DETERMINATION

Client: [illegible] Services

W. O. No.:

Location: Scrubber outlet

Date: [illegible]

Test: [illegible]

Operator: [illegible]

Barometric Pressure: 30.07

COMMENTS:

DATA

	Clock Time	Gas Meter C.F. VM	TM In	TM Out	PM Orifice In. H_2O (-)	PM Vac. Gage In. Hg (-)
Stop	0775	314.117	73	56	1.69	3
Start	0720	303.862	44	44	1.69	3
Net/Avg						

IMPINGERS

	1	2	3
Final ml.	188	134	—
Initial ml.	100	100	—
Net ml.	88	34	

Total ml 132

SILICA GEL

Container No.

Final gm 244

Initial gm 232

Net gm 12

→ 144

CALCULATIONS

(1) PB =

(2) VM Net =

(3) TM Avg= TM + 460 =

(4) PM Avg= + orifice IN. H_2O x $\frac{1}{13.6}$ = + orifice IN. Hg.

= + Vacuum Gage IN. Hg (When meter is before pump)

(5) VMSTD = $\frac{17.65 \times VM\ (PB + PM)}{TM + 460}$ = $\frac{17.65 \times (\quad)}{(\quad)}$ =

(6) VW = ml. H_2O + gm Silica gel =

(7) VW Gas = VW x 0.0471 =

(8) BM = $\frac{100 \times VW\ Gas}{VMSTD + VW\ Gas}$ = $\frac{100 \times (\quad)}{(\quad) + (\quad)}$ = $\frac{(\quad)}{(\quad)}$ =

Client [illegible]

W.O. No.

Plant [illegible]

Run No. Train #1

PARTICULATE FIELD DATA
(continued)

Sheet 1 of 1

Location

Date 10/21/72

STACK MAP POINT	DISTANCE IN INCHES	CLOCK TIME ACTUAL	CLOCK TIME RUN	DRY GAS METER, CF	PITOT IN. H_2O ΔP	ORIFICE ΔH IN. H_2O DESIRED	ORIFICE ΔH IN. H_2O ACTUAL	DRY GAS TEMP. °F INLET	DRY GAS TEMP. °F OUTLET	PUMP VACUUM IN. Hg GAUGE	BOX TEMP °F	IMPINGER TEMP °F		STACK TEMP. °F
A1	2.50	326												
2	3.00	328												
3	2.30	329												
4	1.50	329												
5	1.70	328												
D-1	2.10	328												
2	2.00	330												
3	1.10	331												
4	0.97	331												
5	0.92	331												
C-1	1.20	328												
2	0.81	329												
3	0.56	330												
4	0.55	332												
5	0.46	331												
B-1	0.47	328												
2	0.48	329												
3	0.47	330												
4	0.47	331												
5	0.55	329												
A-1	0.16	328												
2	0.21	330												
3	0.32	330												
4	0.35	327												
5	0.73	329												

$\bar{V}^{1/2}$ 70.17

STATIC -0.24

(OL) 0L / 4.9 | 11.0

APPENDIX V

RAW FIELD DATA

5.3 Visible Emissions

VISIBLE EMISSION OBSERVATION FORM

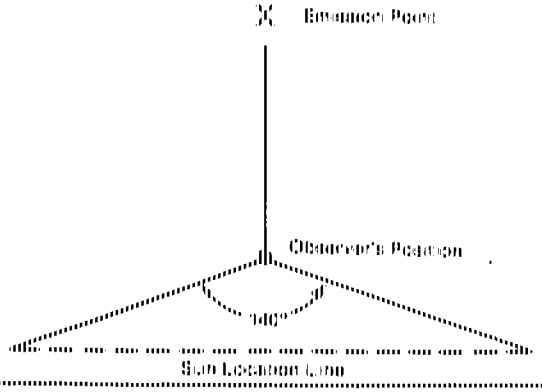
No. 1

COMPANY NAME	Windsor Service
STREET ADDRESS	South Reading Facility
CITY	
STATE	
ZIP	
PHONE (DEV CONTACT)	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	Asphalt Hot Mix Facility
OPERATING MODE	
CONTROL EQUIPMENT	Baghouse
OPERATING MODE	
DESCRIBE EMISSION POINT	Stack
HEIGHT ABOVE GROUND LEVEL	20'
HEIGHT RELATIVE TO OBSERVER	Start 20' End
DISTANCE FROM OBSERVER	Start 80' End
DIRECTION FROM OBSERVER	Start NNW End
DESCRIBE EMISSIONS	Start End
EMISSION COLOR	Start End
IF WATER DROPLET PLUME	Attached ☐ Detached ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Stack Exit End
DESCRIBE PLUME BACKGROUND	Start Sky End
BACKGROUND COLOR	Start Sky End
SKY CONDITIONS	Start Overcast End
WIND SPEED	Start 0-2 mph End
WIND DIRECTION	Start South End
AMBIENT TEMP	Start End
WET BULB TEMP	End
RH percent	

SOURCE LAYOUT SKETCH

Stack with Plume
Sun
Wind

Draw North Arrow



ADDITIONAL INFORMATION

OBSERVATION DATE	START TIME	END TIME
10/31/92	1255	1332

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	Time 1255
11	0	0	0	0	Time 1300
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	1127
29	0	0	0	0	1130
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Alsright
OBSERVER'S SIGNATURE	George Alsright
DATE	10/31/92
ORGANIZATION	Southern Environmental
CERTIFIED BY	Eastern Technical Assoc.
DATE	

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM
(CONTINUED)

COMPANY NAME: Windsor Service Reading	TYPE OF FACILITY: Asphalt Hot mix
CITY: South Reading Facility	EMISSION POINT: baghouse stack Ex 1
METHOD: 9 / PAGE ____ OF ____	OBSERVER: Steve Asphalt

OBSERVATION DATE			START TIME		END TIME
MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	Time 1132
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	1201

