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AP-42 Section 9.7  
Reference 11  
Report Sect. 4  
Reference 3

**ECKLEY ENGINEERING**  
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Fresno, Ca. 9301  
Attn: Bob Eckley

**SOURCE EMISSION TESTING**  
**MOUNT WHITNEY COTTON GIN**  
Total Particulate  
PM-10 Particulate  
NOVEMBER 29 & 30, 1990

Prepared By:

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Job Number  
5019

Laboratory Report Number  
290-188

Test Team Leader  
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Results Verified By:  
Tom Porter - Director Air Test Division

**BTC** ENVIRONMENTAL  
INCORPORATED

MOUNT WHITNEY GIN: PRE-MODIFICATION EMISSIONS

EMISSIONS POINT	REFERENCE	TEST DATE	TESTED G/DSCF	TESTED LB/HR	CYCLONE COLLECTORS (NUMBER & SIZE ("))	BALES/HOUR	SYSTEM (POUNDS/HOUR)	SYSTEM (POUNDS/BALE)
WEST PLENUM [Unloading & Pryers & inclined cleaners]	Mt. Whitney	11/90	0.1000*	2.88	15/38	15.2	43.2	2.84
EAST PLENUM [Overflow Separator & Trash from West Plenum Cyclones]	Mt. Whitney	11/90	0.0949	3.55	4/38	14.3	14.2	0.99
NOTES (Note Condenser)	Mt. Whitney	11/90	0.0164	1.23	2/72	11.7	2.46	0.21
NOTES CNSR	Mt. Whitney	11/90	0.0366	1.71	1/72	15.3	1.71	0.12
LC&BC BSKT	Calc Sheet	-	-	-	-	-	-	1.15
NOTE CLNR	Mt. Whitney	11/90	0.0366	0.64	1/28	15.3	0.64	0.04

Calculated pounds per bale before 1991 modifications = 5.4

\*Allowable under Rule 404

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EMISSION SUMMARY

#1 CYCLONE

*West plenum  
suction/drying*

CONSTITUENT	RUN #1	RUN #2	AVERAGE
<b>Total Particulate</b>			
gr/DSCF	0.0896	0.1646	0.1271
lbs/hr	2.59	4.73	3.66
<b>PM-10 Particulate</b>			
+10μ (%)	47.8	51.1	49.5
-10μ (%)	52.2	48.9	50.6
+10μ (lbs/hr)	1.24	2.42	1.83
-10μ (lbs/hr)	1.35	2.31	1.83

*19.06 lbs/hr*

*2.88 lbs/bale*

EMISSION SUMMARY

#2 CYCLONE

*East Plenum*

CONSTITUENT	RUN #1	RUN #2	AVERAGE
<b>Total Particulate</b>			
gr/DSCF	0.0710	0.1187	0.0949
lbs/hr	2.66	4.44	3.55
<b>PM-10 Particulate</b>			
+10μ(%)	93.9	88.8	91.4
-10μ(%)	6.1	11.2	8.7
+10μ(lbs/hr)	2.50	3.94	3.22
-10μ(lbs/hr)	0.16	0.50	0.33

*0.99 lb/bale*

EMISSION SUMMARY

#3 CYCLONE (NOTES) 6/61

CONSTITUENT	RUN #1	RUN #2	AVERAGE
<b>Total Particulate</b>			
gr/DSCF	0.0045	0.0283	0.0164
lbs/hr	0.33	2.12	1.23
<b>PM-10 Particulate</b>			
+10μ (%)	81.7	54.0	67.9
-10μ (%)	18.3	46.0	32.2
+10μ (lbs/hr)	0.27	1.14	0.71
-10μ (lbs/hr)	0.06	0.98	0.52

• 21 15/61

EMISSION SUMMARY

#4 CYCLONE *MOTES/CONDENSER* 85

CONSTITUENT	RUN #1	RUN #2	AVERAGE
<b>Total Particulate</b>			
gr/DSCF	0.0464	0.0268	<b>0.0366</b>
lbs/hr	2.16	1.25	<b>1.71</b>
<b>PM-10 Particulate</b>			
+10 $\mu$ (%)	95.8	95.8	<b>95.8</b>
-10 $\mu$ (%)	4.2	4.2	<b>4.2</b>
+10 $\mu$ (lbs/hr)	2.07	1.20	<b>1.63</b>
-10 $\mu$ (lbs/hr)	0.09	0.05	<b>0.07</b>

*12 lbs/hr*

## ***I. INTRODUCTION***

## INTRODUCTION

On November 29 & 30, 1990, BTC Environmental performed source emission tests for PM-10 particulate matter and total particulate matter on various cyclones located at the Mount Whitney cotton gin. The gin is located on Mount Whitney Road near Five Points. The cyclones were designated as #1, #2, #3 and #4. A candy cane exhaust duct was attached to the cyclone outlet and routed to ground level producing a uniform flow in a vertical position.

The testing was conducted while the plant was operating at normal conditions and production rates.

## SAMPLING AND ANALYTICAL PROCEDURES

STACK GAS ANALYSIS: The stack gas were assumed to be ambient air. The O<sub>2</sub> value was 20.9% and the CO<sub>2</sub> value was 0.05%.

STACK GAS VELOCITY: The stack gas velocity was determined using an "S" type pitot tube connected to an inclined draft gauge or a magnehelic gauge.

The stack temperature was determined using a thermocouple and an indicating pyrometer. The proportion of water was determined gravimetrically and the dry molecular weight of the stack gas determined by E.P.A. Method 3, equation 3-2. Stack velocities were calculated using E.P.A. Method 2, equation 2-9; gas volumetric flow rate was determined by equation 2-10.

PA 5 PARTICULATE EMISSIONS: Particulates were collected using a Lacey Model 31 stack sampler system that conforms to E.P.A. requirements for particulate sampling. The system consists of a heated probe, heated filter, and cooled impingers (see E.P.A. Method 5). After the weight of the particulates on the filter and in the probe is determined, the total dissolved solids in the the impingers is determined and added to the particulate weight in order to comply with APCD regulations. Blanks for the DI water and acetone were analyzed and subtracted from the total particulate weight.

PM-10 PARTICULATE EMISSIONS: Sampling was done isokinetically from each stack at the same time that the total particulate sampling was being done. The sampling was done by using a Gil cascade impactor. The impactor consists of a nozzle, two (2) stages with slotted filters, a final stage containing a backup filter, heated probe and cooled impingers containing DI water. The nozzle and the two (2) stages represent the +10 $\mu$  fraction. The final stage, heated probe and the impingers represent the -10 $\mu$  fraction.

The weight from each fraction including the filter weights and the rinses are added together to obtain a total weight. The total weight is divided into the weight obtained from each fraction to obtain the percentage for each fraction. The lb/hr values obtained from the total particulate runs were utilized to obtain the lb/hr for the +10 $\mu$  and the -10 $\mu$  fractions.

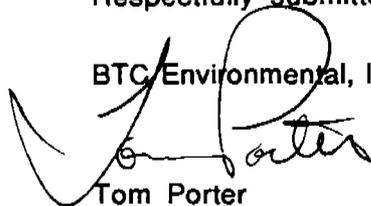
**LEAK CHECKS:** Leak rates were conducted on the sampling train and the pitot tubes before and after each test. The leak check for the sampling train was done at the nozzle. Any leak rate greater than 0.02 cfm was corrected for in the volume calculations.

All calculations for lb/hr were done by using the flow rate of the stack gas. All values were calculated by using standard conditions (60°F & 29.92 in Hg).

If you have any questions concerning this test or if we can be of further assistance, please contact the undersigned at (805) 644-1095.

Respectfully submitted,

BTC Environmental, INC.



Tom Porter

Director-Air Test Division

Copies: 3 Eckley Attn: Bob Eckley

## **II. WET TEST METHODS DATA SUMMARIES**

## METHOD 5 FIELD DATA SUMMARY

### #1 CYCLONE

	Run#1	Run#2
Vlc - Volume of water collected, ml	8.3	6.5
Vm - Gas volume, meter cond., dcf	39.615	38.620
Y - Meter calibration factor	1.023	1.023
Pbar - Barometric pressure, in. Hg	30.23	30.23
Pg - Stack static pressure, in. H2O	30.24	30.24
$\Delta H$ - Avg. meter press. diff., in. H2O	1.582	1.595
Tm - Absolute meter temperature, °R	525.7	536.7
Vm(std) - Standard sample gas vol., dscf	40.6596	38.8303
Bws - Water vapor part in gas stream	0.9	0.8
CO2 - Dry concentration, volume %	0.05	0.05
O2 - Dry concentration, volume %	20.9	20.9
Md - Mol wt. stack gas, dry, g/gmole	28.844	28.844
Ms - Mol wt. stack gas, wet, g/gmole	28.742	28.760
Cp - Pitot tube coef., dimensionless	0.843	0.843
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	0.393	0.393
Ts - Absolute stack Temp. °R	554.4	560.4
A - Area of stack, square feet	2.64	2.64
Qstd - Volumetric flow rate, dscfm	3367	3354
An - Area of nozzle, square feet	0.0005275	0.0005275
$\emptyset$ - Sampling time, minutes	60	60
✓ I - Isokinetic variation, percent	98.5	94.4

## METHOD 5 FIELD DATA SUMMARY

### #2 CYCLONE

	Run#1	Run#2
Vlc - Volume of water collected, ml	8.5	7.4
Vm - Gas volume, meter cond., dcf	39.848	40.979
Y - Meter calibration factor	1.023	1.023
Pbar - Barometric pressure, in. Hg	30.04	30.04
Pg - Stack static pressure, in. H2O	30.05	30.05
$\Delta H$ - Avg. meter press. diff., in. H2O	1.778	1.778
Tm - Absolute meter temperature, °R	542.7	547.6
Vm(std) - Standard sample gas vol., dscf	39.3903	40.1452
Bws - Water vapor part in gas stream	1.0	0.9
CO2 - Dry concentration, volume %	0.05	0.05
O2 - Dry concentration, volume %	20.9	20.9
Md - Mol wt. stack gas, dry, g/gmole	28.844	28.844
Ms - Mol wt. stack gas, wet, g/gmole	28.736	28.752
Cp - Pitot tube coef., dimensionless	0.843	0.843
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	0.507	0.507
Ts - Absolute stack Temp. °R	540.9	545.0
A - Area of stack, square feet	2.64	2.64
Qstd - Volumetric flow rate, dscfm	4377	4366
An - Area of nozzle, square feet	0.0004246	0.0004246
$\theta$ - Sampling time, minutes	60	60
I - Isokinetic variation, percent	91.2	93.1

METHOD 5 FIELD DATA SUMMARY

#3 CYCLONE

	Run#1	Run#2
Vlc - Volume of water collected, ml	9.9	10.5
Vm - Gas volume, meter cond., dcf	32.713	32.845
Y - Meter calibration factor	1.023	1.023
Pbar - Barometric pressure, in. Hg	29.95	29.95
Pg - Stack static pressure, in. H2O	29.97	29.97
$\Delta H$ - Avg. meter press. diff., in. H2O	1.768	1.784
Tm - Absolute meter temperature, °R	538.0	538.9
Vm(std) - Standard sample gas vol., dscf	32.5219	32.5006
Bws - Water vapor part in gas stream	1.4	1.5
CO2 - Dry concentration, volume %	0.05	0.05
O2 - Dry concentration, volume %	20.9	20.9
Md - Mol wt. stack gas, dry, g/gmole	28.844	28.844
Ms - Mol wt. stack gas, wet, g/gmole	28.693	28.684
Cp - Pitot tube coef., dimensionless	0.843	0.843
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	0.623	0.623
Ts - Absolute stack Temp. °R	534.3	531.0
A - Area of stack, square feet	4.28	4.28
Qstd - Volumetric flow rate, dscfm	8727	8748
An - Area of nozzle, square feet	0.0003436	0.0003436
$\phi$ - Sampling time, minutes	48	48
I - Isokinetic variation, percent	94.5	94.5

### METHOD 5 FIELD DATA SUMMARY

#### #4 CYCLONE

	Run#1	Run#2
Vlc - Volume of water collected, ml	3.5	5.9
Vm - Gas volume, meter cond., dcf	40.245	40.085
Y - Meter calibration factor	1.023	1.023
Pbar - Barometric pressure, in. Hg	30.08	30.08
Pg - Stack static pressure, in. H2O	30.09	30.09
$\Delta H$ - Avg. meter press. diff., in. H2O	1.765	1.822
Tm - Absolute meter temperature, °R	534.6	550.2
Vm(std) - Standard sample gas vol., dscf	40.4378	39.1387
Bws - Water vapor part in gas stream	0.4	0.7
CO2 - Dry concentration, volume %	0.05	0.05
O2 - Dry concentration, volume %	20.9	20.9
Md - Mol wt. stack gas, dry, g/gmole	28.844	28.844
Ms - Mol wt. stack gas, wet, g/gmole	28.801	28.768
Cp - Pitot tube coef., dimensionless	0.843	0.843
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	0.615	0.619
Ts - Absolute stack Temp. °R	519.0	524.6
A - Area of stack, square feet	2.64	2.64
Qstd - Volumetric flow rate, dscfm	5447	5443
An - Area of nozzle, square feet	0.0003436	0.0003436
$\theta$ - Sampling time, minutes	60	60
I - Isokinetic variation, percent	92.9	90.0

**PM-10 FIELD DATA SUMMARY**

**#1 CYCLONE**

	<b>Run#1</b>	<b>Run#2</b>
Vlc - Volume of water collected, ml	<u>7.2</u>	<u>6.9</u>
Vm - Gas volume, meter cond., dcf	<u>30.795</u>	<u>30.808</u>
Y - Meter calibration factor	<u>0.969</u>	<u>0.969</u>
Pbar - Barometric pressure, in. Hg	<u>30.23</u>	<u>30.23</u>
Pg - Stack static pressure, in. H2O	<u>30.24</u>	<u>30.24</u>
ΔH - Avg. meter press. diff., in. H2O	<u>1.580</u>	<u>1.578</u>
Tm - Absolute meter temperature, °R	<u>527.0</u>	<u>532.9</u>
Vm(std) - Standard sample gas vol., dscf	<u>29.8468</u>	<u>29.5277</u>
Bws - Water vapor part in gas stream	<u>1.1</u>	<u>1.1</u>
CO2 - Dry concentration, volume %	<u>0.05</u>	<u>0.05</u>
O2 - Dry concentration, volume %	<u>20.9</u>	<u>20.9</u>
Md - Mol wt. stack gas, dry, g/gmole	<u>28.844</u>	<u>28.844</u>
Ms - Mol wt. stack gas, wet, g/gmole	<u>28.724</u>	<u>28.727</u>
Cp - Pitot tube coef., dimensionless	<u>0.843</u>	<u>0.843</u>
Δp - Avg. of sq. roots of each Δp	<u>0.393</u>	<u>0.393</u>
Ts - Absolute stack Temp. °R	<u>555.1</u>	<u>560.2</u>
A - Area of stack, square feet	<u>2.64</u>	<u>2.64</u>
Qstd - Volumetric flow rate, dscfm	<u>3361</u>	<u>3346</u>
An - Area of nozzle, square feet	<u>0.0005275</u>	<u>0.0005275</u>
ø - Sampling time, minutes	<u>48</u>	<u>48</u>
I - Isokinetic variation, percent	<u>95.6</u>	<u>93.0</u>

### METHOD 5 FIELD DATA SUMMARY

#### #2 CYCLONE

	Run#1	Run#2
Vlc - Volume of water collected, ml	<u>8.5</u>	<u>7.4</u>
Vm - Gas volume, meter cond., dcf	<u>39.848</u>	<u>40.979</u>
Y - Meter calibration factor	<u>1.023</u>	<u>1.023</u>
Pbar - Barometric pressure, in. Hg	<u>30.04</u>	<u>30.04</u>
Pg - Stack static pressure, in. H2O	<u>30.05</u>	<u>30.05</u>
$\Delta H$ - Avg. meter press. diff., in. H2O	<u>1.778</u>	<u>1.778</u>
Tm - Absolute meter temperature, °R	<u>542.7</u>	<u>547.6</u>
Vm(std) - Standard sample gas vol., dscf	<u>39.3903</u>	<u>40.1452</u>
Bws - Water vapor part in gas stream	<u>1.0</u>	<u>0.9</u>
CO2 - Dry concentration, volume %	<u>0.05</u>	<u>0.05</u>
O2 - Dry concentration, volume %	<u>20.9</u>	<u>20.9</u>
Md - Mol wt. stack gas, dry, g/gmole	<u>28.844</u>	<u>28.844</u>
Ms - Mol wt. stack gas, wet, g/gmole	<u>28.736</u>	<u>28.752</u>
Cp - Pitot tube coef., dimensionless	<u>0.843</u>	<u>0.843</u>
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	<u>0.507</u>	<u>0.507</u>
Ts - Absolute stack Temp. °R	<u>540.9</u>	<u>545.0</u>
A - Area of stack, square feet	<u>2.64</u>	<u>2.64</u>
Qstd - Volumetric flow rate, dscfm	<u>4377</u>	<u>4366</u>
An - Area of nozzle, square feet	<u>0.0004246</u>	<u>0.0004246</u>
$\phi$ - Sampling time, minutes	<u>60</u>	<u>60</u>
I - Isokinetic variation, percent	<u>91.2</u>	<u>93.1</u>

**PM-10 FIELD DATA SUMMARY**

**#3 CYCLONE**

	Run#1	Run#2
Vlc - Volume of water collected, ml	8.5	6.5
Vm - Gas volume, meter cond., dcf	31.065	33.487
Y - Meter calibration factor	0.969	0.969
Pbar - Barometric pressure, in. Hg	29.95	29.95
Pg - Stack static pressure, in. H2O	29.97	29.97
$\Delta H$ - Avg. meter press. diff., in. H2O	1.769	1.780
Tm - Absolute meter temperature, °R	537.9	537.8
Vm(std) - Standard sample gas vol., dscf	29.2415	31.5288
Bws - Water vapor part in gas stream	1.3	0.9
CO2 - Dry concentration, volume %	0.05	0.05
O2 - Dry concentration, volume %	20.9	20.9
Md - Mol wt. stack gas, dry, g/gmole	28.844	28.844
Ms - Mol wt. stack gas, wet, g/gmole	28.699	28.741
Cp - Pitot tube coef., dimensionless	0.843	0.843
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	0.623	0.623
Ts - Absolute stack Temp. °R	534.3	531.0
A - Area of stack, square feet	4.28	4.28
Qstd - Volumetric flow rate, dscfm	8731	8786
An - Area of nozzle, square feet	0.0003436	0.0003436
$\emptyset$ - Sampling time, minutes	48	48
I - Isokinetic variation, percent	89.6	96.0

**PM-10 FIELD DATA SUMMARY**

**#4 CYCLONE**

	<u>Run#1</u>	<u>Run#2</u>
Vlc - Volume of water collected, ml	<u>6.0</u>	<u>5.6</u>
Vm - Gas volume, meter cond., dcf	<u>32.688</u>	<u>34.180</u>
Y - Meter calibration factor	<u>0.969</u>	<u>0.969</u>
Pbar - Barometric pressure, in. Hg	<u>30.08</u>	<u>30.08</u>
Pg - Stack static pressure, in. H2O	<u>30.09</u>	<u>30.09</u>
$\Delta H$ - Avg. meter press. diff., in. H2O	<u>1.748</u>	<u>1.814</u>
Tm - Absolute meter temperature, °R	<u>533.6</u>	<u>546.7</u>
Vm(std) - Standard sample gas vol., dscf	<u>31.1511</u>	<u>31.7949</u>
Bws - Water vapor part in gas stream	<u>0.9</u>	<u>0.8</u>
CO2 - Dry concentration, volume %	<u>0.05</u>	<u>0.05</u>
O2 - Dry concentration, volume %	<u>20.9</u>	<u>20.9</u>
Md - Mol wt. stack gas, dry, g/gmole	<u>28.844</u>	<u>28.844</u>
Ms - Mol wt. stack gas, wet, g/gmole	<u>28.748</u>	<u>28.756</u>
Cp - Pitot tube coef., dimensionless	<u>0.843</u>	<u>0.843</u>
$\Delta p$ - Avg. of sq. roots of each $\Delta p$	<u>0.615</u>	<u>0.619</u>
Ts - Absolute stack Temp. °R	<u>519.0</u>	<u>524.8</u>
A - Area of stack, square feet	<u>2.64</u>	<u>2.64</u>
Qstd - Volumetric flow rate, dscfm	<u>5426</u>	<u>5437</u>
An - Area of nozzle, square feet	<u>0.0003436</u>	<u>0.0003436</u>
$\sigma$ - Sampling time, minutes	<u>48</u>	<u>48</u>
I - Isokinetic variation, percent	<u>94.9</u>	<u>96.6</u>

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt. Whitney/Eckley**  
 Site: **Mt. Whitney Gln**  
 Unit: **Cyclone #1**

