Addendum to Guarantee Testing Results from the Greenidge Multi-Pollutant Control Project:

Additional NH₃, NO_x, and CO Testing Results

Topical Report of Work Performed May 30, 2007 - June 21, 2007

Daniel P. Connell James E. Locke

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CONSOL Energy Inc.
Research & Development
4000 Brownsville Road
South Park, PA 15129

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ADDENDUM TO

GUARANTEE TEST REPORT MULTI-POLLUTANT CONTROL PROJECT AES GREENIDGE UNIT 4 DRESDEN, NEW YORK

Results of Ammonia, Oxides of Nitrogen, and Carbon Monoxide Sampling Performed on May 30-June 1, 2007, and Ammonia Sampling Performed on June 20-21, 2007



Source(s):Unit 4 (Boiler 6)Owner:AES GreenidgeAddress:590 Plant Road

Dresden, NY 14441

Test Company : CONSOL Energy Inc.

Research & Development 4000 Brownsville Road South Park, PA 15129-9566

Principal Investigator : Daniel P. Connell

412-854-6559 (phone)

danielconnell@consolenergy.com (e-mail)

Sampling Team Leader : James E. Locke

412-854-6607 (phone)

jimlocke@consolenergy.com (e-mail)

Contract Coordinator : Robert G. Munro

412-854-6620 (phone) 412-854-6613 (fax)

bobmunro@consolenergy.com (e-mail)

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ACRONYMS AND ABBREVIATIONS

ASTM American Society for Testing and Materials

BPEI Babcock Power Environmental Inc.

CAE Clean Air Engineering

CEM continuous emission monitor

CO carbon monoxide

CONSOL R&D CONSOL Energy Inc., Research & Development

CTM Conditional Test Method
DOE U.S. Department of Energy
dscf dry standard cubic foot

EPA U.S. Environmental Protection Agency EPC engineering, procurement, and construction

g grams

HCI hydrogen chloride HF hydrogen fluoride

Hg mercury

HHV higher heating value

H₂SO₄ sulfuric acid

IC ion chromatography

ICP-AES inductively coupled plasma-atomic emission spectrometry

ISE ion selective electrode

L liter
lb pound

LPA large particle ash

MASS Multipoint Automated Sampling System

mg milligram mL milliliter

mmBtu million British thermal units

MW megawatt N normal NH₃ ammonia

NH₃-N ammonia reported as nitrogen

NO_x oxides of nitrogen

O₂ oxygen

pH measurement of acidity or alkalinity of a solution

ppmvd parts per million by volume dry QA/QC quality assurance/quality control

RPD relative percent difference
SCR selective catalytic reduction
SNCR selective non-catalytic reduction

SO₂ sulfur dioxide SO₃ sulfur trioxide U.S. United States

SUMMARY

On March 28-30 and May 1-4, 2007, CONSOL Energy Inc. Research & Development (CONSOL R&D) performed flue gas sampling at AES Greenidge to verify the performance of the multi-pollutant control system recently installed by Babcock Power Environmental Inc. (BPEI) on the 107-MW Unit 4 (Boiler 6). The multi-pollutant control system includes combustion modifications and a hybrid selective non-catalytic reduction (SNCR) / in-duct selective catalytic reduction (SCR) system to reduce NO_x emissions, followed by a Turbosorp® circulating fluidized bed dry scrubber system and baghouse to reduce emissions of SO₂, SO₃, HCl, HF, and particulate matter. Mercury removal is provided via the co-benefits afforded by the in-duct SCR, dry scrubber, and baghouse and by injection of activated carbon upstream of the scrubber, as required. The testing in March and May demonstrated that the multi-pollutant control system attained its performance targets for NO_x emissions, SO₂ removal efficiency, acid gas (SO₃, HCl, and HF) removal efficiency, and mercury removal efficiency. However, the ammonia slip measured between the SCR outlet and air heater inlet was consistently greater than the guarantee of 2 ppmvd @ 3% O₂. As a result, additional testing was performed on May 30-June 1 and on June 20-21, 2007, in conjunction with tuning of the hybrid NO_x control system by BPEI, in an effort to achieve the performance target for ammonia slip. This additional testing occurred after the installation of a large particle ash (LPA) screen and removal system just above the SCR reactor and a fresh SCR catalyst layer in mid-May. This report describes the results of the additional tests.

During the May 30-June 1 sampling period, CONSOL R&D and Clean Air Engineering (CAE) each measured flue gas ammonia concentrations at the air heater inlet, downstream of the in-duct SCR reactor. In addition, CONSOL R&D measured flue gas ammonia concentrations at the economizer outlet, upstream of the SCR reactor, and CAE measured flue gas NO_x and CO concentrations at the sampling grids located at the inlet and outlet of the SCR reactor. During the June 20-21 sampling period, CONSOL R&D measured flue gas ammonia concentrations at the air heater inlet. All ammonia measurements were performed using a modified version of U.S. Environmental Protection Agency (EPA) Conditional Test Method (CTM) 027. The NO_x and CO measurements were performed using U.S. EPA Methods 7E and 10, respectively.

Table 1 summarizes the ammonia concentrations measured at the air heater inlet by CONSOL R&D during the test periods, along with the net unit load and NO_x emission rate observed during those periods. (The NO_x and CO measurements at the SCR inlet and outlet grids and the NH_3 measurements at the economizer outlet were performed primarily to aid BPEI's tuning efforts; these measurements are summarized in the body of the report. The CAE ammonia slip measurements at the air heater inlet were considered to be invalid, per the discussion later in this report). For all three tests on May 31-June 1, the ammonia concentrations measured at the air heater inlet were greater than the performance target of 2 ppmvd @ 3% O_2 . Measured ammonia concentrations decreased throughout the day on June 20, 2007, as BPEI tuned the combustion system and SNCR system. The third test performed on that day indicated

2 ppmvd NH $_3$ @ 3% O $_2$ (to one significant digit) while the Unit 4 NO $_x$ emission rate was <0.10 lb/mmBtu, consistent with the performance target for ammonia slip. The testing on June 21 was performed to support tuning activities focused on establishing a set of acceptable boiler operating conditions for routine operation of the NO $_x$ control system under its permitted high-load NO $_x$ emission rate of 0.15 lb/mmBtu. Hence, NO $_x$ emissions during the NH $_3$ slip tests on June 21 were greater than 0.10 lb/mmBtu.

Table 1. Summary of Ammonia Slip Measured by CONSOL R&D at the Air Heater Inlet on May 31-June 1 and June 20-21, 2007

Test Date & Time (MM/DD/YY: hhmm-hhmm)	Average Net Unit Load, ^a MW _e	Average NO _x Emission Rate, ^a Ib/mmBtu	NH ₃ @ Air Heater Inlet, ppmvd @ 3% O ₂
05/31/07: 1804-1910	97.3	0.103 ^b	> 2.5 ^{c,d}
06/01/07: 1020-1108	100.5	0.098	4.6 ^c
06/01/07: 1205-1252	100.5	0.103	4.3°
06/20/07: 0935-1035	99.5	0.101	5.6 ^e
06/20/07: 1755-1836	95.6	0.100	3.4 ^e
06/20/07: 2002-2047	95.6	0.099	2.4 ^e
06/21/07: 1109-1150	99.4	0.161	2.1 ^e
06/21/07: 1517-1557	99.4	0.138	2.5 ^e

^aCalculated by CONSOL as the arithmetic mean of 1-minute CEM data provided by AES. ^bNO_x emission data were not available for 49% of the 1-minute intervals during the testing period. ^cAverage of results determined by ion chromatography and ion selective electrode. CAE also measured ammonia slip during this period, but results were considered to be invalid. ^dA portion of the sample line rinse was lost during sample recovery. Hence, the actual amount of NH₃ present in the flue gas was greater than the amount determined from the recovered sample. ^eResult determined by ion selective electrode.

BACKGROUND

CONSOL Energy Inc. Research & Development, AES Greenidge LLC, and Babcock Power Environmental Inc. were awarded a cooperative agreement from the U.S. Department of Energy (DOE) to install and test an integrated multi-pollutant control system on the 107-MW AES Greenidge Unit 4. The project seeks to be the first to demonstrate:

• Full-load NO_x emissions of ≤0.10 lb/mmBtu using a hybrid selective non-catalytic reduction / selective catalytic reduction (hybrid SNCR/SCR) system, in combination with low-NO_x combustion technology, on a unit firing coal and biomass

- SO₂ removal of ≥95% using a Turbosorp[®] circulating fluidized bed dry scrubber (including a new baghouse) on a unit firing greater than 2%-sulfur bituminous coal
- Mercury reduction of ≥90% via the co-benefits afforded by the in-duct SCR, Turbosorp[®] scrubber, and baghouse, and by the addition of activated carbon into the Turbosorp[®] system, as required
- Acid gas (SO₃, HCl, HF) removal of ≥95% in the Turbosorp[®] system

The goal of the project is to demonstrate substantial improvements in mercury, SO_3 , and particulate matter control, and substantial reductions in the cost for NO_x and SO_2 control, compared to conventional technologies when applied to the large number of smaller coal-fired generating units in the United States.

On March 28-30 and May 1-4, 2007, CONSOL R&D performed guarantee testing to verify the ability of the multi-pollutant control system to meet the performance targets set forth in the engineering, procurement, and construction (EPC) agreement between AES Greenidge and Babcock Power Environmental Inc. That testing demonstrated that the multi-pollutant control system attained its performance targets for NO_x emissions, SO_2 removal efficiency, acid gas removal efficiency, and mercury removal efficiency. However, the ammonia slip measured between the SCR outlet and air heater inlet was consistently greater than the guarantee of 2 ppmvd @ 3% O_2 . As a result, additional testing was performed on May 30-June 1 and on June 20-21, 2007, in conjunction with tuning of the hybrid NO_x control system by Babcock Power Environmental Inc., in an effort to achieve the performance target for ammonia slip. This additional testing occurred after the installation of a large particle ash screen and removal system just above the SCR reactor and a fresh SCR catalyst layer in mid-May. Described herein are the results of these additional tests and the methods used.

SAMPLING RESULTS

During the May 30-June 1 sampling period, CONSOL R&D and Clean Air Engineering, working under subcontract to CONSOL R&D, each measured flue gas ammonia concentrations at the air heater inlet sampling location. In addition, CONSOL R&D measured flue gas ammonia concentrations at the economizer outlet sampling location, and CAE measured flue gas NO_x and CO concentrations at the permanent sampling grids located at the inlet and outlet of the SCR reactor. During the June 20-21 sampling period, CONSOL R&D measured flue gas ammonia concentrations at the air heater inlet sampling location. (CAE was also on site to perform NO_x and CO grid point sampling under contract to AES Greenidge; results of that sampling are not included in this report). All sampling was performed at a constant sampling rate. The measured results from each sampling period are summarized below. The sampling and analytical methods used to perform the measurements are described in the Experimental section later in this report. All times reported herein are local (i.e., Eastern Daylight) times.

May 30 - June 1 Sampling Period

Clean Air Engineering completed 29 measurement runs using their Multipoint Automated Sampling System (MASS) on May 30–June 1 to simultaneously characterize the NO_x and CO concentration profiles at the inlet and outlet of the SCR reactor. Each 24-minute run included one complete traverse of the SCR inlet and outlet sampling grids. The purpose of most of these runs was to provide near-real-time data to BPEI for use in tuning the combustion and SNCR systems. Hence, the results of each individual run are not summarized here. All of the NO_x and CO measurement results are, however, presented in the CAE report that is included as Appendix A to this report. Moreover, average NO_x and CO concentrations measured by CAE at the SCR inlet and outlet during each of the ammonia slip tests are summarized below as part of the discussion of the results of those tests.

Three ammonia slip tests were completed during the May 30–June 1 sampling period: one test on the evening of May 31 and two tests on June 1. (May 30 and much of May 31 were spent tuning the combustion system and SNCR system to try to achieve NO_x and CO profiles that would be associated with low ammonia slip). summarizes the net unit load and NO_x emission rate recorded by the unit's stack continuous emissions monitor (CEM) during each of the tests. Table 3 summarizes the results of analyses of coal samples collected during each of the two tests on June 1. Tables 4 and 5 summarize the average NO_x and CO concentrations measured by CAE during each of the tests. A more detailed presentation of the NO_x and CO sampling results is provided in the CAE report included as Appendix A to this report. (Each ammonia slip test approximately coincided with two complete traverses of the SCR inlet and outlet sampling grids; the results reported in Tables 4 and 5 for each test are the averages of the values measured during the traverses performed during that test. NO_x and CO concentrations were converted to a standard oxygen basis of 3% using O₂ concentrations measured by CAE at the SCR inlet and outlet grids using EPA Method 3A. NO_x emission rates at the SCR outlet were computed by CONSOL R&D according to the procedures set forth in EPA Method 19, using NO_x and O₂ concentrations measured by CAE at the SCR outlet grid and an O₂-based fuel factor, F_d, of 9780 dscf/mmBtu. During Runs 2 and 3 on June 1, several points at the inlet and outlet MASS sampling grids developed leaks. These points, which are identified in the CAE report in Appendix A, were excluded from the averages presented in Tables 4 and 5).

The NO_x emission rates calculated from the CAE measurements at the SCR outlet grid were consistently biased low relative to the NO_x emission rates reported by the unit's stack CEM. The cause of this discrepancy is unknown. Possible causes include measurement error or flow stratification at the SCR outlet. (All grid point measurements were weighted equally when computing the average NO_x and O_2 concentrations at the SCR outlet. NO_x concentrations are inhomogeneous across the SCR outlet grid; hence, if significant flow stratification existed, the use of unweighted average concentrations could have accounted for the discrepancy between the SCR outlet and stack. Space limitations around the SCR reactor prevented the performance of a manual traverse to determine the velocity profile at the SCR outlet).

Table 2. Summary of AES Greenidge Unit 4 CEM Data during the Ammonia Slip Testing Periods on May 31 and June 1, 2007

Test No.	Date & Time (MM/DD/YY: hhmm-hhmm)	Average Net Unit Load, ^a MW _e	Average NO _x Emission Rate, ^a Ib/mmBtu
Test #1	05/31/07: 1804-1916	97.3	0.103 ^b
Test #2	06/01/07: 1018-1108	100.5	0.098
Test #3	06/01/07: 1205-1252	100.5	0.103

^aCalculated by CONSOL as the arithmetic mean of 1-minute CEM data provided by AES. ^bNO_x emission data were not available for 49% of the 1-minute intervals during the testing period.

Table 3. Coal Sample Analysis Results from June 1, 2007

t-		
Analytical Number	20073004	20073005
Date & Time of Collection	6/1/2007 10:30	6/1/2007 14:00
Total Moisture, %	5.56	5.57
As Determined Moisture, %	1.53	1.52
Volatile Matter, % dry	37.90	37.70
Fixed Carbon, % dry	54.03	54.27
Ash, % dry	8.07	8.03
Carbon, % dry	76.12	76.67
Hydrogen, % dry	4.59	4.56
Nitrogen, % dry	1.40	1.40
Sulfur, % dry	2.67	2.82
Chlorine, % dry	0.080	0.081
HHV, Btu/lb dry	13811	13815
Major Ash Elements, % of ash		
SiO ₂	44.52	44.50
Al_2O_3	22.04	21.56
TiO ₂	0.94	0.94
Fe ₂ O ₃	18.23	19.56
CaO	4.92	5.07
MgO	0.93	0.94
Na ₂ O	0.95	0.92
K₂O	1.66	1.65
P ₂ O ₅	0.27	0.32
SO ₃	5.27	5.37

Table 4. Summary of NO_x Measurements at the SCR Inlet and Outlet during the Ammonia Slip Testing Periods on May 31 and June 1, 2007

		SCR NO _x Data @ 3% O ₂			
Test No.	Date (MM/DD/YY)	Average Concentration at SCR Inlet, ppmvd	Average Concentration at SCR Outlet, ppmvd	Removal, ^a %	SCR Outlet NO _x Emissions, ^b Ib/mmBtu
Test #1	05/31/07	107.0	57.3	46.4	0.078
Test #2°	06/01/07	95.4	57.6	39.6	0.079
Test #3°	06/01/07	93.6	68.5	26.8	0.093

^aPercent removal calculated by CONSOL R&D based on overall mean inlet and outlet concentrations reported by CAE for each test. ^bCalculated by CONSOL R&D using the mean NO_x and O_2 concentrations measured by CAE at the SCR outlet and an O_2 -based F-factor, F_d , of 9780 dscf/mmBtu. ^cSeveral points at the inlet and outlet sampling grids developed leaks during the test; these points, which are identified in Appendix A, were excluded when deriving the data presented here.

Table 5. Summary of CO Measurements at the SCR Inlet and Outlet during the Ammonia Slip Testing Periods on May 31 and June 1, 2007

		SCR Inlet Concentrations @ 3% O ₂			Outlet ions @ 3% O ₂
Test No.	Date (MM/DD/YY)	Average, ppmvd	Maximum Single Point, ppmvd	Average, ppmvd	Maximum Single Point, ppmvd
Test #1	05/31/07	175.4	345.6	155.5	476.8
Test #2ª	06/01/07	102.9	388.3	160.0	619.5
Test #3 ^a	06/01/07	87.8	353.1	96.9	321.9

^aSeveral points at the inlet and outlet sampling grids developed leaks during the test; these points, which are identified in Appendix A, were excluded when deriving the data presented here.

During each ammonia slip test, CONSOL R&D and CAE simultaneously performed ammonia sampling at the air heater inlet through a pair of ports: one each on the southern sides of the eastern and western air heater inlet ducts. During the first half of each test, one group sampled the eastern duct while the other group sampled the western duct. The groups then exchanged positions for the second half of the test, such that each collected a composite sample representing the average concentration in both ducts. The test on May 31 was 60 minutes in duration, and the tests on June 1 were each 40 minutes in duration. Both groups conducted sampling using a modified version of U.S. EPA Conditional Test Method 027 (see the Experimental section for a

detailed description of the sampling methodology), and both analyzed the collected samples for ammonia in the field using an ion selective electrode (ISE) and again in the laboratory using ion chromatography (IC).

Table 6 summarizes the ammonia concentrations measured at the air heater inlet (composite of both ducts) by CONSOL R&D. (NH $_3$ concentrations were converted to a standard oxygen basis of 3% using O $_2$ concentrations measured by CONSOL R&D at the sampling train exhaust using a Teledyne Max V portable electrochemical O $_2$ analyzer). During Test #1 on May 31, a portion of the sample line rinse was spilled during sample recovery. Because much of the sampled NH $_3$ is collected in the sample line, the actual amount of NH $_3$ present in the flue gas was greater than the amount determined from the recovered sample, as indicated in the table. The ammonia concentrations determined by ISE exhibited reasonable agreement with those determined by IC; the relative percent difference (RPD) between the two methods was less than 25% for each of the three tests. For all three tests, ammonia concentrations determined by both IC and ISE were greater than the performance target of 2 ppmvd @ 3% O $_2$.

Table 6. NH₃ Concentrations Measured by CONSOL R&D at the Air Heater Inlet on May 31 and June 1, 2007

		NH ₃ ,	NH ₃ , ppmvd @ 3% O ₂		
Test No.	Date & Time (MM/DD/YY: hhmm-hhmm)	IC	ISE	Average of IC, ISE	RPD ^a (%)
Test #1	05/31/07: 1804-1910	> 2.5 ^b	> 2.5 ^b	> 2.5 ^b	0.0
Test #2	06/01/07: 1020-1108	4.9	4.2	4.6	15
Test #3	06/01/07: 1205-1252	4.7	3.8	4.3	21

 a RPD = 100 x | IC – ISE | / ((IC +ISE)/2) b A portion of the sample line rinse was spilled during sample recovery. Hence, the actual amount of NH $_3$ present in the flue gas was greater than the amount determined from the recovered sample.

Table 7 summarizes the ammonia concentrations measured at the air heater inlet (composite of both ducts) by CAE. (A more detailed presentation of these results is provided in the CAE report that is included as Appendix A to this report). The IC and ISE results determined by CAE exhibited poor agreement. The ISE results were more than a factor of four greater than the IC results for all three tests, and the RPD between the two methods was greater than 120% in all cases. Neither the CAE IC results nor the CAE ISE results agreed well with the CONSOL R&D IC and ISE results. Some disparity between the CONSOL R&D and CAE measurements may be expected to result from random error and from minor methodological differences, including the fact that the groups sampled the eastern and western ducts at different points in time and that CONSOL R&D used a slightly longer probe than CAE, allowing CONSOL R&D to extract samples from deeper points in the duct (closer to the center)

than CAE. However, the large unexplained disparity between the CAE IC and ISE results, which bracket the CONSOL R&D IC and ISE results, call the validity of these CAE results into question. The CAE report (Appendix A) identifies exceptions to QA/QC guidelines, including the guidelines for sample hold time and sample storage temperature, that might have contributed to the discrepancies among the results. Because of these exceptions and the inconsistency between the ISE and IC results, the CAE ammonia slip measurements from May 31 and June 1 are considered to be invalid.

Table 7. NH₃ Concentrations Measured by CAE at the Air Heater Inlet on May 31 and June 1, 2007

		NH ₃ ,	NH ₃ , ppmvd @ 3% O ₂		
Test No.	Date & Time (MM/DD/YY: hhmm-hhmm)	IC	ISE	Average of IC, ISE	RPD ^a (%)
Test #1	05/31/07: 1804-1914	1.39	6.20	3.80	127
Test #2	06/01/07: 1020-1107	1.98	8.11	5.05	122
Test #3	06/01/07: 1205-1252	2.39	10.9	6.65	128

 $^{^{}a}RPD = 100 \times | IC - ISE | / ((IC + ISE)/2)$

In addition to the ammonia measurements performed at the air heater inlet, CONSOL R&D performed ammonia measurements during each of the three tests at the economizer outlet, upstream of the in-duct SCR, static mixers, and LPA screen. During each test, a composite sample was drawn from four ports in the economizer outlet duct; two of these ports were located on the eastern wall of the duct, and two were located on the western wall. Again, sampling was performed using a modified version of U.S. EPA CTM 027. As discussed in the Experimental section, support beams located inside the duct at the same level as the ports prevented the completion of a full traverse of the duct. Hence, the measured ammonia concentrations may not be representative of the average concentrations across the entire cross section of the duct. Table 8 summarizes the average ammonia concentrations measured at the economizer outlet during each of the tests on May 31 and June 1. concentrations were converted to a standard oxygen basis of 3% using O₂ concentrations measured by CONSOL R&D at the sampling train exhaust using a Teledyne Max V portable electrochemical O₂ analyzer). As with the samples collected at the air heater inlet, the samples collected at the economizer outlet were analyzed by both ISE and IC. The results determined by the two methods showed reasonable agreement; the inter-method RPD was less than 10% for all three runs.

Table 8. NH₃ Concentrations Measured by CONSOL R&D at the Economizer Outlet on May 31 and June 1, 2007

		NH ₃ ,	NH ₃ , ppmvd @ 3% O ₂		
Test No.	Date & Time (MM/DD/YY: hhmm-hhmm)	IC	ISE	Average of IC, ISE	RPD ^a (%)
Test #1	05/31/07: 1804-1916	74.9	67.9	71.4	9.8
Test #2	06/01/07: 1018-1104	85.2	80.4	82.8	5.8
Test #3	06/01/07: 1205-1250	71.9	66.6	69.3	7.7

^aRPD = 100 x | IC - ISE | / ((IC +ISE)/2)

June 20 - June 21 Sampling Period

CONSOL R&D conducted additional ammonia slip testing at the air heater inlet sampling location on June 20 and 21, 2007. Three tests were completed on June 20, and two tests were completed on June 21. Table 9 summarizes the average net unit load and NO_x emission rate recorded by the unit's stack CEM during each of the tests. Table 10 summarizes the chemical analysis results for a coal sample collected during the testing on June 20.

Table 9. Summary of AES Greenidge Unit 4 CEM Data during the Ammonia Slip Testing Periods on June 20 and 21, 2007

Test No.	Date & Time (MM/DD/YY: hhmm-hhmm)	Average Net Unit Load, ^a MW _e	Average NO _x Emission Rate, ^a Ib/mmBtu
Test #1	06/20/07: 0935-1035	99.5	0.101
Test #2	06/20/07: 1755-1836	95.6	0.100
Test #3	06/20/07: 2002-2047	95.6	0.099
Test #4	06/21/07: 1109-1150	99.4	0.161
Test #5	06/21/07: 1517-1557	99.4	0.138

^aCalculated by CONSOL as the arithmetic mean of 1-minute CEM data provided by AES.

Table 10. Coal Sample Analysis Results from June 20, 2007

Analytical Number	20073422
Date & Time of Collection	6/20/2007
Total Moisture, %	4.28
As Determined Moisture, %	1.32
Volatile Matter, % dry	36.92
Fixed Carbon, % dry	54.51
Ash, % dry	8.57
Carbon, % dry	71.16
Hydrogen, % dry	5.43
Nitrogen, % dry	1.27
Sulfur, % dry	2.50
Chlorine, % dry	0.093
HHV, Btu/lb dry	13851
Major Ash Elements, % of ash	
SiO ₂	47.71
Al ₂ O ₃	23.32
TiO ₂	1.04
Fe ₂ O ₃	15.98
CaO	4.04
MgO	0.97
Na ₂ O	1.04
K₂O	1.86
P ₂ O ₅	0.48
SO ₃	4.07

As with the tests performed on May 31–June 1, sampling was conducted using a modified version of U.S. EPA Conditional Test Method 027 (see the Experimental section for method details). However, for the tests on June 20 and June 21, the eastern and western air heater inlet ducts were sampled independently using separate trains for the full duration of each test, thereby generating data regarding the distribution of ammonia between the two ducts. The collected samples were analyzed for ammonia in the field using ISE. (AES Greenidge, Babcock Power Environmental, and CONSOL R&D mutually agreed to forego follow-up analysis by IC).

Table 11 summarizes the ammonia concentrations measured at the air heater inlet on June 20 and 21. (NH $_3$ concentrations were converted to a standard oxygen basis of 3% using O $_2$ concentrations measured by CONSOL R&D at the sampling train exhaust using a Teledyne Max V portable electrochemical O $_2$ analyzer). All tests were 40 minutes in duration, except where noted. Measured ammonia concentrations decreased throughout the day on June 20, 2007, as BPEI tuned the combustion system and SNCR system. The third test performed on that day indicated 2 ppmvd

NH $_3$ @ 3% O $_2$ (to one significant digit) while the Unit 4 NO $_x$ emission rate was <0.10 lb/mmBtu, consistent with the performance target for ammonia slip. The testing on June 21 was performed to support tuning activities focused on establishing a set of acceptable boiler operating conditions for routine operation of the NO $_x$ control system under its permitted high-load NO $_x$ emission rate of 0.15 lb/mmBtu. Hence, NO $_x$ emissions during the NH $_3$ slip tests on June 21 were greater than 0.10 lb/mmBtu. The average ammonia slip measured at the air heater inlet during the two tests on June 21 was 2.3 ppmvd @ 3% O $_2$.

Table 11. NH₃ Concentrations Measured by CONSOL R&D at the Air Heater Inlet on June 20 and June 21, 2007

	Date & Time	NH ₃ , ppmvd @ 3% O ₂			
Test No.	(MM/DD/YY: hhmm-hhmm)	East Duct	West Duct	Average	
Test #1	06/20/07: 0935-1035	3.4	7.8 ^a	5.6	
Test #2	06/20/07: 1755-1836	3.9	2.9	3.4	
Test #3	06/20/07: 2002-2047	1.6	3.1	2.4	
Test #4	06/21/07: 1109-1150	1.3	3.0	2.1	
Test #5	06/21/07: 1517-1557	1.6	3.4	2.5	

^aSampling was conducted for 50 minutes. All other tests were 40 minutes in duration.

EXPERIMENTAL

Sampling Locations

Figure 1 presents a schematic showing the locations where flue gas sampling was conducted at AES Greenidge on May 31-June 1 and June 20-21, 2007. These sampling locations are described below.

Economizer Outlet

NH₃ tests were conducted at the economizer outlet on May 31–June 1. For each test, a composite sample was extracted from four, four-inch ports located downstream of the economizer but upstream of the in-duct SCR catalyst, static mixers, and large particle ash screen. Two of these ports (labeled E-1 and E-3) are located on the eastern wall of the economizer outlet duct, and the other two (labeled W-1 and W-3) are located on the western wall of the duct. Figure 2 presents photographs showing the four ports. During the 60-minute ammonia slip test on May 31, each of these ports was sampled for 15 minutes. During the 40-minute ammonia slip tests on June 1, each port was sampled for 10 minutes. On both the eastern and western sides of the

economizer outlet, a support beam level with the sampling ports is located inside the duct at a depth of several feet. These support beams prevented the performance of an isokinetic traverse of the economizer outlet duct. Instead, sampling through each port was conducted at a constant sampling rate at the single, deepest point that could be reached using a 10-foot probe. (In some instances, the probe was inserted at an angle to allow it to pass under the support beam).

SCR Inlet

 NO_x and CO tests were conducted at the SCR inlet on May 30–June 1. The eastern wall of the SCR inlet duct is outfitted with four, four-inch flange ports, each of which contains six permanent sampling tubes. The six tubes installed through each of the four ports terminate at different depths in the duct, creating a 24-point grid of sample points covering the cross section of the duct. Clean Air Engineering performed NO_x and CO testing using an automated sampling system that sequentially extracted samples from the grid points. Each of the 24 grid points was sampled for a one-minute interval during each 24-minute test. A diagram showing the locations of the SCR inlet grid sampling points is provided in the CAE report that is included as Appendix A to this report.

SCR Outlet

 NO_x and CO tests were conducted at the SCR outlet on May 30–June 1. As with the SCR inlet duct, the eastern wall of the SCR outlet duct is outfitted with four, four-inch flange ports, each of which contains six permanent sampling tubes. The six tubes installed through each of the four ports terminate at different depths in the duct, creating a 24-point grid of sample points covering the cross section of the duct. Clean Air Engineering performed NO_x and CO testing using an automated sampling system that sequentially extracted samples from the grid points. Each of the 24 grid points was sampled for a one-minute interval during each 24-minute test. A diagram showing the locations of the SCR outlet grid sampling points is provided in the CAE report that is included as Appendix A to this report.

Air Heater Inlet

Ammonia sampling at the air heater inlet was conducted through two ports located immediately upstream of the unit's two air heaters. One port was located at approximately the center (horizontal dimension) of the south wall of the eastern air heater inlet duct, and the other port was located at approximately the center of the south wall of the western air heater inlet duct.

During each ammonia slip test on May 31 and June 1, CONSOL R&D and Clean Air Engineering simultaneously performed ammonia sampling through these ports. During the first half of each test, one group sampled the eastern duct while the other group sampled the western duct. The groups then exchanged positions for the second half of the test, such that each collected a composite sample representing the average concentration in both ducts. Both groups drew samples at a constant rate from a single point located near the center of each duct. The test on May 31 was 60 minutes in duration, and the tests on June 1 were each 40 minutes in duration.

During each ammonia slip test on June 20 and 21, CONSOL R&D used two sampling trains to simultaneously extract separate samples from the eastern and western air heater inlet ducts. Each sample was drawn at a constant rate from a single point located near the center of the duct. With the exception of the first test in the western duct, which lasted 50 minutes, all of the tests on June 20 and 21 were 40 minutes in duration. Figure 3 presents a photograph of the air heater inlet sampling location.

Flue Gas Measurements

Oxides of Nitrogen

All NO_x measurements were performed by Clean Air Engineering using U.S. EPA Method 7E, modified to incorporate the use of CAE's Multipoint Automated Sampling System. A complete description of the methodology is provided in the CAE report that is included as Appendix A to this report.

Carbon Monoxide

All CO measurements were performed by Clean Air Engineering using U.S. EPA Method 10, modified to incorporate the use of CAE's Multipoint Automated Sampling System. A complete description of the methodology is provided in the CAE report that is included as Appendix A to this report.

Ammonia

CONSOL R&D

CONSOL R&D performed ammonia sampling using a modified version of U.S. EPA Conditional Test Method 027. Because of space constraints at the sampling locations, complete isokinetic traverses could not be completed as specified in the method (as discussed above, all sampling was conducted at a constant sampling rate), and a heated Teflon sample line was required to connect the sampling probe to the impingers. Given the presence of SO_2 and SO_3 in the flue gas and the temperature of the heated line (~250 $^{\circ}$ F), some of the collected ammonia was expected to condense out of the sample stream as ammonium bisulfate in the Teflon line, before reaching the impingers. Hence, the contents of line were collected by rinsing with deionized water, and this line rinse was analyzed to account for the ammonia collected there. The sampling procedure is described in more detail below.

Samples were collected by pulling flue gas through an in-stack filter assembly containing a quartz fiber filter and a temperature-controlled quartz-lined probe that was heated to a temperature of approximately 250 °F. Upon exiting the probe, the flue gas passed through a heated Teflon sample line (maintained at ~250 °F) to the impinger train, where it flowed through a series of chilled impingers. The first two impingers were Greenburg-Smith design, each containing 100 mL of a 0.1 normal (N) sulfuric acid (H_2SO_4) solution. The third impinger, also containing 0.1 N H_2SO_4 , was a Greenburg-Smith with the tip removed and was used to evaluate NH₃ breakthrough. The final impinger, a Greenburg-Smith without the tip, was filled with approximately 200 g of silica desiccant for moisture removal. After exiting the impingers, the gas

sample passed through a dry test meter where its volume was measured. The O_2 concentration in the gas exiting the dry test meter was monitored using a Teledyne Max V portable electrochemical O_2 analyzer.

Prior to sampling, the system was leak checked under a vacuum of approximately 10" Hg. The sample probe was placed at the proper location in the sample port; the sample port opening was sealed, and gas was sampled for 40-60 minutes. The following data were recorded: (1) starting gas volume, (2) interval gas volume, (3) final gas volume, (4) probe temperature, (5) heated line temperature, (6) meter differential pressure setting, (7) dry test meter temperature, (8) system vacuum, (9) exit gas O_2 concentration, (10) barometric pressure, and (11) sampling time. Copies of the field data sheets are provided in Appendix B. After sampling, the probe was removed from the duct and leak checked under a vacuum equal to or greater than the highest vacuum observed during testing, and the train components were disassembled for sample recovery. The sample train components were recovered in the following manner:

<u>Sample Probe and In-Stack Filter Assembly</u> - The quartz probe liner was rinsed with deionized water, and the rinse was collected in an approved sample container. The filter was collected, but not analyzed, and the filter assembly was cleaned with deionized water. (The filter assembly rinse was not recovered). The probe rinse was diluted to a known volume and refrigerated until analysis.

<u>Heated line</u> - The heated Teflon line was rinsed with deionized water, and the rinse was collected in an approved sample container. The rinse was then diluted to a known volume and refrigerated until analysis.

<u>Impingers</u> - The contents of the first three impingers and connecting glassware (including rinses of these sample train components with deionized water) were collected in approved sample containers. These samples were then diluted to known volumes and refrigerated until analysis.

All samples were analyzed in the field for ammonium ion by ion selective electrode, per the request of AES and Babcock Power Environmental Inc. (ISE is not specified in EPA CTM 027). The ISE analyses were performed in accordance with Standard Method 4500-NH_3 D, using a Thermo Scientific Orion Model 95-12 ammonia gassensing ion specific electrode coupled with an Oakton model pH 2100 pH/ion meter.

In addition, all samples collected on May 31-June 1 were analyzed for ammonium ion by ion chromatography per CTM 027.

For both the ISE and the IC analyses, the concentration of ammonia in the flue gas was calculated based on the mass of ammonium ion collected (sum of masses determined in the probe, heated line, and impingers) and the volume of flue gas sampled during the test.

Clean Air Engineering

Clean Air Engineering performed ammonia sampling using a modified version of U.S. EPA Conditional Test Method 027. Ammonia concentrations in the collected samples were determined by ion selective electrode in the field and by ion chromatography in the laboratory. A complete description of the methodology is provided in the CAE report that is included as Appendix A to this report.

Coal Sample Analyses

Coal samples were analyzed using the following methods:

ASTM D 2013 Preparing Coal Samples for Analysis. This standard practice covers the reduction and division of gross or divided samples up to and including the individual portions used for laboratory analysis.

ASTM D 3302 Standard Test Method for Total Moisture in Coal. All of the moisture in and on a sample of coal is determined based on the loss of weight in a coal sample in an air atmosphere under rigidly controlled conditions of temperature, time, and air flow.

ASTM D 5142 Proximate Analysis of the Analysis Sample of Coal and Coke by Instrumental Procedures. Moisture, volatile matter and ash are determined sequentially in a single instrumental procedure by establishing the loss in mass of the analysis specimen when heated under rigidly controlled conditions of temperature, time, atmosphere, and specimen mass.

ASTM D 5373 Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal and Coke. Carbon, Hydrogen, and Nitrogen are determined concurrently in a single instrumental procedure. The conversion of the subject materials in each sample occurs during combustion of the sample at an elevated temperature in an atmosphere of purified oxygen.

ASTM D 4239 Sulfur in the Analysis Sample of Coal and Coke Using High-Temperature Combustion and Infrared Absorption. The test specimen is heated in a tube furnace in a stream of oxygen to oxidize the sulfur to sulfur dioxide. The gas stream containing the sulfur dioxide is passed through a cell where it is measured at a precise wavelength by an infrared absorption detector.

ASTM D 5865 Gross Calorific Value of Coal and Coke. A weighed sample of coal is burned under controlled conditions in an oxygen bomb calorimeter. The higher heating value is calculated from the temperature rise of the water in the calorimeter vessel and the effective heat capacity of the system. Corrections are made for the heat released by the ignition of the fuse and the thermochemical reactions forming nitric and sulfuric acids.

ASTM D 6721 Determination of Chlorine by Oxidative Hydrolysis Microcoulometry. A weighed sample is combusted with tungsten accelerator in a humidified oxygen gas flow, at 900 °C. Halogens are oxidized and converted to hydrogenated halides, which are flushed into a titration cell where they accumulate. Chlorine is converted to hydrochloric acid. Once the chloride is captured in the electrolyte of the titration cell, it can be quantitatively determined by microcoulometry.

ASTM D 6349 Determination of Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma-Atomic Emission Spectrometry. The sample to be analyzed is ashed under standard conditions and ignited to a constant weight. The ash is digested in a mixture of hydrofluoric, nitric, and hydrochloric acids. The solution is then analyzed by ICP-AES, in which characteristic line emission spectra are produced by a radio-frequency inductively coupled plasma. The intensity of these emissions is proportional to the concentration of analyte in the sample.

QUALITY ASSURANCE AND QUALITY CONTROL

Test Equipment

The CONSOL field sampling team uses standard EPA-type sampling equipment. Most of the equipment was obtained from Thermo-Andersen (formerly known as Andersen Instruments, Graseby-Nutech, and Nutech) and conforms to all applicable test codes. All sampling trains were leak checked prior to each test and again at the end of each test.

A Teledyne Max V portable gas analyzer was used for determining flue gas composition at the sample train discharge. The meter operator uses the readings to assess the operation of the sampling train and the unit operation. Past experience has indicated that the accuracy of the oxygen determination by this analyzer is equal to or better than that of a manual Orsat analyzer.

The test equipment used by Clean Air Engineering is described in the CAE report that is included as Appendix A to this report.

Oxides of Nitrogen Measurements

Quality assurance / quality control information for the NO_x measurements is provided in the Clean Air Engineering report that is included as Appendix A to this report.

Carbon Monoxide Measurements

Quality assurance / quality control information for the CO measurements is provided in the Clean Air Engineering report that is included as Appendix A to this report.

Ammonia Measurements

CONSOL R&D

For the ISE analyses, at the beginning of each analytical day, fresh calibration standards with concentrations of 0.1, 1.0, 10, and 100 mg/L NH $_3$ -N were prepared. These were used to develop a standard semilogarithmic curve relating concentrations of NH $_3$ -N to the ion meter's millivolt readings. Blank samples of the deionized water and 0.1 N H $_2$ SO $_4$ reagents used for sample recovery were run to confirm that they were not contaminated.

For the ion chromatography analyses, although not required by method, samples were run in duplicate. The average result for each sample was reported. In all cases, the duplicate results had a relative percent difference of ≤10%. An independent quality control standard with a concentration of approximately the midpoint of the calibration curve range was run immediately after calibration and after every 10 samples. In all cases, recovery of the quality control standard was between 90% and 110%. One sample per batch was spiked at 2 mg/L NH₃-N to assess any possible matrix issues; none were discovered. Blank samples of the deionized water and 0.1 N H₂SO₄ reagents used for sample recovery were also run to confirm that they were not contaminated.

In addition to the standard QA/QC procedures specified in CTM 027, blank samples were obtained after one of the tests on June 1 and after one of the tests on June 20 by performing a second rinsing of the probe and line that were used for sampling at the air heater inlet. This was done to ensure that: (1) the initial rinses succeeded in recovering all of the ammonia collected in the probe and line, and (2) there was no residual ammonia from the test that could affect the results of a subsequent test. The blank rinses from June 1 were analyzed by ISE and IC, and the blank rinses from June 20 were analyzed by ISE. The ammonium concentrations in the probe rinse blanks were less than or equal to the ammonium concentrations in the deionized water blanks, and the amount of ammonium recovered in the line rinse blanks was ≤3% of the amount recovered in the original line rinses. Moreover, during the May 31-June 1 testing period, the impingers from a blank CTM 027 train were recovered in the field and analyzed for ammonium; ammonium concentrations in all three field blank impingers were less than the IC limit of detection (0.1 mg/L NH₃-N).

Clean Air Engineering

Quality assurance / quality control information for the NH₃ measurements made by Clean Air Engineering is provided in the CAE report that is included as Appendix A to this report.

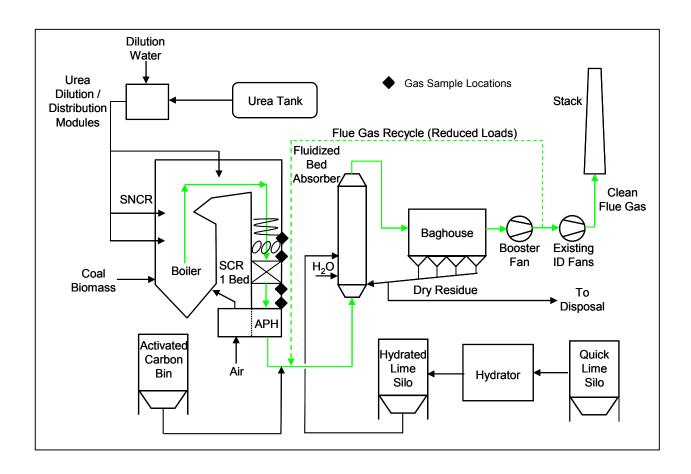


Figure 1. Sampling locations



Figure 2. Economizer outlet sampling ports

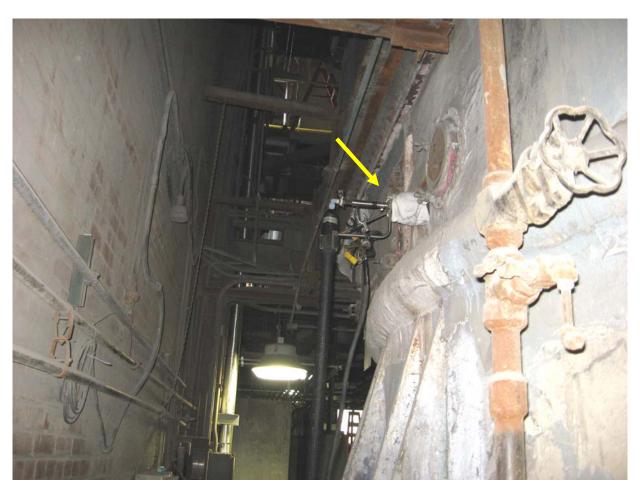


Figure 3. Air heater inlet sampling location

APPENDIX A
Clean Air Engineering Report (NOx, CO, and NH₃ Sampling)



CONSOL Energy, Inc. 1800 Washington Road Pittsburgh, Pennsylvania 15241

REPORT ON POLLUTANT EMISSION CHARACTERIZATION

Performed for:
CONSOL ENERGY, INC.
AIR HEATER INLET AND
UNIT 4 SCR INLET & OUTLET
AES GREENIDGE STATION
DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247 Revision 0: September 7, 2007 Revision 1: November 16, 2007

To the best of our knowledge, the data presented in this report are accurate, complete, error free, legible and representative of the actual emissions during the test program.

Submitted by,

Dick Dreska Project Manager ddreska@cleanair.com (800) 632-1619 ext. 246 Reviewed by,

Robert T. Doran Eastern Engineering Group Leader rdoran@cleanair.com (800) 632-1619 ext. 229 CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642

CleanAir Project No: 10247

REVISION HISTORY

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REPORT ON POLLUTANT EMISSION CHARACTERIZATION

Revision History

Revision No:	Date	Pages	Pages Comments Revision 1 version of original R0 document.	
R1	11/16/07			
R0	0 09/07/07 All Final version of original version or original version of original version or original version versi		Final version of original document.	

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CleanAir.

CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247

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CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247

1-1

PROJECT OVERVIEW

CONSOL Energy, Inc. (CONSOL) contracted Clean Air Engineering (CleanAir) to perform emissions measurements at the AES Greenidge Station located in Dresden, New York in order to characterize pollutant concentration profiles following the installation of a mesh grid to remove popcorn ash buildup in the process.

All testing was performed in accordance with regulations set forth by the United States Environmental Protection Agency (USEPA).

The test parameters included the following pollutants:

- ammonia (NH₃)
- nitrogen oxide (NO_x)
- carbon monoxide (CO)
- flue gas composition (e.g., O₂, CO₂)

The testing took place at the Unit 4 Air Heater Inlet and the Unit 4 Selective Catalytic Reduction (SCR) system (Inlet and Outlet) on May 30 through June 1, 2007. Coordinating the field testing were:

J. Locke – CONSOL Energy
D. Dreska – Clean Air Engineering

Table 1-1 outlines the schedule adhered to during the test program. Table 1-2 summarizes the results of the test program. A more detailed presentation of the test conditions and results of analysis are shown in the Tables and Figures on pages 2-1 through 2-20.

Table 1-1: Schedule of Activities

Run					Start	End
Number	Location	Method	Analyte	Date	Time	Time
1	Unit 4 Air Heater Inlet	CTM-027	Ammonia	05/31/07	18:04	19:14
2	Unit 4 Air Heater Inlet	CTM-027	Ammonia	06/01/07	10:20	11:07
3	Unit 4 Air Heater Inlet	CTM-027	Ammonia	06/01/07	12:05	12:52
As Found	SCR Inlet/Outlet	MASS	O ₂ , CO ₂ , NO _X , CO	05/30/07	11:12	11:35
Final Tuning	SCR Inlet/Outlet	MASS	O ₂ , CO ₂ , NO _X , CO	05/31/07	17:36	17:59
1	SCR Inlet/Outlet	MASS	O ₂ , CO ₂ , NO _X , CO	05/31/07	18:00	19:11
2	SCR Inlet/Outlet	MASS	O ₂ , CO ₂ , NO _X , CO	06/01/07	10:24	11:11
3	SCR Inlet/Outlet	MASS	O2, CO2, NOX, CO	06/01/07	12:00	12:47

CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247

PROJECT OVERVIEW

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Table 1-2:
Summary of Test Results

Source	Sampling	Average
Constituent	Method	Emission ¹
Unit 4 Air Heater Inlet		
NH ₃ (ppm @3% O ₂)	CTM-027	1.92
Unit 4 SCR Inlet		
NO_x (ppmdv @3% O_2)	EPA M7E	98.7
CO (ppmdv @3% O ₂)	EPA M10	122.3
O ₂ (% dv)	EPA M3A	4.4
CO ₂ (% dv)	EPA M3A	15.3
Unit 4 SCR Outlet		
NO_x (ppmdv @3% O_2)	EPA M7E	60.5
NO _x Removal Efficiency (%)	EPA M7E	41.4
CO (ppmdv @3% O ₂)	EPA M10	140.5
O ₂ (% dv)	EPA M3A	4.7
CO ₂ (% dv)	EPA M3A	14.6

¹ CEMs average emissions are calculated using data collected during the three ammonia runs.

DISCUSSION OF TEST PROGRAM

Unit 4 Air Heater Inlet - NH₃ Concentration Testing

Testing for ammonia concentration at the air heater inlet was performed using Conditional Test Method 027 (CTM-027) procedures. Sampling was performed in the available sample ports following the SCR Outlet location.

The allowable clearance outside the test ports prevented the test crew from using the heated probes initially planned for the project. Therefore, the sampling point was approximately 1 foot into the gas stream and the glass liner support was modified unheated pipe.

CleanAir performed on-site ammonia analysis using an ion specific electrode (ISE) to evaluate the data obtained. The samples were also analyzed later by ion chromatography (IC) performed offsite at the Clean Air Engineering laboratory located in Palatine, Illinois. A comparison of the results in shown on Table 2-1 page 2-1.

CONSOL ENERGY, INC. DRESDEN, NEW YORK Client Reference No: 4700146642 CleanAir Project No: 10247

PROJECT OVERVIEW

DISCUSSION OF TEST PROGRAM (CONTINUED)

Unit 4 Air Heater Inlet – NH₃ Concentration Testing (Continued)

There was a large discrepancy between the results of the two analytical methods. The IC results were on average 4 times lower than the on-site ISE results. Several other OA/OC items were noted between the two analytical methods.

- 1. The samples were slightly outside the hold time stated in CTM-027 for the IC analysis by 5-6 days.
- 2. The samples were not kept at 4°C per CTM-027. There is some speculation that this is not a factor so long as the acidity of the sample is maintained.
- 3. The ISE is temperature sensitive. It is not clear if the ISE equipment performed an automatic temperature correction. A 1°C difference in temperature will give a rise to about 2% measurement error according to electrode manufacturer's instructions. ISE analysis notes show sample temperatures ranging from 69-84°F. This would be an error range of 17%.
- 4. The ISE ammonia standard (1,000ppm+/-5ppm) for developing the ISE calibration curve was expired by a few months but otherwise new/unopened.
- 5. The ISE curve was developed for 0-100mg/L. The IC curve was 0-10mg/L
- 6. The IC QA/QC steps were much more rigorous then that used for the ISE (see Appendix G for copies of both the IC and ISE raw data).

In both cases nearly all (>90%) of the ammonia was found to be in the probe rinse portion of the sample instead of the first impinger catch. This is probably due to the unheated probe extension. Also, both techniques show the results from each individual run trended the same direction with each successive test run having a higher ammonia concentration than the previous.

Unit 4 SCR Inlet/Outlet - NOx and CO

Runs were performed at the Unit 4 SCR Inlet and SCR Outlet locations using USEPA Methods 7E and 10 procedures modified to include the use of CleanAir's Multi-Point, Automated Sampling System (MASS®) to obtain a concentration profile of the NO_x and CO.

In order to assess local NO_x reductions, CleanAir has developed a proprietary flue gas profiling system called the $MASS^{\circledR}$ system. The $MASS^{\circledR}$ system allows duct emission profiles to be characterized in a matter of minutes, as opposed much longer sampling times for traditional duct emission traverses using "manual" traversing techniques.

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CONSOL ENERGY, INC. DRESDEN, NEW YORK Client Reference No: 4700146642 CleanAir Project No: 10247

PROJECT OVERVIEW

DISCUSSION OF TEST PROGRAM (CONTINUED)

Unit 4 SCR Inlet/Outlet - NO_x and CO (Continued)

CleanAir's MASS® system uses a series of automated 8-point sample modules with integrated programmable logic controllers (PLC's) to sequentially and rapidly cycle through a multi-point sample grid.

The MASS® system's lightweight modular approach facilitates a fast and easy setup. The system is designed for reliable and consistent operation with features such as pre-purged sample points, automated sequencing, and moisture and particulate removal. The system allows for rapid and efficient sampling of large test grids. The 8-point sample selection modules may be configured in various ways to accommodate a variety of sample time requirements for as many points as needed. For this test program a single set of instruments per location was used which provided one-minute cycle times per sampling point.

Sampling was performed at the existing grid probes located in four (4) ports at each location. There are currently 24 sampling points available at each of the test locations. CleanAir performed a complete grid profile measurement over a 24-minute period.

Prior to beginning sampling, NO_x measurements were conducted at each test location at a stationary point to verify steady state test conditions. Once satisfactory conditions existed sampling was performed. NO_x grid measurements where taken while the plant was tuning the boiler and SCR.

During Runs 2 and 3 some individual sampling points in the MASS® grid develop leaks that later become apparent upon data analysis especially in comparison to Run 1. These points have been left out of the averages, grids and plots of the Section 2 results.

Full results using CleanAir's MASS® system are found in Appendix C, Parameters.

1-4

CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247

2-1

	TO US AND ADMINISTRATION OF PROPERTY OF	able 2-1:			
	Unit 4 Air Hea	ter Inlet – NH	3 Results		
Run No	•	1	2	3	Averag
Date (20	007)	May 31	Jun 1	Jun 1	
Start Time (approx.)		18:04	10:20	12:05	
Stop Time (approx.)		19:14	11:07	12:52	
Gas Co	nditions				
O ₂	Oxygen (dry volume %)	4.4	5.1	6.4	5.3
CO_2	Carbon dioxide (dry volume %)	16.5	13.4	12.4	14.1
Ammon	ia (NH ₃) Results - Total Combined Results (IC)				
C_{sd}	Ammonia Concentration (ppmdv)	1.28	1.74	1.93	1.65
C _{sd7}	Ammonia Concentration @3% O2 (ppmdv)	1.39	1.98	2.39	1.92
C_{sd12}	Ammonia Concentration @12% CO₂ (ppmdv)	0.934	1.56	1.87	1.45
Ammon	ia (NH ₃) Results - Total Combined Results (ISE)				
C_{sd}	Ammonia Concentration (ppmdv)	5.72	7.16	8.87	7.25
C_{sd7}	Ammonia Concentration @3% O ₂ (ppmdv)	6.20	8.11	10.9	8.42
C _{sd12}	Ammonia Concentration @12% CO2 (ppmdv)	4.16	6.41	8.58	6.38

111507 203612 OHP@_N

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RESULTS

Table 2-2: Unit 4 SCR Inlet – As Found MASS Results

	1		l Inlet ly @ 3% O2)		SCR Inlet CO2 (%dv)					***
	1	2	3	4	Average		1	2	3	4	Average
6	121.8	103.0	101.5	93.7	105.0	6	12.5	14.4	14.7	14.5	14.0
5	83.0	66.9	75.7	68.5	73.5	5	16.9	17.2	16.9	17.1	17.0
4	93.8	84.1	98.0	85.5	90.3	4	17.1	17.7	17.3	17.5	17.4
3	113.0	99.7	118.0	105.2	109.0	3 —	17.7	18.1	18.6	17.9	18.1
2	98.4	98.4	95.3	84.6	94.2	2	14.7	18.9	19.1	17.8	17.6
1	103.7	84.0	78.3	70.7	84.2	1	19.1	17.4	18.1	16.2	17.7
Average	102.3	89.4	94.5	84.7 North	92.7	Average	16.3	17.3	17.5	16.8 North	17.0
			t Inlet %dv)						l Inlet v @ 3% O2)		
	1	2	3	4	Average		. 1	2	3	4	Average
6	8.5	6.6	6.3	6.5	7.0	6	64.6	24.7	58.4	72.8	55.1
5	3.9	3.7	3.9	3.8	3.8	5	73.5	99.8	112.6	142.6	107.1
4	3.8	3.4	3.6	3.5	3.6	4	118.1	95.3	84.0	65.0	90.6
3	3.4	2.8	2.6	3.1	3.0	3	49.5	25.4	26.2	30.8	33.0
2	6.6	2.1	2.1	3.2	3.5	2	418.3	603.1	340.5	281.5	410.8
1	1.9	3.5	2.7	4.4	3.1	1	302.1	490.8	410.4	377.4	395.2
Average	4.7	3.7	3.5	4.1 North	4.0	Average	171.0	223.2	172.0	161.7 North	182.0

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RESULTS

			Unit 4	4 SCR		e 2-3: s Found M/	ASS Re	esults			
5	ı		Outlet lv @ 3% O2)	ret				Outlet v @ 3% O2		4
	1	2	3	4	Average	For 100 to 1	1	2	3	4	Average
6	76.1	19.2	1.4	8.3	26.3	6	168.3	594.5	671.9	546.2	495.2
5	97.6	80.9	99.0	2.7	70.0	5	184.7	315.2	760.6	353.7	403.6
4	81.4	102.0	105.4	60.5	87.3	4	216.7	53,9	30.6	24.9	81.6
3	96.1	89.2	83.2	19.9	72.1	3	34.0	26.6	32.7	44.1	34.4
2	82.6	11.4	2.5	1.4	24.5	2	68.2	87.3	147.2	236.0	134.7
1	88.5	48.2	3.2	32.1	43.0	1	170.6	98.6	104.9	280.1	163.5
Average	87.0	58.5	49.1	20.8 North	53.9	Average	140.4	196.0	291.3	247.5 North	218.8
SCR Outlet O2 (%dv)					NOx Re		Outlet ciency % (@) 3%O2)			
Armona de	1	2	3	4	Average	of the second	1	2	3	4	Average
6	5.4	3.6	3.0	3.9	4.0	6	37.5	81.3	98.6	91.1	77.2
5	4.1	3.9	2.8	2.4	3.3	5	-17.6	-20.8	-30.8	96.0	6.7
4	4.3	4.0	3.2	2.8	3.6	4	13.2	-21.3	-7.5	29.2	3.4
3	3.8	4.7	5.2	3.5	4.3	3	15.0	10.6	29.4	81.1	34.0
2	5.1	4.7	3.5	3.4	4.2	2	16.1	88.4	97.4	98.3	75.1
1	6.6	6.3	4.5	5.3	5.7	1	14.7	42.7	96.0	54.6	52.0
Average	4.9	4.5	3.7	3.6 North	4.2	Average	13.1	30.1	47.2 →	75.1 North	41.4
			Outlet (%dv)								
	1	2	3	4	Average						
6	13.2	14.6	15.2	14.5	14.4						
5	14.2	14.4	15.5	15.9	15.0						
4	14.4	14.4	15.2	15.6	14.9						
3	14.7	13.9	13.5	14.9	14.3						
2	13.6	13.7	14.9	15.1	14.3						
1	12.3	12.4	14.0	13.4	13.0						
Average	13.7	13.9	14.7	14.9 North	14.3						

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RESULTS Table 2-4: Unit 4 SCR Inlet - Final Tuning MASS Results **SCR Inlet** SCR Inlet NOx (ppmdv @ 3% O2) CO2 (%dv) 1 2 4 1 2 4 Average 3 Average 17.7 16.0 106.2 102.2 101.8 105.8 6 14.6 15.8 15.7 6 113.1 5 87.5 88.7 84.6 75.1 84.0 5 15.2 18.1 18.6 18.2 17.5 120.7 16.3 16.3 16.5 18.1 16.8 96.6 105.9 91.3 103.6 4 16.0 17.2 18.2 17.5 125.7 111.7 117.0 3 18.4 3 128.1 102.5 105.5 110.4 108.2 82.1 101.5 2 17.0 18.7 18.9 19.1 18.4 2 17.0 17.1 17.9 16.1 17.0 130.1 104.7 111.0 108.6 113.6 17.6 18.0 17.2 16.0 17.2 Average 110.1 103.1 108.7 95.1 104.3 Average North North SCR Inlet SCR Inlet CO (ppmdv @ 3% O2) O2 (%dv) 1 4 Average 1 2 3 4 Average 694.6 129.6 200.9 308.1 6 6.4 5.8 4.1 5.5 5.5 6 5 3.8 3.5 3.2 4.0 5 195.3 266.3 325.2 379.1 291.5 5.6 333.8 105.2 96.0 77.1 153.0 4 4.7 5.2 5.2 3.3 4.6 3 120.8 94.5 91.1 60.3 91.6 3 5.1 4.3 3.6 3.0 4.0 2 134.0 139.8 136.8 367.3 194.5 2 4.3 3.2 2.9 2.3 3.2 4.8 3.9 5.0 321.2 172.7 291.0 413.3 299.5 4.4 4.5 151.3 190.2 250.7 223.0 300.0 Average 5.1 4.5 3.9 3.7 4.3 Average North North

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RESULTS Table 2-5: Unit 4 SCR Outlet - Final Tuning MASS Results SCR Outlet SCR Outlet CO (ppmdv @ 3% O2) NOx (ppmdv @ 3% O2) 4 2 3 4 Average 3 Average 701.9 234.9 482.4 480.9 6 88.5 40.1 2.8 4.1 33.9 6 504.4 18.0 5 166.0 155.5 264.9 220.1 201.6 0.6 1.0 5 65.7 4.5 4.1 59.6 200.9 68.8 34.9 53.2 89.5 85.1 76.4 4 72.7 46.0 46.0 3 83.4 105.6 110.3 57.9 89.3 3 73.8 34.8 29.6 2 92.4 61.4 71.5 165.0 97.6 102.6 2.4 84.3 2 158.8 73.2 381.9 2.6 19.9 274.9 277.3 341.8 319.0 68.0 8.2 1.0 207.9 224.8 205.8 89.5 52.8 49.0 12.0 50.8 Average 251.6 138.8 Average North North SCR Outlet SCR Outlet NOx Removal Efficiency % (@ 3%O2) O2 (%dv) 1 Average 3 4 Average 97.2 96.0 69.3 6.4 7.4 6.4 6 21.7 62.2 6 8.1 3.6 5 24.9 94.9 99.3 98.7 79.4 5 3.4 3.9 4.1 4.8 4.4 95.5 4 24.7 19.7 36.7 44.2 4.3 3.4 4.4 3.8 4.0 4 23.1 3.7 3.7 3 34.9 -2.9 12.2 48.2 3 4.1 3.3 3.7 -50.6 33.7 5.2 97.1 21.3 9.0 2.9 4.5 2 2 3.1 31 47.8 92.2 99.1 97.6 84.2 4.1 5.4 7.7 5.1 88.9 50.0 58.3 53.6 5.6 3.5 4.5 5.0 4.6 Average 17.2 Average North North SCR Outlet CO2 (%dv) 4 1 3 Average 2 15.5 15.0 14.8 13.7 6 9.4 5 15.0 15.3 22.0 20.5 18.2 20.2 18.4 4 19.0 14.8 19.4 15.1 21.3 21.1 19.2 19.3 3 19.9 2 15.9 18.9 22.4 22.3 20.5 24.5 18.7 20.8 19.5 16.7 20.8 19.6 18.4 Average 16.4 North

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RESULTS Table 2-6: Unit 4 SCR Inlet - Run 1 MASS Results SCR Inlet SCR Inlet CO2 (%dv) NOx (ppmdv @ 3% O2) Average 4 2 1 3 Average 2 6 14.4 16.0 17.8 16.3 16.1 110.2 106.7 111.7 117.1 112.7 6 17.8 18.2 18.2 18.4 16.5 79.3 90.6 5 94.6 97.6 90.9 5 17.1 16.8 16.5 18.3 4 16.9 4 98.6 109.5 129.2 93.5 107.7 17.9 18.4 18.8 17.9 114.6 3 16.4 129.8 108.6 3 117.2 102.6 17.0 17.5 2 17.9 17.0 106.3 87.7 98.7 96.5 104.0 2 14.6 15.2 15.2 15.3 15.6 105.8 119.8 114.2 118.5 134.3 16.3 17.0 17.2 17.2 16.9 109.0 106.5 114.0 98.3 107.0 Average Average North North SCR Inlet SCR Inlet CO (ppmdv @ 3% O2) O2 (%dv) Average 1 4 Average 2 3 86.6 200.1 296.0 177.9 6 128.9 4.0 5.2 5.5 7.0 6.0 6 274.2 162.9 246.8 341.4 345.6 5 5.2 3.9 3.6 3.3 4.0 5 226.4 102.0 77.1 125.0 94.6 4 4.6 5.4 5.6 3.3 4.7 98.4 105.3 85.0 62.1 87.7 3.6 2.9 4.0 3 4.3 3 5.2 228.5 200.8 225.2 191.9 2 157.6 4.3 3.1 2.8 2.5 3.1 2 206.2 153.8 193.1 194.4 186.9 5.2 4.4 4.9 4.2 4.7 169.8 199.9 175.4 193.8 138.1 5.1 4.6 4.0 3.7 4.3 Average Average North North

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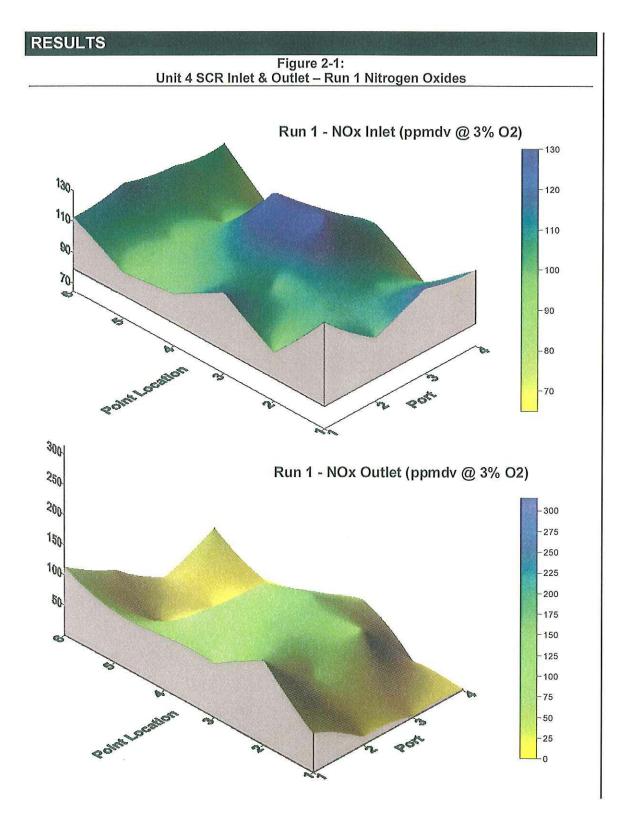
2-7

RESULTS Table 2-7: Unit 4 SCR Outlet - Run 1 MASS Results SCR Outlet **SCR Outlet** NOx (ppmdv @ 3% O2) CO (ppmdv @ 3% O2) 4 3 Average 3 Average 6 113.2 63.1 4.6 40.3 55.3 6 191.2 164.4 405.2 476.8 309.4 85.5 5 5 11.0 1.0 24.7 229.0 122.5 179.4 1.4 270.6 200.4 155.1 92.7 85.5 16.5 4 89.1 71.0 4 47.4 35.6 47.6 71.4 90.2 112.6 110.9 58.6 93.1 61.2 34.5 30.7 40.6 41.8 141.3 72.6 99,9 79.1 2 87.1 83.3 128.5 97.9 64.8 13.4 1.3 2.5 20.5 218.8 260.7 181.6 187.8 212.3 97.4 60.9 50.5 20,3 57.3 158.0 119.4 152.7 192.0 Average Average 155.5 North North SCR Outlet SCR Outlet O2 (%dv) NOx Removal Efficiency % (@ 3%O2) 1 2 3 Average Average 6 9.1 3.9 6.4 6.9 6.6 6 -0.5 46.1 95.8 62.3 50.9 88.7 5 3.2 5 9.5 99.0 4.1 4.0 4.2 3.8 98.2 73.8 4 3.4 2.9 3.9 3.6 3.4 4 9.5 15.3 33.7 82.3 35.2 3.7 3.5 3.4 3.2 3.4 3 21.0 -9.7 14.5 46.0 17.9 7.4 3.1 2.8 3.1 2 -46.5 31.7 2 4.1 3.9 97.3 21.6 3.6 4.5 7.1 2.4 4.4 51.7 87.3 98.9 97.8 84.0 5.0 3.3 4.7 4.3 Average 4.1 Average 7.4 43.2 57.6 80.7 47.2 North North SCR Outlet CO2 (%dv) 1 4 2 3 Average 6 12.1 13.9 16.4 16.3 14.7 5 15.1 11.8 16.1 18.4 15.3 11.6 10.9 15.4 18.5 14.1 16.3 17.3 3 15.4 18.4 19.3 12 4 19.5 20.1 17.8 2 19.5 15.8 17.1 15.8 15.4 16.0 Average 13.7 14.9 16.9 18.0 15.9

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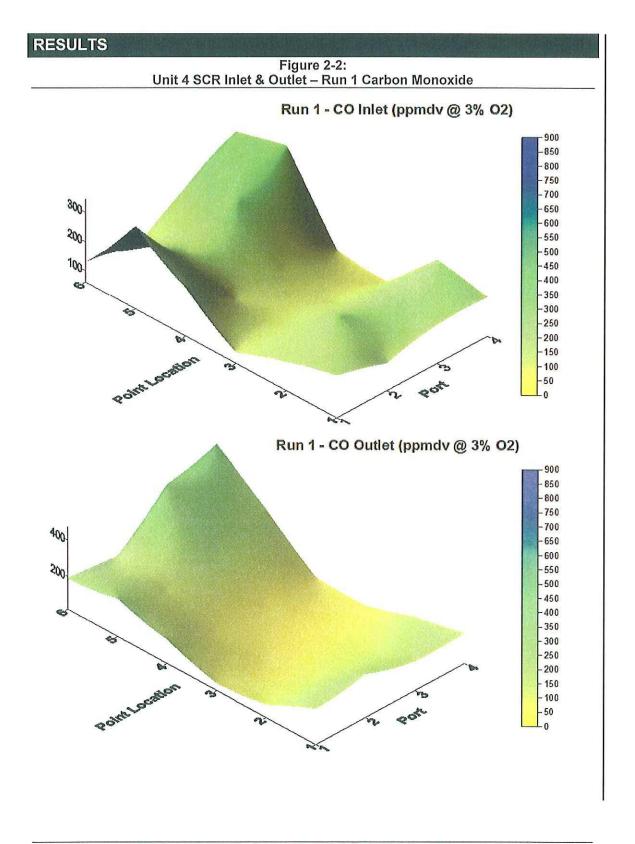
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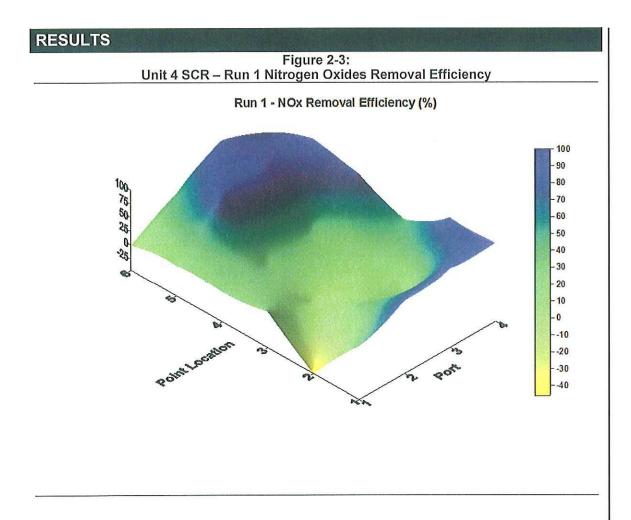
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80.3

65.4

North

388.3

141.8

145.8

49.9

259.4

102.9

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RESULTS Table 2-8: Unit 4 SCR Inlet - Run 2 MASS Results SCR Inlet **SCR Inlet** CO2 (%dv) NOx (ppmdv @ 3% O2) 4 Average 1 2 3 4 Average 2 3. 12.5 14.0 12.8 12.8 11.9 114.8 96.5 96.6 107.2 6 6 120.7 5 14.9 15.3 15.2 14.8 76.4 13.7 68.1 5 98.9 72.8 65.9 14.1 13.4 13.8 4 98.4 80.7 88.2 87.5 88.7 4 15.1 14.1 13.9 15.3 15.5 15.8 15.1 111.9 3 3 121.2 82.2 96.9 103.0 2 15.5 16.8 16.4 16.1 16.2 87.2 73.2 94.5 119.1 98.4 2 14.4 14.8 14.8 14.6 97.1 104.9 107.5 110.1 Average 14.1 14.7 14.7 14.6 86.6 Average 111.0 93.2 89.9 95.4 North North SCR Inlet SCR Inlet CO (ppmdv @ 3% O2) O2 (%dv) 4 Average 4 1 2 -1 2 Average 53.0 59.2 6 132.6 31.1 20.0 5.4 6.0 6.5 6 7.1 113.3 5 129.9 136.7 77.4 109.2 5 5.4 4.4 4.0 3.4 4.3 58.9 45.5 44.1 45.4 5.3 4 100.7 4.1 5.1 4.9 4 3 71.7 43.2 28.6 27.5 42.7 3.8 2.7 5.1 4.1 3.4 3 79.5 77.3 123.3 206.1 130.3 2.4 2.6 2

Average

Revision 1

2

Average

3.4

4.5

5.0

2.7

4.6

4.7

2.2

4.0

3.6

3.8

North

4.2

4.4

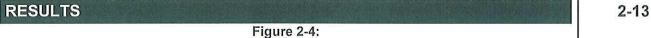
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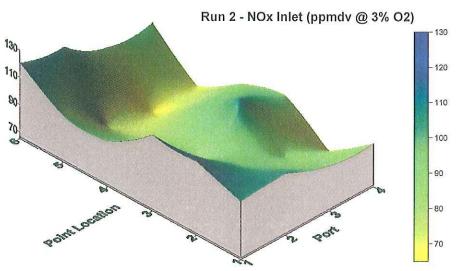
2-12

RESULTS Table 2-9: Unit 4 SCR Outlet - Run 2 MASS Results SCR Outlet SCR Outlet NOx (ppmdv @ 3% O2) CO (ppmdv @ 3% O2) 4 Average 4 Average 2 3 1 2 105.9 64.8 12.7 61.1 188.9 57.0 123.2 123,0 5 70.3 30.1 3.5 34.6 5 91.1 116.4 87.1 98.2 4 98.7 8.4 53.5 4 37.1 125.0 81.1 3 79.7 55.7 67.7 3 161.7 30.3 96.0 2 96.5 71.6 2.5 56.8 2 78.1 138.7 164.7 127.2 106.6 56.9 381.6 619.5 500.6 81.7 93.0 55.8 16.6 57.6 156.4 143.3 160.0 Average 175.1 380.6 Average North North **SCR Outlet** SCR Outlet NOx Removal Efficiency % (@ 3%O2) O2 (%dv) 4 1 2 Average 2 Average 6.5 43.5 87.2 6 8.2 7.1 6 12.2 47.7 7.1 5 4.0 4.9 5 29.0 58.8 60.9 3.7 94.8 4 3.7 3.1 3.4 -0.3 90.3 45.0 3 2.8 3.2 3 34.2 42.5 38.4 3.0 2 1.6 1.9 2.4 2.0 2 19.0 27.3 96.6 47.6 6.8 7.3 7.0 0.7 48.3 24.5 Average 4.5 Average 15.8 82.3 45.6 5.7 3.8 4.6 44.5 North North **SCR Outlet** CO2 (%dv) 1 2 3 4 Average 6 10.8 12.3 12.0 11.7 5 14.5 11.8 14.8 13.7 4 14.9 15.3 15.1 3 15.6 15.3 15.4 2 16.7 16.5 16.0 16.4 12.0 11.5 11.7 Average 14.1 13.0 14.6 14.0

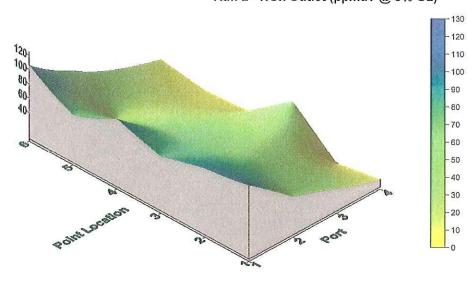
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Unit 4 SCR Inlet & Outlet – Run 2 Nitrogen Oxides

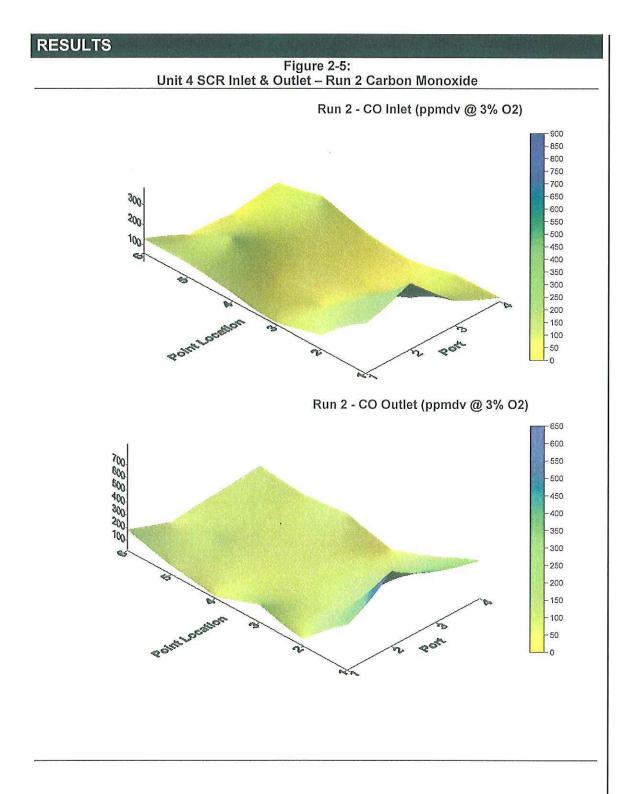


Run 2 - NOx Outlet (ppmdv @ 3% O2)

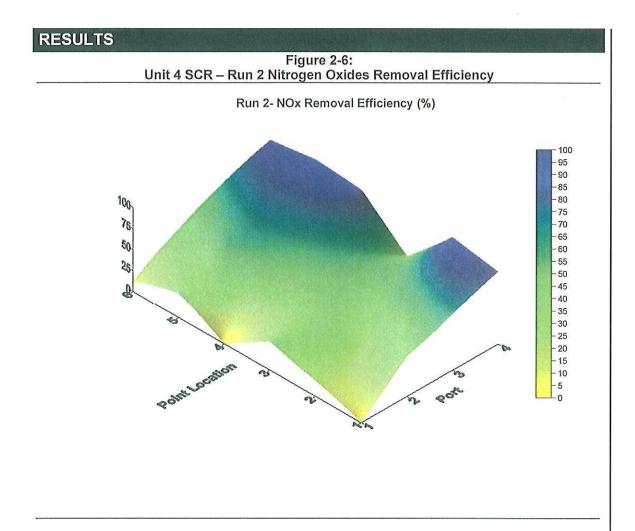


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Table 2-10:											
Unit 4 SCR Inlet – Run 3 MASS Results											
	j	SCR NOx (ppmd	Inlet v @ 3% O2)				SCR CO2	Inlet (%dv)		
	1	2	3	4	Average		1	2	3	4	Average
6	111.9	103.8	112.9	100.2	107.2	6	11.7	12.5	13.6	12.5	12.6
5	91.0	75.2	77.8	67.2	77.8	5	13.3	14.6	14.9	15.0	14.4
4	94.9	86.5	81.0	88.6	87.7	4.	15.0	14.3	13.8	13.4	14.1
3	122.0	83.3	101.6	99.0	101.5	3	14.0	15.3	15.5	15.6	15.1
2	121.4	83.0	86.2	71.1	90.4	2	15.2	16.1	16.5	15.9	15.9
1	106.5	83.8	101.3	95.1	96.7	1	14.4	14.3	14.5	14.9	14.5
Average	108.0	85.9	93.5	86.9 North	93.6	Average	13.9	14.5	14.8	14.5 North	14.4
19		SCR O2 (Inlet %dv)	ON THE PROPERTY OF THE	is a	45	talis was a second of		Inlet v @ 3% O2)	AND DESCRIPTION	
	1	2	3	. 4	Average	Princeton Annual II	1	2	3	4	Average
6	7.6	6.9	5.5	6.1	6.5	6	87.2	45.7	51.4	36.6	55.2
5	5.7	4.6	4.0	3.6	4.4	5	67.2	63.8	30.7	60.4	55.5
4	4.1	5.2	5.3	5.5	5.0	4	87.1	40.3	45.5	71.1	61.0
3	5.1	4.1	3.3	2.8	3.8	3	60.8	45.4	47.7	27.4	45.3
. 2	3.4	2.7	2.3	2.4	2.7	2	136.4	166.2	77.6	88.7	117.2
1	4.3	4.7	4.2	3.5	4.2	1	235.4	353.1	92.0	88.9	192.4
Average	5.0	4.7	4.1 →	4.0 North	4.4	Average	112.3	119.1	57.5 →	62.2 North	87.8

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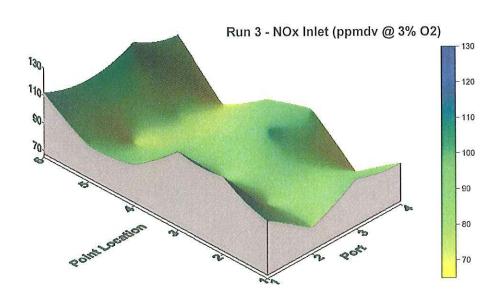
2-17

RESULTS Table 2-11: Unit 4 SCR Outlet - Run 3 MASS Results SCR Outlet SCR Outlet NOx (ppmdv @ 3% O2) CO (ppmdv @ 3% O2) 4 Average 2 Average 6 83.3 48.2 101.6 130.1 13.0 6 158.6 5 87.9 22.8 3.0 37.9 5 71.4 102.1 107.9 93.8 4 115.6 120.9 8.5 81.7 39.8 30.2 69.4 46.5 3 89.6 133.3 90.1 118.3 47.5 3 29.0 21.6 56.3 2 101.2 92.5 2.1 65.3 2 52.3 113,8 115.3 93.8 106.9 106.9 321.9 321 9 Average 100.2 14.8 75.3 68.5 Average 120.8 94.6 96.9 North North **SCR Outlet SCR Outlet** O2 (%dv) NOx Removal Efficiency % (@ 3%O2) 1 2 4 2 Average - 1 4 3 Average 6 7.5 7.0 7.3 6 16.8 87.1 51.9 5 6.7 3.6 6.4 5 2.8 69.3 95.5 55.9 4 5.6 8.3 3.0 5.6 4 -22.4 -39.8 90.4 9.4 3 4.1 6.5 2.7 4.4 3 26.5 -60.1 52.1 6.2 2 2.2 6.3 16.7 -14.4 97.0 2.7 3.7 2 33.1 6.8 6.8 -0.4 -0.4 5.1 Average 7.5 3.8 5.4 Average 4.6 -5.6 84.4 27.8 North North SCR Outlet CO2 (%dv) 2 3 4 Average 6 11.6 5 12.0 10.1 14.9 12.3 4 13.1 10.7 15.5 13.1 3 14.6 12.2 15.8 14.2 2 16.3 12.3 15.8 14.8 12.1 12.1 13,6 11.3 Average 14.7 13.2 North

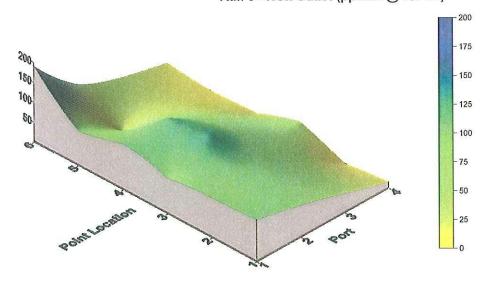
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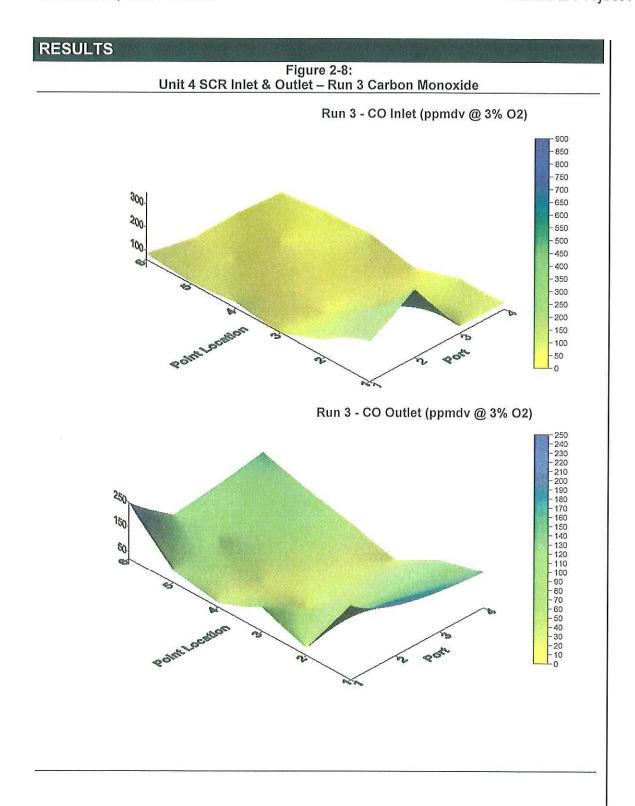




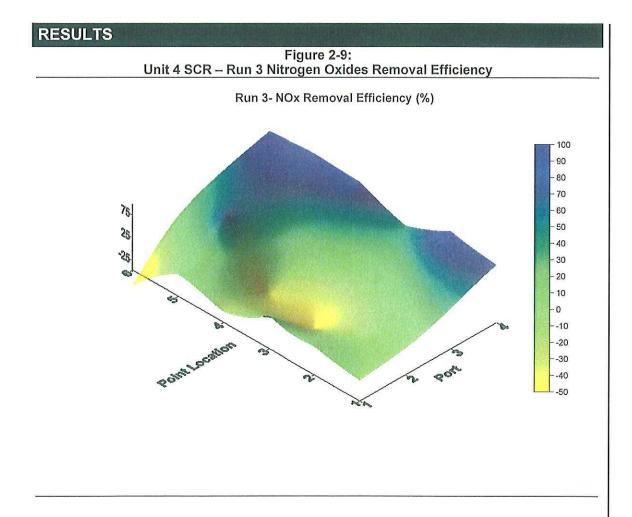
Run 3 - NOx Outlet (ppmdv @ 3% O2)



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Client Reference No: 4700146642 CleanAir Project No: 10247

DESCRIPTION OF INSTALLATION

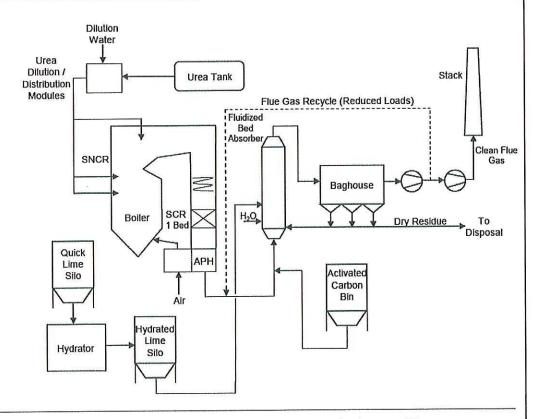
PROCESS DESCRIPTION

AES Greenidge Unit 4 is representative of 492 coal-fired electricity generating units in the United States with capacities of 50-300 MWe. AES Greenidge Unit 4 is a 104-MW coal-fired unit.