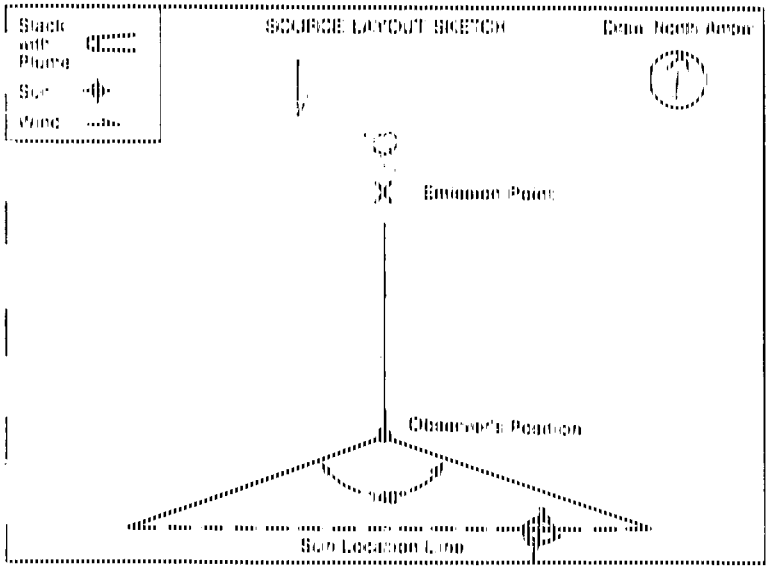
OBSERVATION DATE			START TIME		END TIME
MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	Time 1202
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	1212
27					
28					
29					
30					

VISIBLE EMISSION OBSERVATION FORM

No. 2

COMPANY NAME	Wind Sep Service
STREET ADDRESS	South Reading Plant
CITY	Reading
STATE	PA
ZIP	
PHONE (KEY CONTACT)	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	Asphalt Plant
OPERATING MODE	
CONTROL EQUIPMENT	baghouse
OPERATING MODE	
DESCRIBE EMISSION POINT	rectangular stack exit
HEIGHT ABOVE GROUND LEVEL	20
HEIGHT RELATIVE TO OBSERVER	Start 20 End
DISTANCE FROM OBSERVER	Start 30 End
DIRECTION FROM OBSERVER	Start NW End
DESCRIBE EMISSIONS	Start Detached Plume End
EMISSION COLOR	Start End
IF WATER DROPLET PLUME	Attached [ ] Detached [X]
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Stack Exit End
DESCRIBE PLUME BACKGROUND	Start Clear Sky End
BACKGROUND COLOR	Start Gray End
SKY CONDITIONS	Start End
WIND SPEED	Start 5-15 End
WIND DIRECTION	Start NW End
AMBIENT TEMP	Start 45° End
WET BULB TEMP	
RH, percent	

SOURCE LAYOUT SKETCH



ADDITIONAL INFORMATION

OBSERVATION DATE	START TIME	END TIME
10/8/92	0900	

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Lubrant
OBSERVER'S SIGNATURE	George Lubrant
DATE	[illegible]
ORGANIZATION	Solar Consultants Inc
CERTIFIED BY	[illegible]
DATE	9/30/92

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM
(CONTINUED)

COMPANY NAME [illegible]	TYPE OF FACILITY [illegible]
CITY Santa Rosalia, [illegible]	EMISSION POINT [illegible]
TEST NO. 2 / PAGE 2 OF 2	OBSERVER [illegible]

OBSERVATION DATE			START TIME		END TIME
MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	[illegible]
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	[illegible]	0	
8	0	0	0	0	
9	0	0	0	0	
10	[illegible]	0	15	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	[illegible]	[illegible]	[illegible]	[illegible]	
16	[illegible]	[illegible]	[illegible]	[illegible]	
17	0	0	[illegible]	0	
18	0	0	[illegible]	0	
19	0	0	0	0	
20	0	0	[illegible]	[illegible]	
21	0	[illegible]	0	0	
22	[illegible]	0	0	0	
23	0	0	[illegible]	[illegible]	
24	0	0	0	0	
25	[illegible]	0	[illegible]	0	
26	[illegible]	0	[illegible]	0	
27	[illegible]	[illegible]	[illegible]	0	
28	[illegible]	[illegible]	[illegible]	0	
29	[illegible]	[illegible]	[illegible]	[illegible]	
30	[illegible]	0	0	0	

OBSERVATION DATE			START TIME		END TIME
MIN \ SEC	0	15	30	45	COMMENTS
1					
2					
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6					
7					
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30					

VISIBLE EMISSION OBSERVATION FORM

No. 3

COMPANY NAME	Windsor Service
STREET ADDRESS	South Reading Plant
CITY	Reading
STATE	PA
ZIP	
PHONE (KEY CONTACT)	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	Hot Mix Asphalt
OPERATING MODE	
CONTROL EQUIPMENT	Baghouse
OPERATING MODE	
DESCRIBE EMISSION POINT	Rectangular Stack Exit
HEIGHT ABOVE GROUND LEVEL	70
HEIGHT RELATIVE TO OBSERVER	Start 70 End
DISTANCE FROM OBSERVER	Start 500 End
DIRECTION FROM OBSERVER	Start NNW End
DESCRIBE EMISSIONS	Start Slight detached Plume End Loads Water
EMISSION COLOR	Start End
IF WATER DROPLET PLUME	Attached ☐ Detached ☒
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Stack Exit End
DESCRIBE PLUME BACKGROUND	Start Overcast Sky End
BACKGROUND COLOR	Start Grey End
SKY CONDITIONS	Start End
WIND SPEED	Start 5-5 End
WIND DIRECTION	Start W End
AMBIENT TEMP	Start 45 End
WET BULB TEMP	
RH, percent	

Stack with Plume

Sun

Wind

SOURCE LAYOUT SKETCH

Draw North Arrow

X Emission Point

Observer's Position

100'

Sun Location Line

OBSERVATION DATE	START TIME	END TIME
10/22/92	1030	1130

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME (PRINT)	George Albright
OBSERVER'S SIGNATURE	George Albright
DATE	10/22/92
ORGANIZATION	Shippensburg Inc
CERTIFIED BY	Eastern Technical Assoc
DATE	1/5/93

ADDITIONAL INFORMATION

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM
(CONTINUED)