Date: **11/29/90**  
 Type: **T std = 60 F**  
 Run: **1-Part**

<b>Wlc</b>	Water Condensate Weight	<b>8.3</b>	<b>g</b>		
<b>Vlc</b>	Water Condensate Volume	<b>8.3</b>	<b>ml</b>		
<b>Vm</b>	Metered Sample Gas Volume	<b>39.615</b>	<b>dcf</b>		
<b>Lp</b>	Avg. Leak Rate	<b>0.000</b>	<b>cf</b>		
<b>Vn</b>	Leak Corrected Sample Gas Volume	<b>39.615</b>	<b>dcf</b>		
<b>Y</b>	Dry Gas Meter Calibration Factor	<b>1.023</b>			
<b>Pbar</b>	Barometric Pressure	<b>30.23</b>	<b>In. Hg</b>		
<b>Pg</b>	Static Pressure	<b>0.2</b>	<b>In. H2O</b>		
<b>Ps</b>	Stack Pressure, Absolute	<b>30.24</b>	<b>in. Hg</b>		
<b>Δ H</b>	Dry Gas Meter Press: Differential, Average	<b>1.582</b>	<b>In. H2O</b>		
<b>Tm</b>	Dry Gas Meter Temperature, Average	<b>65.7</b>	<b>deg. F</b>	<b>525.7</b>	<b>deg. R</b>
<b>Vm(std)</b>	Sample Gas Volume	<b>40.6596</b>	<b>dscf</b>		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	<b>41.0457</b>	<b>scf</b>		
<b>Vw(std)</b>	Water Vapor Volume	<b>0.3861</b>	<b>scf</b>		
<b>Bws</b>	Water Content of Stack Gas	<b>0.009</b>		<b>0.9</b>	<b>%</b>
<b>CO2</b>	Carbon Dioxide, Dry	<b>0.1</b>	<b>%</b>		
<b>O2</b>	Oxygen, Dry	<b>20.9</b>	<b>%</b>		
<b>N2</b>	Nitrogen, Dry	<b>79.1</b>	<b>%</b>		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	<b>28.844</b>	<b>lb/lb mole</b>		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	<b>28.742</b>	<b>lb/lb mole</b>		
<b>Cp</b>	Pitot Calibration Factor	<b>0.843</b>			
<b>Δ P</b>	Velocity Head, Average Square Root	<b>0.393</b>	<b>In. H2O</b>		
<b>Ts</b>	Stack Gas Temperature, Average	<b>94.4</b>	<b>deg. F</b>	<b>554.4</b>	<b>deg. R</b>
<b>As</b>	Area of Stack	<b>2.64</b>	<b>sq ft</b>	<b>22.0</b>	<b>in. dia.</b>
<b>Vs</b>	Stack Gas Velocity	<b>22.64</b>	<b>ft/sec</b>		
<b>Qa</b>	Actual Flow Rate	<b>3,585</b>	<b>cfm</b>		
<b>Qad</b>	Actual Flow Rate, Dry	<b>3,552</b>	<b>dcfm</b>		
<b>Q(std)</b>	Stack Gas Flow Rate	<b>3,367</b>	<b>dscfm</b>		
<b>An</b>	Nozzle Area	<b>0.0005275</b>	<b>sq ft</b>	<b>0.311</b>	<b>in. dia.</b>
<b>Theta</b>	Sampling Time	<b>60</b>	<b>min.</b>		
<b>I</b>	Isokinetics	<b>98.5</b>	<b>%</b>		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt. Whitney/Eckley**  
 Site: **Mt. Whitney Gln**  
 Unit: **Cyclone #1**

Date: **11/29/90**  
 Type: **T std = 60 F**  
 Run: **2-Part**

<b>Wlc</b>	Water Condensate Weight	6.5	g		
<b>Vlc</b>	Water Condensate Volume	6.5	ml		
<b>Vm</b>	Metered Sample Gas Volume	38.620	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	38.620	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	1.023			
<b>Pbar</b>	Barometric Pressure	30.23	in. Hg		
<b>Pg</b>	Static Pressure	0.2	in. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.24	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.595	in. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	76.7	deg. F	536.7	deg. R
<b>Vm(std)</b>	Sample Gas Volume	38.8303	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	39.1327	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3024	scf		
<b>Bws</b>	Water Content of Stack Gas	0.008		0.8	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.760	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.393	in. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	100.4	deg. F	560.4	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	22.75	ft/sec		
<b>Qa</b>	Actual Flow Rate	3,604	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	3,576	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	3,354	dscfm		
<b>An</b>	Nozzle Area	0.0005275	sq ft	0.311	in. dia.
<b>Theta</b>	Sampling Time	60	min.		
<b>I</b>	Isokinetics	94.4	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt. Whitney/Eckley  
 Site: Mt. Whitney Gln  
 Unit: Cyclone #2

Date: 11/29/90  
 Type: T std = 60 F  
 Run: 1-Part

<b>Wlc</b>	Water Condensate Weight	8.5	g		
<b>Vlc</b>	Water Condensate Volume	8.5	ml		
<b>Vm</b>	Metered Sample Gas Volume	39.848	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	39.848	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	1.023			
<b>Pbar</b>	Barometric Pressure	30.04	In. Hg		
<b>Pg</b>	Static Pressure	0.15	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.05	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.778	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	82.7	deg. F	542.7	deg. R
<b>Vm(std)</b>	Sample Gas Volume	39.3903	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	39.7857	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3954	scf		
<b>Bws</b>	Water Content of Stack Gas	0.010		1.0	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.736	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.507	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	80.9	deg. F	540.9	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	28.91	ft/sec		
<b>Qa</b>	Actual Flow Rate	4,579	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	4,534	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	4,377	dscfm		
<b>An</b>	Nozzle Area	0.0004246	sq ft	0.279	in. dia.
<b>Theta</b>	Sampling Time	60	min.		
<b>I</b>	Isokinetics	91.2	%		

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**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt. Whitney/Eckley**  
 Site: **Mt. Whitney Gln**  
 Unit: **Cyclone #2**

Date: **11/29/90**  
 Type: **T std = 60 F**  
 Run: **2-Part**

<b>Wlc</b>	Water Condensate Weight	7.4	g		
<b>Vlc</b>	Water Condensate Volume	7.4	ml		
<b>Vm</b>	Metered Sample Gas Volume	40.979	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	40.979	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	1.023			
<b>Pbar</b>	Barometric Pressure	30.04	In. Hg		
<b>Pg</b>	Static Pressure	0.15	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.05	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.778	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	87.6	deg. F	547.6	deg. R
<b>Vm(std)</b>	Sample Gas Volume	40.1452	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	40.4895	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3442	scf		
<b>Bws</b>	Water Content of Stack Gas	0.009		0.9	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.752	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.507	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	85.0	deg. F	545.0	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	29.01	ft/sec		
<b>Qa</b>	Actual Flow Rate	4,595	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	4,556	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	4,366	dscfm		
<b>An</b>	Nozzle Area	0.0004246	sq ft	0.279	in. dia.
<b>Theta</b>	Sampling Time	60	min.		
<b>I</b>	Isokinetics	93.1	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt. Whitney/Eckley  
 Site: Mt. Whitney Gln  
 Unit: Cyclone #3

Date: 11/30/90  
 Type: T std = 60 F  
 Run: 1-Part

<b>Wlc</b>	Water Condensate Weight	9.9	g		
<b>Vlc</b>	Water Condensate Volume	9.9	ml		
<b>Vm</b>	Metered Sample Gas Volume	32.713	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	32.713	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	1.023			
<b>Pbar</b>	Barometric Pressure	29.95	In. Hg		
<b>Pg</b>	Static Pressure	0.25	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	29.97	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.768	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	78.0	deg. F	538.0	deg. R
<b>Vm(std)</b>	Sample Gas Volume	32.5219	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	32.9824	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.4605	scf		
<b>Bws</b>	Water Content of Stack Gas	0.014		1.4	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.693	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.623	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	74.3	deg. F	534.3	deg. R
<b>As</b>	Area of Stack	4.28	sq ft	28.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	35.38	ft/sec		
<b>Qa</b>	Actual Flow Rate	9,078	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	8,952	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	8,727	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	94.5	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt. Whitney/Eckley**  
 Site: **Mt. Whitney Gln**  
 Unit: **Cyclone #3**

Date: **11/30/90**  
 Type: **T std = 60 F**  
 Run: **2-Part**

<b>Wlc</b>	Water Condensate Weight	10.5	g		
<b>Vlc</b>	Water Condensate Volume	10.5	ml		
<b>Vm</b>	Metered Sample Gas Volume	32.845	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	32.845	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	1.023			
<b>Pbar</b>	Barometric Pressure	29.95	In. Hg		
<b>Pg</b>	Static Pressure	0.25	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	29.97	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.784	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	78.9	deg. F	538.9	deg. R
<b>Vm(std)</b>	Sample Gas Volume	32.6006	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	33.0891	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.4884	scf		
<b>Bws</b>	Water Content of Stack Gas	0.015		1.5	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.684	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.623	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	71.0	deg. F	531.0	deg. R
<b>As</b>	Area of Stack	4.28	sq ft	28.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	35.28	ft/sec		
<b>Qa</b>	Actual Flow Rate	9,052	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	8,918	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	8,748	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	94.5	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt. Whitney/Eckley  
 Site: Mt. Whitney Gln  
 Unit: Cyclone #4

Date: 11/30/90  
 Type: T std = 60 F  
 Run: 1-Part

<i>Wlc</i>	Water Condensate Weight	3.5	g		
<i>Vlc</i>	Water Condensate Volume	3.5	ml		
<i>Vm</i>	Metered Sample Gas Volume	40.245	dcf		
<i>Lp</i>	Avg. Leak Rate	0.000	cf		
<i>Vn</i>	Leak Corrected Sample Gas Volume	40.245	dcf		
<i>Y</i>	Dry Gas Meter Calibration Factor	1.023			
<i>Pbar</i>	Barometric Pressure	30.08	in. Hg		
<i>Pg</i>	Static Pressure	0.15	in. H2O		
<i>Ps</i>	Stack Pressure, Absolute	30.09	in. Hg		
$\Delta H$	Dry Gas Meter Press. Differential, Average	1.765	in. H2O		
<i>Tm</i>	Dry Gas Meter Temperature, Average	74.6	deg. F	534.6	deg. R
<i>Vm(std)</i>	Sample Gas Volume	40.4378	dscf		
<i>Vm(wet)</i>	Sample Gas Volume, Wet	40.6006	scf		
<i>Vw(std)</i>	Water Vapor Volume	0.1628	scf		
<i>Bws</i>	Water Content of Stack Gas	0.004		0.4	%
<i>CO2</i>	Carbon Dioxide, Dry	0.1	%		
<i>O2</i>	Oxygen, Dry	20.9	%		
<i>N2</i>	Nitrogen, Dry	79.1	%		
<i>Md</i>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<i>Ms</i>	Molecular Wt. of Stack Gas, Wet	28.801	lb/lb mole		
<i>Cp</i>	Pitot Calibration Factor	0.843			
$\Delta P$	Velocity Head, Average Square Root	0.615	in. H2O		
<i>Ts</i>	Stack Gas Temperature, Average	59.0	deg. F	519.0	deg. R
<i>As</i>	Area of Stack	2.64	sq ft	22.0	in. dia.
<i>Vs</i>	Stack Gas Velocity	34.27	ft/sec		
<i>Qa</i>	Actual Flow Rate	5,428	cfm		
<i>Qad</i>	Actual Flow Rate, Dry	5,406	dcfm		
<i>Q(std)</i>	Stack Gas Flow Rate	5,447	dscfm		
<i>An</i>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<i>Theta</i>	Sampling Time	60	min.		
<i>I</i>	Isokinetics	92.9	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt. Whitney/Eckley**  
 Site: **Mt. Whitney Gln**  
 Unit: **Cyclone #4**

Date: **11/30/90**  
 Type: **T std = 60 F**  
 Run: **2-Part**

<b>Wlc</b>	Water Condensate Weight	5.9	g		
<b>Vlc</b>	Water Condensate Volume	5.9	ml		
<b>Vm</b>	Metered Sample Gas Volume	40.085	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	40.085	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	1.023			
<b>Pbar</b>	Barometric Pressure	30.08	In. Hg		
<b>Pg</b>	Static Pressure	0.15	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.09	in. Hg		
<b>Δ H</b>	Dry Gas Meter Pressure Differential, Average	1.822	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	90.2	deg. F	550.2	deg. R
<b>Vm(std)</b>	Sample Gas Volume	39.1387	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	39.4131	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.2745	scf		
<b>Bws</b>	Water Content of Stack Gas	0.007		0.7	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.768	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.619	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	64.6	deg. F	524.6	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	34.72	ft/sec		
<b>Qa</b>	Actual Flow Rate	5,499	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	5,460	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	5,443	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	60	min.		
<b>I</b>	Isokinetics	90.0	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt Whitney/Eckley**  
 Site: **Mt Whitney Gln**  
 Unit: **Cyclone #1**

Date: **11/29/90**  
 Type: **T std = 60 F**  
 Run: **1-PM10**

<b>Wlc</b>	Water Condensate Weight	7.2	g		
<b>Vlc</b>	Water Condensate Volume	7.2	ml		
<b>Vm</b>	Metered Sample Gas Volume	30.795	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	30.795	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	30.23	In. Hg		
<b>Pg</b>	Static Pressure	0.2	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.24	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press; Differential, Average	1.580	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	67.0	deg. F	527.0	deg. R
<b>Vm(std)</b>	Sample Gas Volume	29.8468	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	30.1818	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3349	scf		
<b>Bws</b>	Water Content of Stack Gas	0.011		1.1	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.724	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.393	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	95.1	deg. F	555.1	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	22.66	ft/sec		
<b>Qa</b>	Actual Flow Rate	3,589	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	3,549	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	3,361	dscfm		
<b>An</b>	Nozzle Area	0.0005275	sq ft	0.311	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	95.6	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt Whitney/Eckley  
 Site: Mt Whitney Gln  
 Unit: Cyclone #1

Date: 11/29/90  
 Type: T std = 60 F  
 Run: 2-PM10

<b>Wlc</b>	Water Condensate Weight	6.9	g		
<b>Vlc</b>	Water Condensate Volume	6.9	ml		
<b>Vm</b>	Metered Sample Gas Volume	30.808	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	30.808	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	30.23	In. Hg		
<b>Pg</b>	Static Pressure	0.2	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.24	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.578	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	72.9	deg. F	532.9	deg. R
<b>Vm(std)</b>	Sample Gas Volume	29.5277	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	29.8487	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3210	scf		
<b>Bws</b>	Water Content of Stack Gas	0.011		1.1	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.727	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.393	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	100.2	deg. F	560.2	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	22.76	ft/sec		
<b>Qa</b>	Actual Flow Rate	3,605	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	3,566	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	3,346	dscfm		
<b>An</b>	Nozzle Area	0.0005275	sq ft	0.311	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	95.0	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt Whitney/Eckley  
 Site: Mt Whitney Gln  
 Unit: Cyclone #2

Date: 11/29/90  
 Type: T std = 60 F  
 Run: 1-PM10

<b>Wlc</b>	Water Condensate Weight	7.6	g		
<b>Vlc</b>	Water Condensate Volume	7.6	ml		
<b>Vm</b>	Metered Sample Gas Volume	35.316	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	35.316	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	30.04	in. Hg		
<b>Pg</b>	Static Pressure	0.15	in. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.05	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.775	in. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	82.3	deg. F	542.3	deg. R
<b>Vm(std)</b>	Sample Gas Volume	33.0719	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	33.4255	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3535	scf		
<b>Bws</b>	Water Content of Stack Gas	0.011		1.1	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.729	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.507	in. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	81.0	deg. F	541.0	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	28.92	ft/sec		
<b>Qa</b>	Actual Flow Rate	4,580	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	4,532	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	4,375	dscfm		
<b>An</b>	Nozzle Area	0.0004246	sq ft	0.279	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	101.1	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt Whitney/Eckley**  
 Site: **Mt Whitney Gln**  
 Unit: **Cyclone #2**

Date: **11/29/90**  
 Type: **T std = 60 F**  
 Run: **2-PM10**

<b>Wlc</b>	Water Condensate Weight	8.1	g		
<b>Vlc</b>	Water Condensate Volume	8.1	ml		
<b>Vm</b>	Metered Sample Gas Volume	33.354	dscf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	33.354	dscf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	30.04	In. Hg		
<b>Pg</b>	Static Pressure	0.15	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.05	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.770	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	85.8	deg. F	545.8	deg. R
<b>Vm(std)</b>	Sample Gas Volume	31.0339	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	31.4107	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3768	scf		
<b>Bws</b>	Water Content of Stack Gas	0.012		1.2	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.714	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.507	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	85.0	deg. F	545.0	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	29.03	ft/sec		
<b>Qa</b>	Actual Flow Rate	4,598	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	4,543	dscfm		
<b>Q(std)</b>	Stack Gas Flow Rate	4,354	dscfm		
<b>An</b>	Nozzle Area	0.0004246	sq ft	0.279	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	95.3	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt Whitney/Eckley  
 Site: Mt Whitney Gln  
 Unit: Cyclone #3

Date: 11/30/90  
 Type: T std = 60 F  
 Run: 1-PM10

<b>Wlc</b>	Water Condensate Weight	8.5	g		
<b>Vlc</b>	Water Condensate Volume	8.5	ml		
<b>Vm</b>	Metered Sample Gas Volume	31.065	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	31.065	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	29.95	In. Hg		
<b>Pg</b>	Static Pressure	0.25	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	29.97	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.769	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	77.9	deg. F	537.9	deg. R
<b>Vm(std)</b>	Sample Gas Volume	29.2415	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	29.6369	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3954	scf		
<b>Bws</b>	Water Content of Stack Gas	0.013		1.3	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.699	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.623	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	74.3	deg. F	534.3	deg. R
<b>As</b>	Area of Stack	4.28	sq ft	28.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	35.38	ft/sec		
<b>Qa</b>	Actual Flow Rate	9,078	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	8,957	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	8,731	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	89.6	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: Mt Whitney/Eckley  
 Site: Mt Whitney Gln  
 Unit: Cyclone #3

Date: 11/30/90  
 Type: T std = 60 F  
 Run: 2-PM10

<b>Wlc</b>	Water Condensate Weight	6.5	g		
<b>Vlc</b>	Water Condensate Volume	6.5	ml		
<b>Vm</b>	Metered Sample Gas Volume	33.487	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	33.487	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	29.95	In. Hg		
<b>Pg</b>	Static Pressure	0.25	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	29.97	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.780	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	77.8	deg. F	537.8	deg. R
<b>Vm(std)</b>	Sample Gas Volume	31.5288	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	31.8312	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.3024	scf		
<b>Bws</b>	Water Content of Stack Gas	0.009		0.9	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.741	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.623	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	71.0	deg. F	531.0	deg. R
<b>As</b>	Area of Stack	4.28	sq ft	28.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	35.25	ft/sec		
<b>Qa</b>	Actual Flow Rate	9,043	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	8,957	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	8,786	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	96.0	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt Whitney/Eckley**  
 Site: **Mt Whitney Gin**  
 Unit: **Cyclone #4**

Date: **11/30/90**  
 Type: **T std = 60 F**  
 Run: **1-PM 10**

<b>Wlc</b>	Water Condensate Weight	6.0	g		
<b>Vlc</b>	Water Condensate Volume	6.0	ml		
<b>Vm</b>	Metered Sample Gas Volume	32.688	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	32.688	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	30.08	In. Hg		
<b>Pg</b>	Static Pressure	0.15	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.09	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.748	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	73.6	deg. F	533.6	deg. R
<b>Vm(std)</b>	Sample Gas Volume	31.1511	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	31.4302	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.2791	scf		
<b>Bws</b>	Water Content of Stack Gas	0.009		0.9	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.748	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.615	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	59.0	deg. F	519.0	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	34.30	ft/sec		
<b>Qa</b>	Actual Flow Rate	5,433	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	5,384	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	5,426	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	94.9	%		

**FIELD DATA & CALCULATIONS SUMMARY**

Client: **Mt Whitney/Eckley**  
 Site: **Mt Whitney Gln**  
 Unit: **Cyclone #4**

Date: **11/30/90**  
 Type: **T std = 60 F**  
 Run: **2-PM10**

<b>Wlc</b>	Water Condensate Weight	5.6	g		
<b>Vlc</b>	Water Condensate Volume	5.6	ml		
<b>Vm</b>	Metered Sample Gas Volume	34.180	dcf		
<b>Lp</b>	Avg. Leak Rate	0.000	cf		
<b>Vn</b>	Leak Corrected Sample Gas Volume	34.180	dcf		
<b>Y</b>	Dry Gas Meter Calibration Factor	0.969			
<b>Pbar</b>	Barometric Pressure	30.08	In. Hg		
<b>Pg</b>	Static Pressure	0.15	In. H2O		
<b>Ps</b>	Stack Pressure, Absolute	30.09	in. Hg		
<b>Δ H</b>	Dry Gas Meter Press. Differential, Average	1.814	In. H2O		
<b>Tm</b>	Dry Gas Meter Temperature, Average	86.7	deg. F	546.7	deg. R
<b>Vm(std)</b>	Sample Gas Volume	31.7949	dscf		
<b>Vm(wet)</b>	Sample Gas Volume, Wet	32.0554	scf		
<b>Vw(std)</b>	Water Vapor Volume	0.2605	scf		
<b>Bws</b>	Water Content of Stack Gas	0.008		0.8	%
<b>CO2</b>	Carbon Dioxide, Dry	0.1	%		
<b>O2</b>	Oxygen, Dry	20.9	%		
<b>N2</b>	Nitrogen, Dry	79.1	%		
<b>Md</b>	Molecular Wt. of Stack Gas, Dry	28.844	lb/lb mole		
<b>Ms</b>	Molecular Wt. of Stack Gas, Wet	28.756	lb/lb mole		
<b>Cp</b>	Pitot Calibration Factor	0.843			
<b>Δ P</b>	Velocity Head, Average Square Root	0.619	In. H2O		
<b>Ts</b>	Stack Gas Temperature, Average	64.8	deg. F	524.8	deg. R
<b>As</b>	Area of Stack	2.64	sq ft	22.0	in. dia.
<b>Vs</b>	Stack Gas Velocity	34.73	ft/sec		
<b>Qa</b>	Actual Flow Rate	5,501	cfm		
<b>Qad</b>	Actual Flow Rate, Dry	5,456	dcfm		
<b>Q(std)</b>	Stack Gas Flow Rate	5,437	dscfm		
<b>An</b>	Nozzle Area	0.0003436	sq ft	0.251	in. dia.
<b>Theta</b>	Sampling Time	48	min.		
<b>I</b>	Isokinetics	96.6	%		

### **III. WET TEST METHODS CALCULATIONS**

**CALCULATED EMISSION RESULTS**

Client: **Mt. Whitney/Eckley**  
Site: **Mt. Whitney Gln**  
Unit: **Cyclone #1**

Date: **11/29/90**  
Type: **T std = 60 F**  
Run: **1-Part**

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.2362	g
<b>Cs</b>	Total Particulate Emissions	0.0896	grain/dscf
<b>CFs</b>	Particulate Flow Rate	2.59	lb/hr

*BTC Environmental, Inc. - 1989*

**CALCULATED EMISSION RESULTS**

Client: Mt. Whitney/Eckley  
Site: Mt. Whitney Gin  
Unit: Cyclone #1

Date: 11/29/90  
Type: T std = 60 F  
Run: 2-Part

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.4143	g
<b>Cs</b>	Total Particulate Emissions	0.1646	grain/dscf
<b>CFs</b>	Particulate Flow Rate	4.73	lb/hr

*BTC Environmental, Inc. - 1989*

**CALCULATED EMISSION RESULTS**

Client: Mt. Whitney/Eckley  
Site: Mt. Whitney Gln  
Unit: Cyclone #2

Date: 11/29/90  
Type: T std = 60 F  
Run: 1-Part

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.1812	g
<b>Cs</b>	Total Particulate Emissions	0.0710	grain/dscf
<b>CFs</b>	Particulate Flow Rate	2.66	lb/hr

*BTC Environmental, Inc. - 1989*

**CALCULATED EMISSION RESULTS**

Client: Mt. Whitney/Eckley  
Site: Mt. Whitney Gin  
Unit: Cyclone #2

Date: 11/29/90  
Type: T std = 60 F  
Run: 2-Part

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.3088	g
<b>Cs</b>	Total Particulate Emissions	0.1187	grain/dscf
<b>CFs</b>	Particulate Flow Rate	4.44	lb/hr

*BTC Environmental, Inc. - 1989*

**CALCULATED EMISSION RESULTS**

Client: Mt. Whitney/Eckley  
Site: Mt. Whitney Gln  
Unit: Cyclone #3

Date: 11/30/90  
Type: T std = 60 F  
Run: 1-Part

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.0094	g
<b>Cs</b>	Total Particulate Emissions	0.0045	grain/dscf
<b>CFs</b>	Particulate Flow Rate	0.33	lb/hr

*BTC Environmental, Inc. - 1989*

**CALCULATED EMISSION RESULTS**

Client: **Mt. Whitney/Eckley**  
Site: **Mt. Whitney Gln**  
Unit: **Cyclone #3**

Date: **11/30/90**  
Type: **T std = 60 F**  
Run: **2-Part**

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.0597	g
<b>Cs</b>	Total Particulate Emissions	0.0283	grain/dscf
<b>CFs</b>	Particulate Flow Rate	2.12	lb/hr

*BTC Environmental, Inc. - 1989*

**CALCULATED EMISSION RESULTS**

Client: Mt. Whitney/Eckley  
Site: Mt. Whitney Gln  
Unit: Cyclone #4

Date: 11/30/90  
Type: T std = 60 F  
Run: 1-Part

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.1215	g
<b>Cs</b>	Total Particulate Emissions	0.0464	grain/dscf
<b>CFs</b>	Particulate Flow Rate	2.16	lb/hr

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**CALCULATED EMISSION RESULTS**

Client: **Mt. Whitney/Eckley**

Site: **Mt. Whitney Gln**

Unit: **Cyclone #4**

Date: **11/30/90**

Type: **T std = 60 F**

Run: **2-Part**

**Total Particulate**

<b>Ws</b>	Total Particulate Weight	0.0681	g
<b>Cs</b>	Total Particulate Emissions	0.0268	grain/dscf
<b>CFs</b>	Particulate Flow Rate	1.25	lb/hr

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**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #1</u>	Lab # : <u>290-188</u>
Run : <u>1</u>	

**BLANKS**

Acetone	Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0023</u> gms.
DI Water	Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0964</u> gms.	Tare: <u>0.0893</u> gms.	Net: <u>0.0071</u> gms.
Filter	Gross: <u>0.0924</u> gms.	Tare: <u>0.0891</u> gms.	Net: <u>0.0033</u> gms.