The unit has an integrated multi-pollutant control system installed in order to reduce emissions in an economically viable way. This new technology utilizes a hybrid selective non-catalytic reduction / selective catalytic reduction system for NO_x reduction and a circulating fluidized-bed dry scrubber for SO_2 and mercury reduction.

The testing was performed at the Unit 4 SCR Inlet and Outlet and the Unit 4 Air Heater Inlet.

A schematic of the process indicating sampling locations is shown in Figure 3-1.



Source: Quarterly Progress Report, May 19 – June 30, 2006, U.S. DOE Cooperative Agreement No. DE-FC26-06NT41426, D.P Connell, CONSOL Energy, Inc.

Figure 3-1: Process Schematic

Client Reference No: 4700146642 CleanAir Project No: 10247

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATIONS

Sampling point locations were determined according to EPA Method 1.

Table 3-1 outlines the sampling point configurations. Figures 3-2 through 3-4 illustrate the sampling points and orientation of sampling ports for each of the sources tested in the program.

Table 3-1: Sampling Points

Location	Constituent	Method	Run No.	Ports	Points per Port ¹	Minutes per Point	Total Minutes	Figure
Unit 4 Air	Heater Inlet							
	NH ₃	CTM-027	1	2	1	30	60	3-2
	NH ₃	CTM-027	2, 3	2	1	20	40	3-2
Unit 4 SC	R Inlet and Outlet							
	NO _X , CO, O ₂ , CO ₂	3A, 7E, 10	1-3	4	6	1	24	3-3
	NO _X , CO, O ₂ , CO ₂	3A, 7E, 10	1-3	4	6	1	24	3-4

¹ NH₃ testing was performed at a single point for both the East and West ducts. Due to the length of the sampling probes, testing was conducted slightly closer to the actual ports, rather than the center of the ducts.

Client Reference No: 4700146642 CleanAir Project No: 10247

3-3

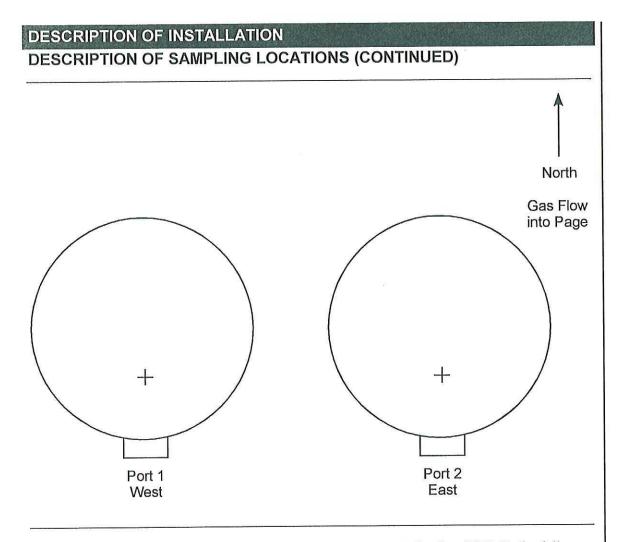
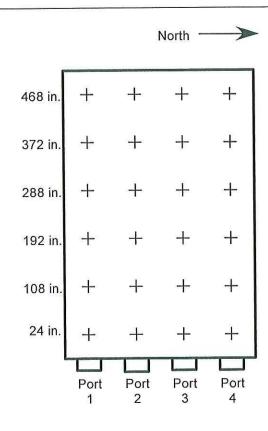


Figure 3-2: Unit 4 Air Heater Inlet Sampling Point Determination (EPA Method 1)

Revision 1

Client Reference No: 4700146642 CleanAir Project No: 10247

DESCRIPTION OF INSTALLATION DESCRIPTION OF SAMPLING LOCATIONS (CONTINUED)



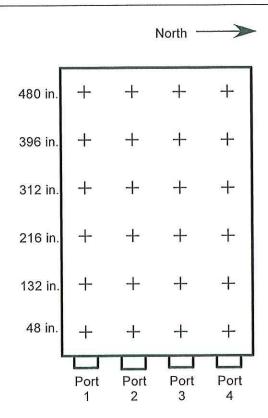
Traverse Point	Port to Point Distance (in.)
1	24
2	108
3	192
4	288
5	372
6	468

Figure 3-3: Unit 4 SCR Inlet – Sampling Point Determination (EPA Method 1)

Client Reference No: 4700146642 CleanAir Project No: 10247

DESCRIPTION OF INSTALLATION

DESCRIPTION OF SAMPLING LOCATIONS (CONTINUED)



Traverse Point	Port to Point Distance (in.)		
1	48		
2	132		
3	216		
4	312		
5	396		
6	480		

Figure 3-4: Unit 4 SCR Outlet – Sampling Point Determination (EPA Method 1)

Client Reference No: 4700146642 CleanAir Project No: 10247

METHODOLOGY

4-1

Clean Air Engineering followed procedures as detailed in USEPA Methods 1, 2, 3A, 4, 7E, 10 and CTM-027, as well as the CleanAir Proprietary MASS[®] Method. The following table summarizes the methods and their respective sources.

Table 4-1: Summary of Sampling Procedures

Title 40 CFR Part 60 Appendix A

Method 1 "Sample and Velocity Traverses for Stationary Sources"

Method 2 "Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)"

Method 3A "Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from

Stationary Sources (Instrumental Analyzer Procedure)"

Method 7E "Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental

Analyzer Procedure)"

Method 10 "Determination of Carbon Monoxide Emissions from Stationary Sources"

Conditional Test Methods (CTM)

CTM-027 "Procedure for Collection and Analysis of Ammonia in Stationary Sources"

CleanAir Proprietary Methods

MASS[®] "Multipoint Automated Sampling System for Stationary Grid Gas Analysis"

These methods appear in detail in Title 40 of the Code of Federal Regulations (CFR) and on the World Wide Web at http://www.cleanair.com.

Diagrams of the sampling apparatus and major specifications of the sampling, recovery and analytical procedures are summarized for each method in Appendix A.

CleanAir followed specific quality assurance and quality control (QA/QC) procedures as outlined in the individual methods and in USEPA "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III Stationary Source-Specific Methods", EPA/600/R-94/038C. Additional QA/QC methods as prescribed in CleanAir's internal Quality Manual were also followed. Results of all QA/QC activities performed by CleanAir are summarized in Appendix D.

Client Reference No: 4700146642 CleanAir Project No: 10247

APPENDIX	
TEST METHOD SPECIFICATIONS	SA
SAMPLE CALCULATIONS	B
PARAMETERS	C
	D
FIELD DATA	<u></u> E
FIELD DATA PRINTOUTS	<u></u>
LABORATORY DATA	G

Client Reference No: 4700146642 CleanAir Project No: 10247

TEST METHOD SPECIFICATIONS

Α

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Specification Sheet for

Conditional Test Method (CTM) 027

Source Location Name(s)

Unit 4 Air Heater Infat

Pollutant(s) to be Determined

Ammonia

Other Parameters to be Determined from Train Gas Density, Moisture

Standard Method Specification

Pollutant Sampling Information

N/A

Run 1 = 60 minutes; Ruos 2-3 = 40 minutes

Actual Specification Used

Duration of Run

No. of Sample Traverse Points Sample Time per Point

Sampling Rate

NW

N/Α

5 minutes

Isokinetic (90-110%)

Sampling Probe

Nozzie Material Nozzle Design

Probo Liner Material

Effective Proba Length Probe Temperature Set-Point Borosilicate of Quartz Glass

Button-Hook or Ethow

Borosilicate or Quartz Glass

Stack Temperature

Mone

N/A

N/A

Borosilicate Glass

N/A Море

Velocity Measuring Equipment -

Pilot Tube Design Plot Tube Coefficient

Pilot Tube Calibration by

Pitol Tube Attachment

Туре S

N/A Geometric or Wind Tunnet

Attached to Probe

None

N/A NΙΑ

N/A

Metering System Console

Meter Type

Meter Accuracy Meter Resolution

Meler Size

Meter Calibrated Against

Ритр Туре

Temperature Measurements

Temperature Resolution AP Differential Pressure Gauge ΔΗ Differential Prossure Gauge

Baromeler

MΑ

Dry Gas Meter

±2%

N/A

Wot Test Meter or Standard DGM

N/Α

5.4°F

Inclined Manameter or Equivalent Inclined Manameter or Equivalent

Marcury or Aneroid

Dry Gas Moter

±1%

0.01 cubic feet 0.1 dcf/revolution Wet Test Meter

Rolary Vane

Type K Thermocouple/Pyrometer

1.0°F N/A

Inclined Manameter

Digital Barometer calibrated wildercury Anarold

Filter Description

Pilter Location

Filler Holdor Material Filter Support Material Trimble Material

Filter Heater Set-Point Fitter Material

to Stack

Glass Fiber

Borosificate Glass or Teffon

Boroslicate Glass or l'effon MΑ N/A

In-Stack

Barosilicate Glass

Tellon Glass Stack Temp Glass Fiber

Other Components

Description

Location Operating Temperature N/A

N/A N/A ΝΆ

MΑ NΙΛ

Specification Sheet for

Conditional Test Method (CTM) 027

Type of Glassware Connections Connection to Probe or Filter by

Number of Implagers

impinger Stem Types

Impinger 1 Impinger 2

Impinger 3

Impinger 4 impinger 5

Impinger 6 Impinger 7 impinger 6 Standard Method Specification

Leak-Free Glass Connectors Direct or Flexible Tubing

Actual Specification Used

Screw Joint with Silicone Gasket

Flexible Telton Line

Greenburg-Smith Greenburg-Smith Greenburg-Smith

Greenburg-Smith Modified Greenburg-Smith Modified Greenburg-Smith Modified Greenburg-Smith Modified Greenburg-Smith

Gas Density Determination

Sample Collection

Sample Collection Medium

Sample Analysis

Multi-point integrated Flexible Gas Bag

Orsat or Fyrite Analyzer

Single Point Grab Direct Interface

CEM

Sample Recovery information

Probe Brush Material

Probe Rinse Reagent

Probe Rinse Wash Bottle Material

Probe Rinse Storage Container

Filler Recovered?

Filter Storage Container

Implinger Contents Recovered?

Impinger Rinse Reagent

Impinger Wash Bollle

Impinger Storage Container

Analytical Information

Method 4 H₂O Determination by

Filter Preparation Conditions

Front-Half Rinse Preparation

Back-Half Analysis

Additional Analysis

None Delonized Water Polyethylene

Polyethylene No

N/A Yes

Delonized Water

Polyethylene

Polyethylene

Volumetric or Gravimetric

NIA

Combined with back-half. ton Chromatography Analysis

NΑ

Mone Delonized Water Polyethylene Polyethylone Archived

Polystyrene Yes

Delonized Water Polyothylene Polyethylene

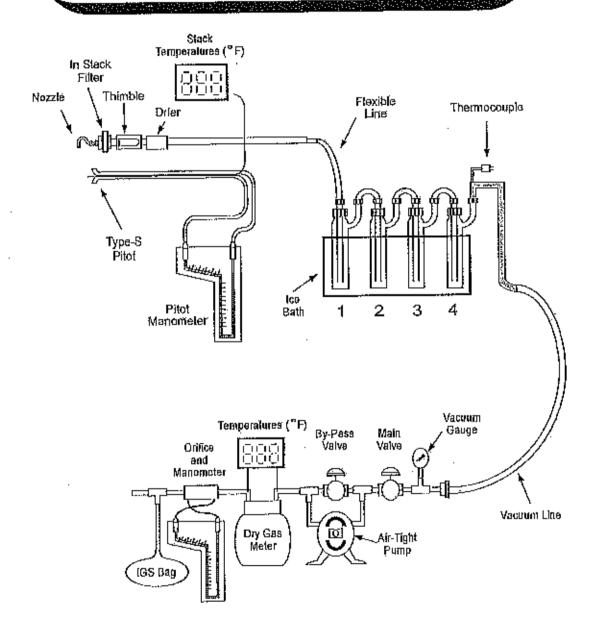
Gravimetric and Volumetric

N/A

See Analytical Flow Chart jon Chromatography

None

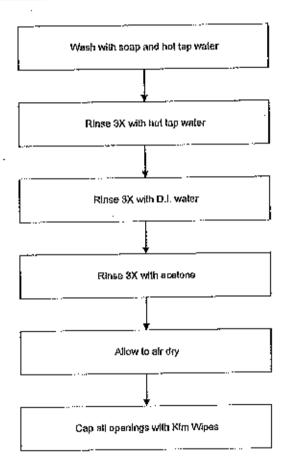
CTM-027 Sampling Train Configuration



Impinger Contents

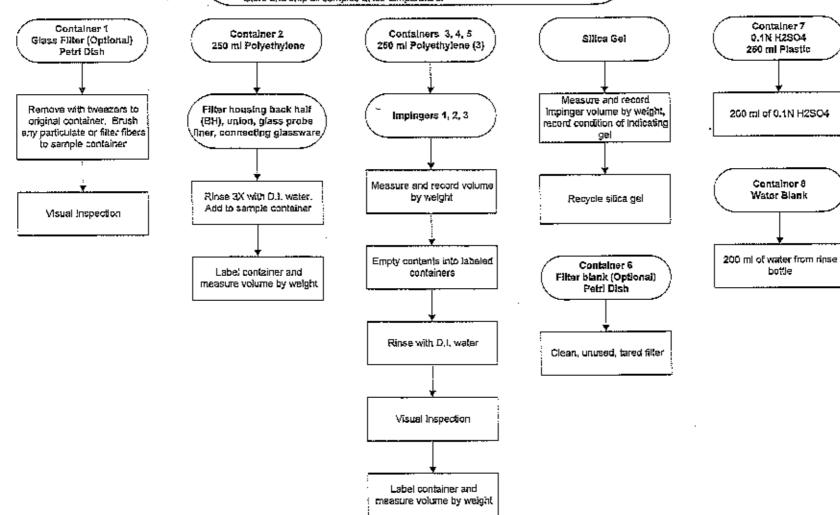
11.16.100	
Impinger 1	0.1N H ₂ SO ₄
impinger 2	0.1N H₂SO₄
Impinger 3	Empty
Impinger 4	Silica Gel

CTM-027 Glassware Preparation Procedures



CTM-027 Sample Recovery Flowchart

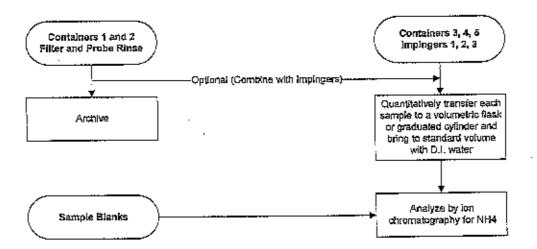
- Tare all sample containers before sample collection
- Mark all liquid levels and final weights on the cutside of each sample container
- Seal all sample containers with Tellon tape.
- If recycling, bake silica gel for two hours at 350 degrees F (176 degrees C)
- Store and sintp all samples at ice temperature.



CTM-027 Analytical Flowchart

- Log each sample in shipment and verify against chain-of-custody sheet.

 Note liquid levels in the sample containers and confirm on the chain-of-custody sheet. condition



Specification Sheet for

EPA Methods 3A, 7E and 10 with MASS

Source Location Name(s)

Politiani(s) to be Determined

SCR Intel & Outlet Test Grid Determination of Nitrogen Oxides (NO_x) and Carbon Monoxide (CO) Emissions

Other Parameters to be Determined from Train | Q2 and CO2 (EPA Method SA)

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	24 minutes
No, of Sample Traverse Points	N/A -	24
Sample Time per Point	N/A	1 minute
Sampling Rate	Constant Rate	Constant Rate
Sampling Probe		
Nozzie Material	NVA	None
Nozzie Design	MA	N/A
Probe Liner Material	Stainless Steel or Pyrex Glass	Test Grid
Effective Probe Length	Sufficient to Traverse Points	Test Grid Probos
Probe Temperature Set-Point	Prevent Condensation	Stack Temp
Particulate Filter	·	
In-Stack Filter	Yes ·	No
In-Steck Filter Material	Non-reactive to gas	N/A
External Filter	Yes	Yeş
External Filter Material	Borosilicale, Quartz Glass Wool or Fiber Mat	Borosificate Class Fiber Mat
External Fifter Set-Point	Prevent Condensation	Ambient
Sample Dalivery System		
•	Stataless Steel or Tellott	Tefton
Heated Sample Line Material		Ambient
t leated Sample Line Set-Point	Prevent Condensation	N/A
Heated Sample Line Connections	Probe Exit to Moisture Removal System	Coll - Condenser Type
Mojsture Removal System	Refrigerator-type condenses or similar	Piston
Sample Pump Type	Loak-Free, minimel response limb	Tefton
Saropto Pump Material	Non-reactive to sample gases	
Sample Flow Control	Constant Rate	Constant Rate (±10%) Telion
Non-Heated Sample Line Material	Statutes Steel or Terion	Probe to Sempla Gas Manifold
Non-I-leated Sample Line Connections	Moisture Removal to Sample Gas Manifold	Yes
Additional Fillers	Optional	·
Additional Filter Type	N/A	Particulate Removal
Additional Filter Location	Optional	Entrance to Semple Manifold
Falter Material	Non-reactive to eample gases	Glass Fiber
Analyzer Description		
Oxygen (O ₂)	EPA Method 3A (Paramagnetic)	EPA Method 3A (Paramagnetic)
Carbon Dloxide (GO ₂)	EPA Method 3A (Paramagnetic)	EPA Method 3A (Paramagnotic)
Sulfur (Dloxide (SO ₂)	N/A	N/A
Nitrogen Oxides (NO ₃)	EPA Method 7E (Chentiluminescent)	EPA Method 7E (Chemiluminescent)
Carbon Monoxide (CO)	EPA Method 10 (Gas Filter Correlation IR)	EPA Method 10 (Gas Filtor Correlation IR)
Total Hydrocatbon (THC)	AM.	N/A
Hydrogen Chlorida (1101)	N/A N/A	n/a n/a
Ammonia (Ni-l ₃)	NA	TALL?

Specification Sheet for

EPA Methods 3A, 7E and 10 with MASS

	Standard Method Specification	Actual Specification Used
Instrument Span Range	•	
Oxygen (O ₂)	≤ 1.33 x Expected Maximum	0-15%
Carbon Dioxide (CO ₂)	≤ 1,33 x Expected Meximum	0-15%
Sulfur Dioxide (SO ₂)		N/A
Nitrogen Oxides (NO _x)	≤ 1.39 x Expected Maximum	0-200 ppm
Carbon Monoxide (CO)	≤ 1.33 x Expected Maximum	0-1,000 рріл
Total Hydrocarbon (THC)	N/A	N/A
Hydrogen Chloride (HCI)	N/A	N/A
Ammonia (NH _s)	N/A	NIA
Data Acquisition		
Data Recorder	Strip chart, Analog Computer or Digital Recorder	Analog Computer
Recorder Rosolution	0.5 Percent of Span	0.1 Percent of Span
Data Storage	Manually or Automatic	Manually
Measurement Freq. <60 inln. Sample Time	1-min. Intervals or 30 measurements (less restrictive)	One reading per second
Recording Freq. <50 mln. Sample Time	1-min, intervals or 30 measurements (lass restrictive)	One Minute Average (60, 1 second readings)
Measurement Freq. >60 mln. Sample Time	2-min. Intervals or 98 measurements (less restrictive)	MA
Recording Freq. >60 min. Sample Time	2-min, intervals or 96 measurements (less restrictive)	
Calibration Gas Specifications		
Oxygen (O ₂)	EPA Protocol 1	EPA Protocol 1
Gartion Dioxide (CO₂)	N/A	EPA Protocol 1
Sulfur Dioxide (SO ₂)	N/A	
Nitrogan Oxides (NO2)	EPA Protocol 1	EPA Protocol 1
Cerbon Monoxida (CO)	N/A	EPA Protocol 1
Total Hydrocarbon (THC)	N/A	
Hydrogen Chloride (HCI)	N/A	
Ammonia (NH ₃)	N/A	

CONSOL ENERGY, INC. AES GREENIDGE STATION

Client Reference Number: 4700146642 Clean Air Project Number: 10247

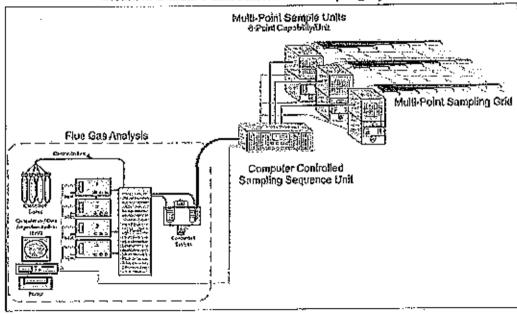
Multi-Point Automated Sampling System®

The NO_x, CO, O₂ and CO₂ distributions at the SCR Inlet and Outlet were measured simultaneously using an extractive continuous emission monitoring (CEM) package contained in a mobile emission laboratory. The system is comprised of three basic subsystems, including; 1) a flue gas sample acquisition and conditioning system, 2) a calibration gas system, and 3) the electronic gas analyzers.

In order to assess local NO_x and CO reductions, CleanAir has developed a proprictary flue gas profiling system called the **Multi-Point Automated Sampling System** (MASS[®]). The MASS[®] system allows duct emission profiles to be characterized in a matter of minutes, as opposed much longer sampling times for traditional duct emission traverses using "manual" traversing techniques.

Clean Air Engineering's MASS® system uses a series of automated 8-point sample modules with integrated programmable logic controllers (PLC's) to sequentially and rapidly cycle through a multi-point sample grid. A diagram of the sampling system is provided in Figure 1.

Figure 1: CleanAir's Multi-Point Automated Sampling System[®]



Based on a 24 point grid system (inlet and outlet) for the reactor module, three (3) cycles were performed to obtain a test duration of 24 minutes. A total of three test runs were performed concurrently at both the SCR Inlet and Outlet test grid locations.

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CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642

CleanAir Project No: 10247

SAMPLE CALCULATIONS

В

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CONSOL Energy - AES Greenidge Clean Air Project No: 10247 Unit 4 Air Heater Inlet

CTM-027 (Ammonia) Sampling, Velocity and Moisture Sample Calculations

Sample data taken from Run 1

Note: The tables prosenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formalted to an appropriate number of significant figures.

091807 103709

1. Volume of water collected (wscf)

$$V_{\text{tribl}}$$
 = $(0.04707)(V_k)$

Where:

 V_k = total volume of ilquid collected in impingers and silica gel (ml) = 70.4 ml
0.04707 = ideal gas conversion factor (ft³ water vapor/ml or gm) = 0.04707 ft³/ml

 V_{vald} = volume of water vapor collected at standard conditions (ft³) = 3.31 ft³

2, Volume of gas metered, standard conditions (decf)

$$V_{mstd} = \frac{(17.64)(V_{ts})\left(P_{por} + \frac{\Delta H}{13.6}\right)(Y_{d})}{(460 + T_{m})}$$
Where:

Properties pressure (in, Hg)

THIS IS.				
P _{ber}	≂ barometric pressure (in. Hg)	=	29.44	In. Hg
τ_{m}	= average dry gas meter temperature (°F)	77	102.46	°F .
V _{iii}	volume of gas sample through the dry gas meter at meter conditions (def)	=	39.48	dof
Y,	= gas meter correction factor (dimensionless)	=	1,0071	
ΔH	 = average pressure drop across motor box office (in. H₂O) 	=	1.50	in. H₂O
17.64	= standard temperature to pressure ratio (*R/in. Hg)	=	17.64	°R/in, Hg
13.6	= conversion factor (In. H ₂ O/in. Hg)	=	13,6	in.H₂O/in. Hg
460	= "F to "R conversion constant	=	460	
V_{mold}	volume of gas sampled through the dry gas meter at standard conditions (dscf)	=	36,848	dscf

Prepared by Clean Air Engineering Propylology Software BS ISOKINETIC Version 2006 13a

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QA/QC

CONSOL Energy - AES Greenidge

Clean Air Project No: 10247

Unit 4 Air Fleater Inlet

3. Moisture measured in sample (% by volume)

B_{wo}	$= \frac{V_{vestd}}{(V_{mstd} + V_{wstd})}$			
Where:				
V _{mald}	 volume of gas sampled through the dry gas mater at standard conditions (dscf) 	=	36.848	dsc
V_{wstd}	= volume of water collected at standard conditions (sef)	=	3.31	scf
B _{wa}	proportion of water measured in the gas stream by volume	=	0.0825	
		=	8.25	%

4. Nitrogen (plus carbon monoxide) In gas stream (% by volume, dry)

17

$$N_2+CO$$
 = 1.00 $-CO_2-O_2$

Where:
 CO_2 = proportion of carbon dloxide in the gas stream by volume (%) = 16.5 %
 C_2 = proportion of exygen in the gas stream by volume (%) = 4.4 %
 C_2 = conversion factor (%) = 100 %

 C_2 = proportion of nitrogen and CO in the gas stream by volume (%) = 79.10 %

5. Motecular weight of dry gas stream (lb/lb-mole)

M_{d}	$= \left(M_{\text{CO}_2}\right) \frac{\left(\text{CO}_2\right)}{\left(100\right)} + \left(M_{\text{O}_2}\right) \frac{\left(\text{O}_2\right)}{\left(100\right)} + \left(M_{\text{N}_2+\text{CO}}\right) \frac{\left(\text{N}_2+\text{CO}\right)}{\left(100\right)}$			
Where:				
M _{CO2}	 molecular weight of carbon dioxide (lb/lb mole) 	=	44.00	(b/lb·mole
Moz	= molecular weight of oxygen (Ib/lb-mole)	=	32.00	lb/lb·mole
M _{N24 CO}	 molecular weight of nitrogen and carbon monoxide (lb/lb-mote) 	=	28.00	lb/lb⋅mole
CO_2	 proportion of carbon dioxide in the gas stream by volume (%) 		18.5	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	4.4	%
N ₂ +CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	79,1	%
100	= conversion factor (%)	=	100	%
M_d	= dry molecular weight of sample gas (lb/lb mole)	=	30.82	lb/lb-mole

$\label{eq:CTM-D27} \text{NH}_{\text{3}} \text{ Analyte Calculations - Front Half Rinse (Fraction 1)}$

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

031897 103709

1. Ammonium to NH₃ conversion factor

K _{NY} ,	$=\frac{\frac{MW_{NH_{1}}}{n\times MW_{MH_{4}}}}{-}$			
MW _{N+EL}	⇒ molecular weight of NH₂ (mg/mg-mole)	Ex	17.030	mg/mg-mole
MW ₁₂₅₆	n molecular weight of ammonium ion (mg/mg-mole)	=	18.040	mg/mg-male
N	≈ molar ratio of ammonium to Ntt₃	=	1.0	mole NH _d /mole NH₃
K _{NH3}	 conversion factor to convert mass NH₄* to mass NH₃ 	=	0.944	

2, Total NH₃ collected (mg)

rotal rang come				
$m_{_{NH_2}}$	$=K_{NH_1} \times \frac{\left(S_{NH_1} v_1 + S_{NH_1} v_2\right)}{1000}$			
Where:				
Krata	□ conversion factor to convert mass NH ₄ ⁺ to mass NH ₃	=	0.944	
SHALL	ammonium concentration of sample fraction 1 (ing/liter)	=	4.4900	mg/liter
V ₁	≃ liquid volume of sample fraction 1 (ml)	=	208.0	m!
Shirts	 ammonium concentration of sample fraction 2 (mg/liter) 	=	0.0000	mg/liter
V ₂	≃ figuid volume of sample fraction 2 (ml)	=	0.0	mi
1000	= conversion factor (ml/llfcr)	=	1000	mi/liter
m _{NH3}	⇒ total NH₂ collected in sample (mg)	=	0.8816	mg
	Note: Non-detects are treated as zero in summations.			

DEFINITION

Fraction 1 o entire sampto except last implager containing applicable absorbing reagent.

Fraction 2 = lest impinger containing applicable absorbing reagent, analyzed separately to evaluate collection efficiency. If entire sample is analyzed as a single fraction, their data is included as Fraction 1 (Fraction 2 = 0).

3. Allowable blank subtraction (mg)

$$m_b = K_{BH_b} \times B_{BH_b} \times \frac{(v_1 + v_2)}{1000}$$

$$m_b = 0 \text{ if } B_{BH_b} < MDJ.$$

Where: K _{MIB} B _{MH4} v ₁ v ₂ 1000	 conversion factor to convert mass NH₃⁺ to mass NH₃ ammonium concentration of blank (mg/liter) liquid volume of sample fraction 1 (mi) tiquid volume of sample fraction 2 (mi) conversion factor (ml/liter) 	= = = =	0.944 <0.0530 208.0 0.0 1000	mg/liter rul rul ml/iller
m _l ,	= allowable blank subtraction (mg)	=	0.0000	ing

Prepared by Clear Air Engineering Prop-Soby Solvedo 59 EPAZG-1 Version 7003-10s (NH3)

Copyright © 2006 Clean Pk (Ingleweing Inc.

Date <u>JW</u>

4, Tofal NH3 collected, corrected for blank (mg) ...

$$m_{nb} = m_{NH_2} - m_b$$

Vhere: m _{ннз} m _ь	= total NH ₃ collected in sample (mg) = altowable blank subtraction (mg)		=	0.8816	mg mg
m _{eb}	= total NH ₃ collected, corrected for blank (mg)	-	=	0.8816	mg

5. Minimum detectable NH3 (mg)

$$m_{MDL} = K_{NH_3} \times MDL \times \frac{(v_1 + v_2)}{1000}$$

Where:		•		
K _{NIIB}	≂ conversion factor to convert mass Nif₄* to mass NH₂	E	0.944	
MDL	a minimum defectable ammonium concentration	•	0,053	mg/liter
V ₁	 liquid volume of sample fraction 1 (ml) 	=	208,0	mi
V ₂	≂ liquid volume of sample fraction 2 (ml)	=	0.0	m!
1000		==	1000	mVilter
March	∞ minimum deteclable NH₃ (mg)	=	0.0104	wā

6. Total NH3 value used in emission calculations (mg)

m_n	$= MAXIMUM \left[m_{nb} or < m_{MDL} \right]$				
Where: m _{nb} m _{MM,}	= total NH₃ collected, corrected for blank (mg) = minimum detectable NH₃ (mg)	=	0.8816 0.0104	បាជិ ខេត្ត	
mα	≃ total NH ₃ value used in emission calculations (mg)	=	0.8816	គាថ្ង	

CTM-027 NH₃ Sample Calculations - Front Half Rinse (Fraction 1)

Sample data taken from Run 1

Note: The lables presenting the results are generated electronically from raw data. If may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to stylicen decimal places throughout. The final lable is formatted to an appropriate number of significant figures.

> 021807 121635 O N

1. NH₃ concentration (lb/dscf)

$$C_{sd} = \left(\frac{m_n}{V_{outd}}\right) \left(\frac{2.205 \times 10^{-3}}{1000}\right)$$

Where: $\mathbf{m}_{\mathbf{n}}$ V_{mald}

= total NH₃ collected, corrected for applicable blank (mg) 0.8616 Шß 36.8485 decf = volume metered, standard (dscf) lb/g 2 205E-03 2.205×10^{-3} = conversion factor (lb/g) 1,000 mg/g

1000 conversion factor (mg/g)

> 5.2756E-08 lb/decf

 ≡ NH₂ concentration (th/dsct) C_{sd}

2. NH₃ concentration (ppmdv)

$$C_{id} = \left(\frac{m_{ii}}{V_{nuld}}\right) \left(\frac{0.850}{1000}\right) \left(\frac{10^6}{MW}\right)$$

Where:

0.8816 □ total NH₂ collected, corrected for applicable blank (mg) ma $\mathbf{m}_{\mathbf{n}}$ 36.8485 dscf volume metered, standard (dscf) V_{mstd} 17.030 g/g-mole □ molecular weight of NH₃ (g/g-mole) MV 0.850 dscf/g-mole 0.850 = conversion factor (dacf/g-mole) 1,000 1000 conversion factor (mg/g) mg/g 10⁶ ppm conversion factor (ppm) 10⁸

1.1942 ppmdv ⇒ NH₃ concentration (ppmdV) C_{sd}

3, NH₃ concentration (ppmwv)

$$C_{\rm pr} = C_{\rm pr} \left(1 - \frac{B_{\rm pr}}{100} \right)$$

Where:

1,1942 ppmdv \mathbf{C}_{sd} = NH₃ concentration (ppmdv) % wv = actual water vapor in gas (% v/v) B.2508 $\mathbf{B}_{\mathbf{w}}$ % 100 100 = conversion factor (%)

1.0956 ppmww = NH_a concentration (ppmwv) C_{ψ}

4. NH₃ concentration (mg/dscm)

Unit 4 Air Heater Inlet

$$C_{sol} = \left(\frac{m_n}{V_{ward}}\right) (35.31)$$

Where:

35.31

⊭ total NH₃ collected, corrected for applicable blank (mg) 0.8816 mg m_a 36.8485 dscf = volume metered, standard (dscf) V_{mstd} dscf/dscm 35.31 = conversion factor (dscf/dscm)

D.B448 mg/dscm C_{sd} NH₂ concentration (mg/dscm)

5. NH₃ concentration (mg/Nm³ dry)

$$C_{sd} = \left(\frac{m_n}{V_{mid}}\right) (35.31) \left(\frac{68 + 460}{32 + 460}\right)$$

Where:

= total NH₃ collected, corrected for applicable blank (mg) 0.8816 mg $m_{\rm n}$ dscf 36,8485 = volume metered, standard (dscf) V_{mskd} dacf/dscm = conversion factor (dscf/dscm) 35.31 35.31 ٩F 68 68 = standard temperature (°F) ٠F 32 a normal temperatura (°F) 32 460 *F to *R conversion constant 460

0.9066mg/Nm³ dry = NH₃ concentration (mg/Nm³ dry) C_{sd}

NH₃ concentration corrected to x% O₂ (ppmdv example)

$$C_{sd}$$
 = $C_{sd} \left(\frac{20.9 - x}{20.9 - O_2} \right)$

Where: 1.1942 ppmdv = NH₃ concentration (ppmdv) C_{sd} % ≤ oxygen content of corrected gas (%) 3.0 х % 4.4 ⇒ proportion of oxygen in the gas stream by volume (%) O₂ 20.9 20.9 = oxygen content of ambiest air (%)

1.2055 ppmdv @ x%O₂ C_{edd} = NH₃ concentration corrected to x%O₂ (ppmdv)

7. NH₃ concentration corrected to y% CO₂ (ppmdv example)

$$C_{sdy} = C_{sd} \left(\frac{y}{CO_s} \right)$$

Where:

1.1942 apmav NH₃ concentration (ppmdv). C_{sd} % = carbon dioxide content of corrected gas (%) 12.0 % proportion of carbon dioxide in the gas stream by volume (%) 16.5 CO₂

ppmdv @ y%COz = NH₃ concentration corrected to y%CO₂ (ppmdv) 0.8685 Cser

:

CTM-027 NH₃ Analyte Calculations - implinger 1 (Fraction 2)

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw date, it may not be possible to exactly duplicate those results using a calculator. The reference method date, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

091807 108709

Ammonium to NH₃ conversion factor.

Κ _{III} , Where:	$= \frac{MW_{NH}}{n \times MW_{MH_4^+}}$			•
MW _{NHX}	ച molecular weight of NH ₃ (mg/mg-mole)	=	17.030	mg/mg-mole
WWNH4+	= molecular weight of ammonium ion (mg/arg-mote)	=	18,040	mg/mg-mole
U	⇒ moler ratio of ammonitum to NH _a	=	1.0	mote NH₄/mote NH _a
K _{NSES}	≃ conversion factor to convert mass NH ₄ * Io mass NH ₃	=	0.944	

2, Total NH₃ collected (mg)

111	$=K_{NH_3} \times \frac{\left(S_{NH_4} \frac{\nu_1 + S_{NH_4} \nu_2}{1000}\right)}{1000}$			
m_{NH_1}	1000			
Where:				
K _{NH3}	$=$ conversion factor to convert mass NH ₄ $^{+}$ to mass NH ₃	= .	0.944	
S _{NH4-1}	 ammonium concentration of sample fraction 1 (mg/liter) 	=	0.3600	mg/iller
V ₁	= Itquid volume of sample fraction 1 (ml)	=	195.0	ml
S _{N84-2}	= ammonium concentration of sample fraction 2 (mg/liter)	=	0.0000	mg/ilter
٧2	= liquid volume of sample (raction 2 (ml)	=	0.0	πl
1000	= conversion factor (mt/liter)	=	1000	mMiter
m _{MH3}	= total NH ₃ coffected in sample (mg)	=	0.0863	mg
	Note: Non-delects are trialed as zero in summetions.			

DEFINITION

Fraction 1 = entire sample except last impinger containing applicable absorbing reagent.

Fraction 2 = jast impinger containing applicable absorbing reagent, analyzed separately to evaluate collection efficiency. If entire sample is analyzed as a single fraction, then data is included as Fraction 1 (Fraction 2 = 0).

3. Allowable blank subtraction (mg)

$$m_b = K_{BH_b} \times B_{BH_A} \times \frac{(v_1 + v_2)}{1000}$$

$$m_b = 0 \quad \text{if } B_{BH_A} < MDL$$

	· ·			
Where:				
K _{NHa}	 conversion factor to convert mass NH₄⁺ to mass NH₃ 	=	0.944	
\mathbf{B}_{NH4}	 ammonium concentration of blank (mg/liter) 	=	< 0.0530	mg/liter
V ₁	= liquid volume of sample fraction 1 (ml)	=	195.0	ml
V ₂	 liquid volume of sample (raction 2 (ml)) 	=	0.0	ml
1000	= conversion factor (mt/liter)	=	1000	mИiter
	•			
m _l ,	= altowable blank subtraction (mg)	===	0.0000	mg

4. Total NH3 collected, corrected for blank (mg)

$$m_{nb} = m_{NH_2} - m_b$$

Where: m _{MB} m _b	= total NH ₃ collected in sample (mg) = allowable blank subtraction (mg)	=	0,0563 0,0000	មេជិ មេជិ
[Pab	= total NH ₂ collected, corrected for blank (mg)	-	0.0863	nig

6. Minimum detectable NH3 (mg)

$$m_{MOL} = K_{NH_1} \times MDL \times \frac{(v_1 + v_2)}{1000}$$

Where:				
K _{NR3}	 conversion factor to convert mess NH₄⁺ to mass NH₃ 	=	0.944	
MDL	= minimum detectable ammonium concentration	=	0.053	mgiliter
V ₁	= ligurid volume of sample fraction 1 (ml)	=	195.0	m)
V ₂	= liquid volume of sample fraction 2 (ml)	=	0.0	ml
1000	= conversion factor (miditer)	=	1000	ml/liter
m _{WOL}	= minimum detectable NH ₃ (riig)	=	0.0098	mg

6. Total NH3 value used in emission calculations (mg)

m_n	$= MAXIMUM \left[m_{nb} or < m_{MDL} \right]$			
Where: m _{nb} m _{MDL}	≃ total NH₃ collected, corrected for blank (mg) ≃ misimum detoctable NH₃ (mg)	=======================================	0,0663 0,0098	mg mg
m _n	$=$ (otal NH $_3$ value used in emission calculations (mg)	=	0,0863	mg

CTM-027 NH₃ Sample Calculations - Impinger 1 (Fraction 2)

Sample data taken from Run 1

= 3.9656E-09 lb/dscf

Note: The tables presenting the results are generated electronically from raw data, it may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formalised to an appropriate number of significant figures.

031807 113109

1. NH₃ concentration (lb/dscf)

$$C_{nd} = \left(\frac{m_{\pi}}{V_{model}}\right) \left(\frac{2.205 \times 10^{-3}}{1000}\right)$$

Where:

m _a	= total NH ₃ collected, corrected for applicable blank (mg)	=	0.0663	ខាជ្ញ
Viiisiri	= volume metered, standard (dsef)	#	36.8485	dscf
2.205 x 10 ⁻³	= conversion factor (fb/g)	15	2.205E-03	lpyg
1000	= conversion factor (mg/g)	=	1,000	mg/g

.

= NH_a concentration (lb/decf)

2. NH t₃ concontration (ppmdv)

$$C_{sd} = \left(\frac{m_u}{V_{mid}}\right) \left(\frac{0.850}{1000}\right) \left(\frac{10^6}{MW}\right)$$

Where:

л _о	= total NH _s collected, corrected for applicable blank (mg)	=	0.0663	mg
V _{msld}	= volume metered, standard (dscf)	=	36.8485	dscf
MW	⇒ molecular weight of NH ₃ (g/g⊣noto)	=	17.03D	g/g-mole
0.850	□ conversion factor (dscf/g-mole)	=	0.850	deci/g-male
1000	a conversion factor (mg/g)	=	1,000	យមិ/ចិ
106	= conversion factor (ppm)	=	10 ⁸	ppm
C _{sd}	⇒ NH _s concentration (ppmdv)	=	0.0898	ppmdv

3. NH₃ concentration (ppmwv)

$$C_w = C_{sJ} \left(1 - \frac{B_w}{100} \right)$$

Where:

C _w	= NH ₃ concentration (ppnww)		0.0824	ppmwv
100	= conversion factor (%)	· =	100	%
B _{or}	≃ actual water vapor ln ges (% v/v)	=	B.2509	% v/v
\mathbf{C}_{sd}	$= NH_3$ concentration (ppmdv)	=	0,0898	ppmdv

Unit 4 Air Heater Inlet

4, NH₃ concentration (mg/dscm)

$$C_{sd} = \left(\frac{m_n}{V_{watd}}\right) (35.31)$$

Where: m _n V _{rosto} 35.31	= lotel NH ₃ collected, corrected for applicable blank (mg) = volume metered, standard (dscf) = conversion factor (dscf/dscm)	= = =	0.0663 36.8485 35.31	mg deci deci/decm
Ces	= NH ₃ concentration (mg/dscm)	=	0.0635	mg/dscm

NH_a concentration (mg/Nm^a dty)

$$C_{sd} = \left(\frac{m_n}{V_{outd}}\right) (35.31) \left(\frac{68 + 460}{32 + 460}\right)$$

Where:				
m _n	 total NH₃ collected, corrected for applicable blank (mg) 	=	0.0663	mg
V _{msld}	= volume metered, standard (dscf)	=	36,8485	dscf
35.31	≂ conversion factor (dect/decm)	=	35.31	dscf/dscm
68	≃ standard temperature (°F)	=	69	° F
32	■ normal temperature (°F)	=	32	۴
460	■ °F to °R conversion constant	7	460	
\mathbf{C}_{sd}	= NH ₃ concentration (mg/Nm³ dry)	-	0.0681	mg/Nm³ dry

8, NH₃ concentration corrected to x% O₂ (ppmdv example)

$$C_{\omega_x} = C_{\omega} \left(\frac{20.9 - x}{20.9 - O_2} \right)$$

Where:				
C_{sof}	= NH ₃ concentration (ppmdv)	н	0.0898	ppmdv
x	= oxygen content of corrected gas (%)	=	3.0	%
O ₂	⇒ proportion of oxygen in the gas stream by volume (%)	=	4.4	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C _{sttx}	= NH ₃ concentration corrected to x%O ₂ (ppmdv)	=	0.0974	ppmdv @ x%O₂

7. NH₃ concentration corrected to y% CO₂ (ppmdv example)

$$C_{sdy} = C_{sd} \left(\frac{y}{CO_z} \right)$$

	* "*			
Where:				
Czd	≂ NH₃ concentration (ppmdv)		0.0898	ppmdv
v	= carbon dioxide content of corrected gas (%)	8	12.0	%
CO₂	= proportion of carbon dioxide in the gas stream by volume (%)	=	16.5	%
Carr	= NH ₃ concentration corrected to y%CO ₂ (ppmdv)	=	0,0653	ppmdv @ y%COz

CTM-027 NH₃ Analyte Calculations - Implagers 2 & 3 (Fraction 3)

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw date, it may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are certied to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

COSEG7 103780

1. Ammonfum to NH₃ conversion factor

Κ _{ηΗ} , Where:	$=\frac{\frac{M2W}{m}_{NH}_{s}}{m\times MW_{NH}_{s}}$			
MWellia	≃ molecular weight of NH ₃ (mg/mg-mole)	=	17.030	mg/mg-mole
MW NH4+	= molecular weight of ammonlum ion (mg/mg-mole)	=	18.040	elom-gm)gm
63	≅ moler (atio of ammonium to NH₃	=	1.0	mola NH₄/mole NH₃
Kun	≃ conversion factor to convert mass NH.⁴ to mass NH.	=	0.944	

2. Total NH₃ collected (mg)

Toda III g ozna				
m_{NH_1}	$=K_{NH_3} \times \frac{\left(S_{NH_4} v_1 + S_{NH_4} v_2\right)}{1000}$			
Where:				
K_{NH3}	 conversion factor to convert mass NH₄⁺ to mass NH₃ 	=	0.944	
SNHC	= ammonium concentration of sample frection 1 (mg/liter)	. =	<0.0530	mg/liter
V ₁	= liquid volume of sample fraction 1 (ml)	=	280,0	mi
S _{NH4-2}	= ammontum concentration of sample fraction 2 (mg/liter)	=	0.0000	mg/liter
v ₂	= (iquid volume of sample fraction 2 (ml)	=	0.0	ml
1000	= conversion factor (mt/liter)	=	1000	mbliter
m _{arts}	= total NH ₃ collected in sample (mg)	=	<0.0140	mg
	Note: Non-detects are treated as zero in summetions.			

DEFINITION

 m_{Λ}

Fraction 1 × entire sample except test impinger containing applicable absorbing reagent.
Fraction 2 = test impinger containing applicable absorbing reagent, analyzed separately to evaluate collection efficiency.
If entire sample is analyzed as a single fraction, then data is included as Fraction 1 (Fraction 2 = 0).

3. Allowable blank subtraction (mg)

 $=K_{NH_3} \times B_{NH_4} \times \frac{(v_1 + v_2)}{1000}$

4. Total NH3 collected, corrected for blank (mg)

$$m_{nb} = m_{NH_3} - m_b$$

Where: m _{NIS} m _b	= (ofat NH ₃ collected in sample (mg) = allowable blank subtraction (mg)		<0.0140 0.0000	កាថ្ម - កាថ្ម
Mark.	⇒ total NH₂ collected, corrected for blank (mg)	=	<0.0140	mg

s. Minimum detectable NH3 (mg)

$$m_{MDL} = K_{NH_1} \times MDL \times \frac{(v_1 + v_2)}{1000}$$

Where:				
K _{NH3}	 conversion factor to convert mass NH₄⁺ to mass NH₅ 	=	0,944	
MDL	= minimum detectable ammonium concentration	=	0,053	mg/liter
٧	= liquid volume of sample fraction 1 (ml)	=	280,0	ml
V ₂	= liquid volume of sample fraction 2 (ml)	=	0,0	mi
1000	= conversion factor (mi/filter)	=	1000	mVliter
Ш	= minimum detectable NH ₂ (Mn)	=	0.0140	ma

6. Total NH3 value used in emission calculations (mg)

m_n	$= MAXIMUM \left[m_{nb} or < m_{MDL} \right]$			
Where; m _{nb} m _{MDL}	 ⇒ total NH₃ collected, corrected for blank (mg) ⇒ minimum detectable NH₃ (mg) 	<u> </u>	<0.0140 0.0140	mg mg
mn	\approx total NH $_3$ value used in emission calculations (mg)	u	<0.0140	អាជ្ញ

амас <u>)(11)</u> Date <u>411() —</u>

CTM-027 NH₃ Sample Calculations - Impingers 2 & 3 (Fraction 3)

Sample data taken from Run 1

< 0.0140

36.8485

1,000

mq

dscf

lb/g

mg/g

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate those results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formetted to an appropriate number of significant figures.

091807 161203

1, NH_a concentration (lb/decf)

$$C_{sd} = \sqrt{\frac{m_n}{V_{model}}} \left(\frac{2.205 \times 10^{-3}}{1000} \right)$$

Where: = total NH_a collected, corrected for applicable blank (mg) m_n ⇒ volume metered, standard (dscf) V_{mstd} 2.205E-03 □ conversion factor (lb/g) 2.205×10^{-3} = conversion factor (mg/g)

<8.3829E-10 lb/decf = NH_a concentration (lb/dscf) C_{sd}

2, NH₃ concentration (pprody)

1000

$$C_{nl} = \left(\frac{m_n}{V_{mid}}\right) \left(\frac{0.850}{1000}\right) \left(\frac{10^6}{MW}\right)$$

Where: ⇒ total NH₃ collected, corrected for applicable blank (mg) <0.0140 mg n_{η} 36.8485 dscf volume metered, standard (dscf) V_{mstd} 17.030 g/g-mole = molecular weight of NH₃ (g/g-mole) MW 0.850dscf/g-mole conversion factor (dscl/g-ntole) 0.8501,000 mg/g 1000 conversion factor (mg/g) 10^B ppm 10⁶ ≃ conversion factor (ppm) opmdy <0.0190 □ NH₃ concentration (ppmdv). C_{sd}

3. NH₃ concentration (ppmwv)

$$C_w = C_{vl} \left(1 - \frac{B_w}{100} \right)$$

Where: <0.0190 ppmdy = NH₃ concentration (ppmdv) Cred 8.2509 % Wv = actual water vapor in gas (% v/v) Вw 100 % = conversion factor (%) 100 <0.0174 ppmwv = NH_a concentration (ppn/wv) C_{w}

Propage 52y Clean Air Engineering Propagatory Software SS 9*(1A26-6 Vendon 2006-10a (1916))

4. NH₃ concentration (mg/dscm)

$$C_{sd} = \left(\frac{m_u}{V_{model}}\right) (35.31)$$

Where:

τπ ^α	 total NH₃ collected, corrected for applicable blank (mg) 	=	<0,0140	mg
Visit	 = volume matered, standard (dscf) 	F	36.9495	dacf
35.31	= conversion factor (decf/dscm)	Ħ	35.31	dec[/dscm

 C_{sd} = NH_s concentration (mg/dscm) = <0.0134 mg/dscm

5. NH₃ concentration (mg/Nm³ dry)

$$C_{zd} = \left(\frac{m_{\pi}}{V_{model}}\right) (35.31) \left(\frac{68 + 460}{32 + 460}\right)$$

Where:

m_{σ}	 total NH₃ collected, corrected for applicable blank (mg) 	=	<0.0140	mg
V _{msld}	= volume metered, standard (dscf)	=	36.8465	dscf
35.31	= conversion factor (dscf/dscm)	=	35.31	dscf/dscm
68	≃ standard temperature (*F)	=	6B	°F
32	= normal temperature (*F)	=	32	" F
460	= °F to °R conversion constant	- =	460	

 C_{ed} = NH₃ concentration (mg/Nm³ dry) = <0.0144 mg/Nm³ dry

6. NH₃ concentration corrected to x% O₂ (ppmdv example)

$$C_{sdx} = C_{sd} \left(\frac{20.9 - x}{20.9 - O_z} \right)$$

Where:

C rd	= NH ₃ concentration (ppindy)		<0.0180	ppmav
x	= oxygen content of corrected gas (%)	₩.	3.0	%
O ₂	= proportion of oxygen in the gas stream by volume (%)	=	4.4	%
20.9	= exygen content of ambient air (%)	п	20.9	%

 C_{edx} = NH₃ concentration corrected to x%O₂ (ppmdv) = <0.0206 ppmdv @ x%O₂

7. NH₃ concentration corrected to y% CO₂ (ppmdv example)

$$C_{sdy}$$
 = $C_{td} \left(\frac{y}{CO_2} \right)$

Where:

\mathbf{C}_{sd}	= NH ₃ concentration (ppmdv)	=	<0.0190	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.0	%
CO2	= proportion of carbon dioxide in the gas stream by volume (%)	7.2	16.5	%

 C_{suly} = NH₂ concentration corrected to y%CO₂ (ppmdv) = <0.0138 ppmdv @ y%CO₂

CTM-027 NH₃ Analyte Calculations - Total Combined Results

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw date. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

091857 | 153703

1. Ammonium to NH₃ conversion factor

Κ _{NH} , Where:	$=\frac{MW_{NM_1}}{n\times MW_{MN_4^+}}$			
MWW	□ molecular weight of NH ₃ (mg/mg-mole)	=	17.030	mg/mg-mole
MWNHS	 molecular weight of ammonium ion (mg/mg-mole) 	=	18.040	mg/mg-mole
1	≃ moter ratio of ammonium to NH ₃	=	1.0	mole NH₄/mole NH₃
Кын	■ conversion factor to convert mass NH₂ ⁺ (o mass NH₂	=	0.944	

2. Total NH₃ collected (mg)

	$(S_{vv}, v, +S_{vv}, v_o)$							
m_{NH_2}	$= K_{NH_1} \times \frac{\left(S_{NH_4} v_1 + S_{NH_4} v_2\right)}{1000}$							
Where:								
K _{MHa}	 conversion factor to convert mass NH₄⁺ to mass NH₃ 	=	0.944					
Տուտ	 ammonium concentration of sample fraction 1 (mg/liter) 	=	0.9479	mg/liter				
V ₁	⇒ liquid volume of sample fraction 1 (ml)	=	0.0	ml				
S _{NIM-2}	= ammonium concentration of sample fraction 2 (mg/lftor)	=	<0.0140	mg/liter				
V ₂	≃ liquid volume of sample fraction 2 (mi)	=	0.0	ml				
1000	= conversion factor (ml/liter)	=	1000	mWiter				
M _{NEI3}	= total NH ₃ collected in sample (mg)	=	0.0000	mg				
	Note: Non-detects are treated as zero in summations.							

DEFINITION

Fraction 1 = entire sample except last implager containing applicable absorbing reagent.

Fraction 2 = last impinger containing applicable absorbing reagent, analyzed asparately to evaluate collection efficiency.

If entire sample is analyzed as a single fraction, then date is included as Fraction 1 (Fraction 2 = 0).

3, Allowable blank subtraction (mg)

$$\begin{array}{ll} m_b & = K_{NH_A} \times B_{NH_A} \times \frac{\left(y_1 + y_2\right)}{1000} \\ m_b & = 0 \quad \text{if } B_{NH_A} < MDL \end{array}$$

Where:				
K _{NH3}	= conversion factor to convert mass NH ₄ * to mass NH ₃	=	0.944	
BNIM	= ammonium concentration of blank (mg/liter)	=	<0,0530	mg/iller
V ₁	⇒ liquid volume of semple fraction 1 (ml)	=	0.0	ml
V ₂	= liquid volume of sample fraction 2 (ml)	=	0.0	ml
1000	= conversion factor (mt/liter)	=	1000	mi/filter
Пь	= allowable blank subtraction (mg)	=	0.0000	mg

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Clean Air Project No: 1024 Unit 4 Air Heater Inlet

4. Total NH3 collected, corrected for blank (mg)

$$m_{nb} = m_{NH_1} - m_b$$

Where: m _{NHS} m _b	= total NH ₃ collected in sample (mg) = allowable blank subtraction (mg)	= =	0.0000 0.0000	mg mg
m _{nb}	= total NH ₃ collected, corrected for blank (mg)	ㅌ	0.0000	mg

5. Minimum detectable NH3 (mg)

$$m_{MDL} = K_{NH_1} \times MDL \times \frac{(v_1 + v_2)}{1000}$$

Where:				
K _{NH3}	= conversion factor to convert mass NH ₄ * to mass NH ₃	73	0.944	
MDL	= minimum detectable ammonium concentration	=	0.053	mg/liter
V ₂	= liquid volume of sample fraction 1 (ml)	=	0.0	яıl
V ₂	= liquid volume of sample fraction 2 (ml)	=	0.0	ınl 💮
1000	= conversion factor (mi/liter)	=	1000	mVüter
m _{MOL}	= minimum detectable Ni I ₃ (mg)	=	0.0000	mg

6. Total NH3 value used in emission calculations (mg)

$$m_{_{cl}} = MAXIMUM \begin{bmatrix} m_{_{ab}} & or & < m_{_{MDL}} \end{bmatrix}$$

Where:

 $m_{_{ab}} = \text{total NH}_3 \text{ collected, corrected (or blank (mg))} = 0.0000 \text{ mg}$
 $m_{_{MDL}} = \text{minimum detectable NH}_3 \text{ (mg)} = 0.0000 \text{ mg}$
 $m_{_{a}} = \text{total NH}_3 \text{ value used in emission calculations (mg)} = 0.9479 \text{ mg}$

7. Collection QC check (% mass collected in second fraction)

$$EFF = 100 \times \frac{K_{NH_1} \times S_{MH_2-2} \times \frac{v_2}{1000}}{m_{NH_1}}$$

	111H,			
Where:				
KNH3	= conversion factor to convert mass NH ₄ * to mass NH ₃		0.944	
$s_{_{\mathrm{NH4-2}}}$	= ammonium concentration of sample fraction 2 (mg/liter)	=	<0.0140	យកិឡាទ្រវ
V ₂	 Ilquid volume of sample fraction 2 (ml) 	=	0.0	ml
111MF3	= total NH ₃ collected in sample (reg)	=	0.0000	mg
1000	= conversion factor (milliter)	=	1000	m/liter
100	= conversion factor	=	100	%
EFF	= Collection QC check (% mass collected in second fraction)		<1,48	%

CTM-027 NH₃ Sample Calculations - Total Combined Results

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are cerried to sixteen decimal places throughout. The final table is formatical to an appropriate number of significant figures.

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1, NH_a concentration (lb/dscf)

$$C_{nd} = \left(\frac{m_{n}}{V_{min}}\right) \left(\frac{2.205 \times 10^{-3}}{1000}\right)$$

Where:

ra _n V _{meld}	 total NH₃ collected, corrected for applicable blank (mg) volume metered, standard (dscf) 	=	0.9479 36.8485	mg dscf
$2,205 \times 10^{-3}$ 1000	= conversion factor (ib/g) = conversion factor (mg/g)	=	2.205E-03 1,000	wâ _t â Ipiâ
$C_{\rm sd}$	= NH _a concentration (ib/dscf)	=	5.67215-08	D/d≤d

2. NH₃ concontration (ppmdv)

$$C_{sd} = \left(\frac{m_{\nu}}{V_{\rm mold}}\right) \left(\frac{0.850}{1000}\right) \left(\frac{10^6}{MW}\right)$$

Where:

m _n	= total NH ₂ collected, corrected for applicable blank (mg)	=	0.9479	mg
V _{cnskd}	⊂ volume metered, standard (dscf)	=	36.8485	dscf
MW	= (nolecular weight of NH _a (g/g-mole)	=	17.030	g/g-mole
0.850	= conversion factor (dscf/g-mole)	=	0.850	dscf/g-mole
1000	= conversion factor (mg/g)	. =	1,000	mg/g
10 ⁶	= conversion factor (ppm)	=	106	ppm
C_{sd}	= NH _s concentration (ppmdv)	=	1.2839	ppmdv

3. NH₃ concentration (ppmwv)

$$C_{w} = C_{sd} \left(1 - \frac{B_{w}}{100} \right)$$

Where:

\mathbf{C}_{sd} \mathbf{B}_{w}	= NH ₃ concentration (ppmdv) = actual water vapor in gas (% v/v)	=	1,2839 8,2509	ppmdv % wv
100	= conversion factor (%)	45	100	%
C _w	= NH ₃ concentration (ppmwv)	<u>=</u>	1.1780	рртич

ONOC JW

4, NH₃ concentration (mg/dscm)

$$C_{sd} = \left(\frac{m_n}{V_{mild}}\right) (35.31)$$

Where:

m _a	 total NH₃ collected, corrected for applicable blank (mg) 	=	0.9479	mg
V _{mstd}	= volume metered, standard (dsct)	=	36.8485	dscf
35.31	□ conversion factor (dsc#/dscm)	=	35.31	decf/dscm

 C_{sd} = NH₃ concentration (mg/dscm) = 0.9083 mg/dscm

5. NH₃ concentration (mg/Nm³ dry)

$$C_{sd}$$
 = $\left(\frac{m_n}{V_{math}}\right) (35.31) \left(\frac{68 + 460}{32 + 460}\right)$

Where:

m_n	 Lotal NH₃ collected, corrected for applicable blank (mg) 	=	0.9479	mg
V_{mstd}	= volume motored, standard (dscf)	=	36.8485	dscf
35.31	= conversion factor (dscf/dscm)	=	35.31	dsc#/dscm
6 8	= standard (emparature (°F)	. =	68	°F
32	= normel temperature (°F)	=	32	°F
460	= "Filo"R convention constant	=	460	

 C_{sd} = NH₃ concentration (mg/Nm³ dry) = 0.9748 mg/Nm³ dry

6. NH₃ concentration corrected to x% O₂ (ppmdv example)

$$C_{\text{rdx}} = C_{\text{rd}} \left(\frac{20.9 - x}{20.9 - O_2} \right)$$

Where:

$\mathbf{C}^{\bullet i}$	= NI I ₃ concentration (ppmdv)	=	1.2839	bbiuga
×	= oxygen content of corrected gas (%)	=	3.0	%
O_2	 proportion of oxygen in the gas stream by volume (%) 	24	4.4	%
20.9	∞ oxygen content of ambient air (%)	В	20.9	%

 C_{sdx} = NH₃ concentration corrected to x%O₂ (ppmdv) = 1.3929 ppmdv @ x%O₂

7. NH₃ concentration corrected to y% CO₂ (ppmdv example)

$$C_{sdy} = C_{sd} \left(\frac{y}{CO_2} \right)$$

Where:

C_{sd}	= NH ₃ concentration (ppmdv)	=	1,2839	ppmdv
у	= carbon dioxide content of corrected gas (%)	=	12.0	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	ы	16.5	%

 C_{ady} = NH₃ concentration corrected to y%CO₂ (ppmdv) = 0.9338 ppmdv @ y%CO₂

CTM-027 NH₃ Analyte Calculations - Preliminary Field T/trafton

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw data, it may not be possible to exactly duplicate those results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

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Ammonfum to NH₃ conversion factor

Κ _{MH} , Where:	$=\frac{MW_{NH}}{n\times MW_{NH}}$			
MW_{this}	= molecular weight of NH ₃ (mg/mg-mole)	=	17.030	slom-gatigm
MVV_{NH44}	molecular weight of ammonium ion (mg/mg-mole)	=	18.040	mg/mg-mole
E	= molar ratio of ammonium to NH ₃	=	1.0	mole NH ₄ /mole NH ₃
K_{NH3}	= conversion factor to convert mass NH ₄ ⁺ to mase NH ₃	=	0,944	

2. Total NH₃ collected (mg)

rotal INFI3 colle				
m_{NH_1}	$=K_{NH_4} \times \frac{\left(S_{NH_4} \nu_1 + S_{NH_4} \nu_2\right)}{1000}$			
Where:				
К _{инз}	 conversion factor to convert mass NH₄* to mass NH₃ 	=	0.944	
S _{NH4-1}	= ammonium concentration of sample fraction 1 (mg/liter)	=	4,2126	mg/liter
ν ₁	 liquid volume of semple (raction 1 (ml)) 	=	0,0	ml
S _{NH4-2}	= ammonium concentration of sample fraction 2 (mg/liter)	=	0.0070	mg/[lter
V ₂	= liquid volume of sample fraction 2 (mi)	. =	0,0	ml
1000		=	1000	ml/liter
ant _{NH3}	= total NH _a collected in sample (mg)	=	0,0000	mg

DEFINITION

Fraction 1 = entire sample except fast implinger containing applicable absorbing reagent.

Fraction 2 = last implager containing applicable absorbing reagent, analyzed separately to evaluate collection efficiency. It entire sample is analyzed as a single fraction, then data is included as Fraction 1 (Fraction <math>2 = 0).

3. Allowable blank subtraction (mg)

$$m_b = K_{NH_A} \times B_{NH_A} \times \frac{(v_1 + v_2)}{1000}$$

$$m_b = 0 \quad \text{if } B_{NH_A} < MDL$$

Where:				
KNH3	= conversion factor to convert mass NH ₄ ⁺ to mass NH ₃	=	0.944	
BINHA	 ammonium concentration of blank (mg/liter) 	=	0.5174	mg/ilter
٧1	= liquid volume of sample (raction 1 (mi)	=	0.0	ml
V ₂	□ liquid volume of sample fraction 2 (mi)	=	0.0	m!
1000	□ conversion factor (ml/liter)	=	1000	mVliter
m_b	= attowable blank subtraction (mg)	=	0.0000	mg

OA/QC ______OA/QC _____

4. Total NH3 collected, corrected for blank (mg)

$$m_{nb} = m_{NH_3} - m_b$$

Where: M _{NH3} Mb	 □ fotel NH₃ collected in sample (mg) □ allowable blank subtraction (mg) 	=	0.0000 0.0000	iųd iųd
m _{rb}	= total NH ₃ collected, corrected for blank (mg)	=	0,0000	mg

5. Minimum detectable NH3 (mg)

$$m_{MDL} = K_{NH_3} \times MDL \times \frac{(v_1 + v_2)}{1000}$$

Where:				
KNtts	 conversion factor to convert mess NH₃⁺ to mass NH₃ 	=	0.944	
MDL	= minimum detectable ammonium contentration	=	0.000	nıg/liter
V ₄	= liquid volume of sample fraction 1 (ml)	=	0.0	mi
V ₂	= liquid volume of sample fraction 2 (ml)	=	0.0	ral
1000	 conversion factor (ml/liter) 	=	1000	mViller
magaL	≖ minimum detectable NH₃ (mg)	=	0.0000	mg

6. Total NH3 value used in emission calculations (mg)

m_n	$= MAXIMUM \left[m_{nb} \cdot or < m_{MDL} \right]$			
Where: m _e m _{ack}	= total NH ₃ collected, corrected for blank (mg) = minimum detectable NH ₃ (mg)	=	0.0000 0.0000	mg mg
m _q	$=$ total NH $_3$ value used in emission calculations (mg)	=	4.2196	шg

7, Collection QC check (% mass collected in second fraction)

$$EFF = 100 \times \frac{K_{mH_b} \times S_{mH_{b-2}}}{m_{mI_b}} \times \frac{v_2}{1000}$$

Where:				
KNHS	= conversion factor to convert mass NH ₄ * to mass NH ₃	=	0.844	
5 _{NR4-2}	= ammonium concentration of sample fraction 2 (mg/liter)	=	0.0070	mg/liter
V2	= liquid volume of sample fraction 2 (mf)	=	0.0	ml
m _{NIB}	= total NH ₃ collected in sample (mg)	=	0.0000	mg
1000	= conversion factor (mt/liter)	=	1000	mbliter
100	= conversion factor	=	100	%
EFF	= Collection QC check (% mass collected in second fraction)	Ħ	0.17	%

CTM-027 NH₃ Sample Calculations - Preliminary Field Titration

Sample data taken from Run 1

mg

dacf

lb/g

pagag

1,000

Note: The tables presenting the results are generated electronically from raw date. It may not be possible to exactly duplicate these results using a calculator. The reference method date, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

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1. NH₂ concentration (lb/dscf)

$$C_{sd}$$
 $\approx \left(\frac{m_n}{V_{mold}}\right) \left(\frac{2.205 \times 10^{-3}}{1000}\right)$ Where:

 m_n = total NH₃ collected, corrected for applicable blank (mg) = 4.2196

 V_{mold} = volume metered, standard (dscf) = 36.8485

 2.205×10^{-3} = conversion factor (bb/g) = 2.205E-03

= conversion factor (mg/g)

 C_{ad} = NH₃ concentration (lb/dscf) = 2.5259 Ξ -07 |b/dscf

2. NH₃ concontraiton (ppmdv)

1000

$$C_{gd} = \left(\frac{m_n}{V_{gold}}\right) \left(\frac{0.850}{1000}\right) \left(\frac{10^6}{MW}\right)$$
Where:
$$m_n = \text{total NH}_2 \text{ collected, corrected for applicable blank (mg)} = 4.2498 \text{ mg}$$

$$V_{maid} = \text{volume metered, standard (dsof)} = 36.8485 \text{ dsof}$$

$$MW = \text{molecular weight of NH}_3 \text{ (g/g-mole)} = 17.030 \text{ g/g-mole}$$

$$0.850 = \text{conversion factor (dsof/g-mole)} = 0.850 \text{ dsof/g-mole}$$

$$1000 = \text{conversion factor (mg/g)} = 1.000 \text{ mg/g}$$

$$10^6 = \text{conversion factor (ppm)} = 10^6 \text{ ppm}$$

 C_{sd} = NH₃ concentration (ppmdv) = 5.7155 ppmdv

3. NH₃ concentration (ppmwv)

$$C_{w}$$
 $\approx C_{yt} \left(1 - \frac{B_{w}}{100}\right)$

Where:

 C_{sd} = NH₃ concentration (pprndv) \cong 5.7155 ppmdv

 B_{w} = actual water vapor in gas (% v/v) \cong 8.2509 % v/v

 100 = conversion factor (%) \cong 100 %

 C_{w} = NH₃ concentration (ppmwv) \cong 5.2439 ppmwv

4. NH₃ concentration (mg/dscm)

$$C_{sd} = \left(\frac{m_n}{V_{cold}}\right) (35.31)$$

Where:

Tin.	 fofal NH₃ collected, corrected for applicable blank (mg) 	F	4.2198	mg .
V _{neid}	= volume metered, standard (dscf)		36.8485	dscf
35.31	= conversion factor (dsc!/dscm)	=	35.31	dscf/dscm

 C_{sd} = NH₃ concentration (mg/dscm) = 4.0434 mg/dscm

NH₃ concentration (mg/Nm³ dry)

$$= \left(\frac{m_n}{V_{model}}\right) (35.31) \left(\frac{68 + 460}{32 + 460}\right)$$

Where:

m_n	 total NH₃ collected, coπected for applicable blank (mg) 	=	4.2198	mg
V _{mstd}	≃ votume metered, standard (dscf)	=	36,8485	dsof
35.31	□ conversion factor (decf/decm)	=	35.31	dscl/dscm
68	□ standard temperature (°F)	=	68	"F
32	≃ normal temperature (°F)	=	32	°F
460	⊨ °F to °R conversioa constant	=	460	
C _{ed}	= NH ₃ concentration (mg/Nm ³ dry)	n	4,3393	mg/Nm³ d₁y

NH₃ concentration corrected to x% O₂ (ppmdv example)

$$C_{sdt}$$
 = $C_{sd} \left(\frac{20.9 - x}{20.9 - O_2} \right)$

Where:

C ^{eq}	= NH ₃ concentration (ppmdv)	=	6.7155	ppmdv
x	= oxygen content of corrected gas (%)	=	3.0	%
Ω_2	= proportion of oxygen in the gas stream by volume (%)	=	4.4	%
20.9	= oxygon content of ambient air (%)	=	20.9	%

 C_{elk} = NH₃ concentration corrected to x%O₂ (ppmdv) = 6.2006 ppmdv @ x%O₂

7. NH₂ concentration corrected to y% CO₂ (ppmdv example)

$$C_{sdy} = C_{sd} \left(\frac{y}{CO_2} \right)$$

Where:

$C_{\rm sd}$	≃ NH ₃ concentration (ppmdv)		5.7155	ppmdv
У	= carbon dioxide content of corrected gas (%)	=	12.0	%
CO2	= proportion of carbon dioxide in the gas stream by volume (%)	=	16.5	%

C_{ady} = NH₃ concentration corrected (a y%CO₂ (ppmdv) = 4.1567 ppmdv @ y%CO₂

CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247

PARAMETERS

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TEST LOG

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Client: CONSOL Energy - AES Greenidge Project No: 10247

Run Number	Location	Method	Analyte	Date	Start Time	End Time	Notes
1	Unit 4 Air Heater Inlet	CTM-027	Ammonia	05/31/07	18:04	19:14	
2	Unit 4 Air Heater Inlet	CTM-027	Ammonie	06/01/07	10:20	11:07	
3	Unit 4 Air Heater Inlet	CTM-027	Ammonia	06/01/07	12:05	12:52	
les:							
lone							691607 10

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Date 9/18

CONSOL Energy - AES Greenidge Clean Air Project No: 10247 Unit 4 Air Heater Inlet

CTM-027 (Ammonia) Sampling, Velocity and Moisture Parameters

Run No		1	2	3	Average
Date (20	107)	May 31	Jun 1	Jun 1	
Start Tin	ne (approx.)	18:04	10:20	12:05	
Stop Tin	ne (approx.)	19:14	11:07	12:62	
Samplin	ng Conditions				
Y_{σ}	Dry gas meter correction factor	1.0071	1.0071	1.0071	
C_{ρ}	Pitot tube coefficient	0.84	0.84	0.84	
Pa	Static pressure (in. H ₂ O)	0.0000	0.0000	0.0000	
Phas	Barometric pressure (in. Hg)	29.44	29.47	29.44	29,4500
O_2	Oxygen (dry volume %)	4.4000	5.1000	6.4000	5.3000
CO2	Carbon dioxide (dry volume %)	16.5000	13.4000	12.4000	14.1000
N ₂ +CC	Nitrogen plus carbon monoxide (dry volume %)	79,1000	81,5000	81.2000	80,6000
V _k	Total Liquid collected (ml)	70.40	57.60	48.80	
V_m	Volume metered, meter conditions (ft ³)	39.4800	26.1850	26.6400	
$T_{\mathbf{m}}$	Dry gas meter temperature (°F)	102.4583	91.5000	95.6250	
۲,	Sample temperature (°F)	636.7500	0.0000	0.0000	212.2500
ΔH	Meter box orifice pressure drop (in. H ₂ O)	1.5000	1.5000	1.5000	
6	Total sampling time (min)	0.00	40.0	40.0	
Flow Re	suits				
$V_{\rm wald}$	Volume of water collected (ft ³)	3.3137	2.7112	2.2970	2.7740
V_{mate}	Volume metered, standard (dscf)	36.8485	24.9506	25.1701	28,9897
Ben	Moisture measured in sample (% by volume)	8,2500	9.8014	8.3628	8.8050
M_d	MW of sample gas, dry (fb/lb-mole)	30.8160	30.3480	30.2400	30.4680
Comme	nts:				09180F (49709

Average includes 3 runs.