COMPANY NAME: Windsor Service	TYPE OF FACILITY: Hot Mix Asphalt
CITY: South Reading Plant	EMISSION POINT: Baghouse Stack Exit
TEST NO.: 3 / PAGE 2 OF 2	OBSERVER: George Ausright

OBSERVATION DATE		START TIME		END TIME	
MIN \ SEC	0	15	30	45	COMMENTS
1	0	0	0	0	1101
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
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15	0	0	0	0	
16	0	0	0	0	
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23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	1130

OBSERVATION DATE		START TIME		END TIME	
MIN \ SEC	0	15	30	45	COMMENTS
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
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29					
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APPENDIX VI

TEST RESULTS

APPENDIX VI

TEST RESULTS

6.1 Particulate

6.2 Volatile Organic Compounds

6.3 Visible Emissions

APPENDIX VI

TEST RESULTS

6.1 Particulate

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
ISOKINETIC SAMPLING ANALYSIS

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: PARTICULATES & FLOW

Sampling Locations: BAGHOUSE EXHAUST

Run No: W-P-1 Date: 10/21/92 Start: 1037 End: 1228

DATA

DN:	0.215	PB:	29.98	PST:	-0.88	AS:	2,304.0
O2%:	11.7	CO2%:	4.8	N2%:	83.5	VW:	299
GAS METER Y-FACTOR:			1.00				

SAMPLE POINT	TIME AT POINT	GAS METER	VELOCITY HEAD	STACK TEMP.	METER IN	TEMP. OUT	PM ORIFICE	SDE	O2	CO2	VEL
A-1	3.5	133.137	3.000	338	60	62	3.195	68.93			7,450
2	3.5		3.600	347	74	64	3.808	53.70			8,176
3	3.5		2.700	347	80	65	2.889	66.50			7,087
4	3.5		1.500	340	82	66	1.615	34.64			5,375
5	3.5		1.400	339	81	68	1.514	33.45			5,093
B-1	3.5	150.315	3.100	343	67	66	3.359	69.89			7,597
2	3.5		1.900	339	80	68	2.018	38.96			5,933
3	3.5		1.100	345	80	68	1.191	29.76			4,537
4	3.5		0.740	348	82	68	0.797	24.45			3,723
5	3.5		1.100	345	83	70	1.180	29.76			4,537
C-1	3.5	162.500	1.800	347	76	70	1.943	38.11	11.1	5.4	5,803
2	3.5		0.660	347	83	71	0.706	23.08			3,514
3	3.5		0.350	345	84	72	0.377	16.79			2,556
4	3.5		0.360	345	84	72	0.390	17.02			2,592
5	3.5		0.360	345	83	72	0.390	17.02			2,592
D-1	3.5	170.638	1.050	352	78	74	1.137	29.20			4,446
2	3.5		0.210	355	81	74	0.225	13.08	12.0	5.0	1,992
3	3.5		0.110	346	80	74	0.117	9.42			1,434
4	3.5		0.110	342	79	74	0.119	9.36			1,430
5	3.5		0.110	338	78	74	0.119	9.37			1,427
E-1	3.5	176.218	0.560	338	74	72	0.606	21.14			3,219
2	3.5		0.570	336	80	74	0.618	21.30	12.0	4.0	3,243
3	3.5		0.690	336	82	74	0.744	23.44			3,568
4	3.5		0.250	328	82	74	0.274	14.04			2,137
5	3.5		0.460	327	82	74	0.509	19.03			2,897
		183.584									

RESULTS	TT	MW	PTT	TS	TM	PM	SDE	O2	CO2	VEL
	87.5	50.567	1.112	342	75	1.196	26.86	11.7	4.8	4,090
	net	net	avg	avg	avg	avg	avg	avg	avg	avg

PSM=	30.07	VMSTD=	50.158	VWGAS=	14.083	%V=	21.9	RMS OF VELOCITIES =	49.1
MD=	0.78	MWC=	29.24	MW=	26.77	PS=	29.92		

STACK GAS VELOCITY =	4,089 AFPM
STACK GAS VOLUME =	33,634 DSCFM
STACK GAS VOLUME =	65,430 ACFM
STACK GAS VOLUME =	1.80E+05 LBS/HR
ISOKINETIC RATIO =	107.5

PARTICULATE EMISSIONS

MG =	37.3
GR/DSCF =	0.011
LBS/HR =	3.30

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
ISOKINETIC SAMPLING ANALYSIS

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: PARTICULATES & FLOW

Sampling Location: BAGHOUSE EXHAUST

Run No: W-P-2 Date: 10/22/92 Start: 0651 End: 0900

DATA

DN: 0.215 PB: 30.17 PST: -0.43 AS: 2,304.0
O2%: 11.2 CO2%: 4.9 N2%: 83.9 VW: 352
GAS METER Y-FACTOR: 1.00

SAMPLE POINT	TIME AT POINT	GAS METER	VELOCITY HEAD	STACK TEMP.	METER IN	TEMP. OUT	PN ORIFICE	SQE	O2	CO2	VEL
A-1	4.0	184.071	0.280	339	40	62	0.261	14.95			2,270
2	4.0		0.320	343	42	62	0.294	16.06			2,433
3	4.0		0.540	350	45	62	0.494	20.97			3,174
4	4.0		0.790	352	50	62	0.723	25.33			3,844
5	4.0		0.880	352	54	64	0.804	26.73			4,057
B-1	4.0	191.597	0.520	356	45	68	0.560	20.60	10.0	6.0	3,135
2	4.0		0.440	358	50	68	0.470	18.97			2,879
3	4.0		0.740	359	55	68	0.780	26.62			3,736
4	4.0		0.870	356	60	50	0.920	26.64			4,044
5	4.0		1.050	349	64	50	1.120	29.15			4,423
C-1	4.0	201.190	1.200	344	52	68	1.300	31.06			4,714
2	4.0		0.950	343	60	50	0.930	26.13			3,965
3	4.0		0.640	344	61	50	0.690	22.68			3,443
4	4.0		0.790	343	63	50	0.850	25.19			3,823
5	4.0		0.900	338	65	51	0.970	26.80			4,067
D-1	4.0	211.765	2.300	341	58	50	2.210	40.02			5,075
2	4.0		1.500	343	66	51	1.950	36.7	11.6	6.0	5,267
3	4.0		1.100	347	66	52	1.200	29.79			4,522
4	4.0		0.770	353	66	52	0.840	25.02			3,797
5	4.0		0.800	352	65	52	0.870	25.49			3,868
E-1	4.0	226.432	2.600	343	61	52	2.610	43.90			6,666
2	4.0		2.900	353	70	53	3.150	48.56			7,369
3	4.0		2.100	356	74	56	2.280	41.40			6,283
4	4.0		1.500	354	74	56	1.610	34.94			5,306
5	4.0		1.700	348	82	58	1.850	37.06	12.0	6.8	5,625
		240.245									