+10 μ Rinse -

Acetone:	<u>75</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0017</u> gms.
DI Water:	<u>100</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0011</u> gms.
Gross:	<u>70.1741</u> gms.	Tare: <u>70.0884</u> gms.	Net: <u>0.0857</u> gms.

**+10μ Total Weight = 0.0933 gms.**

Filter	Gross: <u>0.2182</u> gms.	Tare: <u>0.1118</u> gms.	Net: <u>0.1064</u> gms.
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-10 μ Rinse

DI Water:	<u>400</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0044</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>400</u> ml	Aliquot: <u>400</u> ml	
Gross:	<u>65.0846</u> gms.	Tare: <u>65.0780</u> gms.	Net: <u>0.0010</u> gms.

**-10μ Total Weight = 0.1019 gms.**

**Total Weight = 0.1952 gms.**

+ 10 μ	<u>0.4779</u> %
- 10 μ	<u>0.5221</u> %

52.3 %

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #1</u>	Lab # : <u>290-188</u>
Run : <u>2</u>	

**BLANKS**

Acetone		Volume: <u>100</u> ml
Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Residue: <u>0.0023</u> gms.
DI Water		Volume: <u>100</u> ml
Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0968</u> gms.	Tare: <u>0.0887</u> gms.	Net: <u>0.0081</u> gms.
Filter	Gross: <u>0.0992</u> gms.	Tare: <u>0.0897</u> gms.	Net: <u>0.0095</u> gms.
+10 μ Rinse -			
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
DI Water:	<u>50</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0006</u> gms.
Gross:	<u>68.1401</u> gms.	Tare: <u>67.9739</u> gms.	Net: <u>0.1662</u> gms.
	<b>+10μ Total Weight</b>	=	<u>0.1821</u> gms.
Filter	Gross: <u>0.2876</u> gms.	Tare: <u>0.1113</u> gms.	Net: <u>0.1763</u> gms.
-10 μ Rinse			
DI Water:	<u>350</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0039</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>400</u> ml	Aliquot: <u>400</u> ml	
Gross:	<u>72.4673</u> gms.	Tare: <u>72.4593</u> gms.	Net: <u>0.0030</u> gms.
	<b>-10μ Total Weight</b>	=	<u>0.1743</u> gms.
	<b>Total Weight</b>	=	<u>0.3564</u> gms.
	+ 10 μ		<u>0.5109</u> %
	- 10 μ		<u>0.4891</u> %

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : Whitney/Eckley Date : 11/29/90  
Site : Whitney Gin Job # : 5019  
Unit : Cyclone #2 Lab # : 290-188  
Run : 1

**BLANKS**

Acetone Volume: 100 ml  
Gross: 73.2865 gms. Tare: 73.2842 gms. Residue: 0.0023 gms.  
DI Water Volume: 100 ml  
Gross: 71.7775 gms. Tare: 71.7764 gms. Residue: 0.0011 gms.

**WEIGHTS & VOLUMES**

Filter Gross: 0.0926 gms. Tare: 0.0898 gms. Net: 0.0028 gms.  
Filter Gross: 0.0912 gms. Tare: 0.0895 gms. Net: 0.0017 gms.

+10  $\mu$  Rinse -

Acetone: 50 ml \* 2E-05 gms./ml = Net: -0.0012 gms.  
DI Water: 100 ml \* 1E-05 gms./ml = Net: -0.0011 gms.  
Gross: 68.4417 gms. Tare: 68.2534 gms. Net: 0.1883 gms.

+10 $\mu$  Total Weight = 0.1905 gms.

Filter Gross: 0.1323 gms. Tare: 0.1115 gms. Net: 0.0208 gms.

-10  $\mu$  Rinse

DI Water: 225 ml \* 1E-05 gms./ml = Net: -0.0025 gms.  
Acetone: 50 ml \* 2E-05 gms./ml = Net: -0.0012 gms.  
Total: 275 ml Aliquot: 275 ml  
Gross: 66.0752 gms. Tare: 66.0764 gms. Net: -0.0048 gms.

-10 $\mu$  Total Weight = 0.0123 gms.

Total Weight = 0.2029 gms.

+ 10  $\mu$  0.9391 %  
- 10  $\mu$  0.0609 %

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #2</u>	Lab # : <u>290-188</u>
Run : <u>2</u>	

**BLANKS**

Acetone		Volume: <u>100</u> ml
Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Residue: <u>0.0023</u> gms.
DI Water		Volume: <u>100</u> ml
Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0969</u> gms.	Tare: <u>0.0902</u> gms.	Net: <u>0.0067</u> gms.
Filter	Gross: <u>0.0916</u> gms.	Tare: <u>0.0899</u> gms.	Net: <u>0.0017</u> gms.
+10 μ Rinse -			
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
DI Water:	<u>75</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0008</u> gms.
Gross:	<u>66.9096</u> gms.	Tare: <u>66.6538</u> gms.	Net: <u>0.2558</u> gms.
	<b>+10μ Total Weight</b>	=	<u>0.2622</u> gms.
Filter	Gross: <u>0.1442</u> gms.	Tare: <u>0.1109</u> gms.	Net: <u>0.0333</u> gms.
-10 μ Rinse			
DI Water:	<u>350</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0039</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>400</u> ml	Aliquot: <u>400</u> ml	
Gross:	<u>70.1811</u> gms.	Tare: <u>70.1712</u> gms.	Net: <u>0.0049</u> gms.
	<b>-10μ Total Weight</b>	=	<u>0.0332</u> gms.
	<b>Total Weight</b>	=	<u>0.2954</u> gms.
	+ 10 μ		<u>0.8876</u> %
	- 10 μ		<u>0.1124</u> %

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/30/90</u>
Site : <u>Whitney Gin</u>	Job #: <u>5019</u>
Unit : <u>Cyclone #3</u>	Lab #: <u>290-188</u>
Run : <u>1</u>	

**BLANKS**

Acetone		Volume: <u>100</u> ml
Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Residue: <u>0.0023</u> gms.
DI Water		Volume: <u>100</u> ml
Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0887</u> gms.	Tare: <u>0.0878</u> gms.	Net: <u>0.0009</u> gms.
Filter	Gross: <u>0.0887</u> gms.	Tare: <u>0.0881</u> gms.	Net: <u>0.0006</u> gms.
+10 μ Rinse -			
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
DI Water:	<u>50</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0006</u> gms.
Gross:	<u>68.2254</u> gms.	Tare: <u>68.2006</u> gms.	Net: <u>0.0248</u> gms.
	<b>+10μ Total Weight</b>	=	<u>0.0246</u> gms.
Filter	Gross: <u>0.1218</u> gms.	Tare: <u>0.1109</u> gms.	Net: <u>0.0109</u> gms.
-10 μ Rinse			
DI Water:	<u>200</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0022</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>250</u> ml	Aliquot: <u>250</u> ml	
Gross:	<u>71.0043</u> gms.	Tare: <u>71.0030</u> gms.	Net: <u>-0.0021</u> gms.
	<b>-10μ Total Weight</b>	=	<u>0.0055</u> gms.
	<b>Total Weight</b>	=	<u>0.0301</u> gms.
	+ 10 μ		<u>0.8173</u> %
	- 10 μ		<u>0.1827</u> %

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/30/90</u>
Site : <u>Whitney Gin</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #3</u>	Lab # : <u>290-188</u>
Run : <u>2</u>	

**BLANKS**

Acetone	Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0023</u> gms.
DI Water	Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0913</u> gms.	Tare: <u>0.0904</u> gms.	Net: <u>0.0009</u> gms.
Filter	Gross: <u>0.0898</u> gms.	Tare: <u>0.0894</u> gms.	Net: <u>0.0004</u> gms.
+10 μ Rinse -			
Acetone:	<u>75</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0017</u> gms.
DI Water:	<u>100</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0011</u> gms.
Gross:	<u>73.4209</u> gms.	Tare: <u>73.4093</u> gms.	Net: <u>0.0116</u> gms.
	<b>+10μ Total Weight</b>	=	<u>0.0101</u> gms.
Filter	Gross: <u>0.1256</u> gms.	Tare: <u>0.1139</u> gms.	Net: <u>0.0117</u> gms.
-10 μ Rinse			
DI Water:	<u>250</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0028</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>300</u> ml	Aliquot: <u>300</u> ml	
Gross:	<u>68.3294</u> gms.	Tare: <u>68.3247</u> gms.	Net: <u>0.0008</u> gms.
	<b>-10μ Total Weight</b>	=	<u>0.0086</u> gms.
	<b>Total Weight</b>	=	<u>0.0187</u> gms.
	+ 10 μ		<u>0.5395</u> %
	- 10 μ		<u>0.4605</u> %

**PARTICULATE WEIGHTS<sub>p</sub> : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/30/90</u>
Site : <u>Whitney Gin</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #4</u>	Lab # : <u>290-188</u>
Run : <u>1</u>	

**BLANKS**

Acetone	Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0023</u> gms.
DI Water	Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0917</u> gms.	Tare: <u>0.0903</u> gms.	Net: <u>0.0014</u> gms.
Filter	Gross: <u>0.0916</u> gms.	Tare: <u>0.0903</u> gms.	Net: <u>0.0013</u> gms.

+10 μ Rinse -

Acetone:	<u>100</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0023</u> gms.
DI Water:	<u>100</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0011</u> gms.
Gross:	<u>67.3271</u> gms.	Tare: <u>67.2352</u> gms.	Net: <u>0.0919</u> gms.

+10μ Total Weight = 0.0912 gms.

Filter	Gross: <u>0.1192</u> gms.	Tare: <u>0.1110</u> gms.	Net: <u>0.0082</u> gms.
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-10 μ Rinse

DI Water:	<u>350</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0039</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>400</u> ml	Aliquot: <u>400</u> ml	
Gross:	<u>68.8974</u> gms.	Tare: <u>68.8916</u> gms.	Net: <u>0.0008</u> gms.

-10μ Total Weight = 0.0040 gms.

Total Weight = 0.0952 gms.

+ 10 μ	<u>0.9580</u> %
- 10 μ	<u>0.0420</u> %

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Date : <u>11/30/90</u>
Site : <u>Whitney Gin</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #4</u>	Lab # : <u>290-188</u>
Run : <u>2</u>	

**BLANKS**

Acetone	Gross: <u>73.2865</u> gms.	Tare: <u>73.2842</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0023</u> gms.
DI Water	Gross: <u>71.7775</u> gms.	Tare: <u>71.7764</u> gms.	Volume: <u>100</u> ml	Residue: <u>0.0011</u> gms.

**WEIGHTS & VOLUMES**

Filter	Gross: <u>0.0890</u> gms.	Tare: <u>0.0879</u> gms.	Net: <u>0.0011</u> gms.
Filter	Gross: <u>0.0946</u> gms.	Tare: <u>0.0903</u> gms.	Net: <u>0.0043</u> gms.

+10 μ Rinse -			
Acetone:	<u>100</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0023</u> gms.
DI Water:	<u>100</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0011</u> gms.
Gross:	<u>67.0676</u> gms.	Tare: <u>66.9702</u> gms.	Net: <u>0.0974</u> gms.

+10μ Total Weight = 0.0994 gms.

Filter	Gross: <u>0.1210</u> gms.	Tare: <u>0.1123</u> gms.	Net: <u>0.0087</u> gms.
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-10 μ Rinse			
DI Water:	<u>350</u> ml * <u>1E-05</u> gms./ml	=	Net: <u>-0.0039</u> gms.
Acetone:	<u>50</u> ml * <u>2E-05</u> gms./ml	=	Net: <u>-0.0012</u> gms.
Total:	<u>400</u> ml	Aliquot: <u>400</u> ml	
Gross:	<u>73.4920</u> gms.	Tare: <u>73.4863</u> gms.	Net: <u>0.0007</u> gms.

-10μ Total Weight = 0.0044 gms.

Total Weight = 0.1038 gms.

+ 10 μ	<u>0.9576</u> %
- 10 μ	<u>0.0424</u> %

**BTC ENVIRONMENTAL**  
**EPA methods 2, 3, 4, 5, 6, 8**

**CONSTANTS & CONVERSIONS**

Tstd = 60, 68, or 70 °F	1 in. Hg = 13.6 in. H <sub>2</sub> O
Pstd = 29.92 in. Hg	1 lb = 453.6 g
R = 21.85(in. Hg-cu ft/lb mole-°R)	1 lb = 7000 grain
Dw = 0.9982(g/ml)	1 g = 15.432 grain
MW(H <sub>2</sub> O) = 18.0 lb/lb mole	1 mg = 0.001 g
MW(Sulfur) = 32.03 lb/lb mole	1 hr = 60 min.
M(H <sub>2</sub> SO <sub>4</sub> ) = 98.08 lb/lb mole	1 part/vol X = 1*10 <sup>6</sup> ppmv X
MW(SO <sub>2</sub> ) = 64.06 lb/lb mole	1 bbl = 42 gal
K(H <sub>2</sub> SO <sub>4</sub> ) = 0.5 mg-g mole/g-meq	M = 1000
K(SO <sub>2</sub> ) = 0.5 mg-g mole/g-meq	La = 0.02 cfm
Kp = 85.49(ft/sec(sqrt{lb/lb mole-in.Hg/°R-in. H <sub>2</sub> O}))	
Kw,[cu ft/g-°R] = R / (453.6*MW(H <sub>2</sub> O)*Pstd)	
Kf,[scf-ppm/lb mole] = R * (Tstd+460) * (1*10 <sup>6</sup> ) / Pstd	

**INTERMEDIATE CALCULATIONS**

F,[scf/MMBtu] = F Factor * ( Tstd + 460 ) / 528
Ph,[in. Hg] = Pbar + ( ΔH / 13.6)
N <sub>2</sub> ,[%] = 100 - (O <sub>2</sub> % + CO <sub>2</sub> %)
Vlc,[ml] = Ww / Dw
Qa,[cfm] = 60 * Vs * As
Qad,[dcfm] = Qa * (1 - Bws)

**CFR 40 - EPA EQUATIONS**

eq. 2-8	T[°R] = T[°F]+460
eq. 2-6	Ps, [in. Hg] = Pbar+(Pg/13.6)
eq. 5-3	Bws, [%] = Vw(std) / { Vw(std) + Vm(std) }
eq. 3-2	Md, [lb/lb-mole] = 0.44*CO <sub>2</sub> %+0.32*O <sub>2</sub> %+0.28*(N <sub>2</sub> %+CO%)
eq. 2-5	Ms, [lb/lb mol] = Md*(1-Bws)+(MW(H <sub>2</sub> O)*Bws )
eq. 5-2	Vw(std), [scf] = Ww * Kw * (Tstd+460)
eq. 5-1	Vn, [cf] = Vm - ((Lp-La) * Theta)
eq. 5-1	Vm(std), [sdscf] = Vm * Y * ( (Tstd+460) / (Tm+460) ) * Ph / Pstd
eq. 2-9	Vs, [ft./sec.] = Kp*Cp*(ΔP*(Ts+460)/(( Ps*Ms))^0.5
eq. 2-10	Qstd, [dscfm] = Qad*(Tstd+460)*Ps/((Ts+460)*Pstd)
eq. 5-8	l,[%] = 100*(Ts+460)*Vm(std)*Pstd/(60*Vs*Theta*An*Ps*(1-Bws)*(Tstd+460))
eq. 5-6	Cx, [grain/dscf] = Wx,g*15.432/Vm(std)
eq. 8-2,3	Wx, [mg] = (Vt-Vtb)*N(std)*(Vsoln/Valq)*MWx*Kx
	Cx, [grain/dscf] = Wx,mg*0.001*15.432/Vm(std)
	CWx, [grain/scf] = Cx*(1-Bws)
	CCx, [grain/dscf @ 12% CO <sub>2</sub> ] = Cx*12.0/CO <sub>2</sub> %
	CWCx, [grain/scf @ 12% CO <sub>2</sub> %] = CCx
	CPx, [ppmv dry] = Cx*Kf/(MWx*7000)
	CPCx, [ppmv @ N% O <sub>2</sub> ] = CPX* ((20.9-N%)/(20.9-O <sub>2</sub> %))
	CFx, [lb/hr] = Cx*Q(std)*60/7000
	CEx, [lb/MMBtu] = F*(Cx/7000)*(20.9/(20.9-O <sub>2</sub> %))
	CBx, [lb/bbl] = CEx*(Fuel Btu/MM)*(Fuel lb/gal)*42
	CEsx, [lb S/MMBtu] = CEx*(MW(S) / MWx)

Where x represents, Particulate, Sulfuric Acid, Sulfate, or Sulfur Dioxide respectively.

## **V. LABORATORY ANALYSIS**

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #1

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: 5  
 Run#: 1  
 Hot box#: -

Probe#: 2  
 Stack box#: E  
 Cold box#: 5

Pryo#: T-1  
 Nozzle#: 0.311  
 Pitot#: 0.8428

Imp. #1: 

gross	607.5
tare	602.4
final	5.1

Imp. #2: 

gross	630.8
tare	629.8
final	1.0

Imp. #3: 

gross	492.3
tare	492.3
final	0.0

Imp. #4: 

gross	615.1
tare	612.9
final	2.2

Total 8.3

Probe blank 

-
---

 ml  
 Probe rinse 

200
-----

 ml

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

D-10
------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	
Imp#1	finsh	155.1

 ml  
 Amount Gained: 5.1 ml

Sample Vol: 

start	150.0	
Imp #2	finsh	151.0

 ml  
 Amount Gained: 1.0 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #1

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: 5  
 Run#: 2  
 Hot box#: -

Probe#: 2  
 Stack box#: E  
 Cold box#: 10

Pryo#: T-1  
 Nozzle#: 0.311  
 Pitot#: 0.8428

Imp. #1: 

gross	603.8
tare	601.2
final	<u>2.6</u>

Imp. #2: 

gross	612.3
tare	612.2
final	<u>0.1</u>

Imp. #3: 

gross	481.5
tare	481.0
final	<u>0.5</u>

Imp. #4: 

gross	635.8
tare	632.5
final	<u>3.3</u>

Total 6.5

Probe blank 

-	ml
---	----

  
 Probe rinse 

200	ml
-----	----

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

D-13
------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp #1	finsh	152.6	ml

  
 Amount Gained: 2.6 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	150.1	ml

  
 Amount Gained: 0.1 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #2

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: 5  
 Run#: 1  
 Hot box#: -

Probe#: 2  
 Stack box#: E  
 Cold box#: 5

Pryo#: T-1  
 Nozzle#: 0.279  
 Pitot#: 0.8428

Imp. #1: 

gross	599.0
tare	596.3
final	<u>2.7</u>

Imp. #2: 

gross	579.1
tare	578.8
final	<u>0.3</u>

Imp. #3: 

gross	491.9
tare	491.4
final	<u>0.5</u>

Imp. #4: 

gross	620.3
tare	615.3
final	<u>5.0</u>

Total 8.5

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: D-14  
 Filter Tare wt.         