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CONSOL Energy - AES Greenidge

Clean Air Project No: 10247

Unit 4 Air Heater Inlet

CTM-027 **Ammonium Laboratory Data Summary**

Run No.	Blank	1	2	3
Date (2007	")	May 31	Jun 1	Jun 1
Start Time	(approx.)	18:04	10:20	12:05
Stop Time	(approx.)	19:14	11:07	12:52
() DRAF	T LAB DATA			
MDL J	Min. detectable limit (mg NH ₄ */liter) 0.0530			
	NH ₃ as Total Ammonium (NH ₄ +) - F <u>ront Haif Rinse</u> (F	raction 1)		
B _{NH4} {	Blank concentration (mg NH, //liter) (<0.0530			
S _{NH4-1} F	Fraction 1 concentration (mg NH ₄ */liter)	4.4900	5.5800	5.0200
V ₁ F	Fraction 1 sample volume (ml)	208.0	153,0	192.0
m _{HH3} t	NH ₃ collected before blank subtraction (mg)	0.8816	D.8059	0.9099
m _b /	Allowable blank subtraction (mg)	0.0000	0.0000	0.0000
m _{ab} h	NH _S collected after blank subtraction (mg)	0.8816	0.8059	0,9099
m _{MOL} A	Minimum detectable NH₃ (mg)	0.0104	0.6077	0.0096
$m_{\theta_i} = 7$	Fotal NH ₃ used in emission calculations (mg)	0.8816	0.8059	0.9099

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CONSOL Energy - AES Greenidge Clean Air Project No: 10247 Unit 4 Air Heater Inlet

CTM-027 NH₃ Parameters

Run No	•	1	2	3	Average
Date (20	007)	May 31	Jun 1	Jun 1	
Start Tir	ne (approx.)	18:04	10:20	12:05	
Stop Tin	ne (approx.)	19:14	11:07	12:52	
Gas Co.	nditions				
O ₂	Oxygen (dry volume %)	4.4000	5.1000	6.4000	5.3000
CO2	Carbon dloxide (dry Volume %)	16.5000	13,4000	12.4000	14.1000
T,	Sample temperature ("F)	636,7500	0.0000	0.0000	212,2500
B _e	Actual water vapor in gas (% by volume)	8.2609	0.1425	0.1426	2.8453
Sampli	ng Data				
V_{mater}	Volume metered, standard (dscf)	36.8485	24.9506	25.1701	28,9897
Laborat	lory Data				
ďη _δ	Total NH _a collected (mg)	0.8816	0.8059	0.9099	0.8658
Ammon	la (NH ₃) Results - Front Half Rinso (Fraction 1)				
C_{sd}	Ammonia Concentration (fb/dsef)	5.2756E-08	7.1224E-08	7.9708E-08	6.7896E-08
C_{e47}	Ammonia Concentration @3% O₂ (fb/dscf)	5.7232E-08	8.0690E-08	9.8398E-08	7.8773E-08
$C_{\rm 6d12}$	Ammonia Concentration @12% CO ₂ (lb/dscf)	3.8368E-08	6.3783E-08	7.7136E-08	5.9762E-08
\mathbf{C}_{sd}	Ammonia Concentration (ppmdv)	1.1942	1.6122	1.8042	1.5369
$C_{\rm sd7}$	Ammonia Concentration @3% O ₂ (ppmdv)	1.2955	1.8265	2.2273	1.7831
C_{sd1Z}	Ammonia Concentration @12% CO ₂ (ppmdv)	0.8685	1.4438	1.7460	1.3528
\mathbf{C}_{w}	Ammonia Concentration (ppmwv)	1.0956	1.6099	1.8017	1.5024
\mathbf{C}_{sd}	Ammonia Concentration (mg/dscm)	0.8448	1.1406	1.2764	1.0873
C_{td7}	Ammonia Concentration @3% O ₂ (mg/dscm)	0.9165	1.2921	1.5757	1.2614
C _{ed12}	Ammonie Concentration @12% CO ₂ (mg/dscm)	0.6144	1.0214	1.2352	0.9570
C*4	Ammonia Concentration (mg/Nm³ d/y)	0.9068	1.2240	1.3698	1.166B
C_{sd7}	Ammonia Concentration @3% O ₂ (mg/Nm ³ dry)	0,9836	1.3867	1.6910	1.3537
G_{sdis2}	Ammonia Concentration @12% CO ₂ (mg/Nm ³ dry)	0.6594	1.0961	1.3256	1.0270

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QA/QC JW Date 411 CONSOL Energy - AES Greenidge Clean Air Project No: 10247

Unit 4 Air Heater Inlet

CTM-027 Ammonium Laboratory Data Summary

Run No.	E	Slank	1	2	3			
Date (200	07)		May 31	Jun 1	Jun 1			
Start Tim	e (approx.)		18:04	10:20	12:05			
Stop Time	e (approx.)		19:14	11:07	12:52			
Dor	MET EAB DATA							
MDL	Min. detectable limit (mg NH ₄ */filter) 0.	0530						
	NH ₃ as Total Ammonium (NH ₆ [†]) - impinger 1 (Fraction 2)							
BINHA	Blank concentration (mg NH ₄ */liter) <0.	0530						
S _{NH4-1}	Fraction 1 concentration (mg NH ₄ */fitter)		0.3600	0.3300	0.3500			
\mathbf{v}_1	Fraction 1 sample volume (ml)	ĺ	195,0	211,0	195.0			
m_{NH3}	NH _a collected before blank subtraction (mg)		0.0663	0.0657	0.0644			
m_{b}	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000			
m _{nh}	NH ₃ collected after blank subtraction (mg)		0.0663	0.0657	0.0644			
m _{MDL}	Minimum detectable NH ₃ (mg)		0.0098	0.0106	0.0098			
$m_{\rm p}$	Total NH $_{\rm 3}$ used in emission calculations (mg)		0.0663	0.0657	0.0644			

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CONSOL Energy - AES Greenidge Clean Air Project No: 10247 Unit 4 Air Heater Intet

CTM-027 NH₃ Parameters

Run No.		1	2	3	Averago
Date (2007)		May 31	Jun 1	Јил 1	
Start Time (approx.)		18:04	10:20	12:05	
Stop Time (approx.)		19:14	11:07	12:52	
Gas Cor	ditions				
O_2	Oxygen (dry volume %)	4.4000	5.1000	6.4000	5,3000
CO_2	Carbon dioxide (dry volume %)	16.5000	13.4000	12.4000	14.1000
T.	Sample temperature (*F)	636.7600	0.0000	0.0000	212.2500
B _w	Actual water vapor in gas (% by volume)	8.2509	0.1425	0.1426	2.8453
Samplin	g Data				
V _{mstd}	Volume metered, standard (dscf)	36.8485	24.9508	25.1701	28,9897
Laborate	ory Data				
$\mathbf{m}^{\mathbf{d}}$	Total NH _a collected (mg)	0.0663	0.0657	0.0844	0.0855
Animoni	a (NH ₃) Results - Impinger 1 (Fraction 2)				
C_{sd}	Ammonia Concentration (lb/decf)	3.9655E-09	5.8089E-09	5.6441E-09	5.1395E-09
C_{so7}	Ammonia Concentration @3% O₂ (lb/dscf)	4.3D20E-09	6.5810E-09	6.9878E-09	5.9502E-09
C_{4692}	Ammonia Concentration @12% CO₂ (ib/decl)	2.8840E-09	5.2020E-09	5.4821E-09	4.5160E-09
\mathbf{C}_{ed}	Ammonia Concentration (ppmdv)	0.0898	0.1315	0.1278	0.1163
C_{ad7}	Ammonia Concentration @3% O ₂ (ppmdv)	0.0974	0.1490	0.1577	0.1347
$C_{\rm sdi2}$	Ammonia Concentration @12% CO₂ (ppmdv)	0.0653	0.1178	0.1236	0.1022
\mathbf{C}^{m}	Ammonia Concentration (ppmwv)	0.0824	0.1313	0.1276	0.1137
C_{sd}	Ammonia Concentration (mg/dscm)	0.0635	0.0930	0.0904	0.0823
$G_{\rm set7}$	Ammonia Concentration @3% O ₂ (mg/dscm)	0.0689	0.1054	0.1116	0,0953
Ce412	Ammonia Concentration @12% CO ₂ (mg/dscm)	0.0462	0.0833	0.0875	0.0723
\mathbf{C}_{sd}	Ammonia Concentration (mg/Nm³ dry)	0.0681	8020.0	0.0970	0.0883
C _{sd7}	Ammonia Concentration @3% O ₂ (mg/Nm³ dry)	0.0739	0.1131	0.1197	0.1023
C_{ed12}	Ammonia Concentration @12% CO₂ (mg/Nm³ dry)	0.0496	0.0894	0.0939	0.0776

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Date MM

CONSOL Energy - AES Greenidge

Clean Air Project No: 10247

Unit 4 Air Heater Inlet

CTM-027 Ammonium Laboratory Data Summary

Run No. Blan		ank	1	2	3			
Date (2007)		1	May 31	Jun 1	Jun 1			
Start Time (approx.)			18:04	10:20	12:05			
Stop Time (approx.)			19:14	11:07	12:52			
☐ DRAFT LAB DATA								
MDL.	Min. detectable limit (mg NH ₄ */liter) 0.0	530						
	NH ₃ as Total Ammonium (NH ₄ *) - Impingers 2 & 3 (Fraction 3)							
B_{NH4}	Blank concentration (mg NH ₄ */lifer) <0.0	530						
S _{NH4-1}	Fraction 1 concentration (mg NH ₄ */liter)	(<0.0530	<0.0530	<0.0530			
vi	Fraction 1 sample volume (ml)		280.0	210.0	265.0			
m _{MH3}	NH ₃ collected before blank subtraction (mg)		<0.0140	< 0.0105	<0.0133			
шÞ	Allowable blank subtraction (mg)		0.0000	0.0000	0.0000			
m _{nb}	NH ₃ collected after blank subtraction (mg)		<0.0140	< 0.0105	<0.0133			
m_{MDL}	Minimum detectable NH ₃ (mg)		0.0140	0.0105	0.0133			
m_n	Total NH $_{\mathcal{I}}$ used in emission calculations (mg)		<0.0140	<0.0105	<0.0133			

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CTM-027 NH₃ Parameters

· Run No.		1	2	3	Average		
Date (2007)		May 31	Jun 1	Jun 1			
Start Time (approx.)		18:04	10:20	12:05			
Stop Time (approx.)		19:14	11:07	12:52			
Gas Con	ditions						
Oz	Oxygen (dry volume %)	4.4000	5.1000	6.4000	5.3000		
CO_2	Carbon dioxide (dry volume %)	16,5000	13,4000	12.4000	14.1000		
T _s	Sample temperature (°F)	636,7500	0.0000	0.0000	212.2500		
$\mathbf{B}_{\mathbf{w}}$	Actual water vapor in gas (% by volume)	8.2509	0.1426	0.1426	2.8453		
Samplin	Sampling Data						
V _{mstd}	Volume metered, stendard (deci)	36.8485	24.9506	25.1701	28.9897		
Laborate	ory Data						
m_n	Total NH ₃ collected (mg)	< 0.0140	<0.0105	< 0.0133	<0.0128		
Ammoni	a (NH ₃) Results - Impingers 2 & 3 (Fraction 3)						
C_{sd}	Ammonia Concentration (lb/dscf)	<8.3829E-10	<9.2853E-10	<1.1615E-09	<9.7610E-10		
C_{so7}	Ammonia Concentration @3% O₂ (lb/dscf)	<9.0942E-10	<1.0519E-09	<1.4338E-09	<1.1317E-09		
C _{#d12}	Ammonia Concentration @12% CO ₂ (lb/dscf)	<6.0967£-10	<8.3152E-10	<1.1240E-09	<8.5507E-10		
C _{≠d}	Ammonia Concentration (ppmdv)	< 0.0190	< 0.0210	<0.0263	<0.0221		
C_{td7}	Ammonia Concentration @3% O₂ (ppmdv)	<0.0206	< 0.0238	< 0.0325	<0.0256		
C_{sd12}	Ammonia Concentration @12% CO₂ (ppmdv)	<0.0138	< 0.0188	< 0.0254	<0.0194		
$\mathbf{C}_{\mathbf{w}}$	Ammonia Concentration (ppmwv)	< 0.0174	< 0.0210	< 0.0263	<0.0216		
C_{sd}	Ammonia Concentration (mg/dscm)	< 0.0134	<0.0149	< 0.0186	<0.0156		
$C_{\rm so7}$	Ammonia Concentration @3% O ₂ (mg/dscm)	< 0.0146	<0.0168	< 0.0230	<0.0181		
C4412	Ammonia Concentration @12% CO ₂ (mg/dscm)	< 0.0098	<0.0133	<0.0180	< 0.0137		
C_{ad}	Ammonia Concentration (mg/Nm³ dry)	< 0.0144	<0.0160	<0.0200	< 0.0168		
$C_{\nu d l}$	Ammonia Concentration @3% O ₂ (mg/Nm ³ dry)	<0.0156	<0.0181	< 0.0246	<0.0194		
C_{adi2}	Amntonia Concentration @12% CO ₂ (mg/Nm ³ dry)	<0.0105	< 0.0143	<0.0193	<0.0147		

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Clean Air Project No: 10247

Unit 4 Air Heater Inlet

CTM-027 Ammonium Laboratory Data Summary

Run No.	81:	ank	1	2	3
Date (200	07)	M	Иау 31	Jun 1	Jun 1
Start Tim	e (approx.)		18:04	10:20	12:05
Stop Tim	e (approx.)		19:14	11:07	12:52
	AFT LAB DATA				
MDL	Min. datectable limit (mg NH ₄ */liter) 0.09	530			
	NH ₃ as Total Ammonium (NH ₄ *) - Total Combi	ined Fractio	ns		
B _{NH4}	Blank concentration (mg NH ₄ */liter) <0.03	530			
S _{NH4-1}	Fraction 1&2 Total NH _a (mg)	Ι΄	0,9479	0.8717	0.9743
S_{NH4-2}	Fraction 3 Total NH ₃ (rag)		0.0140	< 0.0105	<0.0133
m_{n}	Total NH 3 used in emission calculations (mg)		0.9479	0.8717	0.9743
EFF	Collection QC Check (% collected in Fraction 3)		<1.48%	<1.21%	<1.36%
			0.9479	0.8717	0.9743

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CONSOL Energy - AES Greenidge Clean Air Project No: 10247 Unit 4 Air Heater Inlet

CTM-027 NH₃ Parameters

Run No.		1	2	3	Average
Date (20	107)	May 31	Jun 1	Jun 1	
Start Tin	ne (approx.)	18:04	10:20	12:05	
Stop Tim	ne (approx.)	19:14	11:07	12:52	
Gas Cor	nditions				
O_2	Oxygen (dry volume %)	4.4000	5.1000	6,4000	5.3000
CO_2	Carbon dioxide (dry volume %)	16.5000	13.4000	12.4000	14.1000
$T_{\rm s}$	Sample temperature (°F)	638,7500	0.0000	0.0000	212,2500
$\mathbf{B}_{\mathbf{w}}$	Actual water vapor in gas (% by volume)	8,2509	0.1425	0.1426	2.8453
Samplin	ng Data				
V_{mstd}	Volume metered, standard (dscf)	36,8485	24,9506	25.1701	28.9897
Laborati	ory Data				
m_n	Total NH ₃ collected (mg)	0.9479	0.8717	0.9743	0,9313
Ammon	la (NH ₃) Results - Total Combined Fractions				
C_{sd}	Ammonia Concentration (fb/dscf)	5.6721E-08	7.7033E-08	8.5352E-08	7.3035E-08
C_{so7}	Ammonia Concentration @3% O₂ (tb/dscf)	6.1534E-08	8.7271E-08	1.0537€-07	B.4724E-08
G_{sol2}	Ammonia Concentration @12% CO ₂ (lb/dscf)	4.1252E-08	6.8985E-08	8.2599E-08	6.4278E-08
C_{so}	Ammonia Concentration (ppmdv)	1.2839	1.7437	1.9320	1.6632
C_{st7}	Ammonia Concentration @3% O ₂ (ppmdv)	1.3929	1.9765	2.3850	1.9178
C*448	Ammonis Concentration @12% CO₂ (ppmdv)	0.9338	1.5615	1.8697	1.4650
$\mathbf{C}_{\mathbf{w}}$	Ammonia Concentration (ppmwv)	1.1780	1.7412	1,9293	1.6162
C^{eq}	Ammonia Concentration (mg/dscm)	0.9083	1.2338	1.3668	1.1698
C_{sd7}	Ammonia Concentration @3% O₂ (mg/dscm)	0.9854	1.3975	1.6873	1.3567
C_{1d1Z}	Ammonia Concentration @12% CO₂ (mg/dscm)	0.6606	1.1047	1.3227	1.0293
$C_{\rm sd}$	Ammonia Concentration (mg/Nm³ dry)	0.9748	1.3238	1.4668	1.2551
G_{sd7}	Ammonia Concentration @3% O ₂ (mg/Nm³ dry)	1.0575	1.4998	1.8107	1.4560
C ₄₀₁₇	Ammonia Concentration @12% CO ₂ (mg/Nm ³ dry)	0.7089	1.1855	1.4195	1.1046

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CONSOL Energy - AES Greenidge

Clean Air Project No: 10247

Unit 4 Air Heater Inlet

CTM-027 Ammonium Preliminary Field Titration Data Summary

Run No.		Bíank	1	2	3
Oate (20	07)		May 31	Jun 1	Jun 1
Start Tim	e (approx.)		18:04	10:20	12:05
Stop Tim	e (approx.)		19:14	11:07	12:52
□DR	AFT LAB DATA				
MDL	Min. detectable limit (mg NH₄*/liter) NA				
	NH ₃ as Total Ammonium (NH ₄ *) - P <u>relimina</u>	ry Field Tita	ation Total Co	mbined Fractio	ns
B _{KH4}	Blank concentration (mg NH ₄ */liter)).5174			
S _{NIM-1}	Fraction 182 Total NH ₃ (mg)	<u></u>	4.2126	3.5780	4.0166
S _{N114-2}	Fraction 3 Total NH ₂ (mg)		0.0070	0.0002	0.4563
m_{\star}	Total NH ₃ used in emission calculations (mg)		4.2196	3,5782	4.4729
EFF	Collection QC Check (% collected in Fraction	3)	0.17%	0.01%	11.36%
			4.2196	3.5782	4.4729

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QA/QC _JW Date __Q[[8] CONSOL Energy - AES Greenidge Clean Air Project No: 10247

Unit 4 Air Heater inlet

CTM-027 NH₃ Preliminary Field Titration Parameters

Run No		1	2	3	Average
Date (20	007)	May 31	Jun 1	Jun 1	
Start Tir	ne (approx.)	18:04	10:20	12:05	
Stop Tir	ne (approx.)	19:14	11:07	12:52	
Ges Co	nditions				
O_2	Oxygen (dry volume %)	4.4000	5.1000	6.4000	5.3000
CO_2	Carbon dioxide (dry volume %)	18.5000	13,4000	12.4000	14.1000
T _s	Sample temperature (*F)	836,7500	0.0000	0.0000	212,2500
\mathbf{B}_{w}	Actual water vapor in gas (% by volume)	8.2509	0.1425	0.1426	2.8453
Samplin	ng Data				
V_{mstd}	Volume metered, standard (dacf)	36.8485	24.9506	25.1701	28.9897
Laborat	tory Data				
m_n	Total NH ₃ collected (mg)	4.2196	3.5782	4.4729	4.0902
Ammon	iia (NH ₃) Results - Preliminary Field Titration Total C	ombined Fractic	ms		
C_{sd}	Ammonia Concentration (lb/dscf)	2.5250E-07	3.1622E-07	3.9184E-07	3.2019E-07
$C_{\rm sd}$	Ammonia Concentration @3% O₂ (tb/dscf)	2.7392E-07	3.5825E-07	4.8372E-07	3.7197E-07
C_{sd1Z}	Ammonia Concentration @12% CO₂ (lb/dscf)	1.8364E-07	2.8318E-07	3.7920E-07	2.8201E-07
C_{sd}	Ammonia Concentration (ppmdv)	5.7155	7.1579	8.8697	7.2477
CM7	Ammonia Concentration @3% O ₂ (ppmdv)	6.2005	8,1093	10.9495	B.4198
C _{tel12}	Ammonia Concentration @12% CO₂ (ppmdv)	4.1567	6.4101	6.5836	8,3835
C _w	Ammonia Concentration (ppmwv)	5.2439	7.1477	8.8570	7.0829
C_{ad}	Ammonia Concentration (mg/dscm)	4.0434	5.0639	6.2748	5.1274
G_{sol}	Ammonia Concentration @3% O ₂ (mg/dscm)	4.3865	5.7369	7.7462	5.9565
C_{sdf2}	Ammonia Concentration @12% CO ₂ (mg/dscm)	2.9407	4.5348	6.0724	4.5160
C_{sd}	Ammonia Concentration (mg/Nm³ dry)	4.3393	5.4344	6.7340	5.5025
		4.7075	6.1567	8.3130	8.3924
C_{sar}	Ammonia Concentration @3% O ₂ (mg/Nm ³ dry)	4.7073	0.1007	0.0100	0.3824

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QA/QC <u>JuJ</u> Date <u>4//</u>% Date: Stort Time: Bnd Time: 500/2007 11:12 11:35

			NOx	N)×	PPU Dev	J. (02)	62		002 >	. NO×	PPM Day I			PPM Dev	<u> </u>	PPU Day
	Point	Time Surpled	Bloodyn	Post Avg	from Avg.	No.	Port Avg		Port Avg	@ 3% CZ	from Avg.	ppmdv	Post Avg	trom over.		From Ave.
- 1	333 SSS	11:12	64.4		-2.8	F.6		12.5		121.8	351	-999.C		-889.5	-नम्बद्धन	1320.6
ł	12 12 14	11:16	78,8		-8/4	3.6	-	16.0		83.0	-R7	60.9		169.3	78.5	205,0
ł	50000000	51:20	89.5	92/0	24	3.6	4.7	17.1	16.3	80.8	1.1	. 112.9	-241.1	212.3	115.1	250.6
- 1	(2)3.024	\$\$:24	HDE		23.3	3.4		17.7		113.0	2D.3	48.4		147.8	49.6	182,0
1		11:20	78.8		-5A	6.6		14,7		98.4	5.7	-998.0		-899.5	-1250.5	-1118.B
		11:32	150.1		Z2.9	1,9		19.1		103.7	11.0	320.7		420.2	302.1	434.7
. 1		11:13	82,3		-4.9	6.6		14.4		103.0	10,3	197		119.2	24,7	157.2
ŀ	2.5	ft::17	84,3		-22.9	27		17.2		66.9	-25,B]	95,9	1	195.4	99.8	2323
ŀ		11:21	82,2	85,5	-5.0	3.4	3.7	17.7	17.5	84.1	-8.5	93 2	-21.6	192.7	95,3	227.9
ŀ	25	11:25 11:29	T00.B		13.6	2.8		18.1		39.7	7.0	25.7		125.2	25,4	157.9
ľ		1128	103.3		16.1 -6.5	2.1		18,9		98,4	8.7	883.4	i	732.9	503,1	735.5
H			\$1.7			2,5		17.4		B4,D	-8.7	-989.0		-829.5	-1027.7	5982
- 1	3-5 3-2 3-3	11:34 11:38	82.8 24.0		4.4	63		14.7		101.5	8,8	47.6		147.1	59,4	190.9
- 1	NN 22 25 S	11:22	71,9 94.7	54.0	-15.3	3.9		10.9		75.7	•17.0	106,9		206.4	112,5	245.1
- I		11:26	120.5	91.6	7.5	3.6	2.5	17.3	17,5	96.0	5.3	B1.2	-532	160.7	84,0	216.5
- [34 35	11:30	100.5		33.4	2.6	- 1	18,8		118.0	25.3	25.6		126.3	29.2	15\$.7
ŀ	34	11:34	79.8		12,9 -7,5	2.1 2.7	- 1	19.1 16.1		95.5	2.6	357,6		457.1	340.5	478,0
H	(((0))	11:15	75,4							78.2	-14,4	-299.0		-899.5	-982.5	- 65 0.0
ŀ		11:19	65.4		-11,6 -21,8	8.5 3.4	1	14,5		83.7	1.0	56.6		768.1	72.8	205.4
ŀ		11:23	83.1	79.5	-4.1	1.5	4.1	17.1		64.5	24.2	138.2		235.7	142.6	279,1
. 1		11:27	104.6	13.0	27,4	3.1	4-1	17.5 17.9	18,8	45.5	-72	€8,2	-72.0	162.7	65.0	197,5
]	4.6	11:31	83.7		-3.5	3.2		17.8		+05.2	12.5	36.8		130.1	30.a	188.3
ŀ	×2	11:36	65.2		-22.0	4.4		16.2		94,8	-8.1	276.4		377.9	281.5	414.1
: t	V-1/- +7415#				-2.0	-		1974		70.7	-22.0	-999.0		-859.5	-1053,8	-651.2

17.0

I																			
Duklet Polet	Time Sampled	NDx pendv	NOX Poet Avg	PPM Dov bross Avg.	7.0v	C2 Part Ave	CO2	CO2 Port App	NOX ⊕ 3% 02	FFEE CAY From Avs.	CO	CO Port Ave	PPM Dev	CO 60 37% D2	PPM Dev	Mile Remental	MOx Renetical Est	CO Removal	CO Removal Eff
S(\$410))	11:12	85.9		10.1	5.4		13.2		76.1	22.2	1=5.7	renny	172,2	766.3	194.7	21,9	97.5	Efficiency	Wf 02 conscion
	11:16	91.5		41.8	41		14.2		97.6	49,7	-669.0		-972,5	-1054.4	1038.0	-15-2	-17.6	447	
2000 -20 20	11:20	75.5	78.1	25.7	4.3	4.9	14.6	43.7	51.4	27.5	201.0	-70.B	227.5	218,7	243.1	15.7	±3.2	777	
13	11:24	91.6		420	3.8		14.7		96.1	42.7	32.5		5 8.0	34,8	60.4	18.9	15.0	29.2 32.9	504.0 47.6 1.13 18.7
	11:26	72.8		29.1	5.1	:	13.5		62.6	28.7	80.2		85.7	68,2	94.6	2.8	16,1	65.0	
	11:32	70.7		20.8	5.6		12.3		88,5	34.6	135.3		162.8	170.6	197.0	35,E	14.7	966 St.	79 6
32	11:13	18.6		-\$1.2	3.6		14,8		7 6.2	34,6	574.6		801.1	594.5	620.9	77.4	91.3	70000400000000000000000000000000000000	S BURNING STORES
	11:17	76.8		27,0	2.9		14,4		80.0	27.0	-8550		-972.6	-1051,9	-1 02 5.5	-19.4	-20,8		100
	11:29	96.3 80.7	58.7	48.5	4.0	4.5	14.4	13,8	702.0	49.1	50,9	-31.7	77.4	\$3,9	60.5	-17.2	-21,3	13452 45 4	404
25	11:28	10.3		30.9 -39.6	4.7		12.9		69.2	35.3	24.1		50.6	26.6	53.0	19.9	10.6	A	李 智
224	11:33	39.3			4.7		13.7		11,4	425	7ê.D		105.5	87.3	113,7	90.0	89.4	87,6	m 85
	11:14			-10,5	<u>- 6.3</u>		12.4		43.Z	-6. 7	BO,4		706.9	98.5	125.0	อำ.9	42.7	20E.C	egre .
8888	11:18	100.1		-48,4 -00.0	3.0		15.2		1.4	-52,5	-999.0		-852.5	- 2000 0	972.8	983	96.6		Commission to the commission of
	11:23	104.2	47.3	50.3 54.4	2.8 3.2	3.7	15.5	14.7	99.0	45.1	769.1		795.6	780.6	787.C	-38.2	-20.8	AC 18:45	3 357
	11:25	73.0	-,,,	23.2	5.2	3.7	15,2 13.5	14.7	105.4	51.5	20.3	17.4	50.8	30,6	57.4	•1 0 .0	-7.\$	42	1 935
	11:30	2.4		47.4	33		14.9		83.2	28.4 -51.4	29.7		65.2	32,7	59.T	39.5	29.4	400	244
3334533	11:34	29		40.9	43		14.0		25 22	-50.7	143.1 95.1		159.6	147,2	173.8	97.5	87,4	(G) (G)	44.5
8335.833	11:15	7.8		-+1.9	3.9		14.5		E.3	-45,5	-999.0		122.6	T04.6	151,3	96.4	95.C 🖗		574 5746
	11:19	2.8		-47.0	2.4	- 1	15.9		27	-512	3 6 5.6	1	-972.5	-1051.6	1025.5	85. 5	91.7	167	### P
4.5	11:25	61_2	20.1	11.4	2.6	8.6	15.6	54.6	5 0.5	8.7	25.2	-15.7	352.1 51.7	353.7	380.1	85,7	99.0	2084	146 S
30 36- 000	11:27	12.5	-	-30.5	3.5		14.2	-4.0	19.9	34.0	129	*13.3	80.4	24.6 44.7	61.3 70.5	29.4	28.2	464	
(3) 44 (3)	11:34	1.4		-46.4	3.4	i	15.5		14	45/6	230.7		257,2	238.5	282.4	91,5 39,3	81.1 93.3	462 171	-414
3A3 44 333	11;35	28.0		-21.8	5.3		13.4		32.1	21.7	244.1		270.5	290,1	306.5	357.5	993 546	12414	150
Outlet Averag	ges.	49.8		·	4.2		14.3		53.9		-28.5			-25.4		42.3	41.A	154.1	159.7

432.5

17,7

^{* -909.0} Indicates that the analyses was cut of range.

Date: Start Tires: End Tisse:

930/2017 12:24 12:47

inlet Point	Time Sampled	NOX person	NOX :	PPM Dev from Avg.	OX OX	O2 Poet Area	E02	CO2 Port Avg	€ 3% 02 € 3% 02	PPM Dev 1 Enors Avg.	CO ppmdv	CO Port Ave	PPM Dev	CO pr 3% 02	PPM Day from Arg.
500585,008	12:24	97.1	- Carriery	9.4	4.1	ruckery.	12.5		135.8	23.4	-9990		408.4	-1397.D	-1260.6
100	12:28	111.8		5.4	3,4		17.0		114.5	2.1	467.6		557.2	478.3	594.7
	12.22	113.8	106.4	7.3	3.7	4.5	16.9	18.1	118.4	6.1	140.0	-583.6	229.0	145.7	262.1
	12:35	113.9	143.4	7.4	3,6		17.2		117.9	9.6	25.6		115.2	29.5	142.9
	12:40	\$1.1		-25.4	8,4		14.3		100.1	-12.2	-999.0		-909.4	-1233,2	-1118.9
	12:44	120.4		13.9	1.9		15.7		113,4	1.1	52 H.3		550.9	528.8	645.2
2002 263 200	12-25	194.0		-25	8.0		14,5		124.8	12.6	90.4		180.0	708.6	225.0
	12:29	103,3		-82	3.2		17.1		134.5	-7.9	45B.4		559.0	473,7	990,1
	12:33	107.4	104.8	0.9	3.2	3.6	17.4	17.5	108.8	-3.7	50.9	-227,7	149,4	58,5	175.8
	12:37	155.7		6.2	3.0		17.7		115.7	-0.6	14.5		104,t	14,5	130,9
2243	12:41	1123		5.8	2.2		18.3		107,5	-4,9	-9 99 ,D		A084	-985.3	-938.9
24	12:45	20.3		-18.2	3.5		18,9		Á2.6	483	-889.C		939.4	-1027.7	911.3
223 2332	12:26	108.0		1.5	5.2		14.5		528.0	15.7	65.3		150,8	72.7	189,1
	12:30	115,3		8.8	2.5		17.1		1156	8.3	338.2		397,8	317.1	433.5
	12234	108.3	107.1	2.3	3.5	3.5	17.2	17.1	511.9	-0,4	79,4	-0.9	163,0	75.5	181.9
2003243334	12:38	113.2		6.7	2.9		17.7		512,6	0.2	12,4		102.D	123	128.7
	12:42	107.6		1.1	2.3		18.2		108.B	-5.5	\$38.6		628.1	519.2	634.7
\$2/25/600	12:46	B 3 9,5		417.0	2.7		17.5		0.38	-24.3	-999.0		-904,4	-882.5	-866,1
89 8 888	17:27	106.6		-0.8	1.6		14.9		123,5	112	205.7		295.3	2417	a\$7.1
200 45 2 000	12:35	108.5		2.1	3.5		17.0		111.7	-0.0	484.5	••	624.2	447.1	S63.5
77. 45. 467	12:35	112.6	T\$7,7	6,1	3,5	4.0	17.2	18.8	115.9	3.5	52.5	3.8	742.1	54.0	270.4
800 5 1 100	12:39	119.1		12,5	23		17.3		121.1	8.8	12.6		102.4	13.5	129,4
	12:43	110.1		3,5	47		17.6 15.7		711.3 99.9	-12.5	316.9 -999.0		408,5 •606.4	320,5 -1103.8	435,9
500 00 5000	12:47	50.4		-16.7	4.1		1947		22.0	-12.5					687.4
iolol Average	55	108.5			3.9		15.7		112.5		489.6			-115.4	

14.4

j Outlet		NCa	NCx	PPM Dov	02	62	CO2	CO2	NOx	PPN Dev 1	~	co	PPE Day	<u> </u>	PPM Day		(NEX RESIDENCE OF	CD Removat :	1.CO Removal Eff
Point	Time Sampled	ppendy	Port Ave					Pert Avg	@ 3% 02	From Avg.	poznitiv	Poet Avg	from Avg.	Ø 3% C2	from Arg.		WE'CZ correction	Principal	W/ 02-correction
88855888	12:24	92.3		3.2	1. B		14.4		¥7.2	-т5.3	-999.0		-687.6	-105t,\$	-940.4	49	28.4	0.00	0.00
1.0	12:28	E.\$S		-9.6	3.8		14.6		101.0	-11,5	-2000		-887.B	-105t.B	494D.4	14.3	11.8	444	# 499¥ 1
	12.32	106.3	99.5	3,6	5.0	5,1	13.7	12.6	119.7	7.2	99.5	-287.7	210.9	112.0	222.6	6.6	-10	70.0	72
**** ********************************	12:36	111.0		5.5	4.2		14.4		119.0	6.5	14.2		125.6	152	126.7	2.5	-10	245 520	5 F 4
	12:40	109.1		3,6	5,1		13.6		123.6	17.2	429		154.3	48.6	160.1	-34.5	-23.5	134	199
\$\$\$1 8 \$\$\$	12:44	57.5		-28.D	82		11.1		118.3	3.8	115.1		228.5	162.2	273,7	31.5	-2.5 20.9	SAVO A	593
3	1225	85.6		-9.9	2.9		15.3		95.1	-17,4	48 99 1.0		4887.6	-883.5 515.4	625.9	8.1 -8.5	23.9	150 F	
	12:29 12:33	1121	102.2	5,5 -8.5	2.5	4.7	15.6	14.4	109.1 105.9	•3.4 •3.6	523.8 19.9	-29.2	841.2 131.3	21.7	133.2	9.7	2.5		1
	12:37	97.0 92.1	104.4	-6.5 -13.4	4,5 4,5		14.0	14.4	100.5	-11.9	13.7	•4J.C	125.1	15.0	126.4	17.5	10.0	2	1.00
	12:41	117.4		15.8	3.5		14.9		121.5	9.0	99.7		211.1	103,2	214.6	4,5	-130	1907	1906
	12:45	98.5		-8.7	8,8		12.0		123.7	51.2	185.0		298.4	235.0	343.0	-6.4	-39.7	250	122-5
	12:28	3,32		-8,9	2.8		154		98.5	-18.9	-9980		-667.6	-386.0	-676.5	10.6	25.4	*270	TI WENT
22	12:50	117.8	:	11.6	2.3		16.1		112.9	5.4	289.1		400.5	278.2	369.7	-7,7	4.6	93	552 51
3.3	12:34	110.8	711.4	*7.3	3.4	3.6	15.1	14.9	119.5	7,6	19.3	-98,4	130.7	19.7	191.2	-7,4	-9.7	74 3	10.9 WES
\$ (\$ 2 .5)	12:34	105.8		3,5	5.0		13.5		120.2	7,8	18.5		120,9	20,8	122,3	5.7	-5.9	46.2	***
35	12:42	114.1		8.6	3.4		15.0		118,7	4,3	\$23,0		211.9	192,2	213.B	- 8 .C	-12.7		#2
	12:45	116.6		75.D	4.4		14.1		125.4	13.6	161.9		273.3	175.6	267.1	-30.2	-43.5	est company of the control of the co	
	12:27	89.5		-76.0	3.7		14.5		93.1	-55,3	0.000		-687.6	-1039,7	-928.2	15.2	24.6	583 7	100
	12:54 12:55	112.6	109.0	7,1	2.6	3.5	15.8	14.9	110.1 113.9	-2,3	3189 185	-84.5	430.3 127.8	311,9 15,4	423.4	-3,7 -8,2	14 -2.7	20.5	200
	12:39	11 0. 5 11 6. 3	104/0	14,1 10,8	2.9 3.3	3,5	15,5 15.1	149	118.3	8,5 5,8	18.5 82.5	-94,5	143.9	33.1	127,9 144,5	2.4	2.4		19316
	12:45	108.8		4.4	3.3		15.1		111.8	•C.7	1121		223.5	114.0	225.5	02	34	84.5	64
	12:47	100.2	:	0.7	5.4		13.3		122.5	10,2	132,3		243.7	152.8	264.3	-175	323	3192	300
X.1					71-					214			_ +						

4114

-111.8

175.6

1124

105.5

Quite: Averages

 $^{^{\}prime\prime}$ -999.0 Indicates that the analyzer was out of range.

Date: Start Time: End Time: 5/90/2007 13:12 18:25

	Inlet Point	Time Sampled	NOx ppmdv	Nort Avg		O2 ¥dv	OZ Park Avg	COZ	CO2 Port Avg	NOx @ 3% 02	PPM Dov from Avg.	CO ppmdv	CO Port Avg	PPM Dav	CO £ \$% OZ	PPM Dev from Avg.
		13:75	\$0.5 111.1		-5.1 15.5	8.0°	***************************************	12.2 18.7		125.6	-18.2	-669 <u>.</u> 0		-801.1	-1385.2	47 4.5
		13:20	101,8	69.0	6.5	2.9	46	15.4	15.9	115.0 107.3	-28.8 -38.5	71.2 41.4	406.4	255,1 229,3	79,7 49,9	465.4 455.3
	13 13	13:24	107.4		31,6	3.6		17.2	12,4	211,1	-32.6	26.2	-7/4/	224.1	27.7	436.8
	3	13:28	75.6		-20,0	6.2	1	14.3		82,1	-51.7	-899.0		-801.1	-1215,5	-804.7
	535-25-530	13:32 13:13	107.A 73.8		-22.6	7.1 17.7		10.0		502.8	-61.5 264.6	-999,0		-601.1	451.2	-539.4
	24	12:17	98.3		2.7	3.6		2.7 18,7		406.3 T	-204.0 -42.6	81.5 117.4		279.4 315.3	455.9 120.8	887.6 632.6
	350	13:21	25.2	86.2	-7.4	3.5	B.\$	18.4	10,3	92.3	-51.4	38.1	4290.1	238,0	39.9	461.6
		12:26	101,5		5.0	3.2		477,5		102.6	-≥1.1	20.2		218,1	20.4	432.2
	33121	13:29 13:33	72.7 83.3		-22.9 -12.8	15.3		4.5		292.4 310.6	29.5 166.9	-999.0		4801.1	-3193.2	-2761.5
	SUS-200	13:14	97.1		7.6	B.1		11.5		547.3	3.5	-969,D 128,9		-801.1 328.6	-3725.4 195.5	-8818,7 667.8
		12:18	101,2		5.6	3.5		18,7		104,1	-39.7	134.0		331.9	137.9	SART
		13:22	25,1	96,8	-10.5	16.3	4.6	2,5	13.5	331,2	167.4	26.6	81.3	228.6	112.5	524.2
		12:26 13:30	106.1	1	10,5 6,8	3.1 3.7		17.6 16.8		105,7	-37.1	22.5		220.4	22.6	434.4
	332354	12:34	87.6		-8.C	5.4		14.8		105,5	-37.2 -42.6	872.7 -889,D		1070.8 -801.1	909.2 -1153.7	1319.9 742.0
	500 5 7888	13:15	107.0		117	*Z		14.1		133,3	-13.5	67.C		294,5	81,5	463.3
		13:18 13:23	102.3		7,3	4.2		16.1		110,3	-33.5	98.8		295.7	105.9	517.6
	5	13:27	111.1	500.7	0,8 15.5	3,5 3,4	4.3	17.2 17.1	162	98,2 113,5	-44,8 -30.1	22.8 24.4	-56.3	220.7 222.2	23.5	435.2
,	S (484)	13:51	102.6		7.0	3.5		17.5	1	105.5	485.2	448.5		645.4	25.0 461.4	435,7 873.1
_	(0)44(C)	13:35	84.3		-11,3	4,0		15.4		93,7	-50.0	-998.0		4801,1	-11107	-989.C
4	Rolet Average	5 	95,4			6.4		14,0		143.8		-197,9			-411.7	

I																			
Çutlei Point	Time Sampled	NOX	NOv	PPMDH	C2	C2	CO2	CO2	NÇIX	PPM Dev	8		PPM Dev	60			Miles (Reinfolder Edit)	g CO Removal	CO Removal En
SSS\$\$\$\$555		ppmdv	Pront Anyg	from Avg.	Levin	Port Avg		Port Avy	@ 3% 02	from Avg.	peandy	Port Ave	from Avra.		tream Awg.	Efficiency	92 C2 correction	Efficiency	W 02 correction
	13:12 13:16	88,7		-6.9	5.4		13.3		102.4	-0.4	-999.0		-921.2	-1153.7	1081.3	2.6	18.4		
G	13:20	91,7 90,0	90.1	-3.9	6.7	1	12,9		106.0	52	108.7		186.5	128.0	220.4	17.5	Ф,т	447	757 500:5
	13:24	90.4	241	-5.6 -5.2	4.0 4.6	4.6	14.5	73,5	95.3	-7.5	86.6	-35.4	163.6	90.8	163.3	51.7	112	M003	10.000
14	13:26	84.9		-0.7	3.6	i	13.9 14.6		99.3	-3.5	24.1		101,9	29.5	116.9	15.5	107	10	69
	13:32	84.6		-11.0	3,9		14.4		99,3 89,1	-3.5 -43.7	78.4		151,2	76.6	169.2	-25.5	-7,9	±07.2	epers :
38825 688	13:13	76.0		718.8	5.7		12.0		99.6		484.4		572.2	520,6	813.0	21.2	12.8	3465	4.43
22	12:17	95,4		-0.2	4.8		\$3.T		90.6 908.1	-6.0 3.3	-869,D		-921.2	-1258.3	-1186.9	-5.2	76.3		7764
(25	13:21	59.2	89.2	-84	4.6	4.6	14L0	13.9	97.4	-5.4	100.7 63.0	4286.5	178.5 148.8	112.0 69.8	204.4	3,0	-49	40	10 174 264
() (24 ())	13:25	91_1		-4.5	4.4	7.5	54.1	,=	98.6	- 700	22.5	4200.5	99,9	24,0	161.2 158.4	•5.1 10.2	-5.5		
######################################	13:22	25.9		1,3	3.4		54.9		99,1	-3.7	213.2		291.D	218.1	350.5	-33.3	3.7 57.3	64 243	
	13:33	85.5		-าน้ำ	3.5		14.8		88.0	148	-999.D		921.2	-1027.7	9853	-2.8	717	. 42	
\$\$\$ \$ \$\$\$	73:14	114.2		50.0	4.5		14.0		124.8	21,6	715,4		783.2	790.8	873.2	-17.9	75.4		500050000000000000000000000000000000000
	13:18	103.A		7.8	4.0		14.3		109.5	6.7	125.7		204.5	134.2	226.8	-17.9	-52		
3 3 3 3 3 3	13:22	91.6	102,4	-4,1	5.4	4.0	13.5	14.5	105,7	2.0	43.5	88.1	121,3	50.2	142.7	7.5	BB 1		
	13:26	105.3		8.7	3.T	- 1	147		109.5	9.E	17.B		85,7	16,6	111.0	ά.e	-27		553 93
98	13:30	105.2		9.6	2.7)	15.6		103.5	0.7	324.1		401.6	315.8	411.2	-27	2.B	6	563
872 36 000	13:34	95.0		-0.6	3.4		14,8		97.2	-3.6	999.0		921.2	~1021.8	928.4	-84	3.9	COB .	964
	13:15	107.7		12.1	5.5		13.2		125.2	22.4	205.3		293,1	236.6	331.0	-07	3,5	404	364 #655
	13:19	99.5		39	3.8		14.7		104,2	1.4	120.6		195.4	126.2	218.7	3.2	5.8	27.7	
	13:23	26.3	190.9	47	3.5	3.0	14.5	14.5	540.1	-9.7	23.4	-47.2	101.2	24.1	110.5	0.1	8.1	- 14	2.6
	13:27	1122		19.6	3.2	- 1	15.2		113.5	18,7	23.4		101.2	23,7	116.7	-1.0	0.2	2.5	49
4.4	13:21 13:35	104.2 84.8		83	7.9	- 1	15.5		104.3	1,5	342.9		420.7	341,D	433,4	-2.2	1.2	440	26.4
200	1829 :			-10.8	4.3		14.1		91.4	175.4	. 499 .0		-921.2	-1077.2	-254.5	-D.6	2.4	66	44
Outlet Averag		95.8																	
Investigation	700	32.0			4.2		14.2		102.8		-77.8			-82.4		-1.1	144	36.2	10.1

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^{* -959.0} Indicates that the analyzer was out of range.

Date: Start Time: End Time:

Inlet Averages

5/90/2007 16:55 17:10

b-sheet		NCx	ΝŌx	PPM Day	02	02	cos	602	NC×	PPM Dev	CO	co	PPM Dev	CO	PPM Dev
Point	Time Rempled	pppodv	Poet Avg	from Avg.	Setv	Fort Ave.	Kety :	Post Avg	@3% 02	from Avg.	ppasav	Part Avg	from Avg.	g 3% O2	From Avra.
8332-222	17:12	109.4		-9.8	7.6		16.8		147.2	16.9	386.3		458.3	522.6	584.0
NY 1900	17:18	125.3		7.1	6.5		20.6		148.5	19.2	59.5		90.5	25.3	95.6
	16:56	179.1	121.5	0.9	4.2	52	23.0	21.6	127.7	-2.7	16,7	131.2	89,7	20.0	92.4
80.26-XX	17:00	130.6		12.8	5.2		24.5		149,1	19,5	27,4		98,4	31.2	103,5
33372833	17:04	95.7		-22.5	4.2		25.4		102.6	-27,8	245,B		318,B	363.2	335,B
2000	17:08	146.2		28.0	4.3		23.7		167.6	27.3	£7.9		158.9	84.8	T67.1
900 S	17:13	114.7		-3.5	7.0		19.7		147.7	17.3	11,8		62.6	15.2	87,\$
\$33 5.4 5%	17:17	104.6		-13,5	4.7		27.3	1	116.8	-14,E	23.2		94,2	25.6	98,D
	16:57	106,9	108.9	-11.3	5,2	4.7	21.2	22.7	121.9	-8.5	125	-113.2	88.5	16.6	88.7
	17:01	29.4		428.B	4.2		22.9		98.8	-34.6	29.7		100.7	31.8	704.2
202	17:06	120.6		2.2	2.5		26.0		119.2	-77.2	242.6		313.6	239.9	3122
3.5 2.4 3.5 3.5 3.7	17:02	117.4		-0,B	4.0		23,8		124,3	-8.0	-999 .0		-822.0	-1058.1	-985.B
2000 394 3000	17;14	119.0		D.B.	5.9		21.1		142.0	11.B	10.5		81./5	12.6	86.0
3-6	17:38	114.8		-8.4	4.3		23.0		123.0	-6.6	17.9		86.9	18.3	91.6
3000 E E E	16:53	118.9	118.8	0.7	5.2	4.2	21.6	-147.6	135.6	5.2	11.4	-454.5	824	T3.0	85.3
	17972	121.8		2.7	3.4		24.2		124.7	-6.7	13.2		64.2	79.5	es.8
3000	17:06	129.0		71.7	2.5		-999.0		129,4	-4.0	37,0		109,0	99.0	108,3
3336(23)	17:10	108.5		-9.7	4,0		23.6		114.8	-16.4	-0.066-		929.0	*165E.1	_4858
5235 65 3333	17:15	125.2		, B.O	6.3		19.5		161.4	31.0	14.2		85.2	58.2	88
000 46 000	16:55	118.3		0.1	4.0		22.8		f25.3	-5.1	15.9		99.9	20.0	92.3
32 94 02	16:69	124.3	124.2	6.1	3.8	4.2	23.2	23.3	130.1	-0.2	12.4	-150,6	83.4	13,0	25.3
333	57:03	\$37.0		16.8	3.0		24.8		t37,C	B.E	14.5		85.6	14.8	25.8
80000000	57:07	526.1		55	2.0		28.5		127,4	-2.0	35.3		105.3	85.1	107.4
	17:11	111.0		72	4.6		22.6		T29.9	-6.5	-999.0		-029.C	-1097.1	-1024.7
	•		,					,		,				,	

													_						
Clubbet		NOx	NC+x	PPM Dev	OZ:	Q2	CCZ	CCZ	Ж	PPM Dev	Ć	ÇÓ	PPM Dev	- 65			Micro Removal Eff	CO Reserval	CO Removal Ext
Point	Time Sampled	pprodv	Port Avg	from Avg.	VAN:	Post Aug		Port Avg	@3%02	from Avg.	pometv	Port Aye	Post Avg. I	@ 3% 02		Efficiency	WCZ cometica	- Efficiency	W/W comedian
\$300 -1 000	17:12	110.2		-8.0	6.0		12.5		132.4	4.6	508.8		343.0	807.5	435.7	40.7	10.1		39.0
	17:16	111.7	4	-5.5	6.1		125		785.1	7.3	17.3		-149.5	20.9	150.0	10.9	9.6	100	97
	16:56	124,8	114.5	6.6	4.1	4.3	14.4	14.3	133.0	5.2	28.8	167.7	-133.0	30.6	-140.1	4.6	-1.ž		1305
	17:00 17:04	113.8		33	3.5		14.9 15.2		116.2 115.7	-9.6 -12.0	17.0 43.†		-145.6 -119,7	17.5 43.8	-153.4 -127.1	12.2 -18.9	29.7 -12.6		
	17:04	111.5		8.7	3.3		15.6		106.7	10.1	393.6		231.0	387.3	216.4	23.7	33.4	33	-516 -241 -251 -3586
82(235 (0))	17:13	114.5			8.0		11.0		-58,9	31,1	35.7		-127.1	49.5	-121.4	0.2	-7.6 B	707	
	17:17	110.2		***	4.6	:	14,1		121,0	-6.7	18,5		143.2	21.5	-149,4	-5.4	-4.7	F13	47(110) 68.7
	18:57	1148	116.8	5.4	4.0	4.5	14.5	14.1	121.5	-5.2	17,8	148.1	-145,0	18,9	-152,3	-7.4	02	443	97.7
	17:01	115.1		0.1	2.9		15.5		157.4	-103	15.9		145,5	15,B	-155,1	-32.1	-22,B	400	
	17:05	128.B		10.6	6.3	!	13.4		147.8	20.0	172.0		9.5	16 6 .D	27.1	-8.9	-24.D	28.0	77.4
	17:08	115.0		-3.2	2,7		15.8		119.1	-14.7	814,7		45t,0	604.6	433.7	2.0	9.0	1618 (1	157
100 E. 100 E.	17:14	119.9		1.7	6,7		17.2		151,1	22.4	21,4		-141,4	27.0	-143,9	-0.8	-8.4	TO STATE OF	
	17:18	1112		-7.0	4.6	i	14.0		121.4	-5.4	23.3		-138,5	25.4	-145,5	3,1	2,0	20.7	300
100	16:50	T18.4	121.9	, 29	3.6	4.1	14.B	14.4	118.4	-8.4	13.4	185.1	•148 <i>A</i>	18,9	-157,0	2.⊊	11.9	97.5	-67
344	17:02	132.4		14.2	3.5		14.B		136.2	8.4	21.7		-141.7	22,8	-148.6	-B.B	-9.2	100	10 10
	17:05	137.1		16.9	2.5		\$5.7		133.4	5.6	138.4		-24.4	#84.B	-35.3	-6,5	<u>45.</u> ≝	1.00	190.0 254 556.0
00034800	17:10	115.1		5.1	3,2		\$4,8		120,5	-7.5	7723		809.5	808.4	637.5	-&1	-4.B	287.3	50AV
	17:15	121.7		3.5	6.7		12.5		153.4	26.0	20.5		-142,4	25.7	-145-2	3/6		THE PARTY OF THE P	
- 10	16:55 16:50	\$11.5 \$17.3	119.6	-7.1 -0.9	**	3.9	14.2 14.0	14.6	123.5 122.6	-7.2 -5.0	29.5 13.8	172.4	-133,3 -143,9	92.0 54.8	-198 9 -158 3	8,3	3,8 56	5 輕新	56.8
433	17:03	195.1	118.0	18.9	3.6 2.7	3.*	15.6	1=23	132.0	5.1	20.2	172.4	142.5	54.8 59.8	-151.0	5,6 1,4	30	100	
4.2	17:07	128,8		B.4	2.5		15.8		123.2	-4.6	115.9		-46.9	752.8	48.1	-2	33 33	c.t.	77
	17:11	105.0		-123	3.3		15.1		107.7	-2D.1	834.5		871,7	948.7	677.8	48	116	110.5	427.4
					777777								_: 11	7.41	2.170				
Outlet Averso	* 4	118.2			4.2		14.3		127.8		152,8			170.9		-0.6	1.0	47.3	-31.9

-T1.0

-723

^{* -999.0} inclosion that the analyzer was out of range.

Start Tame: Shot Time:

17:32 17:55

5/30/2007

intet Point	Time Samples	MOX pprodv	NOx Port Avg	PPM Dev from Avg	O ₃	O ₂	CO. CO.	NDx @ 3% 02	99tr Day from Avg	promoter CO	Port Ave	PPM Dav Trom Avg.	ಕ್ಷಾ ಕ್ಷಾ ಕ್ಷ್ಮ	PPM Dev trom Avg.
	17:24	111.5		·129 ''	6.7			140.6	4,3	428		- 4.5	54.0	0.0
	17:40	127.6		22	5,0			152.8	16,0	23.7		-25.9	28,3	-25.1
	17:66	126,0	126.9	1.6	4.0	5,1		123.5	-2,B	23.6	50.7	-25.8	25.2	-20.2
123	17:43	135.2		10.8	4.5			150.3	14,1	52. 1		25	57,9	4.5
	17:32	168,2		-16.2	4.3			116.7	-15.6	26.8	- 1	-23.3	28.4	-25.0
22324633	17:52	147.7		23.3	6,0			188.3	30.0	182.1		62.5	148.7	B 6 .4
25	17:37	118.6		4.6	6.4	:	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	151,6	15.0	7.7		-41.9	9.8	-43.6
	17:41	111.4		430	4.4			120.9	-15,4	21.7		-27.9	23.5	-29.8
	17:45 17:49	115.4	125.2	-8 .0	5.2	4,7		131.5	-4.7	21.4	50.9	-28.2	24,4	-29.0
	17:53	139.6		14.2	4.3			349.6	13.2	81.7		82.1	59,1	34.7
5	17:33	136,1 118,0		11.7	29			135.8	-0.9	58.8		9.D	55,3	4.9
0000000000	17:34	116.1		-8.4 -8.3	4.6			129.6	-8.7	114.1		64.5	125.8	71.9
	17:42	111.1		-123 -123	6.3			133,2	-30 "	Đ.D		-40.6	10.3	−43. D
	17:48	126.5	123.8	2.1	4.1 5.2	- 45		218,4	-17.9	22.1		-27,5	23.5	-29.6
	17:50	130.0	120.0	74.6	3,4	4.2		244,2	8.0	78.2	51.1	-81.4	20.8	-326
	17:54	131.5	- 1	7.1	2,8			142,2 128.8	5.9 -7.5	728		23,2	74,5	21.1
3-2	17:14	119.2	1	-5.2	44			128.5	م.، وع	199.7 75,0		60.1	107.3	53.9
(V) CB (V)	17:38	124.7		6.3	9.7	······ · · · · · · · · · · · · · · · ·		157.2	21.0			25.4	91.4	28.D -84.5
	17:43	120.0	1	-3.B	3.6			125,0	-11.2	14.6 34.3		-34,7 •15,8	18.8	
	17347	120.3	244	4.4	3.3	4.0		131,0	-52	17.6	45.2	432,D	35.5 17.9	-17.9 -35.5
	17:51	137.2		12.6	28			135.7	476	45,5	40.2	•a.s	45.6	
' (() 4 2.00	77:65	125.8		1.4	28			123.1	432	43.8		342	82.D	-7,B
00 0€ 633	17:35	109.2		-15,2	5.1		7.000.000.000.000.71	123,7	-125	90.7		31,5	91.4	28.5 38.1
												1	01.4	
Inlet Average	#	124.4			4.5		18.1	136.2		49.6			53.4	

Outlet NOx MUD O_z NOx PPM Day CO $\overline{\infty}$ PPM Dev PPN Dev MOX Removal NON Removal Est VE CO correction CO Removat CO Removal Elf Polyt Time Sampled ppeody Port Ave From Ave Poet Avo Port Avg Ø 1% 02 from Avg from Avg 68%0 Efficiency Efficiency WIO, connection Broom Aven COST (17:36 105.D -15,3 6.3 12.6 129.7 1.1 P3.9 41.0 302.7 57.A 7**45**68 17:40 110.6 -87 5.8 12.0 3.5 2.3 101 444 473 483 131.1 16.9 -22.9 -25.9 22.4 13,8 13.9 1111 17:44 124.6 115.0 4.5 40 14.7 74.6 129.9 39.3 43.2 -25 40,9 1.0 2.7 17:48 109,4 40.8 30 15.4 108.4 -15,2 22.6 ·202 22.0 -22.7 76.1 27.2 17)62 123.1 28 2.7 2.4 15.6 121.1 -9,5 36.8 4.0 38,2 53.7 -7.2 3,8 -1**3**.8 17:32 120.6 0,3 16.9 118,7 -10.B 56.6 12.7 8.4 18,3 28.8 -2.8 24 24 24 23 22 22 17.37 114.1 42 7,6 11.3 158.8 29,8 23.5 -19,8 31.5 -13.7 2.8 17:41 110.4 -8.9 3.8 14.7 775.B -12.1 22.7 98 44 761 764 984 -2D.1 23,8 -21.6 Đ.D 4.4 17:45 119,5 120.0 -0.6 3.4 4.2 15.0 16,4 522.2 6.4 22.8 21.2 35.2 -20.0 23.3 -22.0 -3.6 7.1 17:48 123.0 8.7 25 15,8 26.2 -1.4 -21.6 20.7 -24.6 6.9 15.5 17:53 131.7 12,4 6.6 13,2 154.3 26.5 78,8 34.1 90.0 44,5 32 -138 17:55 113.2 -7.1 21 \$6.2 107.8 -19.5 44.2 7.4 42.1 -3.2 4.1 168 47.77 17:38 120.5 3.2 8,4 12.4 149,8 21,1 -1,8 1960 1867 1868 1868 1868 30.9 -21,9 25,8 8.5 -3.8 -117 17:42 116,4 1.0 44 14.2 125.3 28.3 •75.5 28.5 -75.0 **∠**.8 -67 17:46 120.7 124,4 0.4 3.1 3.7 15.5 14.5 121.4 48.2 15.1 44.9 27.7 15.2 30.1 4.5 15.B 17:50 135.2 2.2 16.2 14.9 129,4 7.B 28,8 -14.0 27,6 -17.8 27 Ġ.C 3.7 17:54 141.7 21,4 134.2 â.B 102.5 60.0 67.4 52,0 -7.8 4.3 311 17:34 111.6 -9.7 41 14.5 1188 -8,7 75.4 37.6 60.3 35.3 -9.5 8.4 0.0 44 th th th 17:38 03 120.6 6.6 12.3 149.9 22,3 20,3 -14.0 35,6 2.2 5.7 4,5 4632334 17:43 113.5 -2,5 0.2 2.4 -7,8 -15.3 -6,4 13.9 125.1 45.7 29 50,2 4.9 -D1 -10.4 10.8 17:47 128.4 121.1 6.1 3.8 16.2 14,7 127.6 17.8 48,1 -25.0 18.D -27.5 7,6 1,5 2.4 17:51 135.1 14.8 15.1 130,0 29.4 -13.4 28.3 -17.0 4.2 75.7 75.6 盟 17:55 125.2 4.9 16.1 119.8 85.8 43.0 62.1 25.5 0.5 2.5 17:33 105,4 145 1123 81.2 9.2 333 M Outlet Averages 120,3 3.9 14.6 127.5 42.6 45,5 **9.** 5.0 -14.5 -13.9

53.4

Çade; Start Time; End Time; 5/30/2007 18:40 19:03

199.5

Inded		NOx.	NOK	PPM Dav		02	Terres de la companion de	69Ci¥	PPE Day		<u>co</u>	PPM Dev	co	PPM Dev
Point	Time Sampled	promote	Port Avg	Treen Arra	Activ	Postavy		@ 3% C2	from Avg.	ppmdv	Port Avg		@3% C2	
888 96 883	18:60	214.2		14.7	4.6			250.6	26.5	30.8		9.8	35.8	6.2
	16:52	216.5		17.0	4.7			239,2	15,1	99.2		39,2	73,1	43,5
322	18:56	202.7	207.5	3.2	6.5	5,7		235.6	11,5	17,8	28.B	·9.1	20/B	-8,8
33.0 4-3 333	15.00	258,9		7.6	5.7			243.7	19.5	11.1		-15.9	18.1	-10.5
	18940	182.7		-18.8	6.0			219.6	-4.7	€.8		-222	5.5	-23.8
**************************************	£6544	222.1		22.6	. ಮ			282.0	57.6	10,8		-19.2	13.7	-15.8
\$\$\$ 7 (\$\$\$\$)	18:49	224.0		25,5	4.5			251,3	27.1	73.2		45.1	81.2	51.0
36	18753	197.4		-2.1	3.5			203.1	4Z1.1	\$5.7		29.1	57.7	29.1
33 34 33 3	18:57	194.0	203.9	-5.5	5.8	6.1		230.0	5.8	14.7	29.0	•52.6 ·	16.7	-12.0
200	19:07	209.1		9.6	5.8			247.9	23.7	8.0		-58.G	10.7	-18.0
	16:41	209.7		10.2	4.7			231.7	7.6	9,7		-17,3	10.7	-18.9
887 25 48633	15:45	186.4		-14.1	6.T		0.000.000.000.000	224.2	0.1	12.1		•14.B	14.5	-15.D
3832	16-50	124.2		-5.3	4.0			205.7	-19.0	43.0		38.6	66.7	37.5
333	10:54	961.7		-17.8	3.5			186,9	-37.2	49.2		22.2	50.6	21.0
S 34 (S)	18498	192.0	188,9	-5,7	5,5	4.6		224.1	0.0	11,1	28.3	-15,9	12.9	-95,7
	19:02	704,3		4.8	4,8			224.4	0.2	21.4		-15,8	12.5	-17.1
342	15:42	185.4		-13.7	4.3			201.0	23.1	8.5		-18.5	9.2	-20.6
	10:48	173.9		-25.9	5,4			300 S	-23.3	14,5		-12,5	18,7	-12.9
\$5000	18:61	216.4		15.B	4.7			239.1	15.0	71.5		44.5	78.1	49.5
	1 8.55	123.3		-ne.2	3.7			190.8	-33.4	52.7		26.7	55.9	25.2
	18:19	201.1	167.9	1.6	3.6	42		208.1	-15.1	125	29.1	-14.5	12.9	-16.7
33430	19:03	210.3		15.6	3.6			217.6	-4.5	128		-14.4	13.0	-16.6
\$13 000	18:43	195.0		-3.6	3.2			199.1	-28.0	11.4		-15.6	11.5	-16.1
	18:47	180.3		-59.2	8.6			ZZ4.1	0.0	13.D		-14.Q	16.2	-18.5
												• • • • • • • • • • • • • • • • • • • •		

(Çezêlet	1	NOx	NOX	PPM Dev	C2	02	COZ	CO2	NOx	PPM Dev	€0.		PP# Dev	co.	PPS Day	-NO or President	810000800000011276	CO Removal	CO Removal 2m
Point	Three Secopled	pprodv		from Avg.	Yes	Port Five	E dv	Post Avp	@ 3% 02	from Avg.	pperiody	Port Avg	from Avg.		from Avg.		W/CDZ correction		VII 02 correction
23/38-53%	19:45	205.7		12.5	6.7		12.1		286.3	52.8	40.Z		75.8	50.7	24.1	4.0	-25	o i i gva siti	# 15 E 26 97 STO
14	12:52	206.1		12.5	4.0		14.5		216.3	11.0	81.2		30.6	64.9	38.3	4.8	8.7	146	-F#
* S * * * * * * * * * * * * * * * * * * *	1Z:58	185.0	4,095	-7,5	3.6	4,1	14.6	14.4	195.8	-10.6	21.4	27.3	-3.2	22.5	-4.D	8.2	18.6	186	1 55
22	19:50 15:40	197.9 170.4		-0,7	3,7		14.5		200.8	-5.7	125		-12.1	13.0	153.6	6.8	17.5	12.0	8.0
	16:44	177.4		-23,2 -18,2	3.4 3.1		15.0		174.3 178.4	-32,2 -28,1	13,5 14.9		-11,1 -8.7	13,8 15,0	-+2.6 -+1.8	6.7 20.1	20.6 38.7	586	1000
(S) (2-8 (6))	18:49	209.5		15,9	5.8		10.1		245.1	38.6	45.6		21.0	53.3	28.8	7.3	2.5		
(2) (2) (3)	18:63	183.7		0.1	2.0		16.6		193,7	-12.5	30.7		8,1	30.7	4.1	1.9	4.6		4.0
88 52 68	19:67	191.7	181.4	-1.5	3.3	4.2	15.2	14.4	195.0	-11.5	51,7	21.2	-12.9	11.9	-14.7	1.2	75.2	77.0	200
	12:01	166.7		-4.8	4.3		14.3		208.5	49.0	51,2		-13.4	12.1	-14,5	20	57,9	244	54.5
	10:45	169.5		-5.4	44		14.0		207.0	0.5	78.D		-11.B	14.3	-12.3	10.1	\$C.7	-864	, 7H, 8
88.2228	18:45	176.2		-57.4	4.6		14.2		192.3	•14.1	15.0		-5,8	16.4	-20.2	5.0	14.2	260	12.005100
	10:50	214.3		20.5	44		14.7		232.5	25,0	50,0		25.4	54.2	27.7	-10.4	-13.0	7.7	क्रापा च्या विकास
	10:54	120.9		2.7	11		16.3		1920	-14,5	44,9		20.3	452	18,6	-5.1	-2.7	77	21
	13:58 19:02	199.5 202.9	200,6	9.3	3.4	3.9	16.2	14.6	208.0 211.2	4.7	tD.E	24.7	-14,1	10.7	-15,8	-30	8.4		
	18542	205.7		12.1	3.0		15.4		206.7	0.8	51,5 53,4		-13,1 -15,2	12.0 13.4	-14,8 -13,2	0.7 -10.4	5.9 -2.3	200	-62
32 32 34	18:46	153.6		45.5	5.9		123		224.9	18.5	18.0		4.0	21.5	5.	-10.4	-2.5 -12.0	24.5	383
20 2-6 00	16:55	206.0		14.4	4.4		14.2		225,B	19.2	42.₽		38.3	56.2	41.7	3.9	5.8		
4.5	16:55	176.2		-15,4	3.0		15.4		178,2	-29.3	33,B		9,0	33.6	7.0	2.6	8.6		94
	16250	199.4	193.1	5.8	3.4	3.9	15.0	74.5	204.D	-2.5	12.0	25.4	-12.6	12.3	-14.3	0.6	2.5	WEET.	1/2
	4903	205.5		11.9	3.6		14.3		2:28	6,2	15.4		-13,2	11,8	-14,8	2.\$	2.3	!!!	1 1 1 1
	18:43 18:47	194.2 172.7		1.7	3.1		15.3		195.6	-10.5	14.0		-73.5	14.1	-12,5	0.6	1 11	-43m	763
0000-10001	10(4)	1/2.7		-20.9	5.9		12.9		208.1	-0.4	18,4		-9.2	22.0	-6,6	4.2	J 4.C		THE SHIP SHIP
10																			

25.6

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Postlet Avenges 193,6 4.0 54.5 208,5 24.6 26.6 27 7.2 42.8 45.2

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Clean Air Engineering Project #10247 Consot Energy AES Grownidge

 Coate;
 5/81/2007

 Start Tainer:
 9:35

 End Tilene:
 9:53

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infet Point	Time Sempled	DK/X	NOX Port Avg	PPM Dev from Avg.	O2 Web	Poet Avg	CO2	Port Avg	(#0x @ 3% 02	PPM Dev from Avg.	CO	CO Port Ave	PPM Dev	63% 02	PPM Dev
	P:36	91.6		-3.7	10.7		0,9		1366.4	1211.2	110,9		-132.1	105+23	13333.0
12 13	1:42	25.0		-7.3	6.2		13.5		100.3	-54.6	201.4		-41.6	229.6	-91.0
6693	9;44	106,0	110.0	10.7	4.3	72	14.5	11.8	114.3	-4C.6	207.7	257.1	-35.3	224.0	90.7
14 13	9:48	127,2		319	6.0		13.6		143.2	-51.9	785.0		-69.0	219.5	-101.T
(Y 2)	9:52	100,7		13.4	4.1		144		115.9	30.3	164.0	:	-79.0	174.7	-145.9
<u>Genery</u>	9:56	138.2		42.9	49		13.7		154.6	-0.5	723,8		480.6	800.6	439.9
(20)	9:57	81.T		13.6	6.3		13.5		100.2	-55.D	40.7		-202,3	49.9	-270.0
22.3	9:41	59.2		-36.1	3.7		16.5		61.6	-93.5	163.1		-89,9	259.3	-161.3
253	9:45	55.8	76,6	-41 <i>5</i>	6.2	4.5	14.2	15,1	61.3	-83.6	73.6	140.1	-109.4	83.9	-236.8
24.	9;49	80.2		-35.1	4.0		15.1	-	63.6	-81.4	137.4		-105.6	245.5	-175.1
26.0	8:53	101,1		5.8	3.0		16,7		101,1	-54,0	168.4		-74.6	158.4	-152.3
22 Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	8:57	103.7		B.4	4.7		14.8		115.0	-38,1	257,2		24.2	298.9	-21.7
7949	9:33	29.6		-6.7	4,6		14.5		39.6	-38.5	43.2		-199.8	48.0	272.6
85.0	*42	80.9		-14.6	3.4		15.0		82.7	-72.4	225.9		-14.1	234.1	-66.5
(SEN)	346	112.8	104.5	17.5	5.5	39	14,1	15,3	132.0	-23.2	103.3	226.5	-139,7	120.6	-199.8
3-2 3-3 3-4 3-8 3-8	9;50	131.7		35.4	3.0		15.5		131,7	-23.4	219.7	i	-23.3	219.7	-101.0
304-7	2:54	100,6		5.3	26		15.6		97.9	-57.3	549.2		405.2	631.8	310.9
34.00	9:58	111.2		15.0	4,2		14.9		119.2	-35.9	114,9		-120.1	123.2	-197.5
869:4	9:39	76.7		-15.6	5.1		12.0		95.2	-58.8	36.8		-208,2	£4,5	-276.2
47 43	2:43	74.1		-21.2	3.1		15.6		74.5	-80.6	202.8		402	233.0	-116.7
XXXIII	2 ;47	\$1.4	90.0	-3.9	3.0	3.5	15.7	25.1	91,4	-63.7	92.0	338.4	-180.1	92.9	-227.8
	9:51	117,6		22.3	2.3		15.1		118.2	-41,8	215.2		-27.6	207.1	-113,6
40 %	9:66	61.0		-143	2.0		16.5		76,7	-78A	656.2		443.2	648.8	829,2
4	2:35	97.3		2.D	5.5	:	13,6		110.2	-64.8	795.7		553.7	902.6	561.9

Ι_																			
Conte	Time :	NO	MOX	PPM Dev	.02	OZ.		C07	NOX	PPN Dev	8		POW Day	00	PPM Dav	MOX Connect	8 10 10 10 10 10 10 10 10 10 10 10 10 10	. CO Removal	. CD Removel Eff
Point	Sampled	powody	Port Avg	from Avg.	7.0	Portaup	54	Post Arg	6 3% 02	tram Avg.	ppmdr	Port Ave	from Avg.	#3% O2	from Avg.		WF CIZ correction	Efficiency	W/02 nemetion
2. 在空花花	9:35	23		-45.6	11.3		18.4		4,3	47.6	121.0		•13.D .	225.A	74.2	97.5	98.7	RESIDENCE CONTRACTOR	C 787082 > 104888
	8040	81.6	:	13.4	4.4		26.0		65.5	14.0	£1.4		-72.6	55.5	484.B	30.0	53.4	April 1	7.0
	2:44	97.0	73.1	49,7	4,4	8,0	25.0	-147.6	100.2	54.2	1253	151.3	-6.7	135.9	-15.6	7.6	7.1	100	30 and 1
285	5:49	86.8		38.0	3.6		26,0		88.8	87.6	67.2		-76.7	59.3	-82.2	21.8	37.3	7564	393 393
5033.78	9:52	113.3		65.1	9.5		19.3		182.7	130.9	125.9		4.9	224.0	72.6	-42	-57,8	150	
	9:56	78.5		29,3	2.5		299.D		74,4	22.5	404.0		270.0	38¢.0	241.8	44.6	51.9	ANTS:	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
	9:37	25.5		-22.6	7.2		17.2		33.4	-1BS	39.2		-94.8	51.2	-100,2	64.7	66.6	\$55000 Y-00000	
	3661	4.2		-43.3	3,9		11.1		5.2	-45 .8	125,2		-7.4	132.9	-18.8	917	\$1.6	CAR 6 C 3	100
W-24	9:45	94.5	53.4	40.0	2.0	4,2	11.4	15.6	94.0	428	32.2	BH,2	-101.6	32.2	-119.2	-76.2	-54.6	84.8	
	9:49	116.4		68.2	2.5		10.4		113.9	61.9	38,1		-97.8	35.3	-116.7	483.4	-76.6		
22 7 7 7 2 4 2 4 4 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	9:53	73.5		25.0	2.5		24.9		71.9	26.0	165.4		22.4	153.0	1.5	27.3	28,9	\$24 (#14) #	
200 298 02	9:57	5.4		-428	5.8		13.6		8.4	-45.5	96.9		-97.4	114.9	-35.6	94.\$	94.5	Salah Kal ifabi	10 E0E
12214	0:30	1,3		45.3	8.2		21.9		27	-49.2	85,6		-48.4 ***	120.6	-30.8	97.9	97.3		8 509506 po o vietendo.
	1:42	9.9		-07.3	4.0		21.5		1.0	-54.C	142.5		8.5	#90.0	-0.5	98.9	98.8	1979	
9	9:48	74.2	508	29.0	4.0	4.5	22.4	-216.4	80.7	28.6	34.5	125,5	-93.5	36.5	-114.8	32,4	39.8	of s	3 11
00.0046	1:50	117.0		69.6	2.4		22,1		114.0	62.1	83.4		-90,6	80.7	-70.7	70.6	19,5	420	3543
	9:54	106.5		59.7 -47.3	2.6		4799.0		104,6	52.7	103.0	i	29.0	150.4	8.0	-8.3	-8,8		7.5
	9:56	0.0			5.7		-999.0		1.1	50.9	157,5		23.5	T85.6	34.0	99.2	99.1	A CONTRACTOR	A STATE OF THE STA
	9:39 8:43	24		45.5	7.4		16.7		22	40.6	62.C		-62.0	112.0	-39.4	97.0	954		
	9:47	11.4	15.5	47,3	4.0		19.7		1,D	-51.6	179.5		45,5	190,*	36.7	88.8	99,7	-212	0.0
	9:51	73.6	155	-36,8	3.5	4.4	20.7	76.5	11.5	-40,4	58,4	192.3	-75.6	55,7	-92.7	87.5	87.5	\$E4	
	9:55	2.4		25.5 -48.8	7,5		21.0		71.8	19,8	118,3		-15.7	115.1	-38,4	37_2	36.6	Mat of	10 miles
2	2:38			-46.4	2.3 6.9		23.4		23	48.6	250.9		226.6	347.2	1952	97.5	97.0	443	5 66
-75-1-110	2.30	1.5		AT 1	WF		t&D		2.3	- - 9.8	354.8		220,9	453.8	302.8	992	97,9		494
Outlet A	ranges	48.2			4.0		-107.B		51.9		134.0			151.4		49.7	49.0	25.3	24.5

243.0

320.7

Clean Air Engineering Project \$10267 Contol Energy AES Greenidge

Date: Start Time: End Time:

22

5/31/2007 10:00 10:23

Петер NOx Port Avg PPIE Dev from Avg. O₁ CO CO₂ PPM Dev Post Avg PPM Dev Port Arg 68 32 to 2 Point Samples pomdy freep Avg. ppmdv from Avg. 16:00 101.0 10.7 1536.6 1345.6 151.4 -134.7 2258.4 1863.6 10.04 **47.2** -B.1 4.4 11.9 107.6 -53.4 834,4 389,3 844.9 450.3 110.2 10:08 104.6 \$,à 7.5 14.1 11.4 113.5 47.5 396.0 335.4 :03,9 429.6 35.0 10:12 129.7 34.4 6.2 13.5 147.9 -18,1 200.0 -86.1 228.0 -166.5 12 14 10:16 105.0 10.7 4.4 14.2 115.0 46.5 157,1 -129.0 170.4 -224.1 10:20 132.9 37.6 13.5 147.8 -18.3 423.3 137.2 **47**0.6 76.1 223 88.0 -7.3 10:01 5.0 13.4 99.6 105.7 •5ā.3 185,5 119.7 -274.9 24 24 23 22 10:05 62.4 -32.B 3.5 16.2 64,2 -96,8 591.8 305.7 608.8 214.2 8.3 4.5 10:09 \$7.5 77,3 -37.0 4.6 13.7 14.8 70.5 -90.5 240.2 227 5 -45.9 294.5 -100.1 10:13 70.7 -24.6 14.5 77.**2** -63.B 109.7 -175.4 1197 -274.8 18:17 89.6 -5.7 28 16,6 39.6 -724 \$01.7 -184.4 100,6 -294,0 22 26.8 10:21 6.6 4.5 14.6 104.6 -56.4 222.0 54.1 2423 -152.3 10.02 97.8 2.5 4.2 14.9 104.3 145.3 -55.2 -140.8 155.7 233,8 345 344 348 10:06 80.6 -14.7 3.4 15.5 82.4 -78.6 483,3 197.2 494.3 99.8 111.8 104.8 16.5 5.4 10:10 3.9 13.5 15.3 129.1 -31.P 279.1 263.0 -16.0 311.9 -62.5 10:14 132.3 37.0 3.5 16.6 135.1 -24.0 134.1 -152.0 138.0 -253.6 3-2 3-1 10:18 101.8 6.5 25 16.6 99.6 **61.4** 473,3 187.2 463.0 68.4 10.77 104.7 8.4 4.0 15,2 110,9 -50,1 252.0 -34.1 286.9 -127.7 4.5 10:03 90.7 5.2 13,4 -1 B 103.4 -57.6 212.1 74.0 241.8 -152,7 44 10:07 69.0 -25.3 2.9 16.6 68.6 -92,4 577,2 391.1 673.4 276.9 44 10:11 87.2 68.7 8.1 3,1 -73.3 3.6 15.5 14.9 87.7 113.6 288.6 -172,3 114.4 -280.1 42 22.3 10:15 117.6 26 15.8 115,0 -45.0 142.3 -143.8 139.2 255.4 4.2 10:19 81,3 -14.0 2.2 16.1 77.8 -83.2 475,2 189.1 454.9 60.3 10:23 85.3 13.3 174.8 99.7 **e**1.3 111.2 128.4 265.1

Index Averages 35.3 4.9 14.5 161.0 295.1 394.5

•				l		***************************************							-						
Cuttet	Time	NOx	NOx	PPM Dev	О.	· · · · • • • · · · · ·	CO		NOx	PPM Dev	CO	CO	PPM Dev	, co	PPM Dev	RCD: Recover	NO Remove Pf	CO-Respons	.: CO Removal Eff
Point	Sampled	bbards	Post Avg	from Avg.	: May	Port Avg	Xdv	Post Aver	@ 3% O2	рен Аму,	ppmdr	Port Avg	from Avg.	63%0	trom Avg.	Effetiency.	VI CZ comection	Efficiency	W/ O ₂ correction
19112 1012	10:00	2.1		-48 .9	11.Z		18.1		3.9	-61.2	124.4		-85.2	229.6	-6.4	97.9	95,7		
300	10:04	52.3		11.3	4.0		25,0		65.0	10.B	413.5		203.9	435.0	202.0	25.6	38.7	300	4672
	10:08	100.9	728	49.9	4.3	6.0	24.6	23.0	108,6	\$3.6	240.9	210.5	35.3	269.8	22.0	9.5	4.1	100	- 1900
	10:12	59.5		28.6	4.0	i	25.0	- 1	95.1	40.1	863		-120.7	94.2	-141.8	30.8	35,7	998	291
328 M	10:16	113.9		52.9	9.8	i	19,0	i	183.7	128.6	117.5		92.1	169.5	-45.4	7.5	-59.7	354	- 447
2012	10:20	67.7		16.7	2.5		24.2		65.9	10.8	278.0		68.4	270.4	34.5	49 1	55.4	44	
38	102-075	49.1		-1.9	6.5		14.6	- 1	61,0	5.0	170.1		39.5	211.4	-24.5	44.2	42.3	464	
	10:05	6.4		-44,5	4.5	3.5	11.7		7.0	-48,1	406.5		198.9	443.7	207,8	\$9,7	P89.< ∰	36.4	47.5
24	10:09 10:13	98.5 †281.5	39.7	47.5	2.7	3.5	13.5	12.9	98.9	41.8	45.6	181.7	-164.C	44.8	-591.1	-71.3	-37.4	37.50	200
2.0	10:17	79.3		69.5 26.3	2.7		125		118.5	63.5	34.7		-174.9	34.1	-201.8	-70.4	-53.6	98.9	
200	10:21	4.4		-45.5	29		11.5		78.9	25.8	230,6		71.D	279.0	42.1	11,5	f1.0	174.0	477
	10:02				1.7		13.7		41	-\$ 0.9	152.6		+57.0	142.3	-93,7	95.4	96.T		4.4
	10:05	2.3		-48 7	7.5		20.6		3.1	-51.9	352.3		142.7	489.4	245.5	67.6	97.C	140	S (400)
	10:10	9.5 76.8	52.7	-50.1 25.8	3.4	42	21.2 20.0	21.3	0.0 81,3	-54.1	377.0	200.0	167.4	895.6	149.7	989	96.9		27/0 (6:5
	10:14	121.8	=46,3	76.8	27	42	20.0	21.0	\$19.8	25.3 64.8	43.4 37.4	220.9	-168.2	46,0	-190.0	31.3	37.0	÷ 1 4 04	
2.4	10:15	113.5	- 1	62.5	21		22,6		108.1	53.0	262.0		-172.2 52,4	36.8 249.5	-199.1	7,9	120	***	7842
1838	19:22	0.9	1	-50.1	5.z		23.4		1.0	-54.0	253,0		43.4	288.5	13.5 52.5	-11.5 99.1	-8.5 99.1	44.0	
00 478 mg	10:03	19,0		-320	6.7		17.0	*****	24,0	-31,1	449.0		289.4	256.5 566,0	\$30.1	79.1	75.8		
44	10:07	0.0		-50.1	3.5		20.3		0.9	-\$4.1	375.6		156.0	385.4	150.5	98.7	98.7 &	44.5	
444	10:11	7.6	16.8	-43.4	3,0	4.8	20.0	:9.9	7.6	47.4	76.9	225.5	-132.7	78.9	-158.0	91,3	91.9		2.0
4-3	10,15	81,5		30.5	2.7		20,5	-3.8	60.2	25.1	72.5	*****	137.1	71.3	-164.6	30.7	30,3		32
	10:18	2.6		-49.5	2.5		21.4		24	-52.6	194.6		15.0	169,3	-10=0 - 4 5.6	96.9	95,9 S	88-4	50 4
⊗4 4€	10:23	1.4		-49.6	7,6		19.2	J	1.9	-53.2	184,1		-25.5	247.8	11,9	99,4	98.1	-	4.0
										-214				241.0		2414		elinatadelelenanist.	sorten inden Australia (1997)

209.6

Outlet Averages

51 B

4.5

19,3

55.0

46.7

235.9

47.9

11.0

5.3

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Clean Air Engineering Project #10247 Control Energy AES Greenidge

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Date: 5/31/2007 Start Time: 11:35 End Time: 11:59

inht Point	71m+	Nox	NOx	PPM Dev	02	(02)		NOX	PPN Dev	ÇO.	CO	PPM Day	GO	PPM Dev
	Sampled	ppordv	POST AND	from Avg.		Port Avg		£3%-02	from Avg.	ppmay	Port Avg	TOO BOT	@3% Oz	from Avg.
9.7.2	11:38	94.1		1.1	20.5	-		4890.0	4106.7	35,8		-1125	1646.8	1421.3
33.2011	11:40	912		-5.8	6.5	'		105.D	-177.3	221,1		71.8	257.C	31.5
	1134	110.0	109,6	18.0	4.3	7.5		118,6	-164.7	318.5	179.0	169,2	343.4	117.9
	11:48	125.6		31.8	6.3			147.E	-135,5	105.5		-43.6	121.1	-104.5
	11:52	100.0		3.0	4,1	3		t05.5	-176.4	\$3 ,9		-79.4	74.5	-851,0
833 4 633	11:56	128.9		31.9	5.2			147.0	-136.3	288.3		137.0	326.4	100.9
	11:37	74.6		-22.4	6.5			92.7	-1 9 0.6	22.2		-127.1	27.6	-197,9
	11:41	771.5		-25.5	4.0	i		75.7	-207.6	149.1		-0.2	157.9	-87.6
\$ 7.7 M	11:45	72.6	B5.3	-24.4	6,4	4.7		83.8	-199.5	223.2	100.4	79.9	257.8	32.2
	11:49	191.5		4.5	4.3			109.4	-173.9	60.4		-89.9	65.1	-160.4
	11:53	99.1		2.1	2.9			58.5	-184.8	53.1		-95.2	52,6	-172.7
() 20	11:57	922		-4.8	5.1			1D4.5	-17B.8	94.1		-55.2	105.6	-#18.9
**	11:35	97.6			4,6			107.2	-17£1	45,3		-103.0	50.8	-174,7
	11:42	83.4		-13.6	3,5	1		85.8	-197.5	176,0		26.7	181.1	-44.5
SX.4.83	11:46	116,A	104,6	19.4	5.4	3.9		134.4	-148.9	177.5	158.5	28.2	205.0	-20.5
1828	11:50	130.G		33.6	3,2			132.1	-151.2	67.0		-82.3	67.6	-157,8
	11;54	38.0		1.0	2.3			94.3	-189.0	437.D		267.7	420.6	195.D
	11:68	101.5		4,5	4			140.4	-172.2	46.9		-502.4	50.9	•174,6 □
33. T. S.	11:39	\$8.5		-10.5	5.ž			102.5	-1 8 0.8	64.8		-84,5	76.8	-148.7
	11:43	70.7		-25.3	3.2			71.5	-211.8	358.2		203.9	357,2	121,7
	11:47	92.3	88.68	-4 .7	3.2	3.7		93.9	-189.4 -189.4	75.8	1856	-73.5	77.1	-148.4
	1125	115.8	:	18.8	2.4		and the second second	112.0	-171.3	79.0		-70,3	76,4	-149,1
	11:55	83,4		-13.6	2.1			79.4	-203.9	361.2		201.9	843,9	178,4
	11;53	33.1		-13.9	8.3			95.4	-188.0	59.3		-90.0	69.0	-157.5
andet Ave	reges	27.0			4.5			283.3		145,3			225.5	

1																	
Outlet	Time	NOx	NOX	PPM Dev	OZ	Q2	NOx :	PPM Dav	CO		PPM Day	CO	PPK Day	NO. Parrent	Mico Removal Ed.	CO Removal .	CO Removal 65
Point	Sampled	ppmdv	Post Avg	from Avg.		Port Avg	@3% 02	fresq Avg.	ppmdv	Port Avg	from Avg.	@3%-02	фора Амд.	ET/ACIOCIC)	MF02 correction		W/ C2 correction
	11:35	0,6		-45.2	11.9		1,0	-52.6	27.7		724	55,1	-59.5	99.5	100.0	un maria di sala	6-9253655// 15-14-5-65 55
	11:40	72.5		23,6	5.1		22.1	28,3	75.6		-24.5	85.6	-269	29.5	22.5	18.6	19
	11:44	108,6	74.2	59.9	4.0	6.5	121.5	67.7	116.8	62,7	16,7	130.7	16.1	1.2	-2.4	40.20	382
在有证券	11:48	93.3		44,6	3.9		38.2	44.4	45.9		-53.2	49.4	-6 5 .2	27.6	32.5	25.6	\$ 58.2
	11:5Z 11:55	108.1 62.0		59.4 13.2	10.5		185.1	132.2	9 0,1		-20.0	137.9	23.2	-ė.1	-74.5	448	乗り
	11:37	****		_	2.6		60.6	6,3	149.1		49.0	145,8	31.8	51.9	58.7		66 30 362 453
24 22 24 24 24 24 24 24	11544	43,9		-4.6 -44.5	4.9		49.1	-4.7	62.5		-37,6	69.8	-44.6	41.2	47.0	(4716) 731	
	11:45	102.0	55.3	53.3	6.9 4.5	42	5.8 #11.3	48.6	151.2		B1.1	192.4	77.8	93.B	93.1	#1	2.7
	11:49	116.6	20.0	57.8	2.3	***	112.1	57.5 58.3	31,5 27.8	52.9	-64.8	34.2	-80,4	-40,5	-32.8	100	100
	11:53	61.4		12.7	2.3		59.1	5.3	165.2		-72,3 65,1	25.8 161.9	-87.8	-14,8	-2.4	sele Second	25
	11:57	3.4		-45,3	5.0		3,8	-50.0	52.3		47,8		47.3	38.D	40,0		
	11:38	1.9		-46,6	8.0		25	-51,2	151.9			58.9	-55.7	96.3	94.3	AUTO AND HER OLD STATE	200.00
2.2.8	11:42	0.9		-47.B	44		1.0	-52.9	198,4		51.8*** 98.3	210.8 215.2	96.2 100.7	58.1	B	and a	3000 1000 1000
82.5 W	11548	80.9	49.9	32,2	4.9	4.7	¥0.5	36.7	34.8	1120	-65,3	38.9	-75.6	96.9 30.5	98.9	HPV	
3.2	11:50	115.6		68.9	2.4	***	111.P	58,0	38.6	1120	-86.5	32.5	-82.0	11.5	32,7 15.3	95 ar 45 b	40 at
3.20	11:54	39.7		50,4	2.6		96.0	44.2	166.7		68.6	164.9	503	-1.1	-3.9	Sec.	
335 B.SS	11:58	0.5		-47.8	6.6		1.0	-52.8	36.3		-13.8	100.3	-142	99.1	3.00	A.S.	000
22 9(5)X	11:39	11.6		-37,1	7.5		15,9	-38.0	168.5	******	68.4	290.2	115.7	868	84.5		620 648 605
	11:43	0.9	i	-47.8	3,9		0.9	-52.9	196.5		98.7	209.8	94.8	85.7	99.7		
	11:47	14,4	15.5	-34.3	3.6	4.7	14.9	-35,9	43,5	722.0	-58.6	45.0	-69.£	84.4	84.1	457 454	404
	11:51	62.6	i	13.8	25		81.1	7.3	49.5		-\$0,6	48.4	-65,1	46.0	45.4	TA ST	4000
	11:55	2.1		-46.6	29		2,1	-51.7	159.5		59.4	159.6	44.1	97.5	97.4	41,004	2. 55.6
**** ********************************	11:59	1.4		-47.8	7.2		1,8	-52.0	112.2		12.1	146.6	32.0	90.3	98.1	499.9	To deat
Curtlet Av	rerages	49.7			5,0		63,8		100.1			114.6		52.3	51.1	-7 .5	-13.1

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Clean Air Engineering Project #10247 Consol Energy ABS Greenidge

Start Time: 5/31/2007 Start Time: 12/00 End Time: 12/23

	iniet Point	Time Sampled	NOx ppendy	NOX Port Avg	PPM Dev from Avg.	O2 Nov	O2 Port Avg		NOx @ 3% 02	PP10 Dev	ppmdv	CÓ Port Avg	PPM Dev from Avg.	00 @3% 02	PPE Dev from Arg.
F	4 T	12500	99.4		-26.6	20.4			\$ 220 .5	\$279.1	70,4		-31.2	2520.3	2309.5
		12:04	132.1		6.1	6.4			152.6	-125.9	294.0		182,5	339.5	128,6
Į	Ţ,	12:08	137.0	129.9	11.0	3.6	7.4		141.8	-137.7	-88870	-59.6	-1100.8	-1083.6	-1244.4
•	***** *******************************	12-12	140.5		14.5	5.4			162.3	-117,2	58,7		-37,9	79,3	-591,4
1	12	12:16	114.5		-7.5	4.4			128.6	-150.9	25.0		-73.6	30.4	-180,4
ı	(60 2 6E	12:20	151_6		25.8	5.0			170.9	-t08.5	125.2		24,7	142.1	-63,7
- 1	() 24	1,2,01	824		45,5	6.3			38.6	-180,9	42.5		-59.1	52.1	-158.7
ŀ	25	12:05	102.0		+24.D	3.5			104.9	-474.5	251.0		179.5	289.1	79,3
ı	422	12:09	107.7	1123	-18.3	5.8	4.7		128.5	-15C.9	154.4	114.5	52.9	184.3	-26.5
F		12.13	132.2		6.2	4.3			142.6	-136,9	87.4		-14.2	94.2	-116.5
) 22 \\	12;17	130.9		49	3,1			131.6	-147,8	24,3		-77.3	24.4	-186.3
ł	88.68K	12:21	120.4		-5.6	5.2			137.3	-142.2	97.3		-4.3	1t0.9	-98.8
		12:02	114.6		-11.5	42			122.7	-156,7	91,1		10,5	97.6	-1121
- [12:08	130.1		4.1	3.1			130.B	-149.6	477.9		378.4	480.6	269.8
- 1		12:10	134,7	132.4	8.7	5.7	2.9		158,6	-120.8	230.2	169.2	128.7	271.1	80.3
	3.3	12-14	145.2		19.2	3.4			148.5	-130,9	88.5		-12,1	90.5	-120.2
- 1		12:13 12:22	136.8 132.9		10.8	2.7			134.5	-144.9	9t.1		10.5	88.6	-121.2
					8.9	4.3			143.3	-136.1	35,6		45,0	39.5	-171,3
ı	2	12:03	127.5 123.9		1,5	5.5			148.2	-131.2	140.4		38.9	163.2	-47.6
- 1	A	12:11	123.7	129.6	-2,1 7.7	3.4	3.6	and the second second	120,6	-158.9 -142.7	716,4 33.6	591.1	514.9	895,9	485.2 -176.4
- 1		12:15	142.1	12305	16,1	2.0	2.0		136.B	-14D.4	39.8	591.1	-88.0	34.4	
ŀ	43	12:10	128.3		3.3	23			139.0 124,4	-155.0	141.8		-81.7 (40,3	39.0 135.5	-171.7 -74.3
- 1		12:23	121.1		-4.9	65			140.B	-138.7	74.5		-27.1	86.6	-124.2
sł	we va ves	Heider	1477		7.7				140.5	-146.1	(4.0		L41-1	100.0	-1242
, Ι	Inlet Ave	rages	126.0			49			279.A		101,6			210.8	