RESULTS	TT	VM	PTT	TS	TM	PM	SQE	O2	CO2	VEL
	100.0	56.176	1.103	349	54	1.189	28.57	11.2	4.9	4,35
	net	net	avg	avg	avg	avg	avg	avg	avg	avg

PSM= 30.26 VMSTD= 58.310 VWGAS= 16.579 SM= 22.1 RMS OF VELOCITIES = 29.2
MC= 0.78 MWD= 29.24 MW= 25.75 PS= 30.14

STACK GAS VELOCITY = 4,350 APPM
STACK GAS VOLUME = 35,645 DSCFM
STACK GAS VOLUME = 69,609 ACFM
STACK GAS VOLUME = 1.898+05 LBS/HR
ISOKINETIC RATIO = 103.1

PARTICULATE EMISSIONS

MG = 70.2
GR/DSCF = 0.019
LBS/HR = 5.65

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
ISOKINETIC SAMPLING ANALYSIS

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: PARTICULATES & FLOW

Sampling Location: BAGHOUSE EXHAUST

Run No: W-P-3 Date: 10/22/92 Start: 0940 End: 1132

DATA

ON:	0.215	PB:	30.27	PST:	-0.39	AS:	2,304.0
O2%:	12.1	CO2%:	4.4	N2%:	83.5	MW:	4.13
GAS METER Y-FACTOR:			1.00				

SAMPLE POINT	TIME AT POINT	GAS METER	VELOCITY HEAD	STACK TEMP.	METER IN	TEMP. OUT	PM ORIFICE	SDE	O2	CO2	VEL
E-1	4.0	240.481	2.200	348	53	52	2.350	42.16			6,648
2	4.0		2.900	340	64	54	3.100	48.17			7,366
3	4.0		2.200	341	74	56	2.350	47.98			6,620
4	4.0		1.500	344	68	58	1.650	34.73	12.0	4.0	5,311
5	4.0		1.600	339	66	58	1.720	35.75			5,468
D-1	4.0	256.291	1.900	340	58	56	2.080	38.99			5,963
2	4.0		1.700	340	65	58	1.870	36.88			5,640
3	4.0		0.950	344	66	58	1.010	27.64			4,227
4	4.0		0.720	349	66	58	0.780	24.13	12.0	5.0	3,691
5	4.0		0.570	348	66	58	0.610	21.46			3,282
C-1	4.0	268.995	1.200	351	58	56	1.300	31.23			4,771
2	4.0		0.510	350	65	58	0.660	22.23			3,400
3	4.0		0.500	350	65	58	0.540	20.12	12.1	4.6	3,078
4	4.0		0.580	350	65	58	0.600	21.67			3,315
5	4.0		0.750	350	65	59	0.810	24.65			3,770
B-1	4.0	277.522	0.560	348	60	58	0.710	23.09			3,532
2	4.0		0.380	345	66	60	0.400	17.49	12.2	4.0	2,675
3	4.0		0.360	346	66	60	0.390	17.08			2,605
4	4.0		0.530	348	66	60	0.670	22.96			3,451
5	4.0		0.800	348	70	62	0.860	25.42			3,888
A-1	4.0	286.120	0.310	340	62	62	0.330	15.75			2,408
2	4.0		0.270	334	70	64	0.290	14.64			2,239
3	4.0		0.350	334	71	64	0.370	16.67			2,550
4	4.0		0.550	337	73	64	0.700	22.76			3,481
5	4.0		0.580	335	76	65	0.720	23.25			3,556
		293.814									

RESULTS	TT	VM	PST	TS	TM	PM	SDE	O2	CO2	VEL
	100.0	53.333	0.999	344	62	1.075	26.82	12.1	4.4	4,101
	net	net	avg	avg	avg	avg	avg	avg	avg	avg

PSM=	30.35	MPSTD=	54.697	VMGAS=	19.452	SM=	26.2	RMS OF VELOCITIES =	34.6
MD=	0.74	MWD=	29.19	MW=	26.25	PS=	30.24		

STACK GAS VELOCITY =	4,101	AFPM
STACK GAS VOLUME =	32,129	DSCFM
STACK GAS VOLUME =	65,519	ACFM
STACK GAS VOLUME =	1.76E+05	LBS/HR
ISOKINETIC RATIO =	107.3	

PARTICULATE EMISSIONS

MG =	54.6
GR/DSCF =	0.015
LBS/HR =	4.23

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
ISOKINETIC SAMPLING SUMMARY SHEET