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	152.7	ml

  
 Amount Gained: 2.7 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	150.3	ml

  
 Amount Gained: 0.3 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #2

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: 5  
 Run#: 2  
 Hot box#: -

Probe#: 2  
 Stack box#: E  
 Cold box#: 10

Pryo#: T-1  
 Nozzle#: 0.279  
 Pitot#: 0.8428

Imp. #1: 

gross	584.1
tare	582.6
final	<u>1.5</u>

Imp. #2: 

gross	593.0
tare	591.5
final	<u>1.5</u>

Imp. #3: 

gross	480.7
tare	480.5
final	<u>0.2</u>

Imp. #4: 

gross	638.2
tare	634.0
final	<u>4.2</u>

Total 7.4

Probe blank 

-	ml
---	----

  
 Probe rinse 

200	ml
-----	----

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

D-15
------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	151.5	ml

  
 Amount Gained: 1.5 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	151.5	ml

  
 Amount Gained: 1.5 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #3

Date : 11/30/90  
 Job #: 5019  
 Lab #: 290-188

Method#: 5  
 Run#: 1  
 Hot box#: -

Probe#: 2  
 Stack box#: E  
 Cold box#: 5

Pryo#: T-1  
 Nozzle#: 0.251  
 Pitot#: 0.8428

Imp. #1: 

gross	613.4
tare	609.8
final	<u>3.6</u>

Imp. #2: 

gross	599.0
tare	597.8
final	<u>1.2</u>

Imp. #3: 

gross	490.1
tare	489.8
final	<u>0.3</u>

Imp. #4: 

gross	619.3
tare	614.5
final	<u>4.8</u>

Total 9.9

Probe blank 

-
---

 ml  
 Probe rinse 

200
-----

 ml

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

D-16
------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	
Imp#1	finsh	153.6

 ml  
 Amount Gained: 3.6 ml

Sample Vol: 

start	150.0	
Imp #2	finsh	151.2

 ml  
 Amount Gained: 1.2 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #3

Date : 11/30/90  
 Job #: 5019  
 Lab #: 290-188

Method#: 5 Probe#: 2  
 Run#: 2 Stack box#: E  
 Hot box#: - Cold box#: 10

Pryo#: T-1  
 Nozzle#: 0.251  
 Pitot#: 0.8428

Imp. #1: 

gross	599.8
tare	597.6
final	2.2

Imp. #2: 

gross	631.2
tare	629.5
final	1.7

Imp. #3: 

gross	480.0
tare	479.5
final	0.5

Imp. #4: 

gross	642.4
tare	636.3
final	6.1

Total 10.5

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: D-17  
 Filter Tare wt.         

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	152.2	ml

  
 Amount Gained: 2.2 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	151.7	ml

  
 Amount Gained: 1.7 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit : Cyclone #4

Date : 11/30/90  
 Job # : 5019  
 Lab # : 290-188

Method# : 5  
 Run# : 1  
 Hot box# : -

Probe# : 2  
 Stack box# : E  
 Cold box# : 5

Pryo# : T-1  
 Nozzle# : 0.251  
 Pitot# : 0.8428

Imp. #1: 

gross	579.8
tare	579.7
final	0.1

Imp. #2: 

gross	591.7
tare	590.8
final	0.9

Imp. #3: 

gross	491.5
tare	491.4
final	0.1

Imp. #4: 

gross	619.9
tare	617.5
final	2.4

Total 3.5

Probe blank 

-
---

 ml  
 Probe rinse 

200
-----

 ml

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

D-18
------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	
Imp #1	finsh	150.1

 ml  
 Amount Gained: 0.1 ml

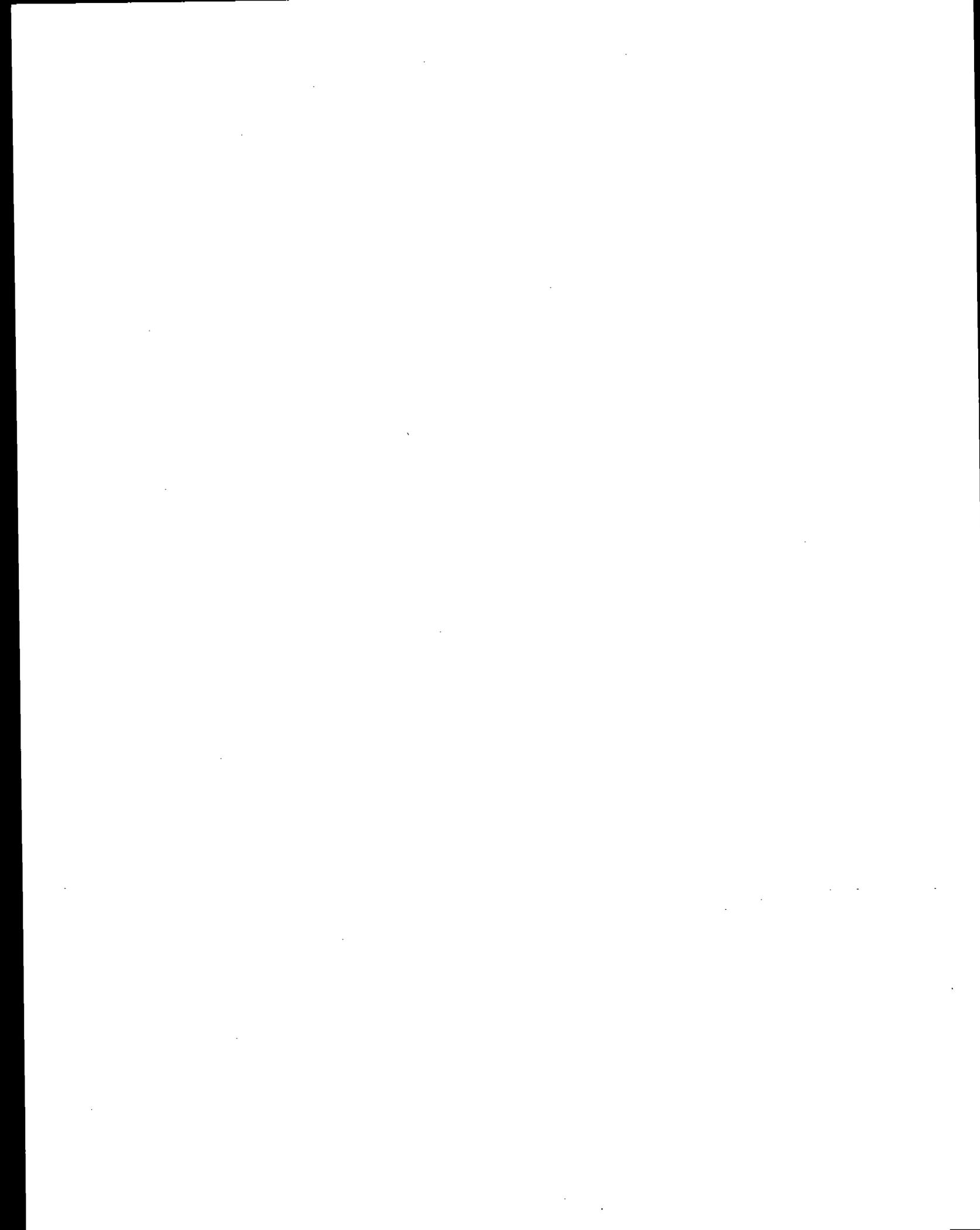
Sample Vol: 

start	150.0	
Imp #2	finsh	150.9

 ml  
 Amount Gained: 0.9 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #1

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 2  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 3

Pryo#: T-1  
 Nozzle#: 0.311  
 Pitot#: 0.8428

Imp. #1: 

gross	601.2
tare	598.8
final	<u>2.4</u>

Imp. #2: 

gross	585.5
tare	584.4
final	<u>1.1</u>

Imp. #3: 

gross	428.6
tare	428.5
final	<u>0.1</u>

Imp. #4: 

gross	626.5
tare	623.2
final	<u>3.3</u>

Total 6.9

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: N,X19.X20  
 Filter Tare wt.         

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	152.4	ml

  
 Amount Gained: 2.4 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	151.1	ml

  
 Amount Gained: 1.1 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #2

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 1  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 3

Pryo#: T-1  
 Nozzle#: 0.279  
 Pitot#: 0.8428

Imp. #1: 

gross	566.1
tare	564.5
final	1.6

Imp. #2: 

gross	602.3
tare	601.5
final	0.8

Imp. #3: 

gross	456.0
tare	455.4
final	0.6

Imp. #4: 

gross	615.2
tare	610.6
final	4.6

Total 7.6

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: R,X21,X22  
 Filter Tare wt.           

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	151.6	ml

  
 Amount Gained: 2.4 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	150.8	ml

  
 Amount Gained: 0.8 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #2

Date : 11/29/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 2  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 9

Pryo#: T-1  
 Nozzle#: 0.279  
 Pitot#: 0.8428

Imp. #1: 

gross	613.5
tare	610.5
final	3.0

Imp. #2: 

gross	588.9
tare	587.3
final	1.6

Imp. #3: 

gross	423.0
tare	422.6
final	0.4

Imp. #4: 

gross	626.9
tare	623.8
final	3.1

Total 8.1

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: T,X23,X24  
 Filter Tare wt.           

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	153.0	ml

  
 Amount Gained: 3.0 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	151.6	ml

  
 Amount Gained: 1.6 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #3

Date : 11/30/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 1  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 3

Pryo#: T-1  
 Nozzle#: 0.251  
 Pitot#: 0.8428

Imp. #1: 

gross	566.9
tare	565.8
final	<u>1.1</u>

Imp. #2: 

gross	596.2
tare	593.7
final	<u>2.5</u>

Imp. #3: 

gross	454.0
tare	453.8
final	<u>0.2</u>

Imp. #4: 

gross	616.5
tare	611.8
final	<u>4.7</u>

Total 8.5

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: W,X25,X26  
 Filter Tare wt.           

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp#1	finsh	151.1	ml

  
 Amount Gained: 1.1 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	152.5	ml

  
 Amount Gained: 2.5 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #3

Date : 11/30/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 2  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 9

Pryo#: T-1  
 Nozzle#: 0.251  
 Pitot#: 0.8428

Imp. #1: 

gross	623.0
tare	622.0
final	1.0

Imp. #2: 

gross	575.0
tare	574.3
final	0.7

Imp. #3: 

gross	415.5
tare	415.0
final	0.5

Imp. #4: 

gross	631.0
tare	626.7
final	4.3

Total 6.5

Probe blank - ml  
 Probe rinse 200 ml

Solution blank DI  
 Solution blank Acetone

Filter No: I,X27,X28  
 Filter Tare wt.

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	ml	
Imp #1	finsh	150.0	ml

  
 Amount Gained: 1.0 ml

Sample Vol: 

start	150.0	ml	
Imp #2	finsh	150.7	ml

  
 Amount Gained: 0.7 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Run Set Up Sheet**

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gin  
 Unit: Cyclone #4

Date : 11/30/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 1  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 3

Pryo#: T-1  
 Nozzle#: 0.251  
 Pitot#: 0.8428

Imp. #1: 

gross	590.4
tare	589.5
final	<u>0.9</u>

Imp. #2: 

gross	624.4
tare	623.4
final	<u>1.0</u>

Imp. #3: 

gross	454.5
tare	454.4
final	<u>0.1</u>

Imp. #4: 

gross	620.5
tare	616.5
final	<u>4.0</u>

Total 6.0

Probe blank 

-
---

 ml  
 Probe rinse 

200
-----

 ml

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

S,X29,X30
-----------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	
Imp #1	finsh	150.9

 ml  
 Amount Gained: 0.9 ml

Sample Vol: 

start	150.0	
Imp #2	finsh	151.0

 ml  
 Amount Gained: 1.0 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### Run Set Up Sheet

Client : Mt. Whitney/Eckley  
 Site : Mt. Whitney Gln  
 Unit: Cyclone #4

Date : 11/30/90  
 Job #: 5019  
 Lab #: 290-188

Method#: PM-10  
 Run#: 2  
 Hot box#: -

Probe#: 2  
 Stack box#: D  
 Cold box#: 9

Pryo#: T-1  
 Nozzle#: 0.251  
 Pitot#: 0.8428

Imp. #1: 

gross	614.3
tare	614.1
final	0.2

Imp. #2: 

gross	564.1
tare	562.8
final	1.3

Imp. #3: 

gross	433.8
tare	433.4
final	0.4

Imp. #4: 

gross	635.2
tare	631.5
final	3.7

Total 5.6

Probe blank 

-
---

 ml  
 Probe rinse 

200
-----

 ml

Solution blank 

DI
----

  
 Solution blank 

Acetone
---------

Filter No: 

U,X31,X32
-----------

  
 Filter Tare wt. 

--

	#	date
Solution Container		
Solution Container		

Sample Vol: 

start	150.0	
Imp#1	finsh	150.2

 ml  
 Amount Gained: 0.2 ml

Sample Vol: 

start	150.0	
Imp #2	finsh	151.3

 ml  
 Amount Gained: 1.3 ml

Total Vol #1 #2 & Rinse 400.0 ml

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Run #: <u>1</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Box #: <u>-</u>	Job #: <u>5019</u>
Unit : <u>Cyclone #1</u>	Filter #: <u>D-10</u>	Lab #: <u>290-188</u>

**SOLUTION BLANKS**

Acetone -			Volume: <u>100</u> ml
	Gross: <u>73.2865</u> g	Tare: <u>73.2842</u> g	Residue: <u>0.0023</u> g
DI Water -			Volume: <u>100</u> ml
	Gross: <u>71.7775</u> g	Tare: <u>71.7764</u> g	Residue: <u>0.0011</u> g

**WEIGHTS & VOLUMES**

A : Filter Catch -			
	Gross: <u>0.5120</u> g	Tare: <u>0.4129</u> g	Net: <u>0.0991</u> g
C : Probe Catch -			
Acetone:	<u>75</u> ml * <u>2.3E-05</u> g/ml		<u>-0.0017</u> g
DI Water:	<u>100</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0011</u> g
	Gross: <u>69.3782</u> g	Tare: <u>69.2386</u> g	<u>0.1396</u> g
			Net: <u>0.1368</u> g
E : Impinger Catch -			
DI Water:	<u>350</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0039</u> g
Total:	<u>400</u> ml	Aliquot: <u>400</u> ml	
	Gross: <u>71.1982</u> g	Tare: <u>71.1940</u> g	<u>0.0042</u> g
			Net: <u>0.0003</u> g
Total Particulate Weight, (A+C+E)			= <u>0.2362</u> g

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Run #: <u>2</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Box #: <u>-</u>	Job #: <u>5019</u>
Unit : <u>Cyclone #1</u>	Filter #: <u>D-13</u>	Lab #: <u>290-188</u>

**SOLUTION BLANKS**

Acetone -	Gross: <u>73.2865</u> g	Tare: <u>73.2842</u> g	Volume: <u>100</u> ml	Residue: <u>0.0023</u> g
DI Water -	Gross: <u>71.7775</u> g	Tare: <u>71.7764</u> g	Volume: <u>100</u> ml	Residue: <u>0.0011</u> g

**WEIGHTS & VOLUMES**

A : Filter Catch -	Gross: <u>0.6408</u> g	Tare: <u>0.4152</u> g	Net: <u>0.2256</u> g
C : Probe Catch -	Acetone: <u>75</u> ml * <u>2.3E-05</u> g/ml		<u>-0.0017</u> g
	DI Water: <u>100</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0011</u> g
	Gross: <u>73.0906</u> g	Tare: <u>72.8997</u> g	<u>0.1909</u> g
			Net: <u>0.1881</u> g
E : Impinger Catch -	DI Water: <u>250</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0028</u> g
	Total: <u>250</u> ml	Aliquot: <u>250</u> ml	
	Gross: <u>67.5497</u> g	Tare: <u>67.5463</u> g	<u>0.0034</u> g
			Net: <u>0.0006</u> g
Total Particulate Weight, (A+C+E)			= <u>0.4143</u> g

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Run #: <u>1</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Box #: <u>-</u>	Job #: <u>5019</u>
Unit : <u>Cyclone #2</u>	Filter #: <u>D-14</u>	Lab #: <u>290-188</u>

**SOLUTION BLANKS**

Acetone -			Volume: <u>100</u> ml
Gross: <u>73.2865</u> g	Tare: <u>73.2842</u> g	Residue: <u>0.0023</u> g	
DI Water -			Volume: <u>100</u> ml
Gross: <u>71.7775</u> g	Tare: <u>71.7764</u> g	Residue: <u>0.0011</u> g	

**WEIGHTS & VOLUMES**

A : Filter Catch -			
Gross: <u>0.4633</u> g	Tare: <u>0.4193</u> g	Net: <u>0.0440</u> g	
C : Probe Catch -			
Acetone: <u>50</u> ml * <u>2.3E-05</u> g/ml		<u>-0.0012</u> g	
DI Water: <u>50</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0006</u> g	
Gross: <u>70.8464</u> g	Tare: <u>70.7093</u> g	<u>0.1371</u> g	
		Net: <u>0.1354</u> g	
E : Impinger Catch -			
DI Water: <u>250</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0028</u> g	
Total: <u>250</u> ml	Aliquot: <u>250</u> ml		
Gross: <u>69.0987</u> g	Tare: <u>69.0941</u> g	<u>0.0046</u> g	
		Net: <u>0.0018</u> g	
<b>Total Particulate Weight, (A+C+E)</b>		<b>=</b>	<b><u>0.1812</u> g</b>

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Run # : <u>2</u>	Date : <u>11/29/90</u>
Site : <u>Whitney Gin</u>	Box # : <u>-</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #2</u>	Filter # : <u>D-15</u>	Lab # : <u>290-188</u>

**SOLUTION BLANKS**

Acetone -	Gross: <u>73.2865</u> g	Tare: <u>73.2842</u> g	Volume: <u>100</u> ml	Residue: <u>0.0023</u> g
DI Water -	Gross: <u>71.7775</u> g	Tare: <u>71.7764</u> g	Volume: <u>100</u> ml	Residue: <u>0.0011</u> g

**WEIGHTS & VOLUMES**

A : Filter Catch -

Gross: <u>0.5550</u> g	Tare: <u>0.4161</u> g	Net: <u>0.1389</u> g
------------------------	-----------------------	----------------------

C : Probe Catch -

Acetone: <u>100</u> ml * <u>2.3E-05</u> g/ml	<u>-0.0023</u> g
DI Water: <u>100</u> ml * <u>1.1E-05</u> g/ml	<u>-0.0011</u> g
Gross: <u>65.8976</u> g	Tare: <u>65.7245</u> g
	<u>0.1731</u> g
	Net: <u>0.1697</u> g

E : Impinger Catch -

DI Water: <u>250</u> ml * <u>1.1E-05</u> g/ml	<u>-0.0028</u> g
Total: <u>250</u> ml	Aliquot: <u>250</u> ml
Gross: <u>69.1180</u> g	Tare: <u>69.1150</u> g
	<u>0.0030</u> g
	Net: <u>0.0002</u> g

Total Particulate Weight, (A+C+E) = 0.3088 g

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : <u>Whitney/Eckley</u>	Run # : <u>1</u>	Date : <u>11/30/90</u>
Site : <u>Whitney Gin</u>	Box # : <u>-</u>	Job # : <u>5019</u>
Unit : <u>Cyclone #3</u>	Filter # : <u>D-16</u>	Lab # : <u>290-188</u>

**SOLUTION BLANKS**

Acetone -	Gross: <u>73.2865</u> g	Tare: <u>73.2842</u> g	Volume: <u>100</u> ml	Residue: <u>0.0023</u> g
DI Water -	Gross: <u>71.7775</u> g	Tare: <u>71.7764</u> g	Volume: <u>100</u> ml	Residue: <u>0.0011</u> g

**WEIGHTS & VOLUMES**

A : Filter Catch -	Gross: <u>0.4228</u> g	Tare: <u>0.4195</u> g	Net: <u>0.0033</u> g
C : Probe Catch -	Acetone: <u>75</u> ml * <u>2.3E-05</u> g/ml		<u>-0.0017</u> g
	DI Water: <u>100</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0011</u> g
	Gross: <u>65.5448</u> g	Tare: <u>65.5366</u> g	<u>0.0082</u> g
			Net: <u>0.0054</u> g
E : Impinger Catch -	DI Water: <u>250</u> ml * <u>1.1E-05</u> g/ml		<u>-0.0028</u> g
	Total: <u>250</u> ml	Aliquot: <u>250</u> ml	
	Gross: <u>70.8696</u> g	Tare: <u>70.8661</u> g	<u>0.0035</u> g
			Net: <u>0.0007</u> g
Total Particulate Weight, (A+C+E)			= <u>0.0094</u> g

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : Whitney/Eckley  
Site : Whitney Gin  
Unit : Cyclone #3

Run #: 2  
Box #: -  
Filter #: D-17

Date : 11/30/90  
Job #: 5019  
Lab #: 290-188

**SOLUTION BLANKS**

Acetone -			Volume: <u>100</u> ml
Gross: <u>73.2865</u> g	Tare: <u>73.2842</u> g	Residue: <u>0.0023</u> g	
DI Water -			Volume: <u>100</u> ml
Gross: <u>71.7775</u> g	Tare: <u>71.7764</u> g	Residue: <u>0.0011</u> g	

**WEIGHTS & VOLUMES**

A : Filter Catch -  
Gross: 0.4296 g      Tare: 0.4213 g      Net: 0.0083 g

C : Probe Catch -  
Acetone: 100 ml \* 2.3E-05 g/ml      -0.0023 g  
DI Water: 100 ml \* 1.1E-05 g/ml      -0.0011 g  
Gross: 73.9636 g      Tare: 73.9090 g      0.0546 g  
Net: 0.0512 g

E : Impinger Catch -  
DI Water: 200 ml \* 1.1E-05 g/ml      -0.0022 g  
Total: 200 ml      Aliquot: 200 ml  
Gross: 70.0732 g      Tare: 70.0708 g      0.0024 g  
Net: 0.0002 g

**Total Particulate Weight, (A+C+E) = 0.0597 g**

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : Whitney/Eckley Run #: 1 Date : 11/30/90  
Site : Whitney Gin Box #: - Job #: 5019  
Unit : Cyclone #4 Filter #: D-18 Lab #: 290-188

**SOLUTION BLANKS**

Acetone - Volume: 100 ml  
Gross: 73.2865 g Tare: 73.2842 g Residue: 0.0023 g  
DI Water - Volume: 100 ml  
Gross: 71.7775 g Tare: 71.7764 g Residue: 0.0011 g

**WEIGHTS & VOLUMES**

A : Filter Catch -  
Gross: 0.4562 g Tare: 0.4236 g Net: 0.0326 g

C : Probe Catch -  
Acetone: 100 ml \* 2.3E-05 g/ml -0.0023 g  
DI Water: 100 ml \* 1.1E-05 g/ml -0.0011 g  
Gross: 67.2334 g Tare: 67.1428 g 0.0906 g  
Net: 0.0872 g

E : Impinger Catch -  
DI Water: 250 ml \* 1.1E-05 g/ml -0.0028 g  
Total: 250 ml Aliquot: 250 ml  
Gross: 65.8146 g Tare: 65.8101 g 0.0045 g  
Net: 0.0017 g

Total Particulate Weight, (A+C+E) = 0.1215 g

**PARTICULATE WEIGHTS : DATA & CALCULATIONS**

Client : Whitney/Eckley Run #: 2 Date : 11/30/90  
Site : Whitney Gin Box #: - Job #: 5019  
Unit : Cyclone #4 Filter #: D-19 Lab #: 290-188