1																	
Outlet	Time	MOX	NOx	PPM Dev	-02	02	NOx	PPM Day	CO.	50	PPM Dev	. 82	PPU Dev		ALCX Rumpowal Eff	CO Removal	CO Removal Eff
Point	Sampled	pprede	Port Avg	from Avg.		Port Avg	@3% 02	from Avg.	ppendv	Pert Avg	from Avg.				NV-G2 correction	Efficiency	W/ Q2 correction
	12:00	0.5		-105.1	11.5		1.0	-110.3	55.4		-85.4	105.6	-36.3	99.5	100.0		994
34-6 0	12-04	113.1		52.5	4,8		125.7	14,5	161,6		40,8	179,7	42.7	14.4	17.6	7650	4
80.848	12:05	125.2	104.2	29.2	5.0	6.3	146.1	34.9	491.5	135.1	376.7	553.3	416.4	5,2	-3.1	349.2	\$998
14 13 12	12:12	120.3		19,7	3.7		125.2	14.0	25.2		-95.6	28.2	-110.7	14.4	22.8	*68 **	954
	12-16	134.6		84.0	10,3		227.3	115,1	25.1		-\$4.7	44.1	-82.9	-13.6	-75.8	75.8	1 2
335 8 4%	12:20	126.9		25.3	26		124.1	12.9	68.7		-521	67.2	-69.6	16.4	27.4	2002-200 -200-2 00-200	
	12:01	89.6		-10.1	6.1		109.5	-1.6	827		361	100,0	-36,9	-12.6	-11.0	94.5	37.00
	12:05	27.1		-73.5	3.3		27.6	-63.7	21B.C		95.2	2t9.7	82.7	73.4	73.7	453	340
24 22 22	12:09	126.6	160.2	56.0	3.0	40	126,6	15,4	65.7	80 .4	-55.1	65.7	-71.3	-17.5	1.5	87 4	B 663
37. S	12:13	125.6		35.2	2.6	1	132.8	21.6	24.1		-96.7	22.6	-113,4	-2.7	6,8	17.00	1 25 .
	12:17	140.3		39.7	2.3	3	135.0	23. B	53.Q		-67.8	51.0	-35.0	-7.2	-2.6	1989	1067
87.6183	12:21	ek.d		-19.6	6.7		102.7	-9.1	41.1		-79.7	\$1.¢	-95,2	22,7	25.5	30 A S 40 A S 4	STATE OF THE STATE
	12:02	43		-96.3	7.4		5.7	-505.5	219.4		98.6	290.9	153,9	96.2	. 9\$.4	200	
34834	12:05	10.2		-90.4	3.8	1	10.7	-100,6	382.2		241.4	379.1	242.2	82.2	91.6	\$10 \$20	210
33 3 3 3 3	12-10	119.4	63.6	18.8	5.7	4.6	136,1	24,9	14,9	123,7	-103.9	19.3	-517.7	11.4	14.2	477	90.9
	12:14	138.0		38.4	3.4	1	142.2	30.9	34.5		-36.3	35.3	-101,7	4.3	4,3	96.0	¥ #10
(72)	12:15	144.5		49.5	3.0		144.5	39.3	55.8		-65.0	55.8	-61.2	-5.6	7,4	#7	47
XX -5 .76	12:22	85.4		-15.2	5.0		95.1	-15,1	53,2		-67,6	\$83	-77.1	35.7	32.9	- 64	610 571 818
(4-6	12:03	115,9		153	7.2		151,4	40.2	275.6		154.8	360.1	223.1	91	-2.2	3418	
	12:07	89.6		-0.8	3.0		99,8	-11,4	351.4		230,6	351.4	214,4	19.5	17.2	38.9	95 50 10
	12:11	128.5	114.2	27.9	3.8	4.4	134.5	23.3	18.5	141.0	-102.0	19.7	-317.3	3.\$	1.5	18 K	T 4/2
\ #	12:16	140,0		39.4	3,0		140.0	28.8	26.8		-94.2	26.6	-110.4	1.5	-0.7	245	308
(42)	12:19	39.3		-1.3	2.3	1	56.2	-13,0	66,0		-\$4,8	65.3	-71.7	23.2	21.1	60 C	1 🙀
44	12:23	101_5		1,0	5,6		127.2	15.9	107.8		-13.0	134.9	-2.5	±8.%	9.6	-94 51	558
								•									
Contest &	VARMORE	100.6			A.A		444.2		120.3			137 B		24.7	19.7	4R 7	14.5

Clean Air Engineering Project #10247 Comod Energy AES Greenidge

 Date:
 \$731/2007

 Start Time:
 12:24

 End Time:
 12:47

treet Point	Time Sampled	NCX ppoodv	NOx Post Avg		O2 Sedv	OZ Fort Avg		NOX @ 3% CI2	PPM Dev from Avg.	CO pponetv	CO Port Avg	PPM Dev from Avg.	60 60	PPM Dev
	12-24	116.8		-13.7	7.7			1526	11.2	57.5		-831.2	75,1	77,5
(1970)	12:28	137.8		7.3	5.2			157.1	15.7	421.2		280.4	480.2	327.6
ä	12:32	136.8	125,2	\$,8	4.3	5.3		147.5	6.1	392.1	219.8	241.3	412.0	259.4
2005	12:36	145.5		1 5 .0	6.1		:	164.8	29.4	99.2		-41.6	F12.4	-40.2
	12:40	119.4		-15.1	4.5			1303 -	-11.1	78.7		-82 1	65,9	-667
	12:44	155.5		25.0	6.2			177.3	35.9	278.6		137.8	317.6	165.0
	12-25	117.0		-13.5	6.1			147.5		105.1		-35.7	127.1	25.5
	12-29	120.7		-9.8	3,5	1		124.2	-17.2	424.2		288,4	435.4	283.8
35 24 23	12:33	118.9	119,2	-11.6	4.6	4.7		139.1	-2.3	84.5	149.0	-56.2	98,9	-58.7
32533	12:37	108.9		-21,6	4.6	1		116.1	-23.8	76,1		-84.7	82.6	-70.1
10.20	12:41	127.2		-3.3	2.4			130.1	-11.3	50.3		-\$0.5	51.4	-101.2
	12:45	122.4		-\$.1	5.1			136.7	-2.7	154.6		13.2	174.5	21,9
334	12:26	125.4		-4.1	4.1			134.7	-6.7	178.1		32.3	184.4	31.6
	12:30	136,9		5.4	3.0			136,9	-4.5	-999.0		-1139.6	-999,0	-11\$1.6
	12:34	139.5	135.7	9,0	5.1	3,6		158.0	16.6	79.0	-70.9	-61.0	P0.4	-52.2
333	12:38	144.3		13.6	3.4			147.8	8.2	105.6		-35.2	109.0	-44.6
8626	12-42	137.6		7,0	2.7			135.2	-62	157.7		16.9	155.1	2.5
	12:45	129.4		-1.1	نه			139.5	-1.9	57.3		-8 3. S :	÷1,₽	-90.8
	12:27	130.4		-0.1	6.1			147.7	6.3	199.3		58.5	225.B	73.2
	12:31	129.1		-1.4	2.5			127,7	-19.7	1008.3		887.5	997,2	844.6
	12:35	138.4	132.0	5.9	3.2	3.6		137.9	-2.5	91,9	265,7	-58.9	B2_B	-69.8
	12:35	145.7		15.2	2.7			143.3	1.9	109.8		30,9	103.1	-44.5
45	12-43	132.6		2.0	2.1			1252	-15,3	155.3		15.5	143.6	-3,8
(8% A 18%)	12:47	117.5		-12.7	£.s			137.8	-3.6	38.5		-102,3	45.0	-107.6
iniel Ave	*2966	130.6			4.3			141.4		140.3			152.6	

Outlet	Time	NOx	NOx	PPM Dev	02	.02		NOx	PPM Day	ĠQ.	ÇÓ	РРИ Ооч	co	PPM Dev	NOx Removal	NOT RECOVERED.	CO Removal	CO Removal Cri
Point	Semented	ippender.	Port Avg		7.01	Port Avg		@ 3% O2	freep Avg.	рримач	Port Avg	from Avg.	© 3/7 Ct		Efficiency	VV 02 соцес 8рц	- Efficiency	W/ C2 correction
	12-24	116.7		-53,6	10.2	•		193.6	50,8	73.4		-79,1	122.3	-47.7	0.9	-268		
	12:28	121.6	•	47.4	4.0			128,8	-139	228.1		75,9	241,6	71.6	11.B	18.0	450	44.0
	12:32 12:36	132.3	127.1	29	4.6	\$9		144.4	1.7	140,0	120.6	-12.2	152.5	-17,2	3.3	2.1	65/4	469
27775		123,8 136,2		-5.6	4.3		100	133.5	-9.2	58.D		-96.2	60.4	-#09.6	14,5	19.0	43.5	44.9
	12:46 12:44	132.7		6.B 3.3	9.7			257,7	75.0	87.0		-65.2	139,0	-31.D	-14.3	-67.0	- 36 5	61.
					2.5			129.1	-13.6	139.5		-12.7	135.7	-34.3	147	27.2	48.	
2-5 2-5	12:25 12:29	124.7 129.1		4.7	6.7			157.2	14,\$	2:1.0		56.8	265,0	95.0	-66	-11.1	100	
	12:33	131.4	121.4	-0.3 2.0	2.9	3.9		126.4	-14.3	259.5		107.3	258.1	38,1	-7,6	-3.4	2.063	20°
3.00	12:37	139.2	1017	2.0 9.6	2.6 2.9	2.9		128.5	-14.2	35.0	113.7	-121.2	30.3	-129.7	•70.5	7.6	500	(1578)
24 23 22	12:41	143.2		13.6	2.4		and the second second	138.4	4,3	30,8		-121.4	20,6	-139,4	-27.8	-17.2	-38 €	Q #
248	12:45	120.5		-8.9	5.5			138.6	-42 -17	95,0		-55.2	82.9	-77,1	-126	-6.5	600.9	185
200 348 333	12:25	126.8	···-					141.0		53.8		-98.4	62.9	-107.1	1.6	-4.7	950	Research Control
3.3	12:30	122.2		-2.6 -7.2	7.1			184.5	21.8	388,0		230.8	496.6	226.8	4.3	-22.1		7004 1208 810 158
1000	12:34	129.7	130.9	0.3	3.1	3.6		122.9	-\$9.B	398.8	4===	244,6	399.0	229.0	10.7	10.2		100
333 (1	12:36	141.7	100.0	12.3	2.9	3.5		135.8	-6.9	82.9	166.8	-119.3	34,4	-135.6	7.0	14,1	38 7	619
	12:42	141.1		10.7	23			140.9 142.5	-1.8 -0.2	26.2		-125.G	26.1	-144.0	1.8	4.5	70.2	
3-2	12:48	117.1		-12.4	42			125.5	-17.2	74,3 96.6		-77,9	71.5	-95.5	7.7	-5.4	精弹	566
5/X 474 XX	12:27	125.2		+2	6.3	~		153.5	10.8			-65.6	92.8	-77.2	9.5	1G.0		802
425	12-21	124.3		-5.1	3.5			127.9	-14.8	444,9 505,8		292.7	545.5	375.5	4.0	-3.9	100	340
XXXXXXX	12:35	134.1	128.5	4,7	3.3	3.8		135.4	-14.0 -6.3	51.5	207.7	353.B	520.3	350.3	3.7	49.2	494	ara 283
32533	12:39	142.2		128	2.6			129.1	-3.6	602	201,7	-100.3	52.6	-117,2	1.7	1.1	9978	203
42	12-43	129.8		0.4	23			124.9	-47.8	174,9		-92.0 -37.3	\$8,9 110,6	-111.1	24	2.9		41.5
	12:47	115.2		-14.3	5.3			132.2	40.5	68.7		-83.5	78.8	59.4 91.2	20 22	1,0	200	额
												-01.7	raio	-81-2	- 22	4.1	109	
Outlet Av	ecages	129,5			4.4			142.7		152.2			170.0		B 2	4.5	~~	**

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Clean Air Engineering Project #10247 Consol Energy AES Greenidge

Date: 5/31/2007 Scart Time: 12:48 End Time: 18:11

Indet Polet	Time Samuled	NOx pomer	NOx Port Avg	PPN Dov from Avg.	02 %d+	O2 Fort Avg		NÓx £0,3% O2	PPM Dov from Avg.	CO ppendy	CO Port Avg	PPN Dev	CO @ 3% O2	PPM Dev from Avg.
880,5388	12:48	117.3		-6,9	7,2			153,2	15,8	40.4	······································	151.6	52.E	-152.8
(F)	12:52	142.0		17.B	6.2		1971	161.B	27,4	547,9		355,7	¢24,7	419.1
	12:59	143.5	140.2	19.3	4.4	5.4		155.7	21.2	489.8	237.4	291.6	524.0	319.3
13 12	13:00	143,5		19.3	5,1			182.6	29.1	148.9		-43.3	168.7	-38.8
	13:M	127.4		3.2	4.7			140.B	6.3	8.38		-103.4	\$8,5	-107,4
	13:08	167.6		43.2	6,6			194,7	60.2	1144		-77.8	1\$3.D	72.6
(2) 25-5 2/6	12-49	103.2		-21.0	5.9			123.2	-11.3	68.8		-561.4	111.9	-53.6
28 24 23	12-63	98.6		-25,6	3.3		* * * *	100,3	-34.2	351.7		159.5	357.7	152.2
	12:57	113.1	79.4	-11.1	6.4	4.6	** :	130.6	-3,9	135,\$	125,2	-86,6	156,6	-48.9
	13:01	108.5		-15.7	4.4			117.7	-18.8	132.5		-5 9 .7	143,7	-91,8
	13:05	25.3		-84.9	3.2			25.8	-108.9	12.0		-180.2	12.5	-193.4
	13:09	27.2		-95.4	6.2			21.7	-102.8	43.4		-143,8	49,5	-155.7
88478	12:50	130.1		4,2	3,7			185,4	0.9	179.2		-13.D	78 6 .5	-19.0
	12:54	135.3		11.1	3.0			135.8	9,0	489,6		297,4	485.5	284.1
	12:58	138.2	138.6	14.0	5.2	3.B		157.6	23.1	225.7	192.3	33.5	257,3	51.8
	13:02	143.6		19,4	3.7			149.4	15.0	110.2		-62.0	114.7	-80.9
	13:06	144.4		20.2	3.0			144.4	9.6	53.4		-103,8	EC3,4	-122.1
	13:10	141.4		17,2	4.8			752.5	18.0	5\$.B		-125.4	71.0	-134.5
	12:51	134.0		9.6	4.6			249.0	14.5	260.6		66.4	289.7	84,2
4	12:65	135.5		11.8	3.0			195.5	1.0	695.5		504.3	695. 5	491.0
	12:59	140.4	128.3	16.2	2.0	3.5		540,4	5,9	€6,0	210.8	-127.2	65.0	-140.5
	13:03	140.5		24.3	2.6			145.3	10.8	72.3		-118.9	70.7	-124.8
	13;07	145,0		20,8	2.4			140,3	5,8	118.5		-78.5	109,9	-95.5
100 100 00000	13:11	128.2		2.0	5.3			244.8	1 0 .9	58.6		-135.6	64.9	-140.6
bullet Ave	3202	124.2			4,3			134.5		192.2			205.5	

1									_			_		_				
Outlet	Tim≠	NGœ	NOx	PPM Day	. CZ			NOX	PPM Dov	CO	00	PPM Dev	. 00	PPM Dev	RCX Remodel	ROW PRINCH ST	CO Removal	. CO Removal Eff
Point	Suropled	ppmdv	Port Avg	from Avg.		Port Avg		@ 3% OZ	from Avg.	ppmdv	Port Avg	from Avg.	@3%-02	troop Avg.	X Project X	Michael Company	Efficiency	W/O2 correction.
	12-48	116.7		-18.8	8.0			161,9	19,9	178,4		-54,2	164,3	-18.6	4.5	-5.7	97835	
	12:52	127.1		-3.4	3.1			127.B	-14.2	343.4		170.B	345,3	142.5	10.5	211	27.5	407
	12:56	141.1	133,0	5.5	3.4	4.7		144.3	2.3	159.5	138.8	-13.1	183.1	-19.7	1.7	7.3	420	1 889
(49)	13:00	131.4		-4.1	3,1			132.1	-9.9	54.0		-118.6	54.3	-128.6	8.4	18.7	637	(B)
	13:04	140.1		4.8	8.1			195.9	53.9	71.5		-101,1	100.0	-\$29	-10.0	-39.2	44	444
	13;02	141,6		e,:	25			133.5	-3,5	85.8		-86.B	B3,9	-9B.8	15.5	28.9		有最初的 (1)
(3 29	12:49	127.8		-7.7	4.7			141.2	-0.8	243.0	-	70.4	269,5	85,6	-23.8	-14.7		\$ 000000000000000000000000000000000000
2 4 3 % 2 %	1263	(33,6		-1,9	44		and the second	144.9	2.9	315,1		142.5	341.8	159.0	-35.5	-44.5	194 187	**
	12:57	139.4	137.3	3.9	2.4	3.3		134.9	•7.1	32.2	127.1	-140.3	21,2	-1\$1,B	-23.3	-8.3	74.7	4.
	13:01	140,4		4.9	2.4			135.8	-8.2	42.2		150.4	40 .B	-142.0	-29.4	-55.4		
	13:05	146.9		11.4	3,3			149,4	7.4	62.2		-110,4	63.3	-119.6	-480.6	-463.9		-407
	13:00	136.7		0,2	2.6			132.7	-9.3	68.0		-104.8	68.5	-116.4	-3B8.f	-318.B	(co. 100 co.)	4
864.88	12:50	132.1		-3.4	6.4			152.6	10,6	402.5		230.9	. 456,D	293.1	-1.5	-12.7	(22 5.4)	
55 54 53 32	12:54	127.2		-8.3	2.2			12H.B	-20.3	543.1		370.5	519.8	237.0	6.0	10.0	-104	84
200 S	12.53	131.6	136.4	-3,9	3.4	a 3		134,5	-7.4	33.3	194.7	-139.5	34.1	-148.8	4.B	14.6	H 444	20
	13:02	144.5		9.0	2.8			142.9	0.9	29.0		-143,6	28,7	-154.2	-0.5	4,4	1. 745	75-9
	13;06	153.7		18,2	2.0			145.5	3.5	74.4		-96.2	70.5	-1t24	-8.4	-0.8	77.8	19.5
3.4	13:10	125.4		-6.1	3.7			134.7	7.4	84.6		-88.0	\$ 8 ,0	-94.6	3,5	11.7	100000000000000000000000000000000000000	
	1261	129.4		-6.3	6.0			145.7	8,7	611.9		439,3	668.9	508.0	3.4	2.2	77 77 78 78 77	
35.00	12:55	131.6		-3.9	2.7			129.4	-12.6	482.3		309.7	474,4	291,5	2.9	4.5	este €	
835288	12-59	138.0	135.4	2.5	26	3.5		135.D	-7.0	4B.7	229.8	-125.8	45.7	-137.2	1.7	3,9	9 2	764
1.0 E.	13:03	146.6		10.1	2,3			140,1	-1,9	47,2		-125.4	45.4	-137.4	2.D	3.5	12.7	400
	13:07 13:11	141.2 125.4		5.7 -9.1	2.3 5.9			135.9 150.6	-6.1 8.8	1D1.9		-70.7	98,1	-34,8	2.5	3.1	607.8	1 69
202-2010	13617	143.4		79.7	_ 1.2			190.8	4.0	36,9		-89.7	106,1	-76.8	-2.2	-4.2	3003	
Outlet Av	eraces	135.5			3.7			147.0		172.6			182.9		_38.S	-39.7	-92 E	.22.1

Clean Air Engineering Project #16247 Consol Energy AES Greenidge

Date: \$431/2007 Start Turne; 13:12 Snd Turne; 13:35

injet Point	Time Sampled	NOx operativ	NOx Port Avg	PPM Day from Avg.	O2 Side	02 Port Avg		₩0¥ @3%-02	PPM Dev from Avg.	CO pprodv	CO Port Avg	PPU Dev	CO #3% 02	PPM Day
	13:12	728.4		-96.3	5.5		. •	157.1	23	203.0		-1102	3829	-60.0
\$\$\$ \$\$ \$\$\$	13:16	162.0		9.3	5.0		1.197	171,1	16.3	2000.0		158t.7	2251,5	1609.7
14 10 2	13:20	144.5	145.7	2,9	4.6	5.5		160.9	6.1	425,9	466,7	8.5	468.8	26.0
	13:24	147.9		5.2	6.7			174.2	19.3	97.D		-32:,3	114,2	-328.6
	13:28	136,3		-6.4	5.3			156,4	1.6	94.4		-323.9	108.3	-334.5
300°340	13:32	165,3		22.6	B.T			194,7	39 .6	54.1		-364,2	63,7	-379.1
(V Z-0 ())	15:13	125.2		-16.5				141.2	-13.6	319,3		-99.0	357.2 :	-85.6
224	12:17	123.0		-19.7	3.3			125.1	-29.7	633.6		215,8	544,4	201.5
	13:21	124.3	128.0	-18,4	5.8	4.6	4.1	145,4	-\$.4	89,7	1920	-828.6	104.9	-337,9
23	13:25	131.4		-11.3	4.6	i		144.3	-10.5	49.6		-358.7	54.5	-388.4
	13:29	141,1	:	-1.6	3.9			148.5	-6.3	33.7		-384,6	35.5	-407.3 i
88 28 08	18:53	125.7		-16.0	6.0			1428	-12.2	26,1		-392,2	29.4	-413.4
	13:14	149.6		6,9	3.0			149.6	-5.2	520.0		101.7	620.0	77.2
	18:18	152.4		9.7	3.0			152.4	-2,4	2000,0		1581.7	2000.0	1557,2
312	13:22	151.7	151.9	9.0	1.4	3.6		175.2	20.4	134.8	475.0	-283.7	155.4	-287.4
	13:26	158.1		13.4	3.7			152.5	7,6	90.8		-327,5	94.5	-343.3
3.2 3.4	13:30	160.5		17.8	3,6			165.1	10,2	79.0		-338.5	62.1	-380,7
	13:34	141.1		-1.6	4.2			151,2	-3.6	24.9		-383,4	26.7	-416.1
	13:15	145.5		2.8	4.3			158.9	2.1	759,3		340.6	B17.7	374.9
	13:19	136,0		-9.7	3.1			135.8	-18.1	2000.0		1581.7	2011.2	1588.4
	13:23	146.6	144.4	3,9	3.2	3.5		148.3	-6,5	70.7	509.3	-347,6	71.5	-371.3
	13:27	159.2		16.5	2,9			155.3	3.5	129,9		-288.4	129,2	-313,6
	13:31	151,9		9.2	2.7			149.4	-5.4	48.5		-369.8	47.7	395.1
\$ 23 8	13.35	127.1		-15.6	4.6			148.7	-6.1	48.2		-370.1	56.4	-386,4
laiet Ave	rages	142.7			4.4		1777	154.8		416.3			442.5	

']																	
Outlet	Time	NOx	NOX	PPM Dev	O2		NOz.	PPM Day	, ¢0	co	PPMDev	8	PPM Dev	NCto Rendovel	NOT REPOYETED	CO Removal	CO Removal Eff
Point	Sampled	ppmdy	POIT AVQ	from Avg.		Port Avg	@3%,02	Store Avg. :	рргосту	Port Avg	from Avg.		from Avg.		WC2correction	Efficiency	W-D2 conscion
1.3	13:12	127_3		-13.5	8.8		189.3	36.7	290.8		-27.4	430.2	78.5	-4.7	-19.9		\$50000=50000000000000000000000000000000
	13:15	136.5		-4.D (3.3		125,1	-124	493.4		:72.2	498.8	147.1	10.0	18.7	169	70.0
	13:20	143,5	139,0	28	3.9	5.1	t51.2	-0,4	720.1	175.9	-198.1	126.5	-225.2	20	6.0	717	754
TEL	13:24 13:28	1349 149.1		-49	3.8		141.2	-10.4	42.4		-275.8	44.4	-307.3	6.8	18.9	WA:	814
	12:22	142.0		8.3 1.2	8.4 2.8	i	213.5	61.9	65.2		-253,0	\$3,4	-258.3	-9.4	-35.5	類条 1	788
3332000000	13:13	137.6		-3.2			139.9	-12.7 3.2	46.5		-271.7	45.5	-305,2	14,1	25.6	42.00	25.5
# # # # # # # # # # # # # # # # # # #	13:17	140.2		-0.5	6.0 0.8		154.9		756.7		488.5	651,9	500.2	-9.0	4.7	77 77 77 7 7 77 77 77 77 77 77 77 77 77 77 77	
	13:21	135.8	143.4	-1,0	2.5	3.6	140.3 135.0	-11,9 -15,8	406.2	***	89.0	405,2	\$4.5	-12,7	-12,2	784	900
	13:25	143.7	144.4	2.9	2.7	4.7	145.3	-14.2	25.9 27.3	215,7	-292.3	25.2	-326,5	-12.5	6.5	100	757
	13:29	160.5		19.7	25		158.1	4,6	29.2		-290.9 -289.0	26.9	-324.B	-9.4	2.1	197 9	10 a 10 a 20 a 16 a
24	13:33	138.6		-2.2	4.5		1522	0.6	48.2		-259.4	29.4 53.6	-323.3 -298.1	-13.7 -9.4	-5.1 -6.7	1	
2002.2000	13:14	140,5		-0.5	49	********	157.2	58	2000/3		1681.8	2237.5	1685.8	6.1	-5,1	100-100 (100-100) 	32.4
124	13:16	132.1		-9.7	3.3		134.4	-17.2	453.0		134.8	450,7	109.0	13.3	-9.1 15.8	10048	903 773 81 906 90
	13 <u>-27</u>	133.1	140.6	-7.7	5.1	4.0	150.8	-0.8	25,0	437.4	-292.2	29.5	-3222	12.3	18.9		
3.2	13:26	145.3		4.5	1.6		750.3	-7,2	96.0		-282.2	37.2	-314.4	6,9	7.5	94 7 60 2	
	13:30	161.6		20.8	3.2	1	1B3.4	1t,9	29.0		-259.4	29.1	-322.6	-0.7	1.0		
888	12:34	130.7		-10.1	2.6		125,2	-15.3	80.7		-237.5	83.5	-268,2	74	10.6	<u>12</u> 64	245
	13:15	140.8		9.0	4.9		197.5	5.9	2000.0		1€81.8	2237.5	1885.9	3.2	-0.4	III A SAN TO SAN	
	13:19	134.0		-6.8	3.7		139.5	-121	429.7		110.5	446.1	94.5	15	2.0	### ###	999
	13:23	144,0	140.5	3.2	3.6	4,0	149.0	-2.6	42.3	448.7	-275.9	43.8	-307.9	1,\$	-C.5	460	3E 8
4.2	13:27 13:31	152.1 148.1		11,3 7.3	2.5		150.4	+1.2	62.4		-254.6	62,7	-269.0	4.5	š č	512	612
	13:35	123.8	- 1	47.0	2,0 6.0		148,t	-3.5 -2.8	54.3		-263.9	54.3	-297,4	25	0.9	620	## ## 514 614
-1,340.0	14.44	72.12/0	1	-1174			148.7	-2.6	72.2		-245.D	67,9	-263.6	26	ά¢	-519	At 9
Ourbet Av	erages:	140.8			4,1		151.6		315.2			351.7		0.7	14	-97	

Clean Air Engineering Project #10247 Consol Spargy AES Greenidge

| State: \$731/2007 | Start Time: 19:35 | End Time: 19:59

inlet Point	Time Sampled	NOx. pprodv	NOx Port Avg	PPM Dev from Avg.	CJ2 Kdy	O2 Port Xorg		69 92% OX NOX	PPN Day from Avg.	CO Vonequ	CO Port Ave	PPM Dev from Avg.	60 63% 02	PPM Dev from Avg.
199 5-5 89	15:36	137.7		7.5	7,5			163,9	22.5	85.5		-35.2	:14.8	-15.3
	15:40	177.8		32.6	6.0			213.6	52.1	20.6	!	-100.0	25.0	-104,6
	15:44	145.2	150.2	20.0	4.1	5.3		176.0	14.6	17.D	97.3	-103.6	18.1	-111.5
	18:48	158.2		13,0	5.2			590,4	18,9	66,3		-54.5	75.6	-54.0
	15:52	106.9		38.3	4.6			117.4	-44.1	104.9	:	-15.9	115.2	-74.4
1222	16:56	155.6		10.4	4.4			168.6	7,3	269.1	:	166,3	313,6	184,0
	16:37	165.2		23.0	6.2			204.6	43.4	11.3		-109.5	13.6	•1n5.9
(A A ()	16:41				l				l :					l 1
30.658	15:45	170.7	150.5	25.5	5.2	4.6		184.6	33,2	13.5	83.7	-107,3	15,4	-114,2
	15:49	140.2		-5.0	4.3			151.2	-10.3	114.3		-6.5	123.3	-6.4
202	16:63	137.3		-7,9	2.9		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	135.5	-24.9	\$0.0		-30.8	B9.5	-40.1
	16:57	135.1		-B.1	4.3			145.8	-14.7	189.6		8 8.8	204.4	74.8
(() 3.7 /6	16:35	20.7		-124.5	23.			24.7	-186.8	12.7		-108.1	15,2	-114.5
	15:42	173.3		2B.1	5.3			198.9	37.4	5.7		-115.1	6.5	-523.1
34	15:46	185.2	<29.5	20.0	5,5	4.5		1920	30,6	15.7	129.7	-105.1	18.2	-711.4
	15:50	163.7		8.5	3.4			157.2	-42	199.6		78,8	204.2	74.5
3.52	15:54	133.7		-11.5	2.4			129.4	-32.1	275.1		154.3	288.2	135.6
	16;58	124.6		20,8	4.2			133.6	-27,9	233,6		112,8	250.4	120.6
225.25	15:09	185.2		40.0	8.7			233.5	72.0	18.4		-102.4	23.2	-108.4
4.8	15;43	190,2		45.0	4.7			210.2	48.7	13,4		-107.4	14.8	-114.9
	15:47	142.6	152.6	3.6	3.7	4.3		154.9	† -6.e	24.5	172.1	-98.3	25.5	-104.1
	15:51	148.9		3.7	2.7			145.4	-15.0	194.8		74.0	191.6	82.D
	15:55	125.2		-20.0	2.8			123.8	-37.6	272.4		151.6	269.4	199.8
200 A 200	15:58	117.0		-26.2	5.4			135.1	-26.3	509.1		388.3	587.9	458.3
inlet Ave	riges.	145.2			4.7			151.5		120.8			129.6	

	terroried	ppmor	Donet Asses					NOx	PPM Dav	co	co	PPIL Dev	ន	PPM Dov	31 123 650 11 12 11	MOre Printers and IPEP	CO Removad .	CO Removed Eff
2000 February 1900			Part years	from Avg.		Port Avy		@3% Q2	from Avg.	ppmdv	Port Avg	trom Avg.		from Avg.		107-02 correction	Efficiency	W/ Q2 correction
200 200 600	15:36	115.4		15.6	10.5			204.5	852	422.0		259.9	747.9	558.4	16.2	-11.2	100	
103650 1	16:40	127.6		28.8	49	1		142,8	23,5	15,2		-146.9	17,0	-172.5	25,2	±3,2	700	20.9
1	15:44	135.7	111.9	38.9	4.1	5.5		144.6	25.3	29.1	178.7	-133.0	31.0	-158.5	17.B	17.9	78.5	7/2
	15:45	111.4		12.6	3.0	1		1114	-7,9	34.5		-127,6	34.5	-155.0	29.5	39.2	APPER TO	548
	15:52	105.6		7.0	7,9	1		145,7	26,4	124.5		-37,6	171.4	-18,1	10	-241	-185	-9.3
	15:55	75.3		-23.5	2.1			74.7	-47.5	< 34.6		272.5	419.8	224.3	51.6	57. 5		
\$2 2.3 \$7	15:37	125.6		27.0	6.1			152.2	32.9	129.6		-32.5	156.7	-32.7	25.2	25.7	40 46 6	43043
23 1	15:41			-98.8	١	1						ايسا				i I	20070	2100
	15;46	124,6	93,1	25.6	4.7	4.1		132.3	14.5	22.7	250,1	-139.4	24.3	-165.2	27.5	81.5	類 (1)	367
3.7.7.5.7.7.7.	15:49	120.5		21.7	2.9	1		119.8	0.8	35.0		-127.1	34.8	-154. 7	14.5	29.7	968	.00
	15:53	71.9		-25.9	2.7		and the second	70.7	-48.5	122.4		-39.7	120.4	-69.1	47.6	49.2	36.6	
K0012001-000	15:57	23.0		-75.B	4.5			25.1	-94.2 239,7	940.9		778.8	1027.0	837.5	63.1	62.9 -1349.3	30000000000000000000000000000000000000	2 (00)(0000 0000
200000000000000000000000000000000000000	18:38	156.D		SY_2	13.1	- 1		358,¢		62,8		49.3	144,1	45,4	-653.6 12.2			650
	15:42	152.1		53.3	4.8	1		169.1	49.8 57.1	17.0	123.7	-145.1	16.9	-170.6 -170.6		15.0	(M)	
	15:45 15:50	128.8 121.4	111:0	30.2 22.6	4.0 2.5	51	and the second second	135.4 118.1	-1.2	15.0 76.7	724.7	-147.1 -\$5.4	15.9 74.6	-173.6	22.0 21.0	29.0 24.9	648	22.0 25.0
	15:54	106.D		72	23]		102.0	+17.3	173.1		11.0	156.5	-114,5 -22,8	20.7	21.1	1	T
	15:52	1.9		-95.0	3.6			20	-517.3	257.6		235.5	411.4	221,9	99,5	98,6		1 663
9448	15-39	157,8		\$9,0	5.9			201.8	62.5	18.9		-143.2	24.2	-165.3	14.8	13.6		2 200000000000000000000000000000000000
	15:43	154.9		56.1	6.2			176.6	57.2	20,7		141,4	23.6	-165.9	18,6	16,0		59/4
	15047	77.9	78.1	-20.9	3.5	4.5		BO.1	-39.1	18.8	212.6	-143.3	19.3	-170.2	47.6	48.2	***	
1 1 1 1 1 1	15:61	70.3		-28.5	2.6			68.8	-50,5	109,4		-\$2.7	107.0	-82.5	52. 8	\$3.0	498	27
	15:55	4.0		-94.B	3.0			4.0	-115.3	158.4		-2.3	158.8	-39.7	96.6	96.8	449	#13
	15:59	3.9		-94.9	6.8	:		4.6	-114.6	350.1		185,0	415.0	225.5	96,7	95.6	21.0	204
Christ there		92 R			- (1			446.3		489.4			400 E		•••	-20.4	-464 B	-710 3

Clean Air Engineering Project #10247 Consol Energy AES Greenidge

Date: Start Time: End Time:

5/31/2007 16:00 16:23

iniet Point	Time	NOX	NOx	PPM Dev	Οz	O2		NOx	PPRI Dev	60,	- 60	PPU Day	, č o	PPU Dov
	Sampled	pprodv	Poet Avg		7.41	Port Avg		@3% O2	from Avg.	pprodv	Port Avg	Gross Avg.	@3%-02	from Avg.
	14300	120.1		-6.3	al D		and the second	177.8	28.2	1927		93.4	287,4	154,6
1.5	16:04	135.2		Q.B	6.7			159.2	9,7	33.2		-69.1	39.1	-72.7
	16:08	133.6	135.6	-0,9	4.5	5.3		144.8	-4. 7	27.7	101.3	-74,6	30,1	-92.8
	16:12	155.6		21.2	5.2			177.4	27.9	24.8		-77.5	26.3	-84.5
12	16:15	103.3		-81.1	2.9			108,8	-40,8	145,1		35.6	148.6	35.7
	16:20	167.9		23.5	4.3			170.3	20.7	188.1		65.6	202.8	90,0
20.44.55X	16:01	1331.7		-0.7	7.2			174.7	25.1	15,1		-\$7.2	19.7	-93.1
	16:05	128.3		-5.1	6.0			145.8	-4.0	25.1		-77,2	28.3	-\$4.6
	76:09	126.5	133.Q	-7.8	5.4	2.9		145.2	-3.3	16.0	58.6	-86.3	18.5	-94,3
23	16:13	132.3		-2.1	4.0			140.1	-B.4	24.5		-77,E	25.9	-88.9
22	16:17	145.3		51.4	2.9			145.0	-4.6	175.0		72.7	174.0	61.2
3/2 2 (6)	16:21	130.3		-4,1	4.7			144.0	-5.6	95,6		-8.7	105.5	-7.2
300 4 666	16:02	95.7		-38.7	5.6			112,0	-37,5	17.4		-84.9	20.4	-92.5
	16:06	128.1		-6,3	4.9			143.3	-6.2	22.6		-79.7	25.3	-87.5
3.40	16:10	133.5	130.1	-0,6	6.7	4,5		157.6	8.0	17.4	75,3	-94.9	20.5	-92.3
	16:14	156.3		21.9	3.4			159.9	10.3	33.4		-88.9	34.2	-79.7
100000	16:16	146_1		\$1.7	2.8			144,5	-5.1	140,5		38.2	136.9	26.1
	16:27	120,6		-13.8	4.3			130,0	-19,5	229.5		118.2	237.8	124.9
### Z 899	16:03	166.6		22.2	E.4			193.3	43.8	30.0	******	-72.3	37.0	-75.8
00.650	16:07	118.2		-16.2	4.4			129.2	-21.3	25.B		-76.5	28.0	-84.8
	16:11	135.6	138.7	1.2	4.7	44		149.6	G.a	19,6	174.2	-82.5	21.9	-90.9
	10:15	192.3		27.9	2,1	-		163.2	13.7	36.5		-65,8	35.7	-78.1
(4.2)	16:19	135.3		4.9	27			137.0	-12.5	256.8		754.5	252.6	139,7
333	16:23	120.4		-14.D	6,1			138.4	-13.1	676.4		574.1	785.3	653.5
					-4.		100	1,54.4		0.0.4		F		W-0.0
Inlet Ave	TALDUS	134.4			4.7		The state of the state of	149.5		102.3			112.8	

I	_ *		· · · · · · · · · · · · · · · · · · ·				 										
Outlet Point	710	MOX	MOX	PPM Dev	02	. 02	NOx	PPM Dev	8	co	PPM Dev	œ			HCX Rimbonii Eff.	CO Removal .:	CO Pagnoyal BT
	Sempled !	pomey	Port Avg	from Avg.		Port Avg	@3% OZ	from Avg.	common	Port Avg		@ 7% C2	from Avg.		90-02 consciton	Encioner	W/ C2 correction
	16:00	22.7		25.8 17.0	8.8	1	122,3	61.0	229.6		182.6	239,7	230,6	35.4	31.2	元46	
	15:04 16:08	72.8 99.9	87.5	44.0	5,0 4,4	5.1	92.1	20,6	26.2		-63.7	31.9	-77.2	461	49.5	14.8	195
	18:12	90.6	er.5	34.7	3.5	3.1	108.4	47.1	34.2	34.9	-52.8	37.1	-72.0	25.2	25.2	257	# # # # # # # # # # # # # # # # # # #
14 11 22 11	18:16	100.8	i	44.9	6.5		\$2.1 128.0	30.6 66.7	19.5 58.3		-77.5	19,6	-89.3	418	45.1	27.4	101 120 201 501
	16:20	78.3		ZŽ.4	2.0		74.2	12.9	199.7		-38.7 162.7	74.0 189.1	-351	2.4 50.4	-17.5		203
	18:01	50.7		-5.2	49		55.7	4.5	30,8		-68.2	34.5	and		56.4		
35 35 31 31 31	16:05	10.7		-45.2	4.3		11.5	-49.B	30,8		46.1	33.3	-74.6 -75.8	62.1 9\$.7	67.5	10.00	E.
*****	15:00	97.1	62.5	41.2	4.1	4.1	103.5	422	1B.6	89. B	784	19,8	-75.0 -89.3	23.3	92.1 29.2	251	f E2 1
2.3	18:13	118.6		62.7	4.2		127.1	65.8	23.0	00.0	-74.0	24.7	-84.4	19.4	9.3		1. Table 1.
3323	16;17	\$1.0		25.1	2.9		33.6	19.3	95.0		7,0	89.5	-19.6	44.4	44,4	XXII	44.4
. Z4	16:21	17.1		-39.6	4.2		18.9	-43.0	245,5		248.5	370.3	281.2	36,9	87.3	372(×r	arear.
85-A-78	16:02	8.8		-\$C,A	121		11,2	-50.1	31.9		-85.1	64.9	-44.2	94.3	90.0		258.8
	16:06	1.4		-54.5	E-28		1.5	-5 9. 7	25,6		-61.4	39.6	-69,5	99.5	98.9	98	65.6
35 14 33 52	16:10	73.6	50,4	17.7	4.2	5.1	79.9	17.6	14.9	85.7	-92.1	15.0	-93.1	45.0	49.9	37.	22.1
	16:14	113,7		57.A	2.9		113,1	51.8	31.3		-65.7	37,1	-78.0	27.3	29.3	øa.	88
	16:18 16:22	104.6		50.7	26		104.3	43,0	62.6		-14.4	80.8	-29.3	27.0	27.8	#44	1979
SXXXXXXX		1.4		-54,5	3.9		 1.5	-59.8	317.6		220,B	334.6	225.5	98.6			20072 (1 807)
44	16:03 16:07	47.1		-8.8 -54.5	5,8	1	59.6	•t,6	3,85		-58.2	49.3	\$4,6	\$ 9.9	69.1	287	17
	16:11	1,4 10.5	23.2	-54.5 -45.4	4.9 5.0	-68	1.6 11.8	-59.7	23.2	4477	-53,7	37.3	-71.8	99.6	99,8 <u>(</u>	284 (97) 68	45 000000000000000000000000000000000000
	16:15	73.1	۵,۵	17,2	3.4	7.0	74.8	-49.5 13,5	15.9 34.2	117.7	-81,1	17.9	-91.2	92.3	92,1	497	182
76 8	15:19	4.1		-51.8	3.0	1	4.1	-57.2	-24-2 189.9		-82.8 72.9	35.0	-74.1	55.0	54.2		A.31
\$ 40 00	16:23	3.4		-52.5	5.4		3.9	-51.2 -57,4	414,\$		317.3	169.9 478.4	80.8 369.3	97 r : 97.2	97.0 97.1	39 W 36 7	257
					177			-20,4	7 * * 1 4		417.0	416.4	بحصد	714	ær∴ 8	0210373 390 £q4003y4	97.6
Courtlest Av	ustage s	55.0			4.7		61.3		97,0			109.1		59.2	58.4	-16.1	-19,1

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Clean Air Engineering Project #18247 Consol Energy AES Greenidge

Corte: Start Time: End Time:

\$91/2007 16:24 16:47

iniet Point	Timo Samsiedi	NOx peracty	NOX Port Avg	PPM Day trees Avg.	02 24v	O2 Post Avg	CO2	CO2 Post Avg	NOx @ 3% 02	PPM Dev from Avg.	ÇO ppoudv	CO Port Avg	PPU Dev from Avg.	20 23% 02	PPM Dev from Avg.	NÇX DAMMBD
8300	16:24	109.6	•	4.2	4.6	-	16.2		120,6	47	543.6		442,6	597.2	297,9	
\$\$ \$\$ \$\$	16:29	0.6		-105.D	6.9		13.8	14 to 1	0.8	-1152	42.6		-58.9	54.5	-54.9	
2	16:32	0.6	25.4	÷105.0	6.0	4.6	16.7	16.3	0.7	-115.2	28.4	151.4	-75.1	29.7	-79.7	
	16:36	0.4		-105.2	43		16.6		0.4	-115.5	34.2		-57.3	35.9	-72.5	
2	16:40	0.3		-405,2	2.8		12.2		0.3	-115.6	86.7		-14.6	85.2	-28.2	
	16:44	40.0		-64.7	3.7		17.6	· · · · · ·	426	-73A	174.5	.	73.1	181.6	72.2	
	10:25	134.2		29.6	6.8		14.8	·	:70.4	54.4	21.6		-79.9	27.4	-820	0.232
(248 ()	16:79	125.5		21.2	63		1 6. 6		745.5	28.6	36.6		-64.E	42.3	-67.0	0.128
33.55.333	16555	125.4	129.5	19,3	6.3	4,9	15.5	17.0	*43.9	280	42.6	521	-58.6	49,2	-80.7	D.195
- XX-8-XX	16:57	125.2		23.6	3.9		18.3		138.0	20.1	19,6		-81. 9	20.5	-86.8 <u> </u>	0.198
2222	16541	137.8		32.2	3.1		19.0		138.6	22.6	70.0		-31.5	70.4	-320	0.189
300-2888	16:45	123.5		17.9	4.9		17.0		138,2	22.2	121.5		20.1	135.9	26.5	0.188
	16:26	134.2		29.6	5.4	·	16.2		155.0	39.1	23.3		-7B2 ;	25.9	-62.5	0.211
	16:30	128.2		22,6	52		16.4		146.2	30.2	19.3		-822	22.0	-67.4	0.189
3388	16:34	132.6	134,7	25,9	5,6	4.4	15,8	17.2	155.0	39.1	18.3	68.0	-83.2	21.4	-880	0.211
322	16:38	162.6		58. 3	3.2		18.7		154,3	48,4	48,3		-58.2	46.8	-80.5	0.234
W-33	16342	142.5		38.7	2.5		18.3		139.2	23.3	125.3		24.9	123.5	14.2	0.190
	14:48	103.4		2.8	4.2		17.2		116,2	0,3	172.7		71,9	185,1	75,7	0.158
	14:27	143.1		37.5	6.6		14.6		177.9	62,0	28.1		-72A	35.2	-732	0.243
	16:31	129.1		23.5	5.0		14.3		145,3	29.4	23.B		-77.9	28.8	-62.8	0.198
	16:35	133.2	132.6	33.6	4.1	4.4	17.3	16.9	148.3	32.4	23.5	134.3	-76.0	25.0	-843	0.202
	16:39	161.5		45.6	2.8		18.0		148.6	33.9	88.3		-15.2	B5.3	-24.0	0.284
	16:43	133,1		27.5	2.5		10.7		131.6	15,7	272.6		171.1	289.5	180.1	0.178
500 P.O.	16:47	101.2		-4.3	82		15.7		115.5	-0.4	370.8		269.4	422.9	313.4	0.157
inlet Ave	rages	105.6			4.6		15.9		115.9		101.5			104.4		0.193

1																					
₹.	Outlet	Time	NOX	HOx	PPM Dev	.02	02	CO2	CO2	NOx	PPM Dev	co	C 20	PPM Dev	- 00	PPM Day	NOx Removal	NOX Removal En	CO Removal .	CO Removal Eff	NÇIX
•	Point	Surepled	ppendv	Port Avg	from Avg.	Yev	Port Avg		Post Avg	@3% O2	from Avg.	ppondy	Port Avg	Drown Avg.	@ 3% C2	troon Avg.	ETH: HOTEY	WEDZ correction	Efficiency	Wi C2 correction	ID-MONASILI
- 5	14	18:24	64.9		26.0	5.0		9.5		90,5	39.0	659,5		549,6	915,1	185.5	40,9	25,3	Maria (1986)	Y(0.1226
- 1	(44)	15:25	51.A		16.5	4.5		10.3		75,3	25.3	30'0		-79,3	38,4	-94,5	-101\$3.3	-9849,1	ges	300 300	0,1341
- 1		16:32	51.7	53.B	5.6	5.7	7.8	11.1	° 9.5	60.9	9.5	37.9	172.2	-72.5	44.5	-39.3	-8516.7	-8613.5	400	302	0,0930
ŀ	0539I	16:36	61.7		8.6	8.0		9.2		71.7	20.7	31.3		78.6	43.4	-89.5	12625.3	-16532.2	43	278	0.0978
ŀ	22222	16:40	42.0 43.7		3.1	9.5		7.5		77.4 64.8	26.4 13.6	96.7 174.6		41.2 64.7	159.2 259.3	26.2 125.3	-15900.0	25845.9 -51.9	152	##A	0.1055
- [226	16:44		 		4.5		3.1		57.5	6.5	188.9		79.0	207.A	74.5	-8.6		nice de la companya dela companya dela companya dela companya de la companya dela companya de la companya dela companya dela companya de la companya dela companya de la companya dela com	4	0.3882 0.3785
ŀ		16:29	62.4 3.9		7.5 -36.0	4.5		13.5		8.7	-41.4	35.1		74.8	207 A 33.1	-84.9	83.0	68.2 83.4	1		0.3182
ŀ		15:33	95,4	61.1	48.5	1.9	3,\$	12.9	733	98,3	47.8	26.9	93.1	-83.0	23,3	-104.6	25,5	31,7	999	- De	0.1241
ŀ	23	18:37	112.8	2.,.	73.9	41	-,+	12.8	10,0	128.5	75,5	34,4	40. 1	-75.5	35.7	-96.3	8.0	7.0	250	1	0.1725
- [15041	74.0		29.1	22		13.7		73.B	22.6	100.0		9.9	99.4	-33.5	48.3	45.9	465≢	44.2	0.1003
ł	28 24 23 23 21	18645	19.1		-25.8	3.5		13.9		19.5	-31.4	173.2		53.3	178.2	45.2	84.5	85.6	426	4	0.0288
1	₹3-8 (\$	16:26	4.3		-40.6	6.3		13.2		5.5	-45.6	32.7		-77.2	41.5	-91.4	95.8	98.5	THE RESERVE		0,0074
- 1		16:30	1.4		-43.5	4.9		15.1		1.6	-49.5	27.6		-82.3	30.9	-102.1	98.9	98.9	400 104	460	0.0021
t	Kurk	16:34	74.1	50.1	29.2	4.2	42	14.2	15.0	76.4	25.4	16.4	73.4	-93.5	17.6	-115.4	44.1	4B.6		460 014	0.1083
- 1		15:38	115.8		75.0	2.5		16.9		1126	61.7	40.6		-69.2	39.5	-93.4	28.7	31.4	169	19 to 1	0.1537
- 1	352	18542	103.7		58.6	2.5		15.5		100.9	49.8 -49.5	\$9.8 223.2		40.6	97.2	-39.6	27.1	27.5	200	4. 72.2	0.1378
- 1		1644	-14-		-43.5	4.0				1.5				113.3	238.4	103.5	98.7	98.7		1 27	0.0020
ı		18:27 18:31	22.6 1.4		-223 -43.5	5.2		11.7		29.1 1.8	-21.9 -49.4	37.1 32.7		-72.8 -77.2	47.8 37.3	-852 -95.7	84.2 98.0	83.6 88.6	3.0	10 mg/s	0.0357 0.0322
1	328	18:35	5.3	14.9	-39.6	4.7	4.5	13.7	23.4	5.6	45.2	19.5	101.1	80.4	21.5	411.4	98.2	96.5	0.0	7.0	0.0360
- 1		15:32	64.7		B.B	2.9	4.4	15.1	744	54.4	3.4	52.5	,,,,,	57A	52.2	-80.7	63.9	63.7	HC2	384	0.0742
	#	16:43	1.6		-47.4	3.0		14.5		3.5	47.5	144.0		24.1	144.3	11.1	97.4	97.3	#2 母子	F 448	0.0048
		15:47	2.0		429	5.7		11.9		2.4	-48.7	320.7		210.8	277.7	244.7	99.D	9ê.D	44.	161	0.0032
	Outlet Av		44.9			5.2		12.3		51.0		109.5			132.5		·1120.4	-2455.7	-32.6	-41.6	0.470

Start Time: End Time: 5/31/2007 17:36 17:59

	Julet Point	Time Secoled	NOx ppendv	NOx Post Avg	PPM Day	02 5dv	O2 Port Are	CZO2 Mydy	Port Avg	NOX @ 3% O2	PPM Dev Iron Avg.	CO	CO Port Are	PPM Dev	CO @ 3% O2	PPM Day from Avg.	NOx Ibramen
	886.888	17:34	37.6		44.9	4.6	-	14.6		113.1	6,9	9527		357.5	894.6	471.6	0.154
	12	17:40	74.8		-21.7	5.6		15.2		87.5	-16,8	166,9		-39.3	195.3	27.8	0,119
		17:44	27,4	27.4	-9.1	4.7	5.1	16.3	16,0	98.5	-7.7	302.1	259.8	669	333.8	110.8	0.132
		17;48	115.1		1B.6	6.1		16.0		128.1	23.8	106.6		-98.6	120.8	-102.5	0,775
		17:52	\$7.5		1.3	4.3		17.0		105.5	1.2	124.8		-60.9	134.0	-89.0	0,144
	88 6 08	17:58	119.5		23.4	4.4		17.0		130.1	25.8	295,1		90.9	321.2	98.2	0,177
	88 30 7 8	17:27	39.6		-6 39	6.E		16.8		1062	7.8	106,3		-95.9	129.6	-63.5	0,545
	24	17:41	84.7		-51.8	3.5		10.1		88.7	-45,6	254.4		49.2	266.3	43.3	0.721
	44.2 2.2	17:45	92.9	94,3	-8.5	5.2	4.5	16.3	17.2	105,9	1.7	92.3	138.5	-112,8	1052	-117.B	0.144
	80208	17:42 17:53	96.1		-1.4	4.3		17,2		102.5	-1.7	87.6		-117.5	PM.5	128.6	0.140
	×2.0	17:57	105.2 94.2		12.7 -2.3	3.2		18.7	1	110.4	6.2	139.2		-57.0	139.8	-833	0.151
	# C C C C C C C C C C C C C C C C C C C	17:38	95.9			4.9		17.1		104.7	D.5	155.8		-49,9	1727	-50.4	0.148
		17:42	87.2		-0.6 -14.3	4.1 3.8				102.2	-21	189.6		-15.6	200.9	-22.1	0.139
		17:00	105.9	103.3	9.4	6.2	3.9	18.5 18.5	18.0	84.6 120.7	19.7	316.1	404.0	110.9	325.2	102.1	0.115
	# Z ZW	17:50	121.5	100.0	25.0	1.6	4.7	18.2	1000	126.7	18,6 21,4	84.2	191.8	-121.0	58.0	-127.0	0.185
	34 33 32	17:64	108.6		12.3	2.3		18.6		108.2	3.9	58.0 137.6		117.2	\$1,1	-132.6	0.171
	33.	17:51	105.4		8.8	3.3		17.0		111.0	8.7	276.4		-97.5 71.2	135.8 291,0	-85.2	0.148 0.155
	200 000 000	17:39	87.5		-8,9	5.6		16.7		101,B	-24	178.3		20.9	207.2	-15.8	0.129
		17:43	74.3		-22.2	3.2		18,2		75.1	29.1	374.5		169.7	379.1	156.1	0.102
		17:47	89.3	90.9	4.7	23	3.7	18.1	17.6	91.3	-129	758	239,7	-129.4	77.1	-148,0	0.125
		17:61	111.7		15,2	3.0		15.4	-1.0	111.7	7.4	60.3	2071	-144.9	60,8	-:82.7	0.152
		17:65	85.3		-11.2	2.3		18.1		82,1	22.2	361.7		178,5	357.3	144.3	0.112
		17:59	26.6		0,0	5.0		16.1		108,6	4.4	387.1		161,9	413.3	190.2	0.148
																	2.140
C	jisket Aver	reges	96.6			4.3		17.2		104.3		206.2			223,0		0.142

Dudlet NCX Port Avg PFM Dev Time MÖX 02 77. C03 C02 CQ PPM Dev 00 PPM Dev MOx Remove: Mily Removal Eff Efficiency #7/12 connection CO Removal CO Removal Eff (NOx 90) CO Control Eff **Point** Samole pperedv from Avg. %dY Port Avg Kdr Post Avo pprodu Post Ave род Аго. e 3% 02 irom Ave from Avg. Efficiency 8.1 24 63.5 37.7 501.9 225,3 701.9 498.1 30.9 0.1207 Ľ 4.8 17:40 633,1 13.2 15.0 85.7 14.9 149.3 -27,3 166.0 39.8 21,0 24.9 0.0896 17544 67,4 73.5 21.5 5.5 19.0 16.4 72.7 21.8 188,3 205.7 9.7 200.9 -4.9 22.9 24.7 0.0991 19-3 17:48 78.3 32.4 4.1 19.3 83.4 32.6 69.3 -107.3 73.8 131.9 30.6 34.9 0.1138 12 17:52 105,6 58.7 9,0 15.0 158.8 109,0 61.4 -415.2 92A -113,4 -೭೦ -50.6 0.2166 17:58 67.2 21.3 3.2 19.5 57.1 66.0 27 t.B 65.2 274.9 四 1 44.0 47.9 0.0927 2.5 2.5 17:57 3.5 16.5 40.1 -40.7 227.D 50.4 234.9 59.7 ## ## ## ## 29.1 62.2 0.0547 17:41 4.4 41.5 16.3 4,5 152.D 50.3 -45,3 -24.6 155.5 94.8 72.7 34.6 34,9 0.0061 3.4 3.3 3.1 2-4 7-3 17566 83.2 51.8 37,3 3.5 14.2 16.7 34.3 67.3 133.7 85.1 -109.3 68.8 -139.9 10.4 15.7 0,1160 17:43 103.2 57.9 16,1 105.6 54.8 34.2 60 60 60 8 -142,4 34.8 -171.0 -9.1 -2.9 0.1440 2 2 2 1 17:53 72.8 26.9 10.5 73.2 22,4 51.1 -115.5 65.4 -1443 33.3 33.7 0.0998 17:57 7.7 -38.2 41 20,5 8.2 -426 250,3 83.7 277.3 71.5 91.R 92.2 0.0112 25 17:38 23 43.6 6.4 15.0 2.6 -48.0 403.6 232.0 504.4 256'è 97.ú 97.2 121111 0.0039 0.6 45,3 17:42 3,9 22.0 0.6 -\$Q<u>2</u> 251.8 75,0 99.3 254,9 59.2 99.3 0.6009 47.0 70.4 17:46 24,5 4.4 2.5 154 20.8 79,4 25.6 32.2 181.3 144.4 34.9 33.5 97 A 89 S 87 A 87 A +270.8 35.7 0.1041 67 T 17:50 108,0 60.1 3.7 21,3 110.3 59.5 28.4 -148.229.8 -t76.2 12,8 12.2 0.1504 17:54 102.0 56.1 3.1 22.4 102.6 51.8 71.1 -135.5 71.5 -134,3 6.3 5.2 0.1399 17:53 0.5 **≠**5.0 6.4 24.5 1.5 49,6 295.0 119.4 341,6 135.1 59.1 99.1 0.0354 17:39 3.1 42.0 7,6 14.8 -92.4 444 237 237 4.1 **-48**,7 353,8 187.2 275,8 492.4 B6.5 65.0 13.17 0.0056 4.4 3.8 1.7 17:43 0.9 45.0 20.5 1.0 -19.B 202.9 26.3 588 229.1 14.4 98.7 0.0013 17:47 3.9 11,8 42.0 5.0 26.2 10.5 ***.1 -4**9.7 50.6 164.9 -125.6 53.2 -152.6 65.7 95.5 0.0056 17:51 55,8 9.7 21.1 57.9 7.0 44,2 -132.4 46.0 156.B 50.2 46.2 0.0789 17:55 24 43.5 29 73 72.3 24 49,4 165.9 -10.7 165.0 -60.B 97.2 67.1 0.0033 17;69 1.9 44.0 15.7 281.5 105.0 291.6 176.5 98.0 97.6 0.0035

Courset Averages 48.9 4.5 12.4 50.8 176.6 206.8 64.2 53.6 12.2 10.5 0.063

Clean Air Engineering Project \$10247 Coraci Energy AES Greenidge

Fd 9780

Date: Start Time: End Time; 5/31/2007 18:00 18:28

imine Polint	Time Samuled	benneda "NCX	Nigy Post Avg	PPU Dev from Avg.	O2 Vdv	O2 Post Ave	(202 4de	CCR Port Byg	NOx ₫ 3% 02	PPM Dev trom Avg.	6baorga CO	CO Port Avg	PPM Day from Avg.	62.2.03 CO		NOx IMMM⊋tu
物質類	18:50	87.3		-10/2	6.3		14.4		111 <i>ā</i>	6.6	123.≠		-78,4	157.8	-58.2	0.15
2 2 2	18504	57.3		-9.8	5.2		16.6		100.1	-5.C	370.6		158.8	422.5	206.6	0.14
38938	18:08	20.4	93.9	•7.D	4.4	5.0	17.1	16.5	98.1	-7.0	227.2	189.4	25.4	248.5	30.5	6.13
37.53	18:12	87.0		-15.4	6.2		16.3		29.2	-5.6	69.0		-512.8	101.5	-514.5	0,14
#47 #45	12:16	69.0	į	-8.4	4.1		17.7		94.9	-10,2	158,1		-42.7	15E.5	-47 -5	0,13
XV.50X	13:20	121.9		24.5	4.4		17.1		132.2	27.2	227.8		26,1	247.2	31,5	0,13
	18:01	96.7		-3.7	£.7		16.7		113.8	8.8	93.6		-317.6	68.8	-117.1	0,15
	18:05	81.9		-5.6	2.9	_	17.8	_	96.8	-8.8	200.1		1 47 }	210.7	- 6 3	0.13
	18:08	96.6	96.5	-1.5	£3	4.5	18.7	17.3	109,7	4.6	78,9	14\$.3	-121.0	\$1.7	-124,3	Q15
8 37 8	12.13	96,Z	:	-5,6	4.3		17.7		103.3	-1.B	108.7		-93.1	\$17.2	-98.7	0.14
24 32 24	18:17	105.2		8.8	3.0		18.5		105.2	1.1	250.9		4P.1	250.9	34.9	0.14
((3) (1))	18:21	92.8		-4,5	4.5		17.2		103.2	-1.9	148.1		-53.7	154.7	-51.3	0.14
rerer	18:02	104,4		7,0	3.5		17.5		109.3	42	288.2		88.4	260.7	84.8	0.15
1000	18506	67.5		-9.9	3.6		18.0		90.5	-14.5	313.1		\$11.3	324.0	108.0	0.12
W	18:10	109.7	105.1	12.3	5.3	3.9	16.4	17.9	125.9	20.8	98.1	213.1	-103.7	112.5	-103.4	0.17
- WESW	18:14	124.2		29.8	3.5		18.2		127.8	22.7	90.4		-111.4	83.0	-123.0	0.17
	10:18	103.6		8.5	2.5		19.1		102.4	2.7	255.7		63.9	262,8	48.9	D.14
2332	11:22	107.5		10.1	4.1		17.7		114.5	9.5	242.8		41.0	258.7	42.7	0.16
20 to 10 to	16:03	34.8		-26	5.0		16.1		106.7	1.7	391.5		169.7	440.7	224.8	0.18
	18:07	76.5		-16.9	3.3		18.1		75.6	25.2	371.4		169.5	377.7	161.8	0.17
	18:11	92.5	33.0	4.9	1.3	3.7	18.0	57.8	94.5	-11.0	77.1	248,7	-124,7	78,4	-137.5	0,13
42	18:15	105.2		8,6	2,8		18,7		105,0	0,0	79,0		-122.8	78.1	-137.8	0.14
	18:19	39.3		-6.1	2.5		19.1		88.9	18.2	381.A		159.9	351.5	135.6	9.12
3344	18:25	96.6		-03	5,1		16.6		109,4	4,4	217.7		15.9	249,8	30.7	0.15
1																

Inlet Averages 97.4 4.3 17.4 105.08 201.6 216.0	Inlet Averages	\$7.A	4.3	17.4	105.08	201.8	216.0	0 .1
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. I																			
C Outlet Point	Time Sampled	NOx ppordy	NOs Port Avg	PPM Dev		Ci2 Port Avo	CD2 Nov	COZ Post Avg	NO± @ 3% O2	PPM Day from Avg.	CQ ppeody	CO Port Avg	PPM (Sev from Avg.	EQ	PPM Dev	HOX Removal	NOT Removal Eff.	CO Removal	CO Removal Eff.
			- Ort stry			. Purchage		- PURE MAN				runtary							1.45.05 Collection
	15:00	74.0		20.1	1.5		13.6		1183	602	140.8		-19.2	227.2	44.7	15.2	-6.9	4	
	18:04	\$2.7	***	28.8	3.2		17.6	41.5	87.1	28.0	225.6		66.5	237.5	55.1	5,6	13,D		
	15:06	106.5	87.5	526	3.5	5.1	11.7	14.5	109.8	50.5	188.2	153.5	-22.5	140.1	-52,4	-≤7,B	-:17	458 458	
	14:12	52.1		34.2	3.7		13.7		91.7	32.6	50,9		-109.Z	53.0	129.5	-1.3	7.5		2000
2	18:16	106.6		52.9	7.4		13.7		147,6	82,5	88,2		-70,8	117.1	-85.4	-2D.O	-4 9.3	- A.A	# (T. 01) WHILE
	14:20	68.9		13.0	2.5		16.6		65.1	6.0	276.8		119,8	271.3	R3.5	45,1	59.8	27.4 1219	
83.8	§ 18:01	68.9		5.0	3.7		17.0		61.3	23	187.4		28.3	193,0	12,5	39,1	48.2	Sept 🛎 💉	
24 24 23 23	18:08	5.0		-44.9	3.1		11.2		8.7	- 50 .D	131.6		-27.A	133.2	-502	90.2	90.8	243	6346
	18:09	85.1	59.7	41.2	2.5	3.4	9,5	1\$8	94,0	35.0	32.8	151,8	-128.3	32.4	-159.D	0.5	14.3	56.6	546
0.23	18,13	109,9		\$6,0	3.B		18.3		115.0	56.0·	33.1		-128.0	34.6	.447.8°	-14.7	17.4	100 B	2 V V V V V V V V V V V V V V V V V V V
	10:17	72.7		12.8	3.1		21.3		73.1	14.0	100.6		-50.5	101.2	-61.3	31,5	31.2	-564	7974 3967
200	16:21	12.6		41.3	3.5		17.5		13.0	-45,0	304.0		144.9	314.5	132.1	95.4	97.4		A AND AND AND AND AND AND AND AND AND AN
2/3/50	18:02	. 3,5		-50,5	7.2		21.0		4.7	-54.4	405.3		246.2	529.6	247.1	26,5	95.7		ensembr . Obvidense
3.8	18,06	0.5		-53.0	4.7		18.3		1.5	-58.1	179,8		20.8	198,8	:53	98.0	29.9	205	38.6
340	10:10	83.7	49,5	29.B	4.3	48	19.3	22.0	90.8	31.2	35.7	156.0	-123,4	38.5	-144.0	23.7	28.3	025 628 676 695	885
(1 min)	18:14	107.5		53.8	19	4	25.7		113.2	54,1	29.5		-130.0	30.6	-151.8	13.4	11.4	67.8	400
3.0	10:18	100.6		45,7	1,2	- 1	25,5		101.7	42.7	94.4		-64.7	95.5	-87.0	2.8	D.S	en s	90. 00
26.00	18:22	. 0.9		-53.0	5.2		214		1.9	-59,1	191.3		32.2	219.1	35.6	99.2	99.1	4.5	5552
2004	13:03	35.8	•	-18.1	7.5		18,9		47.1	-12.0	500.9		341.8	659.3	476.8	52.2	8.60	4.0	
100	18:07	1.4		-52,5	4.5	- 4	20.7		1.5	-57. 8	263.6		104.7	267.9	105.5	98.2	98.1	298	
44 42 42	18:11	15,6	19.7	-38.3	3.5	5.0	20.6	20.5	16.4	42.7	42.8	795.5	-116.3	45.1	-137,4	83.1	62.5	245	C.S.
22420	18;15	55.2		1,3	3.3	- 1	22.5		56.1	-2,8	43.2		-115,9	43.9	-139.5	48.0	46.5	45.5	1 200
\$100 K	18:19	2.4		-51.5	3.3	-	22.3		24	-36,8	165.7		9.5	168.5	-14.0	97.3	97.2	502	
90 4 00	18-23	1,3		-52.0	7.4	i	17.5		2.5	56.6	158,4		-2.7	207.4	24.9	29.0	97.7	2012	\$0040 SAN
F																			
Kongery	ledrá geo	53.5			4,6		18.2		69.1		158.1			182.5		45.1	44.7	21.1	18.6

0.081

NÖK IbMCMBDI

0.583 0,119 0.125 0.125 0.128 0.689 0.632 0.126 0.126 0.018 0.001 0.124 0.139 0.037 0.032 0.032 0.032 0.032 0.032

Clean Air Engineering Project #102s7 Corps Chargy AES Greenidge

Date: Start Time: End Time:

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\$/21/2007 18;48 19:51

izset Poht	Time Statusled	NeOx ppracty	NOx Port Avg		02 44v	O2 Port Ang	CO2 %dv	CC2 Port Avg	© 3% 05 ₩0≖	PPM Dev from Avg.	CO ppondy	CO Port Avg	PPM Dev from Avg.	60 60 60 60 60	PPIR Dev from Avg.	MCs. 15/MMPtu
	16:43	28.4		-11,5	7.0		14.3		113.8	5.0	77.6		47.1	99.9	-34.9	0,155
**** ********************************	18:62	78,7		-21.3	6.1		10.3		89.2	-19,7	287.1		112.4	268.6	133,7	0.122
1.7	18:58	25.7	98.7	-10.3	4.7	\$.1	16.6	18.0	99,1	-9,7	185.7	145.5	62.0	206,8	71.4	0.135
	12:00	119.4		19.4	5.1		16.6		135,3	29.4	84.2		-40,5	95.4	-39.5	0.184
V 5-72	19:04	80. 6		-9.5	44		19.0		98.2	-10.7	136.2		10.5	145.7	11.6	6,134
\$1864B\$S	19:08	125.6		25.5	4.4		12.3		135,3	27.A	152.3		27.6	155.2	30.4	0,196
888888	1849	28.8		-1.2	6.2		10.2		120.3	11.5	69.1		-63%	74A ****	-60.S	0,164
	1883	93.4		-8.8	3.0		18.6		89.3	-10.5	109,4		-15.3	115.2	-19.7	0.134
	18:57	94.7	97.4	-5.3	6.4	4,5	16.8	16.8	109.4	0,5	84.4	311.3	40,3	97,5	-37.4	0.148
2000	79:01	MLS		-55	4.3		10.0		101,9	-6.9	86.6		-33,1	99.4	-41.5	0.729
****	18:05	105.9		5.9	3.1		16.2		108.5	2.4	198.4		7.81	199.5	84.6	0,145
8025000	17:07	34.9		-81	4.3		13.3		108,4	-04	127.7		3.0	142.9	0.6	0,148
)	58:50	103.6		3,6	4.2		17,7		1110	22""	711.5		-13.2	119.5	·15.4	0,151
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Cuttet Averages 62.0 4.0 12.6 55.5 118.5 128.6 43.4 49.8 27 4.0 Clean Air Engineering Project #10247 Consol Energy AES Greedings

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9780

Date: Start Time: End Time: 5/31,2007 19038 58:59

Infet Point	Time	NOx	NOx Port Avg	PPM Dev from Avg.	. 02 Vdv	D2 Port Ava	CO2 Web	COZ.	NOx Q 3% G2	PPM Dev	CO.	CO Port Avez	PPM Day	CO ⊕3% O2	PPM Dev	NOK Ib Mátě su
	Sampled	ppendv	Purt Avg			· · · · · · · · · · · · · · · · · · ·		PORT PORT		from Avg.	ppendv	PORTANG	trom Avg.		from Avg.	
	19:35	100.4		-82	6,7		11.4		128.6	8.6	56.5		71,2	73,7	-12,7	0,173
100	19:40	115.7		7,1	4.7		12.5		129.4	11,7	355.2	400 -	275.6	337.4	313.9	0.177
33868	13:44	109.0	114.8	0.4	4.5	5.1	13.3	12.9	119.0	1.3	117.8	102.7	38.2	128.5	42.7	9.462
13	184	122.5		14.0	5.2		12.8	:	139.8	22.1	26.4		-53.3	30.2	-58.3	0.181
	19:52	102.5		- 2.8	4.4		13.4		112.6	-5.1	42.5		-37.2	46.3	-40.8	3.164
	19:56	137.3		26.7	4.8		12.9		152.7	35.0	15.8		63.9	17.8	68.9	0.209
	19:37	116.8		8.0	6.8		12.1		138.2	20.5	46.2		31.5	57.1	29.3	5.165
332	18:41	122.2		13.6	3.6		14.0		128,4	B.7	134.7		55.1	139.4	52.9	0.172
3350	19:45	123.2	124.1	14.6	61	4.5	12.0	13.3	139.6	21.9	36.0	61.7	43.7	40.8	-45.7	0,190
22 × 20	19:49	122.0		13.6	4.3		13.4		731.6	13.9	39.8		-39,9	42,9	-43,5	0.179
4434	19:53	136.6		27.2	3,4		142		128.9	21,2	55.9		-12.B	69,4	-18.0	0.199
X0.22-0%	19:57	124.9		16.3	4.9		12.0		129.7	22.0	44.6		-35,1	49,9	-38,5	0,191
35-27	19:38	60.6		-48.0	4.7		13.0		68.0	-62.7	77.0		-2.5	82,5	-3,9	0.099
	19:42	6.5		102.1	3.6		14.1		8.7	-111.6	112.9		33.2	115,8	3¢,4	0,009
	19:46	4.0	67.3	-107.7	6.3	4.0	12.7	13.8	1.0	-116,7	24.2	50,4	-55,5	27.8	-58,7	0.001
	18:50	2.13		-57,0	5,4		14,3		\$2,8	-54,8	67.5		-122	69.0	-17,4	0.072
	13:54	1413		82,7	3.3		14.4		143.7	26.0	19.5		-80.2	19.8	-55.6	0.195
*****	19:58	143.1		345	44		13.6		155,2	27_5	65.0		-24.7	59,7	-26.8	0.212
1000 m. 100	19:39	122.0		13.4	4.7		13.1		134,5	27.1	138,5		1tB.9	219.3	132.9	0.184
	13043	127.6		13,8	3.5		14.2		124,5	5.9	221,5		141.9	225.3	136.8	0.170
	15;47	127.7	128.2	19.1	3.4	3.8	14.1	13.8	190.6	12.9	21.B	94.9	-57.9	22.3	-64.2	0.178
333338	19:51	133.8		25.2	3.0		14.4		153.8	16.1	18.7		-61.0	78.7	-87.7	0.182
	19:55	133.3		24.7	3.1		14.5		134.5	16.4	17.3		-624	57.4	-69.1	0.183
) ** 1/**	19:53	129.2		21.2	3.2		12.7		148.0	30.3	91.3		11.7	104.1	17.6	0.202

C Intel Averages

A Quality Tan 15.4 117.7 79,7 85.4 0.150

	_ '			/											1				
Quitiet Point	Time	MCx papasate	NOX Pearl Avg :	PPM Dev from Avg.	2.02	Port Ave	C02	CO2 Port Ave	69.45€ 30.45€	PPM Dev	CO Pomdy	CO Port Avg	from Ave.	60 60 3% 02	PPM Dev		MON Removal Est	CO Removal	W/O2 connection
0.9 1-6 00	Sacushed 19;36	103.4	PER PRE	-18,9		· FURTHER !		· POST PVB :		From Avg.		PHLAY			from Avg.		***************************************	евисинку .	- WANTER CONTROLLED
100	19;40	111.7		-10,5	6,5		7.6		132.2 111.1	5.5 -15.8	115.9 372.1		12.3 268.5	748.2 370.0	40.2 262.0	3.0 3.5	4.5	595	A 9000001129-512-100 (CHR000076)
3000	15:44	120.1	118.2	-10.5	2.5 3.1	41	8.7	8.0	120.8	-5.9	102.9	125.1	-0.7	103.5	46	-10,2	14.2	.⇔.5 121€	
12 22 22	19548	113.6	1102	-8.7	31	~'	11	4.6	1142	42,5	24,7	130.1	-78.9	24.8	-63.2		-1.5 18.3	3/15	
	19:52	126.7		44.1	62		2.4		1543	27.5	29,7		-73.9	38.2	-71.8	7.3 -22.1	437.5		F. 15
	19:54	133.6		112	2.5		7.9		129.8	32	51.5		-57.5	49.7	-58.3	2.9	148	est es	360
23 23 33	19:37	106.2		-16.7	4.0		92		112.5	-14,2	111,1		7.5	197.7	5.7	6.9	188		1000
200	18:45	112.6		4.7	2.8		10.3		112.0	-14.7	165,4		61.6	184.5	58.5	7.9	11.4		
	19:45	114.1	118.3	49.2	3.0	3.0	10.1	9.8	114.1	-12.8	22.1	74.3	-B1.5	22.1	-85.9	7.4	163	77.5	65
83248	13:48	121,9	- 12.2	-0,4	27		10.2	***	119.9	-6.8	17.3		-88.3	17.0	61.0	ii.	89	66	6.2
	19:53	131,3		90	2.5		9.3		127.7	1.0	38.1		-85.5	37.1	-70,9	23	80	40.00	
# # # # # # # # # # # # # # # # # # #	19.57	123.A		1.1	29		9.7		122.7	-4.0	91.6		-120	91.1	-16.9	1.2	12.2	0054	20.8
30.000	18:38	121.0		-1,3	4,6		8.2		732.9	6.2	238.2	 	132.6	258.4	151.4	-94.7	-104,6	ali-des ense sid	000 7 20 000
% 3 8 %	19:42	110.7		-12.1	2.7		9.7	1	708.4	-18.3	213.6		110.0	210.1	102,1	-1595,4	-1511.5	334	954
34	12:46	148.5	126.6	-3.7	5.5	3.7	7.8	7.4	237.9	51.1	20.4	109,2	-63.2	23.7	-94.3	-13077.6	-13249.9	107	4 346
333	19:50	133.5		11.2	4.5		7.3		146.7	19.0	199		-83.7	21.7	-88.3	-158.7	-976.5	786	90
3 3 3 3 3 6	19:54	146.3		26.0	2.2		6.5		142.0	15,3	3 0 <i>A</i>		-73.2	28.1	•78.9	-5.0	1.2	350	-67
(C)	15:58	127.5		5.6	2.8		6.6		127.2	0,5	134,9		31.3	134.2	26.2	10.6	78.1	1983	325
3196	19:39	113.6		-2.7	4.6		2.8		131.3	4,6	342,3		238.7	375.9	267.9	20	2.6		
30 B (3)	19:43	118.4		-38	3.2		10.1		119,7	-7.Q	203.5		93.9	205.B	97.8	2.3	3.9	-100	# 16 # 16
	19:47	125.6	126.2	23	2,9	2,4	10,3	3.0	124.9	-1.8	21.7	114.9	-81.9	21.6	-98,4	1.5	4.4	05	3 30
	13:51	134.6		123	24		5.2		130.2	3.5	20.7		-82.9	20.0	-88.D	-0.6	2.7	空 模等	144
4-2 4-1	18:55	130.9		8,6	2.5		2.1		126.0	7.3	23.1		-80,5	Z2.5	-95,4	1.8	4.5	648	4 40 3
(A) #12(3)	15:59	127_9		76	4,7		6.4	<u></u>	141.3	14.6	77.9		-25,8	36,¢	-22.0	1.5	4.5	782	
Courtet At	VAPPAGE	122.3			26		22		175.7		403.6			466.0		E94.0			100

125.7 103.6 108.0 -571.2 -521.6 -37.6 -30.6

- '- ..