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: PARTICULATES & FLOW

Sampling Location: BAGHOUSE EXHAUST

RUN NUMBER	W-P-1	W-P-2	W-P-3
DATE	10/21/92	10/22/92	10/22/92
DN - NOZZLE DIAMETER, IN.	0.215	0.215	0.215
PB - BAROMETRIC PRESS, IN. OF H2O	29.98	30.17	30.27
TT - NET SAMPLING TIME, MIN.	87.5	100.0	100.0
VM - VOLUME METERED, ACF	50.547	56.174	53.333
TM - AVG. METER TEMP., DEG. F	75	54	62
PM - AVG. DELTA H, IN. OF H2O	1.194	1.189	1.075
Y - GAS METER CALIB. FACTOR	1.00	1.00	1.00
VMSTD - STD. GAS VOL., SCF	50.168	58.310	54.897
VW - TOTAL WATER COLLECTED, ML.	299	352	415
%M - PERCENT MOISTURE	21.9	22.1	26.2
MD - MOLE FRACTION DRY	0.78	0.78	0.74
%CO2 - PERCENT CO2 DRY	4.8	4.9	4.4
%O2 - PERCENT O2 DRY	11.7	11.2	12.1
MWD - DRY MOLECULAR WEIGHT	29.84	29.84	29.19
MW - WET MOLECULAR WEIGHT	25.77	26.75	26.25
%EA - PERCENT EXCESS AIR	0.0	0.0	0.0
AS - STACK AREA, SQ. IN.	2,304.0	2,304.0	2,304.0
PST - STATIC PRESS., IN. OF H2O	-0.88	-0.43	-0.39
TS - STACK TEMP., DEG. F	342	349	344
CP - PITOT COEFFICIENT	0.84	0.84	0.84
VS - STACK GAS VELOCITY, AFPM	4,089	4,350	4,107
RMS - STD. DEV. OF VEL.	49.1	29.2	34.5
QS - STACK GAS FLOW, DSCFM	33,634	35,645	32,129
QA - STACK GAS FLOW, ACFM	65,630	69,609	65,619
%I - ISOKINETIC RATIO	107.5	103.1	107.3
GR/DSCF, PARTICULATE LOADING	0.011	0.019	0.015
LBS/HR, PARTICULATE EMISSIONS	3.30	5.65	4.23

AVG. GR/DSCF, EMISSION RATE 0.015

APPENDIX VI

TEST RESULTS

6.2 Volatile Organic Compounds

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
VOLATILE ORGANIC COMPOUND SAMPLING ANALYSIS

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: VOC

Sampling Location: BAGHOUSE EXHAUST

Run No: W-V-1 Date: 10/22/92

START TIME	RUN TIME (MIN)	BAROMETER (IN HG)	TEMPERATURE FILTER (°F)	TEMPERATURE PROBE (°F)	FLOW RATE (CC/MIN)	VACUUM (IN HG)	AMBIENT TEMP (°F)
0733	0.0	30.20			55	28.4	48
	5.0				55	25.6	
	10.0		254	265	55	23.0	
	15.0		250	264	55	20.4	
	20.0		249	265	55	17.9	
	25.0		250	266	55	14.3	
	30.0		252	265	55	12.2	
	35.0		251	265	55	10.0	
	40.0		251	265	55	8.3	
	45.0		249	265	55	6.2	
	50.0		248	265	55	4.2	
0828	55.0	30.23	248	265	55	2.0	52
	60.0						
AVERAGES		30.22	250	265	55	14.4	50

VOC EMISSIONS		FEED RATE		FLOW RATE	
MG C/CU.M	122.0	TONS/HR =	285	DSCFM =	34,900
GR/DSCF =	0.052				
LBS/HR =	15.51				
LBS/TON =	0.054				

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
VOLATILE ORGANIC COMPOUND SAMPLING ANALYSIS

Client: WEMCSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: VOC

Sampling Location: BAGHOUSE EXHAUST

Run No: W-V-2 Date: 10/22/92

START TIME	RUN TIME (MIN)	BAROMETER (IN HG)	TEMPERATURE FILTER (°F)	TEMPERATURE PROBE (°F)	FLOW RATE (CC/MIN)	VACUUM (IN HG)	AMBIENT TEMP (°F)
0951	0.0	30.28	235	256	65	29.8	55
	5.0		247	256	65	28.6	
	10.0		255	255	65	27.3	
	15.0		252	256	65	26.2	
	20.0		248	255	65	25.0	
	25.0		248	265	65	23.7	
1021/1145	30.0		249	265	65	22.4	
	35.0		230	261	65	21.5	
	40.0		235	265	65	20.4	
	45.0	30.24	247	265	65	19.2	
	50.0		250	265	65	17.8	
	55.0		256	265	65	16.6	
1210	60.0		251	265		14.4	58
AVERAGES		30.26	247	265	65	22.5	57

VOC EMISSIONS

MG C/CU.M	327.5
GR/DSCF =	0.139
LBS/HR =	41.62
LBS/TON =	0.151

FEED RATE

TONS/HR = 276

FLOW RATE

DSCFM = 34,900

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
VOLATILE ORGANIC COMPOUND SAMPLING ANALYSIS

Client: JENDSCR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: VOC

Sampling Location: BAGHOUSE EXHAUST

Run No: W-V-3 Date: 10/23/92

START TIME	RUN TIME (MIN)	BAROMETER (IN HG)	TEMPERATURE FILTER (°F)	TEMPERATURE PROBE (°F)	FLOW RATE (CC/MIN)	VACUUM (IN HG)	AMBIENT TEMP (°F)
07"8	0.0	30.15	251	265	65	29.6	42
	5.0		250	265	65	28.4	
	10.0		251	265	65	27.1	
	15.0		249	265	65	25.7	
	20.0		250	265	65	24.2	
	25.0		251	265	65	23.2	
	30.0		250	265	65	22.1	
0753/0758	35.0		250	265	65	20.7	
	40.0		250	265	65	19.7	
	45.0		251	265	65	18.0	
	50.0		251	266	65	16.7	
0816/0929	55.0		249	264	65	16.2	
0935	60.0	30.15	251	265		15.0	51
AVERAGES		30.15	250	265	65	22.0	47

VOC EMISSIONS

MG C/CU.M	163.0
GR/DSCF =	0.069
LBS/HR =	20.72
LBS/TON =	0.072

FEED RATE

TONS/HR = 288

FLOW RATE

DSCFM = 34,900

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
ISOKINETIC SAMPLING SUMMARY SHEET

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Tests: VOC

Sampling Location: BAGHOUSE EXHAUST

RUN NUMBER	W-V-1	W-V-2	W-V-3
DATE	10/22/92	10/22/92	10/23/92
BAROMETRIC PRESS, IN. H2O	30.22	30.26	30.16
FILTER TEMPERATURE, °F	250	247	250
PROBE TEMPERATURE, °F	265	265	265
FLOW RATE, CC/MIN	65	65	65
AMBIENT TEMPERATURE, °F	50	57	47
FLUE GAS VOLUME, DSCFM	34,900	34,900	34,900
FEED RATE, TONS/HR	285	276	288
EMISSIONS			
MG/CUBIC METER	122.0	327.5	153.0
GR/DSCF	0.052	0.139	0.065
LBS/HR	15.5	41.6	20.7
LBS/TON	0.054	0.151	0.072

AVERAGE EMISSIONS, LBS/TON 0.063 *

* Average emissions for runs W-V-1 and W-V-3. The average emissions for all three runs is 0.092 lbs/ton.