**SOLUTION BLANKS**

Acetone - Volume: 100 ml  
Gross: 73.2865 g Tare: 73.2842 g Residue: 0.0023 g  
DI Water - Volume: 100 ml  
Gross: 71.7775 g Tare: 71.7764 g Residue: 0.0011 g

**WEIGHTS & VOLUMES**

A : Filter Catch -  
Gross: 0.4244 g Tare: 0.4165 g Net: 0.0079 g

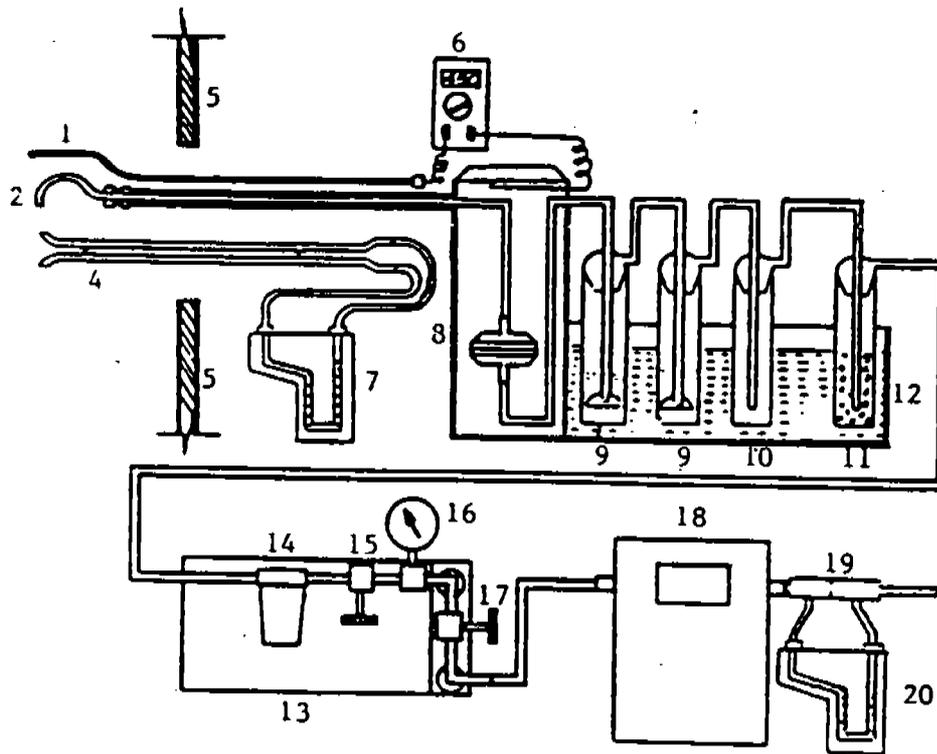
C : Probe Catch -  
Acetone: 100 ml \* 2.3E-05 g/ml -0.0023 g  
DI Water: 140 ml \* 1.1E-05 g/ml -0.0015 g  
Gross: 68.4323 g Tare: 68.3691 g 0.0632 g  
Net: 0.0594 g

E : Impinger Catch -  
DI Water: 300 ml \* 1.1E-05 g/ml -0.0033 g  
Total: 300 ml Aliquot: 300 ml  
Gross: 67.6596 g Tare: 67.6555 g 0.0041 g  
Net: 0.0008 g

Total Particulate Weight, (A+C+E) = 0.0681 g

BTC Environmental, Inc. - 1989

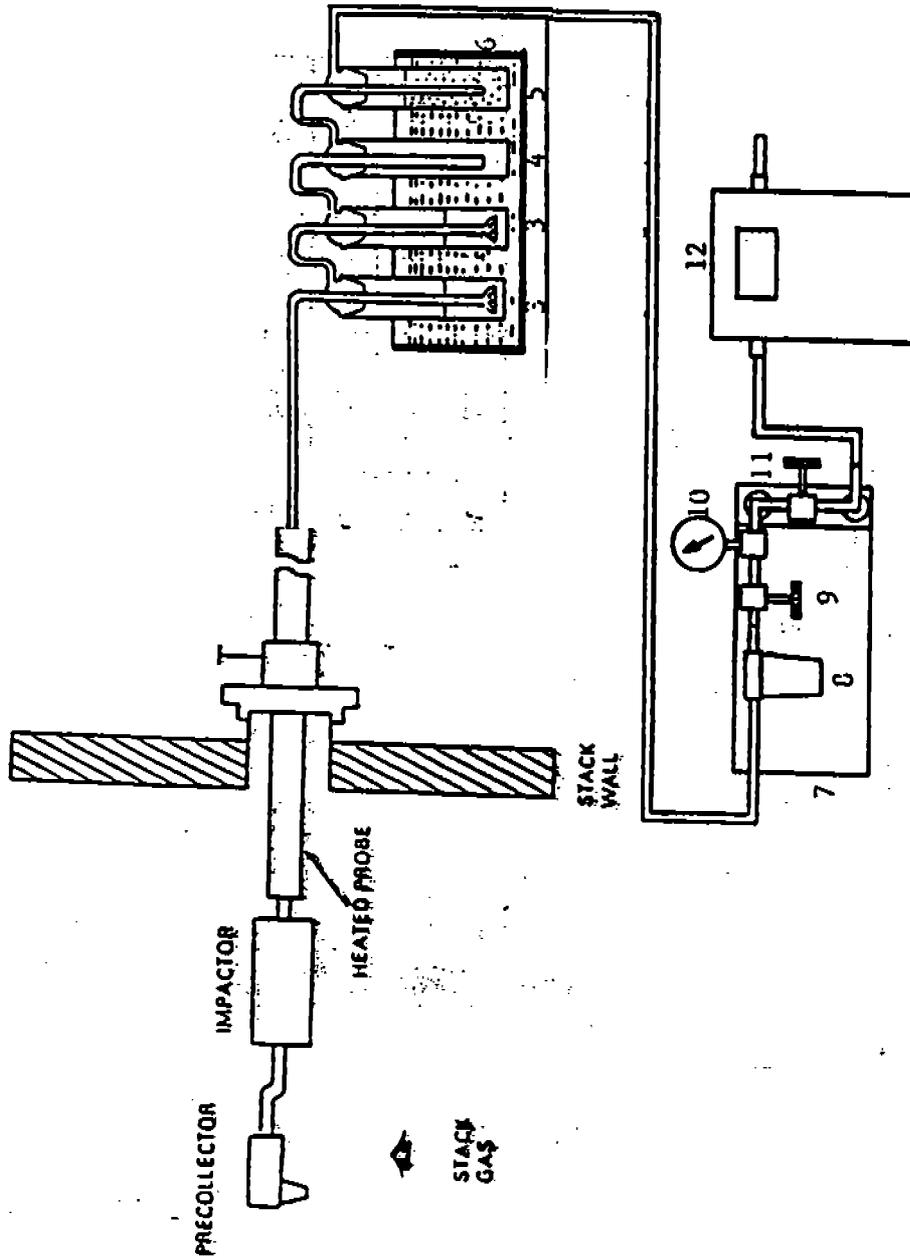
## **VI. METHODOLOGY**



- |   |   |
|---|---|
| 1. Temperature Sensor                       | 11. Bubbler with Silica Gel               |
| 2. Nozzle                                   | 12. Ice Bath                              |
| 3. Glass lined Stainless Steel Probe-Heated | 13. Sealed Pump (Leak Free)               |
| 4. S-type Pitot Tube                        | 14. Filter for Pump                       |
| 5. Stack Wall                               | 15. Metering Valve                        |
| 6. Temperature Sensor Meter                 | 16. Vacuum Gauge                          |
| 7. Pitot Tube Inclined Manometer            | 17. By-pass Valve                         |
| 8. Heated Box with Filter                   | 18. Temperature Compensated Dry Gas Meter |
| 9. Impinger with 100 ml H <sub>2</sub> O    | 19. Orifice                               |
| 10. Empty Bubbler                           | 20. Orifice Inclined Manometer            |

Figure 5.2-1  
 Particulate Sampling Train Set-up with  
 Heated Probe and Heated Filter

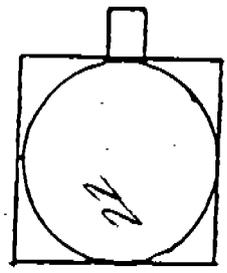
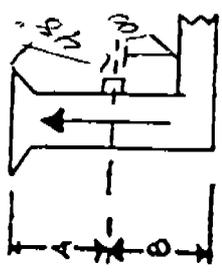
PW-10 PARTICULATE SAMPLING TRAIN



- |   |   |
|---|---|
| 1. Stack Wall                               | 8. Filter for Pump                        |
| 2. Probe                                    | 9. Metering Valve                         |
| 3. Impinger with 100 ml of H <sub>2</sub> O | 10. Vacuum Gauge                          |
| 4. Empty Bubbler                            | 11. By-pass Valve                         |
| 5. Bubbler with Silica Gel                  | 12. Temperature Compensated Dry Gas Meter |
| 6. Ice Bath                                 |   |
| 7. Sealed Pump (Leak Free)                  |   |

**VII. RAW DATA**

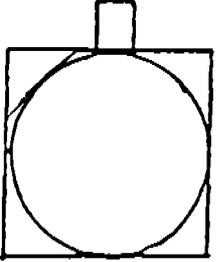
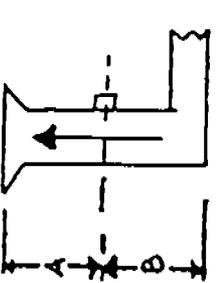
PLANT: Whiting  
 LOCATION: Whiting Rd  
 COUNTY: Presque  
 UNIT: 41 Cx Lane  
 DATE: 11/29/90  
 RUN NO./METHOD: 1/5  
 COLD BOX NO.: 5  
 METER BOX NO.: 1  
 METER FACTOR: 1.0231  
 PITOT #/FACTOR: 12.8428  
 PYROMETER #: 71  
 MAGNEHELIC FACTOR: ΔP 1.005 / ΔH .993



FILTER NO. D-10  
 AMBIENT TEMP.: 53  
 BAROMETRIC PRESS., IN. HG.: 30.23  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT. \_\_\_\_\_  
 NOZZLE DIAMETER, IN.: .311  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 0.2 in. H<sub>2</sub>O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H <sub>2</sub> O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H <sub>2</sub> O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GASMETER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	√ΔP			INLET (Tm), (TM)	OUTLET (TM)		
1	<del>3.400</del>	12	0.5	0	89	.12		1.17	945.925	49	49		
2	<del>3.212</del>	12	1.5	2.5	90	.12		1.18	947.5	50	49		4
3	<del>6.384</del>	12	2.6	5	90	.12		1.19	948.8	51	51		4
4	<del>15.48</del>	12	3.9	7.5	91	.12		1.20	950.3	63	52		
5	<del>18.76</del>	12	5.5	10	91	.14		1.40	951.7	64	52		
6	<del>31.03</del>	12	7.8	12.5	92	.14		1.71	953.0	66	53		
7		14.2	14.2	15	92	.17		1.92	954.6	69	54		
8		16.5	16.5	17.5	92	.19		1.93	956.1	70	55		5
9		18.1	18.1	20	92	.20		2.04	957.9	73	56		
10		19.4	19.4	22.5	93	.20		2.04	959.7	74	57		
11		20.5	20.5	25	93	.20		2.04	961.1	75	58		
12		21.5	21.5	27.5	93	.18		1.84	963.4	76	59		5
	ZERO			30					964.9				
	SPAN												
AVERAGE													
PITOT LEAK CHECK:													
BEFORE: TOP ΔP = <u>1.7</u> BOTTOM ΔP = <u>3.2</u> SAMPLE TRAIN LEAK: CRM@ <u>10</u> IN. HG.													
AFTER: TOP ΔP = <u>1.7</u> BOTTOM ΔP = <u>3.2</u> CRM@ <u>10</u> IN. HG.													
COMMENTS: _____ PURGE _____													

PLANT: C. M. UNITARY  
 LOCATION: Williams Rd  
 COUNTY: SEAS  
 UNIT: #1 cyclone  
 DATE: 11/25/71  
 RUN NO. METHOD: 115 shift  
 COLD BOX NO.: 5  
 METER BOX NO.:  
 METER FACTOR:  
 PITOT #/FACTOR:  
 PYROMETER #:  
 MAGNETIC FACTOR:  $\Delta P$            $\Delta H$          

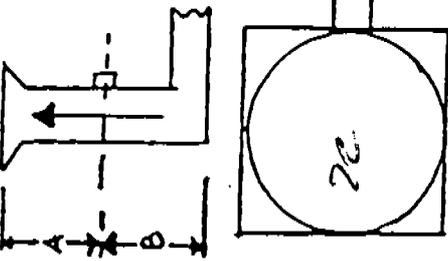


FILTER NO.:  
 AMBIENT TEMP.:  
 BAROMETRIC PRESS., IN. HG.:  
 ASSUMED MOISTURE:  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.:  
 NOZZLE DIAMETER, IN.:  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: \*H2O  
 OFFSET:          in. PORT DIA.:          in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY HEAD IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				20	96	.19	1.93	77	964.9	60			
2				25	97	.20	2.03	78	966.2	61			
3				5	97	.19	1.93	78	968.1	61			
4				2.5	98	.17	1.73	79	970.2	62			
5				10	98	.16	1.63	79	971.9	62			
6				12.5	97	.15	1.53	80	973.6	63			
7				15	98	.15	1.53	80	976.6	63			
8				77.5	97	.14	1.43	81	978.3	64			
9				20	98	.13	1.32	81	979.8	64			
10				22.5	97	.13	1.32	82	981.3	65			
11				25	98	.15	1.53	82	982.8	65			
12				27.5	99	.10	1.02	83	984.2	66			
				30					985.540	66			
AVERAGE					99.9		0.393	1.582	39.65	65.7			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP =          BOTTOM ΔP =           
 AFTER: TOP ΔP =          BOTTOM ΔP =           
 SAMPLE TRAIN LEAK:  
 CRM@          IN. HG.  
 CRM@          IN. HG.  
 COMMENTS:          PURGE

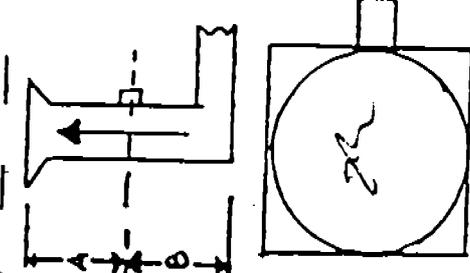
PLANT: W. J. ...  
 LOCATION: MS. ...  
 COUNTY: ...  
 UNIT: # 10  
 DATE: 11/27/70  
 RUN NO./METHOD: 2/15  
 COLD BOX NO.: 10  
 METER BOX NO.: E  
 METER FACTOR: 1.0231  
 PITOT #/FACTOR: #2 84128  
 PYROMETER #: 71  
 MAGNETIC FACTOR: ΔP 1005 ΔH 0.865



FILTER NO. 0-13  
 AMBIENT TEMP.: 58  
 BAROMETRIC PRESS., IN. HG.: 30.23  
 ASSUMED MOISTURE: 570  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.: 3.11  
 NOZZLE DIAMETER, IN.: 3.11  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: 0.12 H<sub>2</sub>O  
 OFFSET:     in. PORT DIA.:     in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	SAMPLE TIME (MIN)	STACK TEMP. (T <sub>s</sub> ), F	VELOCITY IN. H <sub>2</sub> O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H <sub>2</sub> O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (T <sub>m</sub> ),	OUTLET (T <sub>m</sub> )		
1				0	97	.10		1.47	985.682	62	62	2	
2				2.5	100	.15		1.29	987.1	63	63	3	
3				3	100	.13		1.30	988.7	63	63	3	
4				2.5	100	.13		1.41	990.2	63	63	3	
5				10	100	.14		1.51	991.7	63	63	3	
6				12.5	100	.15		1.52	993.2	64	64	3	
7				15	100	.15		1.63	994.7	64	64	3	
8				13.5	99	.16		1.73	996.3	64	64	3	
9				20	100	.17		1.94	997.9	67	67	3	
10				22.5	100	.19		2.05	999.6	68	68	2	
11				25	101	.20		1.95	1001.4	69	69	1	
12				27.5	100	.19			997.2	69	69	1	
	ZERO SPAN			30					1050				
PITOT LEAK CHECK: BEFORE: TOP ΔP = <u>3.5</u> BOTTOM ΔP = <u>3.1</u> ΔP = <u>3.5</u> ΔP = <u>3.1</u> AFTER: TOP ΔP = <u>3.7</u> BOTTOM ΔP = <u>2.7</u> ΔP = <u>3.7</u> ΔP = <u>2.7</u>													
COMMENTS: <u>   </u> PURGE <u>   </u>													

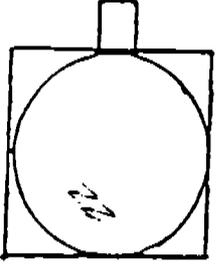
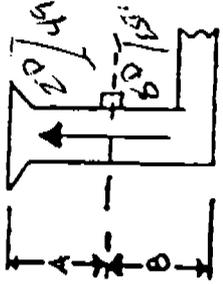
PLANT: W. Bunker  
 LOCATION: W. Bunker  
 COUNTY: W. Bunker  
 UNIT: #1 cyclone  
 DATE: 11/20/90  
 RUN NO/METHOD: 2/5  
 COLD BOX NO.: 9107  
 METER BOX NO.:  
 METER FACTOR:  
 PITOT #/FACTOR:  
 PYROMETER #:  
 MAGNEHELIC FACTOR:  $\Delta P$   $\Delta H$



FILTER NO.:  
 AMBIENT TEMP.:  
 BAROMETRIC PRESS., IN. HG.:  
 ASSUMED MOISTURE:  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.:  
 NOZZLE DIAMETER, IN.:  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: \*H2O  
 OFFSET: in. PORT DIA.: in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	HEAD			INLET (Tm),	OUTLET (Tm)		
1				0	100	112		1.23	1005.0	88	70		
2				2.5	101	112		1.23	6.4	87	71		
3				5	101	112		1.23	7.8	88	72		
4				7.5	101	112		1.23	9.2	89	72		
5				10	101	114		1.44	10.7	90	73		
6				12.5	101	114		1.44	12.3	90	73		
7				15	101	117		1.76	13.8	91	76		
8				17.5	101	119		1.96	15.4	91	76	4	
9				20	101	119		1.97	17.1	93	77		
10				22.5	101	120		2.08	19.0	93	77		
11				25	102	120		2.07	20.8	93	77		
12				27.5	102	118		1.86	22.6	93	77		
	ZERO SPAN			30					1024.302				
AVERAGE		20.1	0.05	60	100.4			1.595	38.620	76.7			
PITOT LEAK CHECK:													
BEFORE:						TOP ΔP =		BOTTOM ΔP =		SAMPLE TRAIN LEAK:			
AFTER:						TOP ΔP =		BOTTOM ΔP =		CFM@		IN. HG.	
						TOP ΔP =		BOTTOM ΔP =		CFM@		IN. HG.	
						TOP ΔP =		BOTTOM ΔP =		COMMENTS:		PURGE	

PLANT: LYTAK  
 LOCATION: WELLS  
 COUNTY: Greene  
 UNIT: #2 Cylone  
 DATE: 11/21/90  
 RUN NO/METHOD: 1/5  
 COLD BOX NO.: 5  
 METER BOX NO.: 5  
 METER FACTOR: 1.0231  
 PITOT #/FACTOR: #2 .8423  
 PYROMETER #: 11  
 MAGNEHELIC FACTOR: AP 1.005  $\Delta H$  995



FILTER NO.: D-14  
 AMBIENT TEMP.: 30.01  
 BAROMETRIC PRESS., IN. HG.: 69  
 ASSUMED MOISTURE: 5.26  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: \_\_\_\_\_  
 NOZZLE DIAMETER, IN.: 2.79  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 0.15 "H<sub>2</sub>O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

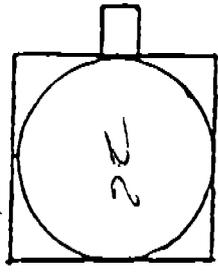
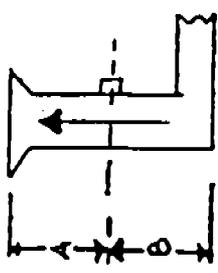
TRAVERSE POINT NUMBER	DISTANCE INCHES	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H <sub>2</sub> O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H <sub>2</sub> O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1	17			5	81	.23	.23	1.53	25.437	69	69		
2	17			10	81	.27	.27	1.82	27.3	75	69		
3	17			15	81	.28	.28	1.91	30.8	82	75		
4	17			20	81	.27	.27	1.85	34.4	83	75		
5	17			25	81	.28	.28	1.93	37.9	87	75		
6	17			30	81	.27	.27	1.87	41.4	91	74	5	
7	17			35	80	.21	.21	1.46	44.8	92	76	5	
8	17			40	81	.26	.26	1.68	48.1	94	79		
9	17			45	81	.27	.27	1.82	51.7	95	81	5	
10	17			50	81	.27	.27	1.89	55.0	97	83	5	
11	17			55	81	.27	.27	1.90	58.5	98	85		
12	17			60	81	.24	.24	1.68	62.7	99	84		
AVERAGE		20.9	0.05	60	48.9		0.507	1.076	39.846	92.7			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = 3.2 BOTTOM ΔP = 2.9  
 ΔP = 3.3  
 AFTER: TOP ΔP = 2.7 BOTTOM ΔP = 3.7  
 ΔP = 2.3

SAMPLE TRAIN LEAK:  
 BEFORE = 1.002 IN. HG.  
 AFTER = 1.067 IN. HG.