0.1515 0.1647 0.1558 0.2104 0.1771 0.1534 0.1527 0.1556 0.1556 0.1635 0.1742 0.1673 0.1812 9.1478 9.1880 0.1987 0,1936 0.1734 0.5791 0,1683 0.1703 0.1776 0.1746

NOx b/MMBtu 0.1803

0.1927 0.173

Clean Air Engineering Project #10247 Consol Energy AES Greenloge

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9780

Start Tiree; End Time:

8/1/2007 8548 9:11

indet Point Tiene NCx PPM Der 02 Port Avg from Avg. Sidv O2 Port para CO2 CO2 NOx @ 8% 02 PPM Dev from Avg. PPM Dev from Avg. CO Port Avrg 60 6 3% 02 PPM Dev from Avg. NOX INMONEN Sampled ppendy Port Ave apmdv 93.9 50.2 57.5 8;48 6.5 5.5 4.5 -10a3 7. -108,6 0.756 12 8:52 -주9 15.0 104.8 34 62.A 462 72,8 -41.5 0.143 103.7 8:58 2.4 4.7 14.7 14.0 102.1 ЦĢ 8.08 106.9 -48,0 53.6 -50.6 0.129 15 12 14 4.9 3.5 5:00 112.5 18.B 13.5 T26.3 24.9 58.3 -\$2.5 63.0 -51.2 9,172 9:04 121,9 27.8 16.3 157.4 24.0 117.6 8.6 121.0 67 0.171 9:05 105.0 11.5 14.9 1122 10.7 339.B 245.7 231,0 359.9 0.153 TTREET FREETA 2.49 9D.D -4.1 -15.5 7.1 11.5 115.7 15.8 14.8 -94,0 19.2 -86.0 0.159 3,63 78.5 4.2 14.6 84.2 -17.2 100.8 -8.0 108.0 -52 0.115 8:57 82.2 88.9 -17.9 3.2 3.8 4.5 13.9 14.6 93.7 -7,7 27.2 36.5 145.6 81.6 35,0 -83.2 0.128 86.7 3:01 -7.4 15.0 90.6 -10,7 -72,3 38.2 -76.0 0.124 2:05 58.5 4.4 24 45 164 95.3 262.0 -8.1 153.2 253.5 139.3 0.139 3-120 25,5 -8.5 14.6 53.4 -B.D 432.3 323.5 471.8 357.6 0.127 3.6 **97.2** 3.1 5.7 11.1 114.5 13.0 -10.8 18.0 -89.6 22.4 -\$5,5 0.155 3.8 6.2 3.2 3:54 86.1 O, ė-14.8 90.7 63,2 **≠**5.8 66,5 -47.7 0.124 82 B 3:54 1006 -1.9 4.0 13.5 14.7 105.6 4,0 21.2 63.7 -97,6 24,2 -90.1 0,144 2:02 116,7 22.6 15.5 118,0 16.6 33.1 75,7 33.5 -80.6 0.161 9;06 9:10 98.0 114.9 19 2.2 4.0 16.6 21,9 -9.5 106.6 -0.2 104.0 -10,2 0.125 20.8 14.6 121,7 20.3 257.3 143,5 272.5 158.3 0,168 ## #8 5:61 34.9 -9.2 6.9 13.4 101,3 -0.7 38.9 -69,6 46.4 74.7 -67,E 0.138 8256 70.1 -240 3.1 15.7 70.5 -30.P 74.3 -34.5 -60.6 -37.5 0.098 12 22 1 8:59 81.4 85.1 -127 4.4 2.6 3.7 14.5 15.4 88.3 -13.1 48,2 98.9 62.3 -81,P 0.1203:03 32,6 4.5 16.4 86.4 -5,0 32.0 -76.8 31.3 -82.6 0.182 2.5 3.6 9:07 75.0 -45.1 76,9 -24.6 68.2 -20*6* 28,4 85.8 0.105**1:11** 36.5 16.7 69.3 311.5 202.7 320.5 0.78\$

Iniet Averages O

34.1

4.2

14,6

101.4

108,5

114.2

0.132

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3 5	Outlet Point	Tions Sampled	NOx parmedy	NOx Post Awg		CIZ Kah	C2 Port Avg	CO2 Sdv	C02 Fort Ave	ND± @ 3% 02	PPM Dev from Avg.	CO ppmdv	CO Port Avg	PPIS Dev	CO g 5% O2	PPM Dev from Avg.	HOX Removal	NCo Removal Str. W Oz correction	CO Removal	CO Removal Eff
	30 5 88	8:48	724		20.7	742		5,2		193.4	123.1	117.B		-20.9	354,2	140.2	22.8	-85.2	200	\$ 0.00000000000000000000000000000000000
		2.62	70.6		18.9	[43		14.0		78.1	\$.B	84.4		-74.1	65.4	-704.5	21.7	27.4	29	
		2:56	92.5	85.7	51.2	3.7	5.5	14.6	73.1	95,7	26.4	422	160.4	-\$A3	43.9	-#3 0. 0	4.7	5.3	肅	4.5
		9;00 9:04	81.0 107.0		29.3	2.7		16.7		79.7	9.3	340.6		202.1	335.0	161.0	29.3	35.9	300 (4.11)	ADEL .
		2:06	90.0		\$43 233	1.6		16.8		99.2	28.0	103.1		-35.4	95,6	-7B.3	12.2	20.0	923	22
	8820	B:49	61.J		0.0	6.5		12.2		111.9	41.5	294.3		155.B	365,8	191.9	15.0	Δ3 .	300	100000000000000000000000000000000000000
	2.6	8:53	21.5		-202	12.4		£8 11.4		108.9 34.4	38.5	72.4		-66.1	152.6	-21,5	426	6.7		
		8:57	78.1	63.1	28.4	12.5	8.6	6.5	10.4	34,4 166,4	-36.0 96.1	69,2	400.0	-68.3	110,6	-62,4	726	P92	arie, 262	36
	30 W	5:01	104.0		523	11.6	0.0	7.7	14.	200.2	123,8	25.6 64.7	152.9	-/12.9 -/3.8	\$4,B	-119.4	5.0	-77.8	49	1978
	2.2	9:06	74.1		22.4	19		16.5		59.8	-0.5	142.5		40	124.5 134.3	-46.4	-20.0	-#20.6	V758	256
	302008	8:09	45.4		-23	3.6		16.5		50.8	-19.5	543.1		404.6	559.7	-36,7 384.8	24,6 42,3	26.8 45.6	458	2056 473 483
	XX -2 4.66	#:50	3,4		-4 83	10.5		8.9		5.6	-64.7	87.7		-70,8	111.2	-62.8	95.5	95.1	256	C C C C C C C C C C C C C C C C C C C
		8:54	0.9		-50.0	7,9		10.8		1.2	-69.1	133.4		-8.1	179.6	3.6	99.0	98.6		200
	3.8	#:58	55.1	45.C	13,4	7.4	7.5	11.3	11.6	863	58.0	19.6	129.2	-416.9	260	-143.0	29.6	19,2	10.3	200
	₩	5:02	33.1		47,4	5.1		13.4		1723	41.9	24.7		-#13.8	26.0	-146.0	15.:	4,9	200	91
		9:06	63.5		41.8	4.6		13.7		104.0	33,5	178.4		39,9	198.3	24.4	2.5	-13.1	4111	200
		9:10	7.8		-43.9	7.4		11.4		19.3	-800 j	354,5		216.0	470.0	296.1	83.2		-10°E	3 3 3
	1 2 3	3:61	6.7		-45,0	6.0		11,8		8.6	51.B	86.9		-57.6	111,1	-828	92.1	91.5		2.0
	•	6:55 6:69	3.4 17.4	53.1	- 4 9.3	3.7		14.8		3.5	-55.8	88.9		-4 9 .5	92.5	-81.4	95.1	95.0	11 AF 71 1	70.4 200.7
		9:63	47.8	22.1	-34.3	3.1	4,9	15.3	13.6	17,5	-52.8	169.1	111,5	50.6	195.2	16,2	78. 6	80.2	2872	J 2000
	3.2	±07	2.4		-4.t -633-	2.6 2.5		18.8		49.8	-23.6	33,4		-105.1	32,7	-141.3	51.7	\$1.7	44	944
		9:11	1.3		404	10.4		75.9 2.9		23 22	-58.0 -58.1	117,0		-21.5	113,8	-60.1	67.0	97.0	467	3077
		,-,21				1964		- 43			408.7	158.9		15.4	252,4	88.4	\$8.7	\$7.8	494	10.1
	Curset Av	MEASURE.	61.7			6.6		12.7		70.5		138.5			174.0		45.7	32.1	-476.2	-3359.6

0.0032 0.0030

MOx **DMMB**ELL 9.2638 0.4039 0.1818 0,1068 0.1353 Q 1526 0.1485 0.0459 0.2259 0.2730 0.0852 0.0683 0.007e 0,0017 3.1177 0.5531 0.1418 0.0141 0.0317 0.0048 0.0239 0.0525

0.096

Cican Air Engineering Project \$10247 Consol Emergy AES Greenidge

Fd 9780

Date: Start Tisse: End Tisse: 8/1/2007 9;t2 9:35

injet Polint	Time : Secreted	NOx pomdy	NOX Port Avg	PPM Dev from Avg.	02 %dv	O2 Port Avg	CO2	CO2	NOx 693% 02	PVtd 0ev trom Ave.	pomety	CO Port Ave	PPM Day from Avg.	CO @3% 02	PPM Day from Avg.	NCs. Is/MMBb
N30.E.22	9:12	86.G		1.7	7.6		"11_B"	' . 	127,7	26.0	68,8		-76.1	95.6	81.4	0.174
213	9:16	89.4		-4.5	6,6		14,2		104,5	2.9	70.2		74.5	82.1	-70.9	0.143
	1r:20	90.9	101.0	-3,6-	3,9	5.0	15.4	14.3	95.7	-8.0	223.2	150.8	78,6	235,0	92.D	0.131
	8:24	107,5		13,1	6.0		14.3		120.5	19.7	66.6		-86.7	63.0	-90.0	0.164
362	9:20	117.5		23.9	2.7		15.5		122.6	20.9	196,0		41,8	193.6	4D.5	0.167
(19 6 8)	9:32	105.2		11,3	4.5		14.8		1121	10.4	300.7		1\$5.0	320,4	167.3	0.153
	9_12	84.2		6,0	6,8		12.5		119.5	27.9	26.7		418,0	33.9	119.2	0.163
	9 <u>−</u> 17	79 <u>.7</u>		-14.7	4.4		14.8		65.9	-45.8	79,7		-55,0	86.5	-88. 6	0.117
24 24 23 32 31	3:21	84.7	91.1	-9.2	5.1	4.5	14.2	14.6	96.0	-5,8	E3.7	167.4	-61.0	94.6	-58.2 i	0.131
3 7 7 (3)	4:2 5	83.2		-10.7	3.8		152		87.6	-14,1	\$9,0		-85.7	67.1	-920	0.119
	5:20	103.0		9.1	2.5		16.3		100,2	-1.5	239.5		91.6	230.1	77,0	0.137
88 321 28	2525	1022		8.3	4.5		14.3		1115	9.8	\$19,8		375.1	557. 3	414.3	0.152
######################################	9;14	98.7		2.8	5.1		13.9		1036	E. 7	24,5		-120.2	27.6	125.3	0.149
	5:15	85.3		-8.6	3.6		15,6		683	-13,5	105.B		-25.9	109.5	-48.6	0.120
32	9:27	20.0	99.3	-3.9	6,3	2.9	14.0	15,1	103.3	1.5	51.0	143.9	-629	59.4	-92.6	0.141
	9:26	113.7		19.8	5,1		15.5		1143	12.6	53.0		-\$1,7	53,3	-69.8	0.155
3.5	2:30	95,5		1.8	2.7		16.1		827.8	-7.8	102,1		-426	100.4	-526	0.128
	9:34	114,5		20.7	3.8		15.0		120.0	18.2	526.4		381,7	551.0	396.0	0.164
	9:16	82.7		-11,2	6.0		13.5		89.4	-2.4	32,5		-612.5	38.6	-214.5	0.135
	9;19	97.0		-26.9	3.1		16.3		67.4	-54,3	224.4		79.7	225.7	72.6	0.092
	9:23	81.0	BALA	-12.6	2.4	3.7	14.7	15,5	67,9	-13.9	41.5	146.6	-503.6	44.6	-108.5	0,129
	9:27	101.3		7.4	2.8		16,2		100,2	-1.5	35.4		-:08.3	38.0	-315,1	0.137
	8:31	76.5		-14.0	2.4		16.6		77.3	-24.4	62.9		-61.9	90,2	-72_8	0.105
20 44 68	9:35	84.4		0.5	33		15.5		98.0	-5.7	289.6		135.9	285.4	132.3	0.131
inder Ava	mages	93,9			4.3		149		101.7		1447			153.1		0.129
, Compan	Time	NOx	NOx	PPM Dev	02	102	CÓZ	GO2	NOx	PPM Day	: 00	CO	PPIK Davi i	.co	l poure	300-00
Point	Sampled			from Avg.	Ver	Port Avg	160	Port Arg				Port Ava	from Ava.	@3% O2		190x Romanus III
20342753		75.7		22.1	*		de v		200	26.7	22.0	TVILATE	40 C	4200	00.0	Voice immediate (2)

	catted	Tiane [NOx	NOx	PPM Dev		102	C02	CO2	NOx	PPM Day	ÇQ	CO	PPIX Dev	CO	PPM Dev		CANCEL PROMISES OF THE	CO Removal	CO Removal 2rt
		Sembled :	pprodv	Post Ayo		WV	PortAvg	*44	Port Arg	@3%02	from Avg.	pproxiv	Port Avg	from Avg.	@3% 02	from Avg.	Endence	18 02 correction	Efficiency	TW 02 correction
		9:12	75,7		23.1	8.2		10.8		708.1	39.2	29.9		-29.5	139.3	-32.2	19.8	553	(100 issis	
- 33		9:16	73,4		19.5	4.0		14.5		77.7	фa	\$1.1		-77.2	54.1	-157.4	17,9	25.7	灩	1.0
- 22	32.2	9:20	101.0	88.8	47.4	3.4	4.4	15,0	14.1	:03,3	34.5	50.9	125.6	-77.4	52,1	-119,4	-11.1	-7.9	77.2	- 64 - 712 - 2807
- 133	14 12 14	2:24	81.7 107.1		26.1 53.5	2.7		15,6		80.4	11.6	139.9		10.5	136,8	-34,9	23.6	33 .3	1460	* ************************************
- 13	30 W	9:26 9:32	93.1		39.5	1.6 6.6		16.7		99.3 1 18. 5	3D.6	80.1		-38,2	83,5	-87.9	9.1	18.0	516	561
		9:13	56.4		28			12.1	-		47,6	324.0		195,7	405,B	234,1	11.5	-4.0	SOURCE STREET	
3	72-8 72-6	2:17	23.4		-202	5,1	i	12.7		₹5.2 23.6 :	-0.6 -45.0	47.3		-91,0	57.2	-114.3	40.1	48,0		
		5:21	Z2,5	64.9	29.2	3.5 4.3	3.P	15.1 14.6	147	89.3		52.1	454.5	-75.2	53.0	-118.5	70,6	72.8	966 878	90 70 7
- 8	24 23 34	9:26	103.3	54,5	49.7	43	3.6	14.4	14.7	111,4	20,5 42,8	25.9	131.5	-105.4	29.0	-142.6	2.7	7.0	42.8	894
- 32	33	9:25	75.4		21.8	17		15.7		79.3	1.5	23.3 189.3		105.0	25.1 157.8	-145,4	-24.2	-27.2	0.0	69
- 30	24.0	5033	63.1		-5.5	3.5	ŧ	16,0		79.5 49.5	-19.3	470.2		41.0 241.6	197.6 483.7	-13.6 312.2	26.8 52.9	25.8 55.6	70.4	
322	OTESTS N	9:14	2.9		-50.7	10.5		8,5		5.0	-53.7	68.5		-64.8					CTORES SAMPLES	
200		9:18	12		-324	9.5	ŀ	9.3		1.0	-65.9	124.2		4.1	110,4 195,7	-61.7 25.3	97.0 98.6	95.4 97.8	7582	一班 医
		3:22	69.1	47.0	15.6	10,4	10.8	8.6	6.3	117.8	49.0	25,2	125.0	103.	43.0	-128.5	23.2	-14.1	130	379.7
- 18	33%	9:25	100.2		45,5	12.4		ij	2.0	211.0	142.2	24.3	12070	-104.D	51.2	-120.3	11.5	-34.5		
	200	9:30	93,6		40.0	12.9		8.4		209,4	149.7	138.0		8.7	308.8	187.3	2.0	123.0	542 557	
10	\$3.3.2.3 3.3.2.3	8:34	14.9		-38.7	8.8		10.1		22.0	-98,7	380.7		252.4	583.2	391.7	87.0	61.B	24.2	
33	446	8:46	3.0		-44,B	6.7		12.0		11.3	-57.4	39,7		-39.6	111.8	-69.7	69,1	88.5		
- 32	4-6	8.19	3,5		-49.7	3.2	- 1	16.1		3.9	-64.B	164.5		38.2	168.4	-5.1	94.2	94.1	28.0	263
33		9:23	15.2	13.7	-37.4	3.0	5.3	15.3	13,3	16.2	-52.6	142.2	T30.2	13,9	1422	-29.3	60.0	91.6	-11 = 130	200
- 83	4	9:27	45.0	-	-4.e	27		15.5		48.2	20.5	33.0		-85,3	32.5	-139.0	51.6	51.9		4/4
	420	9:31	2.4	-	-51,2	2.5		15.9		2.3	-6 5.4	1144		-13.9	111.3	-80.2	97.0	97,0	98.6 58/8	
100	¥100	5:35	1.4		-52.2	13.8		5.6		3.5	-65.2	239.4		110.1	601.0	429.6	99.5	963	158	慕
Ĭo.	etlet Av	era mes	53.6			61		12.6		69.5		128.3			179.5		44.6	34.4	-16.8	-39.8

NCx 8AMMBN 0.1474 0.2060 0.1474 0.2066 0.1254 0.1569 0.6980 0.6026 0.1217 0.1519 0.6859 0.0575 0.0089 0.0028 0.1666 0.2877 0.2955 0.0001 0,015\$ 0,0054 0,0221 0,0857 0,0032 0,0048

0.084

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Clean Air Engineering Project #10247 Contol Energy AES Greenidge

9780

Date: Start Time: Brid Time:

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Jolet Point	Tiene Samoled	ppendv	NCX Port Avg	pres per trop Avg.	Q2	O2 Port Avg	002 %ev	CO2		PPU Dev from Avg.	CO pprody	CO Port Avg	PPM Dev from Avg.	CO 3% 02	PPM Dev from Avg.	NCx Ib/MMBtu
W. W	9:36	99.3		21	7.4		11.8		125.8	25.4	58.6		-59.4	77,7	45,5	0.172
	2:40	87.A		-52	6.2		13.7		69.8	-0,5	99.6		-17.2	113.8	-10.4	0.136
	3:44	323.0	1320	0,2	4.1	4,9	14,8	14,1	99.1	-1.8	134.9	131.2	17.9	143.7	19.6	0.135
100000	9:48	110.3		17.5	5.1		14.0		125.0	24.6	59.1		-57.9	67.0	-57.2	0,170
#	9:52	122.0		29.2	3.5		16.4		125.5	25.1	143,3		263	147,4	23.3	0.171
	炸球	194.1		11.3	4.1		16.0		1,10.9	10.5	251.3		1743	210,4	195,2	0,1\$1
	9:37	90.1		-2.7	6.7		12.3		113.6	13.2	35.6		-8 5.4	38.8	-84,8	0,165
	2:41	55.1		-2 3.7	4.2		14.5		74.1	-26.3	87,4		-29.6	93,7	-30.5	0.101
25 25	B::48	69.7	84.5	-23.1	5.5	4,6	13.6	14.4	61.0	-19.4	40.B	134.4	-78.2	47 A	-76.7	0.110
BN##3	9:45	73.8		-19,0	4.0		15.0		78.2	-22.2	32.3		-84.7	34.2	-90.0	0,107
	9:53	101.7		8.9	2.6		16.2		99.5	-O.B	219.4		102,4	214,5	90,4	0.135
	9:57	102.3		9.5	43		14.4		110.3	9.9	354.9		277.6	425.6	301.7	0,750
	9:38	92,6		-02	5.0		13.8		1042	3.9	24.0		-83.0	27.0	-87.1	0.142
10.88	9:42	55,0		-9,9	4.2		14.9		69.0	-11.4	87.1		-35.9	93.59	-37.2	0.121
18300.331	5:45	93.3	100.9	0.5	5.5	4.0	13.7	14.B	105.4	8.1	46.6	111.B	-70.4	54,2	-70,0	B,149
2	3:50	118,5		25.7	3.2		15.7		119.8	19.5	32,7		-\$4.3	33.1	-91.1	G.163
	3:54	98.7		5.9	7.7		18,6		94.5	-5.9	121.5		-5.5	109.7	-17.4	0.129
		115.6		22.6	4.0		14.9		122.4	22.1	375.0		259.0	37.2	273.0	0.167
380,38	2:39	81.2		-11.6	6.6		13.3		925,0	-8,4	42.0		-74.D	50.3	-73.9	0.130
	2:43	67.2		-25.6	3.3		15,6		69,0	-32.4	115.5		-1.5	116.8	-7.4	0.093
	9547	22.2	B4,6	-10.6	4.8	3.7	13.7	15.0	91,4	-B.D	69.6	90.7	47.4	77.4	-46.8	0.125
	9:51	102.1		9.3	2.7		16.5		100.4	a.b	24.7		-92.8	24,3	-99.9	0.137
	3:55	87.0		-10.8	2.4		18.1		79.3	-21.0	98.1		-20.9	93.0	-31.2	0,108
	3:50	92.9		0.1	3.2		18.3		93.6	-8.4	196.3		78.3	197,6	73.8	0.129

O	Inlet Averages	92,8	4.3	14.5	100.4	117.0	124.2	0.137

Outlet Point	Three Sameled	NOx pondy	NOX Port Avg	PPM Dev	02	O2 Port Avg	C02	CO2 Port Ave	NOx 48: 3% 02	PPM Dev from Arg.	CÓ potody	CO Port Avo	PPM Dev from Avg.	CQ 42.3% 02	PPIE Dav Brom Avg.	NOx Removal Efficiency	HOX Remove Eff	CO Removat	CO Removal Enf
2014500	9:36	75.1	•	15,7	8.1		10.8		105.D	17.1	129.3		2.8	180.8	3.4	20.9	16.5	TOTAL STATE OF THE	1.00000000577.476-05000000
1-6 1-6	3540	71.7		12.3	3.5		14.7		75.1	-12.8	85.7		-48.4	99.7	-97.7	18.2	24.9	340	25.5
	3:44	96J	91.9	37.3	3.5	4.4	15.0	14.2	99.5	11.5	43,5	142,5	-39,6	44.8	-132.7	-4,0	-04	677.6	44
	9:48	\$3.3		23.9	2.2		15.6		82,4	-6,6	1846		\$3.5	183,5	6.1	24.5	34.1	27567	
73 5-2 3	9:52	113.7		54.3	1.6		16.7		105,5	17.5	84.1		-48.0	78.D	-89.4	6.6	16.0	45.3	200
W14.8	3:55	110.0		51.4	6.5		12.2		137.7	49,8	327,0		194.8	405.5	229.1	-5.4	R	12.5	3 300
32 23 33	9:37	62.5		-8.9	6.3		12.3		64.4	423.B	58.4		-73,7	71.5	-105.8	41.7	43.3		e simbolalobé () e magazata
2 T	3:41	24.5		-37.9	11.2		28.0		29.7	-68,2	73,4		-59.7	135.4	-42.0	68.9	46.4	146.0	448
(12.00)	±:46	201.5	73,7	21,4	18.5	9.5	3.3	9,5	329.7	249.7	27.2	133.0	104.9	110.7	-64.6	-15.9	-305.7	30.3	2013
2.4	9:49	107.0		47.5	14.4		5.0		294.7	205.7	23.2		108.0	63.6	-118.6	-450	-277.0	262	46.7
2-4 2-3 2-2	9:53	98.0		38.6	3.2		15.3		89.1	11.1	156.6		24.5	169,4	-10,1	3,6	4.0	267 267	300
25 3	9:57	32.4		23.0	5.3		13.2		P4.5	6.6	459.4		227.3	527.5	349,7	t9,5	24.3	40.0	728.9
	5:32	2_9		-56.5	11.0		8.1		5.2	+82.7	98.5		-32.6	179.6	25	96 ,9	\$ 4 .0		
3.0	9:42	1.2		-58.2	9.5		9.3		1.9	-86.T	142.1		10,0	225.1	47.7	98.5	F7.9	-752 308	458E
3,320	1:45	71.5	53.3	121	9.2	9.1	47	9,8	109.4	21.4	32,6	127,8	-99.5	49.9	-127.8	23.4	-0.9	308	1 79 i
332	t:50	110.5		51.1	6.6		3,5		165,2	79.2	25.5		-108.5	38.4	136.1	6.6	-2 8. 7	35.0	950
# ## ###	1. 54	103.8		50,4	1.5		10.3		158.5	70.5	120.2		-11.9	173.5	-3.9	411.2	-67,3	11.00	ALC:
3333	1:55	25.7		-25.7	7.2		11.6		31, 0	-57.0	347,4		2153	453.9	276.5	79.5	74.7	400	N-2
44	2:33	5.2		-53.6	6.3		17.3		7.1	-60.9	122.8		-9.5	150.3	-27.1	82.B	82.5		Total Control
38.5.38	8:43	3.4		-56.0	2.4		15.0		3.5	-84.5	128.1		-4.0	131.3	-45A	94,9	94,9	401 201	42.7
2250	9;47	15.7	18,6	-48.7	3.0	5.2	15.3	13.4	15.7	-72.3	63.8	125.1	-43.2	689	-89,\$	80.9	92.6	₩	446
	9:51	81.0		21.8	2.6		15.7		78.2	-8.7	24.6		-107,5	24.1	-153,4	20.7	25.1	100	69
20.5	9:55	4.1		-653	2.4		16.8		4.0	-64.0	161.1		29.0	155.9	-21.6	95.0	95.0	4.0	800
\$ 75 (\$	\$:59	1.4		-58.0	13.4		6.1		23	-64.6	225.0		92,9	587,0	359.6	28.5	95.4	462	100 (200) SEE (1900) SEE
Outset A	verages	58,4			7.0		11.7		85.0		1321			177.4		57.9	9.6	-38.0	-75.7

...

NOx (b)4025b) 0.1482 0.1623 0.1356 0.1123 0.1426 0.0876 0.0541 0.4482 0.4551 0.1289

0.0071 0.0026 0.1492 0.2266 0.2161 0.0422

0,0097 0,0047 0,0214 0,1080 0,0054 0,0065

0.120

Clean Air Engineering Project #10247 Consol Energy AES Greenidge

Fd 9780

Dute: Start Time: End Time: 6/1/2007 10XB 10:23

læet Point	Time Secreted	NOx ppovdv	NOX Post Avg	PPM Dev		O2 Port Avg	CO2	CO2 Port Ave	NOX 60 3% 02	PPM Dev	CO ppendy	CO Port Ave	PPM Dev from Avg.	00 Ø 3% 02	PPM Dev From Avg.	МС× ФУМВЫ
25/35/00	10,00	50.8	ronavy	27	7.6	- Full away	11.2	POILER	1223	28.7	61.9	TWINTE	-75.4	83.3	-83.8	0.167
20 PE	10:04	82.8		-54	5.5		13.7		85.0	-0.6	132.2		-5.1	151.7	4.5	0.130
	16:05	\$1,5	\$7.4	1.3	3.5	4.9	16.4	14.0	64.2	-14	163.7	134.1	30.6	177.0	25.0	0.128
	10:12	105.4		18.2	5.2		16.0		121.3	26.7	62.0		-75.3	70.7	-76.5	0.165
898	10:16	114.8		25.5	8.6		15.4		113,3	28.1	113,1		-34,2	117,0	-30.1	0,162
3% 99 90%	10;20	99.6		11,8	4.0		14,7		105.7	50.1	267,5		130.2	2823	128.2	0,144
NY 1988	16001	81.7		-5.5	4.7		12.2		103.0	7.3	27.2		-150.1	34.2	-1128	0,140
32	18:05	64.4		-24.1	4.5		14.4		, pag	-25.7	139,0		1,7	151,7	4.6	0,035
	10:00	75.5	81.2	-12.7	6.1	4.6	15.8	14,5	85.5	-10.1	71.8	185,4	-85.7	81,1	-88.0	0.117
	10:13	87.3		-0.8	4.0		14.1		92.5	-32	45.9		-B1.5	4B.5	-96.6	0.125
(100	10.17	89.4		1.2	2.9		16.3		88.9	-8.7	223.1		35.6	221.9	74.7	0.121
37. 3 6.08	10:21	69.1		0.9	4.6		14.8		97.8	2.2	605.B		458.5	655.3	516.1	0.133
32	10:02	95.9		8.7	6.0		13.8		109.1	13,4	28.7		-:08.6	32.3	-÷14.8	0.149
	10:06	79.5		-8.4	3.9		15.0		64.0	-116	120.8		-:05	133.5	-13.6	0.115
	10:10	85.3	66.0	41.4	6.2	19	13.8	15.5	99.0	33	69.5	174.9	-77.A	67,8	-79.3	0.135
3.3	10:14	112.5		243	2.2		16,0		113,9	18.1	45,1		-61,2	45,5	-100,\$	0,155
	10:18	89.4		12	22		16.4		P\$.5	-10.1	114.1		-23.2	109.2	-37.9	0.117
824	10:22	110,5		22A	4.1		15,5		117.9	72.2	814.2		175.9	334,8	187.8	0.195
	10:03 10:07	623 626		-5,4 26.7	6.7		13.2		97.5	1,9 -32,1	158,3		21,0	185,4 107,5	39.3	0.133
	10:07	74.0	78.4	-25.7 -142	3.3	3.7	15.2 14.1	15.D	63.6 62.3	-52.1 -13.4	105.7 45.7	114.0	-31.6 -80.6	51.9	-39.5 -95.2	0.087 0.112
	10:15	24.5	1004	8.5	2.7	ar	15.8	13.0	83.2	2.4	29.8	114.0	-107.7	29.1	-118.0	0.127
	10:19	69.1	į	-19.5	23		16.3		66.5	-29.1	100.1		-37.2	95,3	-50,3	0.081
	10:23	87.0		-12	3.2		18.3		88.0	7.7	247.3		170.0	250.1	108.0	0.120
17.00	14.20										2-7.0			44401	1244	W 124
, balet Ave	F2249	PS.2			43		146		25.6		137.3			147.1		0.130

ای	iniet Avec	rages	PS.2			43		146		25.6		137.3			147.1		0.130			
اين	Outlet Point	Time [NOx	NOx Port Avg	PPM Dev from Avg.	02 %dv	O2 Port Avg	CO2 Kelv	CC2 Port Avg	NOx @3% O2	PPM Day from Avg.	CO	CO Port Avg	PPM Det	60 g 3% 02 -	PPM Day from Avg.		MOx Removal EST WE GO correction	CO Removal	CO Removal Eff
- 1	0.14 (c)	10:00	76.3		29.8			14.8		106.7	48.2	112.B		-40.6	157.7	-3E7	16.1	12,8		
		10:04	75.3		28.8	4.1		14.4		80.2	21.9	141,3		-123	150,3	-BE,1	9.1	15,6	4 ₹ .	3 300
	6	10:52	81,3	80.7	85,3	276	4.5	14.9	14.5	84.6	25.2	57.2	179.0	-98.2	59.2	-277.3	3.6	10.2 -	H.O	1 144
	140	10:12	73.0		26,5	2.8		15.6		72.2	13.7	153.B		0.5	152.2	-84.2	81.A	40.5	496.2	10000000
		10:16	102.2		55.7	1.7		16.6		25.3	36.8	68.7		-84.7	64.0	-172.4	11.0	198	393 226	#33 909
	2.44.7	10:20	75.7		20.2	6.5		12.2		94.1	35.6	180.4		27.0	224.2	-122	24.1	11.0		
	2.5	10:01	52.6		6.1	10.8		8.2		94.2	35.7	67.1		-88.3	12001	•116.3	35.6	8.6	5,000	
	2-5	10:05	17.5		-28.7	7.8		10.8	4- 4	24.5	-24.0	154.4		1.0	212,6	-22.9	72.2	95 0	HET	466
		10:08	73.5	54.1	27.3	7.8	7.2	11.3	11.6	500.8	42.4	24.9	175,5	-11E.\$	47,7	-1888	23	-17.9	243	407 677 577
	3-3	10:13	87.3		50.8	7,4		11,5		129,0	70.5	27.2		-128.2	36.1	-200.4	-11.5	-39.5	466	2007
	22	10:17 10:21	59.1		12.6	3.1		15.2		59.4 29.4	1.0	117.3		-36.1	118.0 799.7	-118.5	33.9	83.1	467 687 466 478 57	25
			24.0		- <u>22,5</u>	6.3		12.6			-29.0	652.3		49B.9		553.3	73.1 66.8	69.9 92.6	accompany and a	
	35	19;0;2 10:06	2.9 0.3		-42.6 -45.6	12.2 8.7		7.1 9.2		6.0 1.4	-\$0,4 -57,0	114.9 156.7		-36.5 **** 3.3	236.4 250.4	0.0 14,0	96.9	983	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
		10:10	63.5	42.4	17.3	2.5	16.4	9.4	8.7	100.2	41.7	23.8	164.2	-1226	45,6	-1 89. 7	26.5	-12	215 483	
		10:14	94.1	4	47.6	8.3	16.4	10.6	u.r	133.7	75.2	25.4	104.4	-128.0	35.1	-200.4	18,4	-17.5	449	1.1
	gaax	10:12	24.0		37.5	3.6		10.4		121,9	#2.8	180,3		6.9	231.4	-5.0	8.0	-41.7		Kene.
		10:22	1.2		446	14.0		5.5		4.9	-583-5	497.9		344.5	1291.7	1055.2	98.3	96.8	-403 -565	2558
	57 63 55	10:03	12.6		340	5.6		12.1		15.8	-42.8	215.9		62,5	270,3	33,B	84.9	84.0	20	1977
	4.5	10:07	2.8		43.7	3.6		14.8		29	-55.6	103,9		-49.5	107.5	-126.9	95.5	95.4		<u>न्हें इंट्रेड्ड</u>
		10:11	4.6	6.0	-41.3	3.1	5.3	16.2	13.2	4,6	-53.8	115,5	155,D	-97,9	118.1	-120.3	93.8	S4.=	4277	1237
	43	10;16	35,8		-9.7	2.5		15.6		35.0	-22.5	30.1		-123.3	29.4	-207.0	61.2	61.4		65
		10:19	20		-44.5	2.3		16.0		1.9	-58.5	755.9		2.5	150.0	-86.4	97.1	97.1	越す 数7	465
	N - (m)	10:22	8,0		-455	13.7		6.7		2.2	-56.2	308.4		155.0	768.7	536.3	99.0	97.5	4	-7860 □
											•									

NÇK BYMMEN

6.1465 0.1094 0.1154 0.0984 0.1299 0.1292 0.1284 0.0034 0.1375 0.1756

0.0910 0.0401 0.0109 0,00020 0,1386 0,1623 0,1653 0,0087

9.0213 9.0040 9.0063 0.0491 3,0025 3.0031

0.080

Quitlet Averages 46.5 11,9 58,5 153,4 238.4 73.5 Clean Air Englacering Project #10247 Consol Energy AES Greenloge

10:39

10:43

89.5

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Oute: Start Time: End Time:

én/2007 10:24 10:47

12,7

				_												
iziet Point	Tame Sasusted	MOX potady	NOX Port Avg	PPM Dev from Avg.	02	O2 Port Aveg	CO2 XeV	CO2 Port Avg	000x @3% Q2	PPM Dev from Avg.	CQ Postody	Port Avg	PPH Dev from Arg.	\$ 347 O5	PPM Dov from Avg.	NÖX Edilinên:
2376-2	10:24	91.7		4.4	7.3		12.1		120,7	25.4	148.3		\$4.3	1986	94,5	0.165
	10:22	84.8		-2.4	6.4	:	12.5		99,D	2.8	\$4,2		-32.5	62.5	-31.4	0.134
33,65	10:32	84.1	99.0	6.8	4.2	Ś. 1	15.2	F4.1	100.9	5.8	76.0	113.8	-8.7	83.6	-104	0.138
	10:20	108,6		19,3	6.1		14.0		120.7	25.4	424		-44.3	48.0	460 .	0.165
233	10:40	116.7		\$1.5	3.4		15.4		121.4	25.1	105.6		19,9	108.0	14,0	0,165
		98,0		10.9	4.5		14.1		109.6	14.4	257,8		171.1	288.4	194.4	0.150
2.5	§ 18±75	88.3		1,0	7.1		12.4		114.5	18.3	24.6		-621	35.9	-6Z1	0.156
(PAS	10:25	66.5		-20.7	4.5		14.5	_	72.7	22.6	BB4		11,7	107.4	18,4	0.099
	10:33	72.1	84.4	-15.2	2.5	47	13.9	14.7	83,6	- ₹1.6	39.4	113,1	-47.8	45.6	-48.2	0.114
23 25 23	10:37	79.5		-8.0	स		15,3		84,5	4 口 日	37,4		-49.3	39 .B	-54.2	0.115
1372	10:41	100.7		13,5	2.5		16.9		99,0	2.7	204.6		117.9	199.0	105.0	0.134
	10:46	29.4		12.2	4.6		14.5		109,2	13,9	274,0		187.3	300.9	205.9	0.149
	10:26	83.3		-3.4	K.S		14.4		98,2	2,9	18.9		-728	15.3	-77.8	0.134
88-s 8	10-30	410		-45,2	4,0		16,9		49,4	-51.8	58.8		-27.9	62.3	-31.7	0.058
34 33	10:34	65,7	≋ಚ	-20,6	5.4	4.1	13.2	15.0	77.0	-5B.2	25.4	65.4	-81.3	29.3	-54.7	0.105
100	10:38	105.3		18.1	3.5		16.6		108.3	13.1	22.8		-62.9	23,5	-2015	0,148
*	10:42	50.2		2.6	2.3		16.2		86.6	-8.5	74.7		-12.0	71.9	-22 1	0.118
(X4)		112.5		25.7	4.0		14.7		119.6	24.3	195.7		110.0	2083	114.3	0,163
	10,27	78.0		-6,3	6.0		12.5		93.7	4.6	253		-87.4	30,4	-62.6	0.128
4.5		67.0		-29.3	3.6		16.2		66.3	-25.9	84.9		-1,8	87.8	-6.2	0.085
	10:35	76.2	82.3	-9.7	6.0	3.8	14,0	14.3	\$8,D	-7.Z	35.2	54.9	-50.5	40.8	-533	0.120

9780

201212 -83.6 -6.2 -63.3 -72.2 -30.0 2.0 -7.2 3.5 -21.7 0.5 38.2 22.1 68.5 94.4 -50.5 -54.6 -20.2 -7.7 40.8 21.9 64.0 88.0 88.0 98.6 73.5 95.6 2.8 2.3 3.3 16.7 16.2 16.1 -10.9 6.5 10:47 0.133 O Jacket Averages 87.3 44 14.5 96.3 85.7 14.0 0.130 - 39

, I																			
Outlet	Time	MOx	NOZ	PPM Day	02		CD2	CO2	MÇz	PPM Dev	8	Ç0	PPM Day	60	PPM Day		Section Research Control	CO Removal	CO Removal ET
Point	Sampled	perady	Port Avg		-0-	Port Avg	Adv	Port Avg		from Avg. :	Parist A	Port Avg	from Avg.	B 22 CS	from Avg.		Wir C22 Carrier Cop	Efficiency	Mi OS surrection
	10:24	73.0		26.3	8.1		40.B	- 1	102,1	0,2	* 68.6		52.7	235.8	-79.4	20.4	154	190	28.50
	10:28	86.6		6.8	4.1		14,4		59.1	-426	47.5		-68.4	50.6	-204.6	346	29.7	92.5 92.3 766.7	18 1 50 7
13	10:32	94,3	£1,6	45,5	3.7	45	14.3	14.0	95.1	-3.6	29.5	125.6	-96.4	30.7	-224.5	-0.2	2.7	102.2	\$10.8 P
32	10;56	20,7		32.0	2.8		16.5		79.8	-221	152.1		35,2	150.4	-104.7	24.2	33.9	700	V 2749
2.0	10:40	105.4	i	56.7	1.7	-	16.6		38.3	-2.6	76.0		-39.9	70.9	-184.3	11.2	19.1		384
	10:44	20,9		32.2	6.7		12.0		102.0	0.5	261.6		165,6	354.6	99.7	17.4	7.0		
55.3.2 2.3.2	10:25	43.4		-5.3	6.4		12.3		53.8	-48,3	47,5		-59.4	58.8	-196.5	50.8	532	995	
	10:29	7.7 80.4	56.5	±1.5	3.9	7.7	14.6		8,1	-92,6	70.5		-45.4	74.2	180.9	68.4			29.9 -14.7
	10:33	104.1	38.5	32.1 55.4	13.2	7.7	8,3	17.2	187.8	85.9	22.5	125.4	-83.4	52.3	202.9	-12.1	-124,1	17 (48)	48.6
	10:37 10:41	77.2			13,6		5.9		255.3	153.4	24.2		481.7	59.3	-196,8	-\$13	-202.5	100	
	10:45	43.5		28.5 -5.2	1.9 5.9		16.4 11.7		72.7 55.6	-26.2 -48.3	147.1 446.4		31.2 330.5	138,8	-115.6	23.3	25.8	107	200
200 H 300	10:26	1.8		-46.8 :									-39.7	670.E	315,6	55.2	49.0	902.9	4
	10:30	0.9		-40.8 -47.8	17,9		2.0		11.3	-90.6	77.6			464,2	205,0	97.7	88.5	7 19 PV	
1 2	10:34	63,9	42.7	112	13.1 17.4	77.4	1.5 2.5	2.5	5.8 206.3	-95.1 204,5	163.6	110,6	-12.3	682,3	407.1	87.8	86.8	YAU	953.4
	10:35	95,4	-4,,	46.7	17.1		2.7	2.0	449.4	347.5	22,9 30,5	ק,טורר	-93,0 -95,4	117.1 143.7	-138.0	10.2	-197.7		2973
	10:4Z	95.A		44.7	16.8		28		407,8	305.8	171.5		55.6	748.7	-117.5 493.6	9.4	-314.8	29 A C29 A	995
313 322 351	18:48	4.5		44.2	17.0		2.8		20.7	-31,2	257.2		141.3	2180.5	925.8	-3,5 98,0	-359.9 82.7		
:S W16 43	10:27	1,9		46.8	6.9	···- ··· · · · · · · · · · · · · · · ·	113		24	-89,5	77.4		-315	99.3	155.9			2058 2059	941 997 929
4.8	10:31	2.6		-45.8	1.7		14.8		8.0	-25,9	58.3		-57.6	60.7	-194,5	97,6 9 5 ,7	95.6	20.0	1 2522
	10:35	3.0	11.0	-45.7	3.2	5.8	15.2	12.9	30	-98.9	118.0	100.8	21	119,3	-135.8	95.2	95.6	7.0	
	10:35	64.2		5.5	5.2	714	14.7	12.0	58.7	4 52	32.2	100.6	-637	33.7	-221.5	45.7	42.6	4166	F
##	10:48	26		-452	2.4		16.9		24	-69.5	137,2	:	21.3	132.8	122.4	96.7	95,7		901 6026 167 507-6
002(0)	10:47	1.4		-47.8	14.5		4.9		4.0	-87.9	181.5		65.6	515.7	280.5	29.5	95.8	967	
										//				I	22033		. =3.D	(Calculation of Assessment	
Outlet A	verages	48.7			8.8		10.1		101.9		115.9			255.2		46.7	-8.0	-65.4	-384.7

0.135

B100

МФх Голумалёвы 0.1392 0.0008 0.1330 0.1688 0.1340 0 1391 18100 0.0111 0.2561 0.3461 0.0892 0.0756 0.0155 0.0078 0.4177 0.6126 0.5580 0.0232 0.0033 0,0041 0.0041 3.0774 0.0033 0.00540.130

Clean Air Engineering Project \$10247 Consol Energy AES Greenidge

6/1/2007 10:48 11:11

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Clete: Start Time: End Time:

inlet Point	Time (NCX perody	NOx Prof Aver	PPM Dev from Avg.	02	O2		CO2 Port Aver	NOx @3% 02	PPM Day from Avo.	CO	CO Port Ave	PPM Dev	CQ @3% 02	PPM Der from Avg.	NOs RMMBb
DIVE THE	10540	30.4		9.4	7.5		11.7		120.0	\$1.5	57.4		-86.0	76.7	-246,4	L165
	10:52	88.4		-3.6	5.4	:	13.7		99.8	-102.5	170.8		58.4	197.2	-95.8	0.135
T(2)*3****	10:56	21.2	98.1	1.2	3.8	4.9	14.9	14.1	98.0	100.2	117.9	147.3	-0.5	117.8	-175.2	0.131
	11:00	107.5		17.5	6.1		13.6		121.8	83.5	84.1	14120	-23.3	65.3	-197.7	0.186
	11:04	114.2		24.2	3.4		15.5		116.8	-95.5	149.1		35.7	152.5	140.5	0.158
	11:08	88.9		8.6	4.1		14.7		105.4	95.9	310.5		198.1	330.8	37.6	0.144
888 25.300	10:42	88.3		-0.7			12.4	· · · · · · · · · · · · · · · · · · ·	115.0	87.3	23.5		-68.9	30.3	-262.8	0.157
S 24.55	10:53	67.7		-22.3	4.3		16.0		73.0	-128.3	153.9		41.5	166.0	-127.s	0.100
24 24	10,67	85,0	B3.6	-22,0	8.2	4.7	14,2	14,7	77,5	-124,7	39.6	551.6	-72.8	46.1	-247,9	4,108
83 23 88	11:01	75.4		-14.6	4.0		15,2		79,9	-122,4	43,9		-89.5	45,5	-245,5	0.109
	11:05	33.3		9.9	2.8		16.7		98.8	-103.5	215.6		103.2	219.2	-79.8	0.125
	11:03	101.1		11.5	4.6		14.9		111.0	-91.2	433.1		320.7	475.8	162.6	0.151
38443	10:50	83.2		-5.8	5.2		13,6		94.9	-1G7,A	20.8		-91.6	23.7	-269.3	0.129
3	10:54	63.4		-8.6	4.0		14.7		89.3	-113.9	87.3		-25.1	92.5	-200.5	0.120
	10:58	87.1	96.4	-29	8.2	6.5	£3.6	124	99.3	-158.0	57.8	78.9	-80.8	56.8	-2342	0.185
20	11;02	114.7		24.2	3.2		15,4		115.5	-36,6	33,2		-79,	23,7	-259.4	0,157
32	11:04	92.5		2.5	2.0		\$8.5		87,8	-114.7	920		-20.4	67.1	-205.9	0.119
	11:10	117.7		27.7	20.1		6.7		2833.5	2431.5	194.2		61.8	4345.2	4052.2	3.5 P1
31. 42 .83	10:51	65.4		-6.6	5,4		12.5		99.5	-102.7	62,4		-49.C	75.7	-217.4	0.138
	10:58	65.1		-23.9	3.2		15.2		66.8	-135.4	129.1		16.7	130.6	-162.5	0.091
334483	10:53	76.7	82.0	•53.3	5.1	3.9	13.5	14.6	86.6	115.4	44.1	70.9	-69.2	50.0	-243.1	0.118
12	11:03	97.1		7.1	28		16.3		95.0	107,3	33,9		-78,5	23.2	-259,9	0,580
	11:07	75.4		-14.6	2.4		18.0		73.0	-129.3	93.7		-18.7	90.7	- 20 2. 4	0.099
(4) (4)	11:11	93.4		3.4	2		14,4		99,3	-108.9	61,2		-51.1	84,5	-228.5	0,134

8.0 202.3 112.4 0.276 20.0 14.0 233.0

. 1													_						
Duttet	Thom	NOx	NOs	PPM Dev	O2	. 02	COZ	CUZ	NOL	PPM Dev	CO.	CO	PPM Dev	60			Non-Reference PFF	CO Removal	CO Removal EU
Point	Sampled	pomáv	Port Avo		y dv	Port Avo	Xev	Port Avg	@3%02	from Avg.	posodr	Post Arg	from Arg.		from Avg.		WFC2 straistice	Efficiency	W 02 correction
100	10:46	77.5		24.4	8.2	- 1	10.7		10R6	34.0	100.8		-23.B	142.5	-30.5	13.6	9.5		499.3
1000	10:52	77.A		23.9	3.9	ŀ	14.6		91.5	5.7	124.9		0.4	131.5	-41.0	10.4	18.3	25	3 398 3
120000	10:66	95.9	87.5	42.4	3.5	4.5	14.5	54.1	99.1	23,4	421	143.0	-32,5	43.6	-129,0	-5.2	-2,3	62.	36 Sta
35	11:00	61,0		27.5	2.7		16,E		76,7	3,8	1759		\$1.A	173,0	0.4	24.7	34.5	984	9 200
1002	11:04	102.7		49.2	1.5		16.5		94,B	18.9	924		-32.2	85.3	-87.3	10.1	18.9	36.0	d 454 j
22.2	11:08	87,6		34.1	8,8	F	11.5		111,2	35,4	321.7		197.2	409,4	235.8	12,4	-5.5	256	200
0.72 2-6 500	10:49	61,7		7,7	6,5		12.2		76,1	0.2	44,5		-30,1	55,3	-117,2	31,5	33,6		S Service Milds
2.5	10:53	31.1		-224	10.2		5.9		52.0	-23.8	94.8		-29.B	159.6	-14.0	54.1	28.7	35.4	3 44
38.64 G	10:57	23.8	65.4	35.3	10.4	8.6	5.7	10.4	142.9	67.0	24.5	139.5	105.1	41.8	-130.6	-23.2	-84.3	200	1 操业
2.3	71:01	104.5		50.6	14.9		4,7		310.6	234.7	28.4		-96,2	84,7	-97.6	-38,1	-2689	96.0	1 ***
24 25 24 29 23	11:05	75.1		21.8	1.5		18.5		70.4	-5.5	148.2		23.7	138.9	-33.7	24.8	28.6	213	360
(V21)	11:09	43.2		-10.3	7.5		11.3		59.1	-17.7	496.5		372.0	683.2	495.7	57.3	47.8	2.45	-46.6
3.8 %	10:50	3.3		-50.2	13.5		5.4		9.4	-67.4	45.6		-53.6	168.3	-4.3	98.0	97.1	246	600-5
	10:54	1.1		-52.4	10.5		8.6	į	1.9	-73.9	92.2		-32.4	158.7	-13.P	96.7	97.6		706
	10:58	69.9	44.4	18.4	10.1	11.5	6.9	80	115.9	43.0	26.3	108.3	99.8	43.6	-126.0	16.7	-67	460	332
10000	11:02	57.7		44.2	97		B.1		156.1	83.3	24.1		-100.5	333	-134.0	14.4	-35.2	SHIP.	
1023	11:05	94.0		40,5	9.7		9.4		150.2	74.4	1720		47.5	274,9	1023	-1.6	-71.5	98	4.55.5
aggaa	11:10	0.5		-53.0	124	ŀ	6.0		1.7	74.8	269.2		164.7	595,9	394.3	99.5	106,0	2818	90.00
997 P	10:51	12.3		382	6.5		120		22.9	529	1163		-62	149.7	-24.5	78.1		100 - 100 1	STATE OF THE STATE
4.8	10:56	3.9		49.6	5.5		14.3	- 1	4.0	71B	109.7		-14.9	113.5	-\$9,D	84,1	94,D	Carlo	
	10:59	13.8	16.0	-89.7	3,0	54	15,3	182	13,6	-92.0	130,7	107.5	5.2	130,7	-61.9	82.0	84.1	(3 g) 1 研(4)	200
23	11:03	58.2	,-	2.7	2.5	_,.	15.8		54,7	-21.2	27.7	.414	-95.9	26.9	-145,6	42.1	42.4	162	987
	11:07	2.6		-50.9	2.4	ļ	16.0		2.5	-73.3	203.3		78.8	195.7	24.2	95.6	98.6	7.574	1 3570
	11:11	0.6		-526	14,0		5.6		2.3	-73.5	55.2		-89.4	143.2	-29.4	99.0	97.6	0.21	22.6
																	· · · · · · · · · · · · · · · · · · ·		
Outlet A	verages	63.5			7.4		11,6		76,3		124.6			17 <u>2,8</u>		41.3	20,5	-27.1	-81,3

NOx Ib/WMBbu

0.1497 0.1511 0.1383 0.1088 0.1292 0.1516

0,1087 0,0709 0,1648 0,4225 0,950 0,9793 0,9715 0,0026 0,1580 0,2729 0,2049 0,0044

0.0312 0.0066 0.0168 0.0746 0.0034 0.0032

0,103

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Clean Air Engloseding Project #19247 Consol Energy AES Greenlage

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9760

8/1/2007 11:32 11:35 Date: Start Time: End Time:

	iziet Politi	Time Sampled	pomety pomety	NOTE Post Avg	PPM Dav from Avg.	C2	O2 Port Awa	CC2	CQ2 Port Avo	90x @3% 02	PPM Dev from Avg.	ppendv CQ	Port Ava	PPM Dev from Avg.	632°05	PPM Dev from Avg.	NÇX EMMBELI
- 1	38(85)3	11:12	93.4	Lucany	9,4	7.8		17,8		127.6	35,6	47,9	FULL	-29.1	65.5	-17.6	0.174
	S (200 8)	11716	83.7		-0.3	5,5		13.3		97.3	5.3	85.5		18.5	111.0	27.9	0.133
	334433	11:20	87.5	76.3	3.5	4.0	4,9	14.6	54.0	92.7	0.6	130.9	73.0	53.B	1366	55.6	0.125
		11:24	105.6		21.5	8.0		14.0		118.8	26.7	73.2		-3.6	824	-06	0.162
		11:28	82.6		-1.2	3.4	1	16.1		84.7	-7.3	25.5		-51.6	26.1	-\$7.D	0.115
	1922	11:32	4.6		-79.4	3.7		16.1		4.8	-87.2 °	65.1		-119	67.7	-16.3	0.007
	\$ 7 1734	11:13	24.6	• • • • • • • • • • • • • • • • • • • •	1Q.B	d.8	· · · · · - ·	127	·············	120.3	28.3	51.8		-25.2	65.B	-17.3	0.164
	8238	11:17	75.3		-5.7	4.6		14.6		86.0	-8.0	104.4	i	27,4	114.6	\$1,5	Q.117
		11:21	79.6	63.5	-4.4	5.2	4.7	13.9	14.5	90,8	-1,3	£3,1	67.2	11.1	100.4	17.4	0.124
		11:26	76.7		-7,2	4,1		16,0		81,7	-10.3	72.7		-4.9	77.5	-5.6	0.171
	33 262 33	11:29	94,5		7,5	2,8		14,3		929	-1.2	48.5		-20.5	45.0	-37.1	0.124
		11:33	79.7		4.3	4.5		14.4		88.6	-3.4	\$9.7		-37,3	44.1	-35.9	0.121
	332235	11:14	100_2		16.2	6.6		13,3		1165	24,4	72.5		-4.5	84.3	1.2	0.159
		11:18	7B,1		-5,9	4,0		14.7		92.7	-9.3	59.0		-9.0	720	-11.0	0.113
		11:22	85.3	97.3	1.3	5.6	4,1	13.6	14.6	99 .6	7.6	54.8	65.3	-22 .2	64.1	48.9	0,135
		11:25	114.0		39.0	3.3		16.0		115.9	28.9	53.1		-22.9	84.0	-29,1	0,158
	80.536	11:30	31.6		7.6	2.2		16.6		87.7	4.4	82.7		5,7	79.2	-3.9	0.120
	13354870	11:34	114.6		39.5	4.1		14.5		122.0	30.0	60.8		-16.1	64.9	-182	0,165
	11	11:15	50.4		-3.6	6.2		12.4		97.9	5.9	63.2		-22.8	54.5	-19,3	0.133
	34.68	11:18	61.7		-223	3.3		16.0		42,8	-29.3	141.4		54.4	143.8	80.8	880.0
		11-23	72.4	79.t	-t1.B	6.1	3.E	13,7	146	9 <u>2</u> 0 ·	-10.0	56.1	102.6	-20.9	63.6	-19.5	0.112
	42 42	11:27	98,5		14,5	2.5		15.6	:	98.3	4.3	49.2	:	-26.8	47.1	-35.8	0.181
		11:51	T0.4		-13.5	2.4		15.9		68.1	-23.9	122.5	:	45.5	5,6 5	35.5	0,098
		11:35	91,4		7,4	3,3		14.9		83.0	0.9	194.D		117.0	197.3	514.2	0.127
ဂ္	Inlut Ave	raýcs	84.0			4.4		14.4		92.0		77.0	-		63.1		0.125

E																			
Outlet Point	Time Sampled	NOs. pprode	NOx Port Ava	PPM Dav from Avo.	012 %dv	C2 Port Ava	CCI2	CO2 Post Avg	NOX ES 7% OZ	PPM Day from Avg.	CO pomdy	CO Port Avg	PPM Dev from Avg.	60 60 3% 02	PPM Dev	PHON Plantings	NEW Roman ST.	CO Removal	CO Removal Eff
3/01/46/3	11:12	76.3		25.8	8.2		10,7		1:04	-52,5	135.8		12.3	181.4	175.3	16.2	13.5		6 000000 TA17 K (R
88.C.88	11:16	74.2		22.5	4.2		14.3		79.5	-83.A	112.8		-8.7	120.9	-245.8	11.4	18.3		2.0
800 PM	11:20	97.0	84.3	4 0,3	3.7	9.6	14.8	9.5	95.7	-87.1	49.7	117.1	-72.8	\$1,7	-315.0	-5.1	-3.3	- 概念	627
(4.0	17:24	79.5		27.9	3.2		18.3		85.5	-82.4	148.6		25.1	150.3	-216.4	24.5	32.2	985B	9 (80%)
1 I I I I	11:26	103.9		52.2	18.1		1.9		654.2	501,8	78.9		-43.6	504.4	137.7	-25.5	684,3	60 60 60 60	29570-0
	117,332	77.5		25.9	20.2		0.0		1984.3	1821.5	177.0		54.5	4528.1	4159.5	~1587.0	⊸ 13509		\$39709 63836 6
2.5	11:13	63.5	1	12.2	44	:	14.0	i	70.2	-52,7	113.6		-6.9	124.8	-241.9	32.6	41.7	- 11 to 1	484
N	11:17	27.5 20.4	63.8	-24.2 25.7	32	8.3	16,2 15,2		27.6	-F35.1	97.9	118.0	-25.2	38.4	-268.3	64.0	57.7	63) 60/4	
	11:25	101.2	00.0	49.5	32	2.2	15.2	15.1	81.3 102.3	-81.6 -80.5	27.0 26.9	118.0	45.5	27,3	-339,4	-1.0	10.4	SH4	
122	11:25	71.8		19.9	23		16.0		68.9	-94.0	115.4		-95,5 -6,1	25.2 112.0	-340.5 -254.7	-31.6 22.1	-25.2 24.2	264 250.0	
3243	11;35	38.7		-13.0	3.3		16.1		39.4	122.6	327.9		205.4	333.5	33.2	51.4	S5 £	#25.9	1624
-01 W. Blanc	11:14	2,8		-47.6	10.6		8.6		6.8	155.3	125,8		3.3	218.6	-148.1	96.2	94.3		
3.5	11:13	0.9		-50.8	9.7		9.3		1.4	-161.5	145.9		24.4	234.6	131.9	60.8	983	666	
23 (4.2)	11:22	66.6	43.7	14.9	9.2	10.3	9,8	8.6	101.9	-81.0	28.3	122.8	-96.2	40.2	-326.5	21.9	-2.1		92
12222	11:25	94.3		42.6	9.2		9,8		144.3	-18.8	20.D		-102.5	30,6	-33E,1	17.3	-24.4	974 625	450
	11:30	92.9		41.2	9.4		9.6		144.8	-18.3	126.6		a.1	195,5	-171.2	4.4	-84.9	-519	-147.0
	11:34	3.8		-47,9	13.5		5,5		9.2	-153.7	292.6		170,7	707.B	341,1	96.7	92.5	2005	\$ 6708
	11:16	21.9		-25.8	6.9		11.8		28.0	-134.9	200.6		781	255.5	-110.2	726	71.4	1	e e e
44	11:19 11:25	3.4		-48,3	3.5		14.5		3.5	158.4	149,9		27.4	154.2	212.5	94,5	54.4	59	733
	11:27	10,3 51.6	15,1	-41,4	2.9 2.6	5.3	16.4 16.8	13.3	10.2	-152,B	104,4	132,0	-18.1	103.8	-252.8	85,8	97,5	444	40.4
4.2	11:31	2.4		-0.1 -49.3	22		16,1		50.5 2.3	-112,4 -160,8	25.2 144.5		-97.3 22.0	24.6 139.3	342.0	47,6	47.6		1 77
4-1	11:35	0.9		50.8	13.9		33	1	23	-160.5	167.8		45.1	138.8 428.5	-228,4 61,9	95.6 99.0	96.6 97.5	100	-46.2
1,0,000,00	24-7								2.4		197.0		-46.X T		01/3	, ,,,,	G.18	inition pondenia il iliano	THE PROPERTY OF THE PROPERTY OF
Outlet Av	rempes	61,7			7.1		11.7		162.9		122.5			366.T		-25.1	-1713.0	-36.3	-469.4

0,1505 0,1084 0,1206 0,1098 0,5057 2,7058 0.0957 0.0379 0.1109 0.1396 0.0940 0.0537 0.0090 0.0020 0.1389 0.1957 0.1972 0.0125 0.0382 0.0048 0.0140 0.0688

0,0031 0.0031 0.222

PWWBP NOX

Clean Air Engineering Project#10247 Contail Energy AES Greenings

9780

Date: Start Time: End Tame:

6/1/2007 12:00 12:23

Indet	Time	NOs	NOx	PPM Day	02 .	02	C02	CO2	NCx	PPM Dev	CO .	<u> </u>	PPM Dev I	<u> </u>	PPM Day	NOx
Point	Sampled	ppendv	Port Avg	from Avg.		Port Avg	vety		@3%02	from Avg.	ppendv	Part Avg	from Avg.	@3%-02	Grown Arro.	IMMABU
1213	12:09	75.1		+11.5	7.6	•	11.8		197.1	4.2	82.9		-1,5	111,6	19,8***	0.133
\$\$ 9 \$\$	12:04	71.6		-15.0	5.8		13.2	1	84.9	-10,0	50.8		-33.6	80.0	-31,7	€,116
300	12:05	91.5	34,1	4,9	4.1	5.0	16.0	14.1	97.5	2.7	79.9	106.3	-4.5	85.1	-6.B	0.133
33.53.8	12:12	109,4		22.8	5.1		14.1		1229	387	60.8		-33.6	57.6	-34.2	0.169
337 2 33	12:16	118.6		32.0	3.5		15.6		t22,0	27,2	107,3		22,9	110.4	18,7	0,165
32 0 60	12:20	98,4		11.8	4.1		14.8		104.3	10.0	264.1		189.7	302.7	215.0	0.143
300000	12:01	997		2.7	7.0		12.3		115,0	30.2	29.0		-45.4	48.9	-42.8	0.157
	12:05	70.6		-16.3	40		14.2		78.5	-15,3	49.3		-35.1	\$4,B	-369	0,107
	12:09	2.27	77.8	-11.1	5.3	4.8	14.1	14.5	88.6	-8.2	41.1	111.2	-43.3	47.2	-448	Q118
200	12:13	78,0		-9,€	4.1		151		83.1	-11.7	40.0		-44.4	42.6	49.1	0.113
	12:17	77.5		-9,2	2.6		16,8		76.2	-18.6	123.3		38.9	1206	26.9	0.104
24 25 27 27	12:21	75.2		-11.4	4.8		14.7		83.6	11.2	375.6		291.2	417.6	325.9	0.114
1886 4 888	12:02	10672		20.0	5.6		13.2		124.7	29.9	42.7	•	41.7	50.0	-41.8	0.170
334	12:08	71.5		-15.0	4.1		14.7		76.3	-18.5	28.5		-55.9	30.∠	-61.4	0.194
313	12:10	74.3	92.8	-123	5.4	4.1	13.7	14.7	35,8	-9,D	38.9	57.6	-45.5	44.9	-45.8	0.117
33	12-14	108.7		22.1	1.2		16.4		109.9	15.1	37.1		-47,3	27.5	-64,2	a.150
3-2 3-1	12; 18	90.2		3,6	2,3		76.5		86.8	-8.0	69.5		-14.8	85.9	-24.9	0.158
() 5 (0)	12-22	106.6		18.0	4.2		14.8		113.2	18.4	129.0		44.6	133,3	45.5	0.154
80. 15 80	12:03	813	· · · · · · · · · · · · · · · · · · ·	=4.7	6.4		12.2		101.1	6.3	31,B		-52.5	383	-62,5	0.128
33000	12:07	86,1		-21.5	3.5		16.0		67.D	-27.9	58.9		-25.5	さ さ こうりょう	-91.1	0,091
	12:11	76.2	91. 7	-10.4	5_E	4,5	13,3	54.5	82.1	-5.7	57.2	59.8	-27.2	66.9	-24.8	0,522
	12:15	101.7		25,1	2.6		15,5		100,6	5.7	21.8		62.8	21.7	-70.1	0.937
44	12:19	74.7		-11.9	2.5		16.0		71,9	-550	868		2.4	83.5	-8.2	0.096
S: 440%	12-21	20.7		4.1	1.3		15.1		92.2	-26	100.8		16.4	102.5	10.8	0.126

C light Averages	36.6	4,5	14.5	94.2	84.4	91.7	0,125
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Ç Duber	Time	NKXX	ИÚж	PPM Dev	.02	O2	CQ2	C02	NOx	PPM Doy	(X)	ÇO	PPM Dev	CÓ.	PPM Dev	*************	Nun Removal BY	CO Removal	CO Removal SIT.
Point	Sampled	pprodv	Port Avg	troen Avg.	X.IV.	Port Avg	Xdv	Port Avg	@3% O2	from Avg.	Seriot	Port Avg	from Avg.				WE CIZ convection	Stackbary	W 02 correction
33 1-5 3	12:00	27.3		29.2	16.6		4.1		274,6	202,2	104.3		6.0	3523	207.5	-6.3	4 371.7	-25#	
1-8	12:04	65,3		14.2	7.Z		10.3		80.6	1B.2	59.6		-38.7	\$1,4	-53.8	7.4	-6.7	373	
14	12:05	4.36	97.7	44.5	3,5	9.6	14.7	12.2	701.1	2B.7	30.7	128.2	-57.€	32.1	-1126	-5,8	-9.7	196 1352	50.5
- 100 M] 12:12	84.2		32.1	3.0		15.5		84.2	71.8	120.0		21.7	120.0	-24.8	23.0	32.1		-200
4.0 1.4	12-16	103.4		57.3	2.6		15.8		107.0	24.6	78.4		-18.9	77.7	-87.1	7.8	123	750 -221	200
	12:20	50.5		36.4	6.5		12.2		210.0	37.6	275.3		277.0	456.5	321.7	10.1	-4.9		
∴2 -6	12-01	57.2		5.1	5.1		13.5		84.3	-7.6	43.4		54.9	49.2	-65.6	35.9	456	44	
3325	12:05	14.4		-37.7 ·	6.6		11.5		16.0	-54,4	\$1,5		-45.7	64.6	-80.2	79.5	77.0		\$ 10 m
30 2 50	12:09	23.0	52.7	30.9	2.2	7.7	10.8	11.1	117.0	44.6	21.5	195.1	-76.8	30,3	-714.6	-45	-35.0		
3723	{ 12:13	108.8		54,7	7.3		11.4		740.6	86.2	21.1		-77.2	27,8	-517.0	-38.9	-69.1	67.3	2/3
25 24 23 22 22 22	∦ 12 : 17 :	72.4		20,3	9,6		9.1		114.7	423	113.D		14.7	179.0	34.2	7.1	-60.5		486
30.20	12:21	42.5		-9.≙	12		9.6		65.6	-6.3	382.1		281,8	\$88.5	441,8	43.5	216	49	**************************************
3.8 1.2 2.5 3.8 1.2 2.5	12:02	2.5		-49.B	6.4		12.3		3.1	-69.3	63.1		-30.2	84,1	-80.7	97.7	97.5	940	
395	12:00	6.0		-51.2	13.3		6.1		21	-70.3	642		-34.1	151.2	5,4	99.7	97.2 -16.5	1993	
\$ (C. A.	12:10	67.0	45.2	14,8	8.8	83	8.8	10.5	29.2	27.6	19.3	89.0	-79.0	28.6	-116,0	9.9			258.5 35.6 35.5
	12:14	101.6		49,5	7.6		11.2		136.7	84,4	19.5		-79.2	25.7	-119,1	6.5	-34,4 -35,4		
	12:19	76.0		43,8	6.7		11.9 11.8		121.0	48.6 -68.0	95.2 148.0		-3.1 49.7	120,0 192,0	-24.9 47.2	-9.4 96.8	95.1	147	VIII
	12:22	3,4		-48.7	7.1				*4							36,5	95.0	ST STORES	01/01/4-11/5/01/4-10/01/01/01/01 01/01/4-11/5/01/4/01/01/01/01/01/01/01/01/01/01/01/01/01/
337.0	12703	10.7		41.4	7.4	:	11.4		16.2	-58.2	121.5 102.4		23.0	180.8	151 200	95,5	25.5	70.0	76
4-5	12507	2.9		-49.2	3.8		14.9		3.0	69.4 64.0	75.6	90.7	4.1 -28.7	106.9 71.6	-88 <i>8</i> -73.2	89.0			
	12:11	8.4	129	-43.7	3.D	58 -	15.4	13,1	9.4 51.4	-04.0 -20.9		9007	-76.9	21.0	-123.7	49.6	90.5 45.9	1000	24
42	12:16	52.3		3.2	2.7		16.7 16.0			-70.2	25.4 98.4		0.1	98.2	49.6	96.6	98.9	10.00	
	12-19	2.3		-49.6 -51.2	14.3				2.2 2.4	-69.9	129.3		31.0	350.7	205.0	99.0	97.4	2	242.1
(1.44°)	(I 1/2/2)	6.00		-21Z	1 141-3		5.2		64	-02.5	لدكه		, al.u	3.0.7	100.8	F. 30.U	- 97 A		SECURE AND PARTY OF
Scarson	Averages.	52.1			7.0		117		72.4		86.3			144.8		40.5	23.8	-24.5	-85.4

190x 3p4M@ta 0,8744 0,1295 0,1378 0,148 0,1456 0,1503 0,0884 0,0245 0,1595 0,1917 0,1584 0,0394 0,0029 0,1383 0,1655 0,1650 0,0090 0,0183 0,0041 0,0113 0,0701 0,0701

0.099

9780

6/1/2007 12:24 12:47 Date: Start Time: End Time:

Inlet Point	Time Sampled	NCx porody	NÖX Post Avg	FFM Devr from Avg.	O2 744/	O2 Port Ave	502 544	CO2 Post Avg	NOx 62 3% 622	PP16 Dev from Avg.	CO ppendy	CO Port Avg	PPM Dav from Avg.	60 2% OS	PPM Dev from Avg.	NOx IbMMB⊔
88,638	12:24	91,3		7,2	7.5		11,8		122,8 "	305	47.0		35.4	529	21.D	£ 167
	12:28	83.D		-1,B	5.6		13.4		97.1	4.9	88.6		-14.8	74.4	-8.4	0.132
	12:32	87.1	97,7	2,2	4.0	5.0	15.0	13.8	92.3	0.0	84,0	94.1	5.6	65.0	5.2	D. 126
	12:36	108.0		25.8	5,1		13.8		120.7	27.8	56.B		-21,8	64.1	-19.7	0.164
	12:40	118.6		34.5	3.3		14.8		120.8	28.6	159.5		81,2	1823	78.5	0.165
88(46)08	12:44	99,1		14.4	4.5		14L0		108,2	15,9	154.0		75.6	188.1	54,3	0.147
\$0 29	12:25	72.9		-11.5	6.8		12.6		9Z.Š	D.8	. 33.5		-94,0	425	41.3	D.126
200	12:20	65.6		-18.2	43		15.0		71.8	-20.5	87.5		-10.0	728	-1T.C	0.098
24	12:33	74.2	77.1	-8.6	5.1	4,5	14.5	14.5	86.3	-8.9	29.5	109,2	-48,9	33.4	-50.4	0.118
88.6	12:37	78.3		-9.5	4.1		15.5		\$3,4	-6.6	45.3		433.1	48,3	-35.6	0.114
22	12:41	91.4		9.7	2.7		15.3		99.9	-2.4	215.4		137.0	211,B	125/0	0.123
	12:45	77.0		•7.8	4.5		13.8		94.0	-8.2	284,5		186.1	265.7	204.8	0,115
	12:26 12:30	87,6		2.8	5.4		13,9		101.2	8.9	45.6		32.6	52. 9	-30.9	0.138
	12:36	75.7 67.2	82.5	-9,1 -17,8	3.5		15.0		79.2	-13.0	28.7	'	41.7	31,1	-\$2.7	0.108
	12:30	91.7	82.5	7.0	5.1 3.3	4,0	12.0	14.6	75.1	-19,1	40.7	55.3	57.7	46.1	-37,7	0.104
	12:42	89.0		4.3	23		15.6 16.4		83.5 65.7	1.0	55,9		-21.5	57.B	-25.8	0,127
	12:46	83.5		-1.3	4.2		14.2		89,5	-0.6 :	91.8		13.4	88.3	4.5	0,117
33443	12:27	83.7		41.1	5.8		128			7.0	42.6		-05.8	45,7	-38.2	0.122
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12:31	65.2		18.6	3.6		15.0		98.2 87.≴	-24.B	28.7		-49.7 -20.3	34,0	49.8	0.135
	12:35	76.3	81.8	49.5	5.4	39	13.4	14.5	58.1	42	59,1 65,1	59.1		60,1	-23.7	0.092
33 4 3	12:39	99.0	41.4	14.3	27	**	15.6	14.0	97.4	5.1	33,8	59.4	-133	75,2	-6.8	0.420
	12:43	72.2		126	25		15.7		70.2	•22.0	99,4		-44.8 18.0	33.3 \$3.5	-50.8	0.233
	1247	94.6		9.8	3.0		14.5		\$7.9	5.6	72.8		16.0 82-	75,3	10.0	0.096 0.138
				-14					4.10				-26	4.3	- e. 5	u.138
Inlet Ave	72045	24.3			4.4		14.4		32.3		78.4			80.8		0,128

	•							- 11- 1							00.0		0,120			
C	1																			
7	Custlet	Trine	NOx	NOx	PPE Day	.02	. 02	CC2	COZ	WOX.	PPM Deu	8	~~~			l				V
4	Point	Samulad	ppandv	Port Ave		. Xar	Post Are	X.	Port Ave	@ \$% O2			CO- Port Ave	PPR Dev	-89-	PPN Day		NOCRAMOVALET	CO Removal	CO Removal Est
Ċ	33 44 33	12:24	75.3		24,5			<u>.</u>	· . P Carl (A) 4			ppandy	POR PAR	From Avg.		from Ave.		PM C2 connection	Etholeney	W 92 correction
		12:20	72.5		21,0	8.2		10.7		107,5	37.0	101.6		-0.€	1432	-39.3	170	12.4	-3 4	
		12:32	30.3	85.7		5.6		13.1		95,2	14.7	52.5		-49.7	81.4	-124.0	123	12.3	A.	77
		12:36	63.5	85. r	47.5	7.3	5.8	11.5	12.9	130,2	59.7	36.1	76.5	-98,1	47,5	-135.0	-13.5	-41.1	5036	46.5
					31.5	5.3		13.6		95.0	24,5	102.3		0.1	118.6	-85.8	21.4	20.9	407	W 1948
		12:40 12:44	102.3		50.5	1.7		16.7		35.4	24,9	28.9		-73.3	25,9	-155.5	13.9	21.1	200	70.4
			80.5		28.8	7.0		11,5		103.8	32.8	137.7		35.5	177.3	-5.1	16.7	4.0	5 00 医	4 5 5 5
	N&500	12:25	52.6		10.8	2,0		9.2		101.9	31,4	84.7		77,5	254.1	-28.4	14.1	-10,1	Statement (Statement)	25.0 25.0 25.0 27.1
	2.6	12:28	15.3		-36.5	11,0		8.2		27.7	-42.8	77.2		-35.0	139.6	~2.9	77.0	91.5	1044	2578
	2.4	12:33	37.1	63.4	35.3	B.4	7 #	19.6	11.3	124.7	54.2	21.0	80.5	-21.2	33.1	-152.4	44.3	-44,5	Cate 8	-86
	23	12:37	107.7		55.9	5,6		12.9		125.0	55.5	25.8		-75.4	30,2	-152.3	-37.5	-51,D		
	22	12:41	70,4		18.6	3.0		15.4	i	70.4	-0.1	45,5		-536	45.6	-133.9	23.0	21,7	9 3	40.5
	(20 f (3)	1245	37.3		-14.5	7.5		11.4		49.6	20.7	248.0	:	146.6	332.6	160.2	51.6	40.7	55	16.5
	346	12:28	3.2		496	15,8		4.4		11,2	-59.3	113.1		10,9	397.0	214.6	98.3	39.9		49 5
	3-5	12:30	0.9		হনহ	14,4		6.2		2,5	-95.0	105.2		4.D	282.5	110.0	85.B	99,9	251-6	8607
	34	12:34	73.8	46.7	22.0	11,7	127	7.5	6.8	148.8	73.1	23.2	122.6	-79.0	45.1	-137.3	•S.B	-89.5	400	- 24
	3-3	12:38	100.2		45.4	10,9	-	6.3		579.4	108.9	23.4	.—-	-78,8 ·	41.9	-140.6	-6.3	-92.3		- 24
	342	12:42	96.9		47.1	2.5		9.2		559.5	20.0	110.9		8.7	179,8	-3.6	43.1	-98.2		383
	35A	12:46	2.		-48,₽	13,6	i	6.9		7.1	63.4	358.0		255,4	679.3	458.8	96.5	92.1	GD-4 FetSe	762
	200	12-27	3.4		-42.4	5.0		52.5		11,B	-68.7	124.9		22,7	156.3	•28.1	38.8			200000-0000
	6.5	12≘31	29		-48.9	3,5		14.2		3.0	-87.5	106.7		45	109.8	-72.7	95.8	98.1 96.6	data	1545
	V (4)	12:35	8.6	11,4	-43.2	2.5	5.4	15.5	13.2	8.6	-61.Ω	B7,6	123.5	-34.6	87.2	-115.2	96.7	90.3		407
		12:39	44.5		-7.3	2.6		15,5		49.5	-27.D	22.6	-20.0	-79.6	22.1	-160,4	55.1		0.00	404
	** Y2 ***	12:43	20		-49.8	2.9		15.8		20	-66.6	528.2		34.0	135.4	-1907 -47.0	97.2	55.3		361
	4 .1.	12:47	0.5		-53.6	14,1		5.5		2.4	-68.1	283.2		181.0	745.5	563.0	97.2 99.0	97.2	413	SS HISTORY MINET
						- 4					7-91			1012	1400	30371	. 22.0	87.E	same y	PERCENCIONAL PROPERTY.
	Outlet Av	475044	51.8			7.9		11.0		700 F										
		114H24	47.0			1 44		1130		70.5		t02.7			182.5		40,4	24.3	-77.4	-209.ž

NCx IsPARMS (1489) 0.1491 0.1191 0.1295 0.1295 0.1391 0.1419 0.0377 0.1791 0.0600 0.0538 0.05

0.095

....

CONSOL ENERGY, INC. DRESDEN, NEW YORK Client Reference No: 4700146642 CleanAir Project No: 10247

QA/QC DATA

D

Revision 1

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D- 2

CONSOL Energy - AES Greenidge Clean Air Project No: 10247 Unit 4 Air Heater Inlet

CTM-027 (Ammonia) QA/QC Resuits

Run No.		1	2	3	
Stop Tim Total Du	07) ne (approx.) ne (approx.) ration of Test Run (min.) pling Time (min.)	May 31 18:04 19:14 70 60	Jee 1 10:20 11:07 47 40	Jan 1 12:05 12:52 47 40	
<u>Samglin</u>	g System Gallbration Summary				
D _n	Nozzle iD No: Nozzle Diameter (in):	NA NA	NA NA	NA NA	
C _p	Probe ID No: Pitat Coefficient	NA 0.810	₩A 0.840	NA 0.840	
Y _d .	Meter Box ID. No: Meter Box Yd - Field Shoot Meter Box Yd - Database Meter Box ∆H@ - Field Sheet Meter Box ∆H@ - Datebase	68-8 1,0071 1,0071 1,8055 1,8055	68-B 1.0071 1.0071 1.8055 1.8055	68-B 1.0071 1.0071 1.8055 1.8055	
QA/QC					
	Final Loak Chack (a) 4% of Sampling Rata (cfm) (b) Allowable Rate from Metfood (cfm) Allowable Limit - minimum of a and b (cfm) Actual Final Leak Rate (cfm)	0.0263 0.0200 0.0200 0.0030	0.0262 0.0200 0.0200 0.0200	0.0268 0.0200 0.0200 0.0030	

041407 (04627 0 HP (2

Proposed by Clean Ak Engineering Proprietory Software SS ISOKINETIC Version 2016-136

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Certificate of Calibration

Customer:

CLEAN AIR ENGINEERING INC.

Customer P.O.:

N29486865000

Instrument:

Omega CL23A

Work Order Number:

707991284

Description:

CALIBRATOR THERMOMETER

Serial Number:

T-119130

Equipment I.D.#:

605945856

A.R. Number:

707-5530

Omega Engineering, Inc. hereby certifies that the above instrumentation has been calibrated and tested to meet or exceed the published specifications. This calibration and testing was performed using instrumentation and standards that are traceable to the National Institute of Standards and Technology. Omega Engineering, Inc. is in compliance with ISO 10012-1, ISO 9001:2000 and ANSI/NCSL Z540-1-1994. This certificate shall not be reproduced, except in full, without the written consent of Omega Engineering, Inc.

CALIBRATION INFORMATION

Cal Date:

17-Jul-07

Cal Due Date:

17-Jul-08

Temperature:

22 C ± 5 C

Humidity:

Below 80%

Absolute Uncertainty: 0.19F

Comments:

Υ Pass:

Techniclan: VA

Procedure:

QAP-2100

Seals OK:

Yes

Certificate #:

707991284

STANDARDS USED FOR CALIBRATION

Due Date Cal, Dato NIST Traceable Number Description Assel Number 23-Mar-07 23-Mar-08 10NNST098D4 FLUXE 5700A Multicalibrator ST-098-04 21-46-07 21-Jul-08 10MNCL09819 Omega TRCIII ice Point CL-098-19 11-Aug-07 11-Aug-06 10NNDM09822 Aglient 344D1A Multimeter DM-008-22

Metrology Technician:

Quality Assurance Inspector:

Page 1 of 1



Calibration Results

Customer:

CLEAN AIR ENGINEERING INC.

P.O. Number:

029486865000

Work Order #:

707991284

Instrument

Omega CL23A

Description:

CALIBRATOR THERMOMETER

Serial Number: 1

T-419130

Equipment I.D.#: 605945856

A.R. Number:

707-5530

Result:

PASS

Cal Date:

17-Jul-07

Cal Due Date:

17-Jul-08

Technician:

VA.

Temperature:

22 °C ±5 °C

Humidity:

Below 80%

· Condition F/L: AS-LEFT

Procedure:

QAP-2100

Certificate #:

707991284

124	I J_	Used
i innr	នេះការ	HSCall
Juliu	RUI II S	

Asset #	<u>Description</u>	<u>MIST Traccable Number</u>	<u>Cal Date</u>	<u>Dua Date</u>
C1:-098-19	Omega TRCIII lee Point	10NNCL09819	21-Jul-06	21-Jul-07
DM-098-22	Agilent 34401A Multimeter	10NNDM09822	11-Aug-06	11-Aug-07
ST-098-04	FLUKE 5700A Multicelibreter	10NNST09804	23-Mar-07	23-Mar-08

Test Data

TUSI DAM			<u> </u>		
Test Description	True Value	Test Result	Lower Ilmit	<u>Opper limit</u>	
Thermocouple Input		32.1	31.5	32.5	Pags
12.0 DagreeKF		2400.1	2399-0	240%.0	Pass
2400.0 DegreeKF 32.0 DegreeMF		31.6	31.5	32.5	Pass
1390.0 DegreeJF		1389.7	1389.4	1390.6	Pass
7.0 DegreeTF		32,1	31.5	32.5	Pass
750.0 DegreeTF		749.9	74 <u>₽</u> S	750,5	Page
Thermocouple Output			-0.011	0.011	Pass
Va 000,0		-0.002 52,943	52.933	52.971	Pass
52,952 mV		0.008	-0.014	0.014	Pess
0.000 mV 42.564 mV		42.567	42.543	42.585	Paus
0.000 mV		-0.004	-0.011	0.011	Pass
20.803 mV		20.796	20.786	20.620	Pass

End of 'fest Data

Page 1 of 1

Meter Box Full Test Calibration

Meter Box No:

68-B

Date of Calibration:

3/12/2007

Meter Box Y_d: 1.0071

Calibration conducted by: Bill Dimitroff

Meter Box ΔH@: 1,8055

Barometric Pressure: 29.38

						\$ign	aturė											
	. 3 3	والوردي		Sta	indard Me	ter	.ებე#5 M €	fer Box C	ias ()	: S	td.:Met	er, alay		eter Bo		Time	୍ଦ Galibi	ration
				Ga	s Volume	(H³) × 1 × 1		olume (ft	h	Тетп	eratur	a (F)	Tem	peratur	e (F):	(min)	Res	ults
Ţ.,						V _{ds}			V ₄			T _{ds}		T _e	Ta			
Q	ΔH	ΔΡ	Yds	Initial	Final	Net	Initial	Final	Net	ju	Out	Avg.	โก	Out	Avg.	Θ	Υ _ε	ΔH@
0.392	0.50	-0.20	1.0000	12.000	24.000	12.000	768.840	780.940	12.100	71.0	71.0	71.00	77.5	73.0	75.25	29.88	0,9979	1.7810
0.393	0.50	-0.20	1,0000	24.000	34.000	10.000	760.940	791.DOO	10.080	71.0	71.0	71.00	77.0	73.5	75.25	24.83	1,0002	1.7694
0.879	1.5C	-0.40	1.0000	38,000	48,000	10.000	794,990	805.020	10.030	71,0	71.0	71.00	80.5	74.0	77.25	14.37	1.0040	1.7750
0.674	1.50	-0.40	1.0000	48.000	58.000	10,000	805.020	814.980	9,960	71.0	71.0	71.00	81.5	74,5	78.00	14.48	1.0124	1.8022
0.940	3,00	-0.60	1.0000	62,000	80.000	18.000	816.960	836.840	17.680	71.0	71.0	71.00	84.5	75.5	60.00	18.68	1.0546	1.8478
0.937	3.00	-0.60	1.0000	80.000	90.000	10.000	836.840	846.500	9.960	71.0	71.0	71.00	85.0	76.5	60.75	10.42	1.0133	1.8575
			•••												Α.	verages	1,00708	1.80549

$ \begin{array}{lll} \Delta P & \text{Inlet Pressure Differential (in. H}_2\text{O}) \\ V_d & \text{Gas Meter Volume - Dry (ft^2)} \\ V_d & \text{Standard Meter Volume - Dry (ft^3)} \\ T_d & \text{Average Meter Sox Temperature ("F)} \\ T_d & \text{Average Standard Meter Temperature ("F)} \\ Y_d & \text{Meter Correction Factor (unitless), Y}_1 \leq Y_{\text{reg}} \pm 0.02 \\ Y_{ds} & \text{Standard Meter Correction Factor (unitless)} \\ \Delta H \otimes & \text{Orifice Pressure Differential giving 0.75 cfm} \\ \text{of air at 68"F and 29.92 in. Hg (in. H}_2\text{O}) \\ \end{array} $	1, 400 (100 <u>1</u> 2)	Nomenclature	france - Equations - Equations
ತಿಗಿ@, s ಫಿಸ್@್ಯುಕ್ತು 2.2 9 Duration of Run (minutes)	P ₆ Q AH	Barometric Pressure (in. Hg) Flow Rate (cfm) Crifice Pressure differential (in. H₂O) Inlet Pressure Differential (in. H₂O) Gas Meter Volume - Dry (ft²) Standard Meter Volume - Dry (ft²) Average Meter Box Temperature ('F) Outlet Meter Box Temperature ('F) Average Standard Meter Temperature ('F) Meter Correction Factor (unitless), Y₁≤Y₀v₀±0.02 Standard Meter Correction Factor (unitless) Orifice Pressure Differential giving 0.75 cfm of air at 63 F and 29.92 in. Hg¹(in. H₂O) ΔH⊚ ≤ ΔH⊚₀v₀±0.2	$Y_{d} = (Y_{ds}) \left[\frac{V_{ds}}{V_{d}} \right] \left[\frac{T_{d} + 460}{T_{ds} + 460} \right] \left[\frac{P_{b} + \Delta P / 13.6}{P_{b} + \Delta H / 13.6} \right]$ $\Delta H @= \frac{(0.0319)(\Delta H)}{P_{b}(T_{o} + 460)} \left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})} \right]^{2}$

Vecturin	Gauga
Standard	Geuge
(In:Hg)3;	ं(In Hg)
5.0	5.0
10.0	10.0
15.0	15.0
20.0	20.0
25.0	25.0
特殊	
用数据数数	翻翻
器翻辑	報線網



Meter Box - Pyrometer Calibration Sheet

Meter Box No:	68-B	Office:	Pittsburgh
Catibrated by:	Bill Dimitroff	Client:	NA
Date:	3/12/07	Jab No:	NA
Temoeralure Sc:		Type of Calibration:	Full-Test

Calibration Reference Settings			the comment of the second	neter Re ach Cha (°F)	* Carl Vice 18 7 1 1		
(°F)	†	2	3	4	5	Ģ	7
	Stack	Probe	Filter	Imp Out	Aux	DGM In	DGM Out
50	50	49	49	5D	50	50	50
100	10D _	99	99	100	100	100	100
150	151	150	149	161	151	151	151
200	202	201	199				
250	252	250	249				
- 300	302	300	299		聚縣 病電	100	建筑建筑
350	352	350	349		班等等	1889	
400	401	400	399			964 ST	開車運動
450	450	449	449				
500	500	600	499				
550	551	549	549	100		277	ed damente e no
600	601	600	599	調整		100	

Tolerance = ±2°F difference from reference setting.

Calibration Reference	Information
Reference Used: Digimite	Serial No: T119130
Callbrated By: Omega	Dato Calibrated: 5/26/2006
	.
Calibration Report No: 503977790	



cluseuSC-MelerFut. Apr#2094s Copyright Wood Claus Air Englaceting Inc.

Meter Box Critical Orifice Post-Test Calibration Data

10247 Project No.

Meter No. 68-B

Orifice 63-G

Leak Checks Negative Pressure

Office Location

Meter Yd 1,0071

Orifice K' 0.5759

No movement of manometer in one-minute

✓ Pass

06/07/07 **Test Date**

Meter ΔH@ 1.8055

Orifice Cal. Date 01/24/07

Positive Pressure

✓ Pass

Operator Bill Dimitroff Full Test Cal. Date 03/12/07

No movement of manometer in one-minute

Barom, Press. (Pb)

29,21 in. Hg Important: All leak checks must pass in order for calibration to be valid.

		Melieravolume (den la	Jeme Jeme Jalane	romani Lature : r Securiti			Vaccuum Vaccuum Vaccuum Vaccuum Vaccuum	Ne Runs Line of the chart	(80)	A /g Meter Temps for Run	EXERCION XYNKE	An Encoder of Variation
	0.0	285.00	77	73								
1	10.0	292.55	77	74	71	1.70	19	10.0	7.55	75.3	1.0001	0.0%
2	16.0	297.07	78	74	71	1,70	19	6.0	4.52	75.8	1.0033	0.3%
3	28.0	306.18	78	74	71	1.70	19	12.0	9.11	76.0	0.9960	-0.4%

Average Y_E Cal. Error

0.9998 -0.7%

Calculations and Specifications

$$Y_{t} = \frac{K \times P_{b} \times (T_{tot} + 460) \times \theta}{17.64 \times V_{tot} \times (P_{b} + \Delta H)_{13.6}) \times \sqrt{T_{anib} + 460}}$$

$$\Delta Y_t = \frac{Y_t - \overline{Y}_t}{\overline{Y}_t} \times 100$$

$$\Delta Y_i = \frac{Y_i - \overline{Y}_i}{\overline{Y}_i} \times 100 \qquad \text{Spec. : } \Delta Y_i \le \pm 2\%$$

$$Cal Error = \frac{\overline{Y}_i - Y_d}{Y_d} \times 100 \qquad \text{Spec. : } Cal Error \le \pm 5\%$$



Report of Traceability

All Denver Instrument Company weights have been verified using standards of mass traceable to the International Prototype Kilogram (IPK) through the National Institute of Standards and Technology (NIST), and meet or exceed specifications for type and class.