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
GAS FLOW ANALYSIS

Client: WINDSOR Plant: S. ROG

Unit Tested: ASPHALT TEST : GAS FLOW

Test Location: BAGHOUSE

Run No: T-1 Date: 10/22/92 Start: 907 End: 925

DATA

PB: 30.17 PST: -0.24 AS: 2304.0

SAMPLE POINT	VELOCITY HEAD	STACK TEMP.	SQE	VELOCITY AFPM	CO2	O2
E-1	2.500	326	64.33	6,698	5.4	11.1
2	3.000	328	68.62	7,347		
3	2.300	329	62.60	6,437		
4	1.530	329	34.40	5,198	5.0	12.0
5	1.730	328	36.60	5,530		
D-1	2.130	328	40.58	6,167		
2	2.000	330	39.75	6,006	6.0	12.0
3	1.130	331	29.50	4,457		
4	0.970	331	27.70	4,185		
5	0.920	331	26.98	4,076	6.0	10.0
C-1	1.230	328	30.75	4,646		
2	0.810	329	25.28	3,820		
3	0.560	330	21.03	3,178	6.0	11.5
4	0.550	332	20.87	3,154		
5	0.660	331	22.85	3,452		
B-1	0.470	328	19.24	2,908	6.8	12.0
2	0.480	329	19.46	2,941		
3	0.470	330	19.27	2,912		
4	0.470	330	19.27	2,912	6.0	12.0
5	0.550	329	20.83	3,148		
A-1	0.250	328	14.04	2,121		
2	0.210	330	12.88	1,946	5.0	12.0
3	0.320	330	15.90	2,402		
4	0.550	327	20.81	3,144	4.6	12.1
5	0.730	329	26.00	3,626	4.0	12.2

RESULTS	PIT	TM	SQE	VEL	CO2	O2
	1.055	329	27.11	4,096	4.7	11.7
	avg	avg	avg	avg	avg	avg

BP= 20.0
MD= 0.800 MWD= 29.22 MW= 26.97 PS= 30.15

STACK GAS VELOCITY = 4,096 AFPM
STACK GAS VOLUME = 35,474 DSCFM
STACK GAS VOLUME = 65,775 ACFM

AVERAGE OF FLOW RATES = 34899.5

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP

FIELD MOISTURE DETERMINATION

CLIENT: MINOSCO SERVICES

LOCATION: BAGHOUSE EXHAUST

TEST: M-1 DATE: 10/23/93 TIME: 720

OPERATOR: SCHELL

BAROMETRIC PRESSURE: 30.17

GAS METER
START: 293.887 FINAL: 314.117 NET: 20.230

Y FACTOR= 1.00

FLOW METER
AVE.ORIFICE DROP 1.69 AVE. TEMPERATURE: 54

MOISTURE

IMP 1	START:	100	FINAL:	188	NET: 88
IMP 2	START:	100	FINAL:	144	NET: 44
IMP 3	START:	0	FINAL:	0	NET: 0
GEL	START:	232	FINAL:	244	NET: 12

TOTAL COLLECTED MOISTURE: 144.0

TOTAL MOISTURE BY WEIGHT: 24.4 %

SAMPLE VOLUME(VMSTD): 21.044

APPENDIX VI

TEST RESULTS

6.3 Visible Emissions

GILBERT/COMMONWEALTH, INC.
TESTING SERVICES GROUP
VISIBLE EMISSIONS SUMMARY

Client: WINDSOR SERVICE Plant: SOUTH READING

Unit Tested: DRUM MIX ASPHALT PLANT Test: VISIBLE EMISSIONS

Sampling Location: BAGHOUSE EXHAUST

RUN NUMBER:	1	2	3
DATE:	10/21/92	10/22/92	10/22/92
TIME:	1045-1227	0800-0900	1030-1130
AVERAGE OPACITY:	0	0	0

AVERAGE OPACITY FOR
RUNS 1, 2, AND 3: 0

APPENDIX VII

CALIBRATION DATA

[illegible] Commonwealth Inc.
Testing Services Grp.
METER BOX CALIBRATION
[illegible]

[illegible] [illegible] METER BOX NUMBER: [illegible]

BAROMETRIC PRESS. [illegible] = [illegible] in. Hg [illegible] [illegible]

	GAS VOLUME		TEMPERATURES						
				Dry Gas Meter					
Orifice Manometer Setting (Delta H) in. H2O	Wet Test Meter (Vw) cu. ft.	Dry Gas Meter (Vd) cu. ft.	Wet Test Meter (Tw) deg. F	Inlet (Tdi) deg. F	Outlet (Tdo) deg. F	Average (Td) deg. F	Time min.	Y	Delta Hn
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
							AVERAGE	[illegible]	[illegible]

FORMULAS

$$Y = \frac{Vd\,(Pb+\Delta H/13.6)\,Tw+460}{Vw\,(Pb+\Delta H/13.6)\,Td+460}$$

$$\text{Delta Hn} = \frac{0.0319}{Vd\,Pbd}$$

$$Vm = Cm \left[\frac{[illegible]}{Y\,(Tdb+460)\,\text{Delta Hn}} \right]$$

$$Bw = \frac{Vw\,(Tdb+460)}{(Pbar+\Delta H/13.6)\,Vm+460}$$

[illegible] Chemicals Inc.
Testing Services Group
METER BOX CALIBRATION

DATE: [illegible] METER BOX NUMBER: [illegible]

BAROMETRIC PRESS. (Pb) = [illegible] in. Hg DELTA H@ [illegible]