COMMENTS: \_\_\_\_\_  
 PURGE \_\_\_\_\_

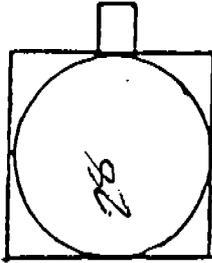
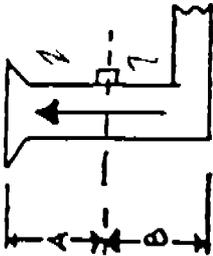
PLANT: Whiting  
 LOCATION: Whiting 21  
 COUNTY: Texas  
 UNIT: #201/100  
 DATE: 11/25/60  
 RUN NO./METHOD: 2/5  
 COLD BOX NO.: 2/10  
 METER BOX NO.: 1  
 METER FACTOR: 1.0231  
 PITOT #/FACTOR: #2 18428  
 PYROMETER #: 71  
 MAGNETIC FACTOR: ΔP 1.005 ΔH 895



FILTER NO.: D-15  
 AMBIENT TEMP.: 30.0  
 BARAMETRIC PRESS., IN. HG.: 30.0  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: 3  
 PROBE LENGTH, FT.: 3  
 NOZZLE DIAMETER, IN.: 0.275 #25  
 PROBE HEATER SETTING: 1  
 APPROX. WIND VEL., MPH: 1  
 SAMPLE BOX TEMP., (F): 100  
 STATIC PRESSURE: 0.15 °H2O  
 OFFSET: 1 in. PORT DIA.: 1/8 in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	85	.23		1.54	65.0	77	76		
2				5	85	.27		1.63	69.0	78	78		
3				10	85	.28		1.91	72.5	85	78		
4				15	85	.27		1.86	70.0	91	74		
5				20	85	.28		1.93	79.6	93	80		
6				25	85	.27		1.88	83.1	97	80		
7				30	85	.21		1.46	85.2	98	82		
8				35	85	.24		1.64	89.0	88	72		
9				40	85	.26		1.82	92.7	99	99		
10				45	85	.27		1.89	96.2	101	84		
11				50	85	.29		1.81	99.9	101	81		
12				55	85	.24		1.69	103.2	104	98		
13				60	85				106.700				
AVERAGE					85.0				40.88				
PITOT LEAK CHECK:													
BEFORE: TOP ΔP = 2.5 BOTTOM ΔP = 3.1													
AFTER: TOP ΔP = 4.3 BOTTOM ΔP = 3.7													
COMMENTS: PURGE													

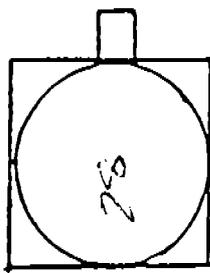
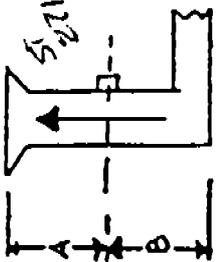
PLANT: Wabiting  
 LOCATION: MS W. T. Inc. Tex  
 COUNTY: Fresno  
 UNIT: #3 Cyclone  
 DATE: 11/24/98  
 RUN NO. METHOD: 1/5  
 COLD BOX NO.: 35  
 METER BOX NO.: 5  
 METER FACTOR: 1.0231  
 PITOT #/FACTOR: #2 8428  
 PYROMETER #: 71  
 MAGNEHELIC FACTOR: ΔP 1.025 ΔH .715



FILTER NO.: 2975 D-16  
 AMBIENT TEMP.: 72  
 BAROMETRIC PRESS., IN. HG.: 29.95  
 ASSUMED MOISTURE: 576  
 HEATER BOX SETTING: 0  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: .351  
 PROBE HEATER SETTING: 0  
 APPROX. WIND VEL., MPH: 25  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: ±.25 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1	1.23			45	77.5	.33	.33	1.44	107.066	62	66		
2	4.11			4	74	.36	.36	1.58	109.5	65	67		
3	8.26			8	75	.37	.37	1.65	118.0	73	68		
4	19.74			12	75	.38	.38	1.71	114.6	78	69	4	
5	23.80			16	74	.40	.40	1.98	117.2	83	72		
6	28.75			20	74	.42	.42	1.92	120.1	86	72		
7				24	74	.43	.43	2.06	122.9	88	73		
8				28	74	.43	.43	1.98	125.9	90	76		
9				32	74	.44	.44	2.03	128.7	92	77	5	
10				36	74	.40	.40	1.85	131.7	93	77		
11				40	74	.35	.35	1.62	134.3	94	78		
12				44	74	.34	.34	1.51	137.2	94	78		
13				48	74				139.7				
AVERAGE													
PITOT LEAK CHECK:													
BEFORE:		TOP ΔP =	0.05	3.3		BOTTOM ΔP =	1.6		BEFORE =	0.02	CFM @	10	IN. HG.
AFTER:		TOP ΔP =	2.4	3.3		BOTTOM ΔP =	1.6		AFTER =	0.015	CFM @	23	IN. HG.
		ΔP =	2.1	2.1		ΔP =	2.7		COMMENTS:				

PLANT: W. J. Perry  
 LOCATION: W. J. Perry Rd  
 COUNTY: Greene  
 UNIT: #3 cyclone  
 DATE: 11/30/90  
 RUN NO/METHOD: 2/BS  
 COLD BOX NO.: 10  
 METER BOX NO.: 1  
 METER FACTOR: 1.0231  
 PITOT #/FACTOR: # 2428  
 PYROMETER #: 11  
 MAGNEHELC FACTOR:  $\Delta P$  1.005  $\Delta H$  9.95



FILTER NO. D-17  
 AMBIENT TEMP.: 72  
 BAROMETRIC PRESS., IN. HG.: 29.95  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: 5  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: .251  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: .25 \*H2O  
 OFFSET:      in. PORT DIA.:      in. (M / F)

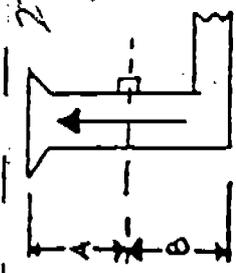
TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT. / 42,000	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				6.10	71	.33		1.46	140.720	60	68	3	
2				4	71	.36		1.61	144.5	72	68		
3				8	71	.37		1.67	146.9	76	68	4	
4				12	71	.38		1.73	149.8	81	70	4	
5				16	71	.40		1.83	152.5	85	71	4	
6				20	71	.42		1.93	155.3	87	72		
7				24	71	.45		2.08	158.1	89	74	4	
8				28	71	.43		1.99	161.1	90	75		
9				32	71	.44		2.04	164.0	91	76	5	
10				36	71	.40		1.86	167.2	92	77		
11				40	71	.35		1.62	170.0	93	78		
12				44	71	.34		1.58	172.7	93	79		
13				48					174.895				
AVERAGE		20.9	0.03	45	71.0		0.1673	1.744	228.945	78.9			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = 1.1 BOTTOM ΔP = 3.0  
 ΔP = 1.9 ΔP = 3.0  
 AFTER: TOP ΔP =      BOTTOM ΔP =       
 ΔP =      ΔP =     

SAMPLE TRAIN LEAK:  
 CFM@ 10 IN. HG.  
 CFM@      IN. HG.

COMMENTS:      PURGE

27452



PLANT: Whiting  
 LOCATION: Whiting Ref  
 COUNTY: Greene  
 UNIT: 4 Cyclone  
 DATE: 11/30/90  
 RUN NO/METHOD: 115  
 COLD BOX NO.: 5  
 METER BOX NO.: F 10231  
 METER FACTOR: B  
 PITOT #/FACTOR: 2 5425  
 PYROMETER #: 71  
 MAGNETIC FACTOR: AP 100000H 975

FILTER NO. D-18  
 AMBIENT TEMP.: 30.08  
 BAROMETRIC PRESS., IN. HG.: 30.08  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: 0  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: .251  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: 15 "H<sub>2</sub>O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

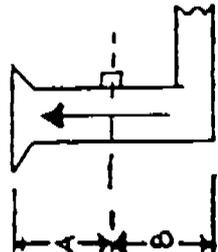
TRAVERSE POINT NUMBER	DISTANCE INCHES	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H <sub>2</sub> O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H <sub>2</sub> O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	√ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	59	0.32		1.42	178.330	55	53	4	
2				2.5	57	0.35		1.50	180.1	57	53		
3				5	57	0.38		1.70	181.6	60	54	5	
4				7.5	57	0.39		1.70	183.3	64	55		
5				10	57	0.40		1.82	184.9	69	56		
6				12.5	57	0.41		1.88	186.6	72	57		
7				15	55	0.42		1.94	188.4	76	58		
8				17.5	57	0.41		1.90	189.0	78	60		
9				20	57	0.40		1.86	191.9	80	63		
10				22.5	57	0.39		1.81	192.9	81	64		
11				25	57	0.37		1.73	195.3	84	65		
12				27.5	59	0.34		1.59	197.1	85	66		
				30					198.7				
AVERAGE													

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = 2.1 BOTTOM ΔP = 4.0  
 ΔP = 3.1 ΔP = 4.0  
 AFTER: TOP ΔP = 2.5 BOTTOM ΔP = 3.9  
 ΔP = 2.5 ΔP = 3.9

COMMENTS: \_\_\_\_\_

SAMPLE TRAIN LEAK:  
 CRM@ 10 IN. HG.  
 CRM@ 10 IN. HG.

PLANT: Whiting  
 LOCATION: Whiting  
 COUNTY: Wood  
 UNIT: #4 Cable  
 DATE: 11/30/90  
 RUN NO./METHOD: 115 Stack  
 COLD BOX NO.: 3  
 METER BOX NO.: 3  
 METER FACTOR: 3  
 PITOT #/FACTOR: 3  
 PYROMETER #: 3  
 MAGNETIC FACTOR:  $\Delta P$  3  $\Delta H$

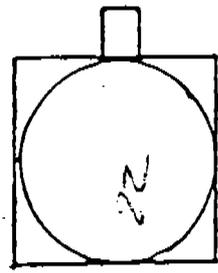
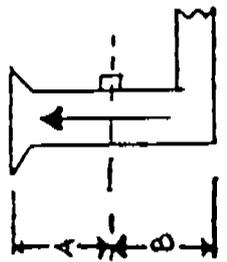


FILTER NO.: \_\_\_\_\_  
 AMBIENT TEMP.: \_\_\_\_\_  
 BAROMETRIC PRESS., IN. HG.: \_\_\_\_\_  
 ASSUMED MOISTURE: \_\_\_\_\_  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: \_\_\_\_\_  
 NOZZLE DIAMETER, IN.: \_\_\_\_\_  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 1.75 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	59	0.39		1.84	198.7	87	69	6	
2				2.5	59	.40		1.89	200.6	89	70		
3				5	59	.40		1.89	202.7	89	71		
4				7.5	59	.41		1.94	203.8	90	74		
5				10	59	.40		1.89	205.6	90	72		
6				12.5	59	.40		1.90	207.4	91	75		
7				15	59	.42		1.99	209.1	92	76	6	
8				17.5	59	.39		1.86	210.9	93	76		
9				20	59	.38		1.81	212.7	94	77		
10				22.5	59	.35		1.67	214.4	93	78		
11				25	59	.37		1.29	216.3	96	79		
12				27.5	59	.30		1.43	211.5	96	80		
13				30					219.05				
AVERAGE		ANA 0.05		60	59.0		0.4615	1.765	40.245	74.6			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP= \_\_\_\_\_ BOTTOM ΔP= \_\_\_\_\_  
 AFTER: TOP ΔP= \_\_\_\_\_ BOTTOM ΔP= \_\_\_\_\_  
 ΔP= \_\_\_\_\_ ΔP= \_\_\_\_\_  
 COMMENTS: \_\_\_\_\_  
 PURGE \_\_\_\_\_  
 SAMPLE TRAIN LEAK:  
 BEFORE: CRM@ \_\_\_\_\_ IN. HG.  
 AFTER: CRM@ \_\_\_\_\_ IN. HG.

PLANT: Whitney  
 LOCATION: Whitney RR  
 COUNTY: Fresno  
 UNIT: #4 Cyclone  
 DATE: 11/30/90  
 RUN NO/METHOD: 2/5  
 COLD BOX NO.: 10  
 METER BOX NO.: 1  
 METER FACTOR: 1.0331  
 PITOT #/FACTOR: #2, 8/25  
 PYROMETER #: TL  
 MAGNETIC FACTOR: ΔP/ΔH ΔH 975



FILTER NO. D-19  
 AMBIENT TEMP.: 30.08  
 BAROMETRIC PRESS., IN.HG.: 53  
 ASSUMED MOISTURE: 5  
 HEATER BOX SETTING: 0  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: 0.251  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: 0.15 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

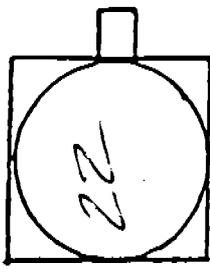
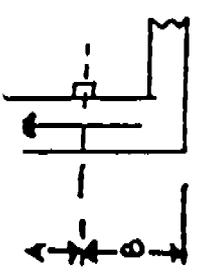
TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	√ΔP			INLET (Tm),	OUTLET (TM)		
1				0	63	0.32		6.47	219.305	77	76		
2				2.5	63	0.36		1.65	221.1	77	76	4	
3				5	63	0.38		1.74	222.8	76	75		
4				7.5	64	0.40		1.85	224.5	82	75		
5				10	64	0.41		1.90	226.3	84	76	4	
6				12.5	64	0.42		1.96	227.9	89	76		
7				15	64	0.42		1.97	229.7	91	77	4	
8				17.5	64	0.41		1.94	231.6	94	78		
9				20	64	0.41		1.94	233.4	96	78		
10				22.5	64	0.40		1.90	235.2	97	81		
11				25	64	0.36		1.71	236.8	99	82		
12				27.5	65	0.35		1.67	238.9	100	83		
	ZERO			30									
	SPAN												
AVERAGE													

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = 2.3 BOTTOM ΔP = 4.7  
 ΔP = 2.3 ΔP = 4.7  
 AFTER: TOP ΔP = 1.0 BOTTOM ΔP = 3.0  
 ΔP = 1.0 ΔP = 3.0

SAMPLE TRAIN LEAK:  
 BEFORE = 0.003 CRM@ 10 IN. HG.  
 AFTER = 0.008 CRM@ 12 IN. HG.

COMMENTS: \_\_\_\_\_ PURGE \_\_\_\_\_

LOCATION: Whitford  
 COUNTY: Frederick  
 UNIT: 4 Cyclone  
 DATE: 11/30/90  
 RUN NO./METHOD: 2/5 Sheet 2  
 COLD BOX NO.:  
 METER BOX NO.:  
 METER FACTOR:  
 PITOT #/FACTOR:  
 PYROMETER #:  
 MAGNETIC FACTOR:  $\Delta P$   $\Delta H$

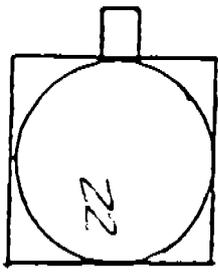
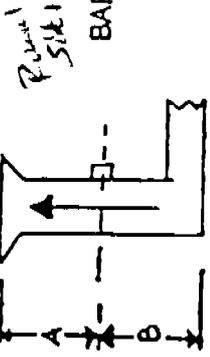


AMBIENT TEMP.:  
 BAROMETRIC PRESS., IN. HG.:  
 ASSUMED MOISTURE:  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.:  
 NOZZLE DIAMETER, IN.:  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE:  $^{\circ}H_2O$   
 OFFSET: In. PORT DIA.: In. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	69	.50		1.92	3389	102	83		
2				8.5	69	.41		1.96	240.5	102	84		
3				5	65	.41		1.96	242.1	103	85		
4				2.5	65	.42		2.02	243.9	105	87		
5				10	65	.41		1.97	245.7	105	87		
6				12.5	66	.40		1.93	247.4	106	88		
7				15.0	66	.41		1.97	249.3	107	89		
8				17.5	66	.40		1.93	251.1	107	90		
9				20	66	.38		1.83	252.8	108	91		
10				22.5	66	.36		1.74	254.6	109	91		
11				25	66	.32		1.55	256.5	110	92		
12				27.5	66	.26		1.25	257.9	109	93		
				30	66				259.7				
				40	67.6			1.822	410.95	90.2			
AVERAGE		20.9	0.05	60			0.619						

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 SAMPLE TRAIN LEAK:  
 BEFORE: CRM@ \_\_\_\_\_ IN. HG.  
 AFTER: CRM@ \_\_\_\_\_ IN. HG.  
 COMMENTS: PURGE \_\_\_\_\_

PLANT: Whiting  
 LOCATION: Whiting Rd  
 COUNTY: Greene  
 UNIT: #1 cyclone  
 DATE: 11/29/90  
 RUN NO/METHOD: 1 P.M.I.D.  
 COLD BOX NO.: 3  
 METER BOX NO.: D  
 METER FACTOR: 0.685  
 PITOT #/ FACTOR: #2 .8428  
 PYROMETER #: 11  
 MAGNETIC FACTOR: AP/005 7 ΔH .952 12



FILTER NO. \_\_\_\_\_  
 AMBIENT TEMP.: 30.23  
 BARAMETRIC PRESS., IN. HG.: 53  
 ASSUMED MOISTURE: 5.76  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: \_\_\_\_\_  
 NOZZLE DIAMETER, IN.: 0.311  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 0.7 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT. <sup>3</sup>	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	96	.19		1.85	007.405	54	59		
2				2	93	.20		1.96	008.2	58	54		
3				4	96	.19		1.88	10.17	63	54		
4				6	95	.17		1.70	12.10	67	54		
5				8	95	.16		1.60	13.2	68	53		
6				10	95	.15		1.50	14.16	69	55		
7				12	95	.15		1.50	15.19	70	55		
8				14	94	.14		1.42	17.11	73	56		
9				16	94	.13		1.32	18.13	74	56		
10				18	93	.13		1.32	19.4	75	57		
11				20	91	.15		1.53	20.8	76	57		
12				22	91	.10		1.02	21.9	77	58		
13				24					23.0				
AVERAGE													

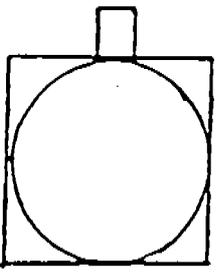
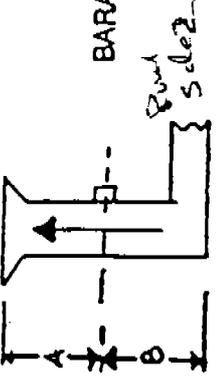
PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_

SAMPLE TRAIN LEAK:  
 BEFORE CRM@ \_\_\_\_\_ IN. HG.  
 AFTER CRM@ \_\_\_\_\_ IN. HG.

COMMENTS: \_\_\_\_\_

PURGE \_\_\_\_\_

PLANT: WTS  
 LOCATION: HT: Highway 1  
 COUNTY: Spokane  
 UNIT: #1C above  
 DATE: 11/22/90  
 RUN NO/METHOD: 1/Pa-10 Sheet 1  
 COLD BOX NO.: 3  
 METER BOX NO.: D  
 METER FACTOR: \_\_\_\_\_  
 PITOT #/ FACTOR: \_\_\_\_\_  
 PYROMETER #: \_\_\_\_\_  
 MAGNEHELIC FACTOR:  $\Delta P$  \_\_\_\_\_  $\Delta H$  \_\_\_\_\_

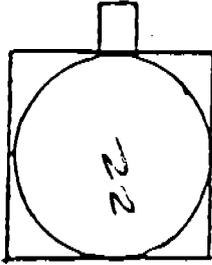
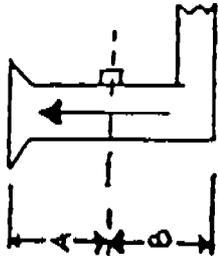


FILTER NO. \_\_\_\_\_  
 AMBIENT TEMP.: \_\_\_\_\_  
 BARAMETRIC PRESS., IN. HG.: \_\_\_\_\_  
 ASSUMED MOISTURE: \_\_\_\_\_  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: \_\_\_\_\_  
 NOZZLE DIAMETER, IN.: \_\_\_\_\_  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: \_\_\_\_\_ \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF ORIFICE METER ( $\Delta H$ ) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						$\Delta P$	$\Delta P$			INLET (Tm),	OUTLET (Tm)		
1				0	90	.12		1.23	73.0	78	60		
2				2	92	.12		1.23	24.2	78	60		
3				4	94	.12		1.23	25.3	79	61		
4				6	96	.12		1.22	26.4	80	62		
5				8	97	.14		1.43	27.5	80	62		
6				10	97	.14		1.45	28.7	81	63		
7				12	97	.17		1.74	29.9	81	63		
8				14	98	.19		1.94	31.4	82	64		
9				16	98	.19		1.95	32.5	85	65		
10				18	97	.20		2.05	33.9	83	65		
11				20	98	.20		2.05	35.3	83	65		
12				22	98	.18		1.85	36.8	84	66		
				24					38.200				
AVERAGE		20.9	0.05	49	95.1			1.580	30.795	67.0			

PITOT LEAK CHECK: BEFORE: \_\_\_\_\_ TOP  $\Delta P$  = \_\_\_\_\_  
 AFTER: \_\_\_\_\_ TOP  $\Delta P$  = \_\_\_\_\_  
 BOTTOM  $\Delta P$  = \_\_\_\_\_  
 BOTTOM  $\Delta P$  = \_\_\_\_\_  
 SAMPLE TRAIN LEAK: BEFORE: \_\_\_\_\_ IN. HG.  
 AFTER: \_\_\_\_\_ IN. HG.  
 COMMENTS: \_\_\_\_\_ PURGE \_\_\_\_\_

PLANT: 6 MERRY  
 LOCATION: 481 WILSON  
 COUNTY: STEARNS  
 UNIT: 412 1060  
 DATE: 11/29/88  
 RUN NO. METHOD: 2 / PIVOT  
 COLD BOX NO.: 9  
 METER BOX NO.: D  
 METER FACTOR: 9685  
 PITOT # FACTOR: 0.2, 8428  
 PYROMETER #: 71  
 MAGNEHELIC FACTOR: ΔP 120'S ΔH 0.75'



FILTER NO. 56  
 AMBIENT TEMP.: 30.23  
 BAROMETRIC PRESS., IN. HG.: 576  
 ASSUMED MOISTURE:  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.:  
 NOZZLE DIAMETER, IN.: 3.11  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: 0.2 \*H2O  
 OFFSET: in. PORT DIA.: in. ( M / F )

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	97	.18	.18	1.77	354.2	62	57		
2				9.2	100	.20	.20	1.96	341.9	61	67		
3				8.4	100	.20	.20	1.97	341.1	63	60	9	
4				6	100	.19	.19	1.89	42.8	68	67	10	
5				8	101	.19	.19	1.89	44.2	71	62	10	
6				10	100	.17	.17	1.71	45.6	74	62	10	
7				12	100	.14	.14	1.41	46.9	75	63	9	
8				14	100	.14	.14	1.41	48.2	77	61		
9				16	100	.12	.12	1.21	49.5	79	64		
10				18	99	.12	.12	1.22	50.6	80	65		
11				20	99	.12	.12	1.22	51.7	82	66	8	
12				22	100	.12	.12	1.22	52.9	85	67		
				24					54.0				
AVERAGE													

SAMPLE TRAIN LEAK:

BEFORE = 0.007 CRM@ 10 IN. HG.  
 AFTER = 0.003 CRM@ 26 IN. HG.