Chain of Traceability

Primary Standards MT57 Calibrated at NIST 02/11/03 under test # 822/768214-03

lkg A & lkg B

Working Standards MT7, MT50 and MT53 Calibrated at Denver Instrument Co. 11/09/04 under test #04-102604

Class 1 Weight Range: 1000 g: S/N: 05-J06467-8 Date of Report: 01/10/05 all weights were found to be in tolerance see chart page 2.

Denver Instrument Reported Uncertainties

	<u> </u>	HACI MEGAMINIST.		33	Uncertainty K=2
Nominal Value	Uncertainty K=2	Nominal Value	Uncertainty K=2	Nominal Value	
		100g	0.025 mg	500mg	D.0015 mg
5000g).5 mg		0.017 mg	200mg	0.0014 mg
2000g	0.75 mg	<u>50g</u>		100mg	0,0014 mg
1000g	0.332 mg	30g	0.012 mg		
	0.192 mg	20g	0.011 rag	50mg	0.0014 mg
500g		10g	0.008 mg	20mg	0.0014 mg
400g	0.117mg	108	0.005 mg	10mg	0.0014 mg
300g	0.116mg	<u> </u>			0.0014 mg
200g	0.076mg	2g	0.005 mg	5mg	
		10	0.005 mg	2mg	0.0014 mg
160g	0.041 mg	<u> </u>	<u> </u>	ling	0.0014 mg
150g	0.041 mg	<u>L — — - </u>	L		·

Type: 1

5kg -- 10mg

Material: Stainless Steel Assumed Density: 7.85g/cm³

5mg - 1mg

Material: Aluminum Assumed Density: 2.70g/cm3

Signature: 777 A. M. Suning

NYLAP I.ab Code 2200106-0

This report pertains to the above listed artificits and parameters only. At the time of test, which may very from date of report the weight(s) were found to meet the stated specification. Weights are religiorated using weighting designs A.Z.1 or A.L.3 described in MRS Tech note 957 (sta redection need to MST masscools software. Using the MST provided masscools software we propaget mass values from our princips stated in MRS Tech note 957 (sta redection need to the values reported unite MST test #82/2/2/8214-b3 detection of the propaget mass values from our princips stated with the less Calibration was on 05/1704 under test managed 04-05/404. Therefore, the reported overy 6 months the less Calibration was on 05/1704 under test managed 04-05/404. Therefore, the reported overy 6 months believed by MST and comply with ANSIANCSL 2560 and ANSIASCOPEC 17025-2000. According to NVI.A.P for spinds integrable to the International Prototype Allowards the provide according tool under lab code 200105-0. This report does not spinyide endorsement by NVI.A.P or any other government ngatory, and may not be reproduced except in fact without our written pertains on.

Pege) of 2

1855 Blake Street, Suite 201 • Denver, CO 80202 800.321,1135 • 303.431,7295 • 303,423,4831 FAX www.denverinstrument.com

Table of Weight Tolerances

		AS	TM E617	- 155 - 1		N	BS Circu	dar 547	i		OIML R	-111	
	Class p(U+)	Class	Class 2	Class 3	Class 4	Class M	Çlass S	Class S1	Class P	Class E1	Class E2	Class F1	Class F2
Nondical	Toppy and a	Tolerunee	Toleransa in erg	Tulerance In pg	Tolerance In ma	Telerauce Ion où	Toderstoll (4 pi)	Totesbhsb in mb	Toletense in mi	Talecznce ia maj	Teleromee Is mg	वशान्त्रभवी पुरस्क	Toleranse In Ing
Yalum 5 kg	6.00	12.0	25.0	50	100	25.0	12.0	5D .	100	2.5	7.5	25	75
⊒ kg	3.75	7.5	15.0	30	60	75.O	7.5	30	68		[;
ž kg	2.5D	5.0	10.0	20	AD.	10.0	5.0	20	AD .	7.0	3.0	10	30
1 kg	1.25	2.5	5.0	10	20	5.0	2.5	10	20	0.5	1.5	5	15
600 g	D.50D	1.20	2.50	5,0	10.0	2.50	1.20	5.0	10.6	0.25	0.75	2.5	7.5
300 g	0.380	0.75	1.50	2.0	6,D	1.50	0.75	3.0	6.0		1 .		l i
200 g	0,250	0.50	1,00	2.0	4.0	1.00	0.59	2.0	4,D	0.10	0,20	1.0	3.D
100 g	0.125	p.25	0.50	1.0	2.0	0,50	0.25	1.0	5.0	0.05	0.15	0.5	1.5
50 g	0.060	0.120	0.250	0.60	1.20	0.250	0.120	03.60	1,20	0.030	0.10	0.30	1.0
30 g	0.037	0.074	0.150	0.45	0.90	0.150	0.074	0,45	0.90		ļ	<u> </u>]
20 g	0.037	0.074	0.500	0.35	0.70	0.100	0.074	0.35	0.70	0.D25	0.080	0.25	0.8
10 5	0.025	0.050	0.074	0,25	0.50	0.050	0.074	0.25.	0.50	0.020	0.050	0.20	ŭ.6
5 g	0.025	0.034	0.054	0.1B	0.36	0.034	0,954	. b.18	0.36	0.015	0.050	0.15	0.5
3 9	0.017	0.034	0.054	0.15	0.30	0.034	0.054	0.15	0.30	i	ļ		
29	0.017	0.034	0.054	0.13	0.26	0.034	0.054	0.13	0.25 ~	0.012	0.040	0.12	D,4 ·
1 5	0.017	0.034	0.054	0,10	0.20	. 0.034	0.054	0.10	0.20	0.010	0.030	0,10	0.3
500 mg	0.005	0,010	9.025	0.080	0.16	0.030	0.025	0.088	0,16	0.008	0.025	0.08	0.25
Bog mg	0,005	0.010	0.025	0.070	0.14	0.010	0.025	0.070	B.14		l		
200 mg	0,005	0.010	0.025	0,060	0.12	0.010	0.025	0.060	0.12	0.008	0.020	6.05	0.20
100 mg	0.005	0.010	0.025	0,050	0.10	0.010	0.025	0.050	0,10	0.005	0.015	0,06	0.15
50 mg	0.005	0.010	0.014	0,042	0.085	0.010	0.014	0.042	0.085	0.004	0.012	0.04	0.12
3D mg	0.005	0.010	0.014	0.038	0.075	0.010	0.014	0.038	0.075				อเาติไ
20 mg	8.005	0.010	0.014	0.035	0.070	0.010	0.014	0.035	6.670	0,003	0.010	0.030	
10 mg	0.005	0.010	0.014	0.039	0.060	0.010	0.014	0,030	O'DED	0.002	0.008	0.025	0.08
5 mp	0.005	0.010	0.014	0.028	0,055	0.010	0.014	0.028	0,055	0.002	0.006	0.020	0.06
3 mg	0,005	0,010	0.014	0.026	0.052	0.010	0.014	0.025	0.052	1.			
2 mg	0.005	0.010	0.014	0.025	0.050	0.010	ρ.014	0.025	0.050	0.002	D.006	0.020	0.05
1 mg_	0,005	0.010	0.014	0.025	0.050	B.010	0,014	0,025	0.050	0,002	0.005	0,020	0.05

For values between those shown on the chart use the value of the weight which would fell below it on the chart. For hon-metric weights convert to make and fellow the same procedure. For example: If using a 400 gram or a 1 fo (452.8g) weight use the following for 300 grams. For elected not shown contact Denver linear union the veights are adjusted to class zero tolerances but meet class 1 specifications for markings and density.

Uncertainty

The combined uncertainty includes: Type A components: The standard deviation of the balance. Type 8 components: Uncertainty of the Air Dansity Calculation, Uncertainty of the Standard's Density, and the Uncertainty of the Density of the mass under test. The combined uncertainty is multiplied by a coverage factor of 2 to give the expanded uncertainty at the 95 percent confidence level. The expanded uncertainty presented in this report is consistent with the ISO Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty should not be used as a tolerance limit by the user during application.

When to Recertify Mass Standards

ISO/IEC 17025 paragraph 5,10.4.4 states: "A calibration certificate (or calibration label) shall not contain any recommendation on the calibration interval except where this has been agreed with the client." Therefore, Denver Instrument Company does not provide a calibration due date. Setting calibration intervals is the responsibility of the and user. As a general guidaline the following calibration intervals may be appropriate:

1. Normal usage;

One year

2, Heavy daily use;

Three - six months

3. Light usage:

Two - three years

Normal usage can be dally but only one or two times a day. Heavy usage is dally use in excess of ten or more times a day. Light usage would be two or three times in a three-month period. Weights should also be recertified if they become contaminated with foreign material or are subjected to dropping, absacion, scretching or denting. If the user experiences significant changes in mass between calibrations a reduction in the calibration interval should be considered. If you would like to discuss your specific requirements please give us a call.

Page 2 of 2

Report of Traceability

ANSI/ASTM Class1

.... 100 gram(s)

S/N: 97-732977-1 Date: 04/10/97

Material Stainless Steel Density: 7852/cm

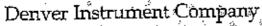
ed Contra Indicarent Cometante truphe him been unified asing standards of most bassable to the National Institute of Bandards and Introduce (NIST) and meet in many specifications for type and class.

Primary Set MT55 NIST Test. #822/257022-96 6/14/96

Secondary Set # MT50 Date 11720796

Signature:

Date Seal Broken:



5542 Fig Street • Arvada, Colorado উ0004` ১ 303/431-7255 •1-800-321-1135• FAX 303-423-483

Report of Traceability

ANSI/ASTM Class 1

10 gram(s)

S/N: 97-J32832-18

Material: Stainless Steel Density: 7.85g/cm³

All Denver Instrument Company weights have been verified using standards of mass travelle to the National Institute of Standards and Technology (NIST), and meet as wood specifications for type and dass.

Primary Set MT55 NIST Test #822/257022-96 6/14/96

Secondary Set # <u>MT50</u> Date <u>11/20/96</u>.

Signature: 7.

Date Seal Broken:

Denver Instrument Company

6542 Fig Street • Arvada, Colorado 80004 303/431-7255 •1-800-321-1135• FAX 303-423-4831

ANSI/ASTM Class 1

1 gram(s)

S/N: 97-733700-21 Date 05/27/97

Type: 1 Material: Stainless Steel Density: 7.85g/cm³

All Bensin Instrument Company insights have been verified using standards of mose transable to the National Institute of Standards and Technology (NIST) and med or exceed specifications for type and dass.

Primary Set MT55 NIST Test #822/257022-96 6/14/96

Secondary Set # <u>MT50</u> Date <u>05/20/97</u>

Date Seal Broken:

Denver Instrument Company

6542 Fig Street - Arvado, Colorado 90004 303/431-7255 -1-900-321-1135- FAX 303-423-4833



Analytical Instruments Company, Inc.

Laboratory Balance Service, Calibration & Repair Since 1975
Member, American Society for Quality (ASQ)
P.O. Box 97112 Pittsburgh PA 15229-0112
Phone or Fax (412)-367-5776

CALIBRATION REPORT

DATE OF SERVICE: August 29, 2006

NEXTCALIBRATION DUE DATE: August 30, 2007

CLEAN AIR ENGINEERING, INC.
ATTN: LILLIAN CRAWFORD
1501 PARKWAY VIEW DRIVE
PARKWAY WEST INDUSTRIAL PARK BLDG 16
PITTSBURGH PA 15205-1409
[millicital lillion in millicital lillion lillion lillion lillion lillion lillion li

Procedures:

- A.) Toploading balances > one kilogram capacity use procedure ASA.
- B.) Topicading balances <= one kilogram capacity use procedure A4A.
- C.) Analytical balances use calibration procedure A1A.
- D.) Micro balances use procedure A2A.

Nr.	Manuf.	Model	Serial Nr.	Location	Cal. Weight/, Procedure	Pre-Service Reading	Post-Service Reading	Readability	Repeatability	Condition or Not/Serviced
í	FISHER	XA-200	4160	FIELD	200g / B	NOT IN LAB	NOT SERVICED	 -		NOT SERVICED
2	CHAUS	AF250D	1127292828	LAB	100g / C	10.00039/ 50.00160/ 100.0027/ 200.0052	10.00000=> 50.00000/ 100.0000=> 200.0000	. 0,1	0.03/ 0.2	GOCD SCINT
3	A&D	EK41001	P1840031	FIELD	4 kg / A	500.1/ 1000.1/ 2000.2/ 3000.3/4000.4	5000=> 4000.3	100	100	GOOD SC EXT
4	A&D	[EK4100î Î	P1840029	FIECO	4 kg / A	1000.0/ 2000.0/ 2399.9/ 3999.8	1000.5=> 400G.0	100	100	GOOD SC EXT
5	A&D .	EK4100i	P1640031	FIELC	4 kg / A	1000.1/ 2000.2/ 3000.4/ 4000.6	1000.0=> 4000.0	100	100	GOOD SC EXT
Ē	A&D	EK4100i	P1840031	FIELD	4 kg / A	1000.0/ 1699.9/ 3000.0/ 3999.9	1000.0=> 4000.9	100	100	GOOD SC EXT
7	OHAUS	T\$4000	4970	FIELD	∳kg/A ,	1000.0/ 2000.2/ 3000.3/ 4300.4	1000.G=>- 4000.0	100	100	GOOD SC EXT
8	OHAUS	AP250D	1127293152	FIELD	100g / C	10.00011/ 50.00027/ 100.0001/ 200.0005	10.00000/ 50.00000/ 100.0000/ 200.0000	0.01/ 0.1	0.03/0.2	GOOD SC INT

Samuel M. Prepelka, Pres.

August 29, 2006

Date

♦ NIST TRACEABLE WEIGHTS CERTIFICATION ♦ NRD ANTISTATIC PRODUCTS ♦ MEMBER, AMERICAN SOCIETY FOR QUALITY (ASQ) ♦ SERVICING BALANCES FROM NEW YORK TO CALIFORNIA FOR OVER THIRTY YEARS THANK YOU FOR CHOOSING ANALYTICAL INSTRUMENTS COMPANY:

Seerch Subjects

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Search Results: 1 records found for the following search criteria:
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County: ALLEGHENY
State: PA

Search Again

2-760: Clean Air Engineering

Timothy D Rodak 1601 Parkway View Dr Pittsburgh , PA 15205-1409 Allegheny County (412) 787-9130

Search Again

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DEPARTMENT OF ENVIRONMENTAL QUALITY

KATHLEEN BABINEAUX BI ANCO GOVERNOR MIKE D. McDANIEL, Ph.D. SECRETARY

CERTIFIED MAIL #7007 0710 0005 6108 1458 Return Receipt Requested

June 30, 2007

AI #85668

LELAP Certificate #03099

Mr. Robert Doran Clean Air Engineering 321 Century Plaza #130 Houston, TX 77073

RE: Accreditation Certificate

Dear Mr. Doran:

In accordance with Louisiana Administrative Code, Title 33, Part I, Subpart 3, Laboratory Accreditation, the State of Louisiana formally recognizes that this laboratory has successfully completed the accreditation process and is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the altachment. Accreditation does not constitute an endorsement of the suitability of the listed methods for any specific purpose. Parameters or analytes that the laboratory has applied for accreditation not included in the scope of accreditation attachment are not accredited.

NELAP accreditation is granted only for those methods/analytes for which "NELAP" is indicated as the type of accreditation. "STATE" is indicated as the type of accreditation for those methods/analytes for which NELAP accreditation is not available. Accreditation is dependent on the laboratory's successful ongoing compliance with regulations as outlined in the Louisiana Administrative Code, Title 33, Part I, Subpart 3, Laboratory Accreditation.

The enclosed accreditation certificate is property of the State of Louisiana. Should a change in accreditation status occur, the Department may recall the original accreditation certificate and attachments. The recalled certificate and attachments should be returned

ENVIRONMENTAL ASSESSMENT

LABORATORY SERVICES DIVISION : PO BOX 4314, BATON ROUGE, LA 70821-4314 P;225-219-9800 F;225-219-9898 WWW.DEG.LOUISIANA.GOV Re: Accreditation Certificate June 30, 2007 Page 2 of 2

to: Office of Environmental Assessment, Louisiana Environmental Laboratory Accreditation Program, P.O. Box 4314, Baton Rouge, LA 70821-4314, Attention: Dr. David L. Boucher.

LAC 33:I.5313.A requires that the laboratory report must include all relevant information. Therefore, the certificate number shall be placed in the upper right corner of all laboratory reports. If the test report includes results of any test for which the laboratory is not accredited, the unaccredited results must be clearly identified as such.

Please be advised that it is your responsibility to examine the scope of accreditation attachment for accuracy and completeness. If you find that an analyte for which you expected to be accredited is not listed, please examine your records to ensure that:

- You have met the requirements for successful participation in proficiency test studies as outlined in LAC 33:L4711 and in the NELAC Standard 2.7.2.
- In the case of accreditation by recognition, the requested analyte must be listed for the requested method and matrix on both the certificate issued by the Primary AA and on the Louisiana application form.

If you have any questions, please contact the Louisiana Environmental Laboratory Accreditation Program at (225) 219-9800.

Sincerely,

Dr. David L. Boucher, Acting Supervisor

Louisiana Environmental Laboratory Accreditation Program

đb

Enclosure



STATE OF LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to:



Clean Air Engineering 321 Century Plaza #130 Houston, TX-77073

Agency Interest Nov 85668

According to the Louisiana Administrative Code, Title 33, Part I, Support 3, LABORATORY ACCREDITATION, the State of Louisiana formally, recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and acknowledges that continued accreditation is dependent on successful engoing compliance with the applicable requirements of Part I. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory, and does not constitute an endorsement of the suitability of the listed methods for any specific application.

To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:L4711.

Melvin & Mitchell Sr., Accreditation Officer

Louisiana Environmental Laboratory Accreditation Program

Certificate Number: 03099

Expiration Date: June 30, 2008

Issued On: July 1, 2007

Page 1 of 5

Organization

03099

(281) 443-6400

Clean Air Engineering 321 Century Plaza #130 Houston . TX 77073

Louisiana Stack Testing Program Certification Method AA Method Ref Analyte Status Date Effective Type' Code NCASI DIMEOH 94.03 Methanol Accredited. 7/1/2003 STATE ĿA 695 1217 Accredited 7/1/2003 STATE LA Method 1 40 CFR 60 App. A Traverse Points 7/1/2003 STATE LA 1219 Method 10 40 CFR 60 App. A Carbon monoxide (CO) Accredited 1232 Method 10A 40 CFR 60 App. A Accredited 7/1/2003 STATE LA Carbon monoxide (CO) STATE 1233 Method 108 40 CFR 60 App. A Carbon monoxide (CO) Accredited 7/1/2003 LA 1248 Method 1A 40 CFR 60 App. A Traverse Points Accredited 7/1/2003 STATE LA LA 1249 Method 2 40 CFR 60 App. A Stack gas velocity, volume flow rate Accredited 7/1/2003 STATE 1250 Method 20 40 CFR 60 App. A Nitrogen Oxides (NCx) Accredited 7/1/2003 STATE £Α 1250 Method 20 40 CFR 60 App. A Accredited 7/1/2003 STATE LA Çxygen 7/1/2003 STATE LA 1250 Method 20 40 CFR 60 App. A Sulfor diaxIde Accredited 7/1/2009 STATE LA 1251 Method 201A 46 CFR 51 App. M Particulates <10 um Accredited 1252 Method 202 40 CFR 51 App. M Particulate Matter <2.5 um. Accredited 7/1/2003 STATE LA 1262 Method 22 40 CFR 68 App. A Visible emissions from coke oven batteries Accredited 7/1/2003 STATE LA 7/1/2003 STATE Accredited £A. 1271 Method 2A 40 CFR 69 App. A Stack gas velocity, volume flow rate in small stacks/ducts 7/1/2003 STATE LA 1272 Method 28 40 CFR 60 App. A Stack gas velocity, volume flow rate Accredited Accredited 7/1/2003 STATE LA 1273 Method 2C 40 CFR 50 App. A Stack gas velocity volume flow rate in small stacks/ducts Accredited 7/1/2003 STATE LA 1274 Method 2D 40 CFR 60 App. A Stack gas velocity, volume flow rate in small stacks/ducts 7/1/2003 STATE LA Accredited 1275 Method 25 40 CFR 50 App. A Stack gas velocity volume flow rate Accredited 7/1/2003 STATE LA 1276 Method 2F 40 CFR 60 App. A Stack gas velocity, volume flow rate 1277 Method 2G 40 CFR 60 App. A Stack gas velocity, volume flow rate Accredited 7/1/2003 STATE LA Accredited 7/1/2003 STATE LA. 1278 Method 2H 40 CFR 50 App. A Stack gas velocity, volume flow rate STATE 1279 Accredited 7/1/2003 LA Method 3 40 CFR 60 App. A Carbon dioxide loxygen dry molecular weight 1295 Method SA 40 CFR 60 App. A Carbon dloxide Accredited 7/1/2003 STATE LA 7/1/2003 STATE LA 1295 Method 3A 40 CFR 80 App. A Охудел Accredited 1297 Method 33 40 CFR 60 App. A Accredited 7/1/2003 STATE LA Emission Rate Correction Factors 7/1/2003 STATE 1298 Carbon dioxide Accredited: ĽΑ Method 3C 40 CFR 60 App. A 1302 Method 4 40 CFR 60 App. A Mosture content Accredited 7/1/2003 STATE: ĽΑ

Issue Date: July 1, 2007

Expiration Date: June 30, 2008

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Page 2 of 5

Organization 03099

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Clean Air Engineering 321 Century Plaza #130 Houston, TX 77073

Viethod Code	Method Ref	Analyto	Status	Date Effective	Type	AA
1303	Method 5 40 CFR 80 App. A	Particulates .	Accredited	7/1/2003	STATE	LA
1304	Method 5A 40 CFR 60 App. A	Particulates from asphalt processing	Accredited	7/1/2003	STATE	LA
305	Method 5B 4B CFR 50 App. A	Particulates	Accredited	7/1/2003	STATE	L.A
13C 6	Method 5D 40 CFR 60 App. A	Particulates from fabric filters	Accredited	7/1/2003	STATE	^
1307	Method 5E 40 CFR 60 App. A	Particulates from wool fiberglass insulation	Aoxedited	7/1/2003	STATE	LΑ
308	Method SF 40 CFR 60 App. A	Particulates	Accredited	7/1/2003	STATE	LA
1315	Method 6C 43 CFR 60 App. A	Şulfur diaxide	Accredited	7/1/2003	STATE	LA
1321	Method 7E 40 CFR 60 App. A	Nitrager, Oxides (NOx)	Accredited.	7/1/2003	STATE	LA.
1764	Method 101A 40 CFR 61 App. B (Sample Only)	Mercury •	Accredited	7/1/2003	STATE	1.A
1789	Method 11, 40 CFR 60 App. A (Sample Only)	Hydrogen sulfide	Accredited	7/1/2003	STATE	LA
1793	Method 12 40 CFR 60 App. A (Sample Only)	Lesi ·	A cco dited	7/1/2003	STATE	LA
1797	Method 13B 40 CFR 60 App. A (Sample Only)	Fluoride	Accredited	7/1/2003	STATE	LA.
1799	Method 14 40 CFR 60 App. A (Sample Only)	Fluoride	Accredited	7/1/2003	STATE	LA
1501	Method 15 40 CFR 60 App. A (Sample Only)	Carbon disulfice	Accredited	7/1/2003	STATE	A_1
1601	Method 15 40 CFR 60 App. A (Sample Only)	Carbonyl sulfide	Accredited	7/1/2003	STATE	LA
1801	Method 15 40 CFR 60 App. A (Sample Only)	Hydrogen sulfide	Accredited	7/1/2003	STATE	LA
1203	Method 15A 40 CFR 60 App. A (Sample Only)	Total reduced sulfur	Accredited	7/1/2003	STATE	LA
1805	Method 16 46 CFR 60 App. A (Sample Only)	Dimethyl Disulfide	Accredited	7/1/2003	STATE	LA
1805	Method 16 40 CPR 60 App. A (Sample Only)	Dimetryl Sulfide	Accredited	7/1/2003	STATE	LA
1805	Method 16 40 CFR 60 App. A (Sample Only)	Hydrogad sulfide	Accedited	7/1/2003	STATE	LA
1805	Method 16 40 CFR 60 App. A (Sample Only)	Methyl Mercepten	Accredited	7/1/2003	STATE	LA
1807	Method 16A 40 CFR 80 App. A (Sample Cnly)	Total reduced suffur	Accredited	7/1/2003	STATE	LA
1809	Method 16B 40 CFR 50 App. A (Sample Only)	Total reduced sulfur	Accredited	7/1/2063	STATE	ĻΑ
1811	Method 17 40 CFR 50 App. A (Sample Only)	Particulates	Accredited	7/1/2003	STATE	ĹĄ
1813	Method 18 40 CFR 60 App. A (Sample Only)	Gasedus Organic Compound Emissions	Accredited	7/1/2003	STATE	LA
1815	Method 19 40 CFR 60 App. A (Sample Only)	Nitragen Oxides (NOx)	Accedited	7/1/2003	\$TATE	LA
1815	Method 19 40 CFR 60 App. A (Sample Only)	Particulates SO2 NOx sulfur removal efficiency	Accredited	7/1/2003	STATE	LA

Issue Date: July 1,2807

Expiration Date: June 30, 2008

Organization .

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(281) 443-6400

Clean Air Engineering 321 Century Plaza #130 Houston, TX 77073

	na Stack Testing Program Certification					
Method Code	Method Ref	Analyte	Status	Date Effective	Туре	AA :
1815	Method 19 40 CFR 60 App. A (Sample Only)	Sulfur dioxida	Accredited	7/1/2003	STATE	LA
1547	Method 23 40 CFR 60 App. A (Sample Only)	Dioxins/Futanş	Accredited	7/1/2009	STATE	1.A
1849	Method 25 40 CPR 60 App. A (Sample Only)	Gaseous Nonmethane Organic Emissions	Accredited	7/1/2003	STATE	. LA
1851	Method 25A 40 CFR 60 App. A (Sample Only)	Gaseous Organic Emissions	Accredited	7/1/2003	STATE	LA
1857	Method 26 40 CFR 50 App. A (Sample Only)	Bromine (Br2)	Accredited	7/1/2003	STATE	LA
1857	Method 26 40 CFR 60 App. A (Sample Only)	Chlorins	Accredited	7/1/2003	STATE	LA
1857	Method 26 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1857	Method 26 46 CFR 60 App. A (Sample Only)	Hydrogen Bromide (HBr)	Accredited	7/1/2005	STATE	ŁΑ
1857	Method 26 40 CFR 60 App. A (Sample Only)	Hydrogen fluoride (Hydrofluoric scid)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Cnly)	Bromine (Br2)	Accrecited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Chlorine	Accrecited	7/1/2003	STATE	ĻA
1859	Method 26A 40 CFR 50 App. A (Sample Only)	Hydrochlaric add (Hydrogen chloride (gas only))	Accredited	7/1/2003	ŞTATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen Bromide (HBr)	Accredited	7/1/2003	STATE	ĿА
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydroger, fluoride (Hydrofluoric acid)	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 50 App. A (Sample Only)	Actimony	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Arsenic	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Bartura	Accredited	7/1/2003	STAŢĒ	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Beryllium	Accredited	7/1/2003	STATE	LA
1961	Metacd 29 40 CFR 60 App. A (Sample Only)	Cadmitm	befibercoA	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Chromium	Accredited	7/1/2003	\$TAT E	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cobatt	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 80 App. A (Sample Only)	Copper	Accredited	7/1/2003	STATE	LA
1891	Method 29 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Manganese	Accredited	7/1/2009	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Mercury	Accedited	7/1/2003	STATE	LA
1861	Mathod 29 40 CFR 50 App. A (Sample Only)	Nickel	Accredited	7/1/2003	STATE	LΑ
18 £ 1	Method 29 40 CFR 60 App. A (Sample Only)	Phosphorus total	Accredited	7/1/2003	STATE	LA.

Issue Date: July 1,2007

Expiration Date: June 30, 2008

Print Date

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Organization 03099

(281) 443-6400

Clean Air Engineering 321 Century Plaza #130 Houston, TX 77073

Louisian	a Stack Testing Program Certification	· 禁制,他们在一个共享,但就是否是一个不管,他们是一个一个				1. Property 2013
Method	Method Ref	Analyte	Status	Date Effective	Type	AA.
1861	Method 29 40 CFR 60 App. A (Sample Only)	Selenium	Accredited	7/1/2003	STATE	LA.
1851	Method 29 40 CFR 60 App. A (Sample Only)	Silver	Accredited	7/1/2003	STATE	LA
1961	Method 29 40 CFR 60 App. A (Sample Only)	Thaillum	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Zinc	Accredited	7/1/2003	STATE	LA.
1885	Method 306 40 GFR 53 App. A (Sample Only)	Chromium	Accredited	7/1/2003	STATE	LA.
1889	Method 308 40 CFR 53 App. A (Sample Only)	Methanol	Accredited	7/1/2003	STATE	LA
1911	Method 316 40 CFR 63 App. A (Sample Only)	Formakiehyde	Accredited	7/1/2003	STATE	LA
1945	Method 6 40 CFR 60 App. A (Sample Only)	Sulfur dioxide	Accredited	7/1/2063	STATE	LA .
1958	Method 7 40 CFR S0 App. A (Sample Only)	Nitrogen Oxides (NOx)	Accredited	7/1/2003	STATE	LA
1955	Method 7A 40 CFR 63 App. A (Sample Only)	Nitrogen Oxides (NOx)	Accredited	7/1/2003	STATE	LA
1957	Method 7B 40 CFR 6B App. A (Sample Only)	Nitrogen Oxides (NOx)	Accredited	7/1/2003	STATE	<u> </u>
1555	Method 7C 40 CFR 60 App. A (Sample Only)	Nitrogen Oxides (NOx)	Accedited	7/1/2003	STATE	LA.
1961	Method 7D 40 CFR 60 App. A (Sample Only)	Nitrogen Oxides (NOx)	Accredited	7/1/2003	STATE	LA
1965	Method 8 40 CFR 60 App. A (Sample Only)	Sulfuric Acid Mist	Accredited	7/1/2003	STATE	LA
1967	Method 9 40 CFR 60 App. A (Sample Only)	Opacity	Accrecited	7/1/2003	STATE	LA.
1977	SW-846 0010 (Sample Only)	Modified Method 5 Sample Train	Accredited	7/1/2003	STATE	ĻA
1979	SYV-845 0011 (Sample Only)	Acetaldehyde	Accred: 0d	7/1/2008	STATE	LA 1.0
1979	SW-846 0011 (Sample Only)	Acetophenone	Accredited	7/1/2003	STATE	LA L
1976	SW-845 D011 (Sample Only)	Formaldehyde	Accredited	7/1/2003	STATE	LA
1979	SW-846 0D11 (Sample Only)	tsophorane	Accredited	7/1/2003	STATE	LA
1979	SW-346 0011 (Sample Only)	Propionaldehyde	Accredited	7/3/2003	STATE	£A.
1983	SW-846 0023A (Sample Only)	Dioxin & Furan Sampling System	Accredited	7/1/2003	STATE	LA
1965	SW-848 0030 (Sample Only)	Volatile Organic Sampling Train (VOST)	Accredited	7/1/2003	STATE	LA
1987	SW-846 0031 (Sample Only)	Sampling Method for VOCs (SMVQC)	Accredited	7/1/2003	STATE	LA
1951	SW-846 0050 (Sample Only)	sokinetic HCI/CIZ Sampling Train	Accredited	7/1/2003	STATE	_A
1994	SW-846 8851 (Analysis Only)	Midget Implager HCVC/Z Sampling Train	Accredited	7/1/2003	STATE	LA.
1995	\$14-846 0060 (Sample Only)	Antimony	Apprecited	7/1/2003	STATE	ĻA

Issue Date: July 1, 2007

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Organization

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Clean Air Engineering 321 Century Plaza #130 Houston, TX 77073

Method Code	Method Ref	Analyte	Status:	Date Effective		AA
1995	SW-846 0060 (Sample Only)	Arsenic	Accedited	7/1/2003	STATE	LA
1995	\$W-\$46 0060 (Sample Only)	Barlum	Accredited	7/1/2003	STATE	ĻΑ
1995	SW-845 0060 (Sample Only)	Beryllium	Accredited	7/1/2003	STATE	LĄ
1995	SW-846 0060 (Sample Only)	Cadmium	Accredited	7/1/2003	STATE	∴ A
1595	SW-846 0060 (Sample Only)	Cobalt	Accredited	7/1/2003	STATE	LA
1995	SW-846 0050 (Sample Only)	Copper	Accadited	7/1/2003	STATE	LA
1985	SW-846 0060 (Sample Only)	Lead	Acceptited	7/1/2003	STATE	LA
1995	SW-948 0060 (Sample Only)	Manganese	Accredited	7/1/2003	STATE	LA
1995	SW-846 0060 (Sample Only)	Marcury	Accredited	7/1/2003	STATE	<u>-</u> A
1595	SW-846 0060 (Sample Only)	Nickei .	Accredited	7/1/2003	STATE	· LA
1995	SW-848 0060 (Sample Only)	Particulates	Accedited	7/1/2003	STATE	LA
1995	SW-846 0060 (Sample Only)	Phosphorus total	Accredited	7/1/2003	STATE	LA
1999	SW-846 0060 (Sample Only)	Selenium	Accredited	7/1/2003	STATE	LA
1995	SW-846 0060 (Sample Only)	Silver	Accredited	7/1/2003	STATE	LA
1995	SW-846 0060 (Sample Only)	Thallium	Accrecited	7/1/2003	STATE	LA
1995	5W-846 0060 (Sample Only)	Total chromium	Accredited	7/1/2003	STATE	LA
1995	SW-846 0060 (Sample Only)	Zinc	Accredited	7/1/2003	STATE	LA.
1997	SW-846 0061 (Sample Only)	Chromium VI	b shberco A	7/4/2003	STATE	ìА

MON-PORTURE	water cermication					
Method	Method Ref	Analyte	Status	Date Effective	Type	AA
10de 10d53006	EPA 300.0	Chloride	Accredited	1/25/2006	STATE	£A.
10053006	EPA 300.0	Fluoricie	Accredited	1/25/2006	STATE	LA
10053008	EPA 300.0	Nitrite	Accredited	1/25/2006	STATE	LA
10053-006	EPA 300.0	Sulfate	Accredited	1/25/2006	STATE	LA.
10000000	CAN 200.0	Odilete				

Issue Date: July 1, 2007

Expiration Date: June 30, 2008

Print Date

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State of New Jersey Department of Environmental Protection Certifies That

Clean Air Engineering Inc Laboratory Certification ID #: IL004

having duly met the requirements of the
Regulations Governing The Certification Of
Laboratories And Environmental Measurements N.J.A.C. 7:18 et. seq.

State Certified Environmental Laboratory to perform the analyses as indicated on the Annual Certified Parameter List which must accompany this certificate to be valid

Expiration Date June 30, 2008



Joseph F. Aiello, Chief Office of Quality Assurance

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New Jersey Department of Environmental Protection

Environmental Laboratory Certification Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2007 until 06/30/2008

Laboratory Name: CLEAN AIR ENGINEERING INC Laboratory Number: IL604 Activity ID: SLC070001

500 WEST WOOD ST PALATINE, IL 60067

totue	Code	Matrix	Technique Description	Approved Method	Pagameter Description
ropped	CAP01.00005	ΑE	Thermal Conductivity	[EPA 3C]	Carbon Dinxide
)mpped	CAP01.00015	ΑŒ	Spectrophotometric	[EPA IOA]	Carbon monexide
mpged	CAP01.00020	AE	Gas Chromatography / YPD	EPA 15]	Cárbon disulfide
mpped	CAP01.00025	AE ·	Gos Chromatography / FPD	. [EPA 15]	Cathon oxysulfide (Carbonyl sulfide)
moped	CAP01.00035	AE.	Specific Ion Electrode	[EPA 13B]	Fluoride
ropped	CAP01.00040	AΕ	Primary Aluminum Plants	[EPA 14A]	Fluorise
estified	CAP01.00045	ĄĖ	ion Chromatography	[5PA 26] [EPA 26A]	Hydrogen obloride, Halicos and Halogen
корресі	CAP01.00050	AE	Gas Chromatography / FPD	[EPA 15]	řív droge a sultide
pplied	CAP01.00055	ΑË	Emission Sampling Train	[EPA 0051, Rev 0, 12/96]	Impinger HCVC12
mpped	CAPBL00060	AE	Gravimetric	· [EPA 24A]	Icks and coatings
ettilied	CAP01.00065	ΑĒ	Emission Sampling Train	[EPA 0050, Rev 0, 12/96]	Isokinetic HCl/ClZ
pphed	CAP01.00G68	AB ·	Thermal Conductivity	(EPA 3CI	Methane
ppliesi	CAP01.00070	ΑΞ	Thermal Conductivity	ΣESA 3C]	Nimpen
pplied	CAPC1.00100	ΑΈ	Thermal Conductivity	[EPA 3C]	. Охудеа
entified	CAP01.00105	ΑE	Gravianetric .	[EPA 5] [EPA 17]	Particulate Matter
crtified	.CAZ01.00110	AE	Gravimetric	[EPA 5A]	Particulate Matter
ತ್ತಾರ್ಲಿಕರ	CAP01.00115	AE .	Gravimetric	[EPA,5B]	Particulate Matter
ertifie:	CAP01.00120	Æ	Gravimetric	[EPA SE]	Particulate Matter
eráfied	CAP01.00125	ΑB	Grayimetric	[EPA 5F]	Particulate Matter
ertified	- CAP01.00145	AE	Gravimetric	[SFA 201A]	Particulate Matter
ertified	CAP01.00150	ΑΈ	Gravimetric	[EPA 202]	Particulate Matter
hopped	CAP01.00180	ΑE	Standard Methods	[EPA 24]	Surface coatings
hopped	CAP01.00185	AE	Barrum-Thorin Titration	[EPA LSA]	Sulfur, Total Reduced
),ropped	CAP01.00190	ΑE	Barium-Thorin Titration	[EPA i6A]	Suffur, Total Restored
hopped	CAP01.00195	ΑB	Gas Chromatography / FPD	92PA 16B)	Suifur, Total Reduced
pplicd	CAP01.00200	AΞ	Barhum-Thorix Tinstion	[EPA 6]	Sulfur Dioxide
polied	CAP01.00210	AB .	Bacium-Thurist Titration	[EPA 8]	Sulfuric soid
`atemur	CAP03 – Atmos	oberic Organic i	Parameters		·
itatus	Code .	Matrix	Terimique Description	Approved Method	Parameter Description

KEY: AE - Air and Emissions, ET - Biological Tissues, DW - Drinking Water, NPW - Non-Potable Water, SCM - Solid and Chemical Materials

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New Jersey Department of Environmental Protection Environmental Laboratory Certification Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2007 until 06/30/2008

Laboratory Name: CLEAN AIR ENGINEERING INC Laboratory Number: IL004 Activity ID: SLC070001 500 WEST WOOD ST PALATINE, IL 60067

Category:	Category: CAP03 - Atmospheric Organic Parameters										
Status	Code	Matrix	Technique Description	Approved Method	Parameter Description						
Certified	CAP03.00040	AB	GC	[EPA 18]	Volutile organics						

Joseph F. Aiello, Chief

New Jersey Department of Environmental Protection Environmental Laboratory Certification Program

LABORATORY PERSONNEL LIST

Effective as of: 07/01/2007

Laboratory Name: CLEAN AIR ENGINEERING INC Laboratory Number: IL004 Activity ID: SLC070001 500 WEST WOOD ST

PALATINE, IL 60067

Position: Manager	•								
Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments			
DOUGLAS REJODES		7/1/2007		Complete/Qualified					
JAMES WRIGHT		4/27/2004	6/30/2007	Complete Qualified					
Position: QA Officer	•	-							
Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments			
DOUGLAS RHODES		7/1/2007		Incomplete	•				
james wright		4/27/2004	6/30/2007	Complete/Quaitfied					
Position: Supervisor/To	ch Dir								
Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments	-		
PRINCIPAL SALDUOD	\$DW02, WPP02, CAP01 or CAP04	7/1/2007		Incomplete					
IAMES WRIGHT	SDW02, WPP02, CAP01 of CAP04	4/27/2004	6/30/2007	Complete/Qualified					
DOUGLAS RHODES	SDW04, WPF04, SHW04, 09, 10 or CAP02	7/1/2007		Incomplete				•	
JAMES WRIGHT	SDW04, WPP04, SHW04, 09, 10 or CAP02	4/27/2004	6/30/2007	Complete/Qualified					
DOUGLAS RHODES	SDW05, 06, WPP05-07, SHW05-12 or CAP03	7/1/2007	-	Incomplete					
JAMES WRIGHT	SDW05, 06, WPP05-07, SHW05-12 or CAP03	4/27/2004	6/30/2007	Complete/Qualified					

STACK TESTING ACCREDITATION COUNCIL

35704 HUNT AVENUE INGLESIDE, ILLINOIS 60041 E-MAIL: SEVANS®BETTERDATA.ORG

June 7, 2007

Mr.Rob Doran Clean Air Engineering

VIA B-mail

Dear Mr. Doran,

On behalf of the STAC Board of Directors, I am pleased to inform you that Clean Air Engineering has been granted interim accreditation by the Stack Testing Accreditation Council (STAC). After careful review of your Quality System documentation and procedures, STAC has determined that they are in conformance with ASTM D7036-04 "Standard Practice for the Competency of Air Emission Testing Bodies". Final accreditation is contingent upon successful completion of your field audit. Please see Module 3 of STAC policy documentation for scheduling requirements.

During this period of interim accreditation, Clean Air Engineering may not claim to be a STAC accredited organization. This requires evidence that your Quality System is effectively implemented in your organization as determined by the field assessment. You may claim, however, that your Quality System meets ASTM D7036 requirements.

Please note that the Attestation of Compliance you signed as part of your application for accreditation requires Clean Air Engineering to be in continuous compliance with the provisions of ASTM D7036. You are also required to comply with all relevant STAC policies and procedures. I encourage you to review this information.

If you have any questions, please feel free to contact me at 847-654-4569. Thank you for your participation in the STAC process and congratulations.

Scott Evans

Chair, STAC Board of Directors

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CONSOL ENERGY, INC. DRESDEN, NEW YORK Client Reference No: 4700146642 CleanAir Project No: 10247

FIELD DATA

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Impinger Weight Sheet

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empiraero)				Total Welglit (gm)
(mp)riger-6;				36.8
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OF METHOD: 76 PAGE TESTING TEST LOCATION: MIRHEMER WILL Hamoria FIELD DATA SHEET UNIT: RUN: **自新記集部 29 44** (in, Hg) (mbar 直向电影 10247 10450L NIA AES GREENIDGE THE 5-30-07 (3)GLASS 7714 ペパックカックラ 157210 DOM (N)(UP) MA **製作到加速**源线 Samue Box No. 68 A 68.13 NIA **通過過過1.8055** 1.0071 NG BENEVA WA ps//A Darke hierstens in 18 NIA 104 0.84 ODZ (cfml.2pml 2022 AO 100 Hg [In] (Out) [6:pr] [Lpm] [6:pr] [8:0] 18:04 Stanning 4.5 กไทน์Outl (H)(L) **3**30 60.615 VIC= 70.4 * 102 102 Co NIA 634 60 64.08 TK + 215 NIA -19/مدو 17-7-17 7 103 435 1.0 101 67:41 10. 3 103 635 60 100 70.71 15 8 59 99 105 73.93 635 20 99 10 59 106 74,77.10 634 **Z**5 L.C. 0.003 @ 19 Ho 54 100 10 107 80 120 634 30 M, V. - 60- 550 59 100 . 12 104 633 23.92 80.560 59 14 27.30 105 100 635 40 1400 58 100 16 106 640 90,67 45 (D2.) 17 58 106 100 94.05 1,44 50 18 16.5 002 642 59 100 100 97.33 55 18 59 105 642 100 100.535 2549 7641 类。1984年20**年6日**1997 102.4583 Average Circle correct bracketed units on data sheet Sum of square roots. CA/QC JWJ

Date ...

CTM-027

FD9003-Gotherd, Feb 2002 Capr 11711 2002 Class Air Grighteasing Inc.

CTW-DDF. TESTING METHOD: 26 000 PAGE TEST LOCATION: AMMONIA HIR HEATER INLET. FIELD DATA SHEET RUN: UNIT: 29.47 ((in. Hg) (mbar 統長政治部部 75 日間は直転 **全部超過過** 10247 CONSOL (3) 五十五八十五 10/10 超鏡形 ケーラムの子 パ THE DES GREENIDGE CLASS 6-1-07 RICHMRDS" 7721 7/1 KUDAK (N)(UP) NIA Samuel Company 480 68 B reter Box NIA ninde New 1.8055 1.007 No see and to the NIA NA Debt (III) Michigan Shanka 0.84 KRATE BEIDE O MYCEMI (Lom) [in]([Out STORT THE CASE 11:07 din) (Out) (my) 103.655 NIA 87 86 WIA 61 NA 317 106.91 +215 110-87 90 61 110.18 10 93 87 60 13.48 117.210 8 60 95 28 116,795 20 89 10 59 97 120.47 25 12 97 90 59 123.76 30 13 98 90 58 126.98 35 - **-**02 5.1 99 91 16 58 130.255 40.40. ብዬ ፤ C0, - 13.4 W., - 2 55 32-2100 17-22 -\$86-550-650 1464 (26.1850 (91:5000) 1.57 2. Avetane Circle correct bracketed units on data sheet. ONOC JWW Sum of square roots,

FENCES-Constal, For \$102 Copy: (N. O. 2002 Conn Air Englaneting Inc.

Date 823

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· .	TEST L	ATION	A.	HOMIL-R.	14113	- Am	MONTH		· ~	TE:	STING	MET	HOD:	CTW1-021	PAGE	y OF /
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CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No: 4700146642 CleanAir Project No: 10247

FIELD DATA PRINTOUTS

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USEPA Method 3 Laboratory Data

							T	est Mathod:	CTM-027
Location: L	Jnit 4 Afr f	leater Inlet						Analyte:	Ammonia
Client (CONSOLE	inergy - AES Gre	eploge						
Project No: 1	0247								
Method: 1	PA Metho	d 3A						_	
Fuel Type: 1	31tuminous	Coal						Analyst:	D, Dreska
F, for Fuel: 1			-				An	alyst timp No:	364
E SECTION OF THE SECT			WEERSTERN				\$4.5 (P) (1/2/19)		第1883年初的 第28
Run			Percent			Dry Mot.			
Number	Trial	Percent CO₂	O ₂ +CO ₂	Percent O _a	Percent N ₂	Weight	F.	Malhod of	Analysis: CRM
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	3] .					
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Run			Parcent		<u> </u>	Bry Mol.	MARCONING SANTON	ALTERNATIONS STATES STATES STATES	ACTION CONTRACTOR CONT
Number	Trlat	Percent CO ₂	O ₂ +GO ₂	Percent O ₂	Percent N.	Weight	F.	Method of	Analyste: CEM
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	ā			i					
	Avg.	L		•					
CEM or 0	Other Avg:	13.40000		5.10000	81,50000	30.34800	1,17910	ව Fo value within ලද	poctori range.
	12 12 12 1			CAPPETERS (CER					
Run			Percent			Dry Mot.			
Number	Trial	Percent CO ₂	Oz+CO ₂	Percent O ₂	Percent N _Z	Weight	F _n	Method of	Analysis: CEM
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	2								
	3	<u> </u>		j					
	Avg.						4 40000	(a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	
CEM or 6	Other Avg:	12.4DD0D	- Julian Cardon Cardon (Cardon Cardon Ca	6,40000	81.20000	30,24000 201550-04072	1,16936 #:855 979/6/2006	ি Fig value Within ex জন্মনার প্রসামিত	penenvenje.
Run	ALCONOMICS.		Percent	THE PARTY OF THE P	eleganes delaces	Bry Mol.	<u> Harakteri baktanan</u>	SANCESCON DESCRIPTION	
Number	Trial	Percent CO2	O ₂ +CO ₂	Parcent O.	Percent N ₂	Weight	F.	Melitod of	Analysis:
Homber	1	LAICON COS	014202		1 0104110 112				
	2		<u>-</u>	4					
	3	 		1					
	Avg.			_					
CEMOD	Other Avg:							☐ Fo value within ex	
STATE SAME			Allegia o Astronomos Societas o Astronomos			4.22		到结果发现的	

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USEPA Method 4 Laboratory Data

					Test Method:	
	r: Unit 4 Air Healer Inlet				Analyte:	
Cli∈n	I; ÇDN\$DL Etergy - AES	Greenidge			Analysi	
Project No	x 10247				Analysi Emp No	
			然是杨旭	FRANCIS	而是他的人们的人们的人们的人们	医热量水量影型器以下水量等并成
Test Ru	r <u></u>	J				
	6	gtt	7 ()	U-14>		
	Contents		Tare (gm) 782,8	Net (gm) 35.8		
Implinger 1	0.1 N H2SO4	793,7		13.4		
Impinger 2	0.1 N H2SD4	76§.2 663.2	747,8	13.4 4.4		
Impinger 3	Empty	917.2	658,8 901,5	15.7		
tmpinger 4	Bilica Gol	\$11.2	90),0	13.7		
Impinger 5		 			54.7 Liguid (gm)	Tield Date Check
impinger 6 Impinger 7		 	——i		O.O Jess rigsa (gm)	And the state of t
				-	54.7 Net Liquid (gm)	54.7 € Q QVQC OK
Impinger B					+ 15.7 Stilica Gel (gm)	15.7 C 2 QVQC OK
		Rinse:		(mlorgm)	70.4 Total Vic (gm)	70.4 2 UNOCON
Neonalization (Strate)	ON CONTRACTOR PROPERTY AND THE	<u>क्ष्मित्रक क्ष्मिक्ष</u>	erielisiin.	2002/2012/15/15/15/15/15/15/15/15/15/15/15/15/15/		
Test Ru	1772/(1722/1724/1724/1724/ τ	Marion III - Inchini - Inc	manage por	COLUMN CONTRACTOR DE CONTRACTO	<u> 19 mil 14 man e grân sûn sûn sûnê ka bişêrîn pebi îpêran.</u>	CONTRACTOR
1001104	<u> </u>					
	Contents	Gross (gm)	Tare (gm)	Met (gm)		
Englinger 1	0.1 N H2904	780.0	759.3	29.7		
Impinger 2	0.1 N H2804	776.3	764.9	10,4		
Empinger 3	Emply	584,9	880.0	4.9		
նորինցա 4	SRica Gel	843.7	831.1	126		
Empinger 5	anna an	4743.7	031.11	ILU		
Impinger 6			-···		45.0 Liquid (gm)	Fleid Dala Chook
Impinger 7			\dashv		0.0 loss rinse (gm)	Control of the contro
Ampinger B			[-	45,0 Net Liquid (gm)	45.0 to 2 navoc no
Muhuilles o		L			+ 12.6 Sifica Gel (gm)	12.8 2 Q QVQCQK
		Rinse;		(m) or gm) =	57.6 Total Vic (gm)	57.6 ☑ Q4QC OK
managan da		Volume Trees of the	100 and	18.82 (19.72.50		
Test Rut		1				
132,112	··	_				
	Contonts	Gross (gm)	Tare (gm)	Net (gin)		
lmgånger 1	0,1 N H2SO4	793.8	766.5	27.3		
Impinger 2	0.1 N H28O4	760.4	751.6	0.8		
Impinger 3	Emply	663.2	GCO.5	2.7		
Implager 4	Sifica Gel	928,5	916.5	10.0		
linginger 6						
Impinger 8					38,8 [Jkjuld (gm)	Field Data Check
Implager 7					O.O less tinse (gm)	Contraction to Section 10 to 1
Ampinger 0				_	38.8 Not Liquid (gm)	38.8 (2 OA/OC OK
• -				_	+ 10.0 63ica Gel (gm)	10.0 美国教(@0)
		Rinses		(m) or gm)	48.8 Total Vic (gm)	48.8 □ QNQCOK
在100 年100年	SANCE OF THE PROPERTY OF SANCE OF SANC		5-11-12-25-17			
Test Run	: <u> </u>]				
	Coptents	Gross (gnt)	Tare (gm)	Net (gm)		
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Impinger 2		!				
impinger 3						
Imploger 4						
իրփնկցել 5		<u> </u>				entermentence productive (A.S.
Joupinger B					Liquid (9m)	Field Data Checks
Impinger 7]	_	leas (insa (gn))	Harry to the control of the control
impinger 8			:		Nat Llouid (gm)	- For Linguisting
		. —		=	Stilca Get (gm)	□ OVOCOK
principle (Suffered to America	ÉNOTIS EXHEOTERANOTAN INCIDENT	Rinse:	[mi er gm)	Total Vic (gm)	j gyrjenki
BURNEST PRO			22 4 7 A T	机构成物的		
						कारू १००१क
						04P#
						* 111 Mg

Prepared by Clean At Enghanding Prophiling Ectives so is 000H 6732 Virulas 2004 3a Engylyti B 2001 (dan Air Enghanting Inc. 0,000 <u>\W</u>).

Field Data Printont

Test Mathod: Analyte:

CTM-027 Ammonia

Location: Unit 4 Air Heater Inlet

Trist Run; 1

Cheric COMSOL Energy - AES Greenidge

Project No: 10247

Leak Rate Affor: 0.003

Meter Operator, T. Richards Probe Operator: E, Dosk Tost Date: 6/31/07 Start Time: 18:04 Stop Time: 19:14 Leak Rate Gefore: 0.002

2a 10 Hp

29 18 Hg

cim

cim

Выг. Ргезе. (Іл. Нд): 29.44

O₂ (dry volume %): 4.40 CO₂ (dry volume %): 16.50 N₂+GO (dry volume %): 79.10 Nozzie ID No: NA Nozzie Diameter (D_e): NA Probe ID No: NA PRot D_e: D_B4 Plick Look Check: Pess Fas

H₂O (condensate, mt or gm): 54.7

H₂O (skice, g): 15.7 Arburi (Aufsture (%): 8.25 Meter Box ID. No: 68-8 Meter ΔHgb: 1.80550 Meter Y_d: 1.00710

Leak Katia Ariota (wooda tan ha 19 na)						-	(+			
(Traverse	Run Time	Pitol	Sample	Melemd	Slack	Dry Ga	s Meter	[46P.	Volume	IsoMnetica
Potent	5,0 min/read	ΔP.	ΔΗ	(del)	т.	T _{m-in}	Tm-ett	(calculated)	(calculated)	(çalculațed)
	0.0	(in. H ₂ O)	(m. H ₂ O)	60.G15	("F)	(°F)	(°F)	(√in. (4 <u>,0)</u>	(n³)	(%)
2-01	5.0		1.50	04,000	634	102	102	302233	3.47	
2-01	10.0		1,50	87.410	635	103	101 100		3.33 3.30	
2-01	15.0 20.0		1.50 1.50	70.710 73.930	635 635	103 105	50		3.22	34
2-01 . 2-01 .	25.0		1.50	77.100	634	106	89		3,17	
2-01	ap.p		1.50	00.120	634	107	100	建熟等	3.02	
Leak Check	30.0			80.550	530	104	100		3.38	
1-01	35,0 40.0		1.50 1,50	93,920 67,300	639 635	104	100		3.38	
1-01	45.0		1.50	50,670	840	106	100	南京縣為	3,37	
1-01	50,0		1.50	94.050	642	108	100		3.38	
1-01	55.0	部海蛇	1.60	97.330	642 642	105 105	100 100	44.5	3,29 3,21	
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dC Chick Flet	d Averages 2-19	\$2450 KG	1.5000	39,480B	638.7500	102	,4603	150 11 10 10 10 10 10 10 10 10 10 10 10 10	em modern i de distribuir de de distribuir de distribuir de distribuir de distribuir d	The state of the s
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Fleid Date Printout

Test Method: Analyle:

CTM-027 Аттопів

Location: Unit 4 Air Healer Inici

Test Run; 2

Lesk Rate Before: 0.003

Leak Rate Atlen 0.002

Client: CONSOL Energy - AES Greenlege

Project No: 10247

Meter Operator, T. Richards Probe Operator, T. Rodek 228 Tost Dele: 6/01/07 Start Time: 10:20 \$1:07

@ 15 T ig

@ 15 Hg

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Ber. Pross. (in. Hg): 28,47

O₂ (day volume %): 5.10 GO₂ (dry volume %): 13.40 N₂+CO (day volume %): 81,59 Nozzie ID Nozik<u>A</u> Nozzie Diameter (D₁): NA Prohe ID Not NA Pitol C_p: 0.84 Pilot Leak Check: ☑ Past. File

H₂O (condensate, ml or gm): 45.0 H₂O (slāce, g): 12.8 Actual Moisture (%): 0.14

Meter Box (D. No: 68-B Meter ΔH@; 1,80550 Meler Y₄: 1,00710

Traverse	Run Time	Pkot	Sempto (Melered	Stack	Dry Ga	s Meler	√AP.	Volume	leokénetice
Point	5.0 minhead	ΔP _e	AH	(det)	∣ т, ∣	T _{m-lin}	Tnon	(ca(culs(ed)	(calculated)	(cajct/alet)
	0.0	(in. H ₂ O)	(AL H ₂ O)	103.655	(°F)	(°F)	(°F)	(մտ, ենք)	(ñ³)	(%)
1-01	5.0	PART	1,50	108,910		87	66	玩戏乐学	3.28	
1-01	10.0		1.50	110,180 113,480		90 93	87 87		3.27 3.30	
1-01 1-01	15.0 20.0	19	1.50 1.50	116,795	黑海蓝	95	88		3.32	
Leak Check	20.0		''	117,210						
2:01	25.0		1,50	120.470		87	89		3.28	
2-01	30.0		1.50	128.980 128.980		97 98	6D 50		3.29 3.22	
2-01 2-01	35.0 40,0		1.50 1.50	130.255		. 88	91		3.27	
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propose by the Mic Englanding Propinities & Street yn Jacoph Fijld Marsho 2006-17a Copplete B 2005 Clean Ab Englanding too.

Field Data Printout

Test Method:

CTM-027 Ammonfa

Analyte: Location: Unit 4 Air Flester Intel Test Run: 3 Nozzie ID No: NA Nozzie Diameter (O_A): NA Bar, Press. (In. Hg): 29.44 Client: CONSOL Energy - AES Greenloge Project No; 10247 O₂ (dry volume %): 8,46 Probe ID No: NA CO₂ (Gry volume %): 12.40 PHot C_p, 0.84 Meler Operator: T. Richards 714 N₂+CO (dry volume %): B1.20 Pētit Leak Check: ☑ Fest Fall Prote Operator: T. Rođak 228 Test Cale: B/D1/07 Start Time: 12:05 H_2O (condensate, intergral): 38.8 Meter Box ID, No: GR-B 610p Time: 12:52 Motor ∆H@: 1,80550 Meter Y₄: 1,00710 H₂O (silica, g): 10,0 Loak Role Before: 0,003 **数 15 °Hg**

@ 20 °Hp

cấm

Actual Moisture (%): 0,14

	Traverse	Run Time	Pitot	Sampta	baretaM	Stack	Dry Ga	s Meter	√AP.	Volume	leokinsáka
	Point	G.O rein/ceads	ΔP.	ΔН	(네너)	[т.	T _{m-in}	Trocat	(catculated)	(colpainted)	(calculated)
		0.0	(ln. H ₁ O)	(m. H ₂ O)	130,710	(°F)	(°F)	(F)	(√n. H₂O)	(ft ²)	(%)
	2-01	5,0	医	1.50	134.110		B3	93		3,40 3,31	
	2-01 2-01	10.0 15.0		1,60 1.50	137.420 140.680		94 97	92 92		3.25	
	2-01	20,0		1,60	143.80D		99	83	東京新雄	3.22	
	Leak Cleack	20.0	超過		144.175						
	1-01	26,0		1.50	147.500	TOTAL	160 160	93 94		3.32 3,34	
	1-01	30.0 35,0		1.50 1.50	159.840 154.840		101	97		3.40	
	1-01	40.0		1.80	157.625	1100	102	95		3,38	
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	Congression of the	territor menical	et Timbin	(CII AS OX	-ET-WE-PERSON	Ut Printing Contraction	200 10 10 10 10 10 10 10 10 10 10 10 10 1	Ng 108	i undeiget geget gege	Total Control of the	talket loomak Seiner kej ne pekseringe
											*

Proporting Chan Ali Enghandra Propinsi An 85 (80)(1)(2)(6) Vinden (100)(100

Look Rate Affect 0,003

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CONSOL ENERGY, INC. DRESDEN, NEW YORK

Client Reference No. 4700146642 CleanAir Project No. 10247

LABORATORY DATA

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TOTAL AMMONIA ANALYSIS DATA SHEET Analytical Technique: Ion Specific Electrode

10247 Project No. Date of Analysis 05/31/07

CALIBRATION DATA	
Concentration	Électrode
of Standard*	Reading
C (mg/liter)	P (mV)
100	39.2
50	58,3
10	93.6
Б	109.5
1	146.2
0.5	162,0

Residuals	
Calculated	
Concentration	Percentage
C (mg/ilter)	€rror
193.058	3.1
49.172	-1.7
9,832	-1.7
4,920	-1.6
1.005	0.5
B.507	1.5

Log (C) (mg/liter) 2.00000 1.69897 1.00000 0.69897 0.00000 -D.30103

Regression Analysis Results

Itedieses survivaled	
Stope (m)	-0,01879
Intercept (b)	2,749754
Correlation (r2)	0.999884

Form of Equation: Log(C)=(m)(P)+b

SCR 126.6" (EVEL SAMPLE DATA AND RESULTS

SUR 120.0 CAVEL SAMPLE DATA AND RESOLUTION						
	Sample	Sample	Ejectrode	Dilution	Ammonia	Total
	Collection	Volume	Potential	Factor	Concentration	Ammonia
Sample Number	Date	ml	mV	[_mg/liter	mg
R1 Probe & Jumper	05/31/07	208	76.8	1"	20,2518	
R1 Imp 1 Catch	05/31/07	195	301.0	1	0.0012	0.0002
R1 Imp 2&3 Catch	05/31/07	280	231.5	1	0.0261	0.0070
KT IIIIP 2003 GARCII	00101101				·	·,

84 F 69 F 71 F

^{* -} assumes standard is ammonla as NH₃

TOTAL AMMONIA ANALYSIS DATA SHEET Analytical Technique: Ion Specific Electrode

10247 Project No. 06/01/07 Date of Analys

CALIBRATION DATA

CATIBRATION DATA	
Concentration	Electrode
of Standard*	Reading
C (mg/liter)	P (mV)
100	42.7
50	58.4
10	92.0
5	107.5
1	141.8
0.5	157.4

Residu	ai	į
	$\overline{}$	_

Residuais	
Calculated	
Concentration	Percentage
C (mg/liter)	Error
100.913	0.9
48.691	-2.6
10,235	2.4
4.984	-0.3
1.014	1.4
0,492	-1.7

Log (C) (mg/liter)

2.000001,69897 1.00000 0.69897 0.00000 -0.30103

Regression Analysis Results

Medical Maria Monto	
Slope (m)	-0.02016
Intercept (b)	2.864755
Correlation (r2)	0.999906

Form of Equation: Log(C)=(m)(P)+b

SCR 126.6' LEVEL SAMPLE DATA AND RESULTS

	0017 IEV.4 EC					
· · · · · · · · · · · · · · · · · · ·	Sample	Sample	Electrode	Dilution	Ammonia	Total
	Collection	Volume	Potential	Factor	Concentration	Ammonia
Sample Number	Date	mì	mV	ļ	mg///ter	mg
R2 Probe & Jumper	08/01/07	153	74.2	i <u>1</u>	23,3B44	3.6778
R2 Imp 1 Catch	06/01/07	211	293.1	1	0.0009	0.0002
R2 imp 2&3 Catch	08/01/07	210	291.2	1	0.0010	0.0002
R3 Probe & Jumper	06/01/07	192	76.6	1	20.9191	4,0165
R3 Imp 1 Catch	06/01/07	495	303.4	1	0.0006	D.0001
R3 mp 2&3 Catch	06/01/07	265	130.4	1	1.7217	0.4563
Field Blank	06/01/07	431	156.3	1 1	0.5174	0.2230
				_		

77.7 F **6**9 F 71.3 F 77.5 F 69 F 71.9 F

^{* -} assumes standard is ammonia as nh3



CleanAir Engineering, Inc.

500 West Wood Street Palatine, IL 60067

<u>Laboratory Report</u> CleanAir Project No: 10247

> <u>Analytes</u> Ammonium

Applicable Analytical Method CTM-027

Customer

Pittsburgh Engineering Group 1601 Parkway View Ddve Pittsburgh, PA 15205

CleanAir.

Analysis Case Narrative Ion Chromatography Analysis

Project Number; Sample Numbers;	Consol Energy Date Received: reenridge Power Plant Date Reported: 10247 Sample Type: -01 through -12 Parameters:	6/13/2007 6/20/2007 imp C&R Ammonium CTM-027
Project Number:	10247 Sample Type: -01 through -12 Parameters:	Ammonium

Summary of Analysis

This report summarizes the results of enalysis performed on samples received on:

06/13/07

The samples were anlayzed in accordance with procedures in the EPA Method listed above.

Method Detection Limits have been determined in accordance with procedures in 40 CFR 136, Appendix B, and in accordance with procedures outlined in CleanAir SOP EPA5-11. Documentation showing the determination of detection limits are included with this report.

Reporting Detection Limits

Reporting limits have been determined in accordance with CleanAir SOPs in reference to the above listed EPA Method.

Sample Preparation

Samples were prepared according to the procedures listed in the EPA Method above. Each sample was analyzed at full strength and a dilution was prepared if necessary to achieve a concentration that was within calibration range Ilmits.

Analysis QA/QC

In accordance with the corresponding CleanAir SOP, The following Quality Assurance steps were taken: Before the first sample was analyzed and every twenty samples thereafter(and before the final calibration) a Continuing Calibration Blank (CCB) and a Continuing Calibration Verification (CCV) were analyzed. The CCB must show a a regression concentration of zero; and the CCV must show a regression concentration that matches its actual concentration within 10 percent of the actuel concentration. The CCV is a standard that is prepared from the same stock as the callbration standards. A Quality Control (QC) sample was analyzed after the tenth sample and every twenty samples thereafter (as applicable). The QC is prepared from a stock that comes from a completely different manufacturer than used for calibration standards. The QC must also meet the same acceptance offers as the CCV. In addition to the preceeding Quality Assurance steps a matrix spike analysis is performed on ten percent of the total number of semples. This sample is propared with equal amounts of a sample and a calibration standard whose concentration is known to be larger than that of the sample. The Matrix Spike must have a recovery of 100 \pm 10 percent.

CleanAir Engineering 500 W. Wood Street Palatine, It 60067-4975 800-627-0033 Www.cleanab.com



CERTIFICATE OF ANALYSIS

Client Name:

Consol Energy

Plant/Facility:

Greenridge Power Plant

Project Number: 10247

Sample Numbers:

Matrix Splke Analysis

10247-09

10247-11

succilinge i ov

-01 through -12

Date Received: 6/13/2007 Date Reported: 6/20/2007 Sample Type: Imp C&R

Parameters: Ammonium

Laboratory Number	Sample Identification	Sample Volume (ml)	NH4+ Sample Conc. (mg/l)	Detection Limit (mg/l)	Reporting Limit (mg/l)
		CleanAir			
10247-00	CCB	n.a.	<	0.053	0.264
10247-00	CCV	n.a.	Difference	0.54%	<10% Yes
		Reagent Blant	k		
10247-01	0.1 N H2SO4 & DI H2O	300	<	0.053	0.264
		Field Blank			
10247-02	imp C&R	431	<	.0,053	0.264
	·	Air Heater Inie	et		
10247-03	R1 F1/2 Rinse	208	4.49	0.053	0.264
10247-04	R1 lmp 1 C&R	195	0.36	0.053	0.264
10247-05	R1 [mp 2&3 C&R	280	<	0.053	0.264
10247-06	R2 F1/2 Rinse	153	5,58	0.053	0.264
		CleanAir			•
10247-00	QC	n.a.	Difference	0.34%	<10% Yes
		Air Heater Inle	t		
10247-07	R2 Imp 1 C&R	211	0.33	0.053	0.264
10247-08	R2 imp 2&3 C&R	210	<	0.053	0.264
10247-09	R3 F1/2 Rinse	192	5.02	0,053	0,264
10247-10	R3 lmp 1 C&R	195	0.35	0.053	0.264
10247-11	R3 imp 2&3 C&R	265	<	0.053	0.264
10247-12	Post R3 Rinse	96	· <	0.053	0.264
		CleanAir			
10247-00	CCV .	n.a.	Difference	0.15%	<10% Yes
10247-00	CCB	n.a.	<	0.053	0.264

% Recovery

100,2%

97.6%

Analyst:

Daniel J. Nune<u>z</u>

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client

Сольої Епелду

Project Number:

10247

Analylo

Ammonium

Date

6/20/2007

Stock Stendard Working Stock Conc. 5027.14 mg/l 50.2714 mg/l 8.0434 mg/l 3.6100 mg/l

CCV

QС

Ana	(vfe:

Analyle:				Stendarde	Calibration D	ata	6	7
Calibration Point.	Date of	1 6,0600	2 0.5027	3 1,0 0 54	4 2.0109	5 5.0271	0.0320	10.0543
Conc. (mg/l) Pre-Cal 1 Trial 1 Pre-Cal 1 Trial 2 Pre-Cal 1 Trial 3 Pre-Cal 1 Trial 4 Pre-Cal 1 Trial 5 Post-Cal 1 Trial 1	(n)ection 6/18/07	0,000,0 0,000,0	0.1304 0.1264 0.1231 0.1242 0.1213	0,2610 0,2688	0.5177 0.5059	1,2522 1,2538 1,2541	1,5069 1,5062	2,4952 2,5007
Pre-Cal 2 Trial 1 Post-Cal 2 Trial 1 Post-Cal 2 Trial 2	6/19/07		0.1172 0.1219	0.2652 0.2678	0.6337 0.6340	1,2581 1.2825	1,5064 1,5021	2.4794 2.4703
Average %RSD Responso Factor Avg RF≕		0.000 0.00 0.00 3.96	0,1235 3,37 4.07	0.2662 1.13 3.79	0,5229 2,25 3,85	1,2601 1.01 3.99	1,5054 0.15 4.01	2,4864 0,56 4,04
%R&D Resp. Factor		2.96 Messured Area Counts (Counts) 0.0000 0.1235 0.2652 0.5229 1.2601	Actual Concentration (mod.) 0.000 0.503 - 1.005 2.011 5.027	Regression Concentration (muff.) -0,044 0,455 1,029 2,072 5,055	Disference pt-Line <u>f% 3-24%</u> 0.44% 0.47% -0.23% -0.61%	Less Thore 2% of Scale? Yes Yes Yes Yes	Differences pt-Line (Religitys %) 0.00% 9.39% -2.34% -9.56% -0.56%	is Relative Exiference Loss Than 1927 Yes Yes Yes Yes Yes Yes Yes Yes Yes

Ammonium

			le Coefficient
Regression Constants		4.D46B	of Regression
Slope	m =	-0.0443	> 0,9957
Intercept	p =	4	Yes
Coefi.	$B_{\lambda} =$	0.9999	

6.033

10.054

1.2601

1,5054

2,4884

5.055 6.048

10.01B

-0.15%

0.36%

Yes

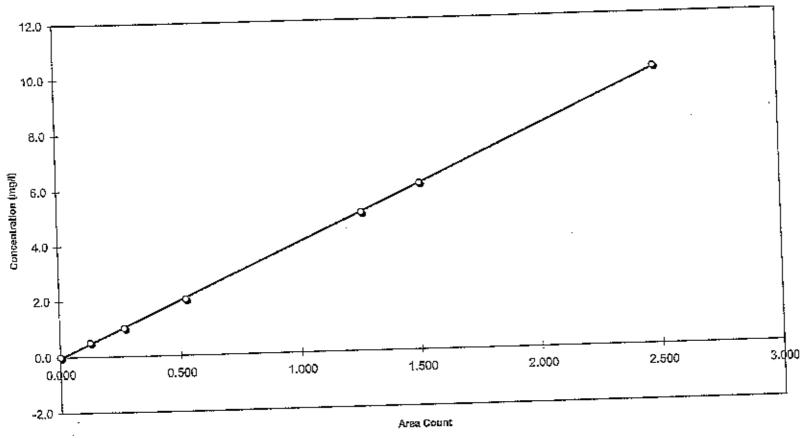
Yes

-0.26%

0.36%

Yes





CHROMATOGRAPHIC DATA REDUCTION

Client Consol Energy Project Number: 10247

Ammonium

Analyte Date

6/20/2007

MDL=	0,053 mg/t
MRL=	0.264 mg/l

	Sample Identification		Area Counts	Area Counts	Area Count Average		s Duplicate Difference Within Warning - Control Limits ?	Duplicate Relative Difference (%)	DF (Analysis Dilution Factor)	V _{sein} (Total Sample Volume, sal)	C _{res} (Concontration, mg/l from Reg Curve)	C _{resp} (Concentration mg/l from Resp Factor)	M _{arthylo} Yotal Amecant of Analyte (mg)
Sample Location	Number	Sample Idenification	Trial 1	Trial 2		TIÐ	na na	па	1	п.а.	٠	4	
CleanAir	10247-00	CCB	0.0000	0.0000	0.0000	0.0202	Yes	1.0%	1	п.а.	8.09	Difference	0.54%
CleanAir	10247-00	CCA	2.0193	1.9991	2,0092	ทอ	TI2	па	1	300	<	<	<0.079
Reagent Blank	10247-01	0.1 N H2SO4 & DI H2O		0,0000	0,0000	LIST.	na na	na	1	431	<	<	<0.114
Field Stank	10247-02	Imp C&R	q.0000	0.0000	0.0000	0.0552	Yes	4.9%	1	208	4.49	4.44	0.93
Air Heater Inlet	10247-03	R1 F1/2 Rinse	1,0936	1.1488	1.1212	0.0007	Yes	0.7%	1	155	0.36	0.39	0.07
Air Heater Inlet	10247-04	R1 imp 1 C&R	0.0991	0.0998	0.0995	0.0007	Yes	0.3%	1	250	<	٩.	<0.074
Air Heater Inlet	10247-05	R1 Imp 2&3 C&R	0.0342	0.0343	0.0348	0.0581	Yes	4.2%	1	153	5,58	5.50	0.85
Air Heater Inlet	10247-06	R2 F1/2 Rinse	1.4181	1.3600	1.3891	6.0001 6.0001	Yes	0.0%	1	C.라.	3.50	Difference	0.34%
CleanAlr	10247-00	QC	0.8753	0.8754	0.6754 0.0927	0,0001	Yes	1.5%	1	-211	0.33	0.37	0.07
Air Heater Injet	10247-07	R2 lmp 1 C&R	p.0934	0,0920		0.0014	Yes	3.3%	í	210	<	<	<0.056
Air Heater Inles	10247-08	R2 Imp 283 C&R	0,0429	0.0415	0.0422	0.0021	Yes	0.2%	1	192	5.02	4,96	0.96
Air Heater Inlet	10247-09	R3 F1/2 Rinse	1.2537	1.2518	1.2527	0.0045	Yes	4.6%	1	195	0.35	0.39	0.07
Als Heater Inlet	10247-10	R3 imp 1 C&R	0,0953	8660.0	0.0976	0.0005	Yes	1.5%	1	285	<	<	<0.070
Air Heater Inlet	10247-11	R3 lmp 2&3 C&R	0.D347	0.0342	0.0345	EU EU	na	na	t	96	<	<	<0.025
Air Heater inlet	10247-12	Post R3 Rinse	0,0000	0.0000	0.000	D.0056	Yes	0.3%	1	ກຣ.	8.03	Difference	0.15%
CleanAir	10247-00	CCA	1.99 53	1.9927	1,9955		na	ra:	1	п.а.	4	<	
CleanAir	10247-00	CCB	0.0000	0.0000	0.0000	па	ш	1101					Spike Recovery
01001#													100.2%
		R3 F1/2 Rinse	1,8675	1.8756	1.8716	0.0081	Yes	0.4%					97.6%
Maldx Spike	10247-09		0.2749	0,2700	0.2725	0.0049	Yes	1.8%					
	10247-11	R3 Imp 2&3 C&R	0.001.44										
					Variable	Valu	9						

Veriable 0.0122 Rag 3.2680 Ď4 for Duplicate 0.0397 UCL Anthrea 0.0385 UWL LCL 0.0000 ĻWL

CHROMATOGRAPHIC DATA REDUCTION

Client Consol Energy

Project Number: 10247
Analyte Ammonium
Date 6/20/2007

Determination of Control Limits for Duplicate Analyses

 $R_i = \left| AreaCount_{ij} - AreaCount_{ij} \right|$

$$R_{m/x} = \frac{\sum_{j=1}^{r} R_{j}}{r}$$
Where: π = Number of duplicates
$$R_{i} = Ranga (are each set of duplicates)$$

$$UCL = Constant (3.256 for duplicates)$$

$$UCL = Upper Control (Jimit)$$

$$UWL = Upper Wending Limit$$

$$LCL = Lever Centrol Limit$$

$$LWL = Lever Wenning Limit$$

$$LWL = Lever Wenning Limit$$

$$\begin{split} UCL &= D_{4}R_{mg} \\ UWL &= \frac{2}{3} \left(D_{4}R_{eq}\right) + R_{mg} \end{split}$$

Note: For duplicates, both LCL and LWL are zero.

QA/QC:

CCV: Calibration Control Verification CCB: Calibration Control Blank

.QC: Quality Check

/ariable	Value
Rava	0.0122
Ū₄	3.268
ŲGL.	0.0397
UWL	68£0.0
LCL	0.0000
EWL	0.0000

Values for_	10247-03
m.	4.0468
ь	-0.0443
AreaCount	1,1212
DF.	1
RF.∞	3.9579
Vacin	208
C.	4.49
Come	4.44
Myrayto	0.93

Determination of Concentration of Analyte

$$C_{\infty} = [m(AreaCount) + b]DF$$

$$C_{_{\rm resp}} = RF_{_{\rm reg}} \big(AreaCount\big)DF$$

$$M_{Annlyse} = \frac{C_{\text{reg}} \left(V_{\text{so in}}\right)}{1000}$$

Where:	Manage	=	Total pendunt of analyte in sample (red)
.,	Cres	=	Analyte committellon from regression duive (=0/)
	V _{spin}	=	Total sample volume (ml)
	1000	=	Conversion factor (mill)

CleanAir.