Orifice Manometer Setting Delta H (in. H2O)	Dry Gas Meter Initial Reading (cu. ft.)	Dry Gas Meter Final Reading (cu. ft.)	Ambient Temp. (deg. F)	Dry Gas Meter Temperatures: Inlet (Tdi) deg. F	Outlet (Tdo) deg. F	Average (Td) deg. F	Time (min.)	Y	Delta H@
0.5	5.003	5.080	83	66.0	73.0	69.5	10.00	1.02	1.81
1.0	5.080	5.225	82	65.5	73.0	69.3	5.00	1.02	1.17
1.5	5.000	5.082	83	66.5	73.0	69.8	7.00	1.02	1.54
2.0	5.007	5.062	83	68.0	75.5	71.8	5.00	1.02	1.69
3.0	5.006	5.185	83	70.5	72.0	71.3	5.00	0.99	1.93
4.0	5.008	5.351	83	73.0	73.0	73.0	4.00	0.99	2.01
							AVERAGE	1.01	1.85

FORMULAS

$$Y = \frac{\text{Vm (Pbar+dH/13.6)(Tm+460)}}{\text{Vmb (Pbar+dH/13.6)(Tmb+460)}}$$

$$\text{delta H@} = \frac{\text{dH}}{\text{Y (Tm+460)}}$$

$$\text{Dn} = \text{Dm} \sqrt{\frac{\text{[illegible]}}{\text{Y (Tm+460) (delta H@)}}}$$

$$\text{Qn} = \frac{\text{Dn}^2 \text{ (Tm+460)}}{\text{(Tmm) (Pm+460)}}$$

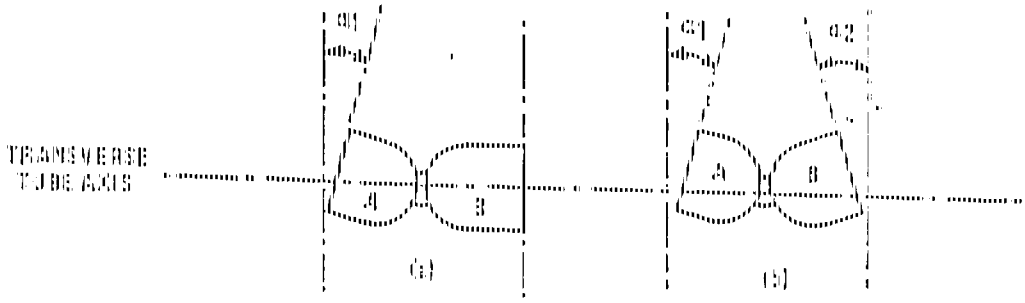
Stinson Communications Inc.
Air Quality Testing Services Group

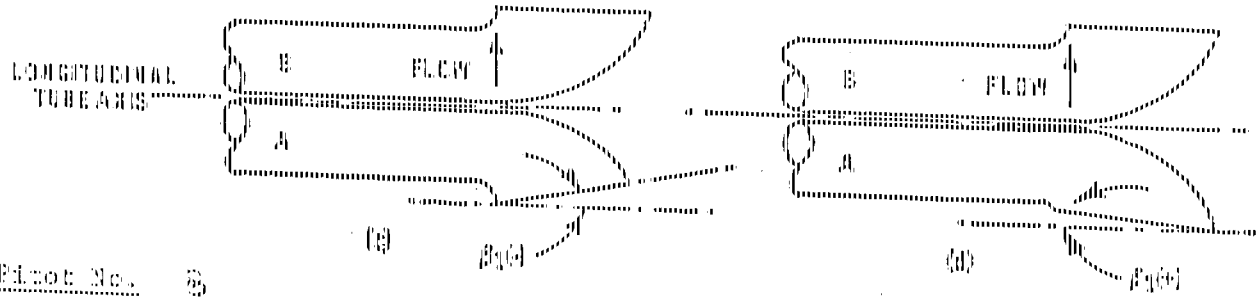
HOT METER CALIBRATION

DATE: [illegible] CALIBRATED BY: [illegible]

HOT METER NUMBER: [illegible] THERMOCOUPLE TYPE: [illegible]

TEST	INSTRUMENT	READER REPORT	
		[illegible]	[illegible]
[illegible]	MERCURY THERMOMETER	[illegible]	[illegible]
	HOT METER	[illegible]	[illegible]
	Difference	[illegible]	[illegible]
[illegible]	MERCURY THERMOMETER	[illegible]	[illegible]
	HOT METER	[illegible]	[illegible]
	Difference	[illegible]	[illegible]
HOT OIL	MERCURY THERMOMETER	[illegible]	[illegible]
	HOT METER	[illegible]	[illegible]
	Difference	[illegible]	[illegible]

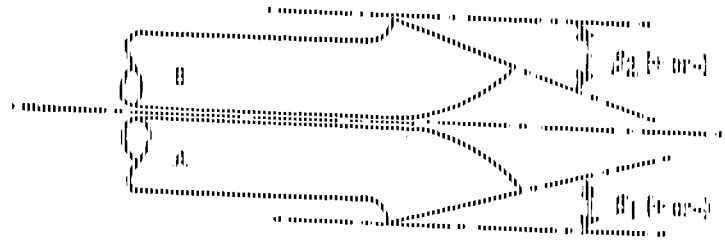


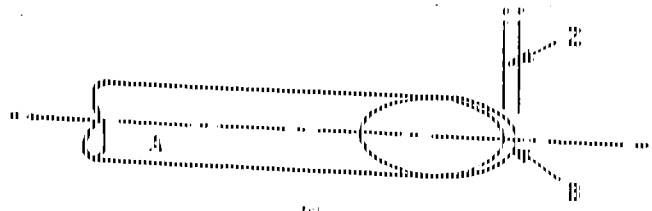


Pitot No. 6

Reference	Side A	Side B
A_1	3 °	—
A_2	—	2 °
B_1	3 °	—
B_2	—	3 °

Reference	Inches
z	0
w	0





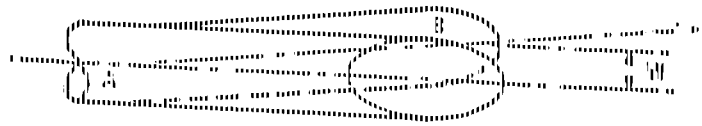


Figure 2-3. Types of face-opening misalignment that can result from field use or improper construction of Type S pitot tubes. These will not affect the baseline value of $C_p(s)$ so long as α_1 and $\alpha_2 < 10°$, β_1 and $\beta_2 < 5°$, $z < 0.32$ cm (1/8 in.) and $w < 0.08$ cm (1/32 in.) (citation 11 in Section 6).