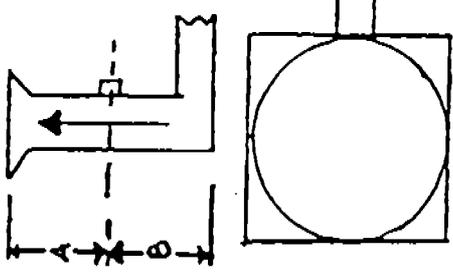
COMMENTS:

PURGE

PITOT LEAK CHECK:

BEFORE: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_ ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_ ΔP = \_\_\_\_\_

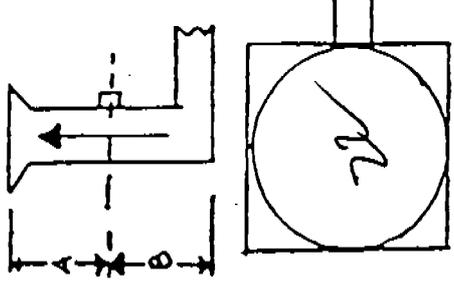
PLANT: Wabash  
 LOCATION: Wabash  
 COUNTY: Wabash  
 UNIT: Electric  
 DATE: 11/25/90  
 RUN NO. METHOD: 2 / P-10 Quartz  
 COLD BOX NO.: \_\_\_\_\_  
 METER BOX NO.: \_\_\_\_\_  
 METER FACTOR: \_\_\_\_\_  
 PITOT #/ FACTOR: \_\_\_\_\_  
 PYROMETER #: \_\_\_\_\_  
 MAGNETIC FACTOR:  $\Delta P$  \_\_\_\_\_  $\Delta H$  \_\_\_\_\_



FILTER NO.: \_\_\_\_\_  
 AMBIENT TEMP.: \_\_\_\_\_  
 BAROMETRIC PRESS., IN. HG.: \_\_\_\_\_  
 ASSUMED MOISTURE: \_\_\_\_\_  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: \_\_\_\_\_  
 NOZZLE DIAMETER, IN.: \_\_\_\_\_  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: \_\_\_\_\_ °H<sub>2</sub>O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. ( M / F )

TRAVERSE POINT NUMBER	DISTANCE INCHES	O <sub>2</sub> (%)	CO <sub>2</sub> (%)	SAMPLE TIME MIN.	STACK TEMP. (T <sub>s</sub> ), F	VELOCITY IN. H <sub>2</sub> O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H <sub>2</sub> O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (T <sub>m</sub> )	OUTLET (T <sub>m</sub> )		
1				0	101	.10		1.02	54.060	83	68		
2				2	100	.15		1.54	55.0	85	68	13	
3				4	100	.13		1.33	56.2	86	70		
4				6	100	.13		1.33	57.7	85	70		
5				8	101	.14		1.43	58.7	85	71		
6				10	101	.15		1.54	60.9	86	72	19	
7				12	101	.15		1.53	61.3	85	72	15	
8				14	101	.16		1.63	62.5	84	73		
9				16	101	.17		1.73	63.9	83	73	18	
10				18	101	.19		1.94	65.4	83	74	19	
11				20	101	.20		2.03	66.7	81	74		
12				22	101	.19		1.93	68.0	81	74		
	ZERO			24					69.270				
	SPAN												
AVERAGE		20.9	0.05	48	100.2		0.383	1.578	30.808	22.9			
PITOT LEAK CHECK:													
BEFORE:						TOP ΔP = _____		BOTTOM ΔP = _____		SAMPLE TRAIN LEAK:		IN. HG.	
AFTER:						TOP ΔP = _____		BOTTOM ΔP = _____		CFM@ _____		IN. HG.	
COMMENTS: _____													
PURGE _____													

PLANT: W. H. H. Co.  
 LOCATION: W. H. H. Co. Rd.  
 COUNTY: Y. Co. Va.  
 UNIT: #2 Cyclone  
 DATE: 11/22/90  
 RUN NO./METHOD: 1/17/110  
 COLD BOX NO.: 3  
 METER BOX NO.: D  
 METER FACTOR: 0.9683  
 PITOT #/FACTOR: #2 8-125  
 PYROMETER #: 11  
 MAGNETIC FACTOR: ΔP 1.08 ΔH 0.82

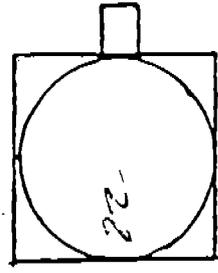
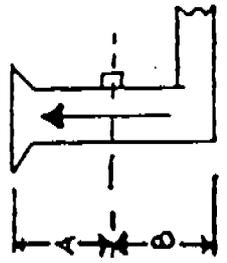


FILTER NO.: \_\_\_\_\_  
 AMBIENT TEMP.: 30.01  
 BAROMETRIC PRESS., IN. HG.: 69  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: 2.75 #28  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 10.15 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm)	OUTLET (Tm)		
1				0	81	0.24		1.59	70.321	68	68		
2				4	81	0.27		1.80	77.9	69	68		
3				8	81	0.27		1.83	77.5	80	69	5	
4				12	81	0.26		1.78	80.3	84	80		
5				16	81	0.24		1.65	83.3	82	87		
6				20	81	0.24		1.45	85.9	90	90	5	
7				24	81	0.27		1.88	88.4	93	74		
8				28	81	0.28		1.93	91.2	99	76	5	
9				32	81	0.27		1.89	94.2	96	88		
10				36	81	0.28		1.96	97.1	97	78		
11				40	81	0.27		1.90	100.1	98	79		
12				44	81	0.23		1.62	103.2	99	83	4	
13				48					105.637				
AVERAGE				9	81		0.507	1.775	35.316	82.3			

SAMPLE TRAIN LEAK: \_\_\_\_\_ IN. HG.  
 BEFORE: 0.007 CRM@ 10 IN. HG.  
 AFTER: 0.009 CRM@ 1 IN. HG.  
 COMMENTS: \_\_\_\_\_ PURGE \_\_\_\_\_

PLANT: Whiting  
 LOCATION: Whiting  
 COUNTY: St. Louis  
 UNIT: 44 x 60  
 DATE: 11/29/79  
 RUN NO./METHOD: 2/PHELO  
 COLD BOX NO.: 9  
 METER BOX NO.: D  
 METER FACTOR: 0.9155  
 PITOT #/FACTOR: #2 .8428  
 PYROMETER #: TI  
 MAGNETIC FACTOR: ΔP 1.028 ΔH 0.82



FILTER NO.: \_\_\_\_\_  
 AMBIENT TEMP.: 30.01  
 BAROMETRIC PRESS., IN. HG.: 29  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: 0  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: 1.279 #28  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

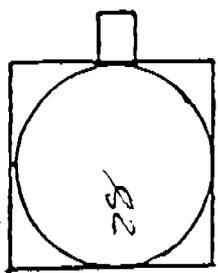
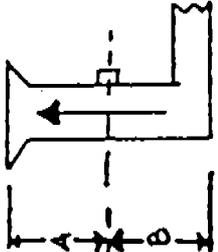
TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm)	OUTLET (Tm)		
1				0	85	.24		1.61	126.75	76	75	7	
2				4	85	.27		1.82	109.3	80	76		
3				8	85	.27		1.83	112.3	82	76		
4				12	85	.26		1.77	115.1	86	77		
5				16	85	.24		1.65	117.9	90	77	8	
6				20	85	.21		1.42	120.6	92	78		
7				24	85	.27		1.87	123.0	95	79	8	
8				28	85	.28		1.95	125.9	96	80		
9				32	85	.27		1.88	128.7	98	81		
10				36	85	.28		1.95	131.5	97	88		
11				40	85	.27		1.88	134.1	98	90	10	
12				44	85	.23		1.61	137.4	101	91		
	ZERO			48					140.105				
	SPAN												
AVERAGE		20.9	0.05	46	85.0		0.507	1.770	39.354	95.8			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP= \_\_\_\_\_ BOTTOM ΔP= \_\_\_\_\_  
 AFTER: TOP ΔP= \_\_\_\_\_ BOTTOM ΔP= \_\_\_\_\_  
 ΔP= \_\_\_\_\_ ΔP= \_\_\_\_\_  
 ΔP= \_\_\_\_\_ ΔP= \_\_\_\_\_

SAMPLE TRAIN LEAK:  
 BEFORE: CRM@ \_\_\_\_\_ IN. HG. 10  
 AFTER: CRM@ \_\_\_\_\_ IN. HG. 15

COMMENTS: \_\_\_\_\_ PURGE \_\_\_\_\_

PLANT: Wabnitz  
 LOCATION: Wabnitz  
 COUNTY: Frederic  
 UNIT: #30 yellow  
 DATE: 11/24/90  
 RUN NO/METHOD: 1/PMD  
 COLD BOX NO.: 3  
 METER BOX NO.: D  
 METER FACTOR: 0.9685  
 PITOT #/FACTOR: #2 0.928  
 PYROMETER #: TI  
 MAGNEHELIC FACTOR: AP 1.008 AH 1.52

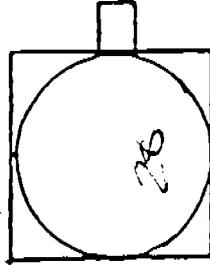
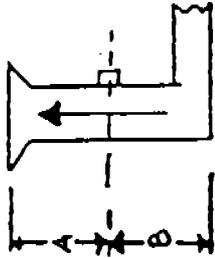


FILTER NO. \_\_\_\_\_  
 AMBIENT TEMP.: 72  
 BAROMETRIC PRESS., IN. HG.: 29.95  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: 0  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: 0.25  
 PROBE HEATER SETTING: 9  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 10.15 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	75	0.34		1.49	142.53	65	65		
2				4	74	0.35		1.53	143.2	65	66		
3				8	75	0.40		1.79	147.6	75	64		
4				12	75	0.44		1.98	150.4	79	69	6	
5				16	75	0.43		1.95	153.3	84	69		
6				20	74	0.45		2.05	156.3	87	71	6	
1				24	74	0.42		1.93	157.3	89	72		
2				28	74	0.40		1.84	161.2	91	74		
3				32	74	0.38		1.76	163.1	93	76		
4				36	74	0.37		1.71	168.0	94	77		
5				40	74	0.36		1.67	170.8	95	77		
6				44	74	0.33		1.53	173.6	95	77		
	ZERO												
	SPAN												
AVERAGE		20.9	0.05	44	74.7		0.627	1.749	31.065	72.9			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP= \_\_\_\_\_ BOTTOM ΔP= \_\_\_\_\_  
 AFTER: TOP ΔP= \_\_\_\_\_ BOTTOM ΔP= \_\_\_\_\_  
 SAMPLE TRAIN LEAK:  
 BEFORE= 1.008 IN. HG. CRM@ 10  
 AFTER= 0.007 IN. HG. CRM@ 8  
 COMMENTS: \_\_\_\_\_ PURGE \_\_\_\_\_

PLANT: Whiting  
 LOCATION: Whiting Rd  
 COUNTY: Greene  
 UNIT: #3 cyclon  
 DATE: 11/29/90  
 RUN NO/METHOD: 2/RM10  
 COLD BOX NO.: 409  
 METER BOX NO.: D  
 METER FACTOR: 0.9685  
 PITOT #/FACTOR: #1, 842.8  
 PYROMETER #: 11  
 MAGNETIC FACTOR: AP 1.008 ΔH .952

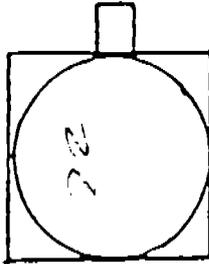
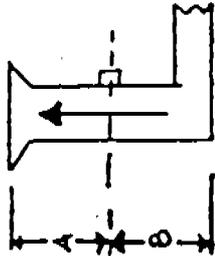


FILTER NO. 72  
 AMBIENT TEMP.: 29.95  
 BARAMETRIC PRESS., IN. HG.: 5.9  
 ASSUMED MOISTURE: 0  
 HEATER BOX SETTING: 5  
 PROBE LENGTH, FT.: 251  
 NOZZLE DIAMETER, IN.: 1.51  
 PROBE HEATER SETTING: 1.51  
 APPROX. WIND VEL., MPH: 1.80  
 SAMPLE BOX TEMP., (F): 2.0  
 STATIC PRESSURE: 1.97 \*H2O  
 OFFSET: 1.07 in. PORT DIA.: 1.93 in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT. / 74.050	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				6	71	.34		1.51	176	68	67	6	
2				4	71	.35		1.56	181.7	72	68	7	
3				8	71	.40		1.80	184.3	76	68	7	
4				12	71	.44		2.0	187.2	80	69	8	
5				16	71	.43		1.97	190.2	84	70	8	
6				20	71	.45		2.07	193.0	86	71	9	
7				24	71	.42		1.93	196.1	88	73	8	
8				28	71	.40		1.85	199.9	89	73	8	
9				32	71	.38		1.76	202.0	90	75	8	
10				36	71	.37		1.71	204.8	91	75	8	
11				40	71	.36		1.67	207.5	91	76	8	
12				44	71	.33		1.53	210.4	92	77	8	
13				48	71				212.32				
AVERAGE			20.9	0.05	48		0.1623	1.780	33.487	77.8			

SAMPLE TRAIN LEAK:  
 BEFORE: 0.002 CRM@ 10 IN. HG.  
 AFTER: 0.008 CRM@ 22 IN. HG.  
 COMMENTS: \_\_\_\_\_  
 PURGE \_\_\_\_\_

PLANT: W. J. ...  
 LOCATION: ...  
 COUNTY: ...  
 UNIT: ...  
 DATE: 11/30/90  
 RUN NO./METHOD: 1/PAUC  
 COLD BOX NO.: 3  
 METER BOX NO.: D  
 METER FACTOR: .9685  
 PITOT #/FACTOR: 2/.8428  
 PYROMETER #: 71  
 MAGNETIC FACTOR: ΔP/CO2 ΔH 0.1485



FILTER NO. \_\_\_\_\_  
 AMBIENT TEMP.: 57  
 BAROMETRIC PRESS., IN. HG.: 30.08  
 ASSUMED MOISTURE: 5%  
 HEATER BOX SETTING: \_\_\_\_\_  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: .251  
 PROBE HEATER SETTING: \_\_\_\_\_  
 APPROX. WIND VEL., MPH: \_\_\_\_\_  
 SAMPLE BOX TEMP., (F): \_\_\_\_\_  
 STATIC PRESSURE: 0.15 \*H2O  
 OFFSET: \_\_\_\_\_ in. PORT DIA.: \_\_\_\_\_ in. (M / F)

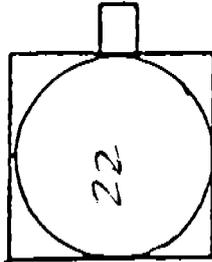
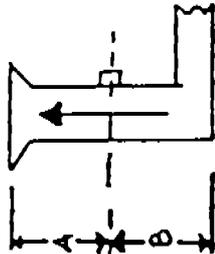
TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	59	.39		1.32	219.587	54	53	4	
2				2	59	.40		1.78	229.9	56	54		
3				4	59	.40		1.19	222.3	60	54		
4				6	59	.41		1.85	223.7	64	55	6	
5				8	59	.40		1.82	225.0	69	58		
6				10	59	.40		1.83	226.5	72	57		
7				12	59	.42		1.93	227.8	74	57		
8				14	59	.39		1.80	229.2	78	54		
9				16	59	.38		1.76	230.7	80	62		
10				18	59	.35		1.63	232.1	82	63		
11				20	59	.27		1.26	233.2	83	64		
12				22	59	.30		1.40	234.5	84	66	4	
12				24					235.6				
AVERAGE													

SAMPLE TRAIN LEAK:

BEFORE: 0.000 IN. HG.  
 AFTER: 0.003 IN. HG.  
 CRM@ 10  
 CRM@ 15

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_  
 BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_  
 COMMENTS: \_\_\_\_\_

PLANT: Wilmington  
 LOCATION: Whiting Rd  
 COUNTY: Greene  
 UNIT: 4th Cyclone  
 DATE: 11/30/91  
 RUN NO/METHOD: 1/PM10 check  
 COLD BOX NO.: 3  
 METER BOX NO.:  
 METER FACTOR:  
 PITOT #/FACTOR:  
 PYROMETER #:  
 MAGNETIC FACTOR:  $\Delta P$   $\Delta H$



FILTER NO.:  
 AMBIENT TEMP.:  
 BARAMETRIC PRESS., IN. HG.:  
 ASSUMED MOISTURE:  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.:  
 NOZZLE DIAMETER, IN.:  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE:  $^{\circ}H_2O$   
 OFFSET: in. PORT DIA.: in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY HEAD IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	59	0.32		1.50	235.6	86	67	4	
2				2	59	0.35		1.65	236.9	87	68		
3				4	59	0.38		1.80	238.2	89	69		
4				6	59	0.39		1.85	239.5	90	70	6	
5				8	59	0.40		1.90	240.8	91	71		
6				10	59	0.41		1.95	242.3	92	72		
7				12	59	0.42		2.00	243.6	93	73	6	
8				14	59	0.41		<del>2.00</del>	245.2	94	73		
9				16	59	0.40		1.91	246.7	95	75		
10				18	59	0.39		1.86	248.1	95	76		
11				20	59	0.37		1.77	249.8	95	77		
12				22	59	0.34		1.63	251.0	96	77		
	ZERO SPAN			24					252.275				
AVERAGE		20.9	0.05	28	59.0		0.615	1.748	32,688	72.0			

PITOT LEAK CHECK:

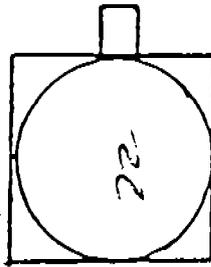
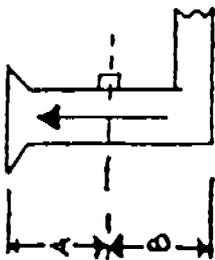
BEFORE: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_ ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_ ΔP = \_\_\_\_\_

SAMPLE TRAIN LEAK:

BEFORE: CRM@ \_\_\_\_\_ IN. HG.  
 AFTER: CRM@ \_\_\_\_\_ IN. HG.

COMMENTS: PURGE \_\_\_\_\_

PLANT: W. J. King  
 LOCATION: W. J. King  
 COUNTY: Prescott  
 UNIT: #4 C. V. 1000  
 DATE: 11/30/90  
 RUN NO. METHOD: 2 / P. 1000  
 COLD BOX NO.: 9  
 METER BOX NO.: D  
 METER FACTOR: 0.5685  
 PITOT #/FACTOR: #2 5828  
 PYROMETER #: 71  
 MAGNETIC FACTOR:  $\Delta P / 100\%$   $\Delta H$  0.652



FILTER NO.: 3008 62  
 AMBIENT TEMP.: 30.5  
 BAROMETRIC PRESS., IN. HG.: 576  
 ASSUMED MOISTURE: 5  
 HEATER BOX SETTING: 5  
 PROBE LENGTH, FT.: 5  
 NOZZLE DIAMETER, IN.: .25  
 PROBE HEATER SETTING: 25  
 APPROX. WIND VEL., MPH: 0.15  
 SAMPLE BOX TEMP., (F): 0.15  
 STATIC PRESSURE: 0.15 \*H2O  
 OFFSET: 0.15 in. PORT DIA.: 0.15 in. (M / F)

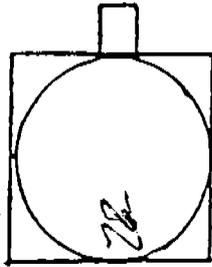
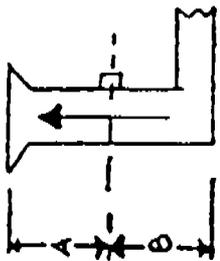
TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF. ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GAS METER		PUMP VACUUM IN. HG.	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
1				0	63	.26		1.18	252.575	72	71		
2				2	63	.32		1.45	251.0	72	71	6	
3				4	64	.36		1.65	255.1	70	71		
4				6	64	.38		1.74	256.4	70	71	7	
5				8	64	.40		1.85	257.8	82	73		
6				10	64	.41		1.90	259.2	85	72	8	
7				12	64	.40		1.86	260.6	87	73		
8				14	64	.41		1.92	262.4	89	73		
9				16	64	.42		1.98	263.6	92	76	8	
10				18	63	.41		1.93	264.9	93	77		
11				20	63	.41		1.94	266.6	95	77	9	
12				22	63	.40		1.89	268.0	96	79		
	ZERO			24					269.9				
	SPAN												
AVERAGE													

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_ ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 ΔP = \_\_\_\_\_ ΔP = \_\_\_\_\_

SAMPLE TRAIN LEAK:  
 BEFORE = 0.007 CRM@ 15 IN. HG.  
 AFTER = 0.000? CRM@ 10 IN. HG.