CHROMATOGRAPHIC DATA REDUCTION

Client

Consol Energy

Project Number:

10247

Analyte Date Ammonium 6/20/2007

Determination of Detection Limit

(in accordance with 40 CFR 136, Appendix B)

(III accordance with to				
Analyte	Ammonium			
	Count			
Trial 1	0.1304			
Triai 2	0.1264			
Triel 3	0.1231			
Trial 4	0.1242			
′ Trial 5	0.1213			
Trial 6	0.1172			
Trial 7	0.1219			
Average	0.1235			
Std Dev	0.0042			
RMS Dev	3,37%			

n	t _(n-1,0,88)
7	3.143
8	2.998
9	2,896
10	2.821
11	2.764
16	2.602

Average Response	
Factor	3,96
Measured Cond	centration (mg/l)
Trial 1	0.483
Trial 2	0.467
Trial 3	0.454
Trial 4	0.458
Trial 5	0.447
Trial 6	0.430
Trial 7	0,449
Average	0.455
Std Dev	0.0168
RMS Dev	3,69%
1	3,143
T _(n-1,0.99)	0.058
Det Lim (mg/l)	Towns on Oak
Rep Lim (mg/L)	1 (2.48) A 2 (2.48) 4 2 (4.48) A 2 (4.4

 Actual Conc
 0.5027

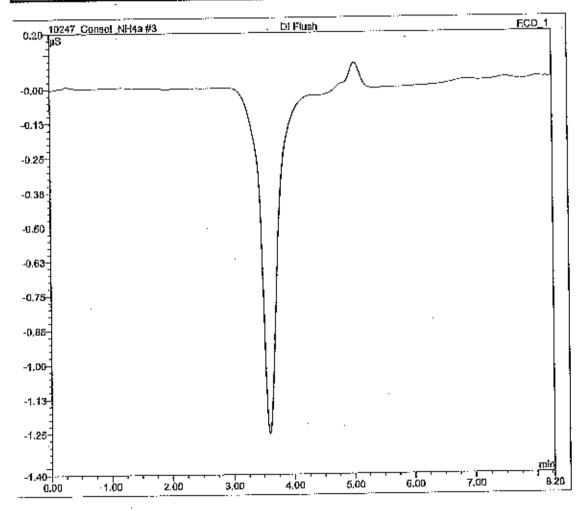
 Stope
 4.05E+00

 Intercept
 -0.0443

 Coeff of Corr
 0.9999

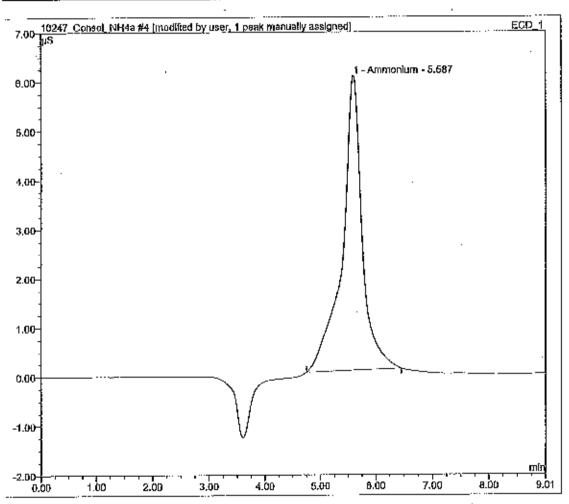


Not lime Peak Namo. Typell ECD_1 ECD_1 ECD_1	Area ECD // US milm	Height ECD	Amount ECD 1:
YOTAL:	0.00	0.00	0.00

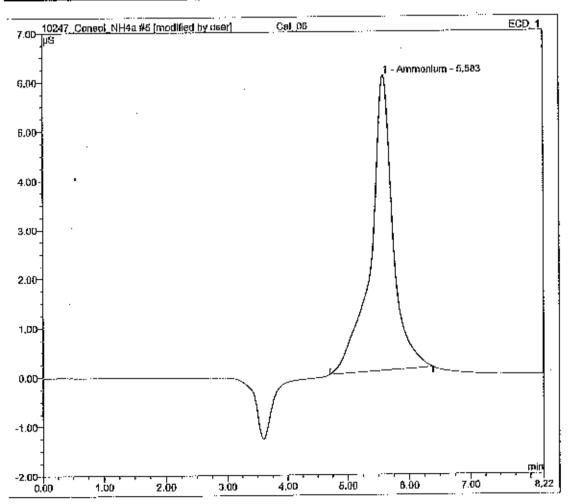


Semple Nume Cal 365 (1.000) 1.0 Semple Nume Cal 365 (1.0000) 1.0000 (1.0000) 1	
Program: Objection: Datie: Numer: Objection: Datie: Numer: Objection: Datie: Numer: Objection: Datie: Numer: Objection: O	100 mg/m

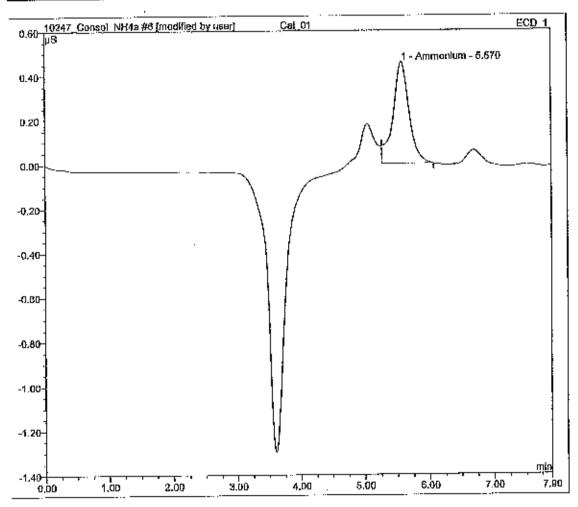
No. Jine Peak Name	Area ECD 1111	ECD 1	Artherite Addition of the state bearing the state of the state of
TOTAL:	0.00	0.00	0.00



No.: Time Beak Name ECO 1 ECO L ECO	10 No. 1 Aug 1	ATTA ATEAT (ATE	Height ECD 4	Amount EGD 1
1 5.58 Ammonium	BMB*	2.501	6,003	n.a.
TOTAL:		2.50	6.00	_0.00

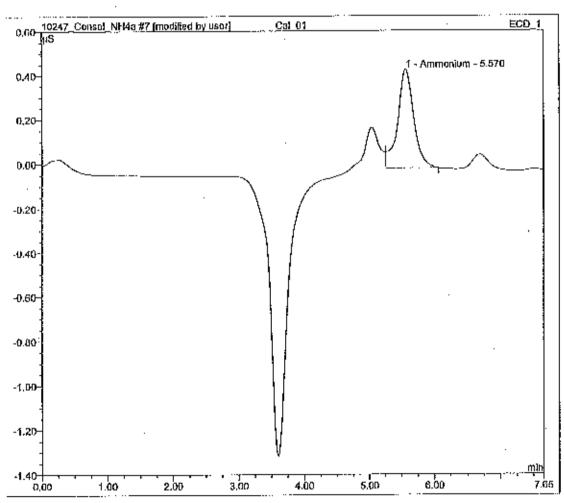


No lime ECD 1 ECD 31	eak Nama ECD: 1	Type ECD, 1	Area EGDITA US min	Height & Eco-1	Amounts:
1 5.57 A	mmonlum	MB⁴	0,130	0,456	ภ. <u>ฮ.</u>
	TOTAL:		0.13	0.46	0.00



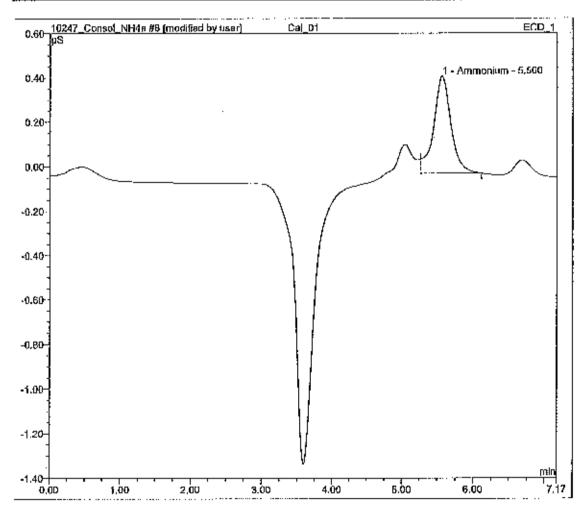
Sample Type 3 of Tonknown Commission and Commission	Sample-lype : Cal 201. 1 Sample-lype : Onknown:
113 D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

No.1 Ime Post Post	GDM:B	ECD_CV	Helght ECD: 1	Amount ECP2
1 5.57 Am	толит М8*	0.126	0.444	n.a
	TOTAL:	0.13	0.44	0.00

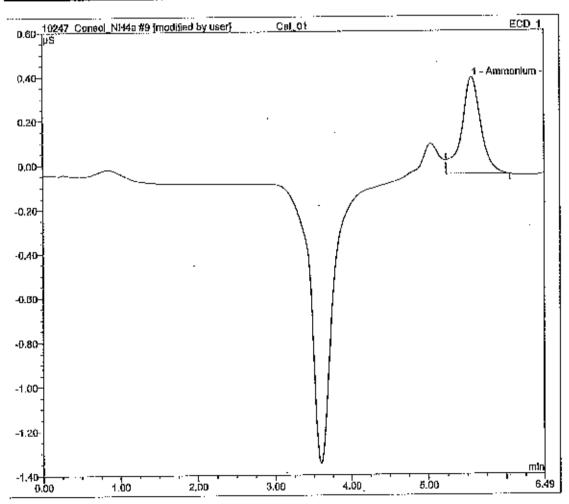


Semple Name Califolia William William Califolia Califoli	

ECD S	ECD 1	»- Peak Name Eco y	Types Ego 1		Lastis Height at the	Amount ECO-1
1	5,58	. Ammonium	MB*	0.123	0.438	n.e
		TOTAL:		0.12	0.44	0.00

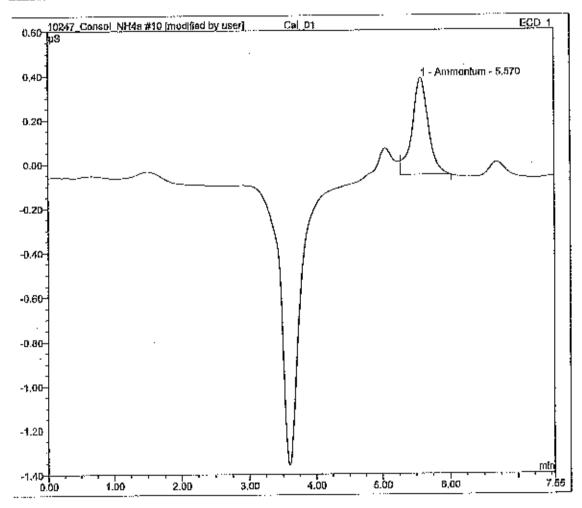


No.	Peak Namo 11 ECD:	Type, EGD-1	FAREE EGDAL US min	Height ECD	Amount FECD
1 5.56	Ammohilim	MB*	0.124	0.437	n.a.
	TOTAL:		0.12	0.44	0.00



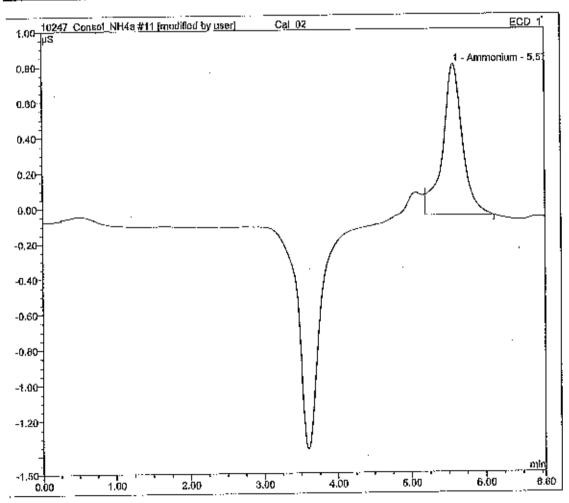
Sample vaine Cal 01 Sample Type unknovin Program 18:06:87 10:04	10) V Dijal	fol: \$1,0 lon Factor: 1,0060
Program:	Oper	rator: Deniel J Nonez
Inf. Date/Time: 18:06:67: ±0:04	Run	Time

No.	Time ECDM	Peak Name E00-1	Type ECD:1	Area ECO pS.min	Height EGO 1 BS	Amount EGD_1
1	5,57	Ammonfun	MB*	0.121	0.437	n.a.
	TOTAL:			_0.12	0.44	0.00

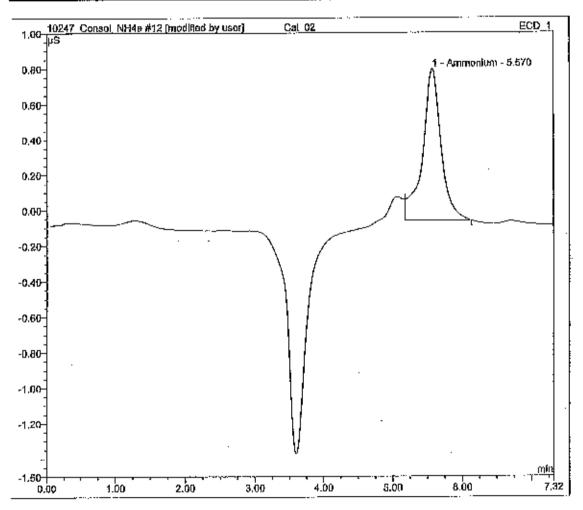


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■ 2000000 EVENT (1990)	2000年1700年1906年2月1日 11日 11日 11日 11日 11日 11日 11日 11日 11日
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■ 17 0.7 (Per 2014) 5 0.4 (A. A. A. A. A. A. A. A. A. A. A. A. A. A	Olivino Perilos CODO
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1 Martini Nito I Different it an all rist i Langua (1901) and an artis and all all and artis and artis and a	· 可能是自己的现在分词,但我们就是是一个人的一个人的,但是是一个人的,这个人的,他们也不是一个人,不是一个人的一个人。
 Control light and the state of	2000年8月1日2000年8月1日 - 1991年2月1日 - 1982年1日 - 1982年1日 - 1982年1日 - 1982年1日 - 1982年1日 - 1982年1日 - 1982年1日 - 1982年1日
■ 「不是我的,我们还有效的,我们在美国国际的特殊的特殊的。""我们就是我们的,我们就是我们的,我们就是我们的,我们会会会会会会会会会会会会会会会会会会会会会	現在の1960年中の1964年代では、2月1日には、1962年では1962年に1964年に1964年に1964年に1964年に1964年に1964年に1964年
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。 "你们就是我们的一个好好的,你也没有一个多数的,我们就会有一个的人,我们就是这个人的,我们就是这个人的,我们就是这个人的。" "我们是一个人,我们	2.100元(4.44年)1.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004/6.1004
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Sample Neme Cal 02 Sample Type unknown Program: Inf. Date/Time 18.06.07 [0:12]	
	

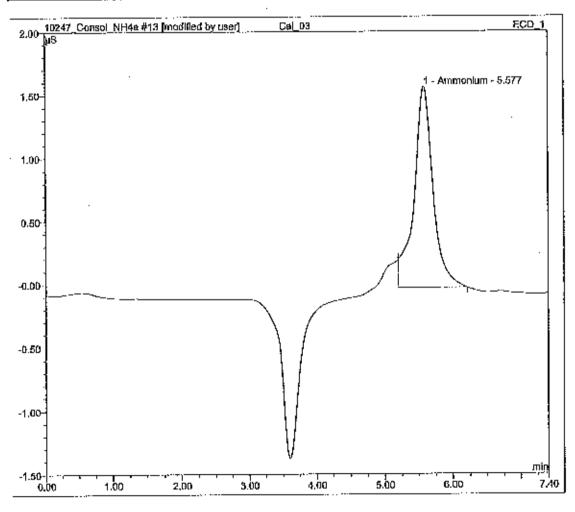
No.	EGDC	Reak Name	EGD 1	Area EGD:	Helget ECD-1	Amount EGD
1	5.57	Ammonium	MB*	0.261	0.853	n.a.
	TOTAL:				0.85	0,00



ECD 1	Times CECQL'L	Peak Name	Type s ECD /		ECD1	Amount Egp
1	6.57	Ammonlum	MB*	0.267	0.858	n.a.
TOTAL: 0.2				0.27	0.86	0.00

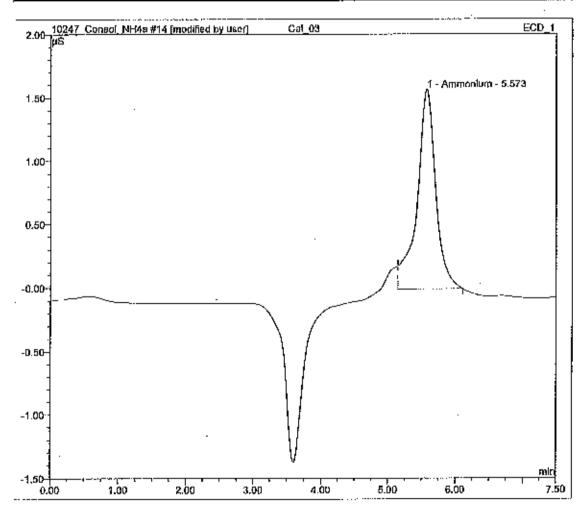


No.	THE SECOND	Peak Name	SECOND C	- Company		Amount EGD:1
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1	5.58	Ammonjum	MB*	0,518	1.592	ก.ส.
	TOTAL:			0.52	1.59	0,00

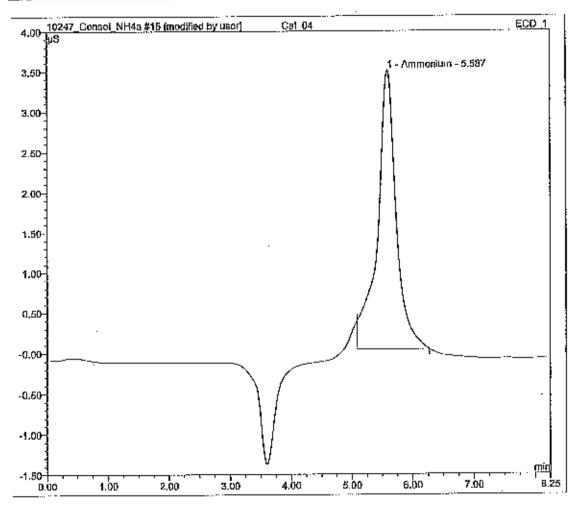


Sample Name: Cel 103: Inj. Vels 1.0 Sample Type: Unknown: Djulion Factor: 1:0000 Program: Operator: Daniel I Nuncz Inj. Dalo Time: 7:50.

ECD 1	TIME ECD 1.	A STATE OF THE STA	Eco-i	FCD of second	the first in the party of the first of the first	Ameuri Econ
1	5,57	Ammonlum	MB*	0.508	1,572	n.a.
	TOTAL:			0.51	1.57	0.00

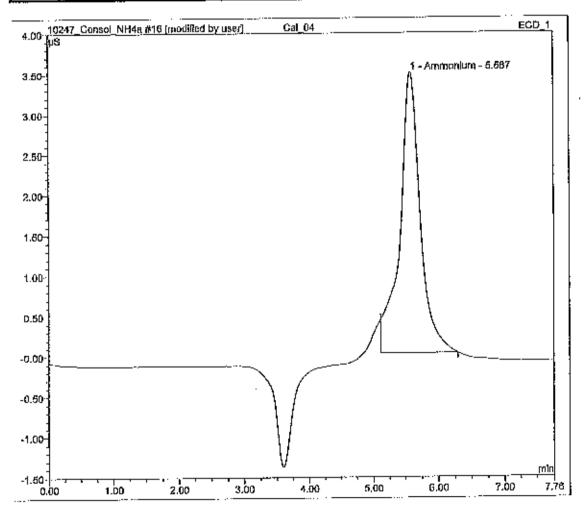


ECDAR	ECORI	Peak Name EGD	ECDA	Area m ECD-1. ps min	Helight ECOST pS	Amount ECD_
1	5.59	Ammonium	MB*	1.252	3.467	n.a.
		. YOTAL:		1.25	3.47	0.00



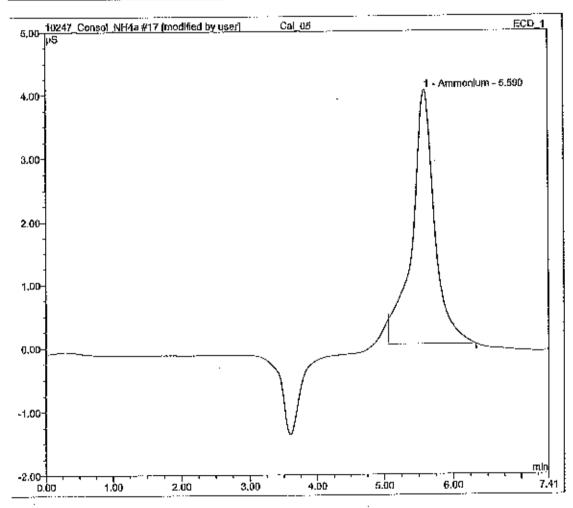
Sample Ivame Cal-04 nj. Voli: 10 Sample Ivame Cal-04 pludioji Factor 0,000 Sample Ivae unknown pludioji Factor 0,000 Rogram Obersio Daniel J Núnez Inj. Date/Time 18:08:07 10:54 Run Time 17:76	
Inj. Date/Tigre 18:08:07:10:59-11-12-22-22-22-22-22-22-22-22-22-22-22-	3.5%

EGD_1	ECD41	Peak Name EGP (E0514	Arga ECD 1	Helght ECD 1	Amount (ECD_1
1	5.59	Ammonium	MB*	1.254	3,480	n.a
		TOTAL:		1.25	3.48	0.00



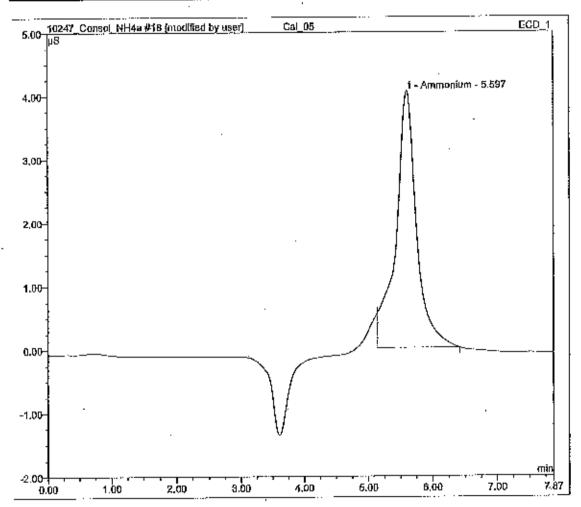
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Sample Type: 175 unknown	-1
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	33
Sample Name Cal-05 Inj. your 4,0 Sample Type	

No.	Ume ECD 1	Peak Name ECD	Type ECD:si	Area ECD-1	Height 21 EGD 11	Amount
1.	6.59	Артолит	MB*	1.607	4.023	n.a.
i		TOTAL:		1.51	4.02	0.00

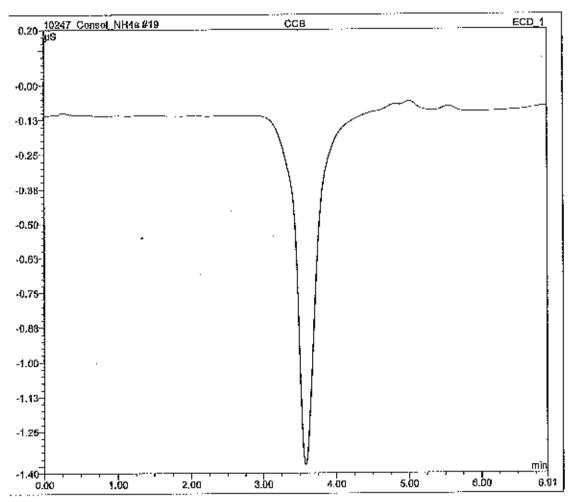


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,此本是我们没有是对方是最大的特殊。2015年2月1日,但是我们的是我们的人们的人们的人们的一个一个一个一个一个人的人,但是这一个	Control of the second s	AND SANDAR CONTRACTOR OF THE SANDAR AND AND AND AND AND AND AND AND AND AND
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Sample Namjo Cal_05 Sample Type cunknown Program Inj. Dale/Time: 18.06.07 314.34		

No,	\$************************************	Peak Nama ECD: 1		Area ECD 1 PS*min	Heißht EGD 1 US	Amount ECDAL
1	5.60	Ammonium	MB*	1.506	4.049	n.a.
	TOTAL:				4.05	0.00

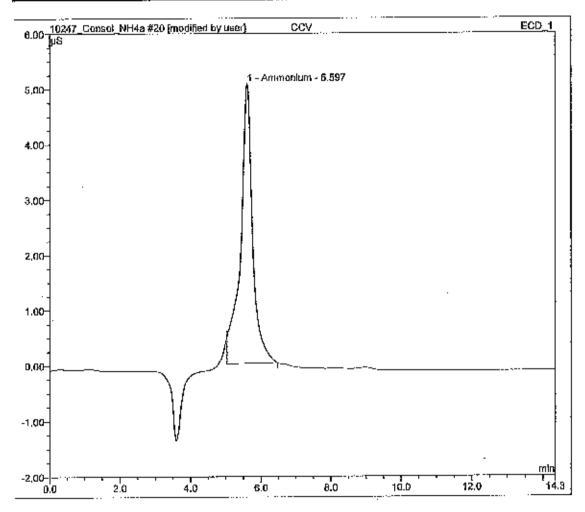


No. Fine Freak Name Types ECD 4 ECD2) ECD 1	Area ECD 15	Height ECO.1 μ8	Amount ECD_1
TOTAL:	0,00	0.00	0.00



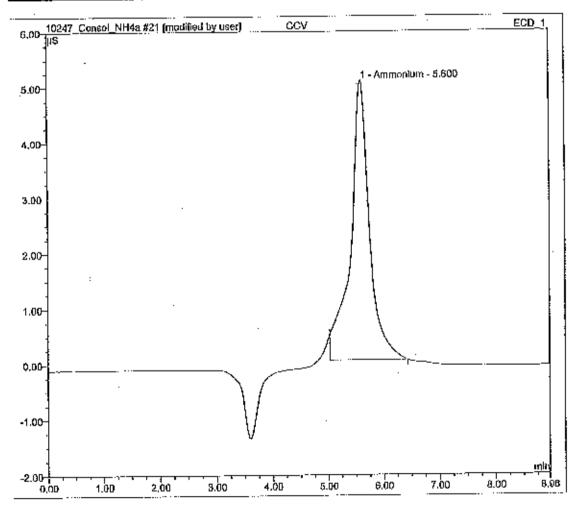
Sample viewe: CGV 213 Fig. Vol. (10) Sample I ynes: Cunknown Diulion Factor 1,0000 Problem: Coperator Daniel J Nunez Inj. Date/Umb. (18:06:07 11:128) Run Tine 12:84		$\overline{}$
	Sample Name CCVs Inj. vol. 00 Sample Type Unknown Downor Factor 1,0000 Profition Daniel J Nunez Inj. pate/limb. 18,06,07,11126 Refilling Sample 14,34	

EGD_1	A	TPešk Name ECD	Type: ECD_4	EGD-02	Height ECD 11	Amount ECD-4
1	5.60	Ammonlum	MB*	2.019	5.061	n.a.
		TOTAL		2.02	5.06	- 0.00



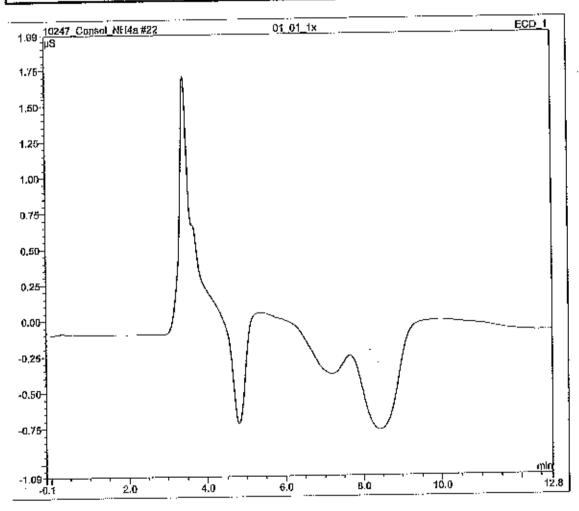
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,我们就是自己的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人, "我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人	
Sample Type: unknown	
Program Daniels Nunez	
Program Operator: 8 Daniel S. Nunez Int. Date/Lime: 8.96.07 11:43	

EOD_1	ECD.	Peak Name		Area Egp 1	The second second second	Amount EGD.4
1	5.60	Аттоліит	MB*	1,999	5,044	п.а.
	TOTAL:			2.00	5.04	.0.00



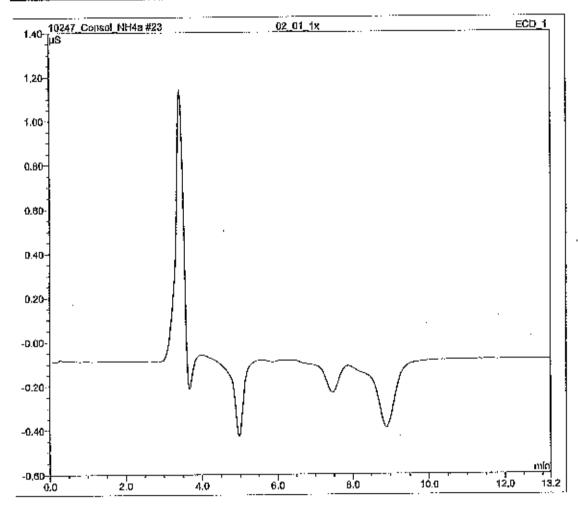
Sample Name 0.1-01-1X Semple Name 0.1-01-1X Semple Type Sunknown Proprent Operator Dametri Numer Ing Date/Time 73,95
Sample Name 0, 0, 0, 18 Sample Name 1,0000 5 Sample Type Sufficient Daniel Numer Program
Sample Neme 0.1 -0.1-1X Sample Type Sunknown Dente Diplion Fedor 1,0000 Separator Dente Number Propress
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No. Time Reak Name	Type	Area	Height	Amount
EGD 1 EGD 1 ECD 1	EED-1	ECD	ECD 1	EGD 4
A A A A A A A A A A A A A A A A A A A	TOTAL:	0.00	0,00	0.00



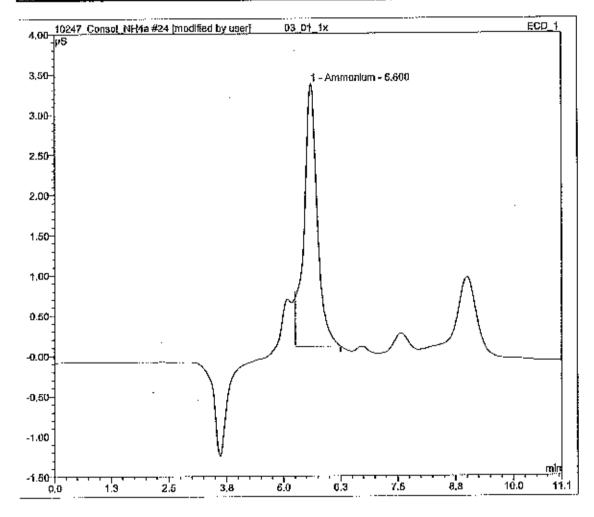
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No. Time Peak	Name: Type	FGD-11-	Height	Amount
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	TOTAL:	0.00	0.00	0.00

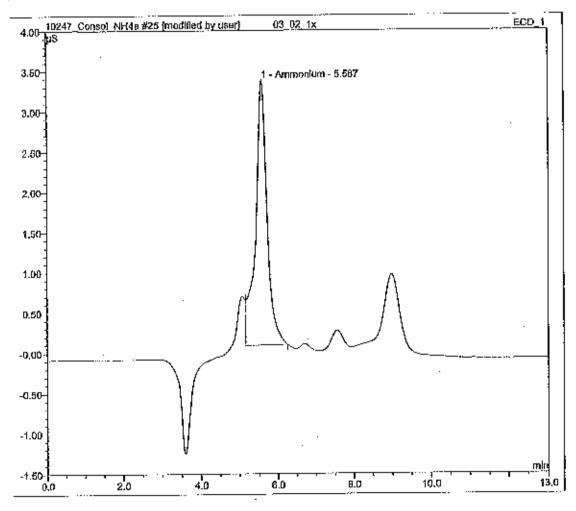


Sample Name D3 03 X Iril Vol 1.0 Sample Type: Zunknown Djugon, Factors 1,000 Program 25 Dgniel J Nunez 1,000 Iril Dato/Time 18,06.07, 61,3 25 1,000

No.	Dimer Epp 1	Reak Name	C VIII	ECDE	The second of th	Amount
1	5. 6 D	Amraopium	MB*	1.094	3,274	n.a.
	TOTAL:				3.27	0.00

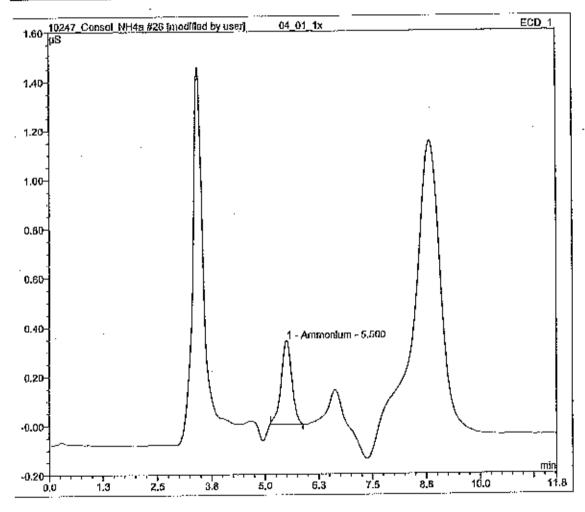


No Time Beak Name : ECD_1 ECD_1 EGD 1	iya. Egdil	ATER ECO	Helgint	Amount 1
With the same and	William Control	COUSINITIES.		
1 5.69 Ammonium	MB*	1.149	3.290	n.a
TOTAL:		1.15	3.29	0.00



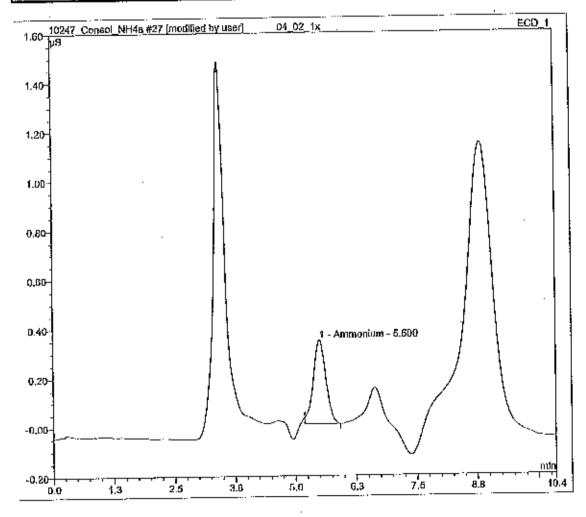
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1	5.60	Ammonium	MB*	0.099	0.341	n.a.
		TOTAL:	0.10	0,34	0.00	



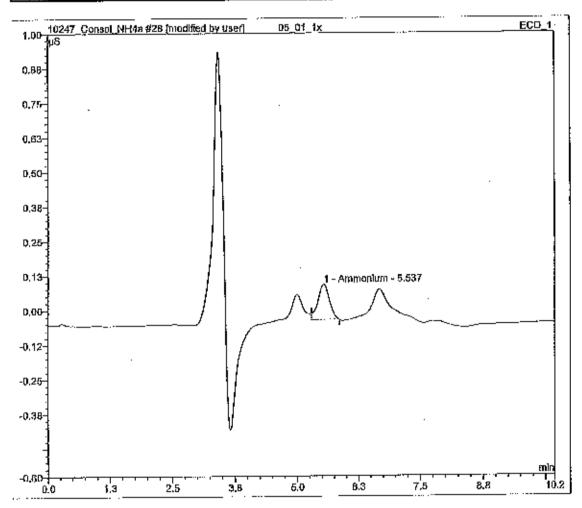
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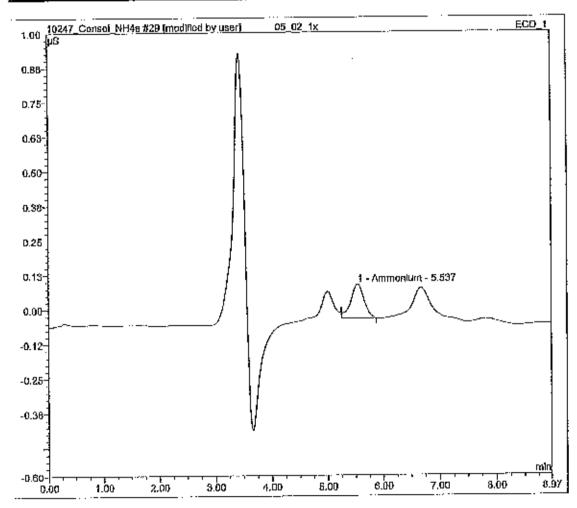
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1	5.54	Ammonium	MB*	0.034	0.127	п.а.
		TOTAL		0.03	0.13	0.00



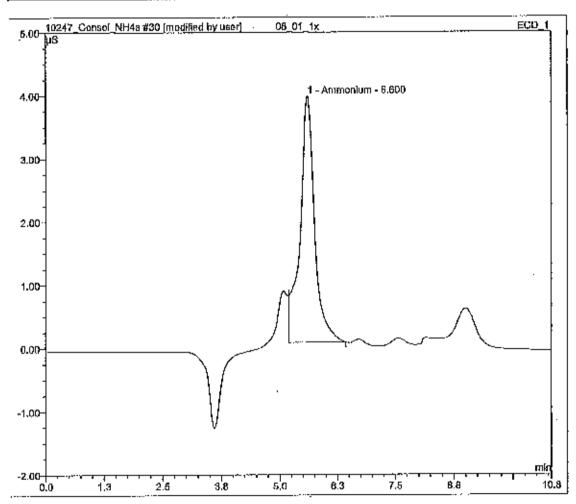
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1	5,5 <u>4</u>	Ammonlum	MB*	0.034	0.124	<u>ព.</u> ង.
	TOTAL:				0.12	0,00



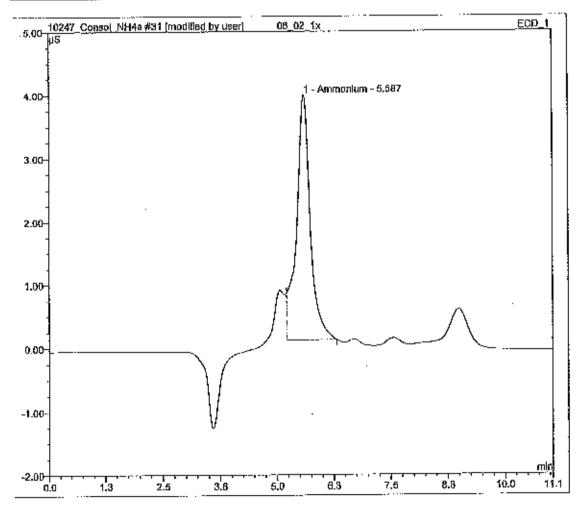
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No EQD_1	EGD 1	Peak Name	Type: Esp.1	ECD-11/2 DS-min	Helöm /_	Amount EGD
1	5.60	Ammonium	MB*	1.418	3,901	n.a
	TOTAL:			1.42	3.90	0.00



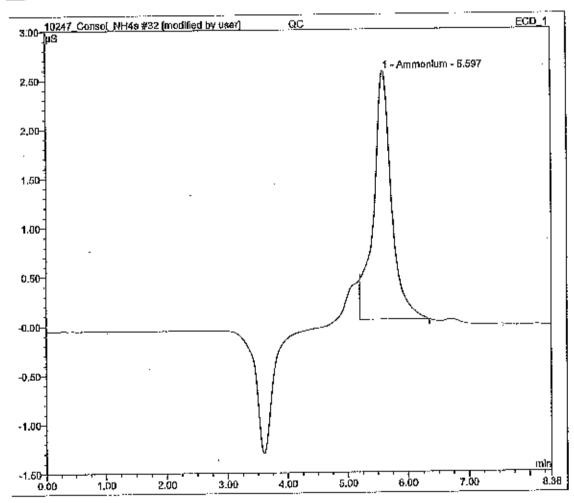
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No. ECP_4	Time	Feak Name EGD	type: eeo:	Wrea ECD 1	Halght EGD 1	Amount ECD
1	5.59	Ammonium	MB*	1.360	3.869	. n.a.
	TOTAL:				3.87	0.00



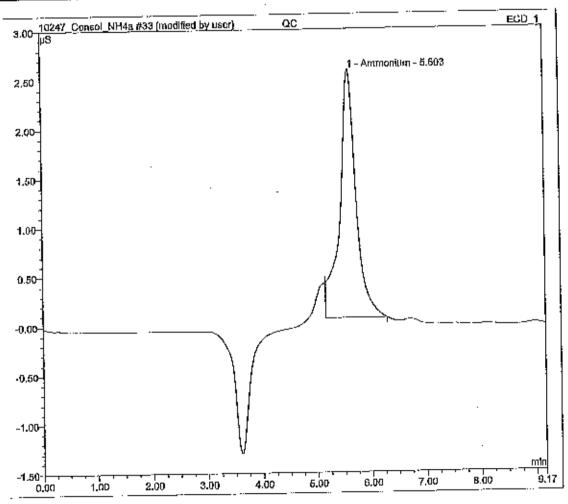
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Sample Name: QC Sample Type: unknown Dinigonisacio: 1/9000 . Plegram of Daniel J.Nunoz Inj. Date/Time: 18:06:07:16:00 Burl Time: 8:86	O1745-34

No ECD	ECD 4.	Peak Name		ECD.A.	Height 1997	Amounts EGD
1	5.60	Ammonium	МВ⁴	0.876	2.531	n.a.
	TOTAL:			0.88	2.53	0,00



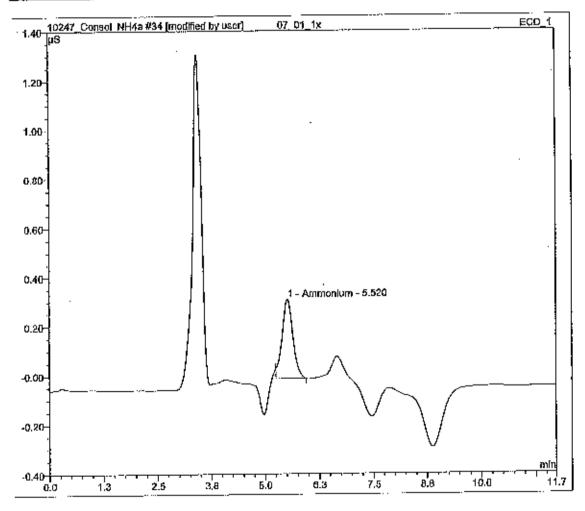
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EGD.	ECD III	SFeak Names	Type C ECO-1	Afea Egpst	Heights T. EGD	Amount Co SECOCI
1	6.60	Ammonium	MB*	0.875	2,521	n.a
	TOTAL:				2.52	0.00



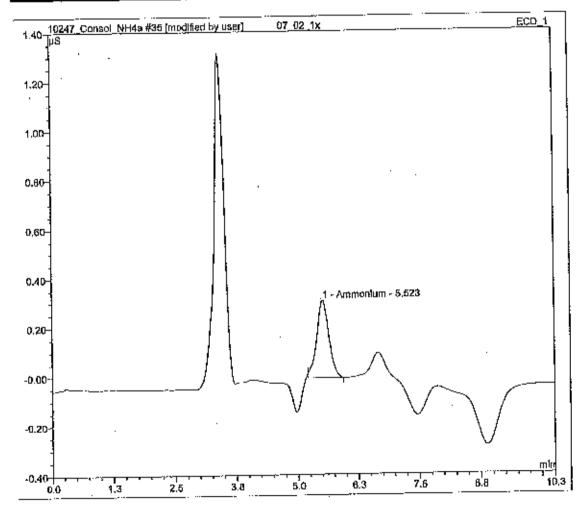
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40.00	的对方,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的人的人,他	A Straight House, Co. Committee St. March 1984 (1984)
Comm	。 第四章 15 元(1917年17月18日) 第二章 在第二章 第二章 15 元章 15 元章 15 元章 15 元章 15 元章 15 元章 16 元章 16 元章 16 元章 16 元章 16 元章 17 元章 17	株式の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学
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No. oTime ReakName! (ECD PCD ECD		Area ECOLO US MINU	Height ECD: / pS	Amount Ecp
1 5.52 Ammonium	MB*	0.093	0.323	n.ē.
TOTAL		0.09	0.32	0,00



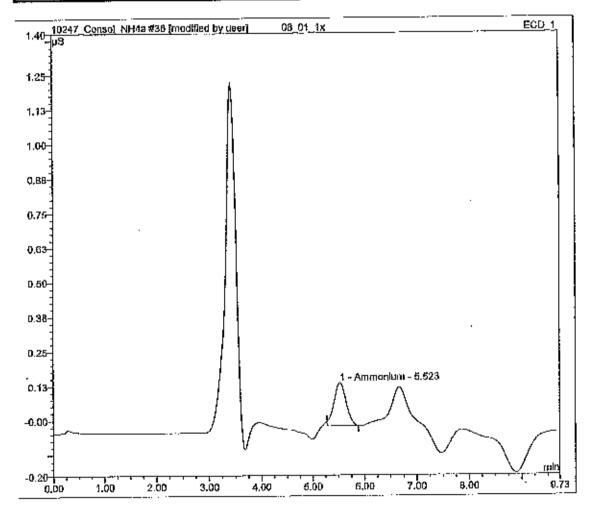
Sample Name 07-02-13 Inj. Vol. 1.0
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Program = 18/06/07: 15/32 Run Time - 18/06/07: 15/32

None	Time	Reak Name	Type	Area	rest Height	T Ambunt
EGD	ECO:	ECDT1		p8 min	18 18 18 18 18 18 18 18 18 18 18 18 18 1	
1	5,52	<u>Ammonium</u>	MB*	0.092	0.315	<u>. n.a</u>
					0.32	0.00

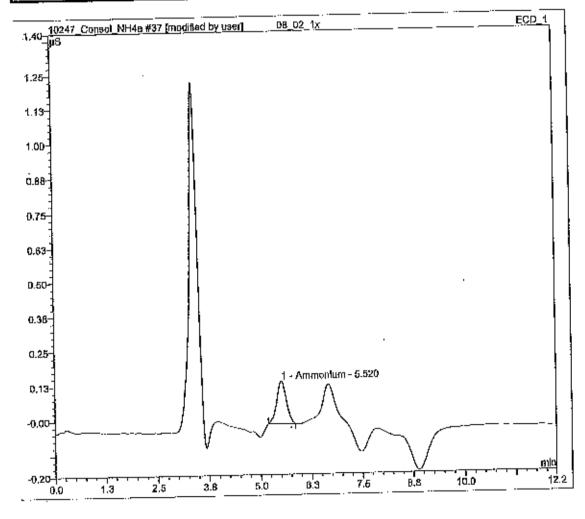


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***	(文)"我们的""我看着我的一句话是有什么人的。" 医自己 化增热 人名英格兰特拉斯 化二二十二烷 化二烷烷 化二烷烷烷
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一直光光,只见这个话,我们就会不够好,这些说话是我们的特殊的情况,我们也没有的人的,我们就是这个话,我们就是一个话,我们也不是一个人的。	我们是是,我们就是"我们的我们,我是我的事业"的人,我们就是"我们"。
- II (Dia Hauta, Rimmaph), 'Estallia (II) (II) Salik (a. Nobina) (IV) Estallia (Nobina) (A. Harista (A. Nobina)	CONTRACTOR DE CENTRACIONAL MAIN DE CONTRACTOR DE C
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。 "我们是我们,我们们也没有的人的,我们们们是这个人的,我们就是我们的,我们就是这个人的,我们就是这个人的,我们就是这个人的,我们就是这个人的,我们也不	,自己的现在分词形式的对对对对自己的对对对对对对对对。 医侧面 医二氯甲基 医动物性神经病 医神经神经炎 化二氯甲基乙二氯甲基乙二二氯甲基乙二二二二二二二二二二二二二二二二二二二二二二二二
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一直,我们们们的最大人们的基本企业,我们们们的工作的问题,从这个人,我们就是这一个人的一个人的一个人的,我们就是这些一个人,这个人不是一个人的人,就是一个人们的	ART DANGE CONTROL OF STATE OF
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相信是最高,在最后的内部的内部的一个企业,这个人就是是有多数的企业,我们就是有一个人的企业,这个人的企业,这个人的人们的,但是是一个人,也是一个人的。这个人,是 第二章	**************************************
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着,就是自然的人的转移的,这样都是有效的的,但是是是一种的人,也是一个人的人的,也是不是一个人的人的。这是是一个人,这是一个人的人。这一个人的人,也不是一个人的	《西西西·尼西·西·西·西·西·西·西·西·西·西·西·西·西·西·西·西·西·
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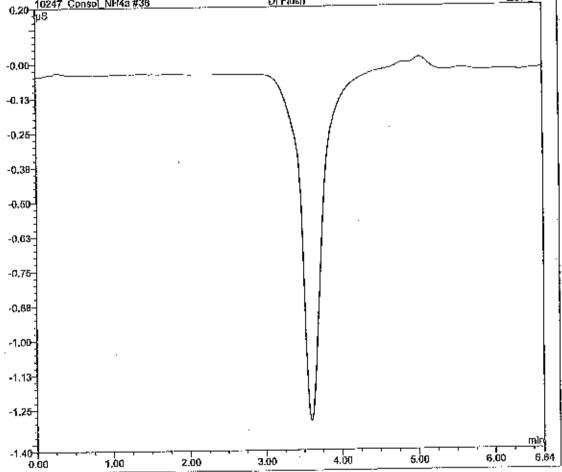
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1	5.62	Ammonium	MB⁺	0.043	0.158	л.а
	TOTAL:				0.16	0.00



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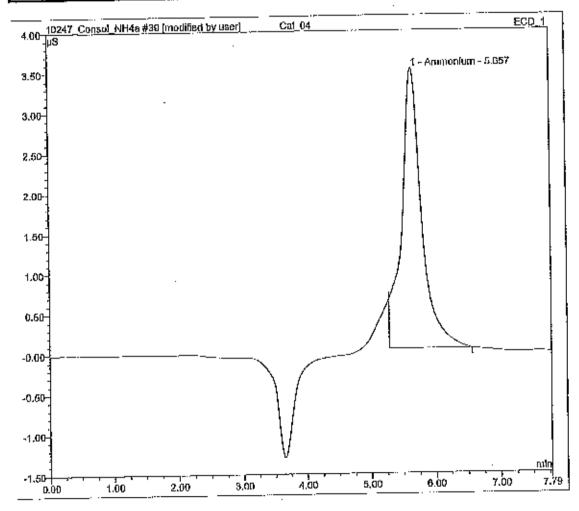


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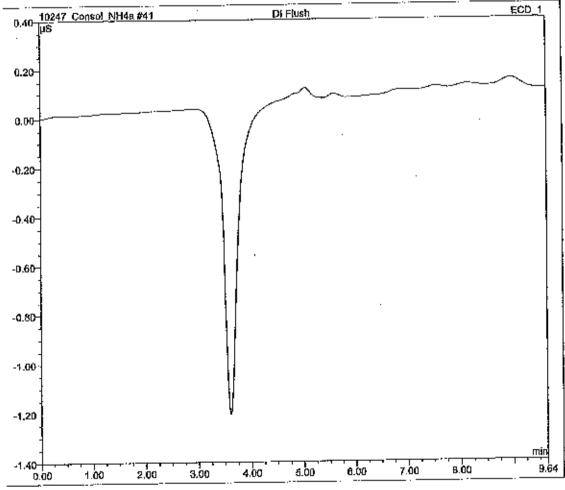


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1 5.86 Ammonlum	MB*	1:254	3.484	п.а.
TOTAL:		1.25	3.48	0.00

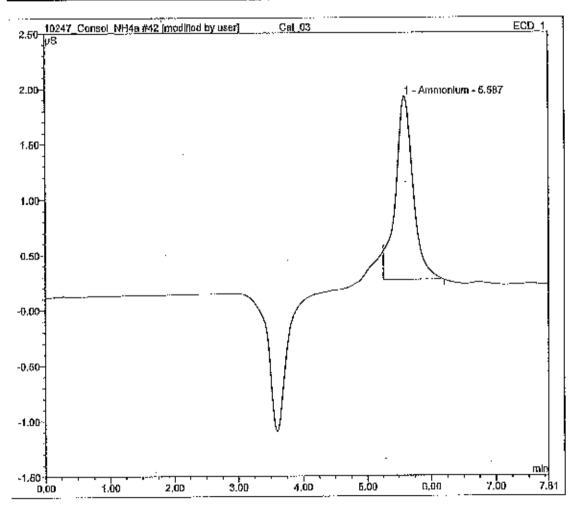


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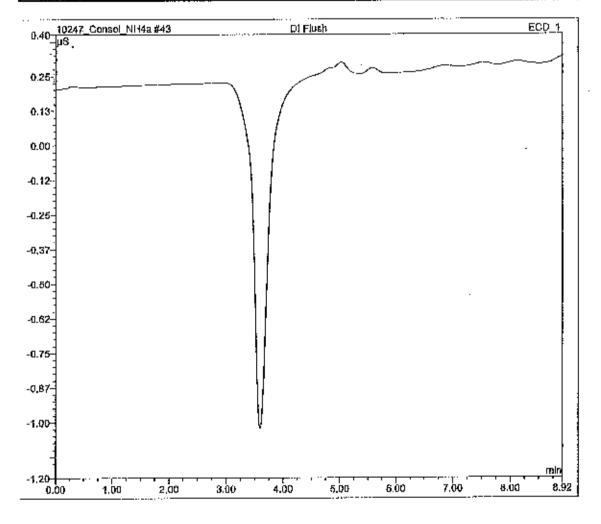
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No.	FCOVE	Ped Name	The second	LANGUAGE TERMINATUR	Helgit E00-1	FireTAMOUNT POPULATION
1	5.59	Ammonlum	MB*	0.523	1.659	n.a.
:	TOTAL:			0.52	1.66	0.00



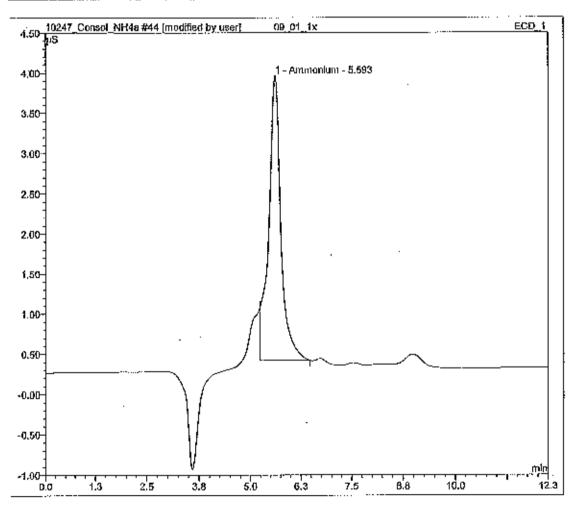
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No. Time! Peak Name type EGD 1 NECD 12 EGD 1 EGD 1	Service Services	Height EGD 15 P8	Amount ECD:11
TOTAL:	0.00	0.00	0.00



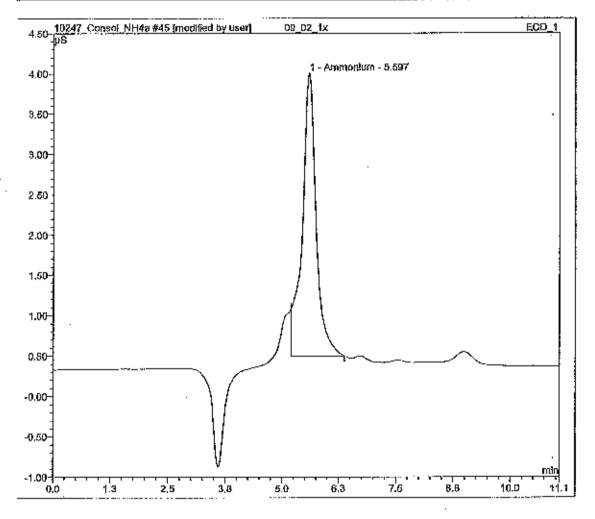
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1	6.59	Ammonlum	MB*	1.254	3.546	· n.a
TOTAL: 1,28				1,25	3,55	0,00



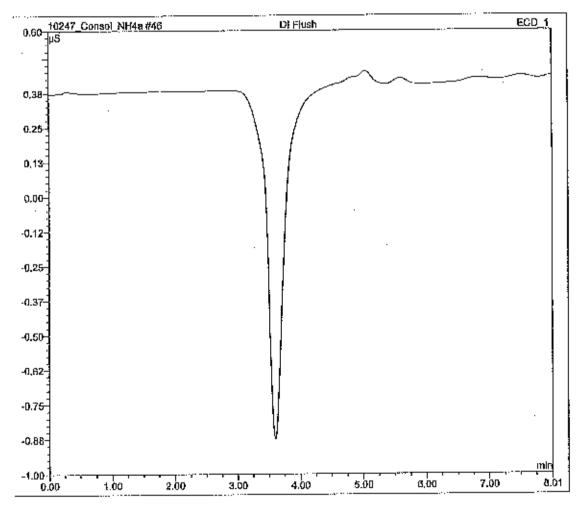
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No.43 ECD 1	ime EĈD 1	PERKNAME	Tyae ÆGD_1	Area	ECD:	
1	5,60	Ammonium	M8*	1.252	3.515	n,a,
	TOTAL; 1,25 3.61 0.00					

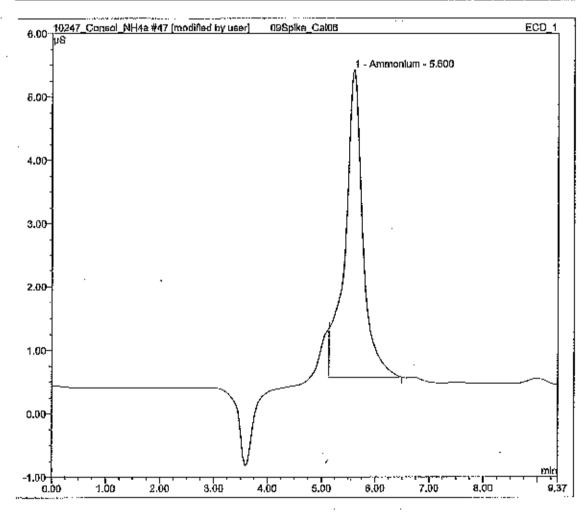


Sample Name DEFIDSE 11 Saljiblio type unknown Programs 19:06:07 - 08:22	ini Yol 10 Dillion Facior 1000 Coperato 1 Daniel 3 Nunez Facilities 2 2 2

No. Tono Peak Name Type EGD TEOD TODAY EGD T	Area ECO PS/M/M	Height ECD11	Amount ac
TOTAL:	0.00	0.00	0.00

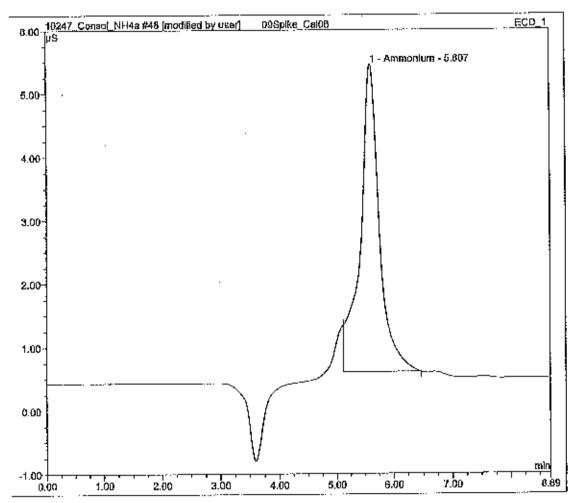


		Peak Name	EGD	Area ECD:4	ECD 1	Amount ECD
1	5.60	Ammonlum	MB*	1.868	4.857	р.а.
	TOTAL:			1,87	4.86	0.00



Sample Name Ogspike Called Sample Noe Unknown Program	inji vol. 1 0. Dilation Eactor: 1 0000
Inj. Date/Time: 1910B07: 09142	Operator Daniel J. Noriez

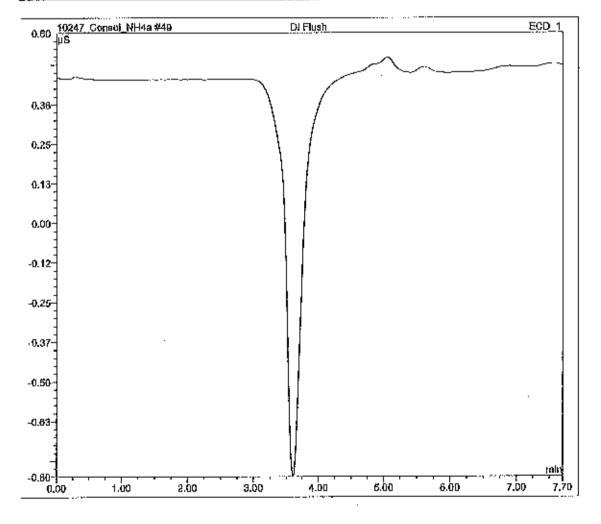
No.		Peak Name ECD 12	Type ECD 1	Area ECD : 111 ECD : 111	HOOM HOOM ECC 1111	Eco 1
1	5.61	Ammonlum	MB*	1.876	4.847	п.ө.
	TOTAL:			1,88	4.85	0.00



Integration Report - ECD_1

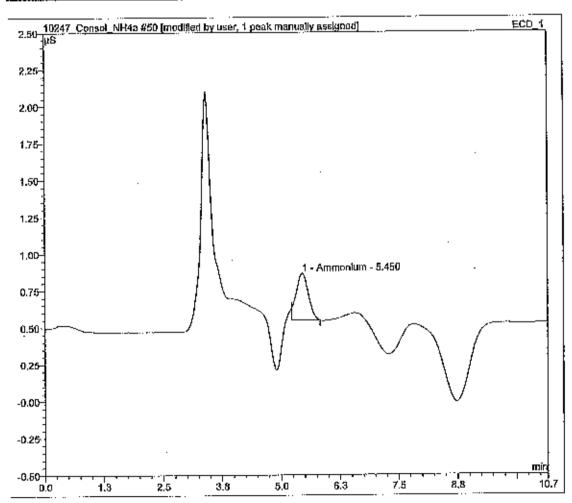
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No Ime - Feachame - Layre	Area	Helpht	C Amount 2
ECDS1 SECOND SEC	13. ECD-1	L This	EGD /
TOTAL:	0.00	0.00	0.00



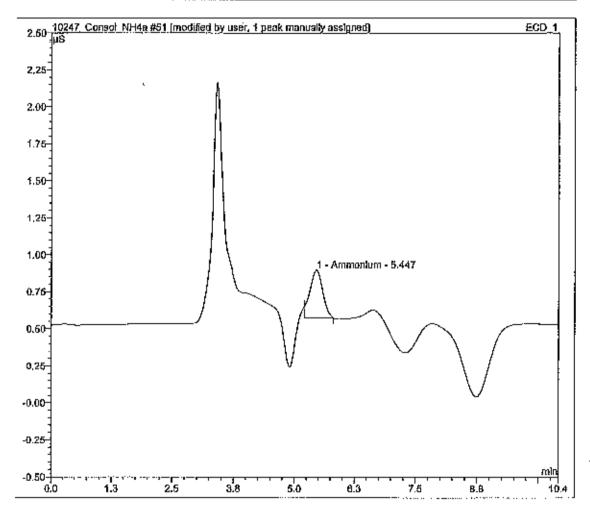
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Sample Name: 40-00 1.1x 10-10 10-1	The second secon
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的文字,是是"我们的",是是有关的,我们就是一个人的一个人的,就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的。"我们就是这一个人的,我们也不	Profession (1997) (1994) in the contraction of the
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Sample Type : Uniknown: Security Securi	

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1	5.45	Ammonism	MB*^	0.095	0.319	n,a,
		TOTAL:		0.10	0.32	0.00



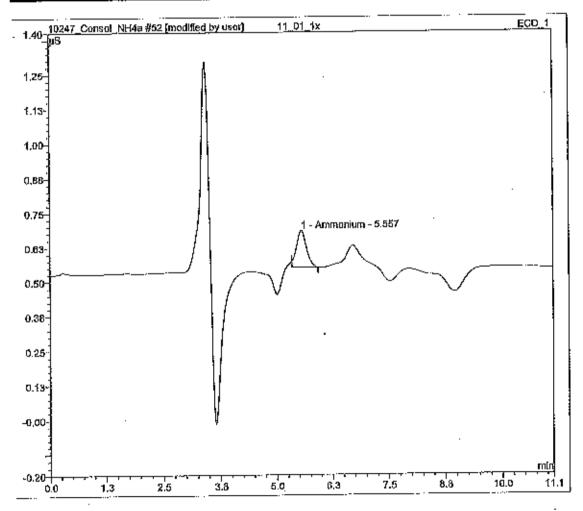
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,一切时间,一个时间,我们就是一个时间,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是一个人的人,我们就是这个人的人,我们就是一个人的人,
一张,连接了我们就是一张的话,我们还是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个
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11-11-11

2N6.33 EQD 1	ECD-1	Peak Name	ECD-1	ECD:	EHeight ECD d	Amount ECD 1
1	5.45	Ammonlum	MB**	0.100	0.323	n.e.
	TOTAL:			0.10	0.32	0.00



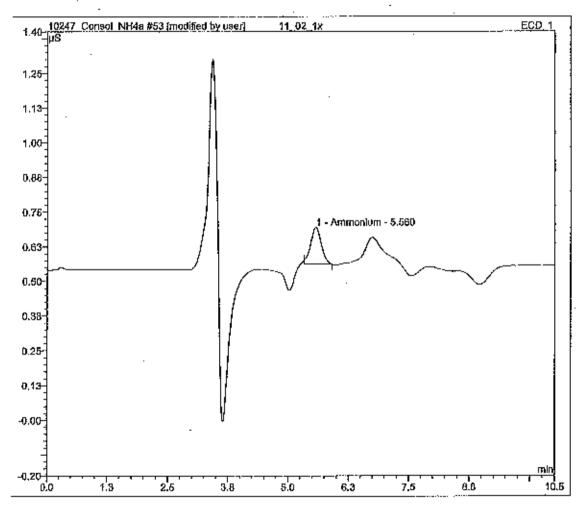


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1 5.56	Ammonium	MB*	0.035	0.134	n.ə.
	TOTAL		0.03	0.13	0,00



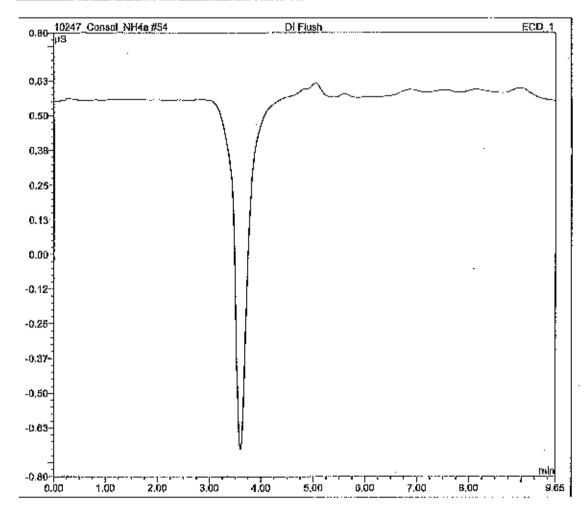
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1	5,53	Ammonium	MB*	0.034	0.133	n.e.
L		TOTAL:		0.03	0.13	0.00

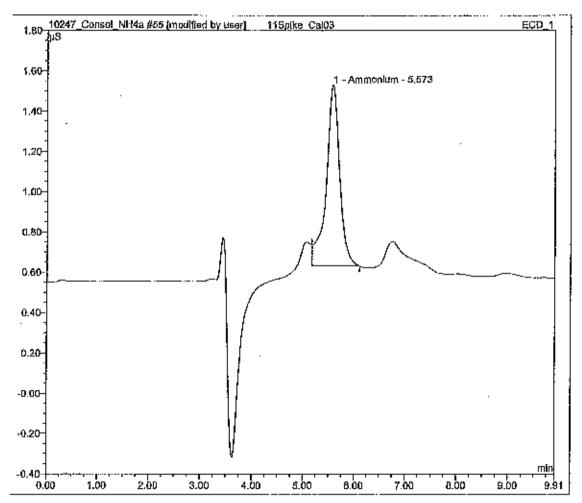


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TOTAL:	0.00	0.00	0.00

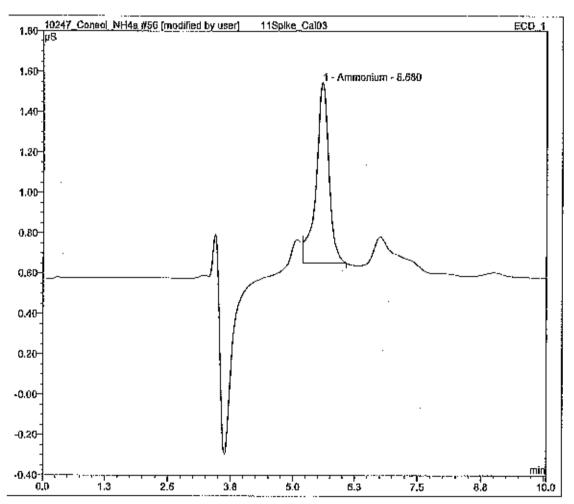


EGD 4		Peak Name ECD-13	Type ECD-1	Area 70 EGO 1	T Peight EGD 4	Amount Street, ECD_(
1	5.57	Ammonium	MB*	0,275	0.900	n.a.
<u> </u>		TOTAL:		0.27	0.90	0.00

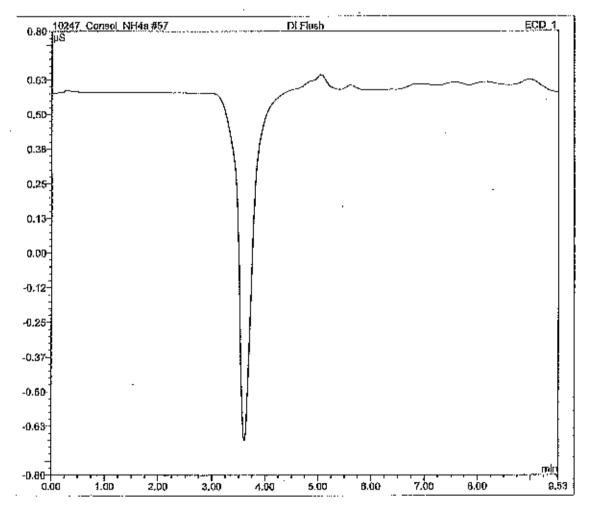


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Sample Type: 12 Sunknown
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10) Date/Times 119:06:07: 11:07:

POT	limo EGD	Peak Name	ECD 7	Area III	ECD	Amount EGD:
1	5.58	Ammonium	МВ*	0.270	0.896	R.O.
	TOTAL:			0.27	0.90	0.00

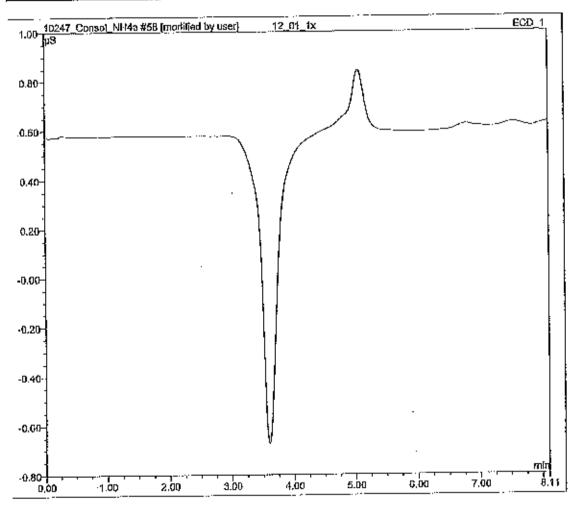


TOTAL:	0.00	0.00	Ann
No. Times Peak Name 15 Type	Arel	Height 1	Amount ECD 45



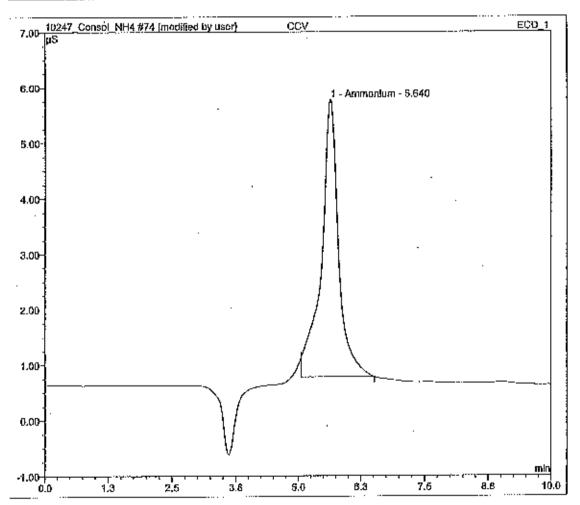
Sample Name 2 12 01 118 11 12 12 12 12 12 12 12 12 12 12 12 12
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表现了这次是一个大型,我们就是一个大型,我们就是一个大型,我们就是一个大型,我们就是一个大型,我们就是一个大型,我们就是一个大型,我们就是一个大型,我们就是一个
。这一个大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大
。一种的一种,我们就是一种,我们就是一种,我们就是一种,我们就是我们的,我们就是我们的,我们就是一个,我们就是我们的,我们就是我们的,我们就是这个人的,我们就是 第一个人的时候,我们就是我们的,我们就是我们的,我们就是我们的,我们就是我们的,我们就是我们的,我们就是我们的人,我们就是我们的人,我们就是我们的人,我们就是我们
是是是是是一个人,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的,我们就是一个人的
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。一种,但是这个人的是一种,我们们们就是一个人的,我们们就是一个人的,我们就是一个人的,我们们就是一个人的。这个人的,我们们就是一个人的。这个人的,他们们们们的
Sample Name 12-01-1X 0.0000 0.00000 0.00000000000000000000

NO Fine Peak Name Type ECD 1 ECD 1	Area CECP_1 us in life	Helight ECD.1 -µS	Amount EGD:11
TOTAL:	0.00	0.00	0.00



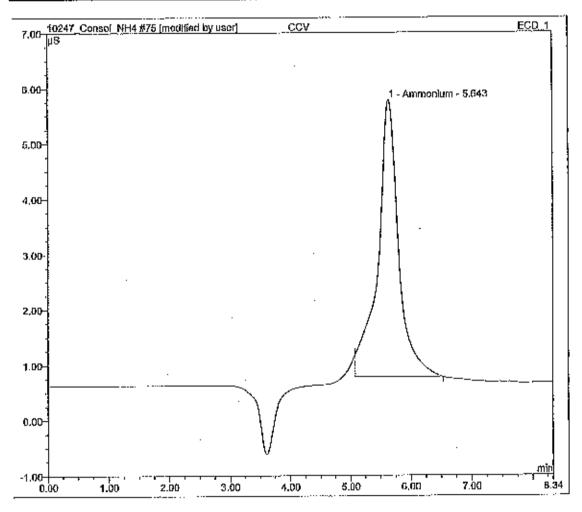
Sample Name CCV 22 / Display CCV 22 / Display Colored CCV 22 / Display Colored CCV 22 / Display Colored CCV 23 / Display Colored CCV 24 / Display Colored CCV 25 / Display Colored CCV 25 / Display Colored CCV 25 / Display Colored CCV 25 / Display CCV 25 / Displa	otion Factor (10000

::EGD <u>@</u> It	Livery and Committee of	Reak Name	YD9	STREET CHARLES	Helgh ECD	FEST Amount
1	5.64	Ammonlum	MB*	1.998	5.008	n.a.
	TOTAL:				5.01	0.00



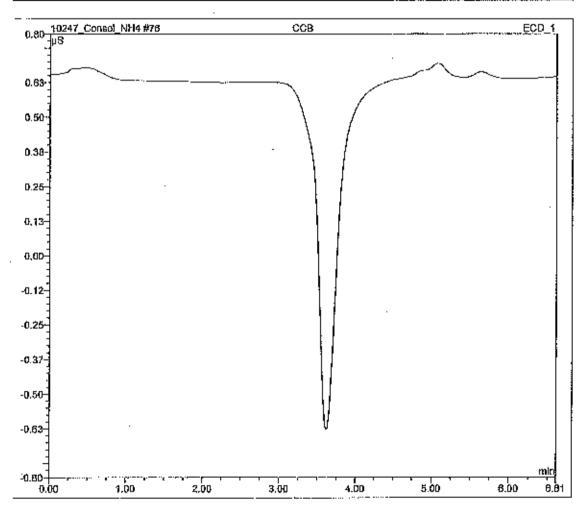
Control of the contro	是是最级的现在分词的 "你不是一个女子的女子就是我们是是''"。
一一一直是是我的人们们的表现,但是我们们们的特定,但是我们的特殊的特殊的。但是我们的特殊的特殊,他们是我们的人们是是我们的人们的人们的人们的人们的人们的人们的人	
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等。这种是一种,我们就是一种的,我们们就是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	
。""我们就是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	CONTRACTOR OF CASE OF THE PROPERTY OF THE PROP
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Ros ECD_1	Tume EeDin	Peak Name (c)	Tipe Ego 7	Area GEGD 2	Height ECD Jus	Amount Ecoly
1	5,64	Ammonlum	₩B*	1.993	5,008	n.e.
	TOTAL:			1.99	5,01	0,00



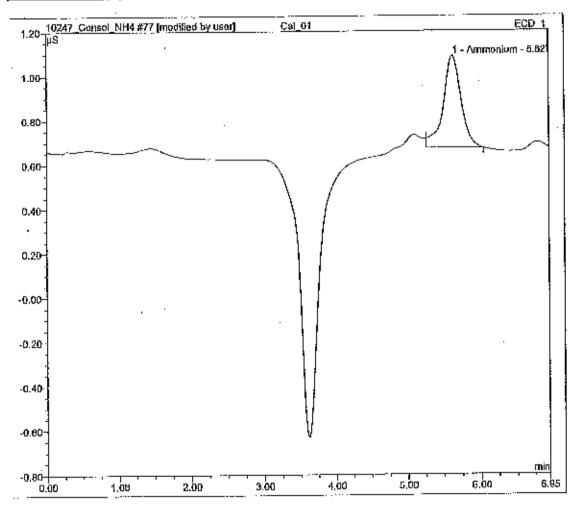
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EGD 12 ZECD 45		ak Name	ECOSISSI	EGD.4	Amount ECD 1
	-	TOTAL:	0.00	0.00	0.00



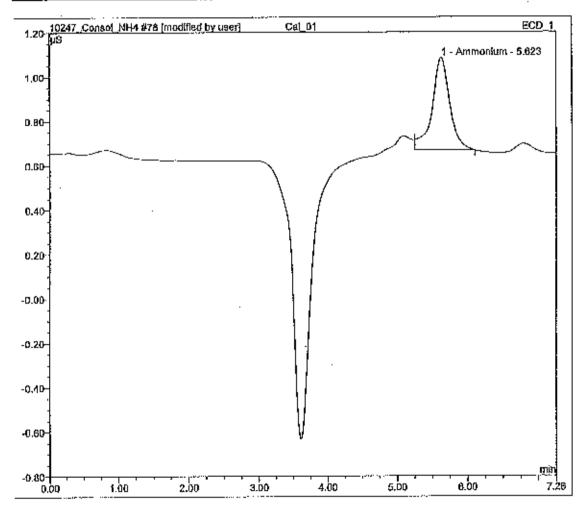
Sample Name: 15 Cat. 01: Inj. Vol. 1:0 Sample Name: 2 Cat. 01: Oliulos Factor 1:0000 Facgram: 1:1

No.	Time ECO 1	Peak Name	Type EGD	Area ECD 111 183mln	r: Height ECD 1	Amount EGP
1	5.63	Ammonlum	MB*	0.117	0.416	n.a. <u>·</u>
	TOTAL:				0.42	0.00



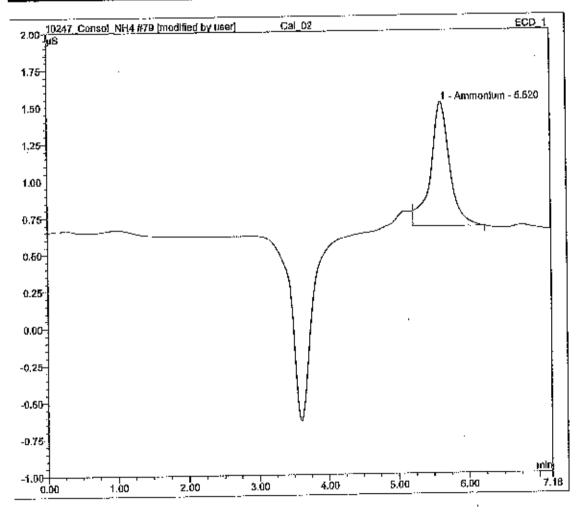
Sample Name Cal 01 Sample (VPE) - unknown Program	David Library
Programs 195 195 195 195 195 195 195 195 195 195	Orlorafor Daniel J Nunazs

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1	5,62	Ammonium	MB*	0.122	0.418	л.ғ.
		TOTAL:		- 0.12	0.42.	0.00



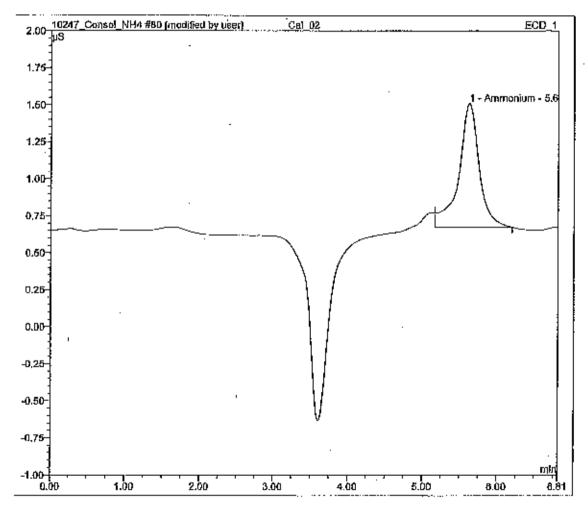
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	(4-1-2)
pwww.m. who was a little and the control of the con	2E:37
	W-12/2
Sample Name - Cal 02 Inj. voj. 100 Sample lybos - Linknown - Daniel J. Nonez Program - Operator Daniel J. Nonez Inj. Date/Time - 19.05.07.18:15 - Run rime - 7.18	Martin (H)
ini Dale/Tinian venggi bilang panggang panggang panggang panggang panggang panggang panggang panggang panggang	

No ECD	aline.	Pësk Name	Type ECD (AVET	Reight 1	Amount FOD
1	:: <u>∰min %</u> 5.62	Ammonium	MB*	0.265	0.841	Ŋ,ė,
		TOTAL:		0.27	0.84.	. 0,00



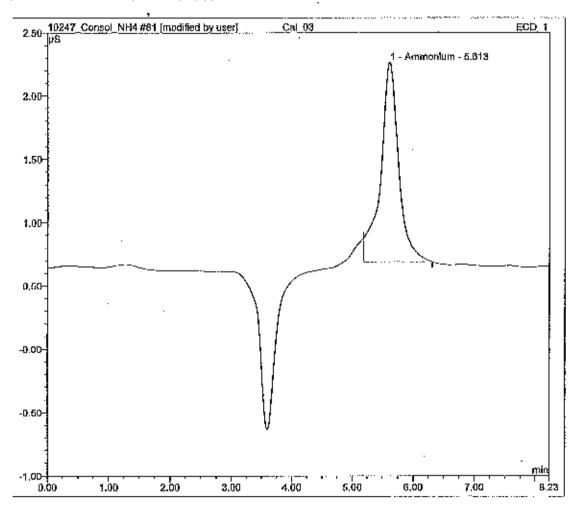
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NO. ECD 1	ECD	1.5.15 C. (1.5.2 美元) (1.5.2 美元) (1.5.4 美元) (1.5.4 美元) (1.5.4 美元) (1.5.4 美元)	ECD_1	Area T	Height EGD 1 p8	Amount 1
1	5.62	Ammonium	MB*	0.268	0,838	n,a,
	TOTAL;				0.84	0.00



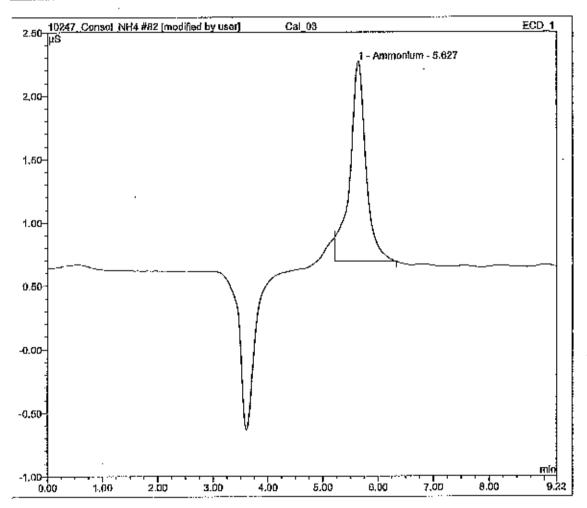
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	Rogam and the property of the second
-	Inv. Calefrine 19:08:07: 16:31:

ECD /	CONTROL OF THE	Feak Name	Type: ECD:4:	Alea ECD2(3)	Height ECD21	Amounto ECD 1
1.	5,81	Ammonium	MB*	0.534	1.579	n.a.
	TOTAL;			0.53	1.58	0.00



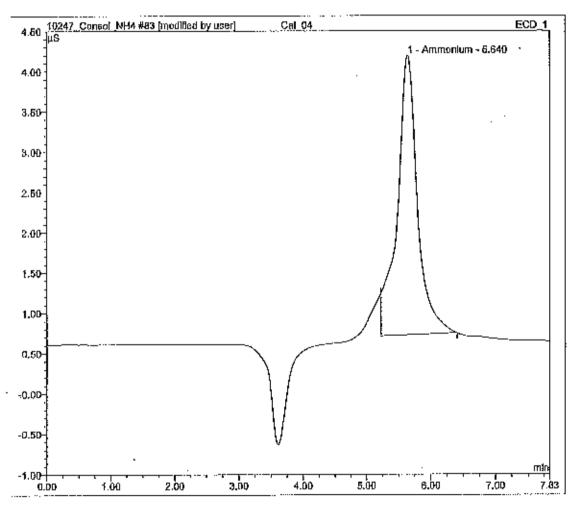
	Contraction in the property
Semple Warmer and Call-Data Andrew Control of the C	magnification and the contraction of the contractio
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Semple (Vanic Car-98 / 1.0 / 1.0) Semple Type : Uniknown	
。 [1] "我们就是我们的人,我们就是自己的自己的,我们就是我们就是我们就是我们的人,我们就是我们就会会看到了。""我们就是我们的,我们就是我们的人,我们就是不	可能 医胃髓机
	44
Inf. Claig/Time: 12-18-08:07 - 18-40 - 9-22	Contract to the second second
。 第17 12 12 12 12 12 12 12 12 12 12 12 12 12	error by the second
Fine Date: Time: 44-319.06.0.45-36-40.11.85-21.31.11.11.11.11.11.11.11.11.11.11.11.11	
and the state of t	

No. ECB 1	ECD 1	Reak Name	NEW PROPERTY.	Arga EGD	i∷ Height II- ECD /I -iS -iπμ8	Amount ECD
1	5.63	Аготоліцт	MB⁺	0.534	1.581	H'S'
		TQTAL		0.53	1.58	0.00



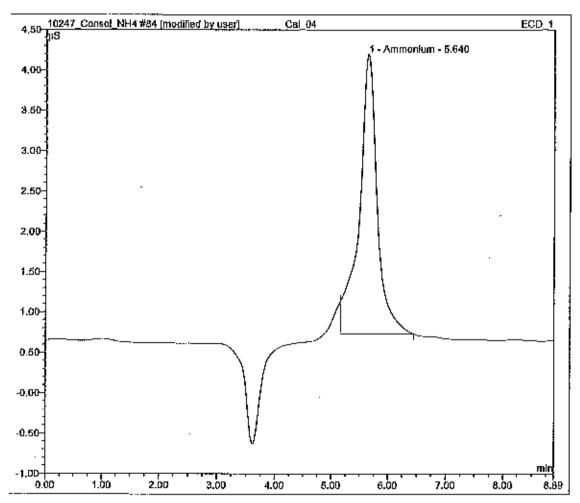
Sample Name 1. Cal O4: 11.	- (m-1):00 (m-1):00:00 (m):00:00
The state of the s	在1970年中的1990年的1990年,中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国中国
。	CINEDIC CONTRACTOR CON
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The control of the co	The Best Productive to the Company of Exploration and the Section of Exploration of Company of Exploration (Company)
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The second secon	The first of the second of the
Inj. Cale/Tyrie ::::19.06.07: 16.60	是是我们在Three 2000年的第三人称单数 1000年的 10000年的 1000年的 1000年的 1000年的 1000年的 1000年的 1000年的 1000年的 1000年的 1000
A. Additional of 1910 of Latination, in page 1900 and property of the page 1900 and 1910 August 1910 A	The last last last last last last last last

No EGD_1	ine Louis E	Peak Name		Area CECD 11 µS min	Height ECD-1 18	Amolini Eco.
1	5.64	Ammonium	MB*	1.258	3.469	, n.a.
		TOTAL:		1.28	3,47	0.00



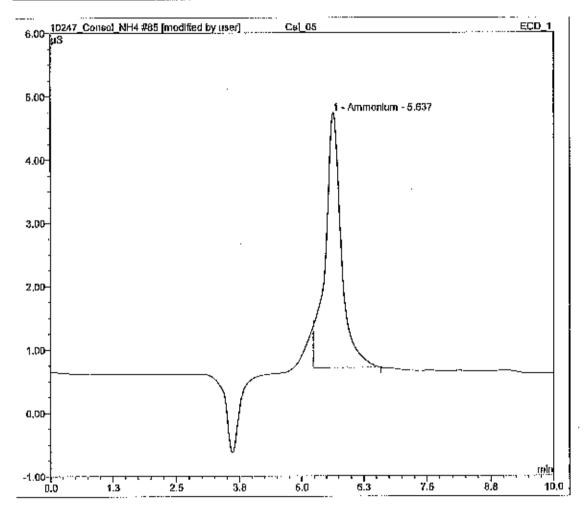
Sample Name: Cal:04 Jini:Vol. 2.0 Jini:Vol. 2.0 Sample: Upe: Unknown Didlon Fasio: 1,0000 Hogging. 2.0 Operator: Daniel Ununez Daniel Ununez January 10,000 Ja
In Dalectime 19.06.07 16:58

No.1	Time EcD 1	Peak Name		EGD 1	Height :: EGD 1c 1 ps	Amount Control of the
1	5.64	Anjmonium	MB*	1.283	3.463	л.а.
	TOTAL:				3.46	0.00



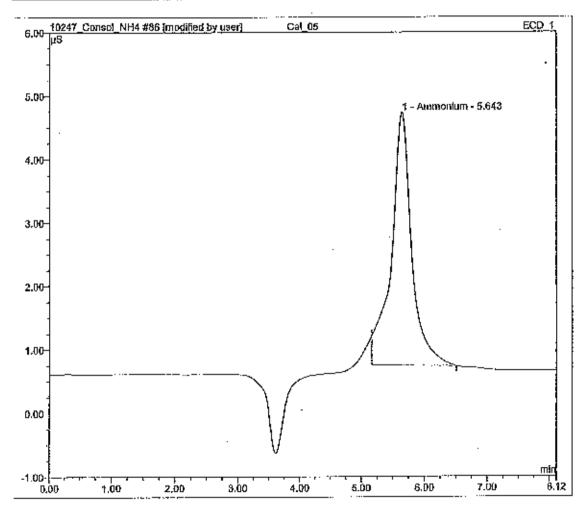
Sample Name: //sCai_05: 3.0.0
Inj. Dato/Jime 19:06:07: 17:07:

No. 3 Elim ECD 1 ECD.	Peak Name	ECD-1	Area ECD 1	Height ECD 1 - µ8	American along a construction of the Construct
1 5.64	Ammonlum	MB*	1.606	4.027	n.a
	TOTAL		1,51	4.03	0.00