APPENDIX VIII

SAMPLE CALCULATIONS

SAMPLE CALCULATIONS

Particulate Isokinetic Sampling

I. Calculations for stack volume and Isokinetic Ratio

Time	Dry Gas Meter $Ft.^3$	Pitot ΔP, In. H_2O	Orifice ΔH, In. H_2O	Dry Gas Temp °F In Out	Stack Static Pressure In. H_2O	Stack Temp °F
T	VM	ΔP	PM	TMI TMO	PST	TS

1. DN = Nozzle Diameter, inches
2. PB = Barometric Pressure, inches Hg
3. TT = Net Sampling Time, minutes
4. VM = VM final − VM initial = Sample Gas Volume, $ft.^3$
5. TM = Average Dry Gas Temperature at Meter, °F

$$TM = \frac{Avg.\ TMI + Avg.\ TMO}{2}$$

6. PM = Average Orifice Pressure Drop, inches H_2O

$$PM = Avg.\ \Delta H$$

7. Volume of dry gas sampled at standard conditions[a], DSCF

$$VMSTD = \frac{17.65 \times VM \times T \left(BP + \frac{PM}{13.6}\right)}{(TM + 460)}$$

8. VW = Total Water Collected = gm H_2O Silica gel + ml Imp. H_2O = ml
9. Volume of water vapor at standard conditions[b], SCF

$$VW\ gas = 0.0471 \times VW = SCF$$

10. Percent moisture in stack gas

$$\%\ M = \frac{100 \times VW\ gas}{VM\ STD + VW\ gas}$$

11. Mole fraction of dry gas

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

12. Molecular weight of dry stack gas

$$MWD = \left(\%CO_2 \times \frac{44}{100}\right) + \left(\%O_2 \times \frac{32}{100}\right) + \left[\left(\%CO + \%N_2\right) \times \frac{28}{100}\right]$$

12A. %EA = % Excess Air $= \dfrac{[(\%\ O_2) - 0.5\ (\%CO)]}{0.264\ (\%N_2) - [(\%O_2) + 0.5\%\ (CO)]} \times 100$

13. Molecular weight of wet stack gas

$$MW = DSTD \times MD + 18\ (1 - DSD)$$

14. AS = Stack Area, square inches

15. PS = Stack Pressure, inches Hg

$$PS = PB \pm Avg.\ PST$$

NOTE: PST in. Hg. $= \dfrac{PST\ in.\ H_2O}{13.6}$

16. TS = Average Stack Temperature, °F

TS = Average TS

17. SDE = Average $\sqrt{\text{Velocity Head } (\Delta P) \times (\text{Stack Temperature} + 460)}$

(Calculated each line)

$$SDE = Avg\ \sqrt{\Delta P \times (TS + 460)}$$

18. Stack gas velocity at stack conditions, fpm

$$VS = 5130 \times Cp \times Avg(SDE) \times \left[\frac{1}{PS \times MW}\right]^{1/2} = FPM$$

Cp = pitot tube coefficient

19. Stack gas volumetric flow rate at standard conditions[c], DSCFM

$$Q_s = \frac{0.129 \times VS \times AS \times MD \times PS}{(TS + 460)} = DSCFM$$

20. Stack gas volumetric flow rate at stack conditions, ACFM

$$Q_a = \frac{.05667 \times VS\ (TS + 460)}{PS \times MD} = ACFM$$

21. Percent Isokinetic

$$KI = \frac{1.932 \times (TS + 460) \times VMSTD}{VS \times TT \times PS \times MD \times (DN)^2}$$

NOTES: [a]Dry standard cubic feet at 68°F, 29.92 in. Hg.
[b]Standard conditions at 68°F, 29.92 in. Hg.
[c]Dry standard cubic feet per minute at 68°F, 29.92 in. Hg

II. Calculations for grain loading and emission rates

22. Particulate, gr/DSCF

$$gr/DSCF = 0.0154 \times \frac{mg}{VMSTD}$$

23. Particulate at stack conditions, gr/ACF

$$gr/ACF = \frac{17.65\ gr/DSCF \times PS \times MD}{(TS + 460)}$$

24. Particulate, lb/hr conc. method

$$lb/hr = 0.00857 \times gr/DSCF \times QS$$

25. Particulate lb/hr area method $= 0.132 \times \frac{EMM\ particulate \times AS}{\left(\frac{DN^2}{4}\right) \times \pi}$

26. Particulate, combustion

$$\frac{lb/hr}{10^6\ BTU/hr}$$

27. Particulate, process lb/ton

$$lb/ton = \frac{lb/hr}{ton/hr}$$

28. Particulate, lb/MMBTU, F-Factor Method =

Using O_2 =

$$\frac{0.0154 \times mg \times F\text{-}Factor \times 20.9}{7000 \times VMSTD \times (20.9 - \%O_2)}$$

Using CO_2:

$$\frac{0.0154 \times mg \times F\text{-}Factor \times 100}{7000 \times VMSTD \times \%\ CO_2}$$

29. F-Factor, dscf/mmBtu

O_2 Formula:

$$F\text{-}Factor = \frac{10^6(3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O_2))}{GCV}$$

CO_2 Formula:

$$\frac{10^6(0.321)(\%C)}{GCV}$$

PARTICULATE MATTER EMISSIONS

Process Factor Formula

$$A = 0.76E^{0.42}, \text{ where:}$$

A = Allowable Emissions in LBS/HR

E = Emission index = F x W in LBS/HR

F = Process factor in LBS/Unit, and

W = Production or charging rate in Units/HR

F shall be obtained from the table in paragraph (1) of subsection 123.13 of the PADER Source Testing Manual.

The units for F and W shall be compatible.

VOLATILE ORGANIC COMPOUND CALCULATIONS

GR/DSCF = (MG of C/M^3 x 0.015) / 35.3

LBS/HR = GR/DSCF x 0.00857 x DSCFM

LBS/TON = (LBS/HR) / (LBS/TON)