COMMENTS: \_\_\_\_\_ PURGE \_\_\_\_\_

PLANT: Whiting  
 LOCATION: Whiting Rd  
 COUNTY: Presque  
 UNIT: #4 cyclone  
 DATE: 11/30/90  
 RUN NO/METHOD: 2/PWD 3net 2  
 COLD BOX NO.:  
 METER BOX NO.: D  
 METER FACTOR:  
 PITOT #/ FACTOR:  
 PYROMETER #:  
 MAGNETIC FACTOR:  $\Delta P$   $\Delta H$



FILTER NO.:  
 AMBIENT TEMP.:  
 BAREMETRIC PRESS., IN. HG.:  
 ASSUMED MOISTURE:  
 HEATER BOX SETTING:  
 PROBE LENGTH, FT.:  
 NOZZLE DIAMETER, IN.:  
 PROBE HEATER SETTING:  
 APPROX. WIND VEL., MPH:  
 SAMPLE BOX TEMP., (F):  
 STATIC PRESSURE: in.  $^*H_2O$   
 OFFSET: in. PORT DIA.: in. (M / F)

TRAVERSE POINT NUMBER	DISTANCE INCHES	O2 (%)	CO2 (%)	SAMPLE TIME MIN.	STACK TEMP. (Ts), F	VELOCITY IN. H2O		PRESSURE DIFF ORIFICE METER (ΔH) IN. H2O	DRY GAS SAMPLE VOLUME (VM), FT.	GAS SAMPLE TEMP. @ DRY GASMETER		PUMP VACUUM IN. HG	TEMP. LAST IMPINGER (F)
						ΔP	ΔP			INLET (Tm),	OUTLET (Tm)		
2				0	64	.35		1.66	269.4	98	86		
3				2	64	.36		1.71	270.8	98	81	7	
4				4	65	.40		1.90	272.2	100	82	8	
5				6	65	.41		1.96	273.6	101	82		
6				8	65	.41		1.96	275.0	102	83		
7				10	66	.42		2.01	276.6	103	85	9	
8				12	66	.42		2.01	278.1	104	86		
9				14	66	.41		1.97	279.8	105	87		
10				16	66	.40		1.97	281.0	105	89		
11				18	66	.38		1.83	282.7	106	85		
12				20	66	.36		1.73	284.1	107	90		
				22	66	.37		1.54	285.4	107	90		
				24					286.755				
AVERAGE		19.9	0.05	96	64.6			1.614	274.180	96.7			

PITOT LEAK CHECK:  
 BEFORE: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 AFTER: TOP ΔP = \_\_\_\_\_ BOTTOM ΔP = \_\_\_\_\_  
 COMMENTS: \_\_\_\_\_

SAMPLE TRAIN LEAK:  
 BEFORE: CFM @ \_\_\_\_\_ IN. HG.  
 AFTER: CFM @ \_\_\_\_\_ IN. HG.  
 COMMENTS: PURGE \_\_\_\_\_

**VIII. QUALITY ASSURANCE**

### DRY GAS METER CALIBRATION

Date: 10/3/90

Unit

Ambient Conditions

Temp: 78 F/C

Baro: 29.86 in.Hg

ORIFICE MANOMETER SETTING D,H	GASVOL WET TEST METER V,w	GASVOL DRY GAS METER Vb,	wet test tw	Temperature				Y	DH@Y
				Dry IN	Dry Out	Ave f	Time e min		
				TD, IN	Tdo,	Td,			
0.5	5	743.814	74	78	73	79.75	13.53	0.9681	2.0535
		738.600	74	91	77				
1.0	5	749.390	74	93	80	89.75	9.88	0.9527	2.1501
		744.000	74	102	84				
1.5	5	754.906	74	105	86	96.25	7.97	0.9789	2.0742
		749.605	74	107	87				
2.0	5	760.540	74	107	87	98.25	7.03	0.9741	2.1440
		755.200	74	110	89				
								0.968	2.105

Calibration by: SALLY

Meter Factor: 0.9685

Reviewed by: \_\_\_\_\_

Delta H: 2.1055

Equations:

$$Y = (Vw \cdot Pb) \cdot (Td + 460) / (Vdt - Vdb) + (DelH / 13.6) \cdot (((Wt + wt) / 2) + 460)$$

$$Del H = (0.0317 \cdot Del) \cdot (((((WT + Wt) / 2) + 460) \cdot e) / Vw)^2 / ((Pb \cdot (Td + 460))$$

### DRY GAS METER CALIBRATION

Date: 10/3/90

Unit: E

Ambient Conditions

Temp: 76 F/C

Baro: 29.86 in.Hg

ORIFICE MANOMETER SETTING D,H	GASVOL WET TEST METER V,w	GASVOL DRY GAS METER Vb,	wet test tw	Temperature				Y	DH@Y
				Dry IN	Dry Out	Ave f	Time e min		
				TD, IN	Tdo,	Td,			
0.5	5	207.685	72	77	70	79.75	14.3	0.9587	2.2767
		202.400	72	94	78				
1.0	6	213.415	72	96	80	91.25	10.13	1.1669	1.5537
		208.100	72	105	84				
1.5	5	219.035	72	104	86	97.75	8.43	0.9790	2.2970
		224.920	73	112	90				
2.0	5	219.600	73	117	93	103.00	7.41	0.9879	2.3531
								1.023	2.12

Calibration by: SALLY

Meter Factor: 1.0231

Reviewed by: \_\_\_\_\_

Delta H: 2.1201

Equations:

$$Y = (Vw \cdot Pb) \cdot (Td + 460) / (Vdt - Vdb) + (DelH / 13.6) \cdot (((Wt + wt) / 2) + 460)$$

$$Del H = (0.0317 \cdot Del) \cdot (((((WT + Wt) / 2) + 460) \cdot e) / Vw)^2 / ((Pb \cdot (Td + 460))$$

**PITOT TUBE CALIBRATION RECORD**

Date: 7/5/89

Unit: #2-5'

Ambient Condition

Temp: 83 F/C

Baro: 30.04 in. Hg

Run No.	AP In.H2O Standard	AP IN. H2O Type "S"		Cp (S)	
		A	B	A	B
1	0.25	0.34	0.33	0.8489	0.8617
2	0.49	0.68	0.69	0.8404	0.8343
3	0.93	1.31	1.3	0.8341	0.8373
Average =				0.8411	0.8444
Average Both Side =				0.8428	

Calibrated by: RTR  
 Reviewed by: CDD

Cp(a)-Cp(b) = 0.003

Sa	Sb
0.007	0.015

### THERMO COUPLE CALIBRATION

Date: 11/20/90

Unit: T-1

Point	* Standard Temperature <i>Tstd</i>		Pyrometer Temperature <i>Tpyr</i>		Error % ** $(Tstd - Tpyr) / Tstd$
	deg. F		deg. F		
1 Ambient	69.8		70.8		0.19%
2 Ice	32.0		32.8		0.16%
3 Boil	213.4		214.0		0.09%
4 Oil					0.00%

Std. Corr. Factor 0.986

Calibration by: RTR

\* Standard ID: LABCRAFT #227-694

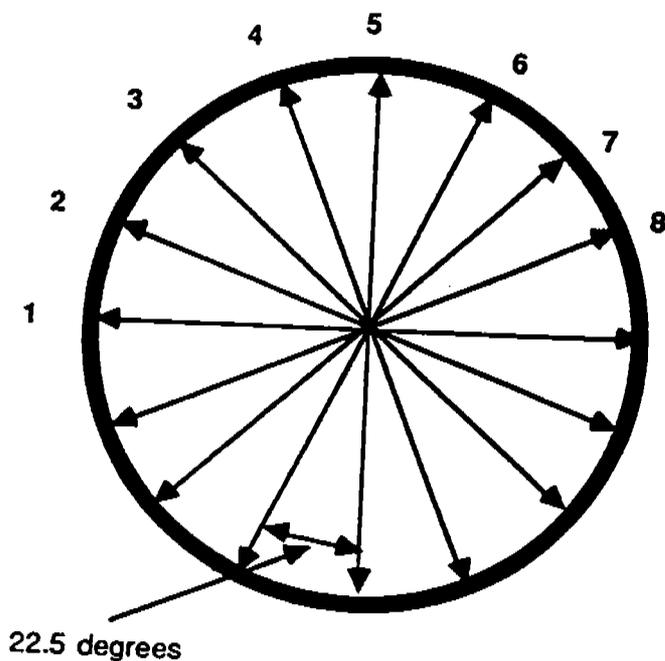
Reviewed by: \_\_\_\_\_

\* \* in deg. K

# Nozzle Calibration

Nozzle I.D. : 23

Date : 7/28/90



Points	
1 -	<u>0.251</u>
2 -	<u>0.251</u>
3 -	<u>0.250</u>
4 -	<u>0.250</u>
5 -	<u>0.250</u>
6 -	<u>0.252</u>
7 -	<u>0.254</u>
8 -	<u>0.251</u>

Average Nozzle Diameter = 0.251

Analyst : RTR

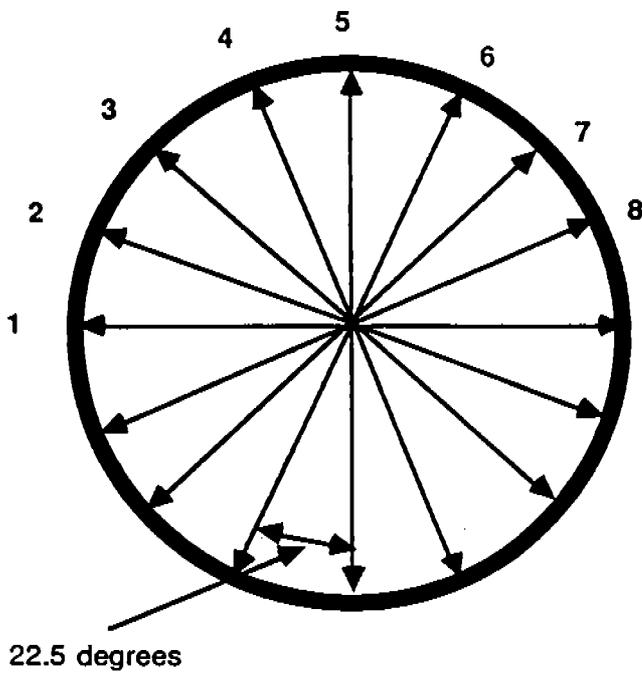
Reviewed :

BTC Environmental, Inc. - 1989

# Nozzle Calibration

Nozzle I.D. :     #35    

Date :     01/08/90    



Points	
1-	<u>0.313</u>
2-	<u>0.313</u>
3-	<u>0.313</u>
4-	<u>0.309</u>
5-	<u>0.309</u>
6-	<u>0.309</u>
7-	<u>0.312</u>
8-	<u>0.312</u>

Average Nozzle Diameter = 0.311

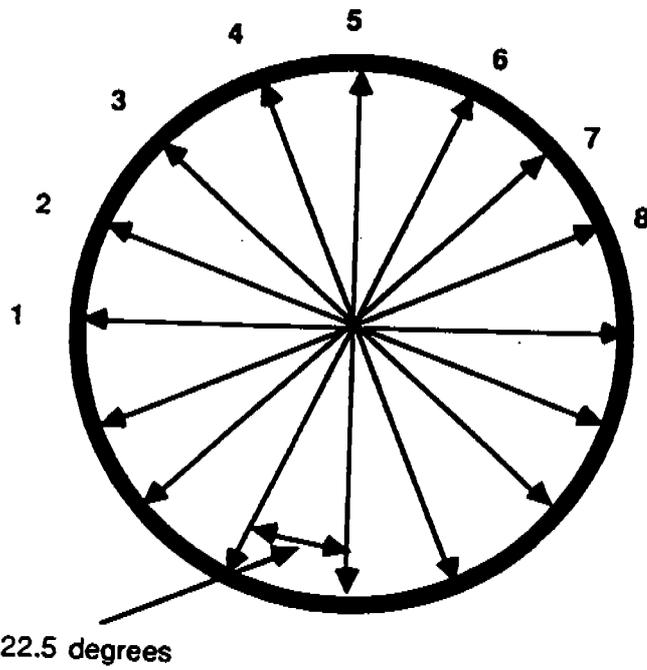
Analyst : BIB

Reviewed :

# Nozzle Calibration

Nozzle I.D. : 28

Date : 7/28/90



Points	
1 -	<u>0.280</u>
2 -	<u>0.280</u>
3 -	<u>0.280</u>
4 -	<u>0.278</u>
5 -	<u>0.278</u>
6 -	<u>0.279</u>
7 -	<u>0.280</u>
8 -	<u>0.280</u>

Average Nozzle Diameter = 0.279

Analyst : RTR

Reviewed :

## MAGNEHELIC CALIBRATION

DATE: 7/27/90  
 GAGE ID # M-11  
 RANGE 0-1.0 in. H2O

SCHEDULED CALIBRATION:  
 SEMI-ANNUAL   
 BI-MONTHLY   
 OTHER

REFERENCE ID # DWYER 0-10 MANO

**LEAK CHECK:**

System:	† Set @ 10 in. H2O	vacuum 10 in. P F	pressure 10 in. P F
Point:	†† Set @ 90 % FS in. H2O	vacuum in. P F	pressure in. P F

Point	Incline Delta P Pinc	Magnehelic Delta P Pmag	% Deviation (Pinc-Pmag)/Pinc x 100
1	0.200	0.20	0.000%
	0.200	0.19	5.000%
	0.200	0.20	0.000%
average	0.200	0.20	** 1.667%
2	0.400	0.40	0.000%
	0.400	0.40	0.000%
	0.400	0.40	0.000%
average	0.400	0.40	** 0.000%
3	0.600	0.60	0.000%
	0.600	0.60	0.000%
	0.600	0.60	0.000%
average	0.600	0.60	** 0.000%
4	0.800	0.80	0.000%
	0.800	0.80	0.000%
	0.800	0.80	0.000%
average	0.800	0.80	** 0.000%
5	1.000	1.00	0.000%
	1.000	1.00	0.000%
	1.000	1.00	0.000%
average	1.000	1.00	** 0.000%

**STANDARD CORRECTION FACTOR**  
 AVERAGE DEVIATION  
 STANDARD DEVIATION  
 95% CONFIDENCE INTERVAL  
 PRECISION( within +/- 3%)

1.003
0.003
0.012
0.031
-1.00

† If pressure or vacuum decreases by more than 1 in. in 5 minutes then remove from service.  
 †† If pressure or vacuum decreases by more than 5% in 5 minutes then remove from service.  
 \*\* These values must be within +/- 5% before the magnehelic can be put into operation.

Calibration by: RTR

Reviewed by: \_\_\_\_\_

### MAGNEHELIC CALIBRATION

DATE: 8/23/89  
 GAGE ID # M-2  
 RANGE 0-2 in. H2O

SCHEDULED CALIBRATION:  
 SEMI-ANNUAL   
 BI-MONTHLY   
 OTHER

REFERENCE  
 ID # #424 0-10

**LEAK CHECK:**

System:	† Set @ 10 in. H2O	vacuum 10 in. P F	pressure 10 in. P F
Point:	†† Set @ 90 % FS in. H2O	vacuum in. P F	pressure in. P F

Point	Incline Delta P <i>Pinc</i>	Magnehelic Delta P <i>Pmag</i>	% Deviation $(Pinc - Pmag) / Pinc \times 100$
1	0.400	0.41	2.500%
	0.400	0.41	2.500%
	0.400	0.41	2.500%
average	<i>0.400</i>	<i>0.41</i>	** 2.500%
2	0.800	0.80	0.000%
	0.800	0.80	0.000%
	0.800	0.80	0.000%
average	<i>0.800</i>	<i>0.80</i>	** 0.000%
3	1.200	1.20	0.000%
	1.200	1.20	0.000%
	1.200	1.20	0.000%
average	<i>1.200</i>	<i>1.20</i>	** 0.000%
4	1.600	1.60	0.000%
	1.600	1.60	0.000%
	1.600	1.60	0.000%
average	<i>1.600</i>	<i>1.60</i>	** 0.000%
5	2.000	2.00	0.000%
	2.000	2.00	0.000%
	2.000	2.00	0.000%
average	<i>2.000</i>	<i>2.00</i>	** 0.000%

**STANDARD CORRECTION FACTOR**

AVERAGE DEVIATION  
 STANDARD DEVIATION  
 95% CONFIDENCE INTERVAL  
 PRECISION( within +/- 3%)

0.995
0.005
0.010
0.025
-0.99

† If pressure or vacuum decreases by more than 1 in. in 5 minutes then remove from service.  
 †† If pressure or vacuum decreases by more than 5% in 5 minutes then remove from service.  
 \*\* These values must be within +/- 5% before the magnehelic can be put into operation.

Calibration by: RTR

Reviewed by: CDD

## MAGNEHELIC CALIBRATION

DATE: 7/27/90  
 GAGE ID # M-12  
 RANGE 0-2 in. H2O

SCHEDULED CALIBRATION:  
 SEMI ANNUAL   
 BI-MONTHLY   
 OTHER

REFERENCE  
 ID # 0-10 DWYER MANO

**LEAK CHECK :**

System:	† Set @ 10 in. H2O	vacuum 10 in. P F	pressure 10 in. P F
Point:	†† Set @ 90 % FS in. H2O	vacuum in. P F	pressure in. P F

Point	Incline Delta P Pinc	Magnehelic Delta P Pmag	% Deviation (Pinc-Pmag)/Pinc x 100
1	0.400	0.45	12.500%
	0.400	0.45	12.500%
	0.400	0.45	12.500%
average	0.40	0.45	** 12.500%
2	0.800	0.85	6.250%
	0.800	0.85	6.250%
	0.800	0.85	6.250%
average	0.80	0.85	** 6.250%
3	1.200	1.23	2.500%
	1.200	1.23	2.500%
	1.200	1.24	3.333%
average	1.20	1.23	** 2.778%
4	1.600	1.62	1.250%
	1.600	1.63	1.875%
	1.600	1.64	2.500%
average	1.60	1.63	** 1.875%
5	2.000	2.05	2.500%
	2.000	2.05	2.500%
	2.000	2.05	2.500%
average	2.00	2.05	** 2.500%

**STANDARD CORRECTION FACTOR**  
 AVERAGE DEVIATION  
 STANDARD DEVIATION  
 95% CONFIDENCE INTERVAL  
 PRECISION( within +/- 3%)

0.952
0.052
0.040
0.099
-0.90

† If pressure or vacuum decreases by more than 1 in. in 5 minutes then remove from service.  
 †† If pressure or vacuum decreases by more than 5% in 5 minutes then remove from service.  
 \*\* These values must be within +/- 5% before the magnehelic can be put into operation.

Calibration by: RTR

Reviewed by: \_\_\_\_\_

**MAGNEHELIC CALIBRATION**

DATE: 7/27/90  
 GAGE ID # M-7  
 RANGE 0-5 in. H20

SCHEDULED CALIBRATION:  
 SEMI ANNUAL   
 BI-MONTHLY   
 OTHER

REFERENCE ID # 0-10 DWYER MANO

**LEAK CHECK :**

System:	† Set @ 10 in. H20	vacuum 10 in. P F	pressure 10 in. P F
Point:	†† Set @ 90 % FS in. H20	vacuum in. P F	pressure in. P F

Point	Incline Delta P Pinc	Magnehelic Delta P Pmag	% Deviation (Pinc-Pmag)/Pinc x 100
1	1.000	0.95	5.000%
	1.000	0.95	5.000%
	1.000	0.95	5.000%
average	1.00	0.95	** 5.000%
2	2.000	2.05	2.500%
	2.000	2.00	0.000%
	2.000	2.00	0.000%
average	2.00	2.02	** 0.833%
3	3.000	3.05	1.667%
	3.000	3.05	1.667%
	3.000	3.05	1.667%
average	3.00	3.05	** 1.667%
4	4.000	4.00	0.000%
	4.000	4.00	0.000%
	4.000	4.00	0.000%
average	4.00	4.00	** 0.000%
5	5.000	4.95	1.000%
	5.000	4.95	1.000%
	5.000	4.95	1.000%
average	5.00	4.95	** 1.000%

**STANDARD CORRECTION FACTOR**  
 AVERAGE DEVIATION  
 STANDARD DEVIATION  
 95% CONFIDENCE INTERVAL  
 PRECISION( within +/- 3%)

1.008
0.017
0.018
0.045
-0.99

† If pressure or vacuum decreases by more than 1 in. in 5 minutes then remove from service.  
 †† If pressure or vacuum decreases by more than 5% in 5 minutes then remove from service.  
 \*\* These values must be within +/- 5% before the magnehelic can be put into operation.

Calibration by: RTR

Reviewed by: \_\_\_\_\_



1536 Eastman Avenue  
Ventura, CA 93003  
(805) 644-1095

BILL TO Company:

Address:

CHAIN OF CUSTODY RECORD

Phone #: \_\_\_\_\_ Contact: \_\_\_\_\_

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS	ANALYSIS	REMARKS	CHECK IF RUSH
AD-188		EUXLEY/WHITNEY					
SAMPLERS: (Signature)							
NO.	DATE	TIME	COM	LAB	SAMPLE I.D.		
1	1/29				Polychloro Ben #1 Probe (175ml)		
2					" " Imps (400ml)	X	
3					" " Filter (D-10)	X	
4					" " PM10-10 (175ml)	X	
5					" " PM10-10 (450ml)	X	
6					" " Filter (117, 118, X)	X	
7					" " Run #2 Probe (175ml)	X	
8					" " Imps (250ml)	X	
9					" " Filter (D-13)	X	
10					" " PM10-10 (100ml)	X	
11					" " PM10-10 (400ml)	X	
12					" " Filter (119, 120, N)	X	
13					Polychloro Ben #1 Probe (100ml)	X	
14					" " Imps (250ml)	X	
15					<del>" " PM10-10 (150ml)</del>		

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature) <i>Sally Walker</i>	Date/Time 12/3/90	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time
		NAME ADDRESS	PHONE NO.

WHITE COPY \_\_\_\_\_ CANARY COPY \_\_\_\_\_ PINK COPY \_\_\_\_\_

1536 Eastman Avenue  
Ventura, CA 93003  
(805) 644-1095

### CHAIN OF CUSTODY RECORD

Phone #: \_\_\_\_\_ Contact: \_\_\_\_\_

NO.	DATE	TIME	G/R	SAMPLE I.D.	NO. OF CONTAINERS	ANALYSIS	REMARKS	CHECK IF RUSH
10-1488 <i>KELLEY/WATNEY</i>								
SAMPLERS: (Signature)								
16	11/29			#2 Sydone Run #1 Filter (0-14)	X			
17				" " PM10-10 (150 ml)	X			
18				" " PM10-10 (275 ml)	X			
19				" Run #2 Probe (200 ml)	X			
20				" " Imps (250 ml)	X			
21				" " Filter (0-15)	X			
22				" " PM10-10 (125 ml)	X			
23				" " PM10-10 (400 ml)	X			
24				" " Filter (23, 24, 25)	X			
25	11/30			#3 Sydone Run #1 Probe (175 ml)	X			
26				" " Imps (250 ml)	X			
27				" " Filter (0-16)	X			
28				" " PM10-10 (100 ml)	X			
29				" " PM10-10 (250 ml)	X			
30				" " Filter (25, 26, 27)	X			

The undersigned hereby acknowledges having received a copy of the Fee Schedule/General Information and Conditions, the provisions of which are a part of this agreement.

Relinquished by: (Signature) <i>Sally Walker</i>	Date/Time 12/3/90 1100	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time
NAME ADDRESS		PHONE NO.	

WHITE COPY \_\_\_\_\_ CANARY COPY \_\_\_\_\_ PINK COPY \_\_\_\_\_  
 WHITE COPY \_\_\_\_\_ CANARY COPY \_\_\_\_\_ PINK COPY \_\_\_\_\_