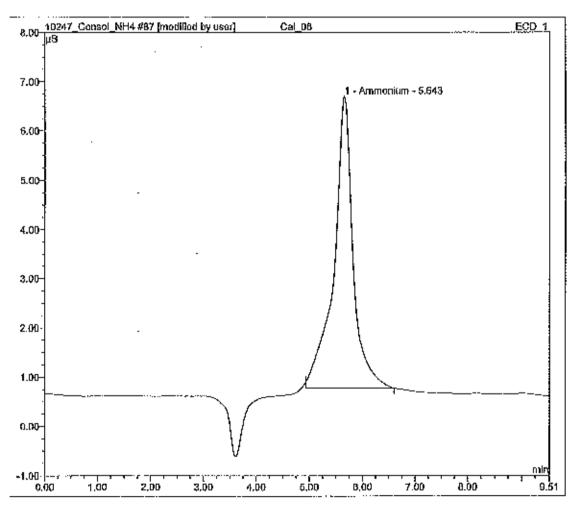


	<u>'</u>	
Sanole Name Call 06	pluror Pacton	0000
Sample Type : Orknown : Program Orknown : Program Orknown : Orknown : Program Or	Operator	Daniel U Nunez

NO TO	ione ECO 1 hillo	Féak Name EGOM	Type ECD-1	Area EGD.	Height 1	Amount EGD/A
í	5.64	Ammonium	MB*	1.505	3,992	ń.a.
		TOTAL:		1,61	3,99	0.00

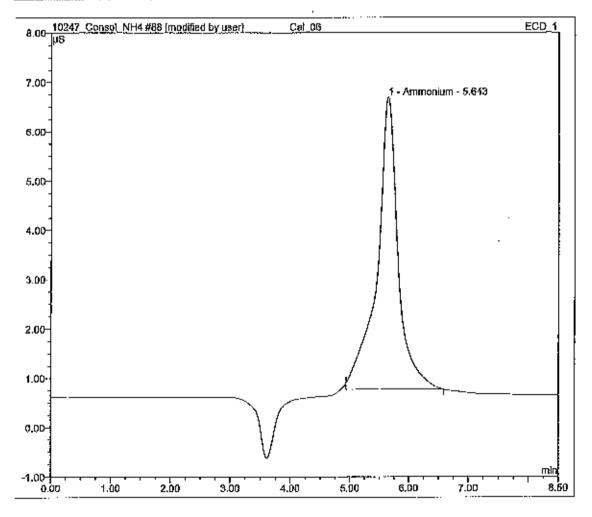


ECD.	Michigan Committee Anne	Peak Name	ECDL	Aleas EGD 111	FCD	THE PROPERTY OF THE PROPERTY O
1	5.64	Ammonium	MB*	2.479	5.93D	п.а.
	TOTAL;			2.48	5.93	0.00



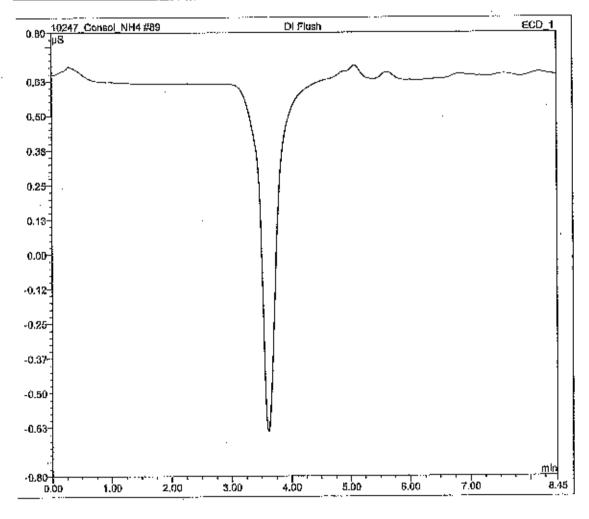
Sample Name Cal U5 Inj Vol. 1:0 Sample Type, unknown Erogram: Operator Daniel INumbz Inj Dale/Line: 19:08:07, 17:37 Pun Type: 14:38:50	
--	--

ECD 1	ivi me EOD (I	Peak Neme **********************************	TV56 * ECD 1	ECD 1	e Height : ECD :	Amount 5.5
1	5.64	Ammonium	₩B*	2.470	6.923	n.a.
		TOTAL:		2,47	5.92	0.00





No Time: Pank Name Type ECD /	Area 600 1 µSmlir	EHelght ECD 1	Amount ECD-1
TOTAL:	0.00	. 0.00	0.00



Stock Solution Standard Mixing Recipe (Cations)

Order of Elution	1	2	3	4	5	6
Analyte	Lithium	Sodium	Ammonium	Potassium	Magnesium	Calcium
Analyte Weight (g/g-mole)	6.94	22.99	18.05	39.1	24.31	40.08
Solid Formula	LiCI	NaCl	NH₄CI	KCI	MgCl ₂ •6H ₂ O	CaCl ₂ •2H ₂ O
Number of ions/Formula	1	1	1	. 1	_ 1	1
Formula Weight (g/g-mole)	42,39	58.44	53.49	74.55	203.3	147.02
% Analyte in Solid	16.37%	39.34%	33.74%	52.45%	11.96%	27.26%
			0.3374			
Recomended Analyte						
Concentration (mg/t)	500	1,200	5,000	3,000	5,000	7,000
Amount of Solid Required to Achieve the At	oove Stock Solut	ian Concent	ration in The Li	sted Volumetri	c Flask:	
50 0 ml	1.5270	1.5252	7.4086	2,8600	20,9070	12.8386
T	500 ml					
Enter Size of Flask				· · · · · · · · · · · · · · · · · · ·		
Enter Amount of Solid Used						
Actual Concentration (mg/l)	·		5027.14			

Concentration in the Five Cal Flasks

Stock (1 liter Flask) Solution Concentrations 10 ml Original Solution Used

50.2714 •

FlaskSize	AliquotStock		
500	5	0.5027	1 •
250	5	1.0054	2 🍝
250	10	2.0109	3 *
200	20	5.0271	4 u
250	30	6.0326	5 🕳
250	40	8,0434	CCV •
200	40	10.0543	5 €

Lab Project# 28132i	Contact Name	Eric Doak		iff 20 Jun	2007
Clean Air Project # 10247	PhoneNumbe				Wed Thu Fri Sat
Internal Dept # 68	Fax Number	···	🕹 Clean	27: 28: 29:	30 . 21 . 15 . 2
Customer Consol Energy		edoak@cleanair.com			8 7 8 9
Plant/Facility Green/idge Power Plant	MailingAddress		FNG NEE	я і м s (100,110,126) / 170,180,190	13 14 15 16 20 21 22 23
Chain-of-Custody Yes	T = X = X			24 25 28	27, 28 29 30
Date Started 6/13/2007	PO Number		\top , \mid \cdot \mid		4, 45, 46, 7
Date Finishe	Client.Note				on again to a second se
Analyst Daniel Nunez	<i>A A</i>				A A
Analysis #1	Analysis #2	Analysis #3	Analysis #4	Analysis #5	Analysis #6
Date Ordered 6/2/2007					
Date Received 6/13/2007					<u></u>
Date Due	> _{N_E}	\ \	\	<u></u>	
First Sample No			——————————————————————————————————————		
Last Sample No12					
Sample Type Imp C&R					· · · · · · · · · · · · · · · · · · ·
Wethod Ctm-027	h;	 	<u> </u>	<u> </u>	N
Antalysis Details Amenonium by Ion Chromatography					j.,
	<u></u>		· 		
Container Plastic Jar					
Sample Condition OK					<u> </u>
Comments Sample -06 leaked during shipping, COC not signed				.	
	i				
			" " " " " " " " " " " " " " " " " " "	The state of	May 1 mg 1 mg
					Jen Jen
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the state of the state of	a ida	ed by the same of the	" John Jake	Mr. Mr.	No.
			•	-	

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CHAIN OF CUSTODY FORM

CLIENT	Ć1				DAIN OF COSTODI	1	T	44701	/OIO F			
PLANT	Consol Ene			, ,	ROJECT NO. 10247		+	ANALI	isis r		STED	
	Greenidge i				DEPT68	킥 뿔.	彦					
	MANAGER	Enc Doak				OF CONTAINERS	ORIGINAL	NH3 - IC Analysis			۵	DDITIONAL
CAE						2		<u> </u>				FORMATION
LAB NO.	RUN NO.	TEST LO	CATION	DATE	SAMPLE MATRIX	<u> </u>		支				
	1	Unit 4 - Air F	leater inlet	5/31/2007	Front Half Rinse	1	208	. х				
	11	Unit 4 - Air F	leater Inlet	5/31/2007	Imp 1 Catch & Rinse	1	195	x				
•••	11	Unit 4 - Air h	leater Inlet	5/31/2007	imp 2 & 3 Catch & Rinse	1	280	×				
	2	Unit 4 - Air h	desfer Inlof	6/1/2007	Front Half Rinse	1	153					
	2	Unit 4 - Air F		6/1/2007	Imp 1 Catch & Rinse	1 1	211	×				•
	1 2	Unit 4 - Air I		6/1/2007	Imp 2 & 3 Catch & Rinse	╁╌┆	210	×			 	
	<u> </u>	Olik 4 - Mil t	icater inner	8/1/2007	imp 2 & 5 Galeit & Pariss	 	210	X				
	3	Unit C - Inle	t	6/1/2007	Front Half Rinse	1	192	×				
·	3	Unit C - Inle	<u>t</u>	6/1/2007	Imp 1 Catch & Rinse	1	195	x		W		
	3	Unit C - inle	t ·	6/1/2007	Imp 2 & 3 Catch & Rinse	1	265	· x				
						1						
	NA.	Field Blank		6/1/2007	Entire Train	1	431	×				
	NΑ	Final Rinse		6/1/2007	Final Rinse	1	!	×			Need Volum	e
	NA.	Reagent Bia	ink	6/1/2007	0.1 N H2SO4	1		×			Need Volum	e
Relinquish	ed by:(Signat	nte)	Date/Time	Received by] :(Signature)	+	 Date/Tim	e Relin	quishe	d by:(Signature)	Date/Time
Courier.			Date/Time	Relinquisher	d by:(Signature)		Date/Tim	e Rec'd	for A	dalvsis		Date/Time
Special Ha	ndling Instru	ctions		···	This form was completed by:	-1				1601 Pittsb	Parkway Vie ourgh, PA 15	w Drive
For	rwarding Lab	Clean Air -			Eric Doak		C/e	anA	N G	(****/	787-9130 ph	
		Attn: D. Rh	oades		Signature Date 2-Jun	_				(412)	787-9138 fa:	C
	PO Number	68-10247		······	Eric Doak	•	DŞ ÇDI FXCI R) Pilleburgh 19-8:3195				

APPENDIX B Field Data Sheets

AES GREENIDGE UNIT 4 GUARANTEE TESTING

NH3 Summary

May 31-June 1, 2007

Location		ECO	AHI	ECO	AHI	ECO	AHI
Date		05/31/07	05/31/07	06/01/07	06/01/07	06/01/07	06/01/07
Start Time		1804	1804	1018	1020	1205	1205
Stop Time		1916	1910	1104	1108	1250	1252
Test Number		NH3-1	NH3-1	NH3-2	NH3-2	NH3-3	NH3-3
MEASURED TEST VARIABLES							
Y factor of Dry Gas Meter	-	0.983	0.970	0.983	0.970	0.983	0.970
Gas Volume	- ft ³	43.18	34.16	33.62	26.83	34.02	26.75
delta H of Dry Gas Meter	- " H ₂ 0	1.0	1.0	1.5	1.5	1.5	1.5
Meter Temperature	- °F	106.7	104.6	95.2	97.1	100.4	102.3
C Factor of Pitot Tube	•						
Nozzle Diameter	- inches	0.194	0.181	0.194	0.181	0.194	0.181
Area of Nozzle	- ft ²	0.00021	0.00018	0.00021	0.00018	0.00021	0.00018
Area of Stack	- ft ²						
H₂O Weight	- gm	97.4	63.2	53.3	59.4	55.5	58.5
Sample Time	- minutes	60	60	40	40	40	40
Barometric Pressure	- " Hg	29.44	29.44	29.47	29.47	29.44	29.44
Static Pressure	- " H ₂ 0						
% Oxygen	-	3.5	4.1	4.7	4.5	5.3	4.4
% Carbon Dioxide	-						
% N₂ + CO	•						
Stack Temp (Dry Bulb)	- °F	666.9	636.8	660.5	NA	668.9	NA
Stack Temp (Wet Bulb)	- °F						
"S" Sample (rms vel head)	- " H ₂ 0					·	
Ammonia as NH4, from IC	- mg	60.32	> 1.53	50.89	2,33	41.41	2.22
Ammonia as NH4, from ISE	- mg	54.71	> 1.50	48.04	2.01	38.36	1.80
CALCULATED TEST VARIABLES							
Sample Volume	- dscf	38,99	30.55	31.06	24.37	31.11	24.05
Absolute Stack Pressure	- " Hg						
Absolute Stack Temperature	- °R	1127	1097	1121	NA	1129	NA
H₂O - % by Volume	- vapor					•	
H₂O - % by Volume	- w/ droplets	10.5	8.9	7.5	10.3	7.8	10.3
Water Volume	- std ft ³	4.59	2.98	2.51	2.80	2.61	2.76
Dry Molecular Weight	- lb/lb-mole						
Wet Molecular Weight	- lb/lb-mole	İ		· .			
% Excess Air	• '						
Mole Fraction of Dry Gas	-	0.895	0.911	0.925	0.897	0.922	0.897
Mole Fraction of Wet Gas	-	0.105	0.089	0.075	0.103	0.078	0.103
Ammonia, IC Results					- 1		
NH3, ppmvd as sampled	-	72.81	> 2.36	77.11	4.50	62.65	4.34
NH3, ppmvd @ 3% O2	-	74.90	> 2.51	85.20	4.91	71.89	4.71
Ammonia, ISE Results		60.54				#0.5.1	
NH3, ppmvd as sampled	-	66.04 67.93	> 2.31	72.79 80.43	3.88 4.24	58.04	3.52 3.82
NH3, ppmvd @ 3% O2	<u> </u>		> 2.46			66.60	3.82

Note: For Test Number NH3-1 at the air heater inlet, a portion of the line rinse was lost during sample recovery. Hence, the actual amount of NH3 present in the flue gas was likely greater than the amount determined from the recovered sample, as indicated in the spreadsheet.

TEST ID	AHI-1
PLANT	GREENIDGE
LOCATION	AIR HEATER INLET
DATE	5/30/07
OPERATOR(S)	BG& DC
AMBIENT TEMP [°F]	101
BAR. PRESS. I" Hol	29-44

CONSOLENERGY.

METER BOX	N-1
PITOT TUBE DESC	AU
PROBE LENGTH [ft]	10 4
NOZZLE ID [inch]	0.181
%H₂O (Assumed)	8
FILTER ID	901007
K FACTOR	NA

				raye <u> </u>
CAL. DATA: delta H	1.894	Comments:		
Y	0.970			
C(p)	NA			
FILTER BOX SETTING	NA			
PROBE HTR SETTING	325			
DUCT X-SECTION	circ ?	rect?	other:	
DUCT DIMENSIONS		DUCT AREA		
			LINE TEMP	

TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER	TEMP	STACK	PROBE	FILTER	LAST HMP	METERE	
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	[0		TEMP	TEMP	* B ΘX*	TEMP	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	921. [11] 203	iniet	outlet	(°F)	[°F]	(°F)	(°F)	[% voi]	[% vol]
opistijastikalini	4604	0		Storio di dispetit.			920-392			(73	7 m 1	and pro-	70		
WEST	1809	5	NA	NA	1.0	3	924,015	102	101	633	301	255	1,8	4.7	
	1814	10	,	у и и и и и и и и и и и и и и и и и и и	1.0		926820	102	101	635	323	25Y	68	free free free free free free free free	
	1519	15		and the second	1.0	4.3	929.673	104	101	635	327	254	67	4.5	
	1824	20	***************************************	nan-Children	1.0	S.0	932,520	105	102	634	323	254	67	-	
	1829	25	and the second	Quality () (glass)	1,0	5,2	9351355	- tot	102	634	323	354	47	4,5	2 .
	1234	30	No.	- Tanana and a said	(,0	5.8	9381218	108	102	634	323	255	67	4.9	
				* ************************************	*		-,242	IJ with		38c5				27.4	,
EAST	1840		To the control of the				938460		-						
ا درابس	1845	35		DOM:	1.0	6.0	941.458	108	103	635	323	248	66	3.7	
	1850			ny material and a second	1.0	6.3	944, 289	109	103	635	323	247	60	3.6	
	1855		- Annaharan - Annaharan - Annaharan - Annaharan - Annaharan - Annaharan - Annaharan - Annaharan - Annaharan -		1.0	7.0	947-072	109	103	640	325	243	58	3.6	
	1900	45	20	WH282	1-0	8.0	949 -902	110	103	642	325	242	58	3.5	3
		50	1997	Difference of the control of the con		8.0	952.711	109	103	642	325	242	53	3.5	
	1905	55			1-0				103		325	242	58	3.5	
	910	60	V	V	1-0	9.0	955.602	109	103	642	262	44	90_	3.3	
														-	\$
								:							
	ļ														
															Variation of the state of the s
AVERAGE	!						34.157		104.6	6365				4.07	3 6
	_	S	ample Train		0-00H ft3		n. Hg			Pitot Tube	PreTest	<u>-</u>	_ 		4
	<u>. Te</u>	1 10	ak Checks:	Post Test	0.000 ft3	@_13_i	in. Hg			Leak Checks:	Post Test	· @	in.	H ₂ O	

TEST ID	AHI - RUNZ
PLANT	GREENIDGE
LOCATION	AIR HEATER INLET
DATE	6/1/07
OPERATOR(S)	BG & DC
AMBIENT TEMP (°F)	87
DAD DDECC FOU	74 47

CONSOL ENERGY.

METER BOX	N-I
PITOT TUBE DESC	***************************************
PROBE LENGTH [ft]	3
NOZZLE ID [inch]	3/6 B
%H ₂ O (Assumed)	8
FILTER ID	1055
K FACTOR	NA

				Page
CAL. DATA: delta H	1.894	Comments:		
Y	0.970			
C(p)	·	_		
FILTER BOX SETTING	NA			
PROBE HTR SETTING	325			
DUCT X-SECTION	circ ?	rect?	other:	
DUCT DIMENSIONS		DUCT AREA		

TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER	TEMP	STACK	PROBE	FILTER	LASTIMP	METERE	
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	[0]	7	TEMP	TEMP	B 9X	TEMP	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft³]	inlet	outlet	[°F]	[°F]	[°F]	(°F)	[% vol]	[% vol]
	1020	0		400 4 0 0			956.002								
EAST	1025	5	NA	NA	1.5	6	959.724	96	91	5+7	325	241	60	3.4	
	1030	10	ì	valistico**	1.5	6	962_854	97	0		325	239	61	3.3	
	1035	15	j	Smoone,	1.5		966.023	100	92		325	239	62	3.4	
	1040	20		A Approximately 19	1.5	yω	969,300	102	93		325	240	61	3.3	
PORT C	HANK-E	-20		*********************************	10		969.514	214							Ž.
		-96-	49	Worksageween PP								:			
	10/30		and the same of th	mad per			969825	2	0.00	-	326	240	60	5.6	_
	1048	75	and and		grant .	0 5		- 311	DEM 94		325	243	59	5.9	
WEST	1053	25	***	- Velida	1.5		973.176	102			325			5.6	
	1058	30	***************************************	- Andrews	1.5	10	976 463	103	95			244	60		
	1103	35	1	and it feetings	1.5	10	979.884	103	95		325	244	61	5.4	
	1108	40	***	P P brushing	1-5	11.5	983.140	104	95		325	745	62	5.7	5.
<u> </u>		-55													
		60~	V	V											
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															<u></u>

													<u> </u>		
		<u> </u>	<u> </u>				1		 Q7 4/	4			<u> </u>	4.5	
AVERAGE	<u> </u>		1		1.5		76.327		97.00		<u> </u>			<u> </u>	
			ample Train eak Checks	n Pre Tes : Post Tes	t <u>0.002</u> ft³ t <u>0.003</u> ft³	@ <u>13</u> i	in. Hg in. Hg			Pitot Tube Leak Checks		t @ t @		_	

TEST ID	AHI-Run 3
PLANT	GREENIDGE
LOCATION	AIR HEATER INLET
DATE	6/1/2007
OPERATOR(S)	BGEDC
AMBIENT TEMP [°F]	90
PAR DOESS FINAL	29.44

CONSOLENERGY.

METER BOX	N-1
PITOT TUBE DESC	· NA
PROBE LENGTH [ft]	3
NOZZLE ID [inch]	3/16 B
%H₂O (Assumed)	8
FILTER ID	1056
K FACTOR	NA

					Page _	of
CAL. DATA: delta H	1-894	Comments:		 		
Y	0.970			 		
C(p)	g-/220m.			 		
FILTER BOX SETTING	NA			 		
PROBE HTR SETTING	325					
DUCT X-SECTION	circ ?	rect?	other:			
DUCT DIMENSIONS		DUCT AREA				

TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER	RTEMP	STACK	PROBE	FILTER	LASTIMP	METER	
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	[0	F	TEMP	TEMP	-BOX	TEMP	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft²]	inlet	outlet	[°F]	[°F]	(°F)	[°F]	[% vol]	[% vol]
	1205	0				á signigativi	986.520					A 12 (5) (7)			
WEST	1210	5	NA	NA	1.5	8	989_913	103	98		325	231	67	5-6	
	1215	10		- Validation of the Control of the C	1.5	8.5	993.287	104	98		325	233	63	5.5	
	1220	15	y e	OUTCOMMENT AND	1-5	9.5	996,654	10 F	99		324	241	64	5.4	
	1225	20	decident	- Contraction	1.5	10	999-956	107	99		325	239	65	5.4	
-		*25	2000	- Company of the Comp		****									
		- 30	Sharpeyoris	o demanda por prilitar										··	-
			- FLOORISH AND AND AND AND AND AND AND AND AND AND	- Available of the second		1									
	1232		Real Property lives	ad Patronians			1000,320	ξ							
EAST	237	2.5 35	- Control of the Cont	**************************************	1.5	11	1003.708	104	99		326	242	66	3.8	
	1242	30		- Control of the Cont	1.5	· Lesson	1007-038	105	90		325	241	61	3.3	
	1247	35		Vicymupheldu	1.5	3	1010.332	107	99		325	241	62	3.2	
	1252	40		- ALAGORETHICA - A	1.5	15	1013 632	103	100		325	242	63	3-1	4
		-55		waliohianga											
		60		1											
			-												all si
	=			-				****							
AVERAGE				M. 400-10-10-10-10-10-10-10-10-10-10-10-10-1	1.5	i i i i i i i i i i i i i i i i i i i	24.748		102.3					4.4	personal production of the
		1	ample Train	Pre Tes	<u>0.008</u> ft ³	@ <u>15</u> i	n. Hg			Pitot Tube		@		H ₂ O	
=[=		Le	ak Checks	: Post Tes	t <u>0 -00 4</u> ft ³	<u>@ 18_</u> i	n. Hg			Leak Checks:	Post Test	@	in.	H₂O	A 100 CONTRACTOR OF THE PROPERTY OF THE PROPER

€0-1 TEST ID GREENIDGE PLANT ECONOMIZER OUTLET LOCATION DATE OPERATOR(S) AMBIENT TEMP [°F] BAR. PRESS. [" Hg]

CONSOLENERGY.

METER BOX	ルー イ
PITOT TUBE DESC	E-3
PROBE LENGTH [ft]	10
NOZZLE ID [inch]	3/6C -0.194
%H ₂ O (Assumed)	8
FILTER ID	/052
K FACTOR	

				Page of
CAL. DATA: delta H	1.790	Comments:	leak check i	~95 COMPIPIAN
Y	0.983		ofter port w-3	no 105Ks
C(p)	0.840		nell found	
FILTER BOX SETTING	NA			
PROBE HTR SETTING	325			, !
DUCT X-SECTION	circ ?	rect?	other:	
DUCT DIMENSIONS		DUCT AREA		

TRAVERSE	CLOCK	SAMPLE	STATIC PRES	PITOT HEAD	METER DIFF PRESSURE	METER VACUUM	METER READING	METER		STACK TEMP	PROBE TEMP	FILTER BOX	LAST IMP TEMP	METER I	EXHAUST CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft³]	inlet	outlet	[°F]	[°F]	[°F]	[°F]	[% vol]	[% vol]
		0					828,005							a di di de de	
	1:804	5	-5.1		1.0	4	!	108	107	657	315	210	65		
	W-1	10			1.0	5	336.18	108	107	663	327	213	60	2.6	17.3
		15			1,9	6	839.62	109	107	664	322	216	60		-
							3296E	78							15
							540,00	-38							
		20	-5.3		60	7	843,49	10S	106	676	319	219	61		
4 134	W-3	25			1.0	7	847,31	108	105	682	322	725	60	7.8	12.4
		30			1,0	7	850.50	108	105	677	3 <i>2</i> 7	227	60		
							851.023								and the state of t
															and the second s
		35	-5.0		1.0	8	854,38	107	105	723	32/	228	65	3.6	17.5
	E	40			1,0	9	857.89	108	105	724	32y	230	6)	2.5	174
		45			110	9	361,300	108	105	730	316	231	61		
													ļ	_ -	
							861,300								
		50	-5.2		1,0	10	864,88	108	104	504	319	235	63	2.7	17.3
	E-2	55			1.0	/ 1	868,35	108	104	602	323	236	61	3 ,i	16.9
	1916	60			1,0	11	871,563	108	104	601	318	236	61	3.0	(7.0
									·						
AVERAGE							43.178		106.67	666.92				3.52	16.53
		1	ample Train	Pre Test Post Test			n. Hg n. Hg		econolos Luebo Maldocki	Pitot Tube Leak Checks:	PreTest Post Test	<u>0</u> @	-	H₂O H₂O	

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CONSOLENERGY.

EPA CTM 027 AMMONIA SAMPLING FIELD DATA SHEET

TEST ID	Econ -2
PLANT	GREENIDGE
LOCATION	ECONOMIZER OUTLET
DATE	6-1-07
OPERATOR(S)	ReD BPS
AMBIENT TEMP [°F]	94°F
BAR. PRESS. [" Hg]	29.47

	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
METER BOX	N-4
PITOT TUBE DESC	F-3
PROBE LENGTH [ft]	10++
NOZZLE ID [inch]	314 C
%H ₂ O (Assumed)	8
FILTER ID	1053
K FACTOR	

		_		Page of
CAL. DATA: delta H	1.790	Comments:		
Y	.983	_		
C(p)		_		
FILTER BOX SETTING	NA			
PROBE HTR SETTING	325			,
DUCT X-SECTION	circ ?	rect?	other:	
DUCT DIMENSIONS		DUCT AREA		•

TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER		STACK	PROBE	FILTER	LAST IMP		EXHAUST
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	0]	1	TEMP	TEMP	BOX	TEMP	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	872.503	inlet	outlet	[°F]	(°F)	(°F)	(°F)	[% vol]	[% vol]
		0	-5.4		1.5	4	876.63	93	93	731	321	258	67		255555595955555555555555555555555555555
	- 1	5	7.7						93				51	20	16.1
	=-1	10			1.5	5	880.764	ay	42	737	318	269	71	3,9	10.1
		ा 5 -													
		- <u>-</u>					880.76								
															Promo
	モーろ	15 20	-5,5		1:5	6	384.99	95	93	605	322	273	53	3,6	16.4
		20-25			1,5	6.	889.132	96	93	606	320	275	56	3,3	16.7
		İ			ر، ا		0 0 1 ., 0 =	18aK ch		1	3 1.				
		-96**						TENK CI	CCN OO	11 110	7[9/17]				
							200000								
							389.400	0.00	0.0	1 - 2		26		117	10 =
	W-1		-5.7		1.5	B	893.54	.98	93	678	321	267	61	4,2	15.7
		30-40-			[,5	10	997,763	98	93	681	320	266	56	4.1	15,9
		.45													ŀ
		I													
						\	897.763								
	W-3	JS-50	-5.6		1.5	11	902,04	ĪOO	95	790623	321	268	58	9.4	10.9
	· /	40_55-	7.0		1,5	12	906,391	101	95	756623	373	26%	61	8,9	11.6
		10-65-	<u> </u>		11)	10	MOD, 771	101	17	13000)		000	1 1	10,1	11,0
	11011	- 6 2.							1						
	1104	<u> </u>													<u> </u>
															
AVERAGE			-5.55		1.5		33.62	75.	12	660.5		<u> </u>	<u> </u>	4.7	
_		Sa	ample Train				n. Hg			Pitot Tube	PreTest			H ₂ O	
		Le	ak Checks:	Post Test	:_ <i></i> ft³	@ <u>_{</u> ii	n. Hg			Leak Checks:	Post Test	:_ <i>U</i> @	<u>6</u> in.	H ₂ O	

TEST ID

PLANT

GREENIDGE

LOCATION

DATE

OPERATOR(S)

AMBIENT TEMP [°F]

BAR. PRESS. [" Hg]

FOR THE TEMP [10]

FOR THE TEMP [10]

FOR THE TEMP [10]

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CONSOLENERGY.

METER BOX N-4

PITOT TUBE DESC E-3

PROBE LENGTH [ft] 10ft

NOZZLE ID [inch] 3/1/16 C

%H₂O (Assumed) 8

FILTER ID 1054

K FACTOR

				Page	_ of
CAL. DATA: delta H	1.790	Comments:			
Y	0,983			 	
C(p)				 	
FILTER BOX SETTING	NA			 	
PROBE HTR SETTING	325		••••		
DUCT X-SECTION	circ ?	rect?	other:		
DUCT DIMENSIONS		DUCT AREA			

TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER READING	METER		STACK TEMP	PROBE TEMP	FILTER BOX	LAST IMP	METER I	EXHAUST CO ₂
POINT [port-inch]	TIME (24-hr)	TIME [minute]	PRES [" H ₂ 0]	HEAD [" H₂0]	PRE\$SURE [" H ₂ 0]	VACUUM [" Hg]	READING [ft³]	[o	outlet	[°F]	(°F)	[°F]	[°F]	[% voi]	[% vol]
[pore-inen]	1205	0					407,000								
		5	-5.3		1:5	5	911.25	99	98	20678	20/320	201	66	4,8	15.3
,	W-I	10			1.5	6	915,434	99	98	. 683	321	209	55	4.3	15,8
		255				*****									
								~							
							915.434							t 4.1	
		15 -20	~5.7		1.5	7	919,66	-101	98	643	322	216	57	9,8	70,5
	W-3	70 -25 -			1,5	8	924.09 2398		.98	644	321	219	56 .	9.6	10.7
		-36-					100K	chrok no	as dunp	No	laks fou	nd			
							924,300								
		Z5-35	-5.4		1.5	a	928,54	103	.98	736	318	224	65	3.7	16.3
	E-I	30 40			1.5	10	932,764	104	99	743	318	226	63	3,5	16.4
		45					1								-
							932.764								
		35 ₋₅₀	-5.6		1,5	12	937,27	105	99 ,	612	315	227	65	3.7	16.3
	E-3	40 55			1.5	13	941.521	105	100	612	319	228	66	3.0	17.0
	_	-60													
	1250														
AVERAGE			-5.5		1.5		34.701	100	1 7, 4	668.9				513	
		i	ample Train	Pre Test	0 ft ³	@ <u>17</u> ii @ <u>6</u> ii	n. Hg n. Hg			Pitot Tube Leak Checks:	PreTest Post Test	<u>)</u> @		H₂O H₂O	

AES GREENIDGE UNIT 4 GUARANTEE TESTING

NH3 Summary - Air Heater Inlet

June 20-21, 2007

Location		East Duct	West Duct	East Duct	West Duct	East Duct	West Duct	East Duct	West Duct	East Duct	West Duct
Date		06/20/07	06/20/07	06/20/07	06/20/07	06/20/07	06/20/07	06/21/07	06/21/07	06/21/07	06/21/07
Start Time		935	935	1756	1755	2007	2002	1109	1110	1517	1517
Stop Time		1015	1035	1836	1835	2047	2042	1149	1150	1557	1557
Test Number		NH3-1	NH3-1	NH3-2	NH3-2	NH3-3	NH3-3	NH3-4	NH3-4	NH3-5	NH3-5
MEASURED TEST VARIABLES							, -				
Y factor of Dry Gas Meter	-	0.970	0.983	0.970	0.983	0.970	0.983	0.970	0.983	0.970	0.983
Gas Volume	- ft ³	26.266	41.540	27.051	33,120	26.707	33.240	26.971	33,380	27.128	34.000
delta H of Dry Gas Meter	- "H ₂ 0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Meter Temperature	- °F	89.9	77.2	89.1	77.6	92.7	77.2	92.7	76.3	95.9	85.4
C Factor of Pitot Tube	-										
Nozzle Diameter	- inches	0.194	0.181	0.194	0.181	0.194	0.181	0.194	0.181	0.194	0.181
Area of Nozzle	- ft²	0.00021	0.00018	0.00021	0.00018	0.00021	0.00018	0.00021	0.00018	0.00021	0.00018
Area of Stack	- ft²										
H ₂ O Weight	- gm	49.3	53.5	54.5	51.2	55.5	58.5	49.8	46.4	48.9	52.4
Sample Time	- minutes	40	50	40	40	40	40	40	40	40	40
Barometric Pressure	- "Hg	29.41	29.41	29.44	29.44	29.44	29.44	29.30	29.30	29.21	29.21
Static Pressure	- " H _z 0										
% Oxygen	m	4.1	7.3	3.9	5.4	3.9	6.1	4.1	6.5	4.9	6,3
% Carbon Dioxide	-										
% N₂ + CO	-]		
Stack Temp (Dry Bulb)	- °F										
Stack Temp (Wet Bulb)	- °F										
"S" Sample (rms vel head)	- "H ₂ 0										
	- mg	1.62	4.95	1.94	1.69	0.81	1.72	0.62	1.61	0.72	1.89
CALCULATED TEST VARIABLES											
Sample Volume	- dscf	24.13	39.58	24.91	31.57	24.43	31.71	24.56	31.74	24.48	31.69
Absolute Stack Pressure	- " Hg										
Absolute Stack Temperature	- ° R										
H ₂ O - % by Volume	- ∨арог										
H ₂ O - % by Volume	- w/ droplets	8.8	6.0	9.3	7.1	9.7	8.0	8.7	6.4	8.6	7.2
Water Volume	- std ft ³	2.32	2.52	2.57	2.41	2.61	2.76	2.35	2.19	2.30	2.47
	- lb/lb-mole										
Wet Molecular Weight	- lb/lb-mole										
% Excess Air	_		•								
Mole Fraction of Dry Gas	-	0.912	0.940	0.907	0.929	0.903	0.920	0.913	0.936	0.914	0.928
Mole Fraction of Wet Gas	-	0.088	0.060	0.093	0.071	0.097	0.080	0.087	0.064	0.086	0.072
AMMONIA											
NH3, ppmvd as sampled	-	3.16	5.89	3.67	2.52	1.56	2.55	1.19	2.39	1.38	2.81
NH3, ppmvd @ 3% O2	-	3.37	7.75	3.86	2.91	1,64	3.09	1.27	2.97	1.55	3.44
AVERAGE NH3, ppmvd @ 3% O2	-	5.	56	3.	38	2.	37	1 2.	.12	2.	49

											_			Page	of
TEST ID		Run	1 -2	ast.		METER BOX	1	CAL. D	ATA: delta H	1.894	Comments:				
PLANT			GREENID	GE	Pi	TOT TUBE DESC]	Y	0.970	_				
LOCATION		Al	R HEATER	INLET		BE LENGTH [ft]			C(p)						
DATE			0/07	<u> </u>	N	OZZLE ID [inch]	3/16"	FILTER I	BOX SETTING	- NA					
OPERATOR(S)	BWG			<u> </u>	4H ₂ O (Assumed)	8	PROBE	HTR SETTING	325				1	
AMBIENT TE	MP [°F]	84			_	FILTER ID		DUC	T X-SECTION	circ ?	rect?	other:		1	
BAR. PRESS	. [" Hg]	29.4	(]	K FACTOR	NA	DUCT	DIMENSIONS		DUCT AREA				
. ·		1	1	T	T		T	I		OTACK	PROPE	LINE	LASTIMP	METER E	TOURINGT
TRAVERSE	CLOCK	SAMPLE TIME	STATIC	PITOT HEAD	METER DIFF PRESSURE	METER VACUUM	METER READING		R TEMP Fj	STACK TEMP	PROBE TEMP	BOX	TEMP	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft ³]	inlet	outlet	[°F]	(°F)	[°F]	[°F]	[% vol]	[% vol]
[port mon]	0935	0		1	2-	1. 31	15.106								Allega englessessessessessessessessessessessessess
EAST	0940	5	NA	NA	1.5	5	18.493	86	84	NA	326	252	57	4.1	
1	0945	10			1.5	6.2	21,790	90	85	NA	323	252	50	4.0	
	0950	15			1.5	6.6	25,025	92	86	NA	324	253	52	4-1	
	0955	20			1.5	7,5	28.217	94	87	NA	324	253	55	4,2	
	1000	25			1-5	8.5	31.414	95	87	NA	325	251	54	4.0	:
	1005	30			1.5	10	34.802	96	87	NA	325	25/	54	4.2	
-3,00	1010	35			1.5	11	38.613	96	88	NA	325	252	54	4.2	
and the second	1015	40			1.5	12	11.372	97	88	NA	325	252	54	3.9	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	25			1	1,2	1								
1		40	V												-
		45													
		60													
*****************		7 5 5													
		-80"													
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															400
													712411111111111111111111111111111111111		No. 7
							-								
AVERAGE			<u> </u>		1.5	8.5	26.266		59.9		324.6	252-	53.8	4.1	
	1	Sa	ample Trair		10.004 ft3	@ <u>iZ</u> i	n. Hg			Pitot Tube	e PreTest			H₂O	
	<u>. </u>	1 10	alı Chaalıa	. Doct Too	.∪. <i>005</i> ft³	a 13 i	n Ho		1.4	Leak Checks	· Post Tost	- 0	- in.	H ₂ O	

CONSOLENERGY.

TEST ID PLANT GREENINGE PITOT TUBE DESC PITOT TUBE DESC PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE LENGTH [ft] PROBE HITE BOX SETTING PROBE HIT SETTING PROBE HIT SETTING DUCT ASSECTION Circ ? FILTER BOX SETTING PROBE HIT SETTING PROBE HIT SETTING DUCT DIMENSIONS DUCT ASSECTION DUCT DIMENSIONS DUCT AREA TRAVERSE POINT TIME PRES HEAD PRESSURE VACUUM RETER DIFF PRESSURE VACUUM PRESDIRG PROBE PRO	LOCATION DATE OPERATOR(S) AMBIENT TEMP [°F]	AIR HEAL	55#K		Contract Con			OAL: 2			J Comments.			****	
LOCATION DATE OPERATOR(S) AMBIENT TEMP [°F] BAR PRESS. [° Hg] TRAVERSE POINT TIME PRES HEAD PRESSURE VACUUM PRESSURE VACUUM READING [ninute] [r H ₂ 0	DATE OPERATOR(S) AMBIENT TEMP [°F]	AIR HEAL	55#K	SEET W	Contract Con										
DATE OPERATOR(S) AMBIENT TEMP [°F] BAR PRESS. ["Hg] TRAVERSE POINT TIME PRES HEAD PRESSURE VACUUM RESURE VACUUM RESURE VACUUM RESURE VACUUM READING [port-inch] [24-thr) [minute] ["H-0] ["H-	OPERATOR(S) AMBIENT TEMP [°F]	6-15			PRO	BE LENGTH Ifti				<u> </u>	1				
S	AMBIENT TEMP [°F]	$\overline{\alpha}$		16-20				FILTER I		NA	1				
AMBIENT TEMP [°F] BAR. PRESS. [° Hg] TRAVERSE CLOCK SAMPLE STATIC PITOT METER DIFF METER METER METER METER METER METER TEMP STACK POINT TIME PRES HEAD PRESSURE VACUUM READING [oF] TEMP TEMP TEMP TEMP BOX TEMP DUCT AREA CITC? rect? other: Other: Other: CITC? Rect? Other: Other: Other: Other: OTHER DIFF METER ABOUT ASSECTION CITC? TOTHER OTHER DUCT DIMENSIONS DUCT AREA OUTHER OUTHER TEMP TEMP BOX TEMP O2 CO2 [port-inch] (24-thr) [minute] ["H-20]		1272	3	· # - 7 - \ -							†				
BAR PRESS. [* Hg] \[\frac{7}{3} \] \[\frac{1}{3		~ 8	50					DUC	T X-SECTION		rect?	other:			
TRAVERSE CLOCK SAMPLE STATIC PITOT METER DIFF METER M	BAR. PRESS. [" Hg]	29.	+		_	K FACTOR									
TRAVERSE CLOCK SAMPLE STATIC PITOT METER DIFF METER ME	<u>,</u>				<u>1,5</u>				\bigcirc			UNES	(4)		
[port-inch] (24-hr) [minute] ["H ₂ 0] ["H ₂ 0] ["H ₂ 0] ["H ₂ 0] ["H ₃ 0] [minute] [minute] ["H ₂ 0] ["H ₂ 0] ["H ₂ 0] ["H ₃ 0] [minute] ["H ₂ 0] ["H ₃ 0] [minute] ["H ₂ 0] ["H ₃ 0] [1 1									Į.	FILTER		METER	XHAUST
0935 0 742.10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	!				Į.						ſ		l	O ₂	CO ₂
5 NA NA +.6 5 94678 77 72 NA 340 224 57		A214	[H ₂ U]	i H₂Uj	[" H ₂ 9]	[" Hg]		inlet	outlet	[F]	ra	r T	(°F)	[% vof]	[% vol]
10 1 1 1 5 5 950.92 78 72 1 340 227 57 9.0			À : A	2//	10		501 NO			A 7.4					
$\frac{1}{2}$		5	/VA	NA	7.0	ے	746,18		7 2	<u> NA</u>	240	224	51		
1 (152 501 4) 7 9 7 1 1 2 2 1 2 2 2 1 0 5 1		10			1.5		950.9Z		72	<u> </u>	340	55)	57	9.0	
- 1		15	1	-+		\ \b (452,502,	778	74)	371	230	60	5.10	
→ 956,80 X 141614 O2 - C14A2GED FITTIO						(951-80			16: +X	1102	- (1)(7 57	2,20
							7,000	•••		1		ľ			7100
		 			, –	~~	0100)	00		_ '~	7 10	227	,	- 	10,
20 1 1 5 7 960.91 80 74 322 232 61 5.7 -		20			1.2		760.71				シアア	252	ا ما	5.1	
25 8 965.03 81 75 322 234 63 6.6 — 30 8 965.15 81 75 322 234 64 6.8 —		25				8	762.03		12		322	234	63	ما، ما	
30 1 8 965.15 81 75 322 234 64 6.8 -		30			1	8	965.15	81	1751		727	とんか	7	6.8	
		-						-							
				1											
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55 1 1.5 9 973.28 8 1 75 322 235 LS 7.0 —		35	++		1,2	7	772.78		12	<u> </u>	322	777	62	<u> </u>	
40 1 9.5 977.41 81 75 322 235 66 7.8 -		40				2.2	711.41		75		322	235	اماما	3,5	
45 1 9,5 981,56 81 76 322 235 67 8.3		45			j	9,5	581,561	81	76		322	735		8.3	
										Common of the Co			١٠	<u> </u>	-
1035 50 1 1.5 10 58572 81 716 32 3 3 2 3 5 1 7 9 9	1035				10	10	0.00	0 1			33 3				
1 1 1 1 2 1 2 1 2 2 2 2 3 1 1 1 1 2 2 2 3 6 1 6 1 6 1 6 1	1022			Line Co.	1.2	10	787.17	2.1	16		ا كــــــــــــــــــــــــــــــــــــ	ريع ا	(d	8.8	-
55		55	 							1					
60		60	1	1	<u> </u>					•					.]
AVERAGE 1.5 7.7 H1.5H 77.0 325.6 230.1 60.7 7.3	AVERAGE				1.5	27	W1 C4		772		2001	222 1	12	30	
AVERAGE 1.5 7.7 41.54 77.7 325.6 232.1 62.7 73 Sample Train Pre Test O S ft ³ @ \O in. Hg C C C C C C C C C	AVENAGE	Samo	ıle Train	Pre Teet	O \< ft ³ @	7 () in	Ha-(-) No 6	يبر الأمراة	11.07	Date 4 To 1					
Sample Train Pre Test O 1 ft @ 10 in. Hg - (c. ccc ft) (So min.) Pitot Tube Pre Test @ in. H ₂ O Leak Checks: Post Test O 0 ft @ 10 in. Hg = 38 54 53 Leak Checks: Post Test @ in. H ₂ O				Post Test	0.060 ft3 @	10 in	Ha = 73 =	جئين.	נ גייד א						
Leak Checks: Post Test <u>0.060</u> ft ³ @ <u>10</u> in. Hg = 38.59 ft ³ \ Leak Checks: Post Test @ in. H ₂ O		aceichichiebhiltairtean		de Geden proposition par			=(४४. <i>ऽ</i> ।	<u> 1 41°)</u>	<u>-</u>		Post lest		in. F	1 ₂ U	
CONSOL ENERGY.	CONSOLEMENG!								leak.	.e~					

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TEST ID		Rita	2 - E	85+	1	METER BOX	1	CAL. E	ATA: delta H	1.894	Comments:	:	
PLANT			GREENID		i Pi	TOT TUBE DESC			Y				
LOCATION		A	IR HEATER	INLET	PRO	OBE LENGTH [ft]	3		C(p)	•			
DATE			0/07] ,	NOZZLE ID [inch]	3/16 E	FILTER	BOX SETTING	NA .	_		
OPERATOR(S	S)	30	4			%H ₂ O (Assumed)	8	PROBE	HTR SETTING	325			
AMBIENT TEI		86				FILTER 10		t	CT X-SECTION		rect?	other:	Т
BAR. PRESS.	. [" Hg]	29.	41]	K FACTOR	NA NA	DUCT	DIMENSIONS		_DUCT AREA	LINE	
TRAVERSE	ССССК	SAMPLE		PITOT	METER DIFF	METER	METER		RTEMP	STACK	PROBE	PILTER	LAST IM
POINT	TIME	TIME	PRES [" H ₂ 0]	HEAD [" H₂0]	PRESSURE [" H ₂ 0]	VACUUM [" Hg]	READING [ft ²]	inlet	outlet	TEMP [°F]	TEMP [°F]	BOX [°F]	TEMP [°F]
[port-inch]	(24-hr)	[minute]	[[[[]	[n ₂ 0]	[1720]	[ngi	42-203	illet	Vouet				
200000000000000000000000000000000000000	1801	5	NA	NA	1.5	5	45.624	87	86	NA	325	223	64
	1806	10	1	1	1.5	6	48.975	89	86	NA	325	224	58
	1811	15			15	7	52-338	89	86	1	325	225	59
	1816	20			1.5	8	55.716	91	86		325	225	59
	1821	25			1.5	8	59.224	91	87		325	226	60
	1826	30			1-5	9	,	94	87		325	226	60
	1831	35			1.5	10	65,763	95	87		325	227	60
	1836		1	1	1.5	12	69,254	96	88	1	325	227	62
		-55											
		.48-											
		45											
		,58°											
		55											
		40											
*													<u> </u>
		1			1		1			Į.			

Sample Train

Leak Checks:

AVERAGE

27.051 8.1 Pre Test 0.001 ft³ @ 15 in. Hg
Post Test 0.06 ft³ @ 18 in. Hg

NA @ ____ in. H₂O Pitot Tube

Leak Checks:

325

Post Test

METER EXHAUST

 O_2 [% vol]

4.0 4-0

3.9 4-0 CO2

[% vol]

				1000	_						1				
TEST ID	Í	TES	# 73	· \		METER BOX	グーナ	CAL. DA	NTA: delta H		Comments:				
PLANT			GREENIDO	GE .	Pfi	TOT TUBE DESC	NA		Y	<u>0883</u>					
LOCATION		TECO	NOMIZER (OUTLET-	A) H. PRO	BE LENGTH [ft]	31/21		C(p)						
DATE				07		OZZLE ID [inch]		FILTER B	OX SETTING	NA					
OPERATOR(S)		<u> </u>	5 5		SEST	6H ₂ O (Assumed)	8	PROBE H	TR SETTING	325				_	
AMBIENT TEM		~ 5	हों ह	2	1	FILTER ID	1	DUCT	TX-SECTION	circ ?	rect?	other:			
BAR. PRESS.		7	Z 2	. 1		K FACTOR		DUCT !	DIMENSIONS		DUCT AREA				
DAN. FREGG.	נפיי ב				4		<u> </u>	(L)	(J)			UNE(S	<i>(t)</i> (
TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER	TEMP	STACK	PROBE	TILTER	LAST IMP	METERE	
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	[oF]	TEMP	TEMP	180X-	TEMP	02	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft³]	inlet	outlet	[°F]	[°F]	(°F)	(°F)	[% vol]	[% vol]
		0					587.50								
	1755	5	シカ	AC	7	ا	99170	77	76	NA	324	216	<u>ا</u> کیا		
	<u> </u>		9	,	1	7	UQ 7 22	77	71	i	373	220		5.4	_
		10	-		}		2000	78	7.9	- \ -	350	770	1	2 3	
		15				8	999.96	18	10	1	7 62	<u> </u>	<u> </u>	7,7	
)	\											
					1 5	9	20,400	79			330	771	68)
		20			1,2	1		-00	7		337	222	68	c 3	
		25				70	008.20	80			777	(()	ا لام	5.7	
		30)))	PE.510	80	7		1337	228	صاحا	7.7	
	9.000										i i				
	****		-	1	-										
						1.5	- 11 110	0		_ \ _	3711	220	1 1	5 11	
		35			1.5	12	84.210	80			777	228	<u> </u>	5.7	
	1835	40	{	Neighbour 4	\	13	070,65	81	7)		1334	229	طط	5.4	
		45													
		1 43								Ī					
		1	 											 	
		1			<u> </u>										
		50								1					
		55						•		\					
		1	 	3)	"				
		60							<u> </u>					 	
													<u> </u>	 	
	<u>. </u>														
AVERAGE					1,5	9.5_	33.12		776		329.4	2249		5.4	
AVERAGE		S	ample Trair	r Pre Tes	t OK ft ³	@ <u>\</u> \\S_i	n. Hg			Pitot Tube		<u></u> @	in.	H ₂ O	
	<u></u>	1	ak Checks	: Post Tes	t 0 1人 ft ³	@ <u>15</u> i				Leak Checks		t <u> </u>	<u> </u>	H ₂ O	440 C
			spensymmetrikle	<u>Medericalicacional</u>	tiei <u>kieitieisi</u> eisisisisisisisisisisisisisisisi				tanathliangaist					Telebrara and a control of the	, ac 181 191 1 (1911 1911 1911 1911 1911 191
CONSOL	einekoy.														

er Th	
TEST ID	TEST 3 - EAST
PLANT	GREENIDGE
LOCATION	AIR HEATER INLET
DATE	6/20/07
OPERATOR(S)	BUG
AMBIENT TEMP [°F]	87
BAR, PRESS, I" Hall	29,44

CONSOL ENERGY.

,	
METER BOX	<u> </u>
PITOT TUBE DESC	, , , , , , , , , , , , , , , , , , ,
PROBE LENGTH [ft]	3
NOZZLE ID [inch]	3/16
%H ₂ O (Assumed)	8
FILTER ID	
K FACTOR	

				Page
CAL. DATA: delta H	1-894	Comments:		
Y	0.970			
C(p)		.74		
FILTER BOX SETTING	NA			
PROBE HTR SETTING	325			
DUCT X-SECTION	circ ?	rect?	other:	
DUCT DIMENSIONS		DUCT AREA		
			LINE	

TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER	TEMP	STACK	PROBE	FILTER	LAST IMP	METER E	
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	[ol	FJ	TEMP	TEMP	вох	TEMP	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[* Hg]	[ft³]	inlet	outlet	(°F)	(°F)	[°F]	[°F]	[% vol]	[% vol]
	2007	0					69.775								
	2012	5	MA	NA	i-5	5	73.282	89	87	NA	326	183	57	3.8	
	2017	10		I	1.5	9	77-729	95	88		325	190_	59	4.0	
	2012	15			1.5	8	77. 774	97	89		325	198	60	3.9	
	2027	20			1.5	8	83.281	98	39		325	202	60	3-9	
15	2032	25			1.5	q	36.748	98	39		325	218	63	3.9	
3 3	2037	30			1.5	- G	99,952	13	89		325	217	64	4.0	
17 19		35			1.5	10	93.236	93	90		325	186	67	3.9	
	2047	40	V	V	1.5	12	91,482	99	90	V	325	181	67	4.0	×,
	,	35	-	-											
		AG					:								
<u> </u>		48													
		-50													-
		~ 55													
		<i>J</i> 86													
								ļ ·							
:															30 m
									<u> </u>	<u> </u>					38.8
			1												. & .
			-						-						
	<u> </u>		<u> </u>		110	8,4	26.707		92.7		325.1	196-9	62.1	3.9	-
AVERAGE	<u></u>	s	ample Tra	in Pre Te	st <u>ල්. </u>	@_15_i				Pitot Tube	PreTes	· @	in.	H ₂ O	The Soft
		1	ak Check	s: Post Te	st <u>(), 01≸</u> ft³	@ <u>17</u> i	n. Hg			Leak Checks	: Post Tes	t @	<u> </u>	H ₂ O	345

Page

TEST ID		TES	サイ	<u>ŧ 3</u>]	METER BOX		CAL. DA			Comments:				
PLANT			GREENID	GE	PIT	TOT TUBE DESC	∂ A		Y	<u>0883</u>					
LOCATION			NOMIZER (A.H. PRO	BE LENGTH [ft]	3/21		C(p)						
DATE	÷	5	20 - (\circ	TOLETN	OZZLE ID [inch]		FILTER B	OX SETTING	NA					
OPERATOR(S)	BP.	S		7 5 5	OZZLE ID [inch]	8	PROBE H	TR SETTING	325					
AMBIENT TEN	IP (°F)	~_ <	850	<u> </u>	~ '=3',	FILTER ID	1062	DUC.	TX-SECTION	circ ?	rect?	other:			
BAR. PRESS.		25	144	``		K FACTOR		DUCT	DIMENSIONS		DUCT AREA			-	
	. 3.		* 6		•	'		(L)	()		` (Z) '	ころが	(4)		
TRAVERSE	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METER	TEMP	STACK	PROBE	-FILTER_	LASTIMP	METER	
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	[of	7	TEMP	TEMP	BOX	TEMP	O ₂	CO2
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft²]	inlet	outlet	(°F)	(°F)	[°F]	[°F]	[% vol]	[% vol]
5 (\$4.62) (B) (\$16)	<u> </u>	0	d) (0) (10) (4)				<u>021.20</u>								
		5	シタ	ショ	1.5	5	025.40	76	75	50	327	0	<u>0ما</u>		
		10	1	i	*	6	74.250	77	75	(724	217	$ S\rangle$	5.4	
		15			j	7	033,63	78	75		377	224	60	5.6	
				THE STATE OF THE S			003100			1				-0.0	
										7					
					1.5	7 4	037.79	70	71	Para Para Para Para Para Para Para Para	327	777	60		
		20			1:2	8		80	<u> </u>	-	320	279	1 1	1 /	•
		25			1	<u> </u>	59.140			e care	222	730	17	6.0 6.3	
		30		1	,		20.240	80	صا	Page 1	767	200	65	6,7	
			Nagara -					·		1					
						1 1	مدم کا ا	0 0	,	į	2 2 2	220	, ,	;	
	2	35			1,5)	ナバ.050	$\frac{8}{0}$		7	322	230	67	6,7	
:	2042	40			•]	024,44	80	76		324	231	نحكر	6,6	
		45		1						1					
				2						y Segretari		W 101			
		50								1				1	
		55								TO AGE					
		60	1	ě)					
AVERAGE					[,5]	8.1	33.24		77.2		323.3	224.8	2,00	6.1	
		1	ımple Train ak Checks:	Pre Test Post Test		@ <u> </u>			opiomomomotčaří akti	Pitot Tube Leak Checks	PreTest Post Test	@ 	in. in.	H ₂ O H ₂ O	
CONICOL	ek tenev														

	•
TEST ID	RUN 4-E45T
PLANT	GREENIDGE
LOCATION	AIR HEATER INLET
DATE	6/21/07
OPERATOR(S)	RUS
AMBIENT TEMP [°F]	92
BAR. PRESS. [" Hg]	29,30

CONSOLENERGY.

METER BOX	
PITOT TUBE DESC	/VA
PROBE LENGTH [ft]	3′
NOZZLE ID [inch]	3/16 E
%H ₂ O (Assumed)	8
FILTER ID	
K FACTOR	

				Page of
CAL. DATA: delta H	1-894	Comments:		,
Y	0.970	<u>.</u>		
C(p)		<u>.</u>		
FILTER BOX SETTING	NA	<u> </u>		
PROBE HTR SETTING	325		ì	
DUCT X-SECTION	circ ?	rect?	other:	
DUCT DIMENSIONS	99,*	DUCT AREA		
'		_	LINE	

TRAVERSE	CLOCK	SAMPLE	STATIC	РПОТ	METER DIFF	METER	METER	METER	TEMP	STACK	PROBE	FILTER-	LAST IMP	METER E	XHAUST
POINT	TIME	TIME	PRES	HEAD	PRESSURE	VACUUM	READING	loj]	TEMP	TEMP	вох	TEMP 3	O ₂	CO ₂
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft³]	inlet	outlet	(°F)	[°F]	(°F)	(°F)	[% vol]	[% vol]
	1109	0					97.244								
	114	5	NA	NA	1.5	5.5	100.683	94	90	N4	329	238	GL_{i}	3.9	
	1119	10	مالاقتهانين .	hersecrifi	1.5	6	104.216	92	86	1	329	237	57	4.1	
	1124	15		Minne American	1.5	4	107.330	95	87	- Parliament on the	330	235	59	4.0	
	1129	20	Programme of the Progra	HERmonages	1.5	7.5	110-697	97	<u> </u>		329	239	62	3-9	
	3	25	winespace.	was distributed to	1.5	8.5	114 695	97	88		328	241	64	4.1	
	11 39	30	deconscionary of the second	- Cérimop as Arein	1-5	9.5	117-458	99	\$9		324	244	66	4.1	
	1144	35	and the state of t	Thereton a different	1.5	10	120,856	100	90	St. St. St. St. St. St. St. St. St. St.	324	245	65	4.2	<u> </u>
	1149	40	1	V	15	12	124.215	100	-91		326	246	62	4.3	
	, , , , , , , , , , , , , , , , , , , ,	35													
		210													
		745													\$
		.5Q													38 33 33
		55													See.
		60.													
															ş
-															(4,7%)
															्र [्] अर्थे
															<u></u>
1			-												
AVERAGE		<u> </u>			1.5	8.3	26.971		92.7		327.4	241.0	62.0	4,1	.sne
AVERAGE	<u> </u>		ample Train		0.00% ft ³	@ <u></u> _i	in. Hg		Source or other North	Pitot Tube	PreTest	· @ · @	in.	H ₂ O	701875

					-			•			-			Page	of
TEST ID		TE	22 7	<u> </u>		METER BOX	***************************************	CAL D	ATA: delta H		Comments:				
PLANT		ļ	GREENID	GE		TOT TUBE DESC			Y	0.283			****		
LOCATION	-	-ECC	NOMIZER			DBE LENGTH [ft]			C(p)						
DATE	÷	ُ ص	<u>- 71-</u>	<u> </u>	INCEIN	IOZZLE ID [inch]		FILTER I	BOX SETTING	NA					
OPERATOR(S		$\Box \mathcal{B}_{1}$	<u> </u>		SEST,	4H ₂ O (Assumed)	8	PROBE	HTR SETTING	325				1	
AMBIENT TEN		~	<u>83</u>	0] ~ () ,	FILTER ID	. 🗸 🐃	DUC	T X-SECTION	circ ?	rect?	other:			
BAR. PRESS.	[" Hg]	<u>\</u>	<u>د. </u>	2]	K FACTOR	NA		DIMENSIONS		DUCT AREA				
				I	T			<u>(L)</u>				LIDE(S)	(4)		
TRAVERSE POINT	CLOCK TIME	SAMPLE TIME	STATIC PRES	PITOT HEAD	METER DIFF PRESSURE	METER VACUUM	METER READING		RTEMP	STACK TEMP	PROBE TEMP	FILTER	LASTIMP	METER E	١٠
[port-inch]	(24-hr)	[minute]	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft²]	inlet	F] outlet	(°F)	[°F]	[°F]	TEMP [°F]	O ₂	CO ₂
	1110	0	100000000000000000000000000000000000000	2010/10/10/10	2011/2012/03/10/10/10/20	100	oss,20	ini se de la con	na se se se se se se se se se se se se se				1 1	[% vol]	[% v ol]
			NΑ	NA	1 5	l sucretime une renging	059,39	71	~	2万	つつ!	¬ \ C			
	;	5	1017	70 7-1	1, 3	9/	021.7	17		277	ブマチ	$\frac{2}{2}$	50		
		10	-		 		067,24	12	7.2	_/	<u> </u>	217	76	<u>ل</u> , O	
		15			J	8	181,510		73		323	223	1571	0	
)											

			1		, 5	0	27.00	78	70		27.2	771	-0	ì	
		20			1,3	}	0)1.88) {	1		ラマラ	226	رذ	(ی	
		25				10	076.03	80	14		323	22)	<u> </u>	6.7	
		30			1	1 1	080.23	81	75	- 1	323	229	しい	6,5	
				\											
					1.5	1 1	00110	01	26	}	222	770	įį		
	٠, ۲ ٥	35			1.3	1 1	08440	8)	1 3		7-7	5	6	1.1	
	1150	40		/_	,	12	088.58	85	76		252	225	62	1.T	~~~
		45													
				- 1				•		7					

			1							_					
		50								\					
		55													
		60	*	*		What I				•					
AVERAGE					1	9.3_	33.38		76.3		323.1	224.6	-6 a	6.5	
AFEIMOE		Sa	mple Train	Pre Test	0 \ ft ³ (<u> </u>		[(C)	Pitot Tube	シウン・1 PreTest		<u> </u>		
			k Checks:	Post Test	~ \ / 2	0 \ Z in	Hg			Leak Checks:	Post Test	<u> </u>		120 1-0	
CONSOL		skamanasassi		ista in a managaring and a second and a second and a second and a second and a second and a second and a second			nderstaratarassi asaranassi sa		dasapasamanggangs	Lour Officers.	. vat 1631			.20	

TEST ID	EAST RUNS
PLANT	GREENIDGE
LOCATION	AIR HEATER INLET
DATE	6/21/07
OPERATOR(S)	RUG
AMBIENT TEMP (°F)	92
BAR PRESS I" Hot	29 21

CONSOLENERGY.

METER BOX	l .
PITOT TUBE DESC	NA
PROBE LENGTH [ft]	N
NOZZLE ID [inch]	316C
%H ₂ O (Assumed)	8
FILTER ID	
K FACTOR	

CAL. DATA: delta H	1.894	Comments:	
Υ	0.970		
C(p)			
FILTER BOX SETTING	NA		
PROBE HTR SETTING	325		
DUCT X-SECTION	circ ?	rect?	other:
DUCT DIMENSIONS		DUCT AREA	

Page _

TRAVERSE	CLOCK	SAMPLE TIME	STATIC	PITOT	METER DIFF	METER	METER	METER		STACK	PROBE	FILTER	LAST IMP	METER	
[port-inch]	(24-hr)	[minute]	PRES ["H₂0]	HEAD [" H ₂ 0]	PRESSURE	VACUUM	READING [ft³]	[0.		TEMP	TEMP	BOX	TEMP	O ₂	CO ₂
	1517	0	1 11203	[1720]	[" H ₂ 0]	[" Hg]	124,600	inlet	outlet	[°F]	[F]	[°F]	(°F)	[% vol]	[% voi]
EAST	1522	5	NA	NA	1.5	ζ	128,146	91	91	NA	333	244	52	iguage tain ina na an an an an an an an an an an an a	
	1527	10	1	7	15	5	131.438	95	92		327	240	51		
	1532	15	000000		1.5	3	134.778	96	92	alliament.	335	239	51	4.9	
	1537		170			G	138.174	94	93	- Parameter - Para	329		51		
	1542	20		į	15		-			na pilotona		240		4.5	
	1547	25			1.5	<u>g</u> B	· . · · · · · · · · · · · · · · · · · ·	101	94	NAC-AND THE ADDRESS OF THE ADDRESS O	329	241	52	4.8	* * * * * * * * * * * * * * * * * * * *
		30	Name of Bulletin		· ~/	<u> </u>	144.037	102	94	7700		241	53	4.8	
	1552	35	N-ALTH			1	148.384	103	95		324	To A Tom	54	4.9	P 200
	1557	40	V		1.5	10	451.728	102	95	- Annual Control	3 2 5	243	55	4.9	
		`35													
		2+Q													
		45													že.
		50													1.
		55				,							****	16.00 m	
		60												4	
					1380					"""					
""-															<u>*************************************</u>
			-				1111111								42.53
									"-"						
AVERAGE					1.5		27.128	95	,9					4.9	
		Sa	mple Train		<u>ಿ.೧೧</u> ೬ ft³ (ı. Hg			Pitot Tube	PreTest	@	īn. l		100
		Lea	ık Checks:	Post Test	<u>ပို. ေျပ်ုံ ကြီး (</u>	in <u>کا آ</u>	ı. Hg			Leak Checks:				7	3400 7840 790 1700

TEST ID		TE	573	# 5		METER BOX	シーナ	CAL	DATA: delta H	1790	Comments:			age	
PLANT			GREENID	GE	PI	TOT TUBE DESC		1	Υ	_ ~ ~ ~	1			·	
LOCATION		- EC C	NOMIZER	OUTLET-	•	OBE LENGTH [ft]		1	C(p)	003	1				
DATE		ل ا	- 21.	-07		OZZLE ID [inch]		FILTER	BOX SETTING	NA NA	†				
OPERATOR(S)	RE			1000	4H ₂ O (Assumed)	8	1	HTR SETTING		1				
AMBIENT TE	MP [°F]	~ '	90')	$] \sim E > 1$	FILTER ID	1050		CT X-SECTION		rect ?	other:		1	
BAR. PRESS.	. [" Hg]	<u></u>	<u>٦.٦</u>	1		K FACTOR		1	DIMENSIONS		DUCT AREA	odici.		i	
	T								(\mathcal{I})			412E(S	(F)		
TRAVERSE POINT	CLOCK	SAMPLE	STATIC	PITOT	METER DIFF	METER	METER	METE	R TEMP	STACK	PROBE	FILTER	LASTIMP	METER	EXHAUST
[port-inch]	(24-hr)	TIME	PRES	HEAD	PRESSURE	VACUUM	READING)F]	TEMP	TEMP	BOX-	TEMP	O ₂	CO ₂
poremen	15110	[minute] 0	[" H ₂ 0]	[" H ₂ 0]	[" H ₂ 0]	[" Hg]	[ft³]	inlet	outlet	(°F]	[°F]	(°F]	(°F)	[% voi]	[% voi]
ancia contrata men			- 1 0	7 ~	, ,	•	02.280			-					
		5	シ は	SA	1.2		853.78	87	83	NA	334	とと	29		-
		10	_(_	- (6.5	50.870	84 *	83	i	334	257	56	5.8	
		15		\	1	J	102.28	8	83		334	710	20	2.7	
							702.20	0 0	0.5		\sim \sim \sim \sim		\sim 1	<u> </u>	
					` ~	_									
		20	}_		1.5	8	106.52	87	184		335	261	62		
		25				5	11073	85	84		375	713	63	ما و ما	
		30	- {		1	99	CPVII	89	24		275	212	12	9 ,8	
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		35			1.5	10	119.26	85	48		336	7 LJ	63	ها.ما	
	155L	40			\ \	11	123,50	89	8 F		331	264	1 ()	لَى الْ	
		45									امديم	<u> </u>	67	ا ما ، ک	
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			-+												
		50													
		55													
		60	\	1						1					
AVERAGE					1.5		34.00		dr 11					7 5	
		San	nple Train	Pre Test	0/2 tt3 @	<u> </u>			85.4					6.3	Marting Division of Section
==			k Checks:	Post Test	<u>○ ≤</u> ft³ @) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Hg			Pitot Tube	PreTest _		in. H		
ONSOLE	F L		asiniatina ka	iggini patawang pagga	danagagaganan an					Leak Checks:	Post Test _		in. H	₂ O	
	2 K - X X K - X X K - X X X X X X X X X X														

APPENDIX C Laboratory Analyses



CONSOL Project #:

1621-085

General Description: Ion Selective Electrode Results for CTM-027 Samples from AES

Greenidge Unit 4, 5/31/07-6/1/07

Date Reported:

6/1/2007

				Volume,	NH3 Conc., mg/L as	Total NH3, mg	
Sample No.	Location	Test No.	Sample	ml	N	as NH4+	
11	Air Htr In	1	Probe	85	3.93	0.43	
2	Air Htr In	1 .	Line	71	7.21	0.66	*Portion of sample lost during recovery
3	Air Htr In	1	lmp #1	220	0.625	0.18	
4	Air Htr In	1	lmp #2	220	0.538	0.15	
5	Air Htr In	11	Imp #3	120	0.541	0.08	1.50
6	Econ Out	1	Probe/Line	130	34.1	5.70	
7	Econ Out	1	lmp #1	220	151	42.71	
8	Econ Out	1	lmp #2	220	21.9	6.19	·
9	Econ Out	1	Imp #3	120	0.7	0.11	54.71
10	Air Htr In	2	Probe	124	0.149	0.02	
11	Air Htr In	2	Line	134	10.5	1.81	
12	Air Htr In	2	Imp #1	220	0.529	0.15	
13	Air Htr In	2	Imp #2	220	0.095	0.03	
14	Air Htr In	2	Imp #3	120	0.02	0.00	2.01
15	Econ Out	2	Probe/Line	129	50.1	8.31	
16	Econ Out	2	Imp #1	220	131	37.05	
17	Econ Out	2	Imp #2	220	9.41	2.66	
18	Econ Out	2	Imp #3	120	0.075	0.01	48.04
19	Air Htr In	3	Probe	139	0.076	0.01	
20	Air Htr In	3	Line	120	9.37	1.45	
21	Air Htr In	3	lmp #1	220	0.948	0.27	
22	Air Htr In	3	Imp #2	220	0.225	0.06	
23	Air Htr In	3	lmp #3	120	0.052	0.01	1.80
24	Air Htr In	3	Probe Blank	91	0.052	0.01	
25	Air Htr In	3	Line Blank	76	0.02	0.00	
26	Econ Out	3	Probe/Line	140	19.9	3.58	
27	Econ Out	3	lmp #1	220	113	31.96	
28	Econ Out	3	lmp #2	220	9.88	2.79	
29	Econ Out	3	Imp #3	120	0.126	0.02	38.36
30	Zeno Blank			125	0.067	0.01	
31	0.1N H2SO4 Blank			125	0.065	0.01	
32	Blank Train		Imp #1	150	0.19	0.04	
33	Blank Train		Imp #2	150	0.134	0.03	
34	Blank Train		Imp #3	100	0.03	0.00	



CONSOL Project #: 1621-085

General Description: Ion Chromatography Results for CTM-027 Samples from AES Greenidge Unit 4, 5/31/07-6/1/07

Date Reported: 6/6/2007

ANALNUM	DESCR	SAMPLE	NH3 as N	NH3 as NH4		NH3 as NH4
			mg/L	mg/L	volume (L)	miq
20072968	AIR HTR IN TEST 1 PROBE	1	4.92	6.34	0.085	0.54
20072969	AIR HTR IN TEST 1 LINE	2	7.33	9.44	0.071	0.67
20072970	AIR HTR IN TEST 1 IMP #1	3	0.98	1.26	0.220	0.28
20072971	AIR HTR IN TEST 1 IMP #2	4	0.11	0.14	0.220	0.03
20072972	AIR HTR IN TEST 1 IMP #3	5	< 0.10	< 0.13	0.120	< 0.02
20072973	ECON OUT TEST 1 PROBE/LINE	6	38.24	49.25	0.130	6.40
20072974	ECON OUT TEST 1 IMP #1	7	172.34	221.94	0.220	48.83
20072975	ECON OUT TEST 1 IMP #2	8	17.63	22.70	0.220	4.99
20072976	ECON OUT TEST 1 IMP #3	9	0.61	0.79	0.120	0.09
20072977	AIR HTR IN TEST 2 PROBE	10	0.36	0.46	0.124	0.06
20072978	AIR HTR IN TEST 2 LINE	11	9.94	12.80	0.134	1.72
20072979	AIR HTR IN TEST 2 IMP #1	12	1.86	2.40	0.220	0.53
20072980	AIR HTR IN TEST 2 IMP #2	13	< 0.10	< 0.13	0.220	< 0.03
20072981	AIR HTR IN TEST 2 IMP #3	14	< 0.10	< 0.13	0.120	< 0.02
20072982	ECON OUT TEST 2 PROBE/LINE	15	50.82	65.45	0.129	8,44
20072983	ECON OUT TEST 2 IMP #1	16	139.91	180.18	0.220	39.64
20072984	ECON OUT TEST 2 IMP #2	17	9.77	12.58	0.220	2.77
20072985	ECON OUT TEST 2-IMP #3	18	0.24	0.31	0.120	0.04
20072986	AIR HTR IN TEST 3 PROBE	19	0.43	0.55	0.139	0.08
20072987	AIR HTR IN TEST 3 LINE	20	9.4	12.11	0.120	1.45
20072988	AIR HTR IN TEST 3 IMP #1	21	2.16	2.78	0.220	0.61
20072989	AIR HTR IN TEST 3 IMP #2	22	0.25	0.32	0.220	0.07
20072990	AIR HTR IN TEST 3 IMP #3	23	< 0.10	< 0.13	0.120	< 0.02
20072991	AIR HTR IN TEST 3 PROBE BLANK	24	< 0.10	< 0.13	0.091	< 0.01
20072992	AIR HTR IN TEST 3 LINE BLANK	25	< 0.10	< 0.13	0.076	< 0.01
20072993	ECON OUTTEST 3 PROBE/LINE	26	24.74	31.86	0.140	4.46
20072994	ECON OUT TEST 3 IMP #1	27	120.05	154.60	0.220	34.01
20072995	ECON OUT TEST 3 IMP #2	28	10.13	13.05	0.220	2.87
20072996	ECON OUT TEST 3 IMP #3	29	0.45	0.58	0.120	0.07
20072997	ZENO BLANK	30	< 0.10	< 0.13	0.125	< 0.02
20072998	0.1N H2SO4 BLANK	31	< 0.10	< 0.13	0.125	< 0.02
20072999	BLANK TRAIN IMP #1	32	< 0.10	< 0.13	0.150	< 0.01
20073000	BLANK TRAIN IMP #2	33	< 0.10	< 0.13	0.150	< 0.02
20073001	BLANK TRAIN IMP #3	34	< 0.10	< 0.13	0.100	< 0.01

* Portion of sample lost during recovery

1.53

60.32

2.33

50.89

2.22

41.41



CONSOL Project #: 1621-085
General Description: Ion Selective Electrode Results for CTM-027 Samples from AES Greenidge Unit 4, 6/20/07-6/21/07
Date Reported: 6/21/2007

				Volume,	NH3 Conc., mg/L as	Total NH ₃ , mg	
Sample No.	Location	Test No.	Sample	ml	N.	as NH4+	
1	East Duct	1	Imp #1	240	1.98	0.61	
2	East Duct	11	Imp #2	120	0.333	0.05	
3	East Duct	11	Imp #3	100	0.062	0.01	•
4	East Duct	1	Probe	125	0.27	0.04	4.00
5	East Duct	1	Line	125	5.66	0.91	1.62
6	West Duct	1	Imp #1	220	6.48	1.83	
.7	West Duct	1	Imp #2	220	0.531	0.15	
8	West Duct	1	Imp #3	130	0.036	0.01	
9	West Duct	1	Probe	132	0.96	0.16	4.05
10	West Duct	1	Line	128	17	2.80	4.95
11	East Duct	1 1	Line Blank	134	0.132	0.02	
12	East Duct	1 1	Probe Blank	130	0.012	0.00	
13	West Duct	11	Probe Blank	132 138	0.012 0.477	0.00	
14	West Duct	1	Line Blank	100	0.477	0.00	
15 16	ļ	-	Zeno Blank 0.1 N H2SO4 Blank	100	0.012	0.00	
17	East Dust	2	Imp #1	220	1.85	0.52	
18	East Duct	2	Imp #2	220	0.404	0.32	
19	East Duct East Duct	2	Imp #3	100	0.023	0.00	
20	East Duct	2	Probe	125	0.355	0.06	
21	East Duct	2	Line	136	7.09	1.24	1.94
22	West Duct	2	Imp #1	220	4.31	1.22	1.54
23	West Duct	2	Imp #2	220	0.371	0.10	
24	West Duct	2	Imp #2	100	0.026	0.00	
25	West Duct	2	Probe	130	0.020	0.02	
26	West Duct	2	Line	132	2.07	0.35	1.69
27	East Duct	3	Imp #1	220	0.5	0.14	1.00
28	East Duct	3	Imp #2	220	0.13	0.04	
29	East Duct	3	Imp #3	100	0.068	0.01	
30	East Duct	3	Probe	108	0.08	0.01	
31	East Duct	3	Line	126	3.77	0.61	0.81
32	West Duct	3	Imp #1	220	3.61	1.02	
33	West Duct	3	lmp #2	220	0.339	0.10	
34	West Duct	3	Imp #3	100	0.047	0.01	
35	West Duct	3	Probe	140	0.621	0.11	
36	West Duct	3	Line	138	2.75	0.49	1.72
37			Impinger Recovery Blank	200	0.031	0.01	
38	East Duct	4	Imp #1	220	0.646	0.18	
39	East Duct	4	lmp #2	220	0.138	0.04	
40	East Duct	4	Imp #3	100	0.025	0.00	
41	East Duct	4	Probe	133	0.174	0.03	
42	East Duct	4	Line	129	2.22	0.37	0.62
43	West Duct	4	lmp #1	220	2.99	0.85	
44	West Duct	4	Imp #2	220	0.813	0.23	
45	West Duct	4	Imp #3	100	0.032	0.00	
46	West Duct	4	Probe	136	0.731	0.13	
47	West Duct	4	Line	132	2.37	0.40	1.61
48	West Duct	5	lmp #1	220	4.48	1.27	
49	West Duct	5	Imp #2	220	0.701	0.20	
50	West Duct	5	Imp #3	100	0.037	0.00	
51	West Duct	5	Probe	134	0.286	0.05	1 00
52	West Duct	5	Line	127	2.27	0.37	1.89
53	East Duct	5	Imp #1	220	0.881	0.25	
54	East Duct	5	Imp #2	220	0.207	0.06	
55 E0	East Duct	5	Imp #3	100	0.023	0.00	
56	East Duct	5	Probe	120 122	0.156	0.02	0.70
57	East Duct	5	Line	122	2.44	0.38	0.72



Research and Development

www.consolenergy.com 4000 Brownsville Rd. South Park, PA 15129

Sample Description.: GREENIDGE COAL 6/1/07 10:30

Sample No.: NH3-1

Date Received: 06/04/2007

Date Completed: 06/08/2007

Analytical No.:

20073004

Project No.: 1621 - 085

- 000

Submitted By: BWG/JEL/DPC

<u>Proximate</u>	(Dry)	Wt%	Ash Fusion Reducing Temp (F)	Trace Elements (ppm	(Dry)
Ash		8.07	Initia	Hg	
Volatile Matter		37.90	Softening	F	
Fixed Carbon		54.03	Hemispherical.	As	
BTU/ib		13811	Fluid	Ва	
MAF BTU/lb		15023		Be	
Ultimate (Dry)%			Ash Fusion Oxidizing	Cd	
Carbon		76.12	Initial	Co	
Hydrogen	aa aj masanawa a	4.59	Softening	Cr	
Nitrogen		1.40	Hemispherical.	Cu	
Chlorine	1,0 × 10 × 1,0 × 1	0.0798	Fluid	Li	of the manufactor of the file of
Sulfur, Total		2.67		Mn	
Ash		8.07		Мо	**********
Oxygen (DIFF)		7.07		W	
	AVERTONE TO CONTRA			Pb	
Major Ash Elem.	<u>%</u> (Ign	iited)	Misc.	Sb	
SiO2		44.52	Analysis Value	Se	
Al2O3		22.04		Sn	
TiO2		0.94		Th	
Fe2O3		18.23		TI	
CaO		4.92		J	
MgO		0.93		V	
Na2O		0.95		Zn	
K2O	Tier neu ne en nun na	1.66		Seive Analysis	
P2O5		0.27		SIZE	WT_%
SO3		5.27			
Undetermined		0.27			
Total Moisture		5.56			
Sulfur Forms (D	ry)		HGI/FSI		
Pyritic Sulfur			HGI		
Sulfate	rar TM Ting traki		approprieta mese el montale polatione des meses (1994 e 1994 e 1994)		
Organic			FSI		
Sulfur, Total	ess es fy his hand dan syn d	2.67			

As Determined Moisture

1.525

These values have been reviewed and are approved for transmission.



Research and Development

www.consolenergy.com 4000 Brownsville Rd. South Park, PA 15129

Sample Description.: GREENIDGE COAL 6/1/07 14:00

Sample No.: NH3-2

Date Completed: 06/08/2007

Date Received: 06/04/2007

Analytical No.:

20073005

Project No.: 1621 - 085

- 000

Submitted By:

BWG/JEL/DPC

Proximate_	(Dry)	Wt%	Ash Fusion Reducing Temp (F)	Trace Elements (ppm	(Dry)
Ash		8.03	Initial	Hg	
Volatile Matter		37.70	Softening	F	
Fixed Carbon		54.27	Hemispherical.	As	
BTU/lb		13815	Fluid	Ва	
MAF BTU/lb		15021		Be	
Ultimate (Dry)%			Ash Fusion Oxidizing	Cd	
Carbon		76.67	Initial	Co	
Hydrogen		4.56	Softening	Cr	
Nitrogen		1.40	Hemispherical.	Cu	
Chlorine	Marine menselymi	0.0809	Fluid	Li	and the second of the
Sulfur, Total		2.82		Mn	
Ash	3.1	8.03		Мо	**
Oxygen (DIFF)		6.44		N.	
		and the second s		Pb	
Major Ash Elem.	<u>%</u> (lgn	nited)	Misc.	Sb	
SiO2		44.50	<u>Analysis</u> <u>Value</u>	Se	
Al2O3	"" " II. II. "	21.56		Sn	
TiO2		0.94		Th	
Fe2O3	/ \''\ -'	19.56		TI	
CaO		5.07		1	
MgO		0.94	A CONTROL OF THE CONT	V	
Na2O		0.92		Zn	
K2O		1.65		Seive Analysis	
P2O5		0.32		SIZE	WT_%
SO3		5.37		•	
Undetermined		-0.83			
Total Moisture		5.57			
Sulfur Forms (Di	<u>y)</u>		HGI/FS1		
Pyritic Sulfur			HQI		
Sulfate	erate that he		PER DAME THA THE ENGINEET OF A PERFORMANCE BY LODGE THAT LIAL TRAFF THE ENGINEET AS		
Organic			FSI		
Sulfur, Total	2000 PARTICLE	2.82	 consequite transfer to the most state of CEENTRY STREET AND A STATE of CONTRACT AND A STATE OF CONTRACT AND A STA		

As Determined Moisture

1.515

These values have been reviewed and are approved for transmission.



Research and Development

www.consolenergy.com 4000 Brownsville Rd. South Park, PA 15129

Sample Description.:

GREENIDGE COAL 6/20/07

Sample No.:

NH3-1

Date Received: 06/26/2007

Date Completed: 08/29/2007

Analytical No.:

20073422

Project No.: 1621 - 085

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Submitted By: J. LOCKE/D. CONNELL

Proximate	(Dry)	<u>Wt%</u>	Ash Fusion Reducing Temp (F)	Trace Elements (ppm	(<u>Dry)</u>
Ash Volatile Matter		8.57 36.92	Initial Softening	Hg F	
Fixed Carbon		50.92 54.51	Hemispherical.	Ās	
BTU/lb		13851	Fluid	Ba	
MAF BTU/lb		15149		Be	
Ultimate (Dry)%			Ash Fusion Oxidizing	Cd	
Carbon		71.16	Initial	Co	
Hydrogen		5.43	Softening	Cr	
Nitrogen		1.27	Hemispherical.	c u	
Chlorine		0.0932	Fluid	u mananananan dan da surum surum. U	
Sulfur, Total		2,50		Mn	
Ash		8.57		Мо	
Oxygen (DIFF)		10.98		NI	
				Pb	
Major Ash Elem.	<u>%</u> (lgn		Misc.	Sb	
SiO2		47.71	Analysis Value	Se	
Al2O3	ne morna digela d	23.32		Sn	
TiO2		1,04		Th	
Fe2O3	merekaka eta.	15.98		TI	
CaO		4.04 0.97		ν ν	
MgO Na2O	170-20-0	1,04		· · · · · · · · · · · · · · · · · · ·	en Lakee vergemen.
Nazo K2O		1.0 4 1.86		Zn	
R205	uzzunun mara	0.48	(QARSMARAHOROPHERROPHER VINNERRARI (GARRIER BERTER ES)	Seive Analysis	
SO3		4.07		<u>SIZE</u>	<u>WT_%</u>
Undetermined		-0.51			
Total Moisture		4.28			
Sulfur Forms (Dr)		HGI/FSI		
Pyritic Sulfur Sulfate			HGI		
Organic Sulfur, Total		2.50	FSI		

As Determined Moisture

1.315

These values have been reviewed and are approved for transmission